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.		030501	1	178
				(2)	SALINE & CADDO RIVERS STRS. & APPRS.(S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS

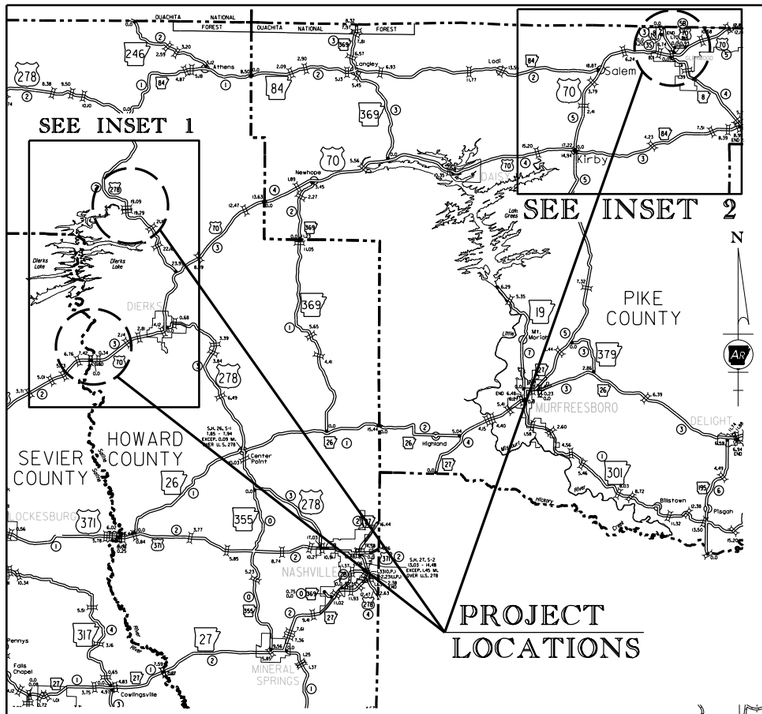
SALINE & CADDO RIVERS STRS. & APPRS.(S)

SEVIER, HOWARD, AND PIKE COUNTIES

ROUTE 70 SECTIONS 2, 3, & 5 AND ROUTE 278 SECTION 2

FED. AID PROJ. NHPP-0076(152)

JOB 030501



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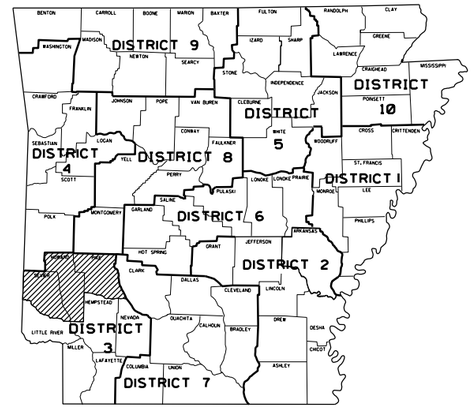

ARKANSAS HIGHWAY DISTRICT 3

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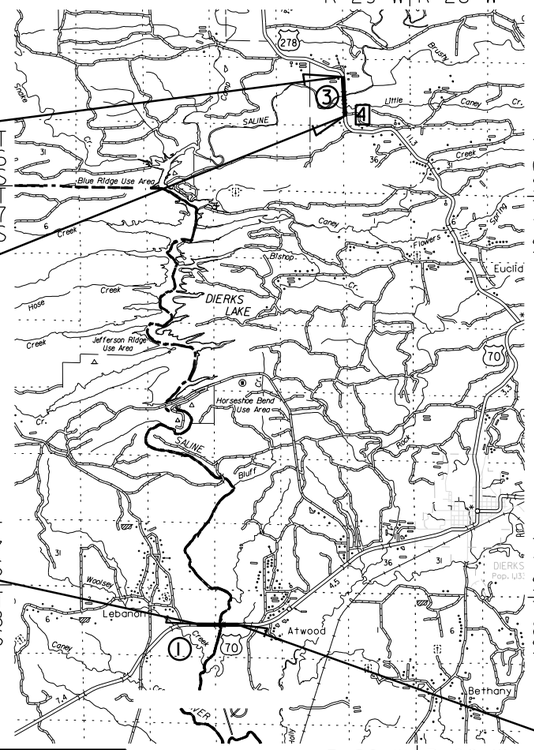

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STA. 3013+00.00
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END JOB 030501

STA. 984+78.45
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LOG MILE 7.14

STA. 1019+86.36
END SITE 1

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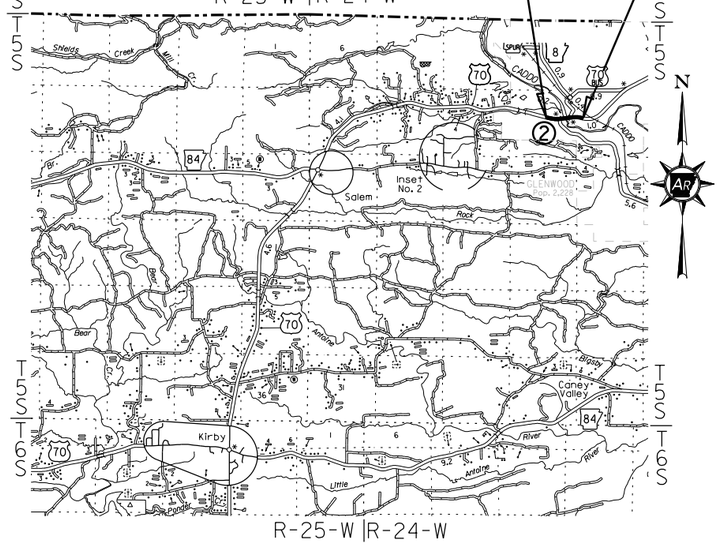
INSET 2


R-25-W | R-24-W
T4S T5S
T5S T6S
Shields Creek
Bayou
Caney Creek
Little
Caney Valley
Klirby
Salem
Inset No. 2
Glenwood Recreation Area
Caddo River
Rock
Little
Mountain
Creek
Bayou
Caney
Valley
Klirby
Salem
Inset
No. 2
Glenwood
Recreation
Area
Caddo

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.		030501	2	178

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

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135	DETAILS OF 380'-0" CONT. COMP. W-BEAM UNIT - HWY. 278 OVER SALINE RIVER (SHEET 4 OF 6)	07442	60690
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139 - 178	CROSS SECTIONS		

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

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	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
55008	STANDARD DETAILS FOR POURED SILICONE JOINTS	02-11-16
55009	STANDARD DETAILS FOR NEOPRENE STRIP SEAL JOINTS	02-11-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	03-24-20
55013	STANDARD DETAILS FOR TRANSITIONAL APPROACH RAILING	02-11-16
55014	STANDARD DETAILS FOR TYPE H RAILING	02-11-16
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16
55030C	STANDARD DETAILS FOR TYPE C APPROACH GUTTERS	02-27-14
55040C1	STANDARD DETAILS FOR TYPE C1 APPROACH SLAB	02-27-14

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	11-07-19
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9E	DETAILS OF DROP INLETS (TYPE C)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
GR-6	GUARDRAIL DETAILS	11-07-19
GR-7	GUARDRAIL DETAILS	11-07-19
GR-8	GUARDRAIL DETAILS	11-07-19
GR-9	GUARDRAIL DETAILS	11-07-19
GR-10	GUARDRAIL DETAILS	11-07-19
GR-11	GUARDRAIL DETAILS	11-07-19
GR-12	GUARDRAIL DETAILS	05-14-20
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SE-3	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC (4% MAXIMUM)	11-07-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
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-3	CHAIN LINK FENCE	11-17-10
WF-4	WIRE FENCE TYPE C AND D	08-22-02
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05
R-200X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-15-63
W-X003-2	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	12-31-62

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				6	ARK.			
				JOB NO.		030501	3	178

(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
8-14-2020

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 030501
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
210-1 _____ UNCLASSIFIED EXCAVATION
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
404-3 _____ DESIGN OF ASPHALT MIXTURES
410-1 _____ CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2 _____ DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1 _____ PORTLAND CEMENT CONCRETE DRIVEWAY
600-2 _____ INCIDENTAL CONSTRUCTION
603-1 _____ LANE CLOSURE NOTIFICATION
604-1 _____ RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3 _____ TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1 _____ CONCRETE DITCH PAVING
606-1 _____ PIPE CULVERTS FOR SIDE DRAINS
617-1 _____ GUARDRAIL TERMINAL (TYPE 2)
620-1 _____ MULCH COVER
621-1 _____ FILTER SOCKS
632-1 _____ CONCRETE ISLAND
633-1 _____ CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1 _____ CURBING
800-1 _____ STRUCTURES
802-3 _____ CONCRETE FOR STRUCTURES
804-2 _____ REINFORCING STEEL FOR STRUCTURES
807-2 _____ STEEL STRUCTURES
808-1 _____ INSTALLATION OF ELASTOMERIC BEARINGS
808-2 _____ ELASTOMERIC BEARINGS
JOB 030501__BIDDING REQUIREMENTS AND CONDITIONS
JOB 030501__BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 030501__BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 030501__CARGO PREFERENCE ACT REQUIREMENTS
JOB 030501__CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 030501__CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 030501__CONSTRUCTION PROJECT INFORMATION SIGN
JOB 030501__CULVERT CLEAN OUT
JOB 030501__DELAY IN RIGHT OF WAY OCCUPANCY
JOB 030501__DETAILS FOR SAFETY OF STREAM TRAFFIC
JOB 030501__DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 030501__DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 030501__DRILLED SHAFT FOUNDATIONS
JOB 030501__ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 030502__FLEXIBLE BEGINNING OF WORK
JOB 030501__GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 030501__MANDATORY ELECTRONIC CONTRACT
JOB 030501__MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 030501__NESTING SITES OF MIGRATORY BIRDS
JOB 030501__NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 030501__OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 030501__PARTNERING REQUIREMENTS
JOB 030501__PLASTIC PIPE
JOB 030501__PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 030501__REMOVING AND REPLACING TOPSOIL
JOB 030501__RESTRICTIONS ON THE USE OF RECYCLED ASPHALT PAVEMENT MATERIAL
JOB 030501__RUMBLE STRIPS
JOB 030501__SECTION 404 NATIONWIDE 23 PERMIT REQUIREMENTS
JOB 030501__SHORING FOR CULVERTS
JOB 030501__SOIL STABILIZATION
JOB 030501__STORM WATER POLLUTION PREVENTION PLAN
JOB 030501__SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 030501__TRENCHING AND SHOULDER PREPARATION FOR TEMPORARY WIDENING
JOB 030501__UTILITY ADJUSTMENTS
JOB 030501__VALUE ENGINEERING
JOB 030501__VEGETATED BUFFER ZONE
JOB 030501__WARM MIX ASPHALT
JOB 030501__WATER POLLUTION CONTROL

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. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. 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.
7. 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.
8. 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.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. 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.

Scott.Thornsberry 8/14/2020 12:25:40 PM
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REVISED DATE: $$REVDATE$$

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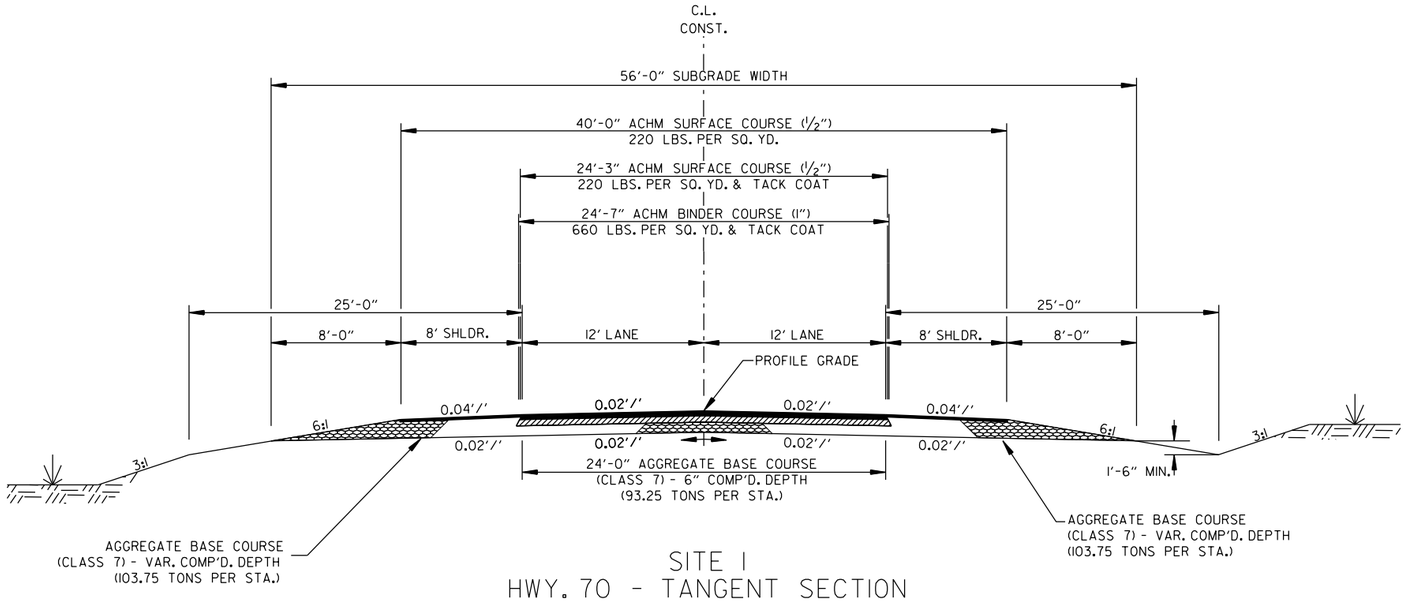
				6	ARK.			
				JOB NO.		030501	4	178
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



SITE 1
HWY. 70 - TANGENT SECTION

STA. 991+98.80 TO STA. 999+81.39
STA. 1005+21.61 TO STA. 1013+38.28

NOTES:

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

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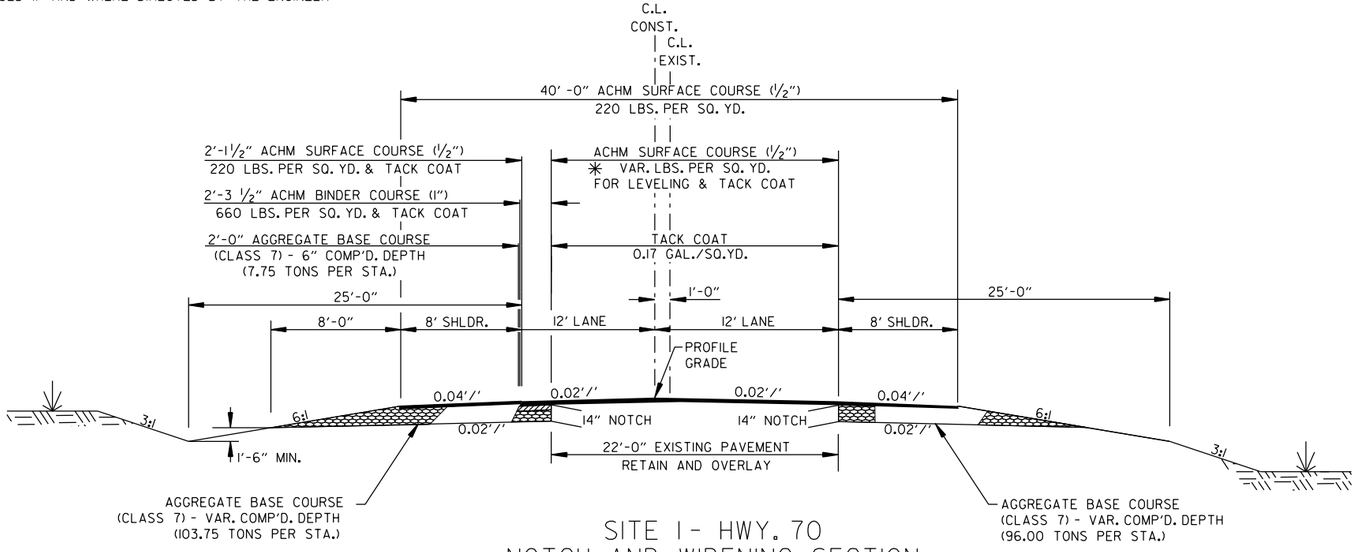
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

✳ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



SITE 1- HWY. 70
NOTCH AND WIDENING SECTION

STA. 984+78.45 TO STA. 991+98.80
STA. 1013+38.28 TO STA. 1019+86.36

STA. 984+78.45 TO STA. 991+98.80
TRANSITION FROM
HWY. 70 - NOTH AND WIDENING SECTION TO
HWY. 70 - FULL DEPTH SECTION.

STA. 1013+38.28 TO STA. 1019+86.36
TRANSITION FROM
HWY. 70 - FULL DEPTH SECTION TO
HWY. 70 - NOTH AND WIDENING SECTION.

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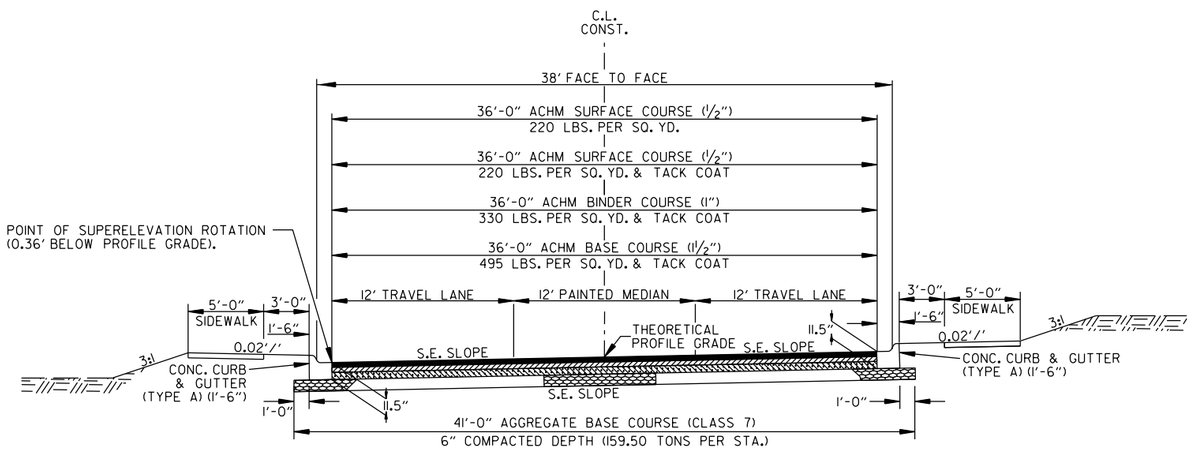
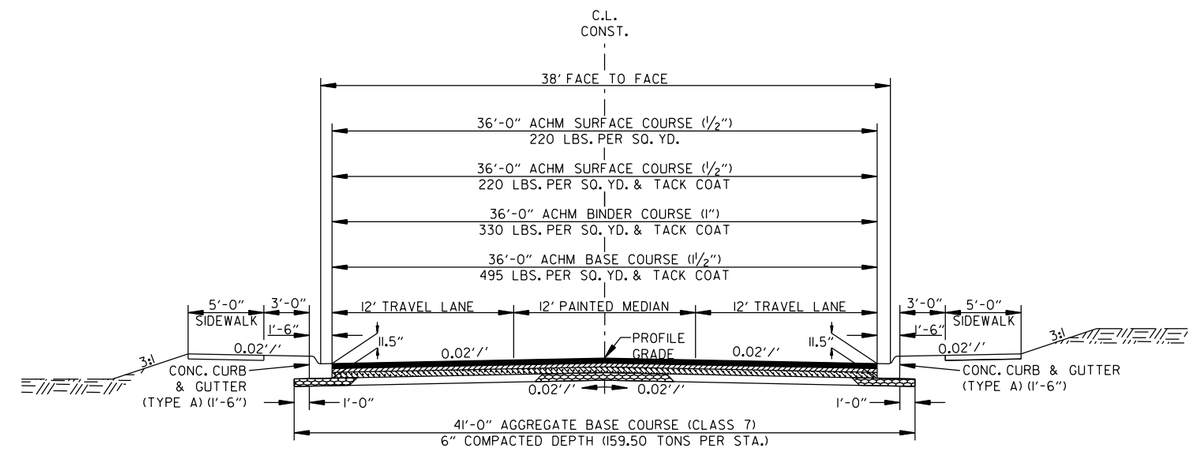
				JOB NO.		030501	5	178
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



SITE 2
HWY. 70 - SUPERELEVATION SECTION

STA. 1993+60.00 TO STA. 1999+29.33
STA. 2008+67.97 TO STA. 2011+00.00



SITE 2
HWY. 70 - TANGENT SECTION

STA. 1999+29.33 TO STA. 1999+55.83
STA. 2006+34.17 TO STA. 2008+67.97

HWY. 8 W/70B
STA. 25+18.00 TO STA. 25+50.00

NOTES:

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STATE OF ARKANSAS
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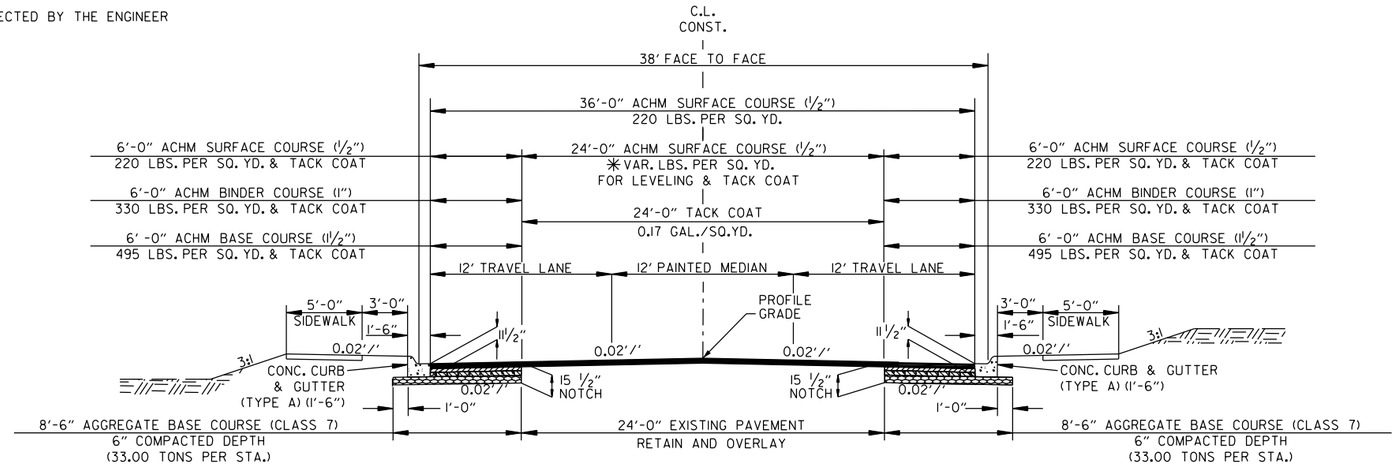
				6	ARK.			
				JOB NO.		030501	6	178

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

✳ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



SITE 2 - HWY. 70
NOTCH AND WIDENING SECTION

STA. 1989+00.00 TO STA. 1993+60.00
TRANSITION FROM
HWY. 70 - NOTCH AND WIDENING SECTION TO
HWY. 70 - SUPERELEVATION SECTION.

STA. 2011+00.00 TO STA. 2016+25.00
TRANSITION FROM
HWY. 70 - SUPERELEVATION SECTION TO
HWY. 70 - NOTCH AND WIDENING SECTION.

STA. 1989+00.00 TO STA. 1993+60.00
STA. 2011+00.00 TO STA. 2016+25.00
HWY. 8 E.
STA. 18+96.00 TO STA. 19+82.00

NOTES:

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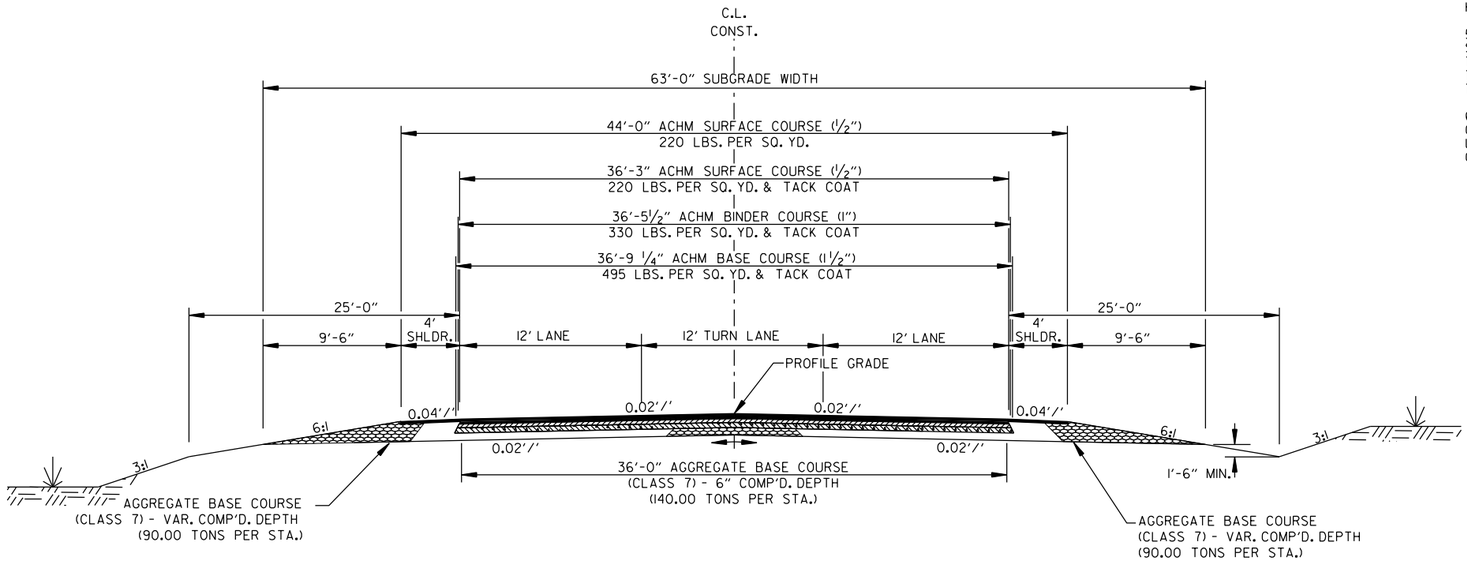

SITE 2
HWY. 8 - TANGENT SECTION

HWY. 8 W/70B.
STA. 25+50.00 TO STA. 26+50.00

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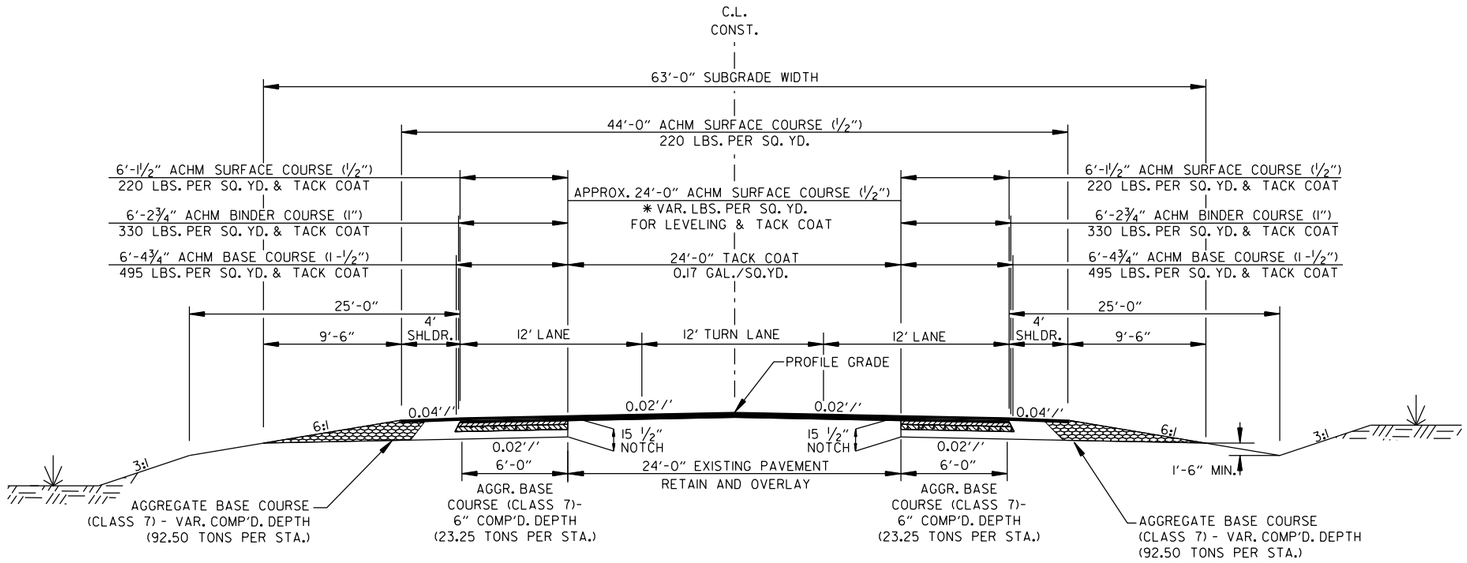
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

✳ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



SITE 2 - HWY. 8
NOTCH AND WIDEN OPEN SHOULDER

HWY. 8 E.
STA. 17+60.00 TO STA. 18+96.00

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STATE OF ARKANSAS
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No. 13640
BYRON O. LAWRENCE
8-13-2020

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				JOB NO.		030501	8	178
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

STATE OF ARKANSAS
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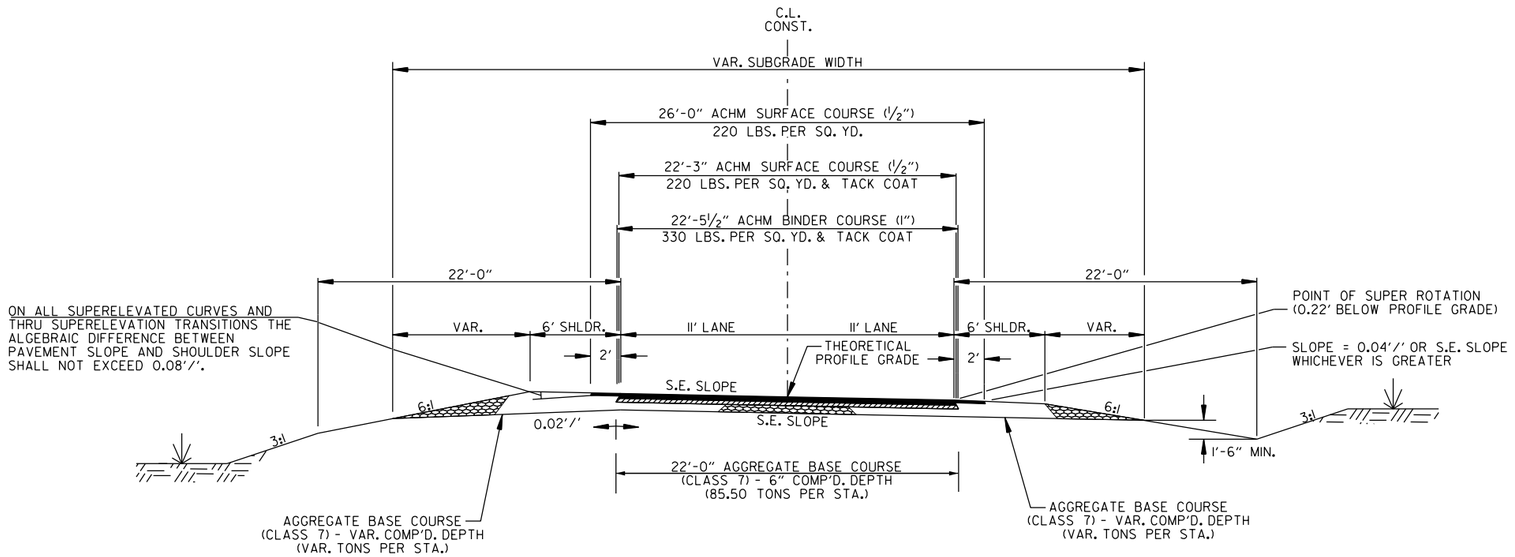

SITE 3
HWY. 278 - SUPERELEVATION SECTION

STA. 2990+00.00 TO STA. 2990+64.35
STA. 2990+85.63 TO STA. 2997+27.81

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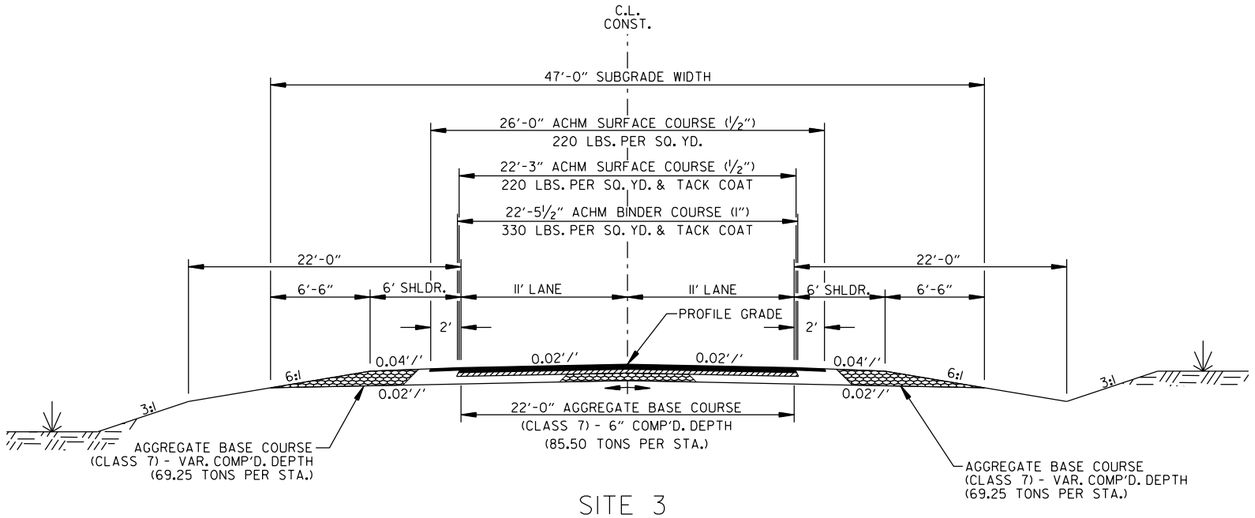

SITE 3
HWY. 278 - TANGENT SECTION

STA. 2990+64.35 TO STA. 2990+85.63
STA. 2997+27.81 TO STA. 2997+49.40
STA. 3002+04.61 TO STA. 3008+50.00

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				JOB NO.		030501	9	178

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
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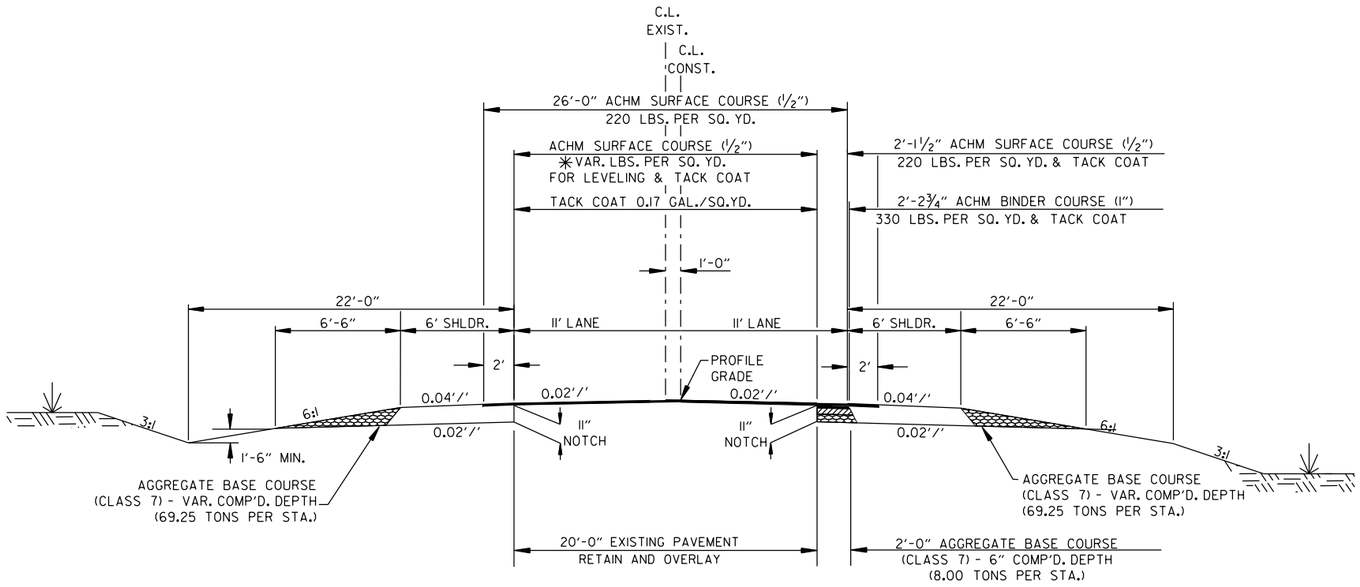
8-25-2020



SITE 3 - HWY. 278
NOTCH AND WIDENING SECTION

STA. 2984+22.00 TO STA. 2984+22.25
STA. 3008+50.00 TO STA. 3013+00.00

STA 3008+50.00 TO STA. 3013+00.00
TRANSITION FROM
HWY. 70 - FULL DEPTH SECTION TO
HWY. 70 - NOTCH AND WIDENING SECTION.

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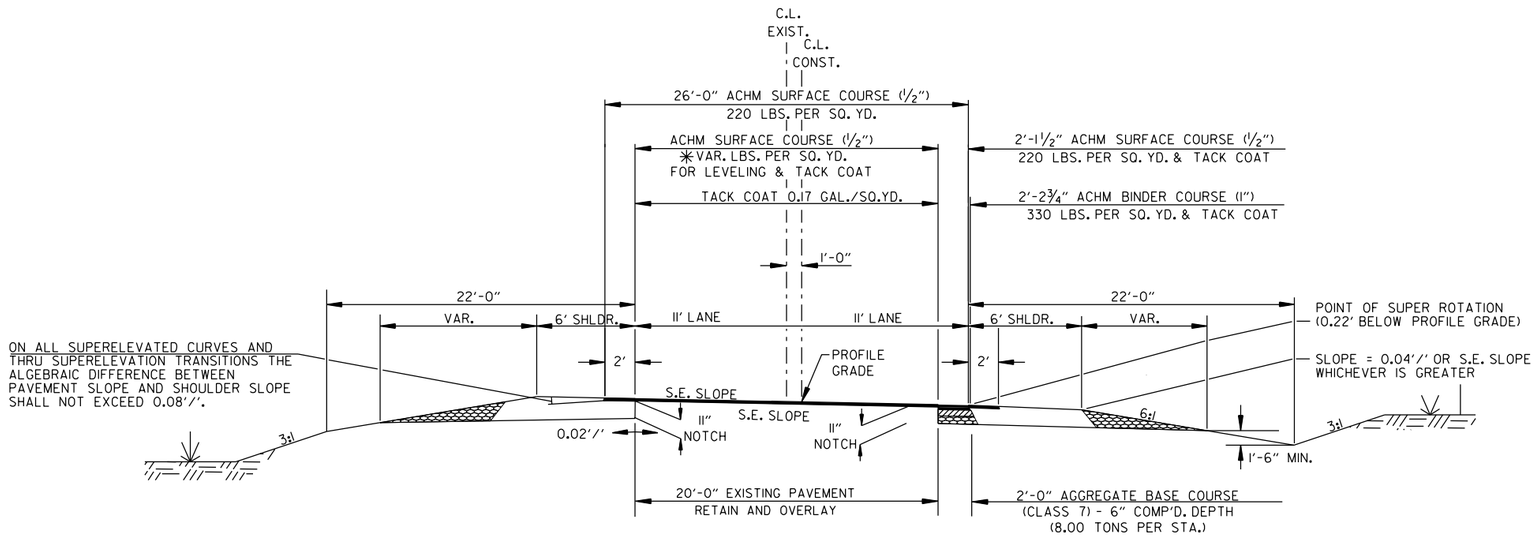

SITE 3
HWY. 278 - SUPERELEVATION NOTCH AND WIDENING SECTION

STA. 2984+22.25 TO STA. 2990+00.00

STA 2984+22.25 TO STA. 2990+00.00
TRANSITION FROM
HWY. 278 - SUPERELEVATION NOTCH AND WIDENING SECTION TO
HWY. 278 - FULL DEPTH SECTION.

TYPICAL SECTIONS OF IMPROVEMENT

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				(2)	SPECIAL DETAILS			

STATE OF ARKANSAS
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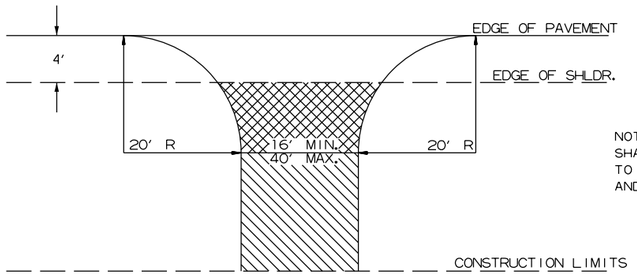


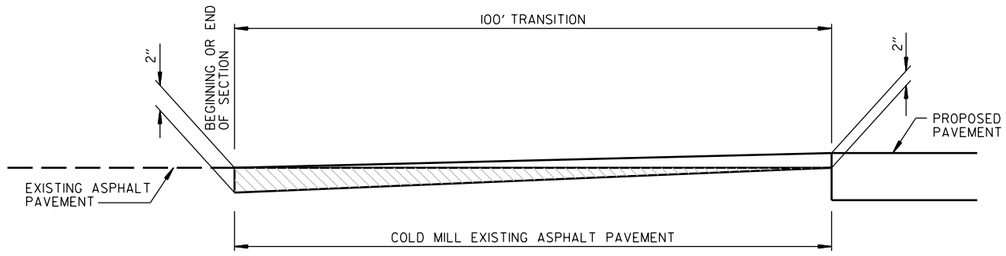
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

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

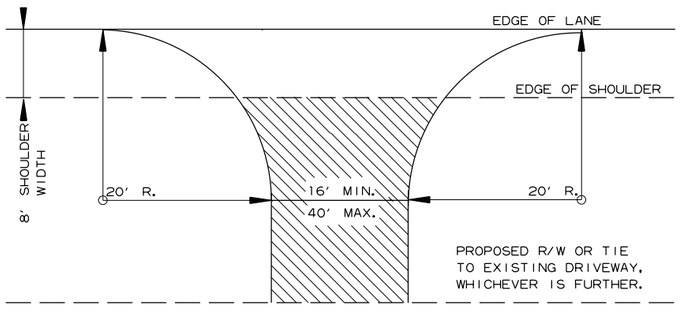
AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM TO EXISTING DRIVEWAY

DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

SITE 3



DETAIL FOR TRANSITIONS



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DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)

SITE 1

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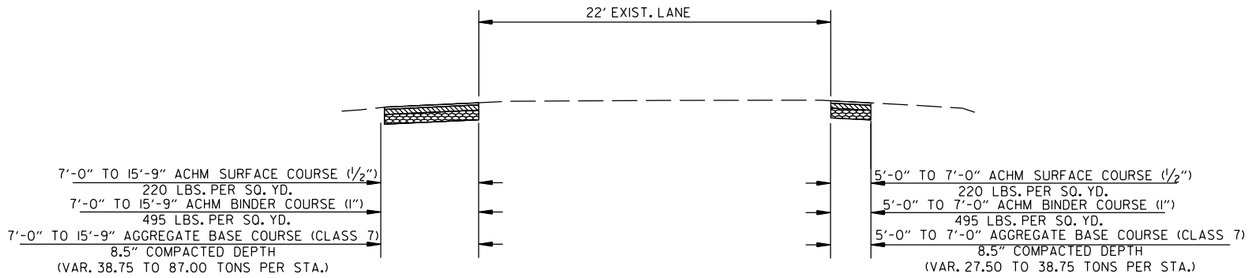
				JOB NO.		030501	11	178
				(2)	SPECIAL DETAILS			

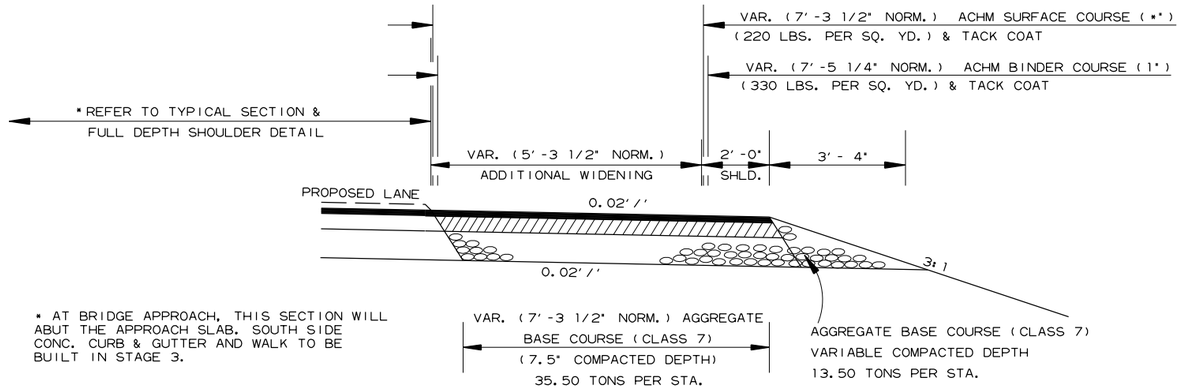


SITE 2 - HWY. 70
STAGE IA - TRENCH & SHOULDER PREPARATION DETAIL

NOTE:
LEFT AND RIGHT SECTIONS SHOULD BE CONSTRUCTED IN SEQUENCE CHRONOLOGICALLY AND NOT CONCURRENTLY

STATIONS FOR STAGE IA MOT:
LT. SHOULDER
STA. 1989+00.00 TO STA. 1996+00.00
STA. 2011+50.00 TO STA. 2016+25.00

RT. SHOULDER
STA. 2011+00.00 TO STA. 2016+25.00



* AT BRIDGE APPROACH, THIS SECTION WILL ABUT THE APPROACH SLAB. SOUTH SIDE CONC. CURB & GUTTER AND WALK TO BE BUILT IN STAGE 3.

STATE OF ARKANSAS
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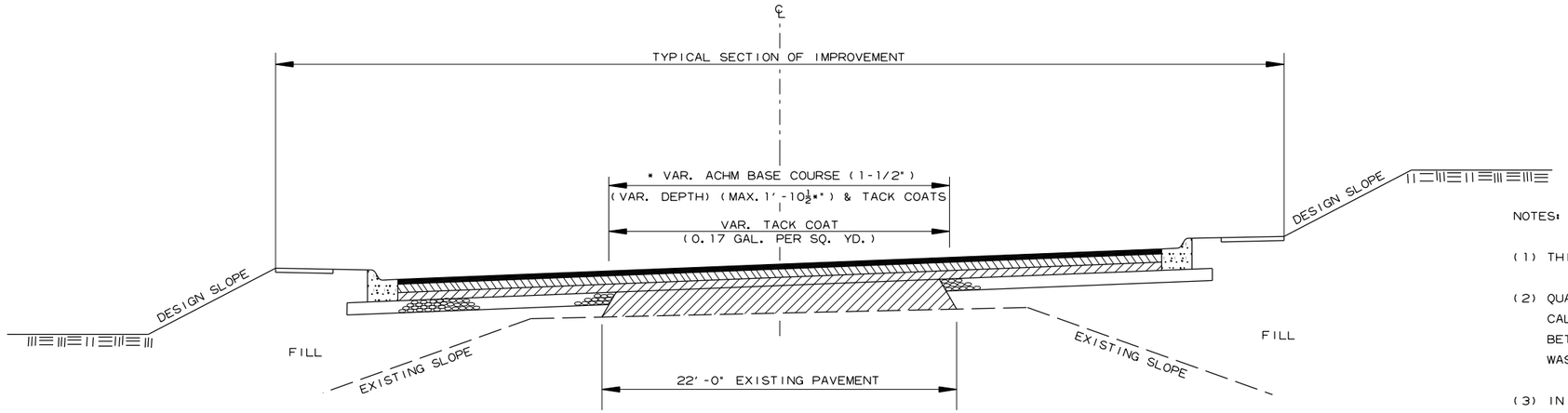
ADDITIONAL WIDENING FOR MAINTENANCE OF TRAFFIC

STATIONS (FOR STAGE 1 MOT)
STA. 1989+00.00 TO STA. 1997+00.00
STA. 1998+07.00 TO STA. 1999+92.33
STA. 2005+97.67 TO STA. 2016+25.00



* 6" AGGREGATE BASE COURSE (CLASS 7) TO BE REPLACED WITH ACHM BASE COURSE (1-1/2")

METHOD OF RAISING GRADE
SITE 2 HWY. 8 WEST & HWY. 70

NOTES:

(1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.

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

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

Leonard.Speed 8/13/2020 11:59 PM
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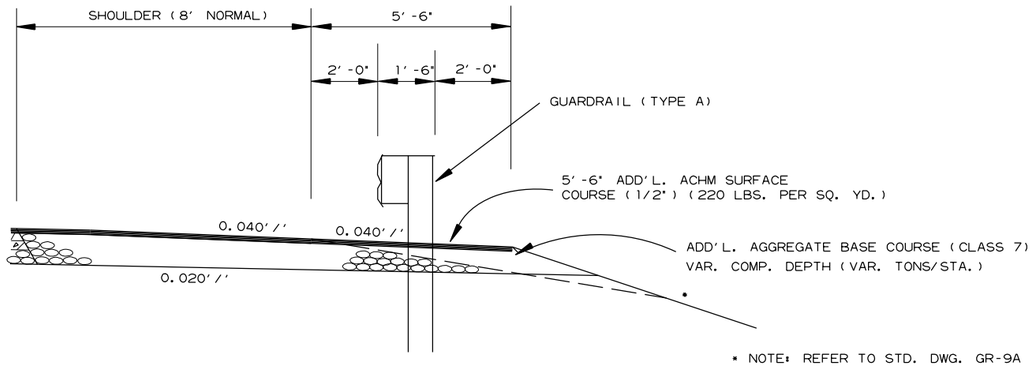
REVISED DATE: $$REVDATE$$

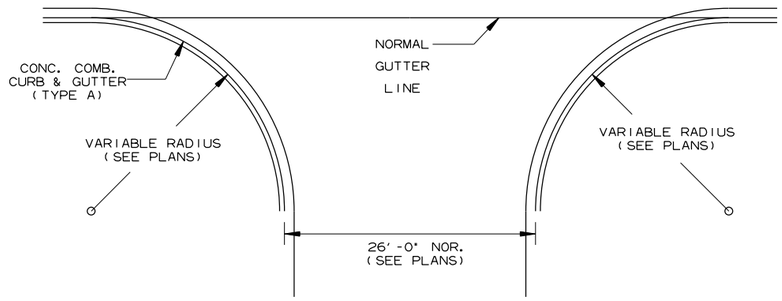
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	12	178

(2) SPECIAL DETAILS



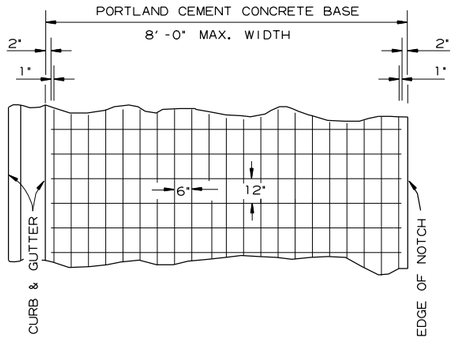
▪ NOTE: REFER TO STD. DWG. GR-9A AND CROSS SECTIONS FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.

WIDENING FOR GUARDRAIL



NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER SECTION

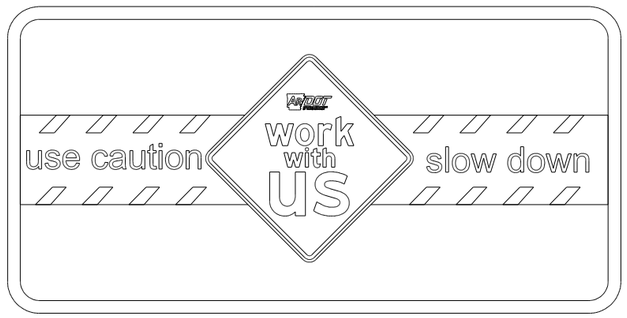


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ.YD.

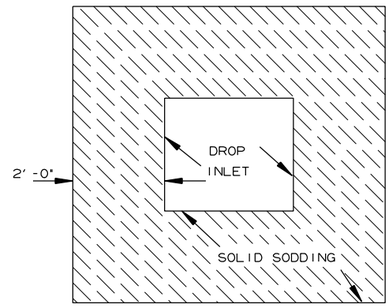
NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (6" U.T. & 9.5" U.T.)

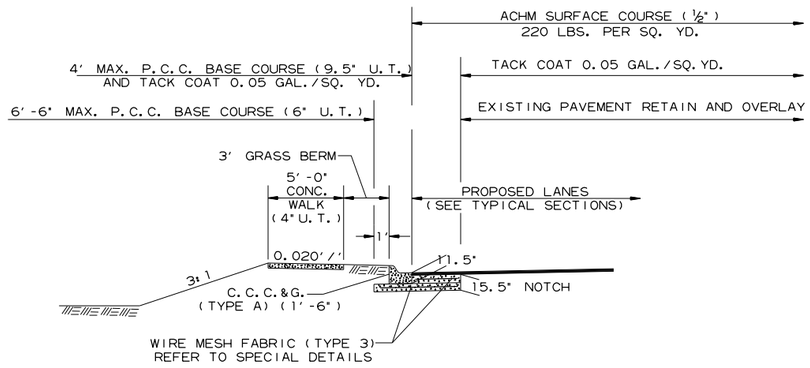
DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)



WORK WITH US SIGN



DETAIL FOR SOLID SODDING AROUND DROP INLETS



P.C.C. BASE WIDENING DETAIL

P.C.C. BASE WIDENING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

LeonardSpeed 8/13/2020 1:16:00 PM
WORKSPACE: ARDOT
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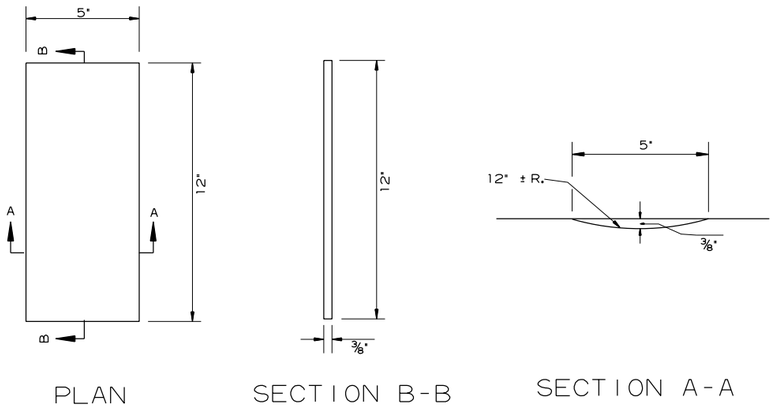
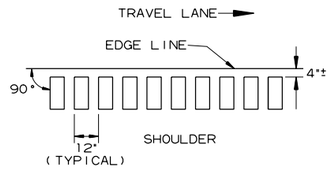
REVISED DATE: $$REVDATE$$

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.		030501	13	178
				(2)	SPECIAL DETAILS			

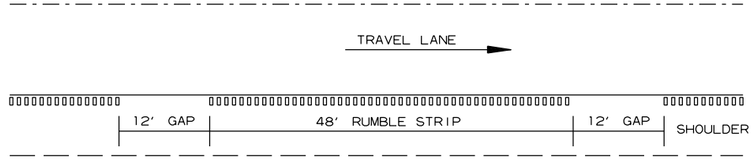


PLAN SECTION B-B SECTION A-A

DETAILS OF RUMBLE STRIPS

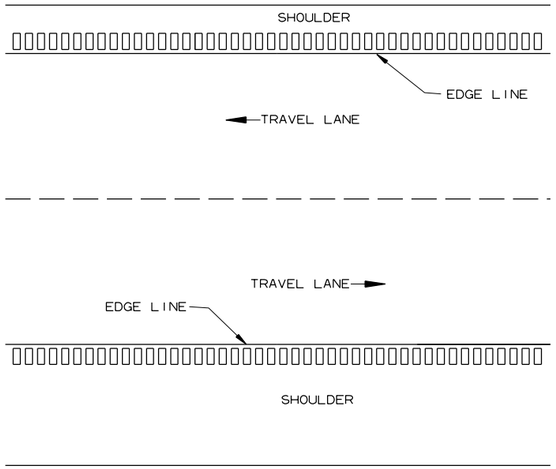


LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

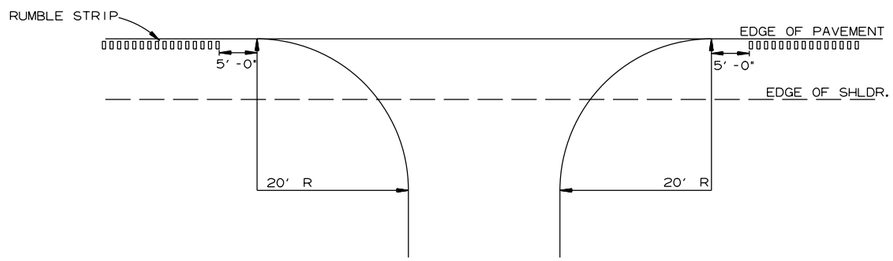
DETAIL FOR GAP PATTERN RUMBLE STRIP



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.
5. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

Leonard.Speed 8/13/2020 1:16:00 PM
WORKSPACE: ARDOT
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				JOB NO.		030501	14	178
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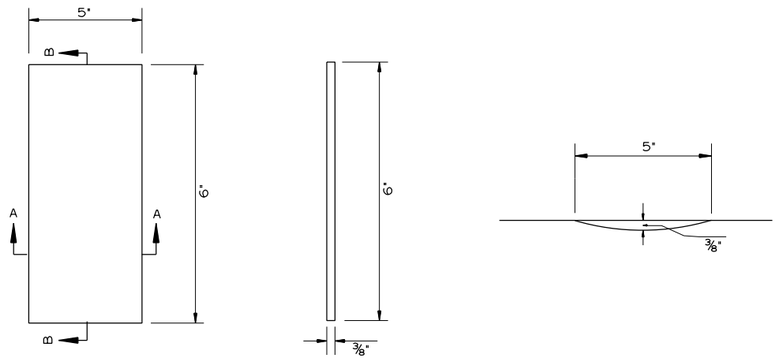
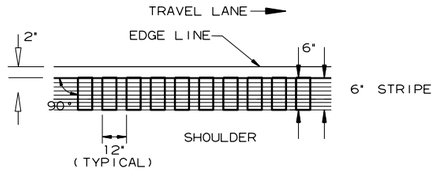
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

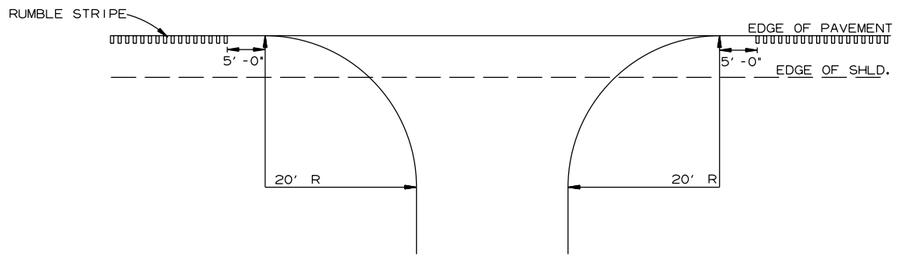


PLAN SECTION B-B SECTION A-A

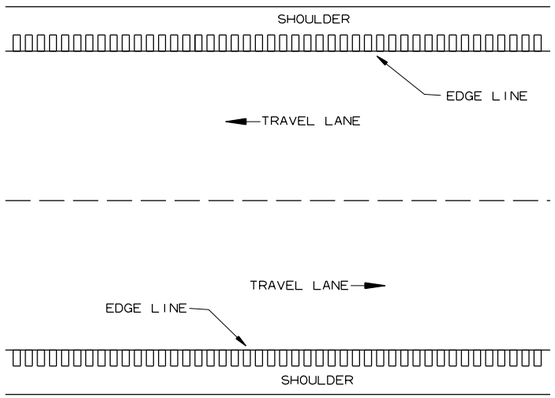
DETAILS OF RUMBLE STRIPE



LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



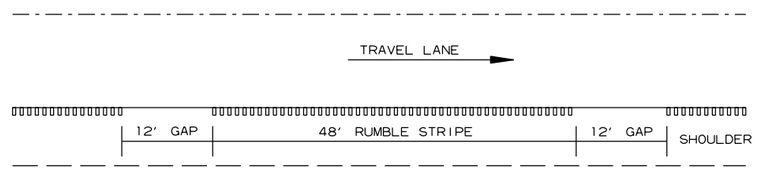
DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
4. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

DETAIL FOR GAP PATTERN RUMBLE STRIPE

SPECIAL DETAILS

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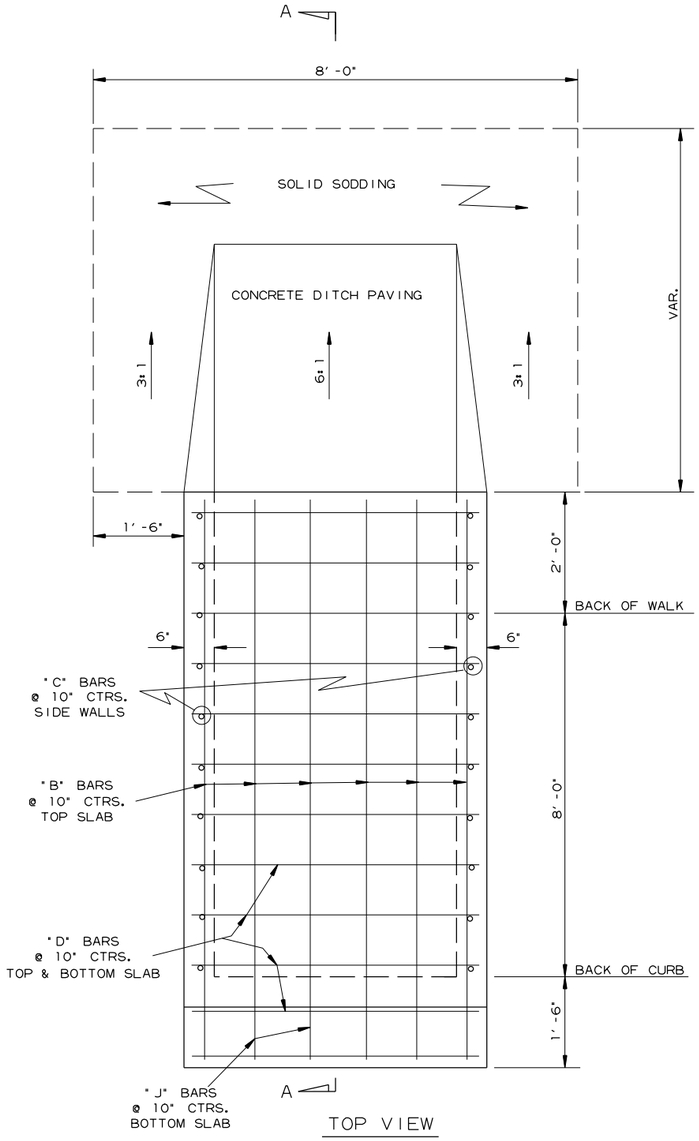
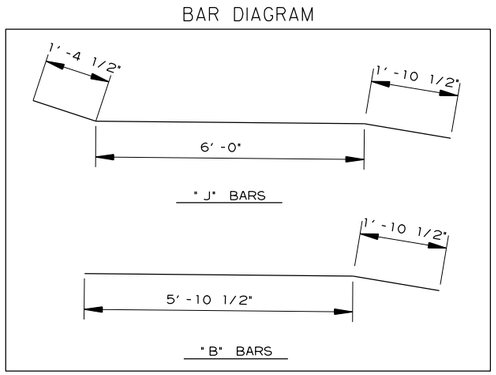
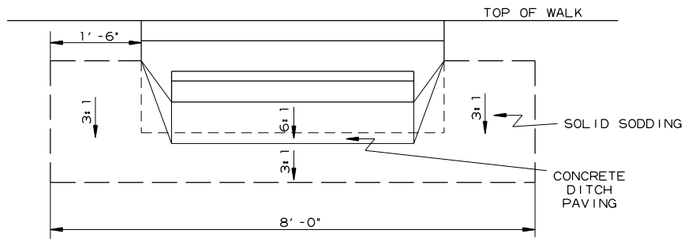


TOP VIEW



CLASS A CONC.	REINF. STEEL-RDWY GRADE 60
CU. YDS.	POUND
1.90	155

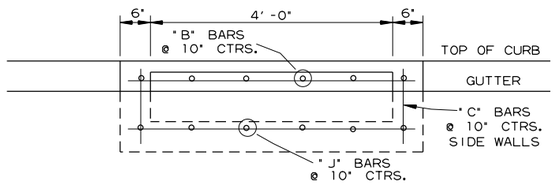
QUANTITIES FOR INFORMATION ONLY.



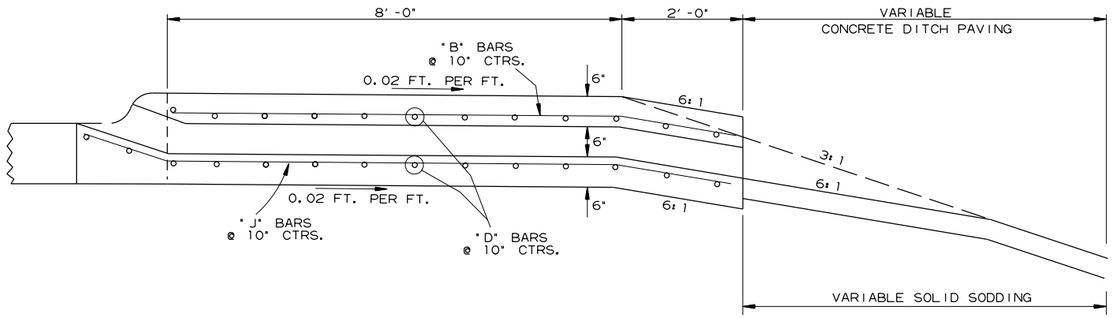
BACK VIEW

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4″ CHAMFER.
2. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2″ COVER.
3. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
4. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET IF AND WHERE APPROVED BY THE ENGINEER.
5. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
6. PAYMENT FOR CONCRETE DITCH PAVING & SOLID SODDING SHALL BE PAID FOR SEPARATELY.
7. SEE STANDARD DRAWING FPC-9E FOR EXTENSIONS.



FRONT VIEW



SECTION A-A

SECTION A-A

DROP INLET (TYPE SPECIAL)

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

Leonard.Speed 8/13/2020 11:16:02 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

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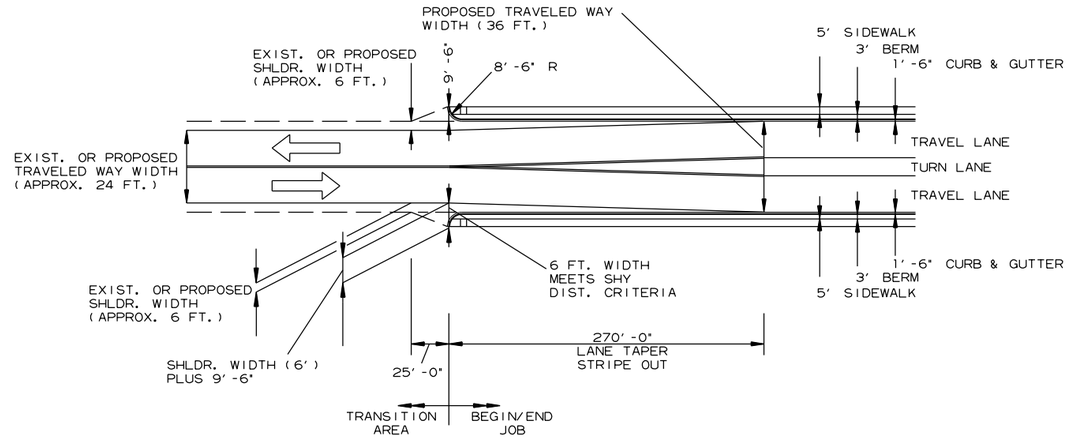
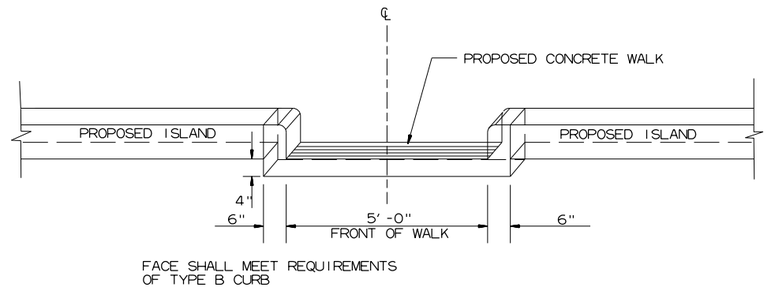
				6	ARK.			
				JOB NO.		030501	16	178
				(2)	SPECIAL DETAILS			

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



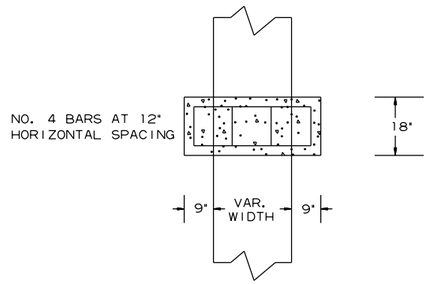
TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION
SITE 2 - HWY. 70



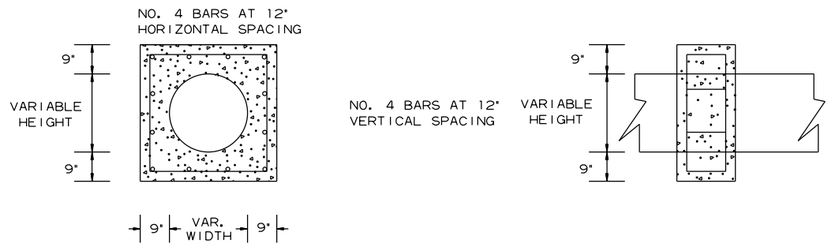
FACE SHALL MEET REQUIREMENTS
OF TYPE B CURB

NOTE: CONCRETE WALK THROUGH ISLAND SHALL BE POURED MONOLITHICALLY. ALL MATERIALS REQUIRED TO CONSTRUCT CONCRETE WALK THRU ISLAND SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE ISLAND.

CONCRETE WALK THROUGH ISLAND



TOP VIEW



FRONT VIEW SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

Leonard.Speed 8/13/2020 11:6:03 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

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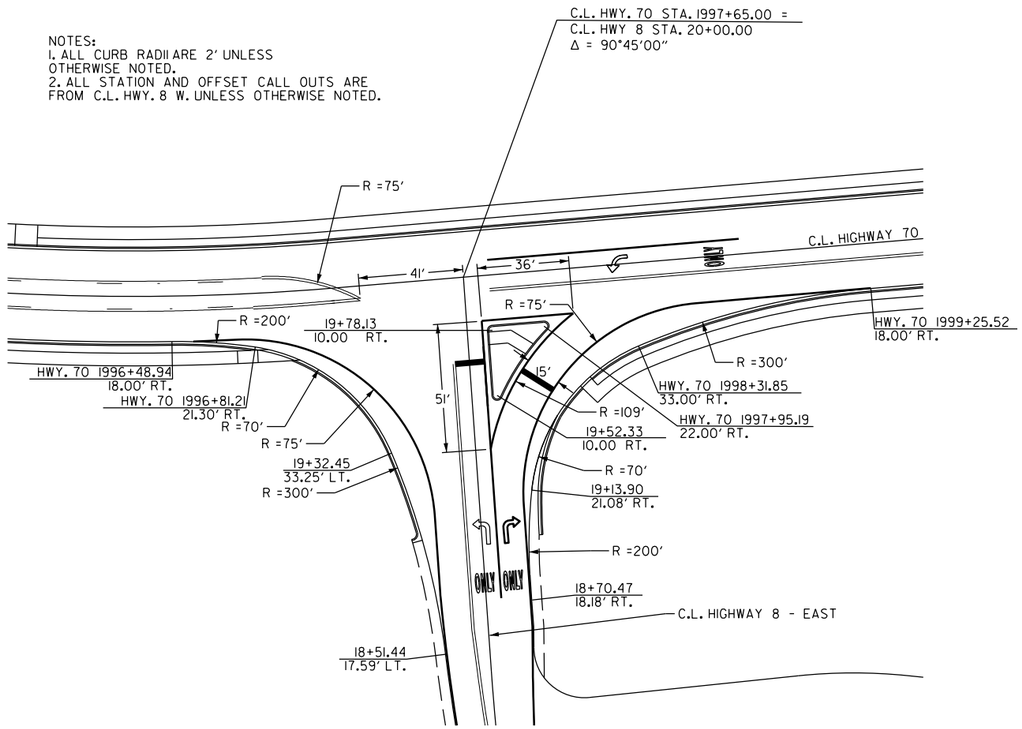
				6	ARK.			
				JOB NO.		030501	17	178
				(2)	SPECIAL DETAILS			

NOTES:
1. ALL CURB RADII ARE 2' UNLESS OTHERWISE NOTED.
2. ALL STATION AND OFFSET CALL OUTS ARE FROM C.L. HWY. 8 W. UNLESS OTHERWISE NOTED.



U.S. HWY. 70/STATE HWY. 8 EAST
INTERSECTION DETAIL

NOTES:
1. ALL CURB RADII ARE 2' UNLESS OTHERWISE NOTED.
2. ALL STATION AND OFFSET CALL OUTS ARE FROM C.L. HWY. 8 E. UNLESS OTHERWISE NOTED.

STATE OF ARKANSAS
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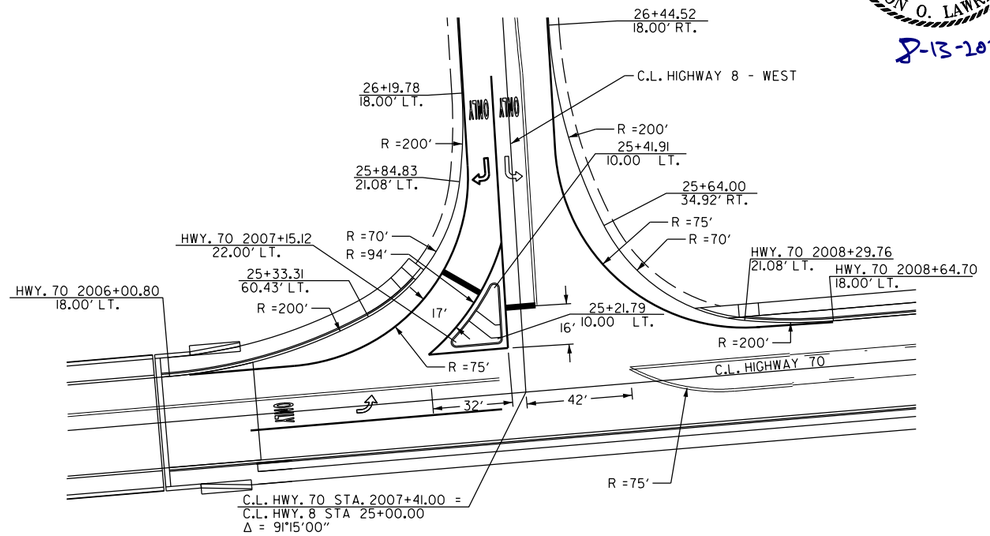
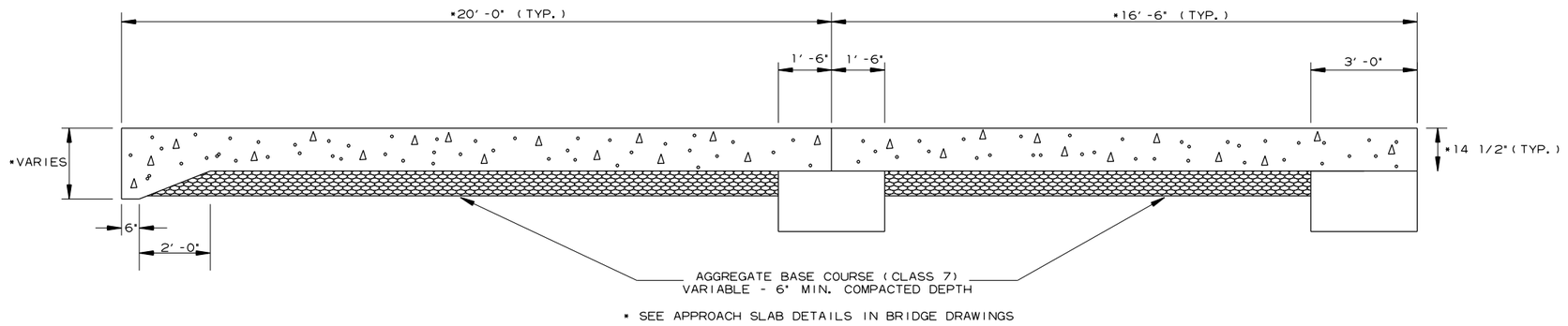


U.S. HWY. 70/STATE HWY. 8 WEST
INTERSECTION DETAIL



* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB

LeonardSpeed 8/13/2020 1:16:10 PM
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				6	ARK.			
				JOB NO.	030501		18	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-20

STA. 984+78.35
BEGIN JOB 030501
BEGIN SITE 1
L.M. 7.14

N

PC 984+78.45
985+00
990+00
995+00
PI 996+20.43
PRC 992+59.23
PROP. R/W
EXIST. R/W
C.L. HWY. 70
PI 988+68.99
E-11
E-6

SILT FENCE	E-11	LIN FT.
STA. 983+78 TO 1000+60	LT.	1730
STA. 1000+20 TO 1000+55	RT.	60
STA. 1004+07 TO 1004+38	RT.	88
STA. 1004+66 TO 1014+00	LT.	954
STA. 983+78 TO 994+44	RT.	1093
STA. 994+51 TO 999+82	RT.	529
STA. 1005+22 TO 1010+15	RT.	488
STA. 1010+32 TO 1012+00	RT.	247

LEGEND

E-6 = ROCK DITCH CHECK

E-11 = SILT FENCE

E-14 = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

1000+00
1005+00
PROP. R/W
EXIST. R/W
PI 1008+92.09
C.L. HWY. 70
E-14
300 CU. YDS.
200 CU. YDS.
SALINE RIVER
PT 999+81.39
PC 1005+21.61
PRC 1012+62.32
50' NATURAL BUFFER

ROCK DITCH CHECKS	E-6	INSTALLATION
STA. 990+25 TO 991+75	LT. =	3
STA. 990+60	RT. =	1
STA. 998+50 TO 999+50	LT. =	2
STA. 1000+50	CL. =	1
STA. 1002+25 TO 1002+75	CL. =	2
STA. 1005+25	CL.=	1
STA. 1006+50 TO 1009+00	LT. =	2

SEDIMENT BASIN	E-14	CU. YDS.
STA. 999+25	RT.	300
STA. 1000+25	LT.	300
STA. 1004+50	LT.	200
STA. 1005+00	RT.	300

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

CLEARING AND GRUBBING
HWY. 70 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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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.		030501	19	178

(2) TEMPORARY EROSION CONTROL DETAILS

TEMPORARY EROSION CONTROL GENERAL NOTES

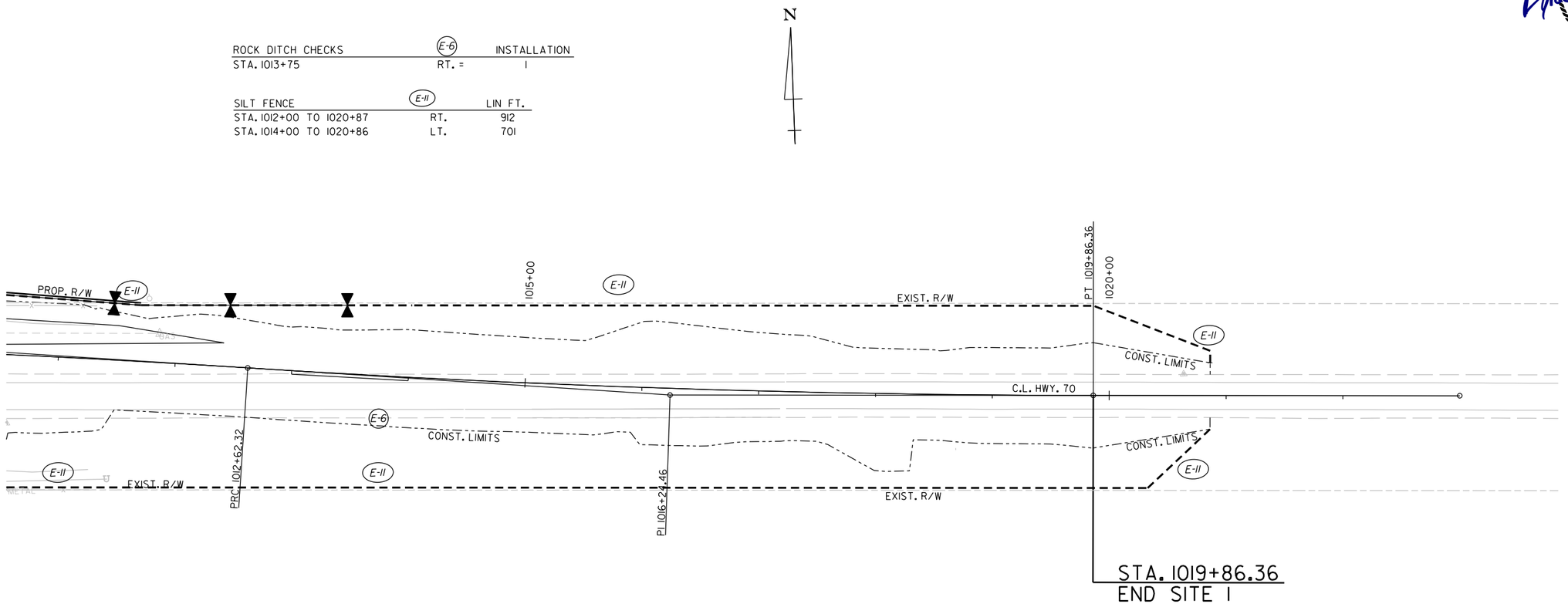
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 1013+75	RT. =	1

SILT FENCE	(E-11)	LIN FT.
STA. 1012+00 TO 1020+87	RT.	912
STA. 1014+00 TO 1020+86	LT.	701



REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

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

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

CLEARING AND GRUBBING
HWY. 70 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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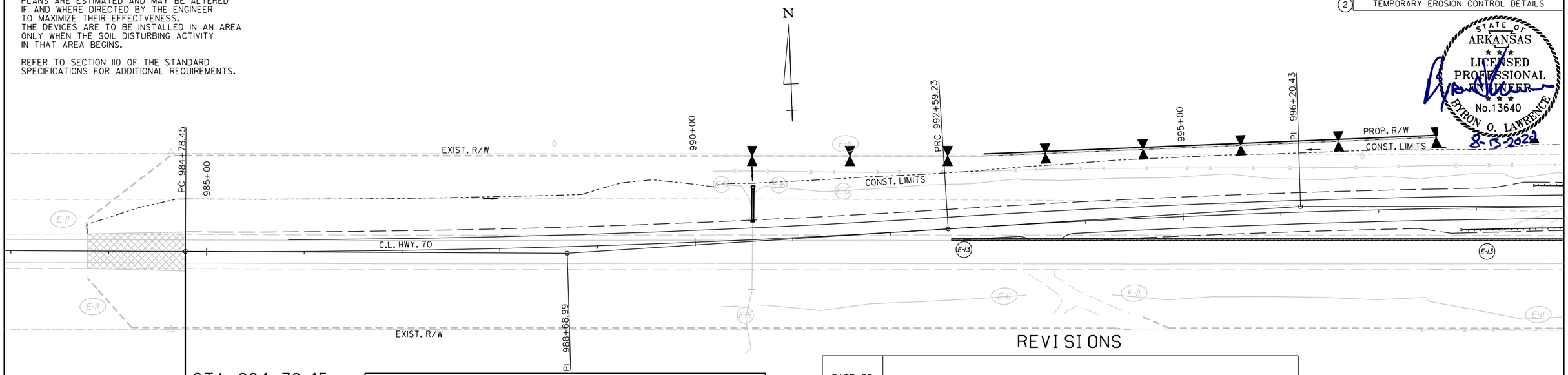
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	20	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
BYRON O. LAWRENCE
No.13640
8-13-2020



STA. 984+78.45
BEGIN JOB 030501
BEGIN SITE 1
L.M. 7.14

LEGEND

(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

(E-13) = FILTER SOCK

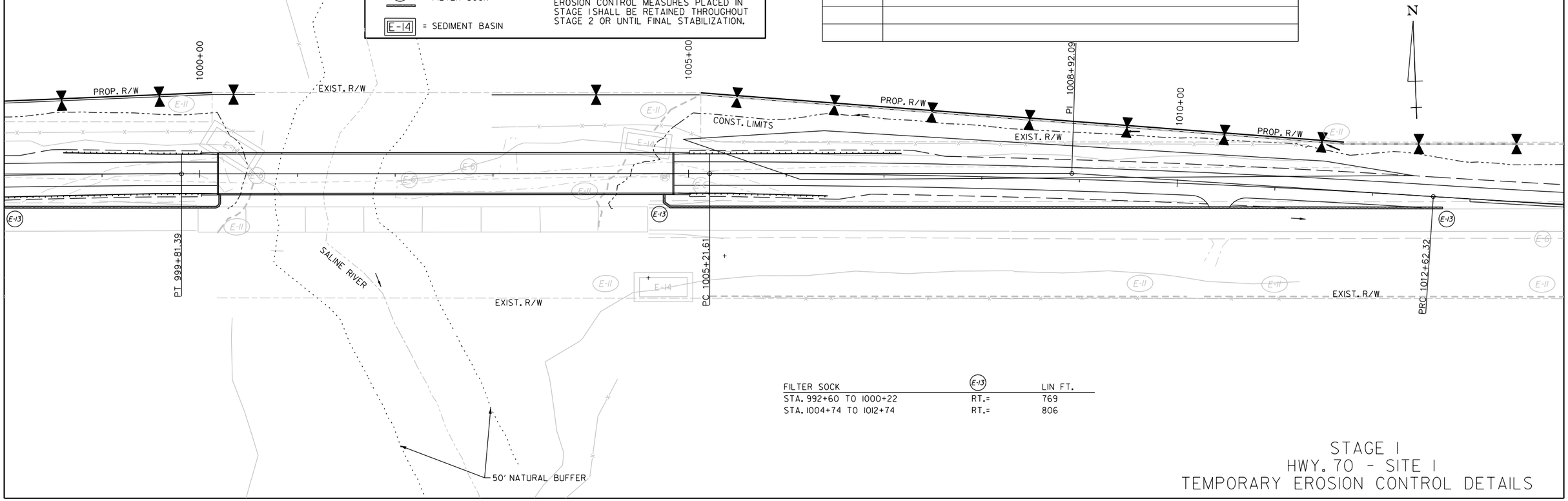
[E-14] = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION



FILTER SOCK	(E-13)	LIN FT.
STA. 992+60 TO 1000+22	RT.=	769
STA. 1004+74 TO 1012+74	RT.=	806

STAGE 1
HWY. 70 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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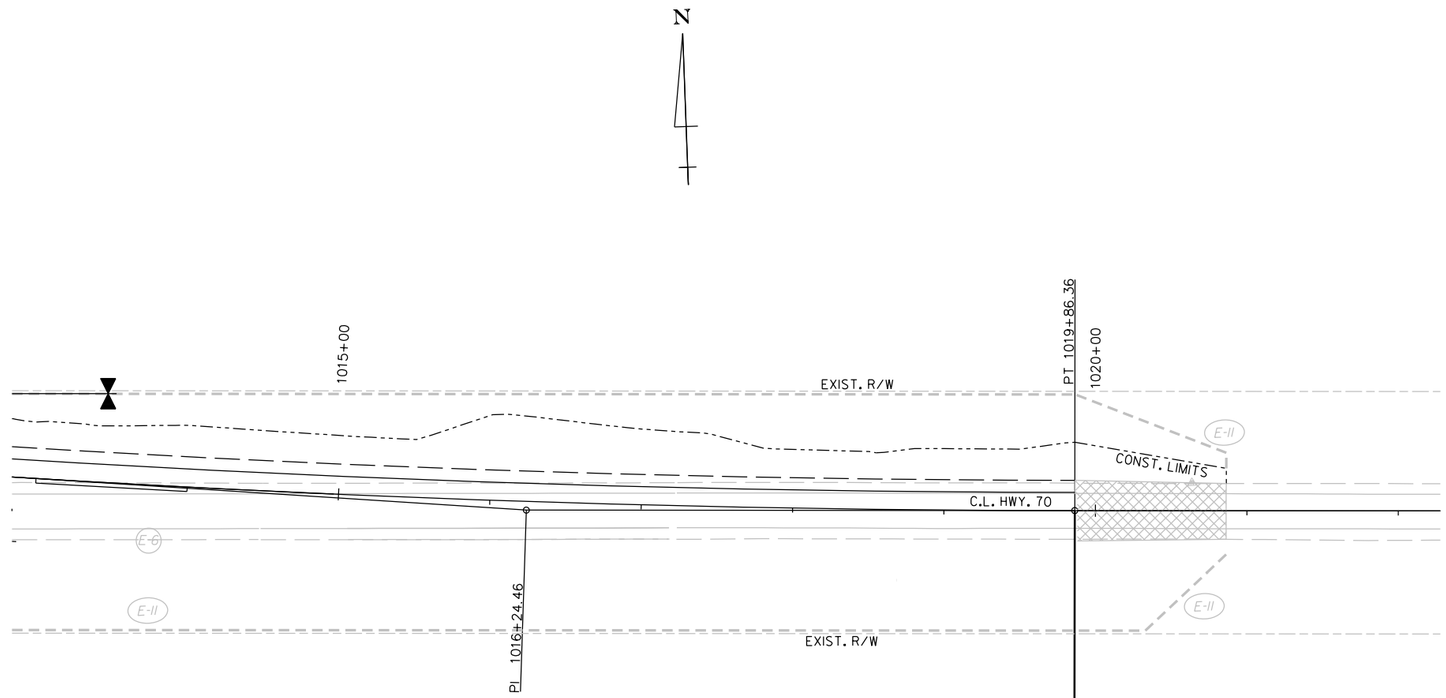
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	21	178

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-11 = SILT FENCE

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

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STAGE 1
HWY. 70 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 1:16:27 PM
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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.		030501	22	178

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

STA. 984+78.45
BEGIN JOB 030501
BEGIN SITE 1
L.M. 7.14

N

EXIST. R/W
985+00
990+00
PRC 992+59.23
995+00
PI 996+20.43
PROP. R/W
CONST. LIMITS
C.L. HWY. 70
CONST. LIMITS
CONST. LIMITS
EXIST. R/W
PC 984+78.45
PI 988+68.99

LEGEND

E-6 = ROCK DITCH CHECK

E-11 = SILT FENCE

E-14 = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

1000+00
STA. 1000+17.89
BR. END
STA. 1004+85.11
BR. END
1005+00
PROP. R/W
CONST. LIMITS
EXIST. R/W
SALINE RIVER
50' NATURAL BUFFER
PT 999+81.39
PC 1005+21.61
PI 1008+92.09
1010+00
PRC 1012+62.32
EXIST. R/W

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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STAGE 2
HWY. 70 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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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.		030501	23	178
(2) TEMPORARY EROSION CONTROL DETAILS				

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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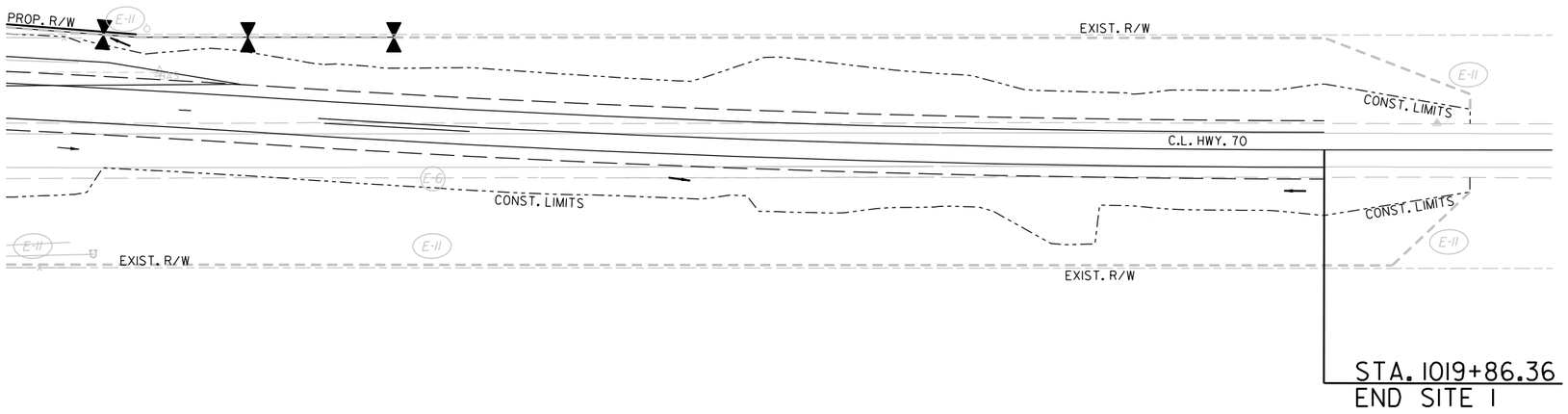
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

N



LEGEND

E-6 = ROCK DITCH CHECK

E-11 = SILT FENCE

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

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2
HWY. 70 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	24	178

2 TEMPORARY EROSION CONTROL DETAILS

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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HWY. 70

SILT FENCE	(E-11)	LIN FT.
STA. 1993+40 TO STA. 1995+36	LT.	193
STA. 1995+76 TO STA. 2000+44	LT.	557

HWY. 70

ROCK DITCH CHECK	(E-6)	EACH.
STA. 1989+50 TO 1990+00	LT. =	2
STA. 1991+50 TO 1992+75	LT. =	3
STA. 1994+50	LT. =	1
STA. 1996+50 TO 1999+00	LT. =	5

HWY. 8 E.

SILT FENCE	(E-11)	LIN FT.
STA. 16+55 TO 17+89	RT.	429
STA. 17+98 TO 19+19	RT.	329
STA. 18+91 TO 19+40	LT.	59

HWY. 70

SILT FENCE	(E-11)	LIN FT.
STA. 1994+20	RT.	45
STA. 1994+70	RT.	43
STA. 1995+25	RT.	50
STA. 1995+65	RT.	20

HWY. 70

ROCK DITCH CHECK	(E-6)	INSTALLATION.
STA. 1989+75 TO STA. 1992+20	RT. =	5
STA. 1993+70 TO STA. 1995+20	RT. =	3
STA. 1998+50 TO STA. 1999+50	RT. =	3

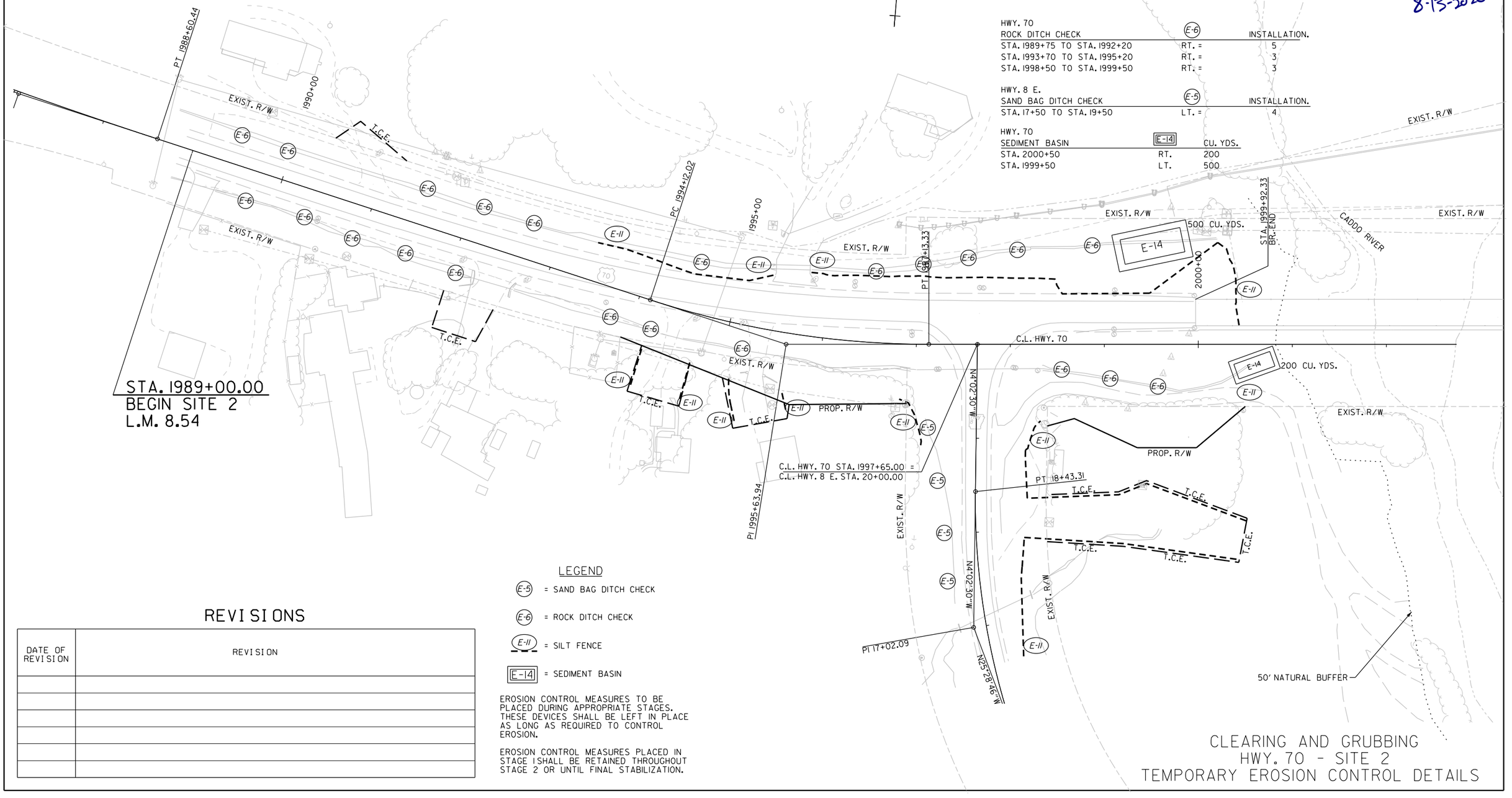
HWY. 8 E.

SAND BAG DITCH CHECK	(E-5)	INSTALLATION.
STA. 17+50 TO STA. 19+50	LT. =	4

HWY. 70

SEDIMENT BASIN	(E-14)	CU. YDS.
STA. 2000+50	RT.	200
STA. 1999+50	LT.	500

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



LEGEND

(E-5) = SAND BAG DITCH CHECK

(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

[E-14] = SEDIMENT BASIN

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

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REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

LeonardSpeed 8/13/2020 11:6:37 PM
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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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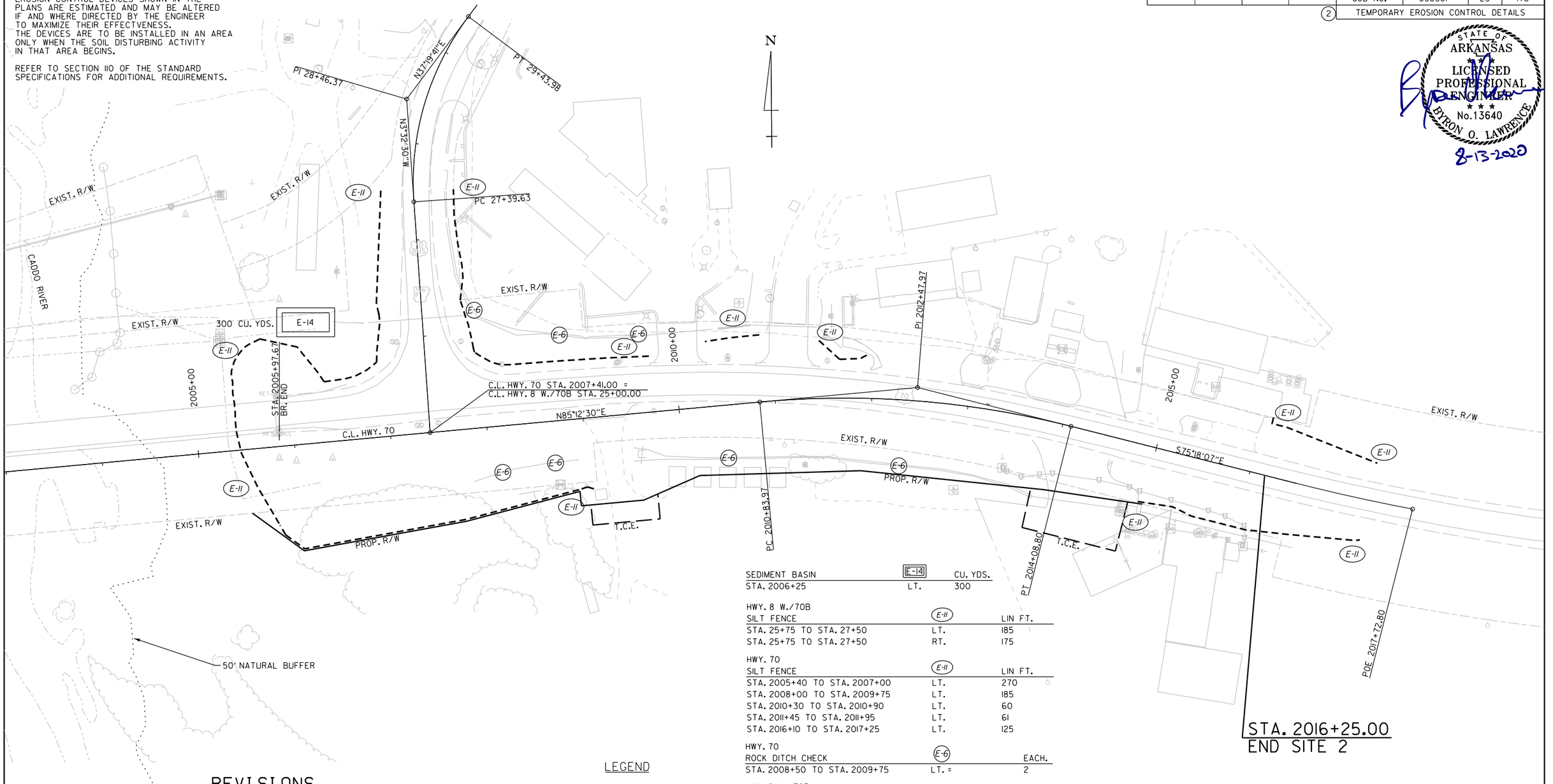
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	25	178

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



SEDIMENT BASIN	E-14	CU. YDS.
STA. 2006+25	LT.	300

HWY. 8 W./70B SILT FENCE	E-11	LIN FT.
STA. 25+75 TO STA. 27+50	LT.	185
STA. 25+75 TO STA. 27+50	RT.	175

HWY. 70 SILT FENCE	E-11	LIN FT.
STA. 2005+40 TO STA. 2007+00	LT.	270
STA. 2008+00 TO STA. 2009+75	LT.	185
STA. 2010+30 TO STA. 2010+90	LT.	60
STA. 2011+45 TO STA. 2011+95	LT.	61
STA. 2016+10 TO STA. 2017+25	LT.	125

HWY. 70 ROCK DITCH CHECK	E-6	EACH.
STA. 2008+50 TO STA. 2009+75	LT. =	2

HWY. 8 W./70B ROCK DITCH CHECK	E-6	EACH.
STA. 26+25	RT. =	1

HWY. 70 SILT FENCE	E-11	LIN FT.
STA. 2005+40 TO STA. 2009+00	RT.	456
STA. 2015+00 TO STA. 2017+25	RT.	236

HWY. 70 ROCK DITCH CHECK	E-6	INSTALLATION.
STA. 2008+25 TO 2008+75	RT. =	2
STA. 2010+50	RT. =	1
STA. 2012+25	RT. =	1

LEGEND

E-6 = ROCK DITCH CHECK

E-11 = SILT FENCE

E-14 = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

LeonardSpeed 8/13/2020 11:16:41 PM
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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.		030501	26	178

(2) TEMPORARY EROSION CONTROL DETAILS

TEMPORARY EROSION CONTROL GENERAL NOTES

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HWY. 70

ROCK DITCH CHECK	(E-6)	EACH.
STA. 1993+50 TO 1995+00	RT. =	2
STA. 1996+75	RT. =	1
STA. 1998+50 TO 2000+00	RT. =	5

HWY. 8 E.

ROCK DITCH CHECK	(E-6)	EACH.
STA. 17+50 TO 19+00	RT. =	2

HWY. 70

FILTER SOCK	(E-13)	LIN FT.
STA. 1992+75 TO 1997+40	CL.	425
STA. 1998+00 TO 2000+00	CL.	205

HWY. 8 E.

FILTER SOCK	(E-13)	LIN FT.
STA. 18+95 TO 20+00	LT.	110
STA. 18+95 TO 20+00	RT.	110

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
CLINTON O. LAWRENCE
8-13-2020

N

50' NATURAL BUFFER

PT 1988+60.44
EXIST. R/W
1990+00
T.C.E.
EXIST. R/W
CONST. LIMITS
E-13
T.C.E.
CONST. LIMITS
E-6
T.C.E.
EXIST. R/W
CONST. LIMITS
PROP. R/W
T.C.E.
PI 1995+63.94
PC 1994+12.02
1995+00
RET. WALL
GETZDALE
RET. WALL
EXIST. R/W
PT 1997+13.33
C.L. HWY. 70 STA. 1997+65.00 =
C.L. HWY. 8 E. STA. 20+00.00
EXIST. R/W
STA. 1999+92.33
BR. END
2000+00
CADDO RIVER
EXIST. R/W
C.L. HWY. 70
E-13
RET. WALL
EXIST. R/W
PROP. R/W
C.L. HWY. 8 E.
M.05.20.4"N
CONST. LIMITS
EXIST. R/W
T.C.E.
PT 18+43.31
T.C.E.
T.C.E.
T.C.E.
T.C.E.
M.47.02.30"W
CONST. LIMITS
EXIST. R/W
PI 17+02.09
N25°28'46"W
PC 15+57.48
50' NATURAL BUFFER

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK
- [E-14] = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 1
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

LeonardSpeed 8/13/2020 1:16:44 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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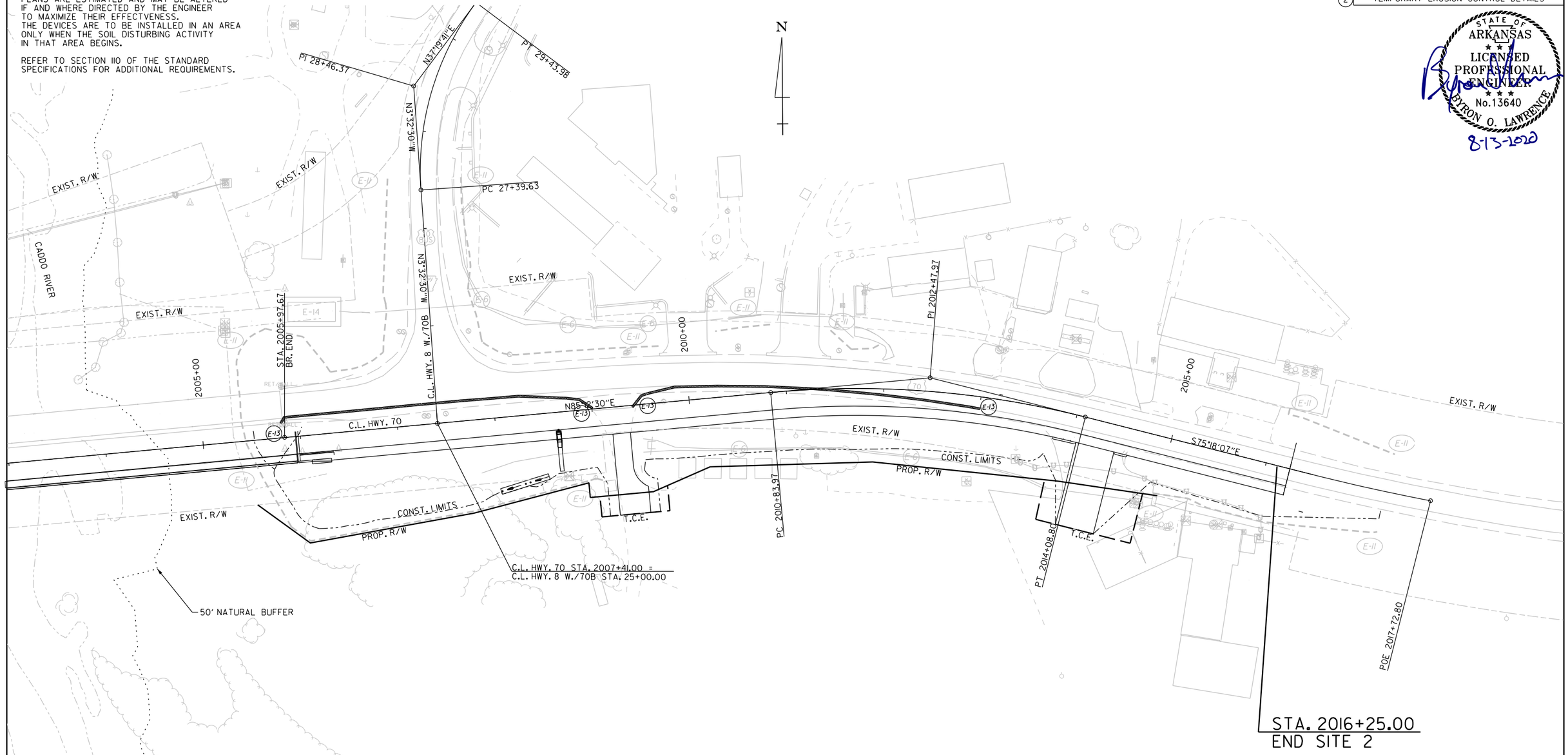
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	27	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-13 = FILTER SOCK

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 ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

HWY. 70 FILTER SOCK		
STA. 2005+80 TO 2013+00	E-13 CL.	LIN FT. 694

STAGE I
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 11:16:46 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613\03050\Caddo & Saline River Bridges\Design\CIVIL\Drawings\R03050\05E_EC2_004.dgn
REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

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.		030501	28	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

HWY. 70 FILTER SOCK	(E-13)	LIN FT.
STA. 1992+00	LT.	12
STA. 1994+40	LT.	12
STA. 1996+08	LT.	12
STA. 1997+25	LT.	12
STA. 1997+90	LT.	12
STA. 1998+45	LT.	12

N

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

PT 1988+60.44
EXIST. R/W
CONST. LIMITS
1990+00
+40.51 53.73'
+60 85'
T.C.E.
+20 60.13'
EXIST. R/W
CONST. LIMITS
CONST. LIMITS
PC 1994+12.02
1995+00
RET. WALL
EXIST. R/W
PT 1997+13.33
CONST. LIMITS
50' NATURAL BUFFER
2000+00
EXIST. R/W
EXIST. R/W
CADDO RIVER
EXIST. R/W
C.L. HWY. 70
+00 100'-58.54'
T.C.E.
+49.01 100'
+57.00 57.01'
CONSL. LIMITS
+93.97 47.33'
+18 100'-48.95'
T.C.E.
+70 100'-54.41'
EXIST. R/W
+04.94 59.81'
T.C.E.
CONST. LIMITS
PROP. R/W
+25 110'
+75 90' - 75'
PI 1995+63.94
+91.06 63.40'
C.L. HWY. 70 STA. 1997+65.00 =
C.L. HWY. 8 E. STA. 20+00.00
EXIST. R/W
CONST. LIMITS
N4°02'30"W
W. 20.20'
+38.11 160'
+39.22 87'
+68 79'
+15 157'
+35 110'
+45 145'
PROP. R/W
+98 110'
+50 66.12'
EXIST. R/W
STA. 1999+92.33 BR. END
+52 185'
T.C.E.
PT 18+43.31
T.C.E.
T.C.E.
T.C.E.
+39.15 210'
+20 215'
+43 232'
50' NATURAL BUFFER
EXIST. R/W
CONST. LIMITS
PT 17+02.09
C.L. HWY. 8 E.
N25°28'46"W
PC 15+57.48

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK
- [E-14] = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 1:16:48 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_05E_EC2_005.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.		030501	29	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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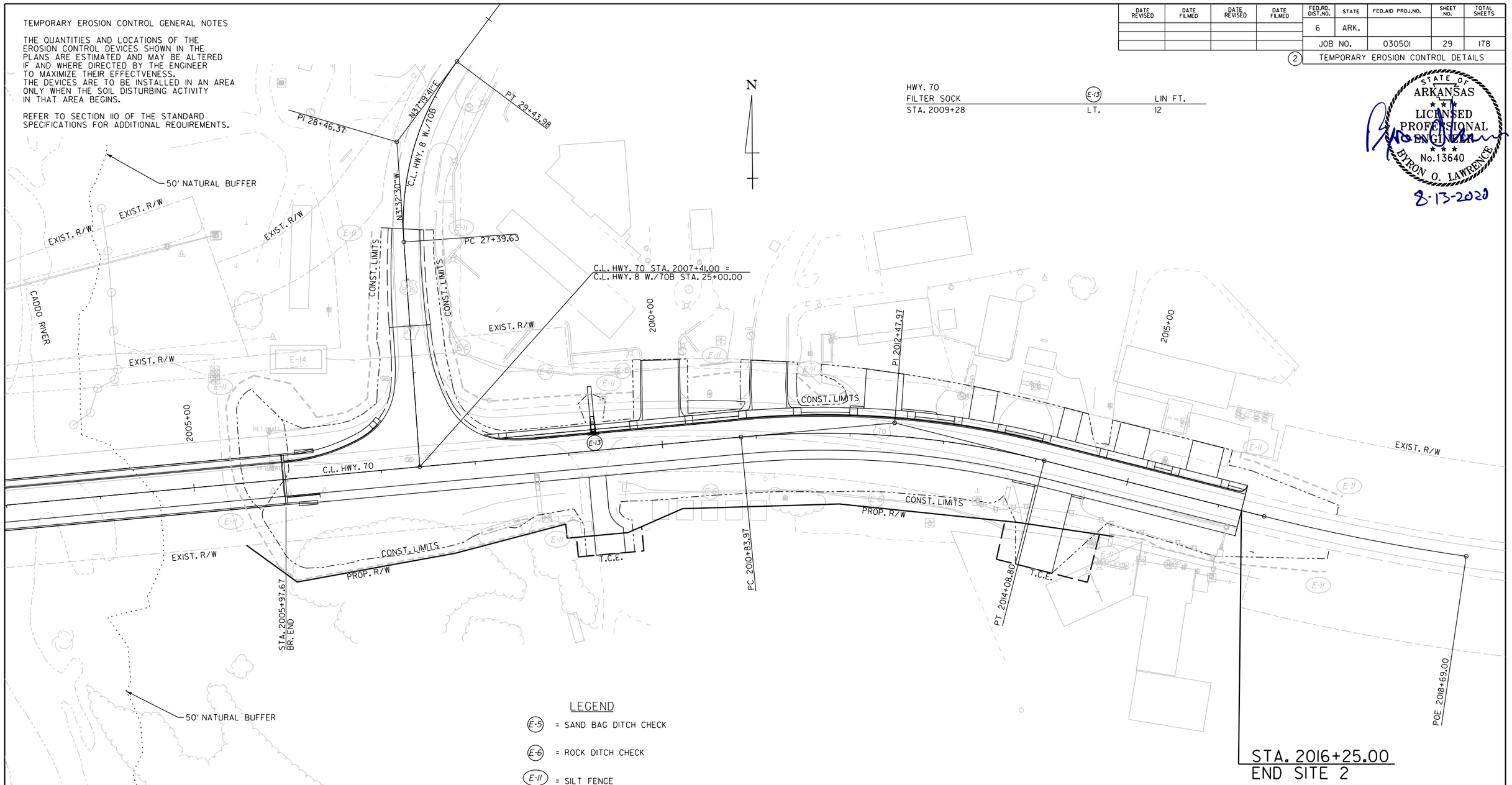
HWY. 70		
FILTER SOCK	(E-13)	LIN FT.
STA. 2009+28	LT.	12

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK
- [E-14] = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 11:51:51 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613\030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_05E_EC2_006.dgn
REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

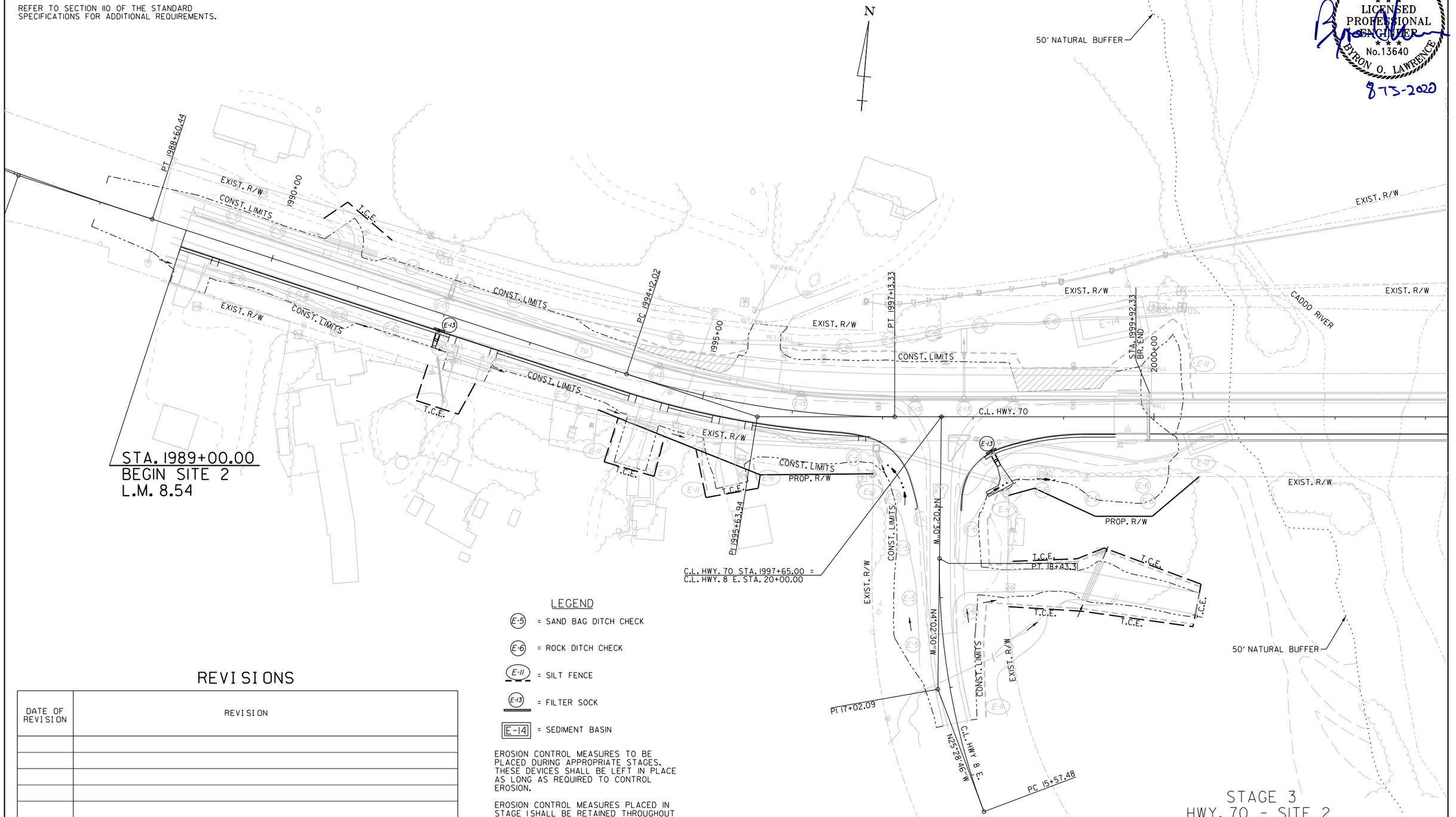
HWY. 70 FILTER SOCK	(E-13)	LIN FT.
STA. 1992+00	RT.	12
STA. 1998+20	RT.	12

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.		030501	30	178

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK
- [E-14] = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 3
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

LeonardSpeed 8/13/2020 1:16:53 PM
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.		030501	31	178
(2) TEMPORARY EROSION CONTROL DETAILS				

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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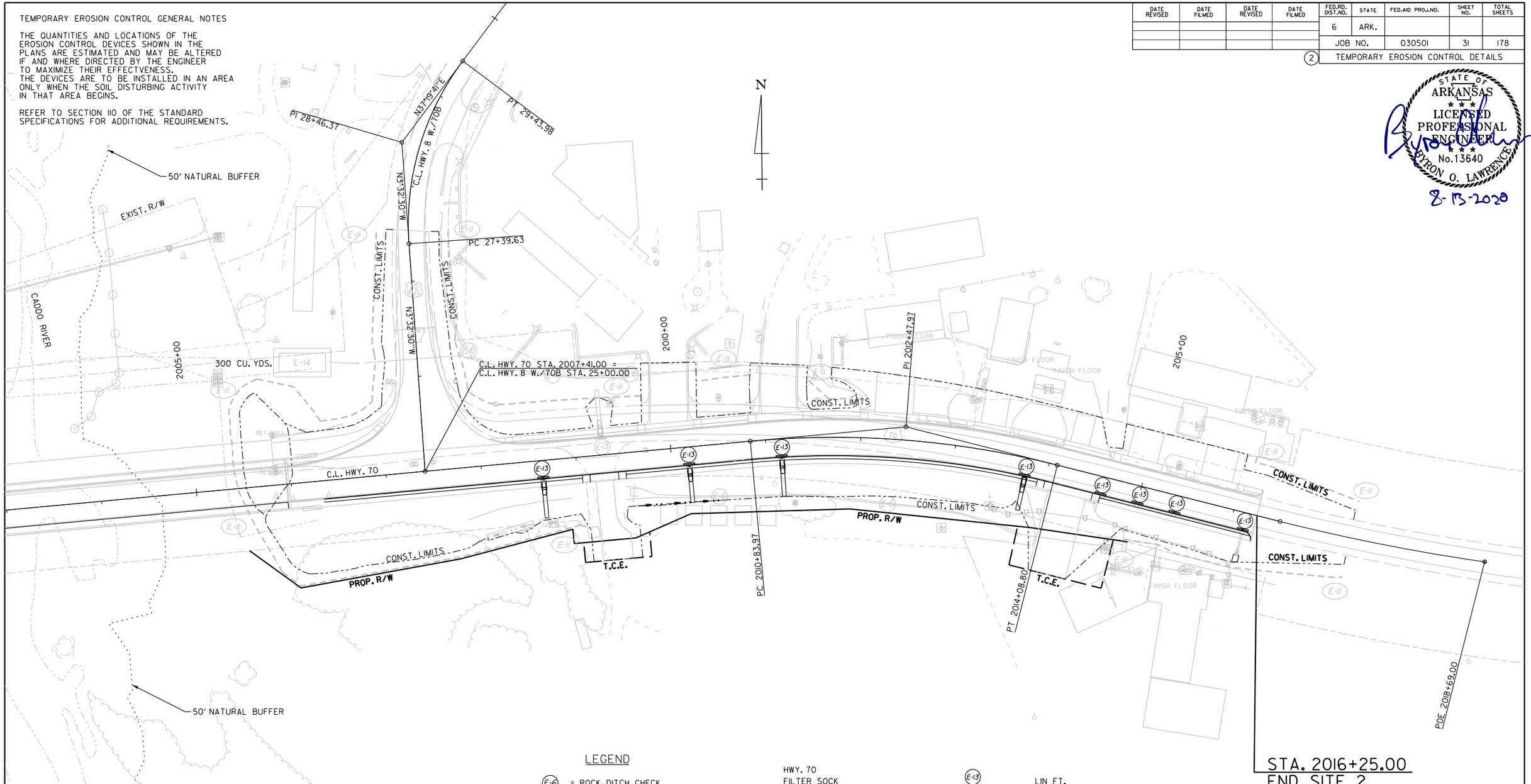
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK
- [E-14] = SEDIMENT BASIN

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

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

HWY. 70

FILTER SOCK	(E-13)	LIN FT.
STA. 2008+90	RT.	12
STA. 2010+40	RT.	12
STA. 2011+16	RT.	12
STA. 2013+58	RT.	12
STA. 2014+60	RT.	12
STA. 2015+00	RT.	12
STA. 2015+40	RT.	12
STA. 2016+25	RT.	12

STAGE 3
HWY. 70 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 11:6:55 PM
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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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STA. 2984+22.00
BEGIN SITE 3
L.M. 18.82

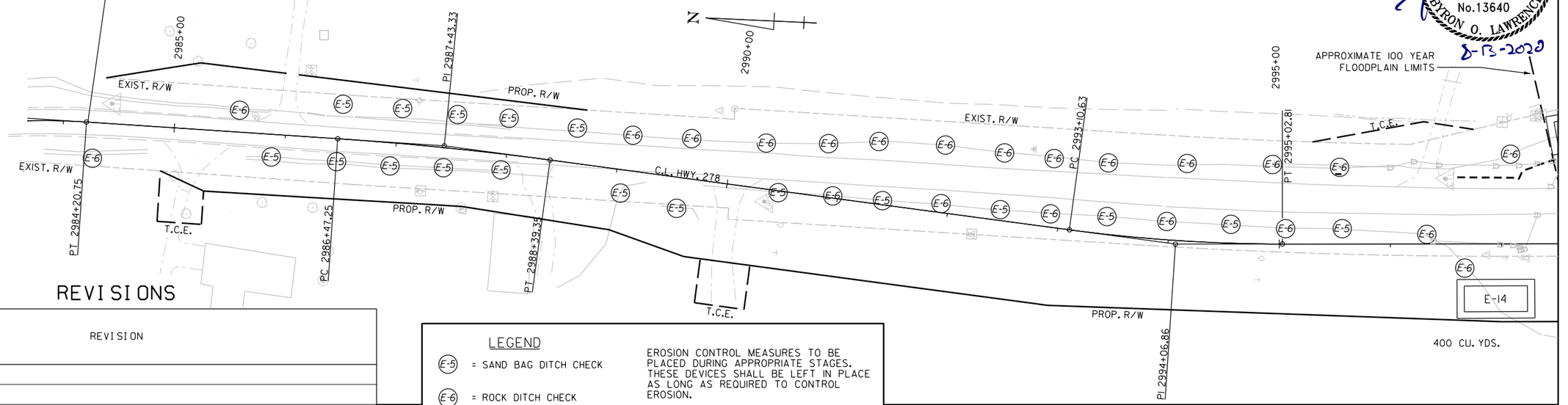
SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 2985+89 TO 2987+97	RT. =	5
STA. 2986+50 TO 2988+60	LT. =	5
STA. 2989+05 TO 2989+60	RT. =	2
STA. 2990+45 TO 2995+55	LT. =	6

SEDIMENT BASIN	E-14	CU. YDS.
STA. 2997+10	RT.	400

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 2984+28	RT. =	1
STA. 2985+57	LT. =	1
STA. 2989+10 TO 2995+55	LT. =	12
STA. 2990+95 TO 2995+05	LT. =	5
STA. 2996+33 TO 2996+65	CL. =	2
STA. 2997+08	LT. =	1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	32	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECK

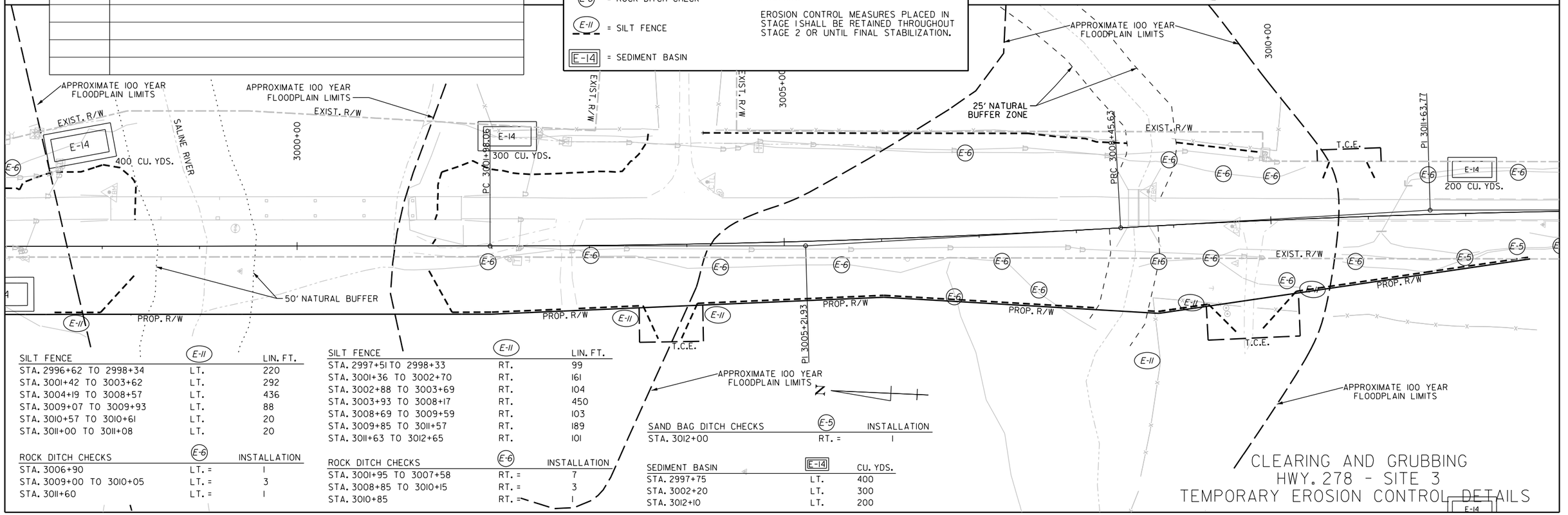
(E-6) = ROCK DITCH CHECK

(E-11) = SILT FENCE

E-14 = SEDIMENT BASIN

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

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



SILT FENCE	(E-11)	LIN. FT.
STA. 2996+62 TO 2998+34	LT.	220
STA. 3001+42 TO 3003+62	LT.	292
STA. 3004+19 TO 3008+57	LT.	436
STA. 3009+07 TO 3009+93	LT.	88
STA. 3010+57 TO 3010+61	LT.	20
STA. 3011+00 TO 3011+08	LT.	20

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 3006+90	LT. =	1
STA. 3009+00 TO 3010+05	LT. =	3
STA. 3011+60	LT. =	1

SILT FENCE	(E-11)	LIN. FT.
STA. 2997+51 TO 2998+33	RT.	99
STA. 3001+36 TO 3002+70	RT.	161
STA. 3002+88 TO 3003+69	RT.	104
STA. 3003+93 TO 3008+17	RT.	450
STA. 3008+69 TO 3009+59	RT.	103
STA. 3009+85 TO 3011+57	RT.	189
STA. 3011+63 TO 3012+65	RT.	101

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 3001+95 TO 3007+58	RT. =	7
STA. 3008+85 TO 3010+15	RT. =	3
STA. 3010+85	RT. =	1

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 3012+00	RT. =	1

SEDIMENT BASIN	E-14	CU. YDS.
STA. 2997+75	LT.	400
STA. 3002+20	LT.	300
STA. 3012+10	LT.	200

CLEARING AND GRUBBING
HWY. 278 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

E-14

Leonard Speed 8/13/2020 11:03 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16131_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_05E_EC3_001.dgn
REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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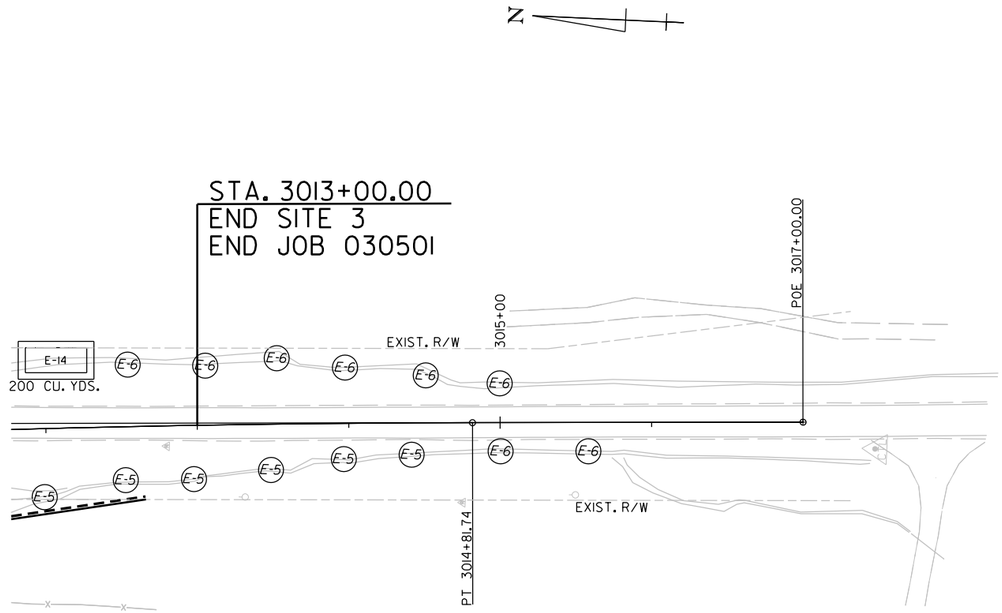
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	33	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



LEGEND

(E-5) = SAND BAG DITCH CHECK

(E-6) = ROCK DITCH CHECK

E-14 = SEDIMENT BASIN

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 ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

SAND BAG CHECKS	(E-5)	INSTALLATION
STA. 3012+50 TO 3014+42	RT. =	6

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 3012+55 TO 3015+00	LT. =	6
STA. 3015+00 TO 3015+60	RT. =	2

REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING
HWY. 278 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 11:7:04 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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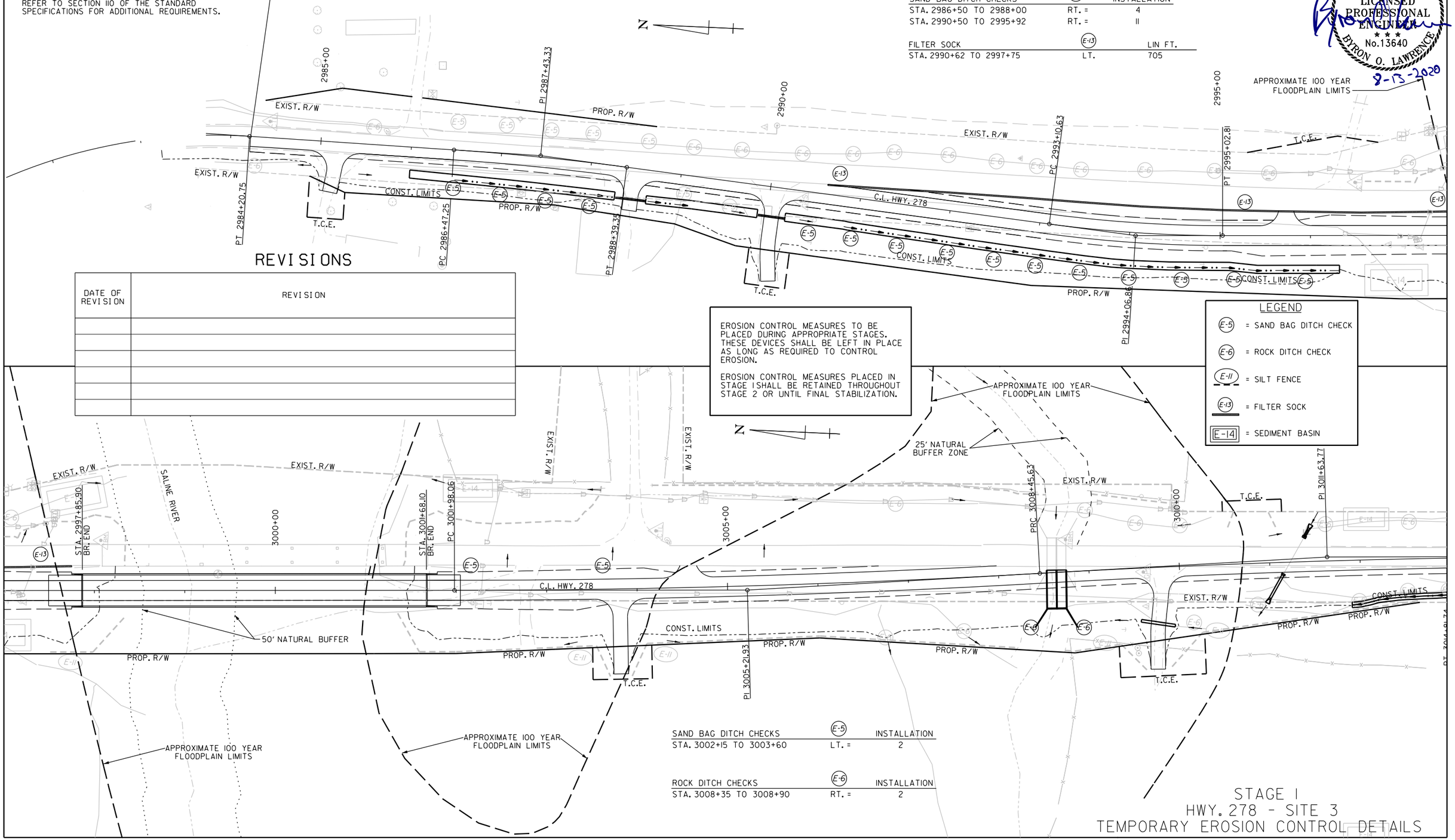
STA. 2984+22.00
BEGIN SITE 3
L.M. 18.82

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.		030501	34	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 2986+50 TO 2988+00	RT. =	4
STA. 2990+50 TO 2995+92	RT. =	11

FILTER SOCK	(E-13)	LIN FT.
STA. 2990+62 TO 2997+75	LT.	705



REVISIONS

DATE OF REVISION	REVISION

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

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

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-13) = FILTER SOCK
- E-14 = SEDIMENT BASIN

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 3002+15 TO 3003+60	LT. =	2

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 3008+35 TO 3008+90	RT. =	2

STAGE I
HWY. 278 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

LeonardSpeed 8/13/2020 11:08 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1663_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_05E_EC3_003.dgn
REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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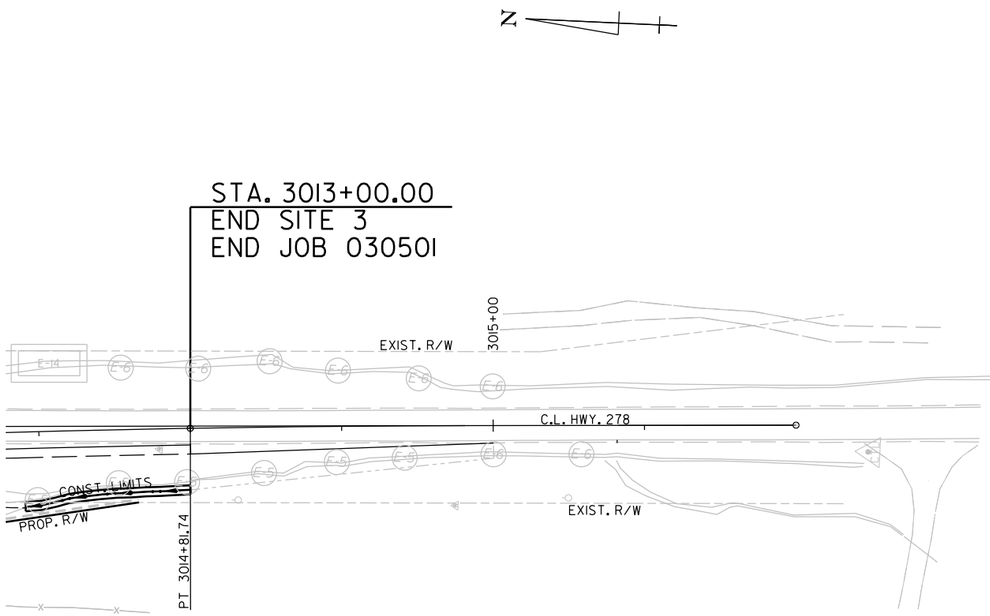
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	35	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECK

(E-6) = ROCK DITCH CHECK

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

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

STAGE 1
HWY. 278 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

Leonard.Speed 8/13/2020 11:17:10 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1661\030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_05E_EC3_004.dgn
REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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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.		030501	36	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

STA. 2984+22.00
BEGIN SITE 3
L.M. 18.82

N

EXIST. R/W
CONST. LIMITS
PROP. R/W
T.C.E.
C.L. HWY. 278
2995+00
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
PI 2994+06.86

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- [E-14] = SEDIMENT BASIN

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

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

REVISIONS

DATE OF REVISION	REVISION

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
EXIST. R/W
SALINE RIVER
3000+00
PC 3001+98.06
EXIST. R/W
3005+00
EXIST. R/W
CONST. LIMITS
E-11
E-14
STA. 2997+85.90
BR. END
PROP. R/W
50' NATURAL BUFFER
STA. 3001+68.10
BR. END
PROP. R/W
T.C.E.
C.L. HWY. 278
PI 3005+21.93
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
25' NAUTRAL BUFFER ZONE
PRC 3008+45.63
3010+00
EXIST. R/W
CONST. LIMITS
T.C.E.
PI 3011+63.77
EXIST. R/W
CONST. LIMITS
PROP. R/W
PROP. R/W
T.C.E.
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

N

STAGE 2
HWY. 278 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: $$REVDATE$$

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

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.		030501	37	178
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

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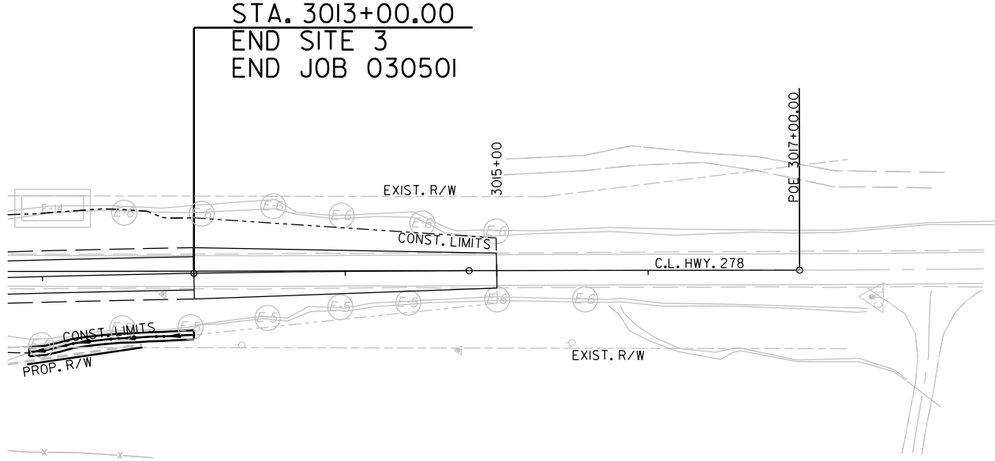

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECK

(E-6) = ROCK DITCH CHECK

E-14 = SEDIMENT BASIN

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

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

STAGE 2
HWY. 278 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	38	178
(2)	MAINTENANCE OF TRAFFIC DETAILS			

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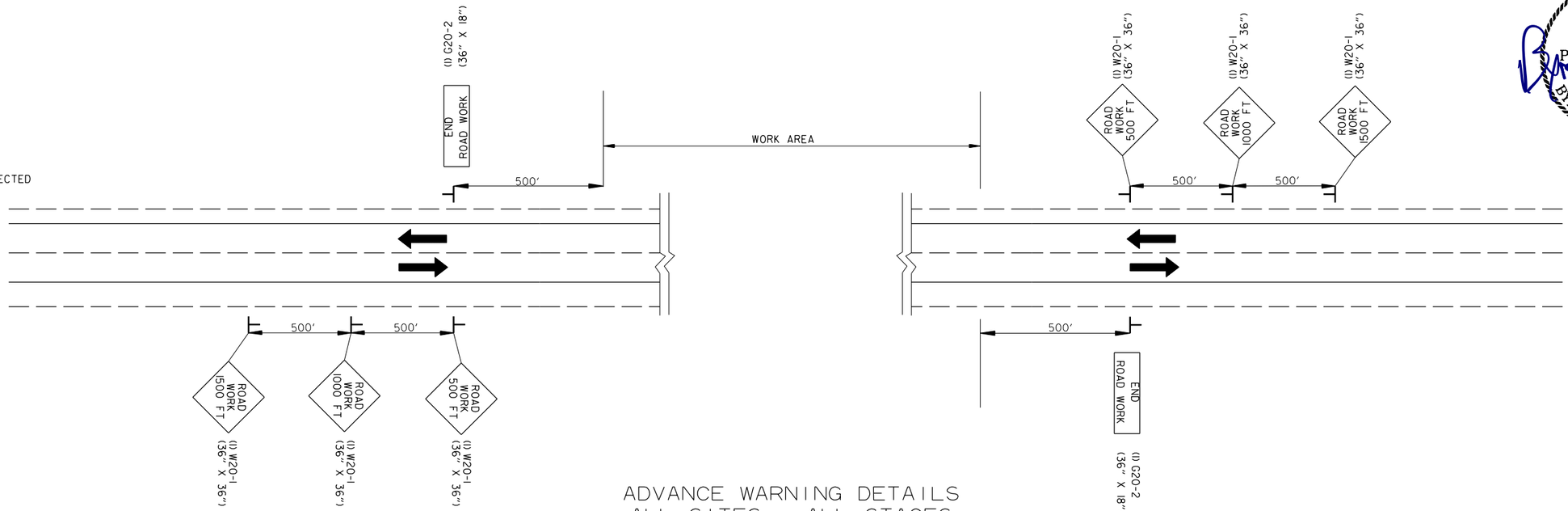
RIGHT SHOULDER CLOSED * (1) W21-5a (36" X 36")

DO NOT PASS * (2) R4-1 (24" X 30")

* IF AND WHERE DIRECTED BY THE ENGINEER



ADVANCE WARNING DETAILS
ALL SITES - ALL STAGES

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 1

STAGE 1:

MAINTAIN TRAFFIC ON EXISTING LANES AND BRIDGE.

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

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE 1A SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES, STAGE 1A TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE 1B TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE 1BRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION SEQUENCE - HWY. 278 - SITE 3

STAGE 1:

MAINTAIN TRAFFIC ON EXISTING LANES AND BRIDGE.

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

ADVANCED WARNING SIGNS
SEQUENCES OF CONSTRUCTION
MAINTENANCE OF TRAFFIC DETAILS

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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.		030501	39	178
(2)	MAINTENANCE OF TRAFFIC DETAILS			

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BYRON O. LAWRENCE
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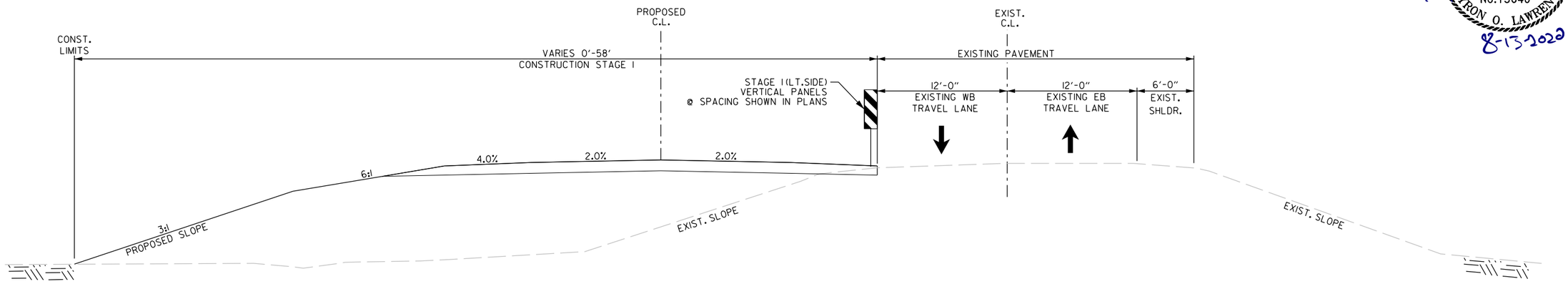


SITE 1 - HWY. 70
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE 1

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 1

STAGE 1:

MAINTAIN TRAFFIC ON EXISTING LANES AND BRIDGE.

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

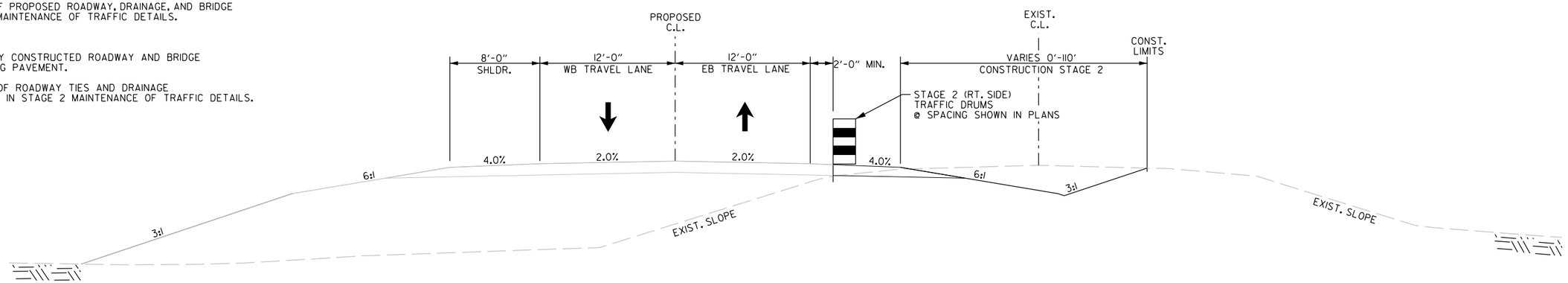
CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.



SITE 1 - HWY. 70
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE 2

HWY. 70 - SITE 1
STAGE 1 & 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	40	178

(2) MAINTENANCE OF TRAFFIC DETAILS

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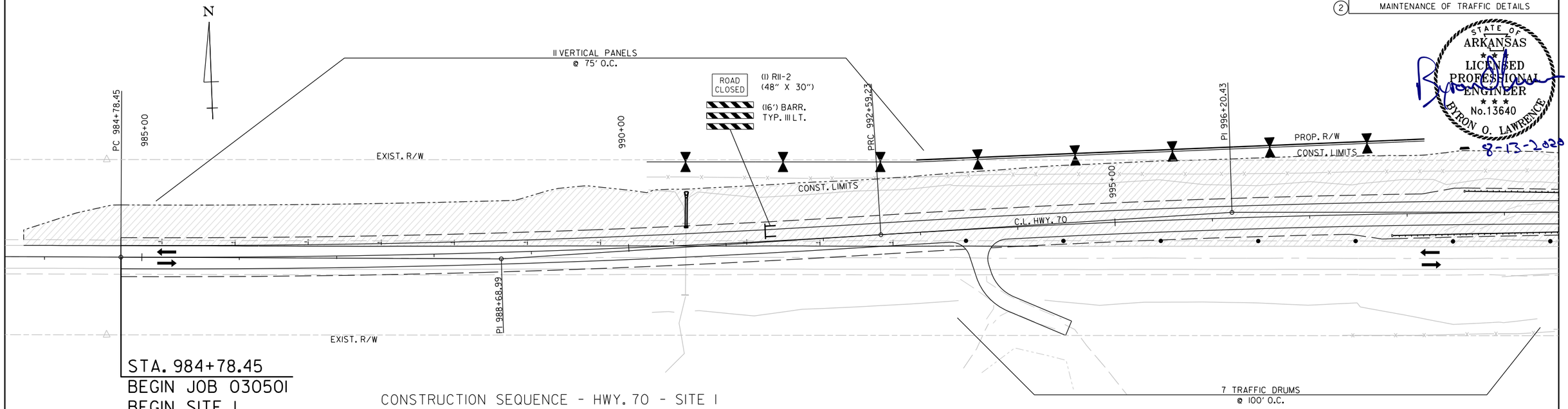
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



STA. 984+78.45
BEGIN JOB 030501
BEGIN SITE 1
L.M. 7.14

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 1

STAGE 1:

MAINTAIN TRAFFIC ON EXISTING LANES AND BRIDGE.

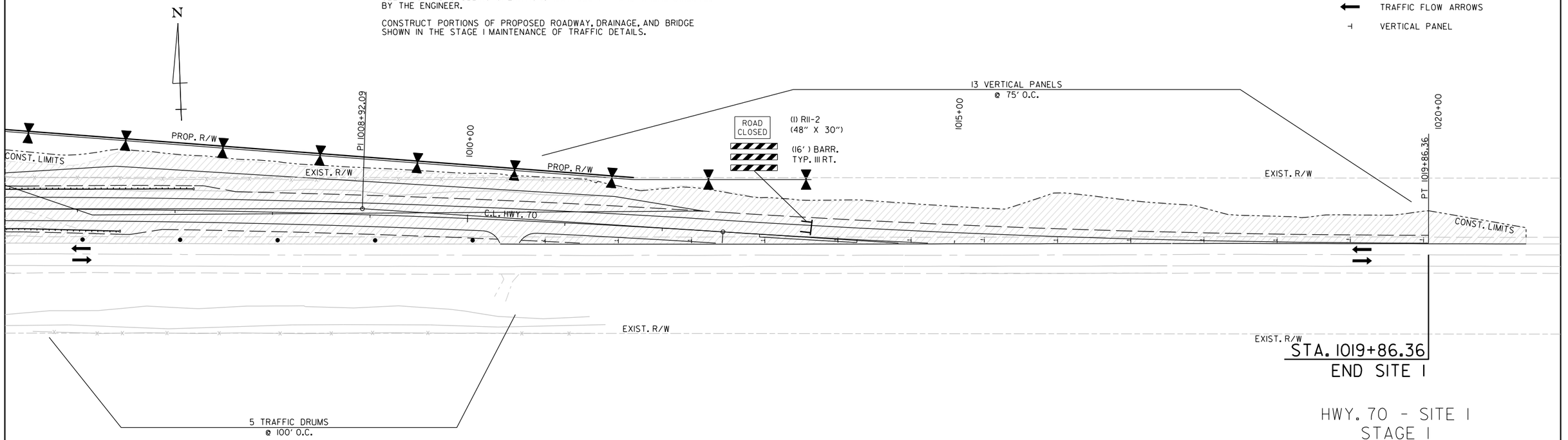
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- STAGE CONST. AREA
- TRAFFIC DRUM
- TYPE 3 BARRICADE
- TRAFFIC FLOW ARROWS
- VERTICAL PANEL



STA. 1019+86.36
END SITE 1

HWY. 70 - SITE 1
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	41	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW

STA. 984+78 TO 999+81
STA. 1005+22 TO 1019+86

CONSTRUCTION PAVEMENT MARKING WHITE

STA. 984+78 TO 999+81 LT. / RT.
STA. 1005+22 TO 1019+86 LT. / RT.

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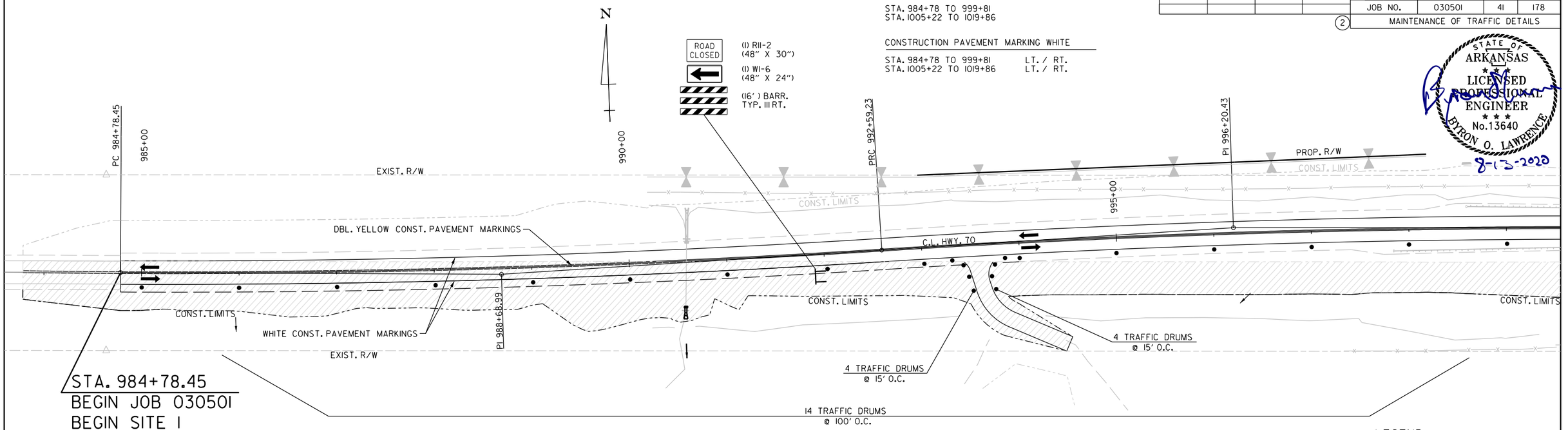
8-13-2020



STA. 984+78.45
BEGIN JOB 030501
BEGIN SITE 1
L.M. 7.14

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 1

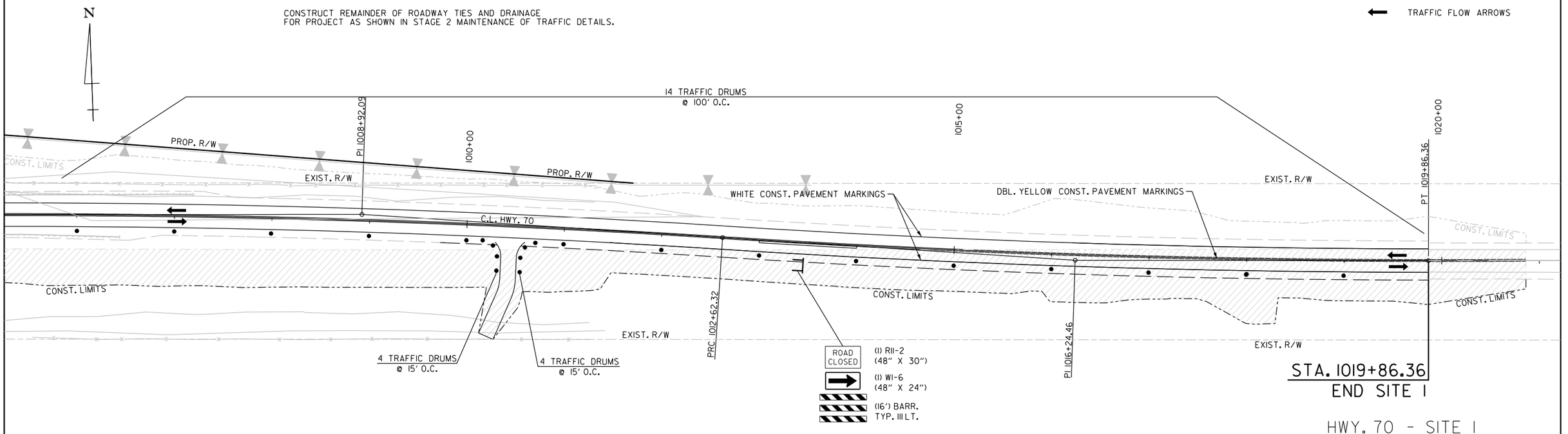
STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- STAGE CONST. AREA
- TRAFFIC DRUM
- TYPE 3 BARRICADE
- TRAFFIC FLOW ARROWS



STA. 1019+86.36
END SITE 1

HWY. 70 - SITE 1
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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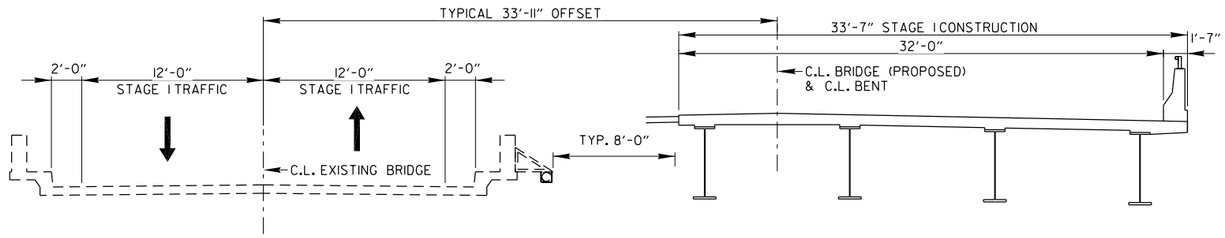
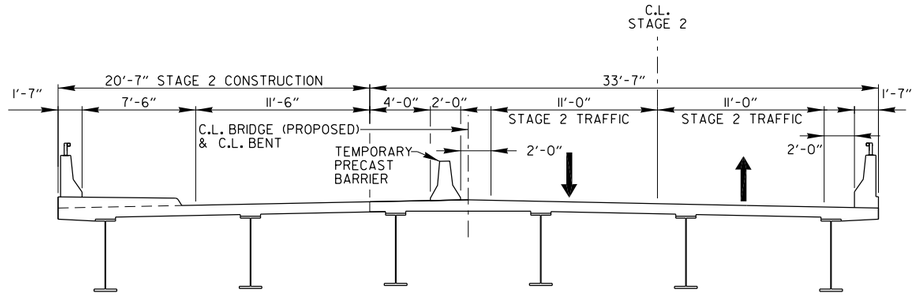
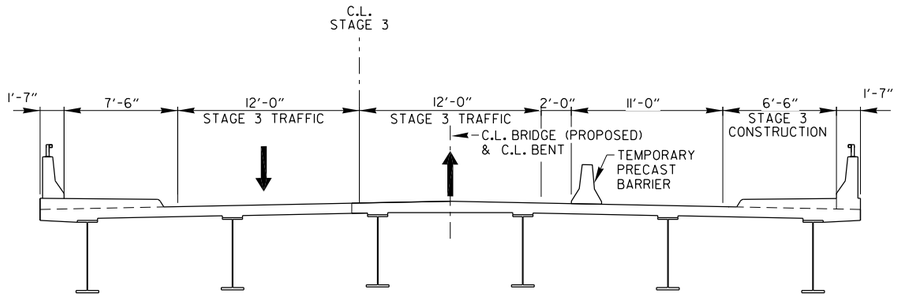
				JOB NO.		030501	42	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			



STAGE 1
(LOOKING FORWARD)



STAGE 2
(LOOKING FORWARD)



STAGE 3
(LOOKING FORWARD)

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE 1A SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES, STAGE 1A TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE 1B TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE 1BRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

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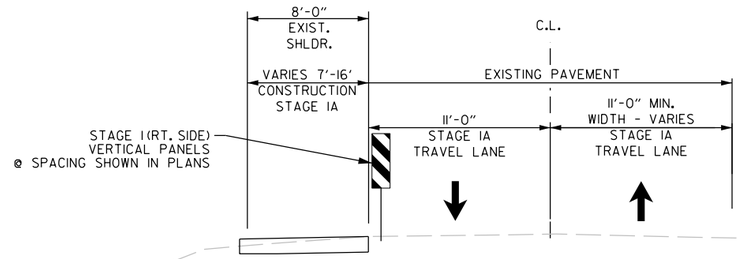
HWY. 70 - SITE 2
DETAILS OF STAGE CONSTRUCTION
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

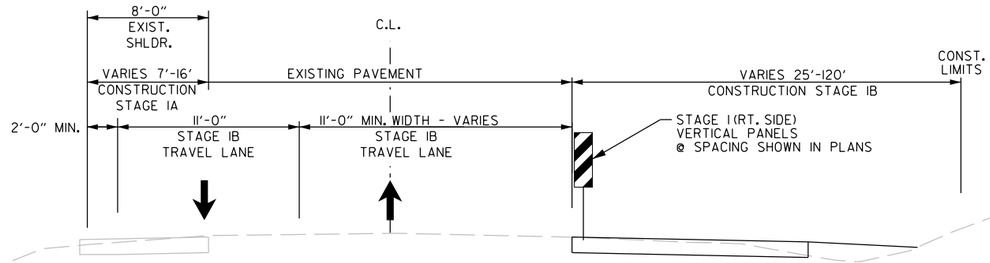
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	43	178

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



SITE 2 - HWY. 70
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE IA



SITE 2 - HWY. 70
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE IB

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES. STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

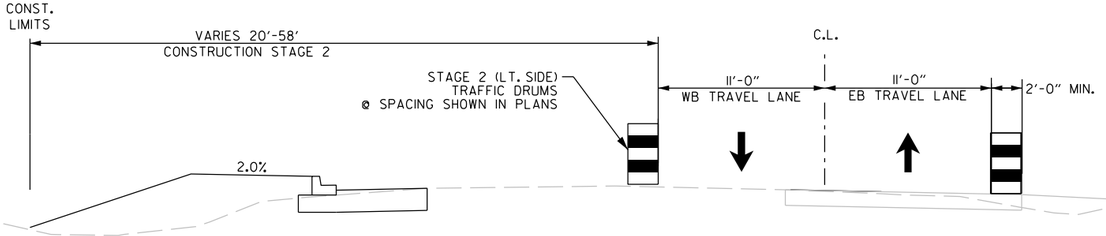
SHIFT TRAFFIC OVER TO STAGE IBRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

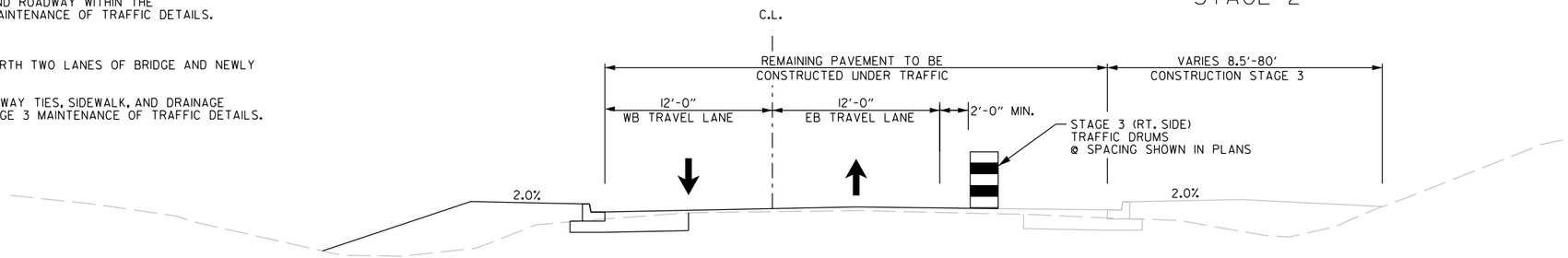
STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.



SITE 2 - HWY. 70
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE 2



SITE 2 - HWY. 70
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE 3

HWY. 70 - SITE 2
STAGE 1, 2 & 3
MAINTENANCE OF TRAFFIC DETAILS

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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.		030501	44	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW WITH R.P.M. TYPE II @ 20' O.C.

STA. 1990+00 TO 1996+00

CONSTRUCTION PAVEMENT MARKING WHITE WITH R.P.M. TYPE II @ 20' O.C.

STA. 1990+00 TO 1996+00 LT. /RT.

*TRAFFIC CONFIGURATION SHOWN REFLECTS STAGE IB CONFIGURATION. STAGE IA ITEMS ARE ONLY NOTED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
BYRON O. LAWRENCE
No.13640
8-13-2020

N

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

1990+00

PT 1988+60.44

WHITE CONST. PAVEMENT MARKING WITH R.P.M. TYPE II (WHITE/WHITE) @ 20' O.C. ALONG LANE SHIFT = 60 EACH

EXIST. R/W

T.C.E.

300' 13' LANE SHIFT 7 TRAFFIC DRUMS @ 45' O.C.

*15 VERTICAL PANELS @ 50' O.C. FOR STAGE 1A LANE WIDENING CONSTRUCTION

DBL. YELLOW CONST. PAVEMENT MARKING WITH R.P.M. TYPE II (YELLOW/YELLOW) @ 20' O.C. ALONG LANE SHIFT = 30 EACH

PC 1994+12.02

300' 13' LANE SHIFT 7 TRAFFIC DRUMS @ 45' O.C.

1995+00

ROAD CLOSED

(I) RII-2 (48" X 30")

(16') BARR. TYP. III LT.

2 TRAFFIC DRUMS @ 50' O.C.

(I) WI-4R (36"X36")

EXIST. R/W

PT 1997+13.33

ROAD CLOSED

(I) RII-2 (48" X 30")

(16') BARR. TYP. III RT.

2000+00

EXIST. R/W

EXIST. R/W

EXIST. R/W

STA. 1998+80.00

STA. 1999+92.33

(I) WI-4L (36"X36")

6 TRAFFIC DRUMS @ 15' O.C

EXIST. R/W

CONST. LIMITS

5 TRAFFIC DRUMS @ 50' O.C

T.C.E.

6 TRAFFIC DRUMS @ 15' O.C.

2 VERTICAL PANELS @ 50' O.C

CONST. LIMITS

20+00

C.L. HWY. 70

EXIST. R/W

T.C.E.

PI 1995+63.94

13 TRAFFIC DRUMS @ 15' O.C.

CONST. LIMITS

PROP. R/W

10 TRAFFIC DRUMS @ 15' O.C.

C.L. HWY. 8 E.

10 TRAFFIC DRUMS @ 15' O.C.

PROP. R/W

2 TRAFFIC DRUMS @ 50' O.C.

T.C.E.

PT 18+43.31

T.C.E.

EXIST. R/W

CONST. LIMITS

N41°02'30"W

T.C.E.

T.C.E.

T.C.E.

10 VERTICAL PANELS @ 50' O.C.

EXIST. R/W

CONST. LIMITS

PI 17+02.09

N.25°28'45"W

PC 15+57.48

LEGEND

- STAGE CONST. AREA
- SHOULDER WIDENING & REBUILD STAGE IA
- TEMPORARY PAVEMENT STAGE IB
- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- VERTICAL PANEL
- TYPE III BARRICADE
- TEMPORARY TRAFFIC SIGN

*STAGE IA
SHOULDER WIDENING & REBUILD

STA.	WIDTH	SIDE
1989+00	7 FT.	LT.
1991+00	7 FT.	LT.
1993+08	15.75 FT.	LT.
1995+00	7 FT.	LT.
1996+00	7 FT.	LT.

STAGE IB
TEMPORARY PAVMENT WIDENING

STA.	OFFSET HWY. 70	SIDE
1989+00	18 FT.	RT.
1993+61	30.6 FT.	RT.
1994+75	30.6 FT.	RT.
1996+70	20 FT.	RT.
1998+65	24 FT.	RT.
1999+10	25.5 FT.	RT.
BRIDGE END	25.5 FT.	RT.

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES. STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE 1 BRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

HWY. 70 - SITE 2
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

Leonard.Speed 8/13/2020 11:7:45 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613\03050l_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R03050l.06.MOT_007.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.		030501	45	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES, STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

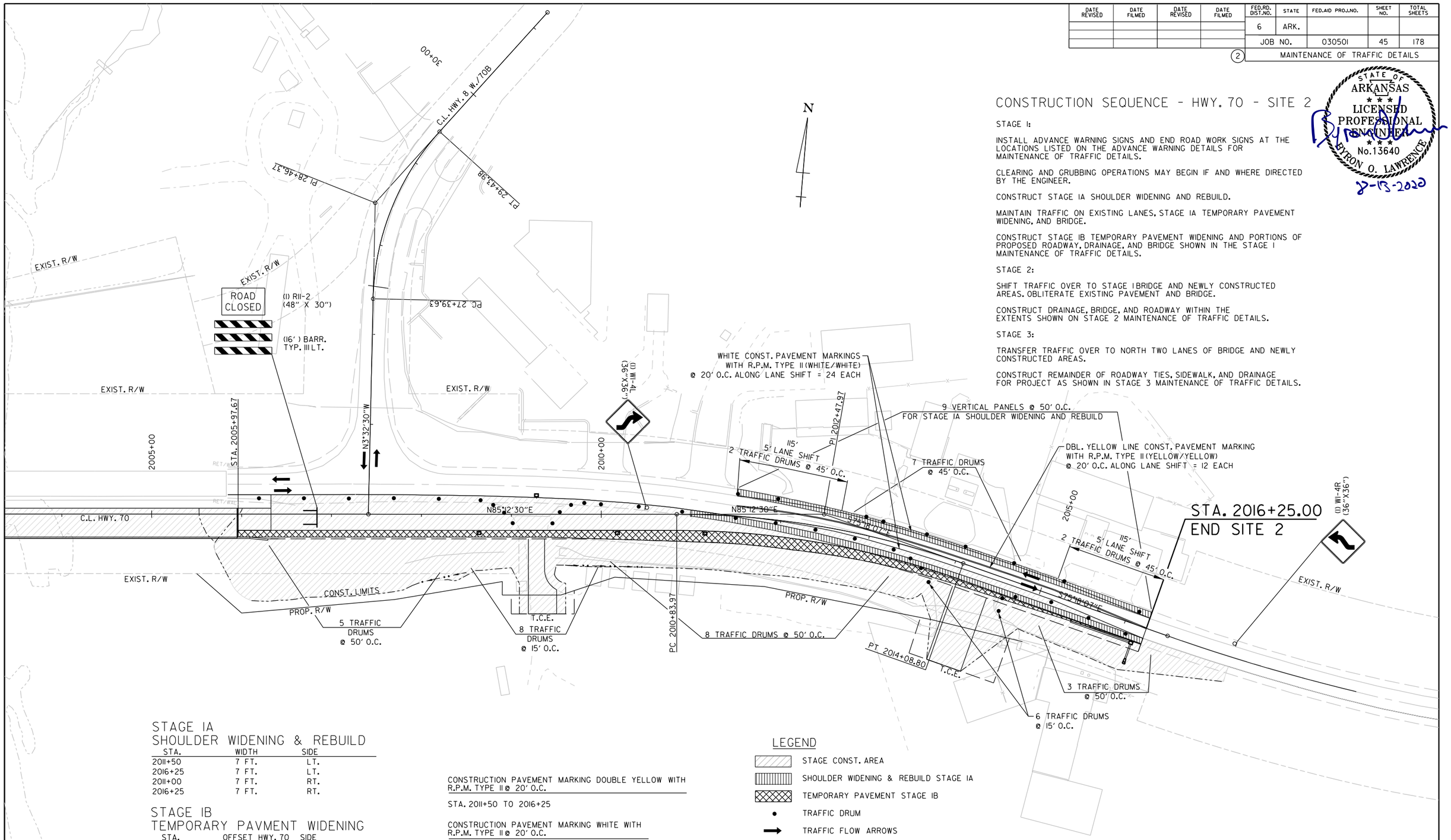
SHIFT TRAFFIC OVER TO STAGE I BRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.



STAGE IA
SHOULDER WIDENING & REBUILD

STA.	WIDTH	SIDE
2011+50	7 FT.	LT.
2016+25	7 FT.	LT.
2011+00	7 FT.	RT.
2016+25	7 FT.	RT.

STAGE IB
TEMPORARY PAVMENT WIDENING

STA.	OFFSET HWY. 70	SIDE
BRIDGE END	25.5 FT.	RT.
2009+4	25.5 FT.	RT.
2011+00	30.6 FT.	RT.
2012+17	30.6 FT.	RT.
2016+25	18 FT.	RT.

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW WITH R.P.M. TYPE II @ 20' O.C.

STA. 2011+50 TO 2016+25

CONSTRUCTION PAVEMENT MARKING WHITE WITH R.P.M. TYPE II @ 20' O.C.

STA. 2011+50 TO 2016+25 LT. /RT.

LEGEND

- STAGE CONST. AREA
- SHOULDER WIDENING & REBUILD STAGE IA
- TEMPORARY PAVEMENT STAGE IB
- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- VERTICAL PANEL
- TYPE III BARRICADE
- TEMPORARY TRAFFIC SIGN

HWY. 70 - SITE 2
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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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.		030501	46	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

LEGEND

- TRAFFIC BARRIER
- STAGE CONST. AREA
- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- TEMPORARY TRAFFIC SIGN
- TYPE III BARRICADE

N

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

1990+00

PT 1988+60.44

WHITE CONST. PAVEMENT MARKINGS WITH R.P.M. TYPE II (WHITE/WHITE) @ 20' O.C. ALONG LANE SHIFT = 34 EACH

DBL. YELLOW CONST. PAVEMENT MARKINGS WITH R.P.M. TYPE II (YELLOW/YELLOW) @ 20' O.C. ALONG LANE SHIFT = 17 EACH

6 TRAFFIC DRUMS @ 15' O.C.

EXIST. R/W

CONST. LIMITS

C.L. HWY. 70

(1) WI-4R (36"X36")

340'
15' LANE SHIFT
13 TRAFFIC DRUMS @ 45' O.C.

T.C.E.

PC 1994+12.02

1995+00

(1) WI-4R (36"X36")

6 TRAFFIC DRUMS @ 15' O.C.

EXIST. R/W

PT 1997+13.33

ROAD CLOSED

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

(1) WI-6 (48" X 24")

(16') BARR. TYP. III LT.

(1) WI-4R (36"X36")

2000+00

EXIST. R/W

•SPECIAL END UNIT

FURNISH AND INSTALL 713 LIN. FT. PRECAST CONCRETE BARRIER

C.L. HWY. 70

CONST. LIMITS

20+00

DBL. YELLOW CONST. PAVEMENT MARKINGS WITH R.P.M. TYPE II (YELLOW/YELLOW) @ 20' O.C. ALONG LANE SHIFT = 14 EACH

WHITE CONST. PAVEMENT MARKINGS WITH R.P.M. TYPE II (WHITE/WHITE) @ 20' O.C. ALONG LANE SHIFT = 28 EACH

EXIST. R/W

EXIST. R/W

T.C.E.

EXIST. R/W

CONST. LIMITS

PROP. R/W

7 TRAFFIC DRUMS @ 80' O.C.

PI 1995+63.94

(1) WI-4R (36"X36")

270'
6' LANE SHIFT
5 TRAFFIC DRUMS @45' O.C.

TEMPORARY IMPACT ATTENUATOR

PROP. R/W
FURNISH AND INSTALL 80 LIN. FT. PRECAST CONCRETE BARRIER

EXIST. R/W

C.L. HWY. 8 E.

CONST. LIMITS

N4°02'30"W

PT 18+43.31

EXIST. R/W

•SPECIAL END UNIT IS SUBSIDIARY TO PAY ITEM, "PRECAST CONCRETE BARRIER"

PI 17+02.09

N25°28'45"W

PC 15+57.48

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES, STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE I BRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW WITH R.P.M. TYPE II @ 20' O.C.

STA. 1989+70 TO 1999+57

CONSTRUCTION PAVEMENT MARKING WHITE WITH R.P.M. TYPE II @ 20' O.C.

STA. 1989+70 TO 1999+57 LT. /RT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW WITH R.P.M. TYPE II @ 20' O.C.

STA. 1999+57 TO 2004+00

REMOVABLE CONSTRUCTION PAVEMENT MARKING WHITE WITH R.P.M. TYPE II @ 20' O.C.

STA. 1999+57 TO 2004+00 LT. /RT.

HWY. 70 - SITE 2
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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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.		030501	47	178

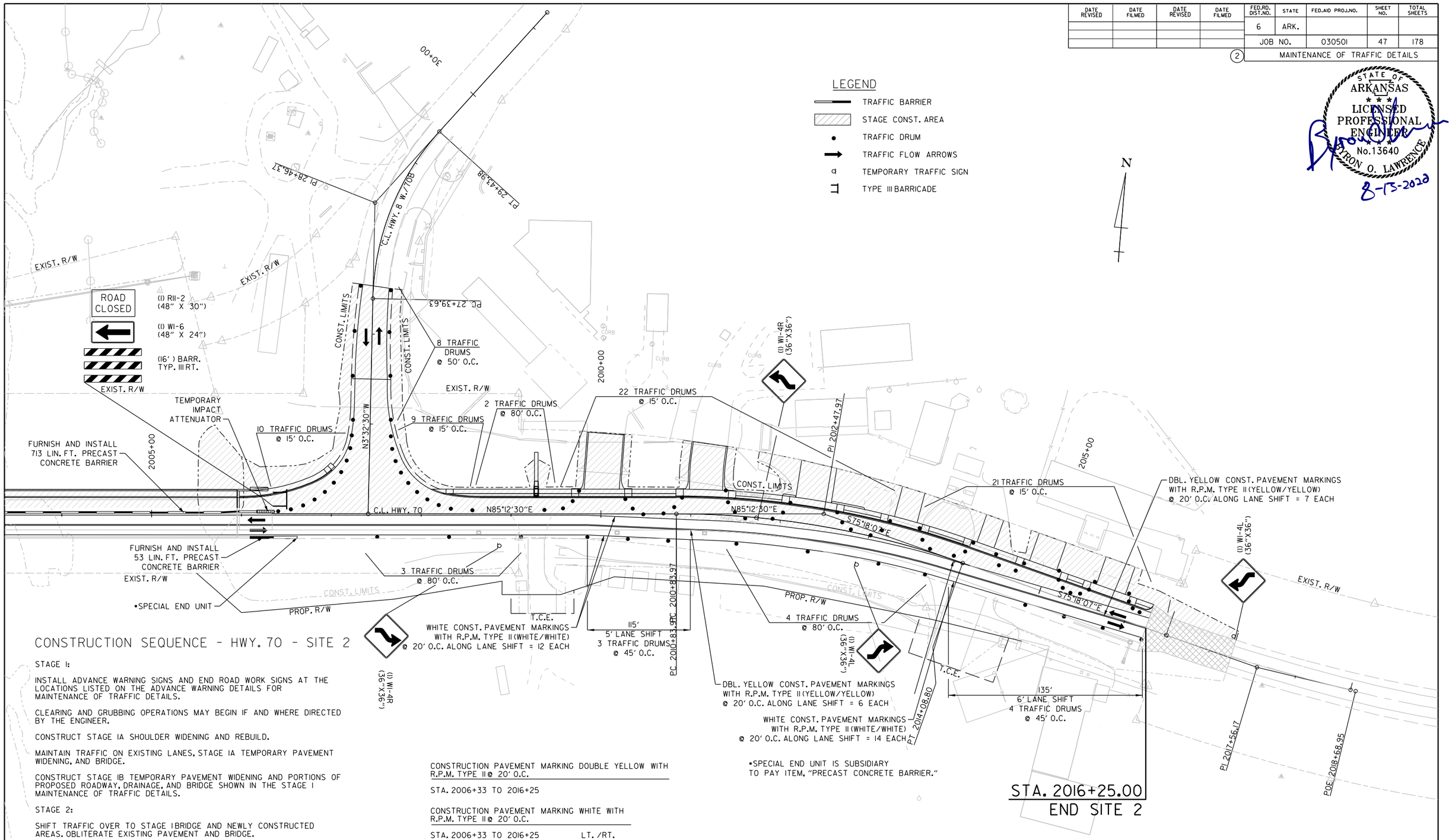
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

LEGEND

- TRAFFIC BARRIER
- STAGE CONST. AREA
- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- TEMPORARY TRAFFIC SIGN
- TYPE III BARRICADE

N



CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES, STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE IBRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW WITH R.P.M. TYPE II @ 20' O.C.

STA. 2006+33 TO 2016+25

CONSTRUCTION PAVEMENT MARKING WHITE WITH R.P.M. TYPE II @ 20' O.C.

STA. 2006+33 TO 2016+25 LT. /RT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW WITH R.P.M. TYPE II @ 20' O.C.

STA. 2004+00 TO 2006+33

REMOVABLE CONSTRUCTION PAVEMENT MARKING WHITE WITH R.P.M. TYPE II @ 20' O.C.

STA. 2004+00 TO 2006+33 LT. /RT.

•SPECIAL END UNIT IS SUBSIDIARY TO PAY ITEM, "PRECAST CONCRETE BARRIER."

HWY. 70 - SITE 2
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

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6	ARK.			
JOB NO.		030501	48	178
(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

LEGEND

- TRAFFIC BARRIER
- STAGE CONST. AREA
- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- TEMPORARY TRAFFIC SIGN

N

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

PT 1988+60.44
135'
6' LANE SHIFT
8 TRAFFIC DRUMS @ 45' O.C.
1990+00
EXIST. R/W
CONST. LIMITS
T.C.E.
(1) WI-4L (36"X36")
C.L. HWY. 70
WHITE CONST. PAVEMENT MARKINGS
PC 1994+12.02
1995+00
EXIST. R/W
CONST. LIMITS
2 TRAFFIC DRUMS @ 80' O.C.
6 TRAFFIC DRUMS @ 15' O.C.
T.C.E.
2 TRAFFIC DRUMS @ 80' O.C.
EXIST. R/W
2 TRAFFIC DRUMS @ 80' O.C.
PROP. R/W
3 TRAFFIC DRUMS @ 10' O.C.
12 TRAFFIC DRUMS @ 15' O.C.
T.C.E.
PI 1995+63.94
PT 1997+13.33
DBL. YELLOW CONST. PAVEMENT MARKINGS
2000+00
C.L. HWY. 70
4 TRAFFIC DRUMS @ 20' O.C.
PROP. R/W
EXIST. R/W
6 TRAFFIC DRUMS @ 80' O.C.
EXIST. R/W
C.L. HWY. 8 E.
CONST. LIMITS
PT 18+43.31 T.C.E.
T.C.E.
T.C.E.
T.C.E.
T.C.E.
EXIST. R/W
CONST. LIMITS
PI 17+02.09
PC 15+57.48

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES, STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE IBRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW

STA. 1989+00 TO 1999+57

CONSTRUCTION PAVEMENT MARKING WHITE

STA. 1989+00 TO 1990+35	LT. / RT.
STA. 1990+35 TO 1996+63	RT.
STA. 1998+95 TO 1999+57	RT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW

STA. 1999+57 TO 2004+00

REMOVABLE CONSTRUCTION PAVEMENT MARKING WHITE

STA. 1999+57 TO 2004+00 RT.

HWY. 70 - SITE 2
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

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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.		030501	49	178
(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

LEGEND

- TRAFFIC BARRIER
- STAGE CONST. AREA
- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- TEMPORARY TRAFFIC SIGN

N

30+00
PI 28+46.31
PT 29+43.98
PC 27+39.63
EXIST. R/W
CONST. LIMITS
C.L. HWY. 8 W./70B
N3°32'30"W
EXIST. R/W
DBL. YELLOW CONST. PAVEMENT MARKINGS
2005+00
2010+00
PI 2012+47.97
CONST. LIMITS
PAVED SHOULDER
N85°12'30"E
S75°18'02"E
PAVEMENT EDGE
2015+00
135'
6' LANE SHIFT
8 TRAFFIC DRUMS
@ 45' O.C.
STA.2016+25.00
END SITE 2
(1) WI-4R
(36"X36")
EXIST. R/W
C.L. HWY. 70
N85°12'30"E
6 TRAFFIC
DRUMS
@ 80' O.C.
EXIST. R/W
CONST. LIMITS
PROP. R/W
WHITE CONST. PAVEMENT MARKINGS
T.C.E.
6 TRAFFIC
DRUMS
@ 15' O.C.
PC 2010+83.97
5 TRAFFIC DRUMS
@ 80' O.C.
CONST. LIMITS
PT 2014+08.80
T.C.E.
6 TRAFFIC
DRUMS
@ 15' O.C.
PROP. R/W
(1) WI-4R
(36"X36")

CONSTRUCTION SEQUENCE - HWY. 70 - SITE 2

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT STAGE IA SHOULDER WIDENING AND REBUILD.

MAINTAIN TRAFFIC ON EXISTING LANES. STAGE IA TEMPORARY PAVEMENT WIDENING, AND BRIDGE.

CONSTRUCT STAGE IB TEMPORARY PAVEMENT WIDENING AND PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC OVER TO STAGE I BRIDGE AND NEWLY CONSTRUCTED AREAS. OBLITERATE EXISTING PAVEMENT AND BRIDGE.

CONSTRUCT DRAINAGE, BRIDGE, AND ROADWAY WITHIN THE EXTENTS SHOWN ON STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

TRANSFER TRAFFIC OVER TO NORTH TWO LANES OF BRIDGE AND NEWLY CONSTRUCTED AREAS.

CONSTRUCT REMAINDER OF ROADWAY TIES, SIDEWALK, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW

STA. 2006+33 TO 2006+47
STA. 2008+36 TO 2016+25

CONSTRUCTION PAVEMENT MARKING WHITE

STA. 2006+33 TO 2014+90 RT.
STA. 2014+90 TO 2016+25 LT. / RT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW

STA. 2004+00 TO 2006+33

REMOVABLE CONSTRUCTION PAVEMENT MARKING WHITE

STA. 2004+00 TO 2006+33 RT.

•SPECIAL END UNIT IS SUBSIDIARY TO PAY ITEM, "PRECAST CONCRETE BARRIER."

HWY. 70 - SITE 2
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

Leonard.Speed 8/13/2020 11:59 PM
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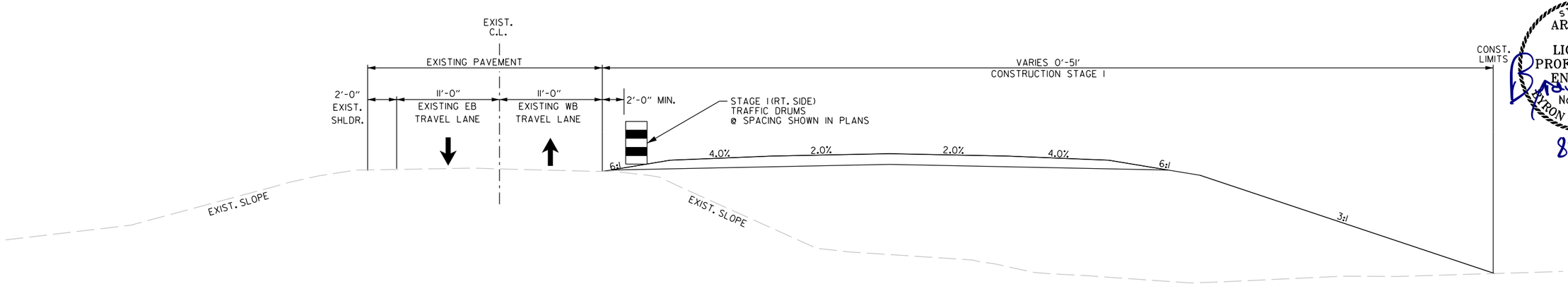
REVISED DATE: $$REVDATE$$

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.		030501	50	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
AARON O. LAWRENCE
8-13-2020



SITE 3 - HWY. 278
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE 1

CONSTRUCTION SEQUENCE - HWY. 278 - SITE 3

STAGE 1:

MAINTAIN TRAFFIC ON EXISTING LANES AND BRIDGE.

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

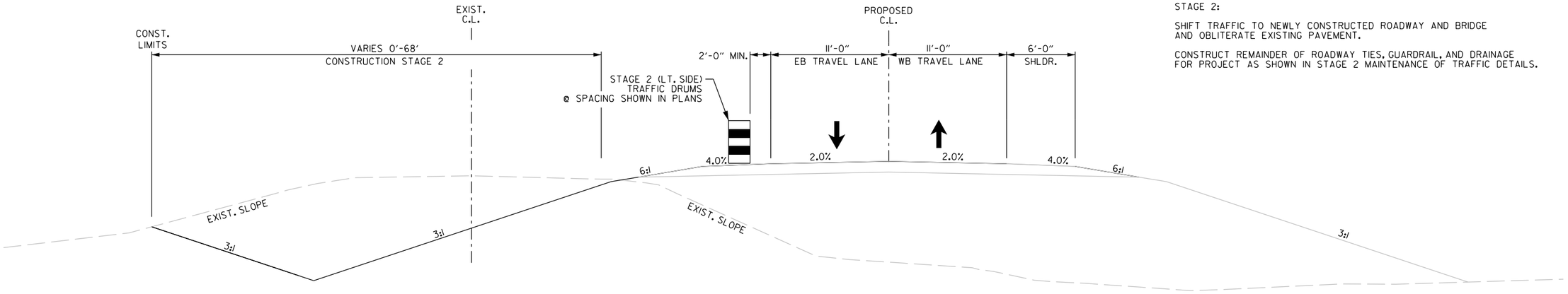
CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.



SITE 3 - HWY. 278
MAINTENANCE OF TRAFFIC
TYPICAL SECTION
STAGE 2

HWY. 278 - SITE 3
STAGE 1 & 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	51	178

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

N

9 VERTICAL PANELS @ 50' O.C.

7 TRAFFIC DRUMS @ 100' O.C.

2985+00 | PI 2987+43.33 | 2990+00 | PC 2993+10.63 | PT 2995+02.81 | 2995+00

EXIST. R/W | PROP. R/W | EXIST. R/W | T.C.E.

•• RELOCATE 33 LIN. FT. PRECAST CONCRETE BARRIER

•SPECIAL END UNIT

EXIST. R/W | PT 2984+20.75 | CONST. LIMITS | PROP. R/W | PC 2986+47.23 | PT 2988+39.35 | CONST. LIMITS | PROP. R/W | PI 2994+06.86 | PROP. R/W

T.C.E. 7 TRAFFIC DRUMS @ 15' O.C.

6 TRAFFIC DRUMS @ 15' O.C.

T.C.E. 6 TRAFFIC DRUMS @ 15' O.C.

ROAD CLOSED

(1) R11-2 (48" X 30")

(16') BARR. TYP. III RT.

STA. 2984+22.00
BEGIN SITE 3
L.M. 18.82

CONSTRUCTION SEQUENCE - HWY. 278 - SITE 3

STAGE I:

MAINTAIN TRAFFIC ON EXISTING LANES AND BRIDGE.

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS FOR MAINTENANCE OF TRAFFIC DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BRIDGE SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- STAGE CONST. AREA
- TRAFFIC DRUM
- TYPE 3 BARRICADE
- TRAFFIC FLOW ARROWS
- VERTICAL PANEL

N

3 TRAFFIC DRUMS @ 50' O.C.

11 VERTICAL PANELS @ 50' O.C.

EXIST. R/W | EXIST. R/W | PC 3008+45.63 | 3010+00 | PI 3011+63.27 | 3015+00

EXIST. R/W | T.C.E. | EXIST. R/W

••RELOCATE 20 LIN. FT. PRECAST CONCRETE BARRIER

PC 3001+98.06

TEMPORARY IMPACT ATTENUATOR

8 TRAFFIC DRUMS @ 15' O.C.

3005+00

FURNISH AND INSTALL 213 LIN. FT. PRECAST CONCRETE BARRIER

•SPECIAL END UNIT

6 TRAFFIC DRUMS @ 15' O.C.

CONST. LIMITS | PROP. R/W | PI 3005+21.93 | TEMPORARY IMPACT ATTENUATOR | PROP. R/W | EXIST. R/W | CONST. LIMITS | PROP. R/W | PROP. R/W | PT 3014+81.74 | EXIST. R/W

T.C.E. | T.C.E.

(1) R11-2 (48" X 30") ROAD CLOSED

(16') BARR. TYP. III LT.

STA. 3013+00.00
END SITE 3
END JOB 030501

•SPECIAL END UNIT IS SUBSIDIARY TO PAY ITEM, "PRECAST CONCRETE BARRIER."

•• TO BE PERFORMED AFTER STAGE I AND LEFT IN PLACE FOR STAGE 2 UNTIL GUARDRAIL HAS BEEN INSTALLED

HWY. 278 - SITE 3
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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REVISED DATE: $$REVDATE$$

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				6	ARK.			
				JOB NO.		030501	52	178
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION PAVEMENT MARKING WHITE

STA. 2983+22 TO 2997+50 LT. / RT.
STA. 3002+05 TO 3015+00 LT. / RT.

CONSTRUCTION PAVEMENT MARKING DOUBLE YELLOW

STA. 2983+22 TO 2997+50
STA. 3002+05 TO 3015+00

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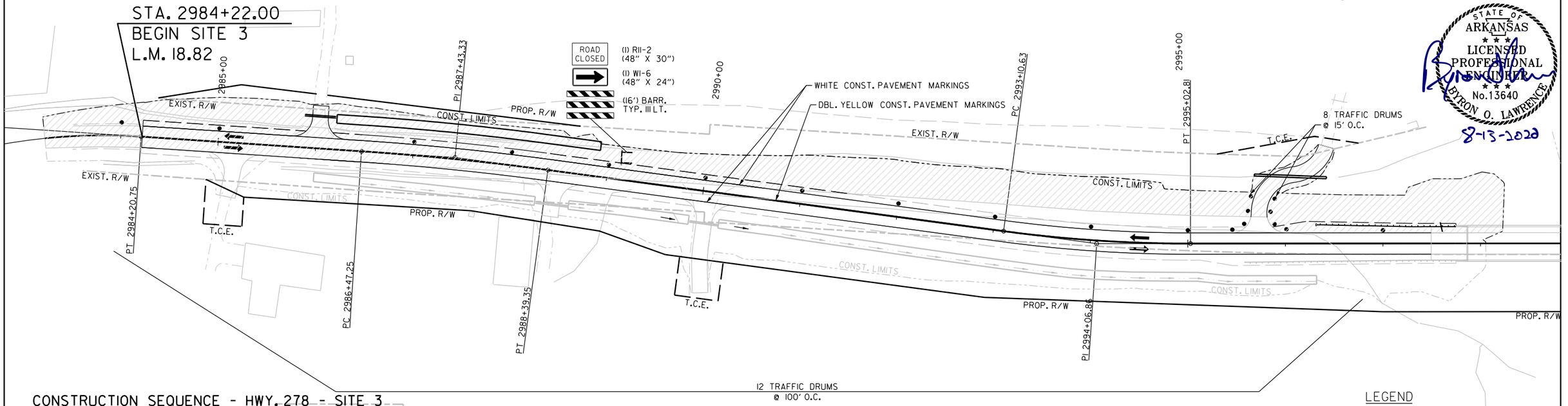
8-13-2020



CONSTRUCTION SEQUENCE - HWY. 278 - SITE 3

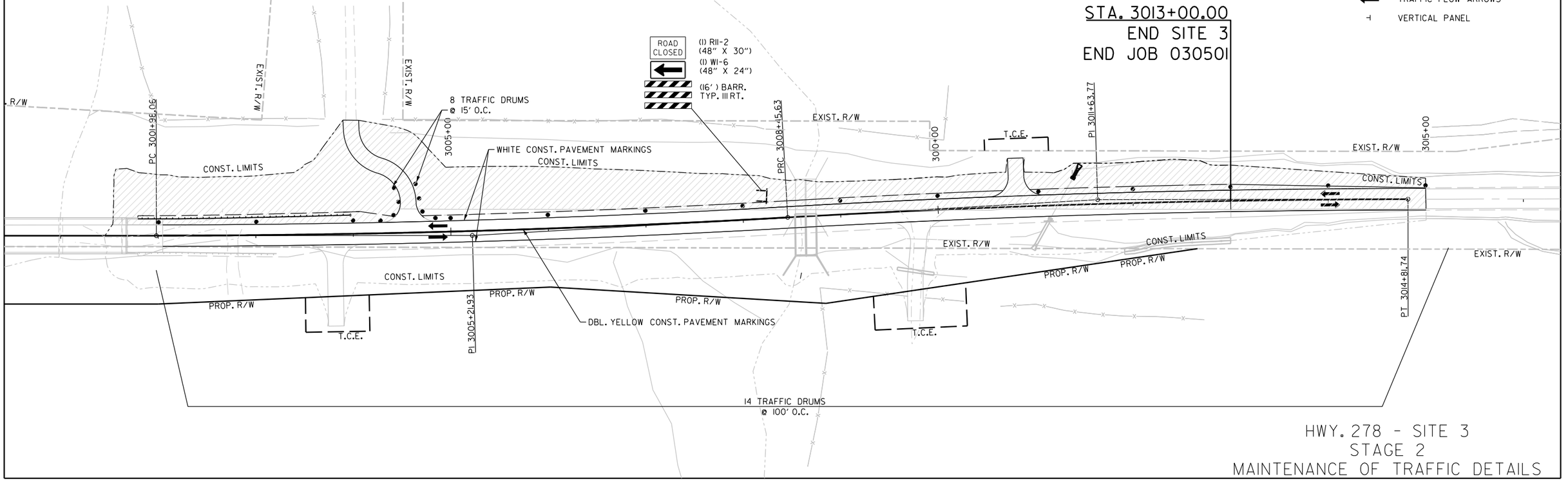
STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGE AND OBLITERATE EXISTING PAVEMENT.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- STAGE CONST. AREA
- TRAFFIC DRUM
- TYPE 3 BARRICADE
- TRAFFIC FLOW ARROWS
- VERTICAL PANEL



HWY. 278 - SITE 3
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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				6	ARK.			
				JOB NO.		030501	53	178
				(2)	PERMANENT PAVEMENT MARKINGS DETAILS			

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT.

STA. 983+78 TO 1020+86 - 3708 LIN. FT.

6" THERMOPLASTIC CONTINUOUS DOUBLE YELLOW LINE W/ RPM 80' O.C. (TYP.)

STA. 983+78 TO 1020+86 - 3708 LIN. FT. - 47 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT.

STA. 983+78 TO 1020+86 - 3708 LIN. FT.

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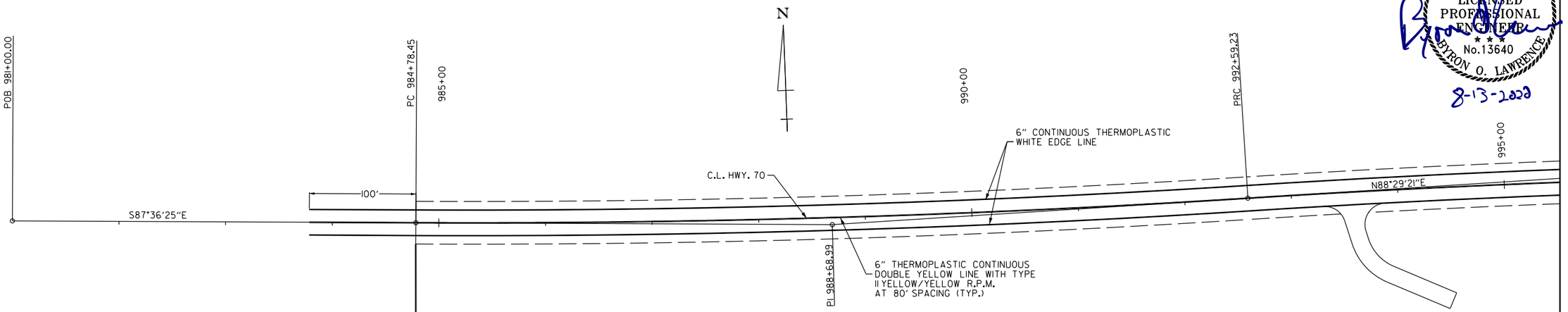
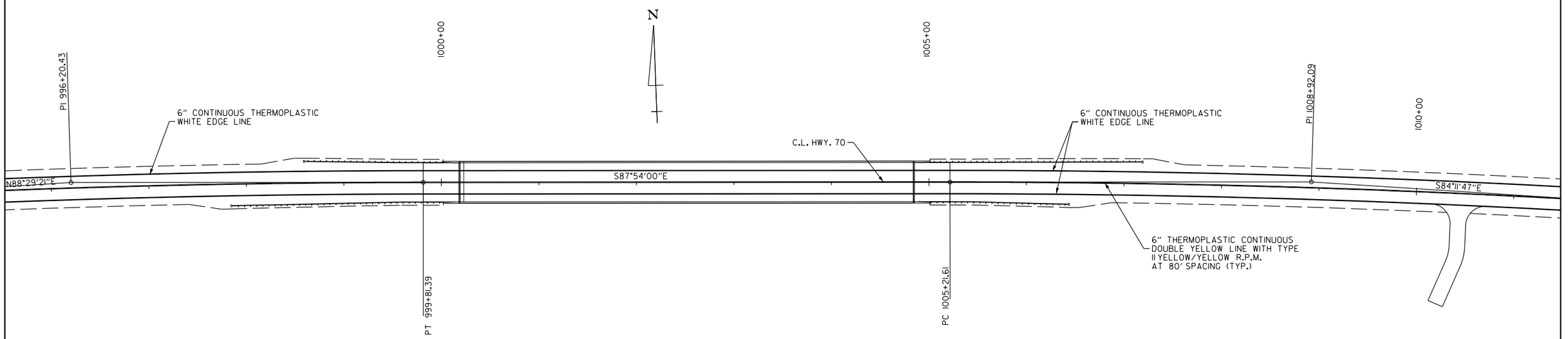


STA. 984+78.45
BEGIN JOB 030501
BEGIN SITE 1
L.M. 7.14

PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 70 - SITE 1

NOTE:

1. THE 6" YELLOW STRIPPING QUANTY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PSSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF PROJECT.



U.S. HWY. 70 - SITE 1
QUANTITIES:

THERMOPLASTIC PAVEMENT MARKINGS
6" WHITE EDGE = 7416 LIN. FT.
6" YELLOW = 7416 LIN. FT.
YELLOW/YELLOW TYPE II
RAISED PAVEMENT MARKERS = 47

PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 70 - SITE 1

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				6	ARK.			
				JOB NO.		030501	54	178
				(2)	PERMANENT PAVEMENT MARKINGS DETAILS			

NOTE:

1. THE 6" YELLOW STRIPPING QUANTY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PSSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF PROJECT.

STATE OF ARKANSAS
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BYRON O. LAWRENCE
8-13-2020

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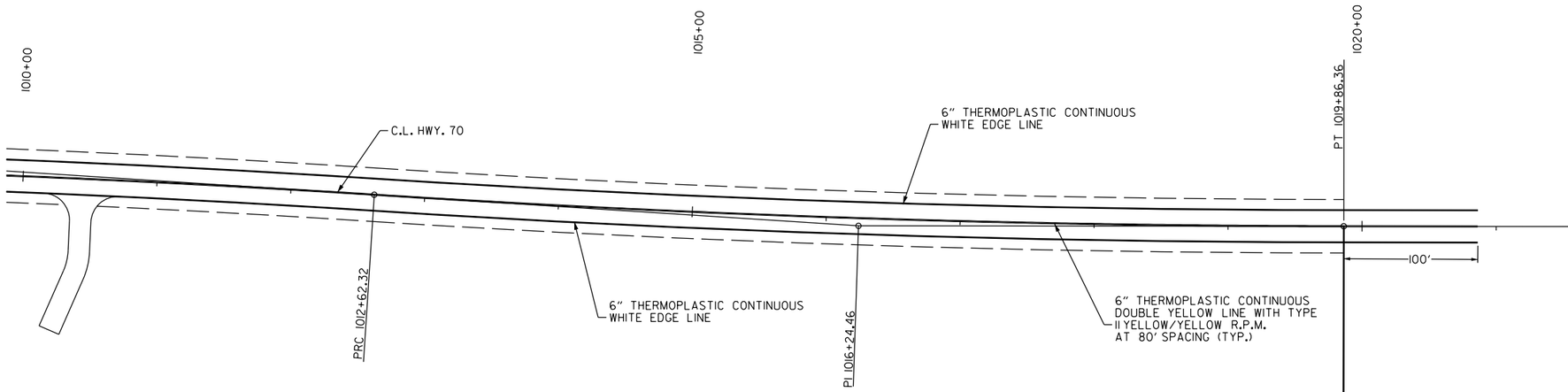

PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 70 - SITE 1

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				6	ARK.			
				JOB NO.		030501	55	178
				(2)	PERMANENT PAVEMENT MARKINGS DETAILS			

HWY. 70 - SITE 2
QUANTITIES:

THERMOPLASTIC PAVEMENT MARKINGS
6" WHITE EDGE = 2925 LIN. FT.
8" WHITE TURN LANE = 604 LIN. FT.
6" YELLOW = 12786 LIN. FT.
WORDS (ONLY) = 6
TURN ARROW = 6
24" STOP LINE = 56 LIN. FT.
10" WHITE REFLECTORIZED PAINT = 167

YELLOW/YELLOW RAISED PAVEMENT MARKERS = 73
RED/WHITE RAISED PAVEMENT MARKERS = 10

THERMOPLASTIC PAVEMENT MARKING
YELLOW (6" SOLID) - CENTER LANE - HWY. 70

STA. 1991+70	TO	1996+85	- 515	LIN. FT.
STA. 1991+70	TO	1996+81	- 511	LIN. FT.
STA. 1999+75	TO	2005+31	- 556	LIN. FT.
STA. 1999+75	TO	2005+31	- 556	LIN. FT.
STA. 2008+46	TO	2013+54	- 508	LIN. FT.
STA. 2008+24	TO	2013+54	- 530	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
YELLOW (6") SKIP LINE RAISED
PAVEMENT MARKERS (TYPE II)
(YELLOW/YELLOW) (80' O.C.) - CENTER LANE - HWY. 70

STA. 1991+70	TO	1996+85	- 515	LIN. FT. - 7 R.P.M
STA. 1991+70	TO	1996+81	- 511	LIN. FT. - 7 R.P.M
STA. 1999+75	TO	2005+31	- 556	LIN. FT. - 7 R.P.M
STA. 1999+75	TO	2005+31	- 556	LIN. FT. - 7 R.P.M
STA. 2008+46	TO	2013+54	- 508	LIN. FT. - 7 R.P.M
STA. 2008+24	TO	2013+54	- 530	LIN. FT. - 7 R.P.M

THERMOPLASTIC PAVEMENT MARKING
6" CONTINUOUS DOUBLE YELLOW
LINE W/ YELLOW/YELLOW RAISED PAVEMENT MARKERS
80' O.C. (TYP.) - HWY. 70

STA. 1988+00	TO	1989+00	- 100	LIN. FT. - 2 R.P.M.
STA. 1989+00	TO	1991+70	- 270	LIN. FT. - 3 R.P.M.
STA. 1989+00	TO	1991+70	- 270	LIN. FT. - 3 R.P.M.
STA. 1996+85	TO	1997+24	- 39	LIN. FT.
STA. 1996+81	TO	1997+24	- 43	LIN. FT.
STA. 1997+75	TO	1999+75	- 200	LIN. FT. - 3 R.P.M.
STA. 2005+31	TO	2007+31	- 200	LIN. FT. - 3 R.P.M.
STA. 2007+83	TO	2008+46	- 63	LIN. FT.
STA. 2007+83	TO	2008+24	- 41	LIN. FT.
STA. 2013+55	TO	2016+25	- 270	LIN. FT. - 4 R.P.M.
STA. 2013+55	TO	2016+25	- 270	LIN. FT. - 4 R.P.M.
STA. 2016+25	TO	2017+25	- 100	LIN. FT. - 2 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT. - HWY. 70

STA. 1988+00	TO	1991+70	- 370	LIN. FT.
STA. 2013+55	TO	2017+25	- 370	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT. - HWY. 70

STA. 1988+00	TO	1991+70	- 370	LIN. FT.
STA. 2013+55	TO	2017+25	- 370	LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
8" WHITE TURN LANE WITH WHITE/RED RAISED
PAVEMENT MARKERS (TYPE II) (80' O.C.) HWY. 70

STA. 1997+75	TO	1998+75	- 100	LIN. FT. - LT. OF C.L. - 2 R.P.M.
STA. 2006+31	TO	2007+31	- 100	LIN. FT. - RT. OF C.L. - 2 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
WHITE ARROW (LT. TURN)

STA. 1998+65 - 1 EACH - C.L. HWY. 70
STA. 2006+40 - 1 EACH - C.L. HWY. 70

THERMOPLASTIC PAVEMENT MARKING
WHITE WORD (ONLY)

STA. 1999+00 - 1 EACH - C.L. HWY. 70
STA. 2006+10 - 1 EACH - C.L. HWY. 70

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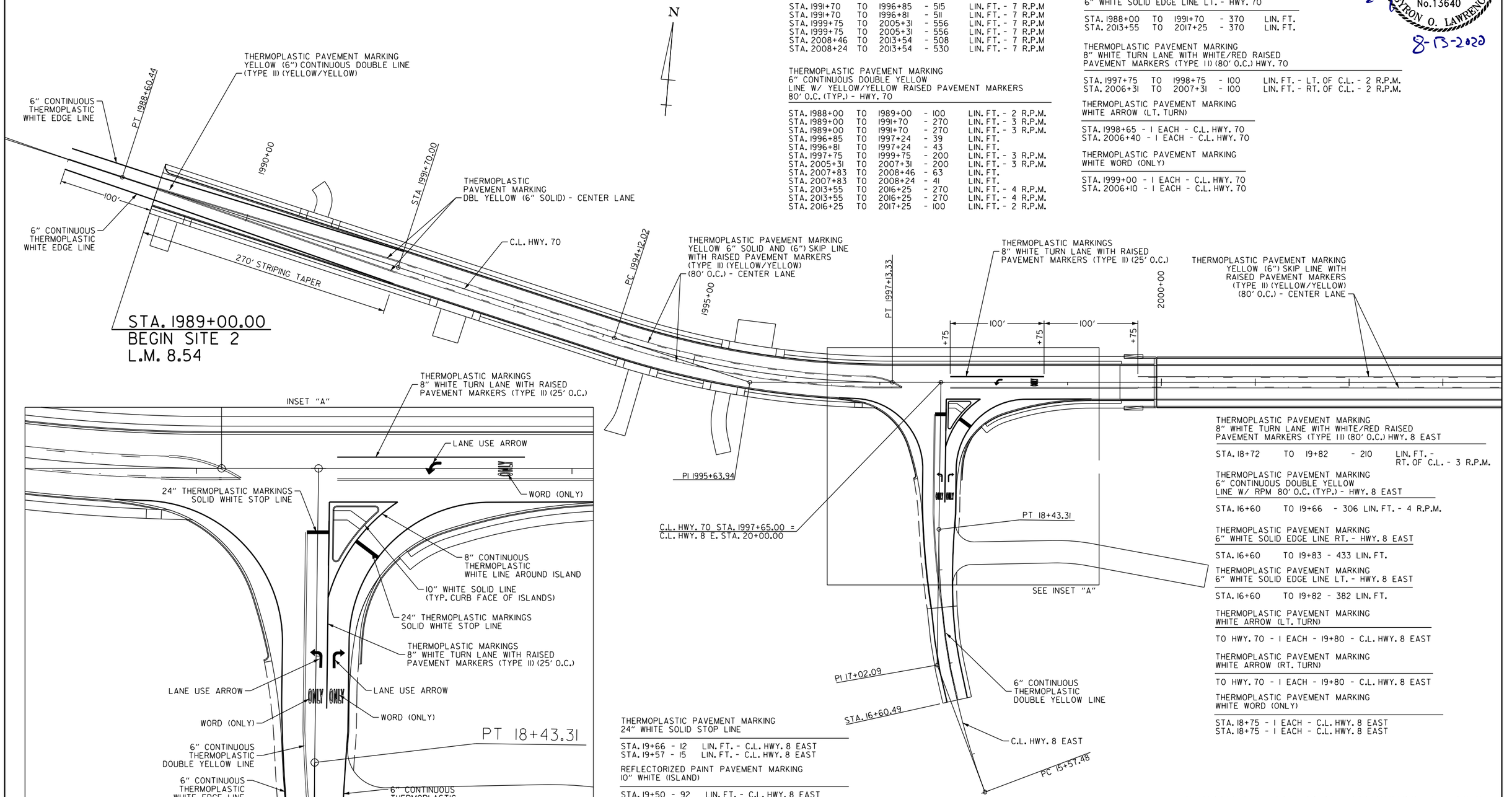

THERMOPLASTIC PAVEMENT MARKING
24" WHITE SOLID STOP LINE

STA. 19+66 - 12 LIN. FT. - C.L. HWY. 8 EAST
STA. 19+57 - 15 LIN. FT. - C.L. HWY. 8 EAST

REFLECTORIZED PAINT PAVEMENT MARKING
10" WHITE (ISLAND)

STA. 19+50 - 92 LIN. FT. - C.L. HWY. 8 EAST

THERMOPLASTIC PAVEMENT MARKING
8" WHITE TURN LANE WITH WHITE/RED RAISED
PAVEMENT MARKERS (TYPE II) (80' O.C.) HWY. 8 EAST

STA. 18+72 TO 19+82 - 210 LIN. FT. - RT. OF C.L. - 3 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
6" CONTINUOUS DOUBLE YELLOW
LINE W/ RPM 80' O.C. (TYP.) - HWY. 8 EAST

STA. 16+60 TO 19+66 - 306 LIN. FT. - 4 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT. - HWY. 8 EAST

STA. 16+60 TO 19+83 - 433 LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT. - HWY. 8 EAST

STA. 16+60 TO 19+82 - 382 LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
WHITE ARROW (LT. TURN)

TO HWY. 70 - 1 EACH - 19+80 - C.L. HWY. 8 EAST

THERMOPLASTIC PAVEMENT MARKING
WHITE ARROW (RT. TURN)

TO HWY. 70 - 1 EACH - 19+80 - C.L. HWY. 8 EAST

THERMOPLASTIC PAVEMENT MARKING
WHITE WORD (ONLY)

STA. 18+75 - 1 EACH - C.L. HWY. 8 EAST
STA. 18+75 - 1 EACH - C.L. HWY. 8 EAST

PERMANENT PAVEMENT MARKINGS DETAILS
U.S. HWY. 70 - SITE 2

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				6	ARK.			
				JOB NO.		030501	56	178

(2) PERMANENT PAVEMENT MARKINGS DETAILS

THERMOPLASTIC PAVEMENT MARKING
8" WHITE TURN LANE WITH WHITE/RED RAISED
PAVEMENT MARKERS (TYPE II) (80' O.C.) HWY. 8 WEST/70B

STA. 25+18 TO 26+26 - 194 LIN. FT. - LT. OF C.L. - 3 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
6" CONTINUOUS DOUBLE YELLOW
LINE W/ RPM 40' O.C. (TYP.) - HWY. 8 WEST/70B

STA. 25+34 TO 27+85 - 251 LIN. FT. - 3 R.P.M.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT. - HWY. 8 WEST/70B

STA. 25+20 TO 27+52 - 307 LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT. - HWY. 8 WEST/70B

STA. 25+15 TO 27+50 - 323 LIN. FT.

THERMOPLASTIC PAVEMENT MARKING
WHITE ARROW (LT. TURN)

TO HWY. 70 - 1 EACH - 25+94 - C.L. HWY. 8 WEST/70B

THERMOPLASTIC PAVEMENT MARKING
WHITE ARROW (RT. TURN)

TO HWY. 70 - 1 EACH - 25+94 - C.L. HWY. 8 WEST/70B

THERMOPLASTIC PAVEMENT MARKING
WHITE WORD (ONLY)

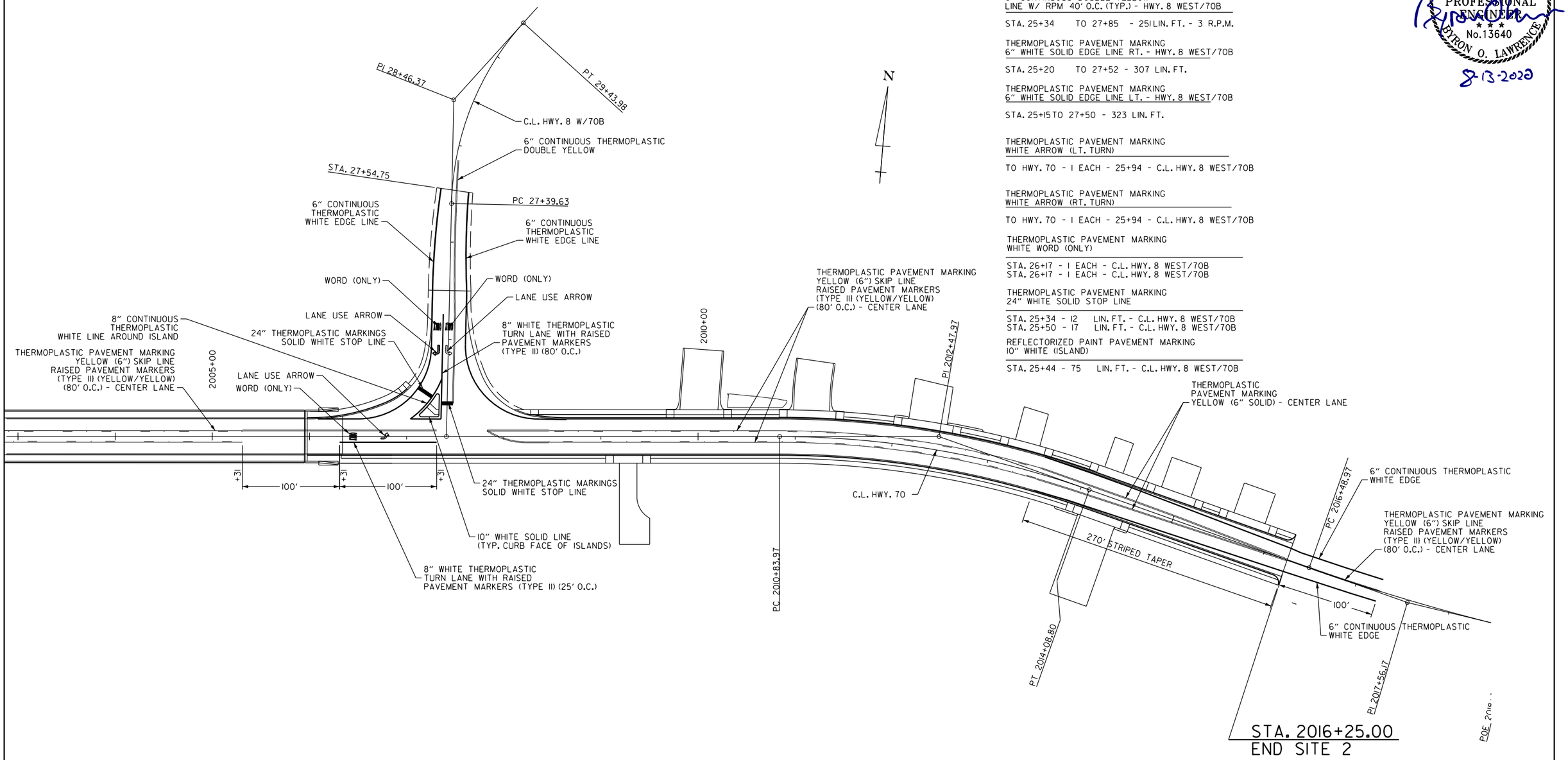
STA. 26+17 - 1 EACH - C.L. HWY. 8 WEST/70B
STA. 26+17 - 1 EACH - C.L. HWY. 8 WEST/70B

THERMOPLASTIC PAVEMENT MARKING
24" WHITE SOLID STOP LINE

STA. 25+34 - 12 LIN. FT. - C.L. HWY. 8 WEST/70B
STA. 25+50 - 17 LIN. FT. - C.L. HWY. 8 WEST/70B

REFLECTORIZED PAINT PAVEMENT MARKING
10" WHITE (ISLAND)

STA. 25+44 - 75 LIN. FT. - C.L. HWY. 8 WEST/70B



PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 70 - SITE 2

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				6	ARK.			
				JOB NO.		030501	57	178
				(2)	PERMANENT PAVEMENT MARKINGS DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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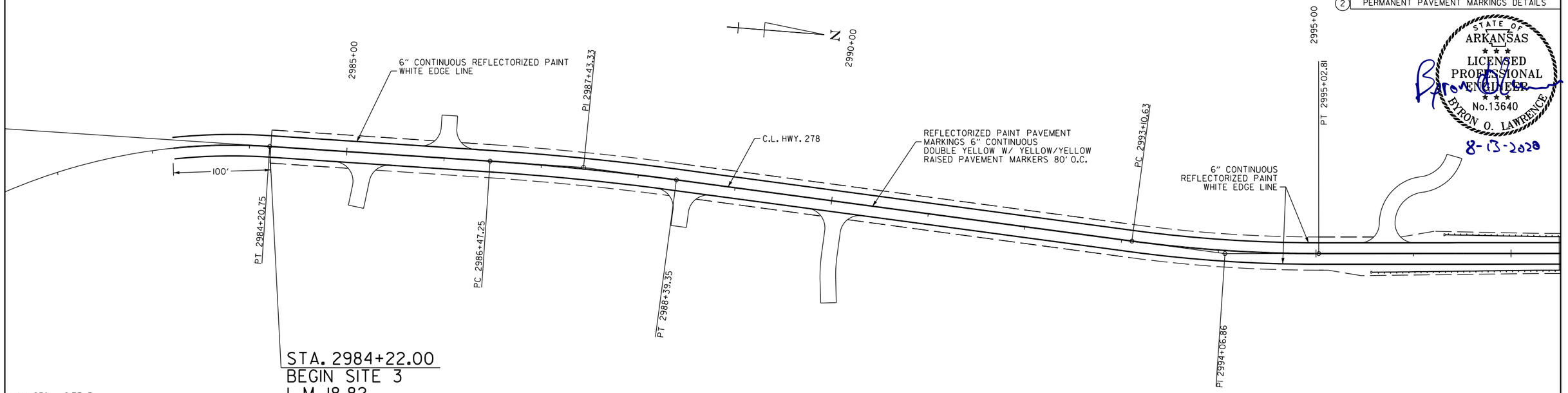
8-13-2020



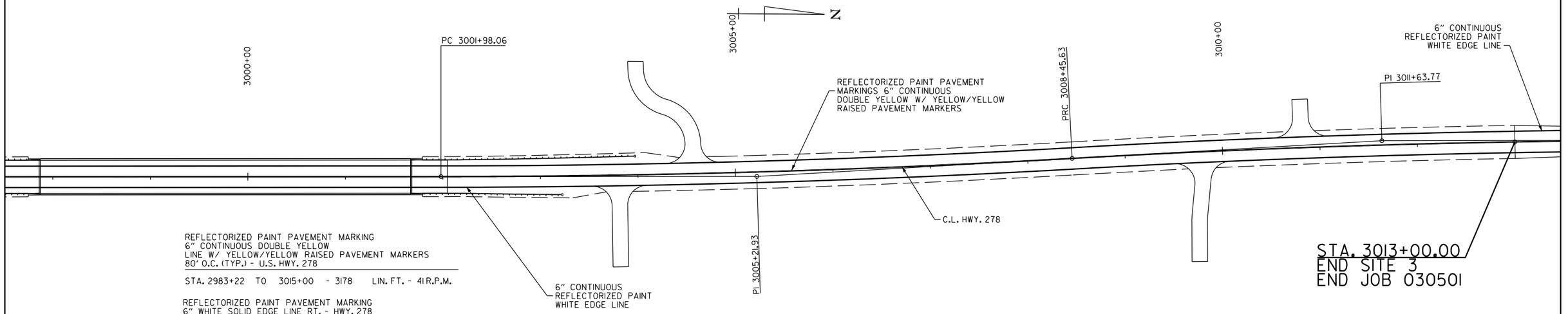
HWY. 278 - SITE 3
QUANTITIES:

REFLECTORIZED PAINT PAVEMENT MARKINGS
6" WHITE EDGE = 6356 LIN. FT.
6" YELLOW = 6356 LIN. FT.
YELLOW/YELLOW RAISED PAVEMENT MARKERS = 41

NOTE:

1. THE 6" YELLOW STRIPPING QUANTY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PSSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF PROJECT.

PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 278 - SITE 3



REFLECTORIZED PAINT PAVEMENT MARKING
6" CONTINUOUS DOUBLE YELLOW
LINE W/ YELLOW/YELLOW RAISED PAVEMENT MARKERS
80' O.C. (TYP.) - U.S. HWY. 278

STA. 2983+22 TO 3015+00 - 3178 LIN. FT. - 41 R.P.M.

REFLECTORIZED PAINT PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT. - HWY. 278

STA. 2983+22 TO 3015+00 - 3178 LIN. FT.

REFLECTORIZED PAINT PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT. - HWY. 278

STA. 2983+22 TO 3015+00 - 3178 LIN. FT.

PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 278 - SITE 3

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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.		030501	58	178
(2) PERMANENT PAVEMENT MARKINGS DETAILS				

STATE OF ARKANSAS
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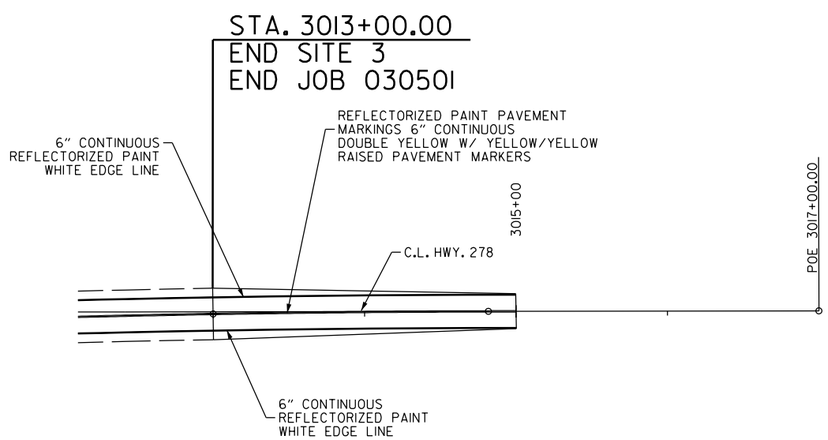
BYRON O. LAWRENCE
9-13-2020



NOTE:

1. THE 6" YELLOW STRIPPING QUANTY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PSSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF PROJECT.

PERMANENT PAVEMENT MARKINGS DETAILS
HWY. 278 - SITE 3

Leonard.Speed 8/13/2020 08:33 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_07_PM_006.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.		030501	59	178
				(2)	QUANTITIES			

SOIL BORING LOG

PROJECT: ARDOT 030501: SALINE & CADDO RIVERS STRS. & APPRS.
LOCATION: PIKE AND HOWARD COUNTY, ARKANSAS
GHBW JOB NUMBER: 18-040

BORING NO.	APPROX. STATION (ft)	OFFSET (ft)	GROUND ELEVATION (ft)	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			SIEVE ANALYSIS PERCENT PASSING								UNIFIED CLASS.	AASHTO CLASS.
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	2 in.	1 in.	3/4 in.	3/8 in.	#4	#10	#40	#200		
SITE 1 - HWY. 70 OVER SALINE RIVER																		
S10	999+60	19 Lt		2.5-3.5	4	20	14	6	100	56	51	35	28	23	15	8	GM-GC	A-1-a
S10	999+60	19 Lt		13.5-14	16	---	---	----	100	100	97	62	37	19	4	1	GP	A-1-a
S10	999+60	19 Lt		23.5-24.5	12	---	---	----	100	78	71	49	38	27	17	7	GW-GM	A-1-a
S10	999+60	19 Lt		53.5-54.5	15	---	---	----	100	100	100	100	100	98	95	88	ML	A-4
S10	999+60	19 Lt		58.5-59	15	37	21	16	--	--	--	--	--	--	--	--	SHALE	
S11	1000+25	7 Lt		6-6.5	14	---	---	----	100	100	83	48	37	34	28	14	GM	A-1-a
S11	1000+25	7 Lt		18.5-19	12	18	13	5	--	--	--	--	--	--	--	70	CL-ML	A-4
S11	1000+25	7 Lt		28.5-29	25	---	---	----	100	96	96	67	36	13	5	3	GP	A-1-a
S11	1000+25	7 Lt		43.5-44	33	---	---	----	100	100	100	74	53	37	22	15	GM	A-1-a
S11	1000+25	7 Lt		53.5-54	11	---	---	----	--	--	--	--	--	--	--	--	SHALE	
S11	1000+25	7 Lt		63.5-65	39	23	16	7	--	--	--	--	--	--	--	--	SHALE	
S12	1002+32	12 Lt		2.5-3.5	14	NON-PLASTIC			100	100	100	100	100	100	100	47	SM	A-4
S12	1002+32	12 Lt		6.5-7.5	18	22	14	8	100	100	100	100	100	100	97	51	CL	A-4
S12	1002+32	12 Lt		9-10	-----	---	---	----	100	100	88	84	81	77	67	22	SM	A-2-4
S12	1002+32	12 Lt		24-25	-----	---	---	----	100	100	100	100	95	87	73	24	SM	A-2-4
S12	1002+32	12 Lt		34.5-35	16	---	---	----	100	100	100	100	80	24	6	3	SW	A-1-a
S12	1002+32	12 Lt		49.5-50	-----	---	---	----	100	100	100	95	84	51	16	10	SP-SM	A-1-b
S12	1002+32	12 Lt		53.5-54	15	39	21	18	--	--	--	--	--	--	--	--	SHALE	
S13	1003+36	9 Lt		0.5-1.5	10	NON-PLASTIC			100	100	100	100	100	99	95	33	SM	A-2-4
S13	1003+36	9 Lt		2.5-3.5	11	NON-PLASTIC			100	100	100	100	100	100	98	24	SM	A-2-4
S13	1003+36	9 Lt		9-10	16	---	---	----	100	100	100	86	75	65	49	14	SM	A-1-b
S13	1003+36	9 Lt		19-20	16	---	---	----	100	100	100	60	33	16	6	4	GP	A-1-a
S14	1004+72	2 Rt		2.5-3.5	14	---	---	----	100	100	100	95	92	91	87	34	SM	A-2-4

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

SOIL BORING LOG

PROJECT: ARDOT 030501: SALINE & CADDO RIVERS STRS. & APPRS.
LOCATION: PIKE AND HOWARD COUNTY, ARKANSAS
GHBW JOB NUMBER: 18-040

BORING NO.	APPROX. STATION (ft)	OFFSET (ft)	GROUND ELEVATION (ft)	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			SIEVE ANALYSIS PERCENT PASSING								UNIFIED CLASS.	AASHTO CLASS.
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	2 in.	1 in.	3/4 in.	3/8 in.	#4	#10	#40	#200		
S14	1004+72	2 Rt		4.5-5.5	17	NON-PLASTIC			100	100	100	100	100	100	99	40	SM	A-4
S14	1004+72	2 Rt		14-15	11	-----	---	---	100	100	93	72	53	37	26	11	GW-GM	A-1-a
S14	1004+72	2 Rt		19-20	15	-----	---	---	100	100	88	73	66	61	54	26	SM	A-2-4
S14	1004+72	2 Rt		24-25	24	-----	---	---	100	100	100	100	100	100	99	9	SP-SM	A-3
S14	1004+72	2 Rt		34-35	14	-----	---	---	100	100	100	90	65	24	5	3	SP	A-1-a
P9	993+83	53 Rt		1-2	7	NON-PLASTIC			100	100	89	78	69	58	48	19	SM	A-1-b
P9	993+83	53 Rt		4.5-5	7	NON-PLASTIC			100	87	81	62	58	52	43	20	GM	A-1-b
P10	998+49	27 Rt		1-2	9	NON-PLASTIC			100	100	100	94	82	69	58	23	SM	A-2-4
P11	1006+16	28 Rt		0.5-1.5	5	NON-PLASTIC			100	100	94	72	51	38	26	9	GP-GM	A-1-a
P12	1012+40	37 Rt		1-2	7	-----	---	---	100	100	87	65	51	37	26	13	GM	A-1-a
P12	1012+40	37 Rt		2.5-3.5	12	22	15	7	--	--	--	--	96	--	--	67	CL-ML	A-4
SITE 2 - HWY. 70 OVER CADDO RIVER																		
S1	1999+45	75 Rt		0.5-1.5	16	34	24	10	100	100	100	82	75	65	49	34	SC	A-2-4
S1	1999+45	75 Rt		2.5-3.5	19	---	---	---	100	100	100	100	95	89	80	59	CL	A-4
S2	2000+78	58 Lt		0.5-1.5	15	27	17	10	---	---	---	---	89	---	---	53	CL	A-4
S2	2000+78	58 Lt		2.5-3.5	17	---	---	---	100	100	100	96	86	79	68	48	SM	A-4
S3	2003+84	59 Lt		2.5-3.5	18	24	19	5	100	100	100	89	84	79	72	50	CL-ML	A-4
S3	2003+84	59 Lt		4-5	7	27	19	8	---	---	---	---	---	---	---	---	SHALE	
S3A	2003+87	4 Rt		2.5-3.5	4	---	---	---	100	46	29	4	1	1	0	0	GP	A-2-4
S4	2005+32	2 Rt		0.5-1.5	15	24	17	7	---	---	---	---	93	---	---	50	CL-ML	A-4
S4	2005+32	2 Rt		2.5-3.5	9	26	17	9	---	---	---	---	---	---	---	---	SHALE	
S5	2006+30	58 Lt		0.5-1.5	14	29	19	10	100	100	93	86	81	75	67	45	SC	A-4

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

SOIL BORING LOG

PROJECT: ARDOT 030501: SALINE & CADDO RIVERS STRS. & APPRS.
LOCATION: PIKE AND HOWARD COUNTY, ARKANSAS
GHBW JOB NUMBER: 18-040

BORING NO.	APPROX. STATION (ft)	OFFSET (ft)	GROUND ELEVATION (ft)	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			SIEVE ANALYSIS PERCENT PASSING								UNIFIED CLASS.	AASHTO CLASS.
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	2 in.	1 in.	3/4 in.	3/8 in.	#4	#10	#40	#200		
S5	2006+30	58 Lt		9-10	14	32	19	13	---	---	---	---	60	---	---	20	GC	A-2-6
P1	1996+08	52 Lt		2.5-3.5	17	35	19	16	---	---	---	---	99	---	---	80	CL	A-6
									---	---	---	---						
P2	1998+39	12 Lt		0.5-1.5	9	23	16	7	100	100	100	91	79	63	41	20	SC	A-2-6
P2	1998+39	12 Lt		2.5-3.5	13	30	19	11	---	---	---	---	78	---	---	28	SC	A-2-6
P3	2006+92	63 Lt		1-2	17	35	21	14	---	---	---	---	87	---	---	39	SC	A-6
P4	2009+53	9 Lt		1-2	8	21	17	4	100	100	100	86	65	49	31	14	SC-SM	A-1-b
P4	2009+53	9 Lt		2.5-3.5	11	24	17	7	---	---	---	---	76	---	---	30	SC-SM	A-2-4
SITE 3 - HWY. 278 OVER SALINE RIVER																		
S6	3001+78	5 Rt		0.5-1.5	6	NONPLASTIC			100	100	80	67	60	52	45	22	GM	A-1-b
S6	3001+78	5 Rt		6.5-7.5	21	18	16	2	-----	---	---	---	94	---	---	42	SM	A-4
S7	2999+66	9 Rt		0.5-1.5	8	NONPLASTIC			100	100	95	82	72	67	49	8	SP	A-1-b
S7B	3000+54	2 Lt		0.5-1.5	---	NONPLASTIC			-----	---	---	---	-----	---	---	---	GM	A-2-4
S7B	3000+54	2 Lt		6.5-7.5	14	24	14	10	-----	---	---	---	-----	---	---	---	SHALE	
S8	2998+26	1 Lt		0.5-1.5	8	NONPLASTIC			100	100	93	91	85	78	64	21	SM	A-2-4
S8	2998+26	1 Lt		6.5-7.5	17	19	16	3	-----	---	---	---	100	---	---	60	ML	A-4
S9	2997+45	3 Lt		0.5-1.5	12	25	15	10	100	100	100	97	96	93	87	57	CL	A-4
S9	2997+45	3 Lt		4.5-5.5	17	27	17	10	100	100	100	100	98	95	90	60	CL	A-4
P5	3006+29	16 Lt		2-2.5	4	---	----	----	100	100	79	46	35	28	22	11	GP	A-1-a
P6	3003+65	56 Lt		2.5-3.5	10	26	17	9	100	100	100	78	56	39	29	18	SC	A-2-4
P7	2996+08	56 Lt		2-3	10	32	16	16	100	100	84	76	70	67	62	42	SC	A-6
P8	2993+90	19 Lt		0.5-1.5	13	33	18	15	100	100	88	77	72	68	62	44	SC	A-6

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
BYRON O. LAWRENCE
No.13640
8-13-2020

LeonardSpeed 8/13/2020 11:18:39 PM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_16631_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_08B_0YT_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
				6	ARK.			
				JOB NO.		030501	60	178

(2) QUANTITIES

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
19+69	SITE 2 - C.L. HWY. 8 E. RT.	C	45
25+24	SITE 2 - C.L. HWY. 8 W./70B LT.	C	32
TOTAL:			77

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-1) LIN. FT.
990+22	1001+12	SITE 1 - C.L. HWY 70 - LT	1090
1002+98	1013+50	SITE 1 - C.L. HWY 70 - LT	1052
TOTAL:			2142

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS LIN. FT.	UNDERDRAIN OUTLET PROTECTORS EACH
* ENTIRE PROJECT TO	BE USED IF AND		4000	16
WHERE DIRECTED BY	THE ENGINEER			
TOTALS:			4000	16

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

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH FEET	LENGTH FEET	TON
1992+25	SITE 2 C.L. HWY. 70 - RT.	7.33	98	9
	SITE 2 C.L. HWY. 8	11.42	30	25
ENTIRE	IF AND WHERE DIRECTED	9.67	50	27
PROJECT	BY THE ENGINEER			
TOTAL:				61

AVG. DEPTH = 2"

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
997+83.76	1000+02.51	SITE 1 C.L. HWY. 70 RT	150	1	1
998+58.76	1000+02.51	SITE 1 C.L. HWY. 70 LT	75	1	1
1005+00.49	1006+44.24	SITE 1 C.L. HWY. 70 RT	75	1	1
1005+00.49	1007+19.24	SITE 1 C.L. HWY. 70 LT	150	1	1
2995+56.74	2997+75.49	SITE 3 C.L. HWY. 278 RT	150	1	1
2996+31.74	2997+75.49	SITE 3 C.L. HWY. 278 LT	75	1	1
3001+78.51	3003+22.26	SITE 3 C.L. HWY. 278 RT	75	1	1
3001+78.51	3003+97.26	SITE 3 C.L. HWY. 278 LT	150	1	1
TOTALS:			900	8	8

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	SITE 1 STAGE 1	SITE 1 STAGE 2	SITE 2 STAGE 1	SITE 2 STAGE 2	SITE 2 STAGE 3	SITE 3 STAGE 1	SITE 3 STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED NO.	TOTAL SIGNS REQUIRED SQ. FT.	VERTICAL PANELS EACH	TRAFFIC DRUMS EACH	BARRICADES (TYPE III) RIGHT LIN. FT.	BARRICADES (TYPE III) LEFT LIN. FT.	FURNISHING & INSTALLING PRECAST CONC. BARRIER LIN. FT.	RELOCATING PRECAST CONCRETE BARRIER LIN. FT.	TEMPORARY IMPACT ATTENUATION BARRIER EACH	TEMP. IMPACT ATTEN.BARR. (REPAIR) EACH
			LIN. FT. - EACH																	
W20-1	ROAD WORK 1500 FT.	36"x36"	2	2	4	4	4	2	2	8	8	72.0								
W20-1	ROAD WORK 1000 FT.	36"x36"	2	2	4	4	4	2	2	8	8	72.0								
W20-1	ROAD WORK 500 FT.	36"x36"	2	2	4	4	4	2	2	8	8	72.0								
G20-2	END ROAD WORK	48"x24"	2	2	4	4	4	2	2	8	8	64.0								
W1-4R	REVERSE CURVE RT.	36"x36"			2	6	2			6	6	54.0								
W1-4L	REVERSE CURVE LT.	36"x36"			2	2	2			2	2	18.0								
R11-2	ROAD CLOSED	48"x30"	2	2	3	2		2	2	7	7	70.0								
W1-6	LARGE ARROW	48"x24"		2		2			2	6	6	48.0								
* R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	2	2	6	6	30.0								
* W21-5a	RIGHT SHOULDER CLOSED	36"x36"	1		3	3	2	1	1	5	5	45.0								
	VERTICAL PANELS		24		34			20		78			78							
	TRAFFIC DRUMS		12	44	111	123	76	43	42	210				210						
	TYPE III BARRICADE-RT. (16')		1	1	1	1		1	1	3					48					
	TYPE III BARRICADE-LT. (16')		1	1	2	1		1	1	4						64				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER					846		213		1059							1059			
	RELOCATING PRECAST CONCRETE BARRIER								53	53								53		
	TEMPORARY IMPACT ATTENUATION BARRIER					2	1	2		5									5	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)					2	1	2		5										5
TOTALS:												545.0	78	210	48	64	1059	53	5	5

NOTE: SITES 1 AND 2 ARE HIGH TRAFFIC VOLUME ROADS AND SITE 3 IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	SITE 1 STAGE 1	SITE 1 END OF JOB	SITE 2 STAGE 1	SITE 2 STAGE 2	SITE 2 STAGE 3	SITE 2 END OF JOB	SITE 3 STAGE 1	SITE 3 END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)	RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	THERMOPLASTIC PAVEMENT MARKING 6" WHITE	THERMOPLASTIC PAVEMENT MARKING 6" YELLOW	THERMOPLASTIC PAVEMENT MARKING 8" WHITE	THERMOPLASTIC PAVEMENT MARKING 24" WHITE	THERMOPLASTIC PAVEMENT MARKING WORDS	THERMOPLASTIC PAVEMENT MARKING ARROWS	REFLECTORIZED PAINT PAVEMENT MARKING 6" WHITE	REFLECTORIZED PAINT PAVEMENT MARKING 6" YELLOW	REFLECTORIZED PAINT PAVEMENT MARKING 10" WHITE
	LIN. FT. - EACH								LIN. FT.			EACH		LIN. FT.				EACH		LIN. FT.		
* REMOVAL OF PERMANENT PAVEMENT MARKINGS	2164		3221	750	810		2735		9680													
CONSTRUCTION PAVEMENT MARKINGS	11968		4300	8316	5807		10492			40883												
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS				2704	2028						4732											
RAISED PAVEMENT MARKERS TYPE II (WHITE/WHITE)				88		10						98										
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)		47		44		73		41					205									
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		7416				2925								10341								
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		7416				12786									20202							
THERMOPLASTIC PAVEMENT MARKING WHITE (8")						604										604						
THERMOPLASTIC PAVEMENT MARKING WHITE (24")						56											56					
THERMOPLASTIC PAVEMENT MARKING (WORDS)						6												6				
THERMOPLASTIC PAVEMENT MARKING (ARROWS)						6													6			
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")								6356												6356		
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")								6356													6356	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")						167																167
TOTALS:									9680	40883	4732	98	205	10341	20202	604	56	6	6	6356	6356	167

NOTE: SITES 1 AND 2 ARE HIGH TRAFFIC VOLUME ROADS AND SITE 3 IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

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

Leonard.Speed 8/13/2020 11:18:40 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1603_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_08B_01T_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
08-28-2020				6	ARK.			
				JOB NO.		030501	61	178

(2) QUANTITIES

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	RETAINING WALLS	ROCK WALLS	COLUMNS	CONCRETE DRIVEWAYS	SIGN FOUNDATIONS	GUARDRAIL	BUILDINGS	SIGNS
			LIN. FT.	LIN. FT.	LIN. FT.	EACH	SQ. YD.	EACH	LIN. FT.	EACH	EACH
998+96	999+98	SITE 1 C.L. HWY. 70 - RT							201		
1004+59	1005+36	SITE 1 C.L. HWY. 70 - RT							153		
1989+04	1989+37	SITE 2 C.L. HWY. 70 - RT	39				99				
1992+13	1192+72	SITE 2 C.L. HWY. 70 - RT		46							
1995+25		SITE 2 C.L. HWY. 70 - RT			12						
1995+25		SITE 2 C.L. HWY. 70 - RT				1					
1995+28	1995+55	SITE 2 C.L. HWY. 70 - RT					91				
1995+50		SITE 2 C.L. HWY. 70 - RT			12						
1995+50		SITE 2 C.L. HWY. 70 - RT				1					
1998+45		SITE 2 C.L. HWY. 70 - RT						2			1
1998+70	1999+90	SITE 2 C.L. HWY. 70 - LT							250		
2000+48		SITE 2 C.L. HWY. 70 - RT						2			1
2005+85	2006+61	SITE 2 C.L. HWY. 70 - LT							152		
2008+45		SITE 2 C.L. HWY. 70 - RT						6			2
2009+05		SITE 2 C.L. HWY. 70 - RT (SHED)								1	
2009+60		SITE 2 C.L. HWY. 70 - RT (LARGE SIGN/FOUNDATION)						1			
2009+77	2010+30	SITE 2 C.L. HWY. 70 - LT	85				210				
2010+87	2011+43	SITE 2 C.L. HWY. 70 - LT	91				216				
2013+11	2014+61	SITE 2 C.L. HWY. 70 - LT	60				263				
2014+05	2014+46	SITE 2 C.L. HWY. 70 - RT					384				
2014+75		SITE 2 C.L. HWY. 70 - RT						2			
2014+75		SITE 2 C.L. HWY. 70 - RT									
2014+75		SITE 2 C.L. HWY. 70 - RT									
2989+43	2989+80	SITE 3 C.L. HWY. 278 -RT		40							
2997+78	2998+06	SITE 3 C.L. HWY. 278 - LT AND RT							56		
3001+72	3001+99	SITE 3 C.L. HWY. 278 - LT AND RT							54		
2988+10		SITE 3 C.L. HWY. 278 - RT (POULTRY BUILDING)								1	
TOTALS:			275	86	24	2	1263	13	866	2	4

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.

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 (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	SITE 1 - C.L. HWY. 70 CLEARING AND GRUBBING						5.20	5.20	106.1		39	4445		1100	1100	1278
ENTIRE	PROJECT	SITE 1 - C.L. HWY. 70 STAGE 1	2.61	5.22	2.61	266.2	2.61	5.22	5.22	106.5				1575			
ENTIRE	PROJECT	SITE 1 - C.L. HWY. 70 STAGE 2	3.51	7.02	3.51	358.0	5.11	7.02	7.02	143.2							
ENTIRE	PROJECT	SITE 2 - C.L. HWY. 70 CLEARING AND GRUBBING						3.41	3.41	69.6	88	87	2979		1000	1000	1143
ENTIRE	PROJECT	SITE 2 - C.L. HWY. 70 STAGE 1	2.08	4.16	2.08	212.2	2.08	4.16	4.16	84.9		30		1544			10
ENTIRE	PROJECT	SITE 2 - C.L. HWY. 70 STAGE 2	0.81	1.62	0.81	82.6	0.81	1.62	1.62	33.0				84			
ENTIRE	PROJECT	SITE 2 - C.L. HWY. 70 STAGE 3												120			
ENTIRE	PROJECT	SITE 3 - C.L. HWY. 278 CLEARING AND GRUBBING						3.79	3.79	77.3	550	138	2283		1300	1300	1456
ENTIRE	PROJECT	SITE 3 - C.L. HWY. 278 STAGE 1	1.90	3.80	1.90	193.8	1.90	3.80	3.80	77.5	374	6		705			19
ENTIRE	PROJECT	SITE 3 - C.L. HWY. 278 STAGE 2	2.11	4.22	2.11	215.2	2.11	4.22	4.22	86.1							
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.30	2.60	1.30	132.6	1.30	9.61	9.61	196.0	110	30	960	402	340	340	391
TOTALS:			14.32	28.64	14.32	1460.6	15.92	48.05	48.05	980.2	1122	330	10667	4430	3740	3740	4297

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.

CULVERT CLEAN OUT

STATION	LOCATION	EACH
2010+82	SITE 2 - C.L. HWY. 70 - LT	1
*IF AND WHERE DIRECTED BY THE ENGINEER		5
TOTAL:		6

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
3011+85	END OF CONC. PAVED SPECIAL DITCH	10	20
TOTALS:		10	20

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

REMOVAL AND DISPOSAL OF PIPE CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
1989+21	SITE 2 C.L. HWY. 70 - RT.	1
1990+74	SITE 2 C.L. HWY. 70 - LT.	2
1992+25	SITE 2 C.L. HWY. 70 - RT.	1
1992+41	SITE 2 C.L. HWY. 70 - RT.	1
1994+44	SITE 2 C.L. HWY. 70 - RT.	1
1995+37	SITE 2 C.L. HWY. 70 - RT.	1
1997+65	SITE 2 C.L. HWY. 70 - RT.	1
2986+03	SITE 3 C.L. HWY. 278 - LT.	1
2988+48	SITE 3 C.L. HWY. 278 - RT.	1
2990+05	SITE 3 C.L. HWY. 278 - RT.	1
2995+73	SITE 3 C.L. HWY. 278 - LT.	1
3009+83	SITE 3 C.L. HWY. 278 - RT.	2
TOTAL:		14

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

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.		TON
	ENTIRE	PROJECT	SITE 1 HWY. 70 - STAGE 1	415	32166	
	ENTIRE	PROJECT	SITE 1 HWY. 70 - STAGE 2	3446	1380	
	ENTIRE	PROJECT	SITE 2 HWY 70 - STAGE 1	1500	18100	
	ENTIRE	PROJECT	SITE 2 HWY. 70 - STAGE 2	1160	1670	
	ENTIRE	PROJECT	SITE 2 HWY. 8 E.	230	234	
	ENTIRE	PROJECT	SITE 2 HWY. 8 W./70B	45	144	
	ENTIRE	PROJECT	SITE 3 HWY. 278 - STAGE 1	3883	16984	
	ENTIRE	PROJECT	SITE 3 HWY. 278 - STAGE 2	3146	1902	
	ENTIRE	PROJECT	DRIVEWAYS	400	2245	
			CHANNEL CHANGE	200		
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE	840	4500	600
			DIRECTED BY THE ENGINEER			
	TOTALS:			15265	79325	600

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
1992+00.00		SITE 2 C.L. HWY. 70 RT.	8.00	4.00	3.56	3.56	0.04
1992+00.00		SITE 2 C.L. HWY. 70 LT.	9.00	4.00	4.00	4.00	0.05
1997+90.00		SITE 2 C.L. HWY. 70 LT.	27.00	4.00	12.00	12.00	0.15
1998+15.00	1998+43.00	SITE 2 C.L. HWY. 70 RT.	60.00	6.00	40.00	26.67	0.34
2008+00.00	2008+50.00	SITE 2 C.L. HWY. 70 RT.	50.00	6.00	33.33	22.22	0.28
2008+90.00		SITE 2 C.L. HWY. 70 RT.	30.00	4.00	13.33	13.33	0.17
2009+28.00		SITE 2 C.L. HWY. 70 LT.	38.00	4.00	16.89	16.89	0.21
2010+40.00		SITE 2 C.L. HWY. 70 RT.	28.00	4.00	12.44	12.44	0.16
2011+16.00		SITE 2 C.L. HWY. 70 RT.	30.00	4.00	13.33	13.33	0.17
2013+78.00		SITE 2 C.L. HWY. 70 RT.	25.00	4.00	11.11	11.11	0.14
2016+14.00		SITE 2 C.L. HWY. 70 RT.	8.00	6.00	5.33	3.56	0.04
2986+00.00	2988+30.00	SITE 3 C.L. HWY. 278 RT.	230.00	9.00	230.00	102.22	1.29
2986+20.00	2988+90.00	SITE 3 C.L. HWY. 278 LT.	270.00	9.00	270.00	120.00	1.51
2988+65.00	2989+89.00	SITE 3 C.L. HWY. 278 RT.	124.00	9.00	124.00	55.11	0.69
2990+20.00	2996+32.00	SITE 3 C.L. HWY. 278 RT.	617.00	9.00	617.00	274.22	3.46
3011+90.00	3013+00.00	SITE 3 C.L. HWY. 278 RT.	110.00	6.00	73.33	48.89	0.62
TOTALS:					1479.65	739.55	9.32

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
983+78.45	984+78.45	SITE 1 C.L. HWY. 70	37.50	416.67
1019+86.36	1020+86.36	SITE 1 C.L. HWY. 70	38.00	422.22
1988+00.00	1989+00.00	SITE 2 C.L. HWY. 70	46.90	521.11
16+60.00	17+60.00	SITE 2 C.L. HWY. 8 E.	31.55	350.56
26+50.00	27+50.00	SITE 2 C.L. HWY. 8 W./70B	40.76	452.89
2016+25.00	2017+25.00	SITE 2 C.L. HWY. 70	46.53	517.00
2983+22.00	2984+22.00	SITE 3 C.L. HWY. 278	29.80	331.11
3013+00.00	3015+00.00	SITE 3 C.L. HWY. 278	28.55	634.44
TOTAL:				3646.00

NOTE: AVERAGE MILLING DEPTH 1".

CONCRETE BASE

	STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE		
					AVG. WID.	9 1/2" U.T.	6" U.T.
				FEET	FEET	SQ. YD.	SQ. YD.
*	1992+50.00	1993+20.00	HWY. 70 - LT.	70.00	4.25	33.06	
*	2012+10.00	2012+60.00	HWY. 70 - LT.	50.00	4.25	23.61	
*	1992+50.00	1993+20.00	HWY. 70 - LT.	70.00	6.75		52.50
*	2012+10.00	2012+60.00	HWY. 70 - LT.	50.00	6.75		37.50
TOTALS:						56.67	90.00

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

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
1989+00	1999+56	SITE 2 - C.L. HWY. 70 - LT.	975
1989+00	1996+94	SITE 2 - C.L. HWY. 70 - RT.	709
1998+10	1999+55	SITE 2 - C.L. HWY. 70 - RT.	152
2005+97	2007+04	SITE 2 - C.L. HWY. 70 - LT.	113
2008+08	2016+25	SITE 2 - C.L. HWY. 70 - LT.	1043
2006+32	2016+20	SITE 2 - C.L. HWY. 70 - RT.	901
TOTAL:			3893

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
983+78	1000+50	SITE 1 C.L. HWY. 70	17	17
1004+17	1020+86	SITE 1 C.L. HWY. 70	17	17
1988+00	2000+34	SITE 2 C.L. HWY. 70	13	13
2005+47	2016+20	SITE 2 C.L. HWY. 70	11	11
16+61	20+00	SITE 2 C.L. HWY. 8 E.	4	4
25+00	27+53	SITE 2 C.L. HWY. 8 W./70B	3	3
2983+21	2998+18	SITE 3 C.L. HWY. 278	15	15
3001+80	3015+00	SITE 3 C.L. HWY. 278	13	13
TOTALS:			93	93

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	37	74
TOTALS:	37	74

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
990+22	1000+57	SITE 1 C.L. HWY 70 - LT	1035
1002+98	1011+31	SITE 1 C.L. HWY 70 - LT	833
2014+75		SITE 2 C.L. HWY. 70 - RT (PIPE RAIL)	10
TOTAL:			1878

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
8-28-2020

ByronLawrence 8/28/2020 4:48:48 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16631_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_08B_01T_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	62	178

(2) QUANTITIES

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III) 18"	24"	30"	54"	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	54"	DROP INLETS TYPE SPECIAL	MO	JUNCT. BOXES (TYPE E)	YARD DRAINS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE - ROADWAY	REINF. STEEL- ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.- ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.						EACH				EACH		EACH		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
990+59	SITE 1 C.L. HWY. 70 LT.		30						1													8	0.10	FES-2, PCC-1
990+59	SITE 1 C.L. HWY. 70 RT.		6						1													8	0.10	FES-2, PCC-1
1992+00	SITE 2 C.L. HWY. 70 RT.											1										3	0.04	SPEC. DETAILS
1992+00	SITE 2 C.L. HWY. 70 LT.											1										3	0.04	SPEC. DETAILS
1992+25	SITE 2 C.L. HWY. 70 RT.					50									1							2	0.03	FPC-9
1994+44	SITE 2 C.L. HWY. 70 LT.						156						1											FPC-9E, FPC-9M, FES-2, PCC-1, PCM-1
1996+08	SITE 2 C.L. HWY. 70 LT.						122						1											
1996+94	SITE 2 C.L. HWY. 70 RT.		8		317				1		2			1								78	0.98	FPC-9, FES-2, PCC-1
1997+36	SITE 2 C.L. HWY. 70 LT.						50						1											FPC-9E, FPC-9M, FES-2, PCC-1, PCM-1
1997+90	SITE 2 C.L. HWY. 70 LT.	42						1					1									5	0.06	FPC-9E, FPC-9M, FES-2, PCC-1
1998+20	SITE 2 C.L. HWY. 70 RT.											1										3	0.04	SPEC. DETAILS
1998+45	SITE 2 C.L. HWY. 70 LT.						51						1											FPC-9E, FPC-9M, FES-2, PCC-1, PCM-1
2008+64	SITE 2 C.L. HWY. 70 RT.											1										3	0.04	SPEC. DETAILS
2009+28	SITE 2 C.L. HWY. 70 LT.											1										3	0.04	SPEC. DETAILS
2010+18	SITE 2 C.L. HWY. 70 RT.											1										3	0.04	SPEC. DETAILS
2011+16	SITE 2 C.L. HWY. 70 RT.											1										3	0.04	SPEC. DETAILS
2013+78	SITE 2 C.L. HWY. 70 RT.											1										3	0.04	SPEC. DETAILS
2014+63	SITE 2 C.L. HWY. 70 RT.						33						1											FPC-9E, FPC-9M, FES-2, PCC-1
2015+00	SITE 2 C.L. HWY. 70 RT.						36						1											FPC-9E, FPC-9M, FES-2, PCC-1
2015+40	SITE 2 C.L. HWY. 70 RT.						70						1											FPC-9E, FPC-9M, FES-2, PCC-1, PCM-1
2016+14	SITE 2 C.L. HWY. 70 RT.						17						1											FPC-9E, FPC-9M, FES-2, PCC-1
3011+23	SITE 3 C.L. HWY. 278 RT.			30						1												13	0.16	FES-2, PCC-1
3011+23	SITE 3 C.L. HWY. 278 LT.			9						1												13	0.16	FES-2, PCC-1
SUBTOTALS:		**42**	**44**	**39**	**317**	**50**	**535**	**1**	**3**	**2**	**2**	**8**	**9**	**1**	**1**							**151**	**1.91**	
3008+64	SITE 3 C.L. HWY. 278 RT. DBL. 10'X9'															10	9	41	105.44	14563	44	16	0.20	W-X003-2, R-200X-0, RCB-1, RCB-2, RCB-3
SUBTOTALS:																			**105.44**	**14563**	**44**	**16**	**0.20**	
TOTALS:		**42**	**44**	**39**	**317**	**50**	**535**	**1**	**3**	**2**	**2**	**8**	**9**	**1**	**1**				**105.44**	**14563**	**44**	**167**	**2.11**	

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

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	37
TOTAL:	**37**

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING CU.YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	160
TOTAL:	**160**

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

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
19+74	SITE 2 C.L. HWY. 8	60
TOTAL:		**60**

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3 SQ. YD.
19+05	SITE 2 - C.L. HWY. 8 E. LT.	5.3
19+05	SITE 2 - C.L. HWY. 8 E. RT.	5.3
25+97	SITE 2 - C.L. HWY. 8 W./70B LT.	5.3
25+97	SITE 2 - C.L. HWY. 8 W./70B RT.	5.3
TOTAL:		**21.2**

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE) EACH
SITE 2	8	8
SITE 3	2	2
TOTALS:	**10**	**10**

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE C) CU.YD.	APPROACH SLABS CU.YD.	REINFORCING STEEL-RDWY. (GR. 60) POUND	AGGREGATE BASE CRS. (CLASS 7) TON
999+81.39	1000+17.89	SITE 1 - C.L. HWY. 70	29.60	49.15	7395	51.7
1004+85.11	1005+21.61	SITE 1 - C.L. HWY. 70	29.60	49.15	7395	51.7
1999+55.83	1999+92.33	SITE 2 - C.L. HWY. 70		73.47	9125	41.3
2005+97.67	2006+34.17	SITE 2 - C.L. HWY. 70		75.41	9396	42.8
2997+49.40	2997+85.90	SITE 3 - C.L. HWY. 278	23.10	44.90	6876	44.3
3001+68.11	3002+04.61	SITE 3 - C.L. HWY. 278	23.10	44.90	6876	44.3
TOTALS:			**105.40**	**336.98**	**47063**	**276.1**

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH FEET	**MODIFIED CURB STATION	STATION	PORTLAND CEMENT CONCRETE DRIVEWAY SQ. YD.	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22) SQ. YD.	TON	AGGREGATE BASE COURSE (CLASS 7) TON	SIDE DRAINS 18"	24"	30"	36"	STANDARD DRAWINGS
										LIN. FT.				
993+50	RT.	SITE 1C.L. HWY. 70	16				263.88	29.03	107.75					SPEC. DETAILS
1010+44	RT.	SITE 1C.L. HWY. 70	16				197.83	21.76	80.78					SPEC. DETAILS
1989+21	RT.	SITE 2 C.L. HWY. 70	20	1988+97	1989+45	115.20						208		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-1
1990+74	LT.	SITE 2 C.L. HWY. 70	16	1990+52	1990+96	39.11	59.38	6.53	24.25		120			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-1
1992+41	RT.	SITE 2 C.L. HWY. 70	28	1992+13	1992+69	49.78	93.33	10.27	38.11			96		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-1
1994+44	RT.	SITE 2 C.L. HWY. 70	16	1994+22	1994+66	39.11	122.56	13.48	50.05				76	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-1
1995+37	RT.	SITE 2 C.L. HWY. 70	16	1995+15	1995+59	157.33								DR-1
1995+60	LT.	SITE 2 C.L. HWY. 70	40	1995+26	1995+94	173.15								DR-1
18+17	RT.	SITE 2 C.L. HWY. 8 E.	24				709.90	78.09	289.88		94			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-1
2009+28	RT.	SITE 2 C.L. HWY. 70	18	2009+05	2009+51	40.89	166.92	18.36	68.16					DR-1
2010+00	LT.	SITE 2 C.L. HWY. 70	39	2009+67	2010+34	328.23								DR-1
2011+16	LT.	SITE 2 C.L. HWY. 70	37	2010+84	2011+49	267.45								DR-1
2012+33	LT.	SITE 2 C.L. HWY. 70	40	2011+99	2012+67	60.44	177.78	19.56	72.59					DR-1
2013+35	LT.	SITE 2 C.L. HWY. 70	26	2013+08	2013+62	147.00								DR-1
2014+26	LT.	SITE 2 C.L. HWY. 70	20	2014+02	2014+50	116.00								DR-1
2014+26	RT.	SITE 2 C.L. HWY. 70	40	2013+92	2014+60	444.88								DR-1
2014+94	LT.	SITE 2 C.L. HWY. 70	32	2014+64	2015+24	53.33	115.41	12.70	47.13					DR-1
2015+74	LT.	SITE 2 C.L. HWY. 70	34	2015+43	2016+05	55.11	122.63	13.49	50.07					DR-1
2985+21	RT.	SITE 3 C.L. HWY. 278	16			44.43	30.43	3.35	12.43					SPEC. DETAILS
2986+03	LT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	24.47	32				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, SPEC DETAILS
2988+48	RT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	27.30	34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, SPEC DETAILS
2990+05	RT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	94.07	30				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, SPEC DETAILS
2995+73	LT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	110.52		74			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, SPEC DETAILS
3003+81	RT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	81.81					SPEC. DETAILS
3004+57	LT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	115.99					SPEC. DETAILS
3009+83	RT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	88.84				30	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, SPEC DETAILS
3010+81	LT.	SITE 3 C.L. HWY. 278	16				30.43	3.35	29.89					SPEC. DETAILS
*ENTIRE PROJECT TEMPORARY DRIVES								35.00	116.00					SPEC. DETAILS
TOTALS:						**2131.44**	**2303.49**	**288.42**	**1530.09**	**96**	**288**	**304**	**106**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

** FOR INFORMATION ONLY

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

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

LeonardSpeed 8/3/2020 8:43 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_I60\030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_08B_QYT_001.dgn
REVISED DATE: $$REVDATE$$

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
983+78	1000+18	SITE 1 : LT. AND RT.	3280
1004+85	1020+86	SITE 1 : LT. AND RT.	3202
TOTAL:			6482

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

RUMBLE STRIPES IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPES IN ASPHALT SHOULDERS
			LIN.FT.
2983+22	2997+85	SITE 3 : LT. AND RT.	2926
3001+68	3015+00	SITE 3 : LT. AND RT.	2664
TOTAL:			5590

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

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	SOLID SODDING	WATER
			LIN. FT.	SQ.YD.	SQ. YD.	M. GAL
1989+00	1999+93	SITE 2 - C.L. HWY. 70 - LT.	1093	539	364	4.59
1989+00	1996+94	SITE 2 - C.L. HWY. 70 - RT.	794	390	265	3.34
1998+10	1999+93	SITE 2 - C.L. HWY. 70 - RT.	183	83	61	0.77
2005+97	2007+04	SITE 2 - C.L. HWY. 70 - LT.	107	73	36	0.45
2008+08	2016+25	SITE 2 - C.L. HWY. 70 - LT.	817	454	272	3.43
2005+97	2016+20	SITE 2 - C.L. HWY. 70 - RT.	1023	501	341	4.30
TOTALS:				2040	1339	16.88

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

BASE AND SURFACING - SHOULDER RECONSTRUCTION

STATION	STATION	LOCATION	LENGTH	TRENCHING AND SHOULDER PREPARATION	
				AVG. WID.	STA.
			FEET	FEET	
1989+00.00	1996+00.00	SITE 2 - HWY. 70 - LT.	700.00	9.41	7.00
2011+50.00	2016+25.00	SITE 2 - HWY. 70 - LT.	475.00	7.07	4.75
2011+00.00	2016+25.00	SITE 2 - HWY. 70 - RT.	525.00	5.66	5.25
TOTALS:					17.00

BENCH MARKS

LOCATION	BENCH MARKS
	EACH
SITE 1 C.L. HWY. 70	2
SITE 2 C.L. HWY. 70	2
SITE 3 C.L. HWY. 278	2
TOTAL:	6

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

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT (0.05 GAL. PER SQ. YD.)			TACK COAT (0.17 GAL. PER SQ. YD.)			TACK COAT	ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")					ACHM SURFACE COURSE (1/2")										
				TON / STATION	TON	TOTAL WID	SQ.YD.	GALLON	TOTAL WID	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 70-22	AVG. WID	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	AVG. WID	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	TOTAL PG 64-22	TOTAL PG 76-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	TON	FEET			TON	TON	FEET			TON	TON	TON	TON
MAIN LANES																																
SITE 1 - HWY. 70 SALINE RIVER																																
983+78.45	984+78.45	SITE 1 C.L. HWY. 70 TRANSITION	100.00						32.00	355.56	60.45	60.45										31.00	344.44	220.00	37.89						37.89	
984+78.45	993+00.00	SITE 1 C.L. HWY. 70 NOTCH & WIDEN SECTION (OVERLAY)	821.55																											40.00	3651.33	220.00	401.65		401.65	
984+78.45	993+00.00	SITE 1 C.L. HWY. 70 NOTCH & WIDEN SECTION (NOTCH LT.)	821.55	137.00	1125.52	17.45	1592.89	79.64				79.64	8.81	804.21	660.00	265.39						8.64	788.69	220.00	86.76						86.76	
984+78.45	987+40.00	SITE 1 C.L. HWY. 70 NOTCH & WIDEN SECTION (SHLDR. RT.)	261.55	51.50	134.70																											
993+00.00	999+81.39	SITE 1 C.L. HWY. 70 FULL DEPTH	681.39	300.75	2049.28	48.71	3687.83	184.39				184.39	24.58	1860.95	660.00	614.11						24.25	1835.97	220.00	201.96		40.00	3028.40	220.00	333.12		535.08	
1005+21.61	1012+00.00	SITE 1 C.L. HWY. 70 FULL DEPTH	678.39	300.75	2040.26	48.71	3671.60	183.58				183.58	24.58	1852.76	660.00	611.41						24.25	1827.88	220.00	201.07		40.00	3015.07	220.00	331.66		532.73	
1012+00.00	1019+86.36	SITE 1 C.L. HWY. 70 NOTCH & WIDEN SECTION (OVERLAY)	786.36																											40.00	3494.93	220.00	384.44		384.44	
1012+00.00	1019+86.36	SITE 1 C.L. HWY. 70 NOTCH & WIDEN SECTION (NOTCH LT.)	786.36	142.00	1116.63	20.10	1756.20	87.81				87.81	10.13	885.09	660.00	292.08						9.97	871.11	220.00	95.82							
1018+20.00	1019+86.36	SITE 1 C.L. HWY. 70 NOTCH & WIDEN SECTION (SHLDR. RT.)	166.36	43.25	71.95																											
1019+86.36	1020+86.36	SITE 1 C.L. HWY. 70 TRANSITION	100.00						38.43	427.00	72.59	72.59										31.00	344.44	220.00	37.89						37.89	
SITE 2 - HWY. 70 CADDO RIVER																																
1988+00.00	1989+00.00	SITE 2 C.L. HWY. 70 TRANSITION	100.00						40.87	454.11	77.20	77.20															40.87	454.11	220.00		49.95		49.95
1989+00.00	1993+60.00	SITE 2 HWY. 70 O.L. LT.	460.00																								25.95	1326.33	220.00		145.90		145.90
1989+00.00	1993+60.00	SITE 2 HWY. 70 FULL DEPTH RT	460.00	48.81	224.53	30.15	1541.00	77.05				77.05	10.05	513.67	495.00			10.05	330.00		1.66	10.05	513.67	220.00		56.50	10.05	513.67	220.00		56.50		113.00
1993+60.00	1999+55.83	SITE 2 HWY. 70 FULL DEPTH SUPER/TANGENT	595.83	159.50	950.35	108.00	7149.96	357.50				357.50	36.00	2383.32	495.00		36.00	2383.32	330.00		393.25	36.00	2383.32	220.00		262.17	36.00	2383.32	220.00		262.17		524.34
2006+34.17	2011+00.00	SITE 2 HWY. 70 FULL DEPTH SUPER/TANGENT	465.83	159.50	743.00	108.00	5589.96	279.50				279.50	36.00	1863.32	495.00		36.00	1863.32	330.00		307.45	36.00	1863.32	220.00		204.97	36.00	1863.32	220.00		204.97		409.94
2011+00.00	2016+25.00	SITE 2 HWY. 70 O.L. LT.	525.00																								33.14	1933.17	220.00		212.65		212.65
2011+00.00	2016+25.00	SITE 2 HWY. 70 FULL DEPTH RT	525.00	20.84	109.41	8.58	500.50	25.03				25.03	2.86	166.83	495.00			2.86	330.00		0.47	2.86	166.83	220.00		18.35	2.86	166.83	220.00		18.35		36.70
2016+25.00	2017+25.00	SITE 2 C.L. HWY. 70 TRANSITION	100.00																								40.87	454.11	220.00		49.95		49.95
16+60.00	17+60.00	SITE 2 HWY. 8 E. TRANSITION	100.00						31.43	349.22	59.37	59.37															31.43	349.22	220.00		38.41		38.41
17+60.00	18+96.00	SITE 2 HWY. 8 E. NOTCH & WIDEN OPEN SHOULDER (NOTCH)	136.00	218.54	297.21	31.21	471.62	23.58				23.58	10.68	161.39	495.00		10.37	156.70	330.00		25.86	10.16	153.53	220.00		16.89	9.91	149.75	220.00		16.47		33.36
17+60.00	18+96.00	SITE 2 HWY. 8 E. NOTCH & WIDEN OPEN SHOULDER (OVERLAY)	136.00																					220.00									37.18
18+96.00	19+82.00	SITE 2 HWY. 8 E. NOTCH & WIDEN INTERSECTION (NOTCH)	86.00	355.68	305.88	259.38	2478.52	123.93				123.93	86.46	826.17	495.00		86.46	826.17	330.00		136.32	86.46	826.17	220.00		90.88	86.46	826.17	220.00		90.88		181.76
18+96.00	19+82.00	SITE 2 HWY. 8 E. NOTCH & WIDEN INTERSECTION (OVERLAY)	86.00																					220.00			25.94	247.87	220.00		27.27		27.27
25+18.00	25+50.00	SITE 2 HWY. 8 W./70B FULL DEPTH INTERSECTION	32.00	596.99	191.04	389.16	1383.68	69.18				69.18	129.86	461.72	495.00		129.70	461.16	330.00		76.09	129.60	460.80	220.00		50.69	129.47	460.34	220.00		50.64		101.33
25+50.00	26+00.00	SITE 2 HWY. 8 W./70B FULL DEPTH OPEN SHOULDER	50.00	399.68	199.84	170.95	949.72	47.49				47.49	57.26	318.11	495.00		56.95	316.39	330.00		52.20	56.74	315.22	220.00		34.67	56.49	313.83	220.00		34.52		69.19
26+00.00	26+50.00	SITE 2 HWY. 8 W./70B O.L.	50.00																								45.61	253.39	220.00		27.87		27.87
26+50.00	27+50.00	SITE 2 HWY. 8 W./70B TRANSITION	100.00						42.13	468.11	79.58	79.58															42.13	468.11	220.00		51.49		51.49
SITE 3 - HWY. 278 SALINE RIVER																																
2983+22.00	2984+22.00	SITE 3 C.L. HWY. 278 TRANSITION	100.00						29.80	331.11	56.29	56.29										29.80	331.11	220.00	36.42						36.42	
2984+22.00	2990+00.00	SITE 3 C.L. HWY. 278 NOTCH & WIDEN SECTION (OVERLAY)	578.00																											26.00	1669.78	220.00	183.68		183.68	
2984+22.00	2990+00.00	SITE 3 C.L. HWY. 278 NOTCH & WIDEN SECTION (NOTCH RT.)	578.00	85.35	493.32	12.46	800.21	40.01				26.59	6.23	400.10	330.00	66.02		6.13	393.68	220.00	43.30										43.30		
2984+22.00	2990+00.00	SITE 3 C.L. HWY. 278 NOTCH & WIDEN SECTION (SHLDR. LT.)	578.00	69.25	400.27																											
2990+00.00	2997+49.40	SITE 3 C.L. HWY. 278 FULL DEPTH	749.40	224.00	1678.66	44.71	3722.85	186.14				186.14	22.46	1870.17	330.00	308.58		22.25	1852.68	220.00	203.79	26.00	2164.93	220.00	238.14						441.93	
3002+04.60	3008+70.00	SITE 3 C.L. HWY. 278 FULL DEPTH	665.40	224.00	1490.50	44.71	3305.56	165.28				165.28	22.46	1660.54	330.00	273.99		22.25	1645.02	220.00	180.95	26.00	1922.27	220.00	211.45						392.40	
3008+70.00	3013+00.00	SITE 3 C.L. HWY. 278 NOTCH & WIDEN SECTION (OVERLAY)	430.00																			26.00	1242.22	220.00	136.64						136.64	
3008+70.00	3013+00.00	SITE 3 C.L. HWY. 278 NOTCH & WIDEN SECTION (NOTCH RT.)	430.00	85.35	367.01	12.46	595.31	29.77				19.78	6.23	297.66	330.00	49.11		6.13	292.88	220.00	32.22										32.22		
3008+70.00	3013+00.00	SITE 3 C.L. HWY. 278 NOTCH & WIDEN SECTION (SHLDR. LT.)	430.00	69.25	297.78																											
3013+00.00	3015+00.00	SITE 3 C.L. HWY. 70 TRANSITION	200.00						38.43	854.00	145.18	145.18										38.43	854.00	220.00	93.94						93.94	
ADDITIONAL FOR LEVELING																																
984+78.45	993+00.00	SITE 1 C.L. HWY. 70	821.55						22.92	2092.21	355.68	355.68										22.92	2092.21	704.00	736.46						736.46	
1012+00.00	1019+86.36	SITE 1 C.L. HWY. 70	786.36						21.80	1904.74	323.81	323.81										21.80	1904.74	238.00	226.66						226.66	
1989+00.00	1993+60.00	SITE 2 HWY. 70 O.L. LT. - LEVELING	460.00						25.95	1326.33	225.48	225.48										25.95	1326.33	586.00	388.61						388.61	
2011+00.00	2016+25.00	SITE 2 HWY. 70 O.L. LT. - LEVELING	525.00						33.14	1933.17	328.64	328.64										33.14	1933.17	1177.33	1137.99						1137.99	
17+60.00	18+96.00	SITE 2 HWY. 8 E. NOTCH & WIDEN OPEN SHOULDER (OVERLAY)	136.00						22.37	338.04	57.47	57.47										22.37	338.04	784.43	132.58						132.58	
18+96.00	19+82.00	SITE 2 HWY. 8 E. NOTCH & WIDEN INTERSECTION (OVERLAY)	86.00						25.94	247.87	42.14	42.14										25.94	247.87	836.58	103.68						103.68	
26+00.00	26+50.00	SITE 2 HWY. 8 W./70B O.L.	50.00						45.61	253.39	43.08	43.08										45.61	253.39	990.00	125.43						125.43	
2984+22.00	2990+00.00	SITE 3 C.L. HWY. 278	578.00						15.24	978.75	166.39	166.39										15.24	978.75	1100.00	538.31						538.31	
3008+70.00	3013+00.00	SITE 3 C.L. HWY. 278	430.00						15.09	720.97	122.56	122.56										15.09	720.97	235.40	84.86						84.86	
ADDITIONAL FOR MOT																																
990+00.00	995+00.00	SITE 1 C.L. HWY. 70 MOT TEMP. OVERLAY	500.00						17.00	944.44	160.55	160.55															17.00	944.44	834.00	393.83		393.83	
1011+00.00	1016+00.00	SITE 1 C.L. HWY. 70 MOT TEMP. OVERLAY	500.00						13.00	722.22	122.78	122.78															13.00	722.22	303.00	109.42		109.42	
1989+00.00	1997+00.00	SITE 2 HWY. 70 ADDT'L WIDEN FOR MOT (RT)	800.00	49.00	392.00	6.76	600.89	30.04				30.04	6.76	600.89	330.00	99.15		6.49	576.89	220.00	63.46											
1998+07.00	1999+92.33	SITE 2 HWY. 70 ADDT'L WIDEN FOR MOT (RT)	185.33	49.00	90.81	6.83	140.64	7.03				7.03	6.83	140.64	330.00	23.21		6.56	135.08	220.00	14.86											
2005+97.67	2016+25.00	SITE 2 HWY. 70 ADDT'L WIDEN FOR MOT (RT)	1027.33	49.00	503.39	8.28	945.14	47.26				47.26	8.28	945.14	330.00	155.95		8.01	914.32	220.00	100.58											
																		7.27														
ADDITIONAL FOR GUARDRAIL WIDENING																																
997+40.76	999+81.39	SITE 1 C.L. OF HWY. 70 RT.	240.63	38.00	91.44																					4.20	112.29	220.00	12.35		12.35	
998+15.76	999+81.39	SITE 1 C.L. OF HWY. 70 LT.	165.63	37.25	61.70																					4.10	75.45	220.00	8.30		8.30	
1005+21.61	1006+87.24	SITE 1 C.L. OF HWY. 70 RT.	165.63	37.25	61.70																					4.25	78.21	220.00	8.60		8.60	
1005+21.61	1007+62.24	SITE 1 C.L. OF HWY. 70 LT.	240.63	38.00	91.44																					4.00	106.95	220.00	11.76		11.76	
2995+13.74	2997+49.40	SITE 3 C.L. OF HWY. 278 RT.	235.66	55.25	130.20																					8.25	216.02	220.00	23.76		23.76	
2995+88.74	2997+49.40	SITE 3 C.L. OF HWY. 278 LT.	160.66	54.50	87.56																					8.00	142.81	220.00	15.71		15.71	
3002+04.60	3003+65.26	SITE 3 C.L. OF HWY. 278 RT.	160.66	54.25	87.16																					8.00	142.81	220.00	15.71		15.71	
3002+04.60	3004+40.26	SITE 3 C.L. OF HWY. 278 LT.	235.66	55.75	131.38																					8.50	222.57	220.00	24.48		24.48	
TOTALS:					**16015.92**		**######**	**2044.21**		**14701.24**	**2499.24**	**4520.04**		**6694.53**				**17338.12**		**2759.00**	**993.30**		**29486.52**		**4905.49**	**735.12**		**35454.28**		**2844.70**	**1375.17**	**7475.47**	**2110.29**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% 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 = 115 FOR PG 64-22
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.

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.		030501	63	178
				(2)	QUANTITIES			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
BYRON O. LAWRENCE
No.13640
8-13-2020

Leonard,Speed 8/3/2020 08:45 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_08B_0YT_000.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.		030501	64	178

(1) 07440, 07441, & 07442 - QUANTITIES - 60641

SCHEDULE OF BRIDGE QUANTITIES - JOB 030501

BRIDGE NUMBER	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NUMBER	205	801	801	SS & 802	SP, SS, & 802	SS & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 805	806	806	SP, SS, & 807	SP, SS, & 807	SS & 807	SS & 808	SS & 809	SS & 809	812
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE (3) NO. _)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	COFFERDAM	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	SEAL CONCRETE-BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP 12X53) (1)	STEEL PILING (HP 14X73) (1)	PREBORING	METAL BRIDGE RAILING (TYPE H)	TRANSITIONAL APPROACH RAILING	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)	PAINTING STRUCTURAL STEEL (2)	ELASTOMERIC BEARINGS	ARMORED JOINT WITH NEOPRENE STRIP SEAL	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)
			UNIT	LUMP SUM	CU. YD.	EACH	CU. YD.	CU. YD.	CU. YD.	GAL.	POUND	POUND	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	POUND	POUND	TON	CU. IN.	LIN. FT.	LIN. FT.	EACH
07440	HIGHWAY 70 OVER SALINE RIVER	END BENT NO. 1					35.72			0.3	3,901			300					1,184		3,740	42		
		INTERMEDIATE BENT NO. 2			616	2	148.79		192.00		27,712			504					226		4,622			
		INTERMEDIATE BENT NO. 3			640	2	147.39		168.00		27,244			576					226		4,622			
		INTERMEDIATE BENT NO. 4			391	2	133.89		72.00		22,788			828					226		4,622			
		INTERMEDIATE BENT NO. 5			387	2	131.09		72.00		21,854			900					164		4,622			
		END BENT NO. 6			7		35.72			0.3	3,901			350					1,323		4,787	42		
		465'-0" CONT. COMP. PLATE GIRDER UNIT						610.20		48.7		176,670							511,631	5.9				1
		EXIST. BRIDGE NO. 02082 (SITE NO. 1)		1																				
		TOTAL FOR BRIDGE NO. 07440			2,041	8	632.60	610.20	504.00	49.3	107,400	176,670	-	3,458	-	-	-	-	514,980	5.9	27,015	84	-	1
07441	HIGHWAY 70 OVER CADDO RIVER	END BENT NO. 1			62		83.72			0.4	8,258		432		432	23	2		10,083		5,742			
		INTERMEDIATE BENT NO. 2					81.79				20,847								295		6,699			
		INTERMEDIATE BENT NO. 3					90.02				22,705								295		6,699			
		INTERMEDIATE BENT NO. 4					90.50				22,792								295		6,699			
		INTERMEDIATE BENT NO. 5					84.85				21,420								295		6,699			
		END BENT NO. 6			76		83.72			0.4	8,258		276		276	23	2		10,083		5,742			
		600'-0" CONT. COMP. PLATE GIRDER UNIT						1,184.70		77.3		313,530				1,200			1,069,574	12.7				1
		EXIST. BRIDGE NO. 03089 (SITE NO. 2)		1																				
		TOTAL FOR BRIDGE NO. 07441			138	-	514.60	1,184.70	-	78.1	104,280	313,530	708	-	708	1,246	4	-	1,090,920	12.7	38,280	-	-	1
07442	HIGHWAY 278 OVER SALINE RIVER	END BENT NO. 1			1		30.18			0.3	3,581		80		80			960			2,175		37	
		INTERMEDIATE BENT NO. 2					25.83				6,583							617			3,806			
		INTERMEDIATE BENT NO. 3					26.65				6,852							246			3,806			
		INTERMEDIATE BENT NO. 4					27.49				7,131							246			3,806			
		INTERMEDIATE BENT NO. 5					27.27				7,062							617			3,806			
		END BENT NO. 6			2		30.18			0.3	3,581		100		100			960			2,175		37	
		380'-0" CONT. COMP. W-BEAM UNIT						423.80		34.7		103,190						367,834		4.2				1
		EXIST. BRIDGE NO. 03602 (SITE NO. 3)		1																				
		TOTAL FOR BRIDGE NO. 07442			3	-	167.60	423.80	-	35.3	34,790	103,190	180	-	180	-	-	371,480	-	4.2	19,574	-	74	1
		TOTALS FOR JOB NO. 030501			2,182	8	1,314.80	2,218.70	504.00	162.7	246,470	593,390	888	3,458	888	1,246	4	371,480	1,605,900	22.8	84,869	84	74	3

BRIDGE NUMBER	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NUMBER	816	816	SP JOB 030501	SP JOB 030501	SP JOB 030501	SP JOB 030501	SP JOB 030501	SP JOB 030501	SP JOB 030501
			ITEM	FILTER BLANKET	DUMPED RIPRAP	CORING DRILLED SHAFT	DRILLED SHAFT (54" DIA.)	DRILLED SHAFT (72" DIA.)	PERMANENT STEEL CASING (66" DIA.)	PERMANENT STEEL CASING (84" DIA.)	CROSSHOLE SONIC LOGGING (54" DIA.)	CROSSHOLE SONIC LOGGING (72" DIA.)
			UNIT	SQ. YD.	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH
07440	HIGHWAY 70 OVER SALINE RIVER	END BENT NO. 1		391	211							
		INTERMEDIATE BENT NO. 2										
		INTERMEDIATE BENT NO. 3										
		INTERMEDIATE BENT NO. 4										
		INTERMEDIATE BENT NO. 5										
		END BENT NO. 6		370	204							
		465'-0" CONT. COMP. PLATE GIRDER UNIT										
		EXIST. BRIDGE NO. 02082 (SITE NO. 1)										
		TOTAL FOR BRIDGE NO. 07440		761	415	-	-	-	-	-	-	-
07441	HIGHWAY 70 OVER CADDO RIVER	END BENT NO. 1		968	506							
		INTERMEDIATE BENT NO. 2				40		120		66		3
		INTERMEDIATE BENT NO. 3				33		99		45		3
		INTERMEDIATE BENT NO. 4				33		99		45		3
		INTERMEDIATE BENT NO. 5				25		75		21		3
		END BENT NO. 6		890	467							
		600'-0" CONT. COMP. PLATE GIRDER UNIT										
		EXIST. BRIDGE NO. 03089 (SITE NO. 2)										
		TOTAL FOR BRIDGE NO. 07441		1,858	973	131	-	393	-	177	-	12
07442	HIGHWAY 278 OVER SALINE RIVER	END BENT NO. 1		273	153							
		INTERMEDIATE BENT NO. 2				29	58		31		2	
		INTERMEDIATE BENT NO. 3				29	58		31		2	
		INTERMEDIATE BENT NO. 4				26	52		25		2	
		INTERMEDIATE BENT NO. 5				25	50		23		2	
		END BENT NO. 6		296	165							
		380'-0" CONT. COMP. W-BEAM UNIT										
		EXIST. BRIDGE NO. 03602 (SITE NO. 3)										
		TOTAL FOR BRIDGE NO. 07442		569	318	109	218	-	110	-	8	-
		TOTALS FOR JOB NO. 030501		3,188	1,706	240	218	393	110	177	8	12

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

② All Grade 50W structural steel, except galvanized members, surfaces in contact with concrete, and the expansion device, near bridge deck expansion joints shall be painted as specified in Subsection 807.75. For exact distances from bridge deck expansion joints see Bridge Layouts. The color of paint shall be brown equal or close to Fed. Std. 595 B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

③ All material from the existing bridges shall become property of the Contractor except Existing Dumped Riprap which shall remain the property of the State. The Contractor shall coordinate with the District Engineer regarding the preferred on-site stockpile location. This work shall be considered incidental to the item "Removal of Existing Bridge Structure (Site No. _)".

2020.08.13 15:32:16-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SCHEDULE OF BRIDGE QUANTITIES
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
SEVIER, HOWARD, AND PIKE COUNTIES
ROUTE 70 SECTIONS 2, 3, AND 5
ROUTE 278 SECTIONS 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	04/2019	FILENAME:	B03050IXX_0XI.dgn
CHECKED BY:	SFH	DATE:	05/2019		
DESIGNED BY:	--	DATE:	--	SCALE:	None
BRIDGE NO.	07440, 07441, & 07442	DRAWING NO.	60641		

Leonard.Speed 8/13/2020 11:8:48 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16631_030501_Caddo & Saline River Bridges\Design\BRIDGE\Drawings\B03050IXX_0XI.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
08-25-2020				6	ARK.			
09-08-2020				JOB NO.		030501	65	178
				(2)	SUMMARY OF QUANTITIES AND REVISIONS			

SUMMARY OF QUANTITIES BOX (1 OF 2)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	201	CLEARING		93	STATION
	201	GRUBBING		93	STATION
	202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		275	LIN. FT.
	202	REMOVAL AND DISPOSAL OF FENCE		1878	LIN. FT.
	202	REMOVAL AND DISPOSAL OF RETAINING WALLS		86	LIN. FT.
	202	REMOVAL AND DISPOSAL OF ROCK WALLS		24	LIN. FT.
	202	REMOVAL AND DISPOSAL OF COLUMNS		2	EACH
	202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		1263	SQ. YD.
	202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		13	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		14	EACH
	202	REMOVAL AND DISPOSAL OF GUARDRAIL		866	LIN. FT.
	202	REMOVAL AND DISPOSAL OF BUILDINGS		2	EACH
	202	REMOVAL AND DISPOSAL OF SIGNS		4	EACH
	202	REMOVAL AND DISPOSAL OF CANOPY		1	EACH
	202	REMOVAL AND DISPOSAL OF WATER SPIGOT		1	EACH
	206	FLOWABLE SELECT MATERIAL		60	CU. YD.
	SS & 210	UNCLASSIFIED EXCAVATION		15265	CU. YD.
	SP & 210	COMPACTED EMBANKMENT		79325	CU. YD.
	SP	REMOVING AND REPLACING TOPSOIL		8400	CU. YD.
	SP & 210	SOIL STABILIZATION		600	TON
	SP & 215	TRENCHING AND SHOULDER PREPARATION		17	STATION
	SS & 303	AGGREGATE BASE COURSE (CLASS 7)		17822	TON
	309	PORTLAND CEMENT CONCRETE BASE (9 1/2" UNIFORM THICKNESS)		57	SQ. YD.
	SS & 401	TACK COAT		4594	GAL.
	SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		1591	TON
	SP, SS, & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")		66	TON
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		3587	TON
	SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		121	TON
	SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")		44	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		10865	TON
	SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		404	TON
	SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		82	TON
	SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		110	TON
	412	COLD MILLING ASPHALT PAVEMENT		3646	SQ. YD.
	SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		37	TON
	SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		37	TON
	504	APPROACH SLABS		336.98	CU. YD.
	504	APPROACH GUTTERS		105.40	CU. YD.
	SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		2131.44	SQ. YD.
	601	MOBILIZATION		1.00	LUMP SUM
	602	FURNISHING FIELD LABORATORY		1	EACH
	SP & 602	FURNISHING FIELD OFFICE		3	EACH
	SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	SS & 604	SIGNS		545	SQ. FT.
	SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE		4	EACH
	SS & 604	BARRICADES		112	LIN. FT.
	SS & 604	TRAFFIC DRUMS		210	EACH
	SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		1059	LIN. FT.
	SS & 604	RELOCATING PRECAST CONCRETE BARRIER		53	LIN. FT.
	604	CONSTRUCTION PAVEMENT MARKINGS		40883	LIN. FT.
	604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		4732	LIN. FT.
	604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		9680	LIN. FT.
	SS & 604	VERTICAL PANELS		78	EACH
	SS & 605	CONCRETE DITCH PAVING (TYPE B)		1480	SQ. YD.
	SP	CULVERT CLEAN OUT		6	EACH
	606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		42	LIN. FT.
*	606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	535	LIN. FT.
*	606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	535	LIN. FT.
	606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		44	LIN. FT.
	606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		39	LIN. FT.
	606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		317	LIN. FT.
	SS & 606	12" SIDE DRAIN		50	LIN. FT.
	SP, SS, & 606	18" SIDE DRAIN		96	LIN. FT.
	SP, SS, & 606	24" SIDE DRAIN		288	LIN. FT.
	SP, SS, & 606	30" SIDE DRAIN		304	LIN. FT.
	SP, SS, & 606	36" SIDE DRAIN		106	LIN. FT.
	606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	EACH
	606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		3	EACH
	606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
	606	54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
	606	SELECTED PIPE BEDDING		160	CU. YD.
	SS & 609	DROP INLETS (TYPE MO)		9	EACH
	SS & 609	DROP INLETS (TYPE SPECIAL)		8	EACH
	SS & 609	JUNCTION BOXES (TYPE E)		1	EACH
	SS & 609	YARD DRAINS		1	EACH
	SS & 611	UNDERDRAIN OUTLET PROTECTORS		16	EACH
	SS & 611	4" PIPE UNDERDRAINS		4000	LIN. FT.
	615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		61	TON
	SS & 617	GUARDRAIL (TYPE A)		900	LIN. FT.
	SS & 617	GUARDRAIL TERMINAL (TYPE 2)		8	EACH
	SS & 617	THRIE BEAM GUARDRAIL TERMINAL		8	EACH
	619	WIRE FENCE (TYPE D-1)		2142	LIN. FT.
	620	LIME		29	TON
	620	SEEDING		14.32	ACRE
	SS & 620	MULCH COVER		62.37	ACRE
	620	WATER		2469.1	M. GAL.
	621	TEMPORARY SEEDING		48.05	ACRE

*** DENOTES ALTERNATE BID ITEMS.**

SUMMARY OF QUANTITIES BOX (2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
621	SILT FENCE	10667	LIN. FT.
621	SAND BAG DITCH CHECKS	1122	BAG
621	SEDIMENT BASIN	3740	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	3740	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	4297	CU. YD.
621	ROCK DITCH CHECKS	330	CU. YD.
SS & 621	FILTER SOCK (18")	4430	LIN. FT.
623	SECOND SEEDING APPLICATION	15.92	ACRE
624	SOLID SODDING	2246	SQ. YD.
SS & 632	CONCRETE ISLAND	77	SQ. YD.
SS & 633	CONCRETE WALKS	2040	SQ. YD.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	3893	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	10	EACH
637	MAILBOX SUPPORTS (SINGLE)	10	EACH
641	WHEELCHAIR RAMPS (TYPE 3)	21	SQ. YD.
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	6482	LIN. FT.
SP & 642	RUMBLE STRIPES IN ASPHALT SHOULDERS	5590	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	6356	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	167	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	6356	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	10341	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	604	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")	56	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	20202	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	6	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	6	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	303	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	5	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	5	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	44	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	105.44	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	61626	POUND
816	FILTER BLANKET	20	SQ. YD.
816	DUMPED RIPRAP	10	CU. YD.
	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
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	2182	CU. YD.
801	COFFERDAM	8	EACH
SS & 802	CLASS S CONCRETE-BRIDGE	1314.80	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	2218.70	CU. YD.
SS & 802	SEAL CONCRETE-BRIDGE	504.00	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	162.7	GAL.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	246470	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	593390	POUND
SS & 805	STEEL PILING (HP 12X53)	888	LIN. FT.
SS & 805	STEEL PILING (HP 14X73)	3458	LIN. FT.
SP	CORING DRILLED SHAFT	240	LIN. FT.
SP	DRILLED SHAFT (54" DIAMETER)	218	LIN. FT.
SP	DRILLED SHAFT (72" DIAMETER)	393	LIN. FT.
SP	PERMANENT STEEL CASING (66" DIAMETER)	110	LIN. FT.
SP	PERMANENT STEEL CASING (84" DIAMETER)	177	LIN. FT.
SS & 805	PREBORING	888	LIN. FT.
SP	CROSSHOLE SONIC LOGGING (54" DIAMETER)	8	EACH
SP	CROSSHOLE SONIC LOGGING (72" DIAMETER)	12	EACH
806	METAL BRIDGE RAILING (TYPE H)	1246	LIN. FT.
806	TRANSITIONAL APPROACH RAILING	4	EACH
SP, SS, & 807	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	371480	POUND
SP, SS, & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)	1605900	POUND
SS & 807	PAINTING STRUCTURAL STEEL	22.8	TON
SS & 808	ELASTOMERIC BEARINGS	84869	CU. IN.
SS & 809	ARMORED JOINT WITH NEOPRENE STRIP SEAL	84	LIN. FT.
SS & 809	SILICONE JOINT SEALANT	74	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	3	EACH
816	FILTER BLANKET	3188	SQ. YD.
816	DUMPED RIPRAP	1706	CU. YD.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
9-8-2020

REVISIONS

DATE	REVISION	SHEET NUMBER
8/25/2020	ADJUSTED POINT OF SUPERELEVATION ROTATION LABEL ON SITE 2 HWY. 70 - SUPERELEVATED TYPICAL SECTION FROM 0.22' TO 0.36' BELOW PROFILE GRADE. ADDED THE 1' OFFSET LABEL ON SITE 3 - HWY. 278 NOTCH AND WIDENING TYPICAL SECTION. ADDED BRIDGE STANDARD DRAWINGS TO THE PLANS. FIXED CLIPPED NOTE FOR HWY. 70 CURVE DATA NOTE. REVISED 'REMOVAL AND SALVAGE' NOTE FOR EXISTING BRIDGE NO. 03602. REMOVAL AND DISPOSAL ITEMS ADDED TO R&D QUANTITIES AND SUMMARY OF QUANTITIES. DUMPED RIP RAP ADDED TO QUANTITIES.	5, 9, 61, 65, 69, & 125
9/8/2020	REVISED NOTE FOR EXISTING SANITARY SEWER LINE AT SITE 2.	65,104,112 & 118

ByronLawrence 9/8/2020 9:38:22 AM
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.		030501	66	178
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

HWY. 70 - SITE 1

SURVEY CONTROL COORDINATES

Project Name: s030413
Date: 7/24/2017
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL, 660025 - 660025A PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1839139.4599	679787.1176	377.831	CTL	STD AHTD MON. STAMPED PN:1
2	1839070.7371	680590.2201	377.816	CTL	STD AHTD MON. STAMPED PN:2
3	1839070.4140	681741.7281	379.002	CTL	STD AHTD MON. STAMPED PN:3
4	1839036.8647	682538.6811	378.332	CTL	STD AHTD MON. STAMPED PN:4
100	1839103.4513	678703.6583	378.254	GPS	ATHD GPS MON. 660025
101	1839125.9575	680967.5195	373.989	GPS	AHTD GPS MON. 660025A
999	1839097.5747	681162.4878	381.834	BM	USGS CAP "GAGING STATION"

*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 0.9999009755 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 s030413gi.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: 660025 - 660025A
CONVERGENCE ANGLE: 01 10 05 LEFT AT PN:2 LT:N 34-05-45.6 LG:W 094-05-13.8
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 70 - SITE 2

SURVEY CONTROL COORDINATES

Project Name: s030414
Date: 7/14/2017
Coordinate System: ARKANSAS STATE PLANE -SOUTH ZONE BASED ON GPS CONTROL, 550010 - 550010A PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1918633.7294	841102.8149	590.381	CTL	AHTD STD. MON. STAMPED PN:1
2	1918376.6658	842261.1847	573.130	CTL	AHTD STD. MON. STAMPED PN:2
3	1918157.5953	843143.8834	549.538	CTL	AHTD STD. MON. STAMPED PN:3
4	1917750.3251	843235.6475	579.250	CTL	AHTD STD. MON. STAMPED PN:4
5	1918319.3728	844102.8682	548.928	CTL	AHTD STD. MON. STAMPED PN:5
6	1918841.6635	844357.5167	552.034	CTL	AHTD STD. MON. STAMPED PN:6
7	1918287.2413	844813.2945	548.324	CTL	AHTD STD. MON. STAMPED PN:7
8	1918157.4925	845527.1996	545.772	CTL	AHTD STD. MON. STAMPED PN:8
100	1919076.5786	839800.2387	586.553	GPS	AHTD GPS #550010
101	1918423.2066	841664.7327	603.170	GPS	AHTD GPS #550010A
900	1918384.7386	841949.7852	587.007	TBM	CHIS. SQ. NW COR HW
901	1917874.5055	843198.0325	564.573	TBM	CHIS SQ.
902	1918227.3131	844381.4653	540.757	TBM	CHIS.SQ.SW COR CONOCO
999	1919328.9006	836077.2396	599.956	BM	USC & GS BM 1934

*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 0.999908281692 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 s030414gi.CTL.
HORIZONTAL DATUM: NAD 83 (2011)
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: 550010 - 550010A
CONVERGENCE ANGLE: 00 52 11.68 LEFT AT PN:3 LT:N 34-19-16.5445 LG:W 093-33-15.3755
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

Leonard.Speed 8/31/2020 11:8:52 PM
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.		030501	67	178
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
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BYRON O. LAWRENCE
8-13-2020

HWY. 278 - SITE 3

SURVEY CONTROL COORDINATES

Project Name: s030457
Date: 6/16/2017
Coordinate System: ARKANSAS STATE PLANE -SOUTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1878829.3061	692504.9359	645.26	CTL	AHTD STD. MON. STAMPED PN:1
2	1880156.1497	692490.0624	586.83	CTL	AHTD STD. MON. STAMPED PN:2
3	1880926.6603	692447.5144	591.33	CTL	AHTD STD. MON. STAMPED PN:3
4	1882127.7011	692460.1947	647.84	CTL	AHTD STD. MON. STAMPED PN:4
100	1881537.5064	692399.0480	625.16	GPS	FB2736 PG10
101	1879615.7946	692469.0979	589.49	GPS	AHTD GPS #310007A
900	1879703.2841	692500.8543	585.93	TBM	CHIS. SQ. S.END HW
901	1880768.5971	692451.5341	590.87	TBM	CHIS SQUARE

*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 0.99989824280 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 s030457GI.CTL
HORIZONTAL DATUM: NAD 83 (2011)
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: 310007 - 310007A
CONVERGENCE ANGLE: 01 08 52.05 LEFT AT LAT N 34-12-40.32 LON W094-03-02.74
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.		030501	68	178
				(2)	SURVEY CONTROL DETAILS			

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ALIGNMENT NAME: SITE 1
HWY. 70 OVER SALINE RIVER

POINT	STATION	TYPE	NORTHING	EASTING
8000	981+00.00	POB	1839141.4320	679271.6980
8001	984+78.45	PC	1839125.6294	679649.8167
8003	992+59.23	PRC	1839119.6185	680430.4287
8005	999+81.39	PT	1839115.9058	681152.4553
8006	1005+21.61	PC	1839096.1102	681692.3115
8008	1012+62.32	PRC	1839045.0721	682431.1279
8010	1019+86.36	PT	1838994.6567	683153.2928
8011	1023+00.00	POE	1838982.7080	683466.7064

ALIGMENT NAME: SITE 2
HWY. 70 OVER CADDO RIVER

POINT	STATION	TYPE	NORTHING	EASTING
8012	1980+81.00	POB	1918529.2823	841555.9782
8013	1985+49.61	PC	1918397.0124	842005.5279
8015	1988+60.44	PT	1918317.4048	842305.9561
8016	1994+12.02	PC	1918190.6366	842842.7677
8018	1997+13.33	PT	1918168.4116	843142.0061
8019	2010+83.97	PC	1918282.9052	844507.8568
8021	2014+08.80	PT	1918254.9934	844829.9166
8022	2016+48.96	PC	1918194.0570	845062.2222
8049	2018+63.18	PT	1918150.4433	845271.8523
8050	2018+69.00	POE	1918149.5522	845277.6040

ALIGMENT NAME: SITE 3
HWY. 278 OVER SALINE RIVER

POINT	STATION	TYPE	NORTHING	EASTING
8033	2973+31.66	POB	1882782.9323	691704.3338
8034	2975+82.53	PC	1882741.6655	691951.7853
8036	2984+20.75	PT	1882149.7650	692442.6409
8037	2986+47.25	PC	1881923.3216	692437.9170
8039	2988+39.35	PT	1881731.5412	692427.4765
8040	2993+10.63	PC	1881262.0786	692386.0975
8042	2995+02.81	PT	1881070.0868	692382.0974
8043	3001+98.06	PC	1880375.5799	692414.2421
8045	3008+45.63	PRC	1879729.8891	692462.4398
8047	3014+81.74	PT	1879095.6505	692510.1017
8048	3017+00.00	POE	1878877.6342	692520.4110

ALIGMENT NAME: SITE 2
HWY. 8W.

POINT	STATION	TYPE	NORTHING	EASTING
8023	15+57.48	PC	1917741.6389	843276.9402
8025	18+43.31	PT	1918016.4323	843204.5393
8027	20+00.00	POE	1918172.7278	843193.4959

ALIGMENT NAME: SITE 2
HWY. 8E.

POINT	STATION	TYPE	NORTHING	EASTING
8028	25+00.00	POB	1918254.2559	844166.0848
8029	27+39.63	PC	1918493.4277	844151.2818
8031	29+43.98	PT	1918684.8396	844209.4125
8032	31+22.86	POE	1918827.0812	844317.8821

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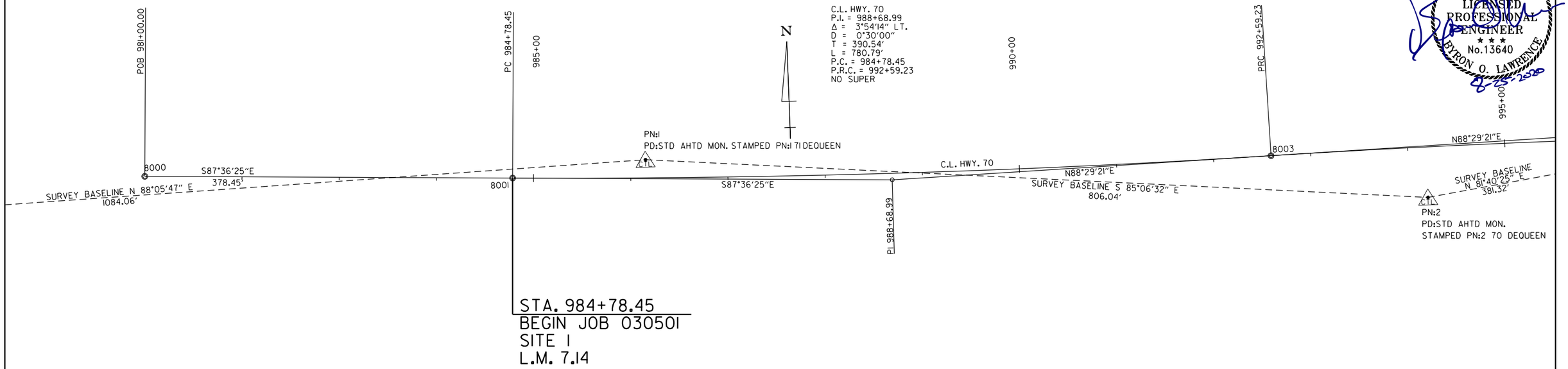
REVISED DATE: $$REVDATE$$

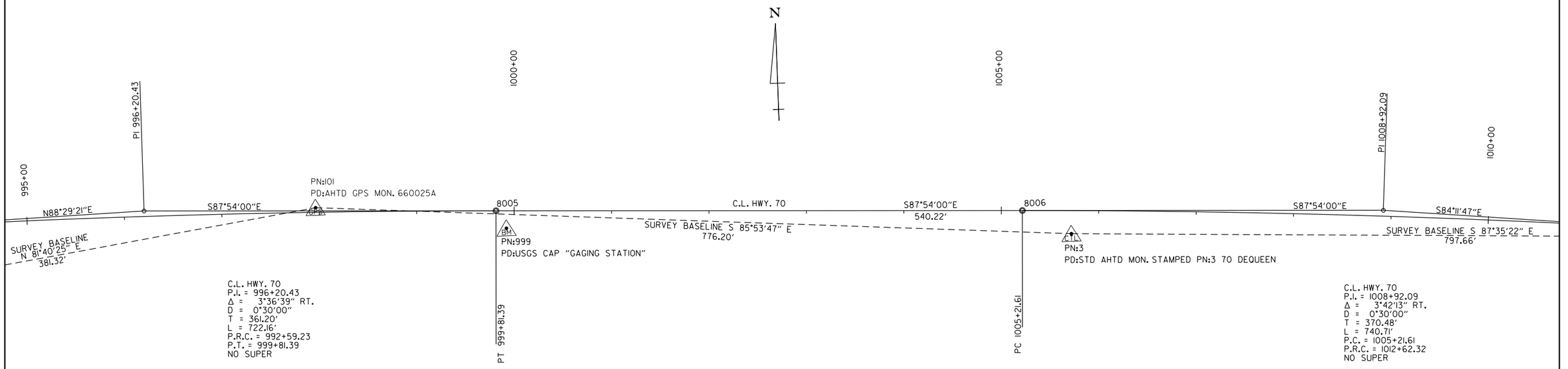
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
08-25-2020			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	69	178

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-25-2020





HWY. 70 - SITE 1
SURVEY CONTROL DETAILS

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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.		030501	70	178
				(2)	SURVEY CONTROL DETAILS			

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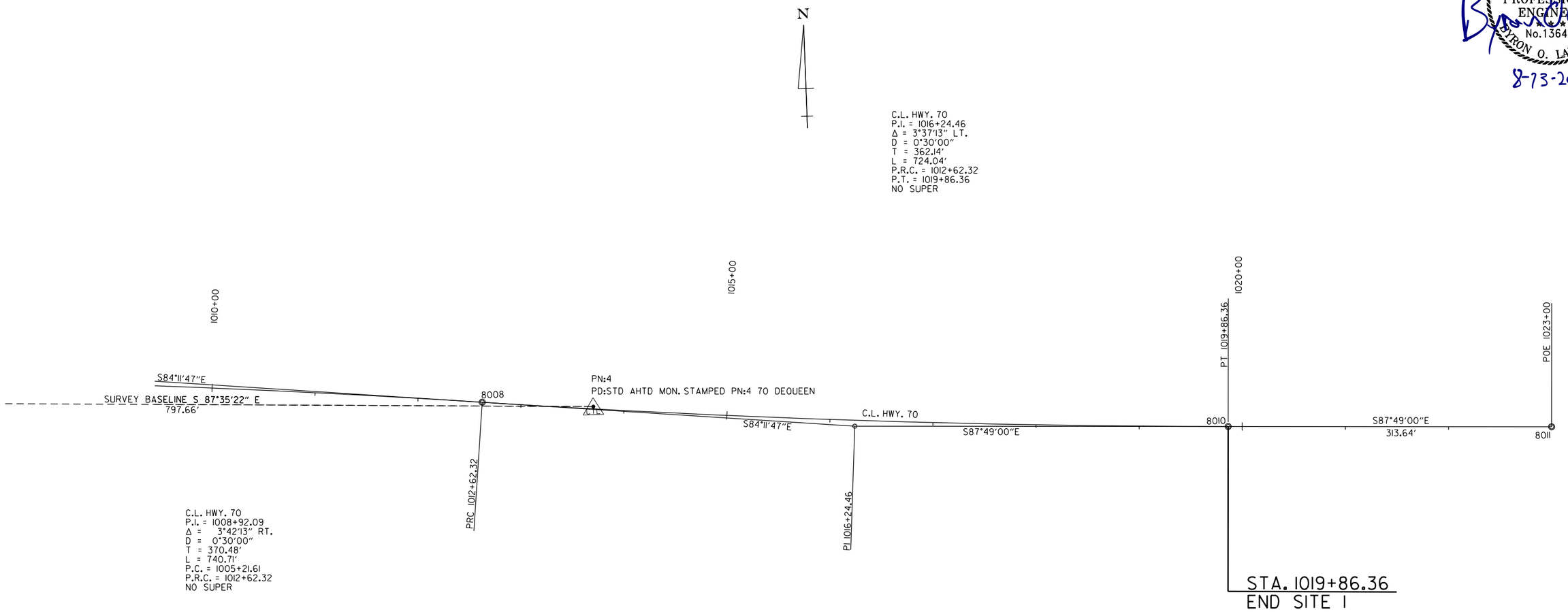
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020



HWY. 70 - SITE 1
SURVEY CONTROL DETAILS

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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.		030501	71	178
(2) SURVEY CONTROL DETAILS				

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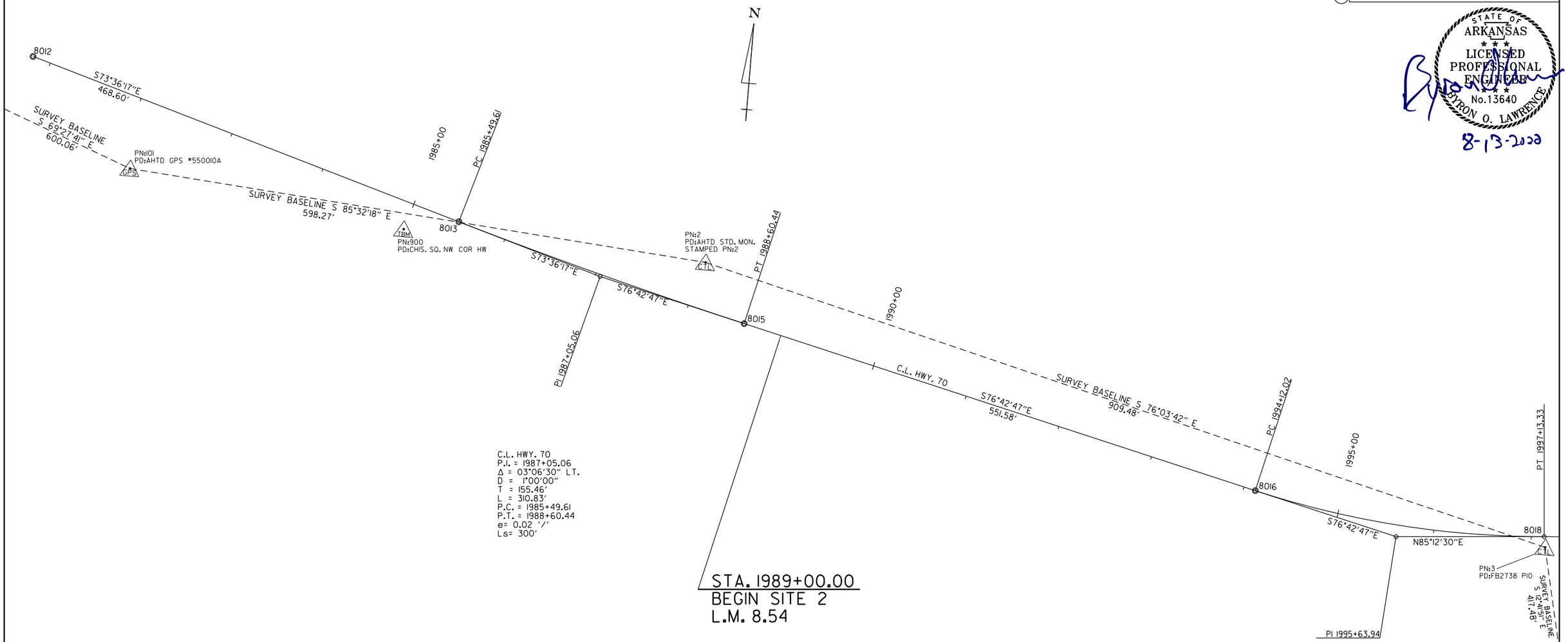

C.L. HWY. 70
P.I. = 1987+05.06
Δ = 03°06'30" LT.
D = 1°00'00"
T = 155.46'
L = 310.83'
P.C. = 1985+49.61
P.T. = 1988+60.44
e= 0.02 '/'
Ls= 300'

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

C.L. HWY. 70
P.I. = 1995+63.94
Δ = 18°04'43" LT.
D = 6°00'00"
T = 151.92'
L = 301.31'
P.C. = 1994+12.02
P.T. = 1997+13.33
e = 0.04 '/'
Ls = 360'

HWY. 70 - SITE 2
SURVEY CONTROL DETAILS

Leonard.Speed 8/3/2020 11:9:07 PM
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.	030501		72	178

(2) SURVEY CONTROL DETAILS

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N

C.L. HWY. 8
P.I. = 28+46.37
Δ = 40°52'11" RT.
D = 20°00'00"
T = 106.74'
L = 204.35'
P.C. = 27+39.63
P.T. = 29+43.98
NO SUPER

30+00

N37°19'41"E
178.88'

8031

PI 28+46.37

N37°19'41"E

PT 29+43.98

SURVEY BASELINE N 25°59'31" E
581.06'

SURVEY BASELINE S 39°25'22" E
111.72'

N03°32'30"W

8029

PC 27+39.63

C.L. HWY. 8 WEST/70B

C.L. HWY. 70 STA. 1997+65.00
C.L. HWY 8 EAST STA. 20+00.00
Δ = 89°15'00"

PT 1997+13.33

2000+00

2005+00

2010+00

PN:5
PD:AHTD STD. MON. STAMPED PN:5

PN:903
PD:3"BRASS COE CAP

NO3°32'30"W
239.63'

8018 51.67' 8027 C.L. HWY. 70 S85°12'30"W 976.00' 8028 S85°12'30"W 342.97' 8019 N85°12'30"E

N85°12'30"E

PN:3
PD:FB2738 PIO

SURVEY BASELINE S 12°41'51" E
417.48'

N04°02'30"W
156.69'

C.L. HWY. 8 EAST

8025

PT 18+43.31

C.L. HWY. 8 E.
P.I. = 17+02.09
Δ = 21°26'16" RT.
D = 7°30'00"
T = 144.61'
L = 285.84'
P.C. = 15+57.48
P.T. = 18+43.31
e = 0.082 '/'
Ls = 225'

PN:901
PD:CHIS SQ.

PI 17+02.09

N04°02'30"W

N25°28'49"W

PC 15+57.48

8023

PN:4
PD:AHTD STD. MON. STAMPED PN:4

C.L. HWY. 70 STA. 2007+41.00 =
C.L. HWY 8 WEST/70B STA. 25+00.00
Δ = 88°45'00"

SURVEY BASELINE N 56°43'41" E
1037.25'

PC 2010+83.97

C.L. HWY. 70
P.I. = 2012+47.97
Δ = 19°29'23" RT.
D = 6°00'00"
T = 164.00'
L = 324.83'
P.C. = 2010+83.97
P.T. = 2014+08.80
e = 0.040 '/'
Ls = 145'/150'

HWY. 70 - SITE 2
SURVEY CONTROL DETAILS

Leonard.Speed 8/13/2020 1:19:10 PM
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.		030501	73	178
(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
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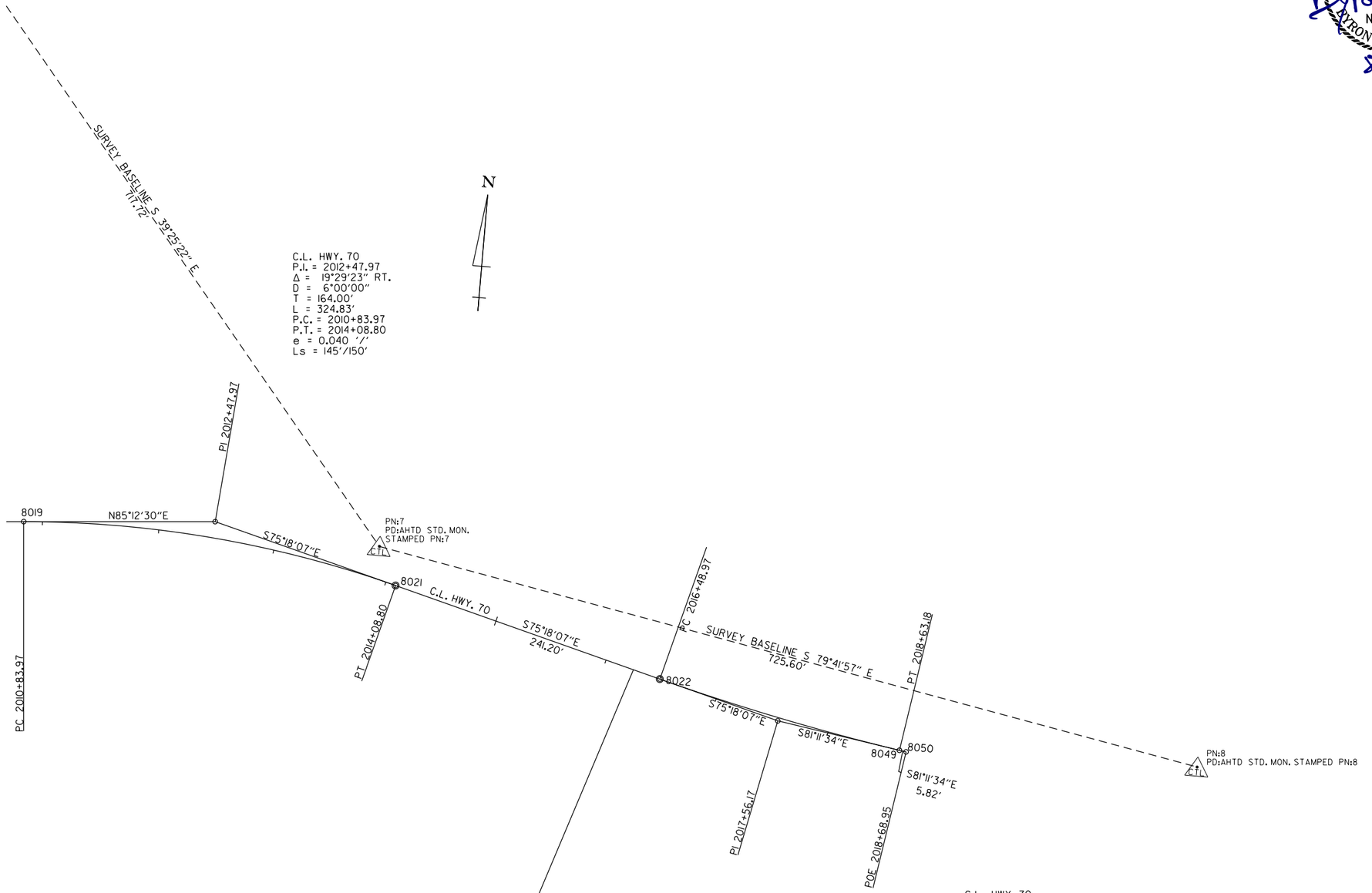
8-13-2020



HWY. 70 - SITE 2
SURVEY CONTROL DETAILS

Leonard.Speed 8/13/2020 11:31:12 PM
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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.		030501	74	178

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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BYRON O. LAWRENCE
8-13-2020

N

2985+00

PN:4
PD:AHTD STD. MON. STAMPED PN:4

S01°11'42"W

8036

S01°11'42"W
226.49'

8037

PI 2987+43.33

C.L. HWY. 278
P.I. = 2987+43.33
Δ = 3°50'31" RT.
D = 2°00'00"
T = 96.09'
L = 192.10'
P.C. = 2986+47.25
P.T. = 2988+39.35
e = 0.048 '/'
Ls = 300'

2990+00

S01°11'42"W
SURVEY BASELINE N 05°54'54" E
593.35'

S05°02'14"W

8039

S05°02'14"W
471.28'

PN:100
PD:FB2736 PGIO

C.L. HWY. 278
P.I. = 2994+06.86
Δ = 7°41'14" LT.
D = 4°00'00"
T = 96.23'
L = 192.18'
P.C. = 2993+10.63
P.T. = 2995+02.81
e = 0.083 '/'
Ls = 300'

PC 2993+10.63

2995+00

PT 2995+02.81

PN:3
PD:AHTD STD. MON. STAMPED PN:3

SURVEY BASELINE N 04°32'11" W
612.77'

C.L. HWY. 278

8040

S05°02'14"W

S02°39'00"E

8042

S02°39'00"E
695.25'

C.L. HWY. 278
P.I. = 2980+90.91
Δ = 81°43'38" RT.
D = 9°45'00"
T = 508.38'
L = 838.23'
P.C. = 2975+82.53
P.T. = 2984+20.75
NO SUPER

PT 2984+20.75

PC 2986+47.25

PT 2988+39.35

PT 2994+06.86

STA. 2984+22.00
BEGIN SITE 3
L.M. 18.82

N

3000+00

PC 3001+98.06

3005+00

3005+00

C.L. HWY. 278
P.I. = 3005+21.93
Δ = 3°14'16" LT.
D = 0°30'00"
T = 323.87'
L = 647.57'
P.C. = 3001+98.06
P.R.C. = 3008+45.63
NO SUPER

PN:2
PD:AHTD STD. MON. STAMPED PN:2

SURVEY BASELINE N 03°09'38" W
771.68'

8043

S02°39'00"E
695.25'

C.L. HWY 278

S02°39'00"E

PI 3005+21.93

SURVEY BASELINE N 02°13'19" E
540.76'

S05°53'16"E

PRC 3008+45.63

3010+00

8045

PN:101
PD:AHTD GPS #310007A

S05°53'16"E

PI 3011+63.77

S02°42'26"E

SURVEY B

C.L. HWY. 278
P.I. = 3011+63.77
Δ = 3°10'50" RT.
D = 0°30'00"
T = 318.14'
L = 636.11'
P.R.C. = 3008+45.63
P.T. = 3014+81.74
NO SUPER

HWY. 278 - SITE 3
SURVEY CONTROL DETAILS

Leonard.Speed 8/13/2020 1:39:17 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

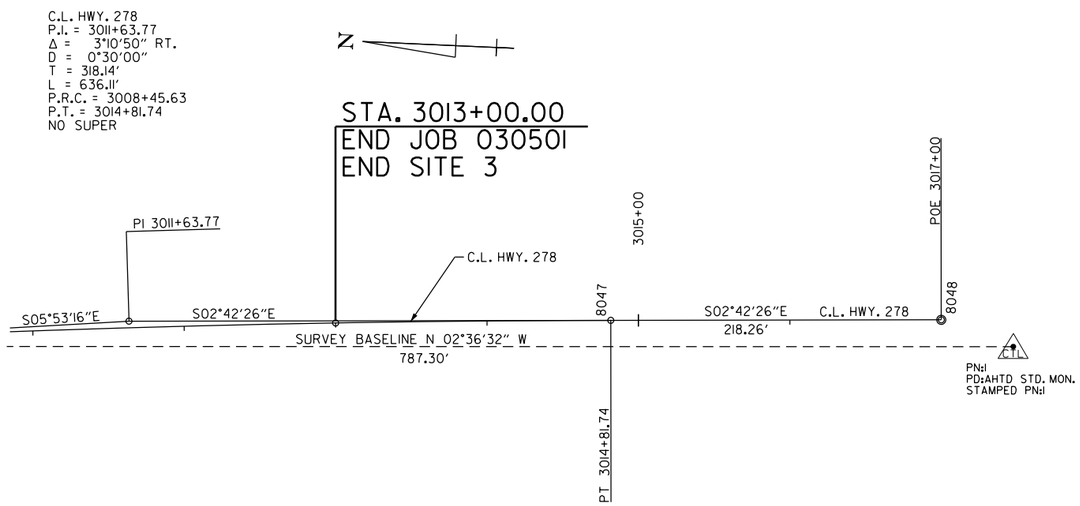
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	75	178
(2)	SURVEY CONTROL DETAILS			

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

8-13-2020

C.L. HWY. 278
P.I. = 3011+63.77
Δ = 3°10'50" RT.
D = 0°30'00"
T = 318.14'
L = 636.11'
P.R.C. = 3008+45.63
P.T. = 3014+81.74
NO SUPER



HWY. 278 - SITE 3
SURVEY CONTROL DETAILS

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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.		030501	76	178
(2)	PLAN AND PROFILE SHEETS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
9-13-2020

N

LEGEND

PAVEMENT TRANSITION

C.L. HWY. 70
P.I. = 988+68.99
Δ = 3°54'14" LT.
D = 0°30'00"
T = 390.54'
L = 780.79'
P.C. = 984+78.45
P.R.C. = 992+59.23
NO SUPER

STA. 990+59.00 IN PLACE
24" X 75' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWL. LT. AND RT. AND
EXTEND R.C. PIPE 26' LT. AND 2' RT.
3° LT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. AND RT.
Q50=19.00 CFS DA=35.17 ACRES
24" R.C. PIPE = 36 LIN. FT.
24" FES = 2 EACH

C.L. HWY. 70
P.I. = 996+20.43
Δ = 3°36'39" RT.
D = 0°30'00"
T = 361.20'
L = 722.16'
P.R.C. = 992+59.23
P.T. = 999+81.39
NO SUPER

REMOVAL AND DISPOSAL OF FENCE
STA. 990+22 TO STA. 995+00 LT. OF CL. = 478 LIN. FT.

FENCE (TYPE D-I)
STA. 990+22 TO STA. 995+00 LT. OF CL. = 478 LIN. FT.

POB 981+00.00
PC 984+78.45
985+00
990+00
PRC 992+59.23
+00 74.31'
995+00
EXIST. R/W
PROP. R/W
EXIST. R/W
CONST. LIMITS
6'
8'
22'
24'
C.L. HWY. 70
S87°36'25"E
N88°29'21"E
N88°29'21"E
+50
R =20'
R =20'
CRANK TO 20'
6'
8'
CONST. LIMITS
16'
+78.45
+78.45
PI 988+68.99
EXIST. R/W
100' TRANSITION TO MATCH EXIST.

STA. 984+78.45
BEGIN JOB 030501
SITE 1
L.M. 7.14

STA. 993+50.00
CONST. APPROACH ON RT. =
25 CU. YDS.

HWY. 70 - SITE 1

PVI 984+78.45
ELEV. 379.80
PVC 985+50.00
ELEV. 379.75
VC=100.00'
K=500
e=0.03'
PVT 986+50.00
ELEV. 379.78
PVC 989+00.00
ELEV. 380.10
VC=1000.00' PROFILE GRADE
K=2703
e=0.46'
ELEV. 381.55
-0.07% (EXIST.)
-0.07%
0.13%
0.13%
0.50%
+78.45
+78.45
100' TRANSITION TO MATCH EXIST.
PVI 986+00.00
ELEV. 379.71
FL IN LT. = 370.07
FL OUT RT. = 368.30
EXISTING GROUND
PVI 994+00.00
ELEV. 380.75

430 420 410 400 390 380 370 360 350 340 330

980+00 981+00 982+00 983+00 984+00 985+00 986+00 987+00 988+00 989+00 990+00 991+00 992+00 993+00 994+00 995+00

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WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

STA.	STA.	LOCATION	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
997+83.76	1000+02.51	RT. OF C.L. HWY. 70	150	1	1
998+58.76	1000+02.51	LT. OF C.L. HWY. 70	75	1	1
1005+00.49	1006+44.24	RT. OF C.L. HWY. 70	75	1	1
1005+00.49	1007+19.24	LT. OF C.L. HWY. 70	150	1	1

REMOVAL AND DISPOSAL OF FENCE
STA. 995+00 TO STA. 1000+57 LT. OF CL. = 557 LIN. FT.
STA. 1002+98 TO STA. 1010+00 LT. OF CL. = 702 LIN. FT.

FENCE (TYPE D-1)
STA. 995+00 TO STA. 1001+12 LT. OF CL. = 612 LIN. FT.
STA. 1002+98 TO STA. 1010+00 LT. OF CL. = 702 LIN. FT.

STA. 1000+17.89 BRIDGE END
BRIDGE NO. 07440 OVER SALINE RIVER
465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(81'-101'-101'-101'-81')
40'-0" CLEAR ROADWAY
467'-2⅝" BRIDGE LENGTH
STA. 1004+85.11 BRIDGE END

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

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6	ARK.			
JOB NO.		030501	77	178
(2)	PLAN AND PROFILES SHEETS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
BYRON O. LAWRENCE
No.13640
8-13-2020

N

PI 996+20.43
995+00
PROP. R/W
EXIST. R/W
CONST. LIMITS
8'
24'
N88°29'21"E
S87°54'00"E
13.50'
11.50'
C.L. HWY. 70 (EXIST.)
1000+00
+12.62
83.11'
SALINE RIVER
C.L. HWY. 70
1005+00
+12.62
82.55'
PI 1008+92.09
1010+00
S84°11'47"E
R =20'
16'
PC 1005+21.61
STA. 1005+21.61
END APPROACH SLAB
PT 999+81.39
STA. 999+81.39
BEGIN APPROACH SLAB

C.L. HWY. 70
P.I. = 996+20.43
Δ = 3°36'39" RT.
D = 0°30'00"
T = 361.20'
L = 722.16'
P.R.C. = 992+59.23
P.T. = 999+81.39
NO SUPER

STA. 999+97 TO STA. 1004+58
EXISTING BRIDGE NO. 02082
461' X 31.75' CANTILEVER I-BEAM
SUPERSTRUCTURE (PIN & HANGER CONNECTIONS)
(2@49.5' & 6@60') & SUBSTRUCTURE
COMPOSED OF 2-COLUMN R/C BENTS WITH
WEBWALLS ON SPREAD FOOTINGS
REMOVE AS EXISTING BRIDGE STRUCTURE
SITE NO. 1 = 1.00 LUMP SUM

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 998+96 TO STA. 999+98 RT. OF HWY. TO CL. = 201 LIN. FT.
STA. 1004+59 TO STA. 1005+36 RT. OF HWY. TO CL. = 153 LIN. FT.

C.L. HWY. 70
P.I. = 1008+92.09
Δ = 3°42'13" RT.
D = 0°30'00"
T = 370.48'
L = 740.71'
P.C. = 1005+21.61
P.R.C. = 1012+62.32
NO SUPER

HWY. 70 - SITE 1

STREAM	STREAM ID	STATION	STREAM TYPE	TOP OF CHANNEL ELEV.
SALINE RIVER	S2	1000+25-1002+25	PERENNIAL	368 FT. MSL

VC=1000.00'
K=2703
e=0.46'
ELEV. 381.55
PVT 999+00.00
ELEV. 383.25
STA. 1000+17.89
BEGIN BRIDGE
0.50%
VC=200.00'
K=133
e=-0.37'
PVI 1002+70.00
ELEV. 385.10
0.50%
-1.00%
STA. 1004+85.11
END BRIDGE
-1.00%
PVC 1005+80.00
ELEV. 382.00
VC=200.00'
K=233
e=0.22'
PROFILE GRADE
PVT 1007+80.00
ELEV. 380.86
-0.14%
ELEV. 380.55
PVC 1001+70.00
ELEV. 384.60
H.H.W. = 376.0'
050 = 373.6
PVT 1003+70.00
ELEV. 384.10
EXISTING GROUND
PVI 1006+80.00
ELEV. 381.00

995+00 996+00 997+00 998+00 999+00 1000+00 1001+00 1002+00 1003+00 1004+00 1005+00 1006+00 1007+00 1008+00 1009+00 1010+00

430 420 410 400 390 380 370 360 350 340 330

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WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

C.L. HWY. 70
P.I. = 1008+92.09
Δ = 3°42'13" RT.
D = 0°30'00"
T = 370.48'
L = 740.71'
P.C. = 1005+21.61
P.R.C. = 1012+62.32
NO SUPER

C.L. HWY. 70
P.I. = 1016+24.46
Δ = 3°37'13" LT.
D = 0°30'00"
T = 362.14'
L = 724.04'
P.R.C. = 1012+62.32
P.T. = 1019+86.36
NO SUPER

FENCE (TYPE D-1)
STA. 1010+00 TO STA. 1013+50 LT. OF CL. = 350 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE
STA. 1010+00 TO STA. 1011+31 LT. OF CL. = 131 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	78	178
				(2)	PLAN AND PROFILE SHEETS			

LEGEND

PAVEMENT TRANSITION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-13-2020

1010+00 1015+00 1020+00

+68.12 50.11'

PROP. R/W

EXIST. R/W

S84°11'47"E

+44

R =20'

R =20'

16'

TRAIL METAL

PRC 1012+62.32

CONST. LIMITS

S84°11'47"E

S87°49'00"E

PI 1016+24.46

EXIST. R/W

PT 1019+86.36

8'

CONST. LIMITS 6'

C.L. HWY. 70 24'

22'

8'

6'

CONST. LIMITS

100' TRANSITION TO MATCH EXIST.

+86.36

+86.36

EXIST. R/W

POE 1023+00

STA. 1010+44.00
CONST. APPROACH ON RT. =
40 CU. YDS.

STA. 1019+86.36
END SITE 1

HWY. 70 - SITE 1

ELEV. 380.55

PROFILE GRADE

EXISTING GROUND

-0.14%

PVC 1017+50.00
ELEV. 379.50

VC=100.00'
K=1250
e=0.01'

PVT 1018+50.00
ELEV. 379.40

PVI 1018+00.00
ELEV. 379.43

-0.06%

PVI 1019+86.36
ELEV. 379.32

-0.06% (EXIST.)

100' TRANSITION TO MATCH EXIST.

+86.36

+86.36

430 420 410 400 390 380 370 360 350 340 330

1010+00 1011+00 1012+00 1013+00 1014+00 1015+00 1016+00 1017+00 1018+00 1019+00 1020+00 1021+00 1022+00 1023+00 1024+00 1025+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.		030501	79	178
				(2)	PLAN AND PROFILE SHEETS			

LEGEND

PAVEMENT TRANSITION

PAVEMENT OBLITERATION

STA. 1990+74 IN PLACE
DBL. 24"X 43' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL 24"X 60' LT. SIDE DRAIN
CONST. APPROACH = 25 CU. YDS.

STA. 1992+00 19.00' LT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 1994+44 19.00' LT. CONSTRUCT
DROP INLET H = 3'-0"
WITH 18" X 156' PIPE OUTLET
TO DROP INLET @ STA. 1996+08 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 156 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 156 LIN. FT.

STA. 1995+60 IN PLACE
DBL 30" X 38' PIPE CULVERT
LT. SIDE DRAIN
RETAIN

STA. 1997+36 19.00' LT. CONSTRUCT
DROP INLET H = 3'-8"
WITH 18" X 50' PIPE OUTLET
TO DROP INLET @ STA. 1997+90 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 50 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 50 LIN. FT.

STA. 1996+08 19.00' LT. CONSTRUCT
DROP INLET H = 3'-4"
WITH 18" X 122' PIPE OUTLET
TO DROP INLET @ STA. 1997+36 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 122 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 122 LIN. FT.

STA. 1997+90 19.00' LT. CONSTRUCT
DROP INLET H = 4'-0"
WITH 18" X 42' PIPE OUTLET
WITH 18" FES @ OUTLET
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 42 LIN. FT.
18" FES = 1EACH

STA. 1998+45 19.00' LT. CONSTRUCT
DROP INLET H = 3'-4"
WITH 18" X 51' PIPE OUTLET
TO DROP INLET @ STA. 1997+90 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 51 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 51 LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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BYRON O. LAWRENCE
8-13-2020

N

C.L. HWY. 70
P.I. = 1987+05.06
Δ = 03°06'30" LT.
D = 1°00'00"
T = 155.46'
L = 310.83'
P.C. = 1985+49.61
P.T. = 1988+60.44
e= 0.02 '/'
Ls= 300'

C.L. HWY. 70
P.I. = 1995+63.94
Δ = 18°04'43" LT.
D = 6°00'00"
T = 151.92'
L = 301.31'
P.C. = 1994+12.02
P.T. = 1997+13.33
e = 0.04 '/'
Ls = 360'

STA. 1999+97 TO STA. 2005+82.98
EXISTING BRIDGE NO. 03089
587.16' X 33.5' COMPOSITE I-BEAM SUPERSTRUCTURE
(9 @ 65') & SUBSTRUCTURE COMPOSED OF
2-COLUMN R/C BENTS W/ WEBWALLS ON SPREAD FOOTINGS
REMOVE AS EXISTING BRIDGE STRUCTURE
SITE NO. 2 = 1.00 LUMP SUM

STA. 1999+92.33 BRIDGE END
BRIDGE NO. 07441 OVER CADDO RIVER
600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(105'-130'-130'-130'-105')
38'-0" CLEAR ROADWAY
605'-4" BRIDGE LENGTH
STA. 2005+97.67 BRIDGE END

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 1998+70 TO STA. 1999+90 LT. OF CL. = 250 LIN. FT.

EXIST. R/W
PT 1988+60.44
7'
24'
7'
CONST. LIMITS
1990+00
+40.55 59.73'
+60 85'
T.C.E.
16'
+20 60.13'
+21
38'
+74
S76°42'47"E
20'
+00.00
100' TRANSITION TO MATCH EXIST.
+00.00
+41
28'
+00 100'-58.54'
T.C.E.
+57.00 57.01'
+49.01 100'
+44
+60
+37
16'
+93.97 47.33'
+18 100'-48.95'
T.C.E.
+70 100'-54.41'
+04.94 59.81'
16'
T.C.E.
PI 1995+63.94
+25 110'
+75 90'-75'
PROP. R/W
R =83'
R =200'
R =70'
CONST. LIMITS
PC 1994+12.02
1995+00
40'
EXIST. R/W
+91.06 63.40'
R =300'
PT 1997+13.33
CONST. LIMITS
EXIST. R/W
C.L. HWY. 70 STA. 1997+65.00 =
C.L. HWY. 8 E. STA 20+00.00
Δ = 89°15'00"
STA. 1999+55.33
BEGIN APPROACH SLAB
89°15'00"
C.L. HWY. 70
N85°12'30"E
38'
R =300'
STA. 1999+92.33
BEGIN BRIDGE
R =70'
R =200'
C.L. HWY. 8 E.
CONST. LIMITS
EXIST. R/W
N4°02'30"W
+38.11 160'
+39.22 87'
+68 79'
PROP. R/W
+35 110'
+15 157'
+45 145'
+98 110'
PT 18+43.31
T.C.E.
T.C.E.
+50 66.12'
+52 185'
T.C.E.
T.C.E.
T.C.E.
+20 215'
+39.15 210'
+43 232'
CONST. LIMITS
EXIST. R/W
PI 17+02.09
N.79°28'52"W
PC 15+57.48
EXIST. R/W
CADDO RIVER
2000+00
EXIST. R/W
CADDO RIVER

STA. 1998+20 39.00' RT. CONSTRUCT
DROP INLET H = 1'-0"
Q10 = 1.59 CFS DA = 0.25 ACRES
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 1992+00 19.00' RT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 1995+37 IN PLACE
30" X 42' PIPE CULVERT
RT. SIDE DRAIN
REMOVE
CONST. APPROACH = 120 CU. YDS.

STA. 19+05 - LT. OF
HWY. 8 E. CONSTRUCT
TYPE 3 WHEELCHAIR
RAMP = 5.3 SQ. YDS.

STA. 1989+21 IN PLACE
30" X 25' C.P. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
30" X 208' RT. SIDE DRAIN
CONST. APPROACH = 10 CU. YDS.

STA. 1992+25 IN PLACE
12" X 48' PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
YARD DRAIN WITH
12" X 50' RT. SIDE DRAIN

STA. 1992+41 IN PLACE
24" X 45' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 30" X 48' RT. SIDE DRAIN
CONST. APPROACH = 10 CU. YDS.

STA. 1994+44 IN PLACE
42" X 24" X 24' PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 36" X 38' RT. SIDE DRAIN
CONST. APPROACH = 170 CU. YDS.

STA. 1996+94 35.00' RT. CONSTRUCT
JUNCTION BOX H = 8'-10"
WITH 54" X 187' PIPE INLET AND FES
Q50 = 98.1 CFS D.A. = 40.17 ACRES
AND 54" X 130' PIPE OUTLET
10° LT. FWD. SKEW TO HWY. 8 AND FES
Q50 = 104.3 CFS D.A. = 43.35 ACRES
AND 24" X 8' PIPE INLET WITH FES
Q50 = 10.1 CFS D.A. = 3.18 ACRES
TYPE E JUNCTION BOX = 6' X 6'
54" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 317 LIN. FT.
54" FES = 2 EACH
24" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 8 LIN. FT.
24"FES = 1EACH

STA. 19+05 - RT. OF
HWY. 8 E. CONSTRUCT
TYPE 3 WHEELCHAIR
RAMP = 5.3 SQ. YDS.

STA. 1989+00.00
BEGIN SITE 2
L.M. 8.54

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
1992+00.00		RT. =	8 LIN. FT.	4'- 0"	3.56
1992+00.00		LT. =	9 LIN. FT.	4'- 0"	4.00
1997+90.0		LT. =	27 LIN. FT.	4'- 0"	12.00
1998+15.00	1998+43.00	RT. =	60 LIN. FT.	6'- 0"	40.00

PLAN SHEET
HWY. 70 - SITE 2

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WORKSPACE: ARDOT
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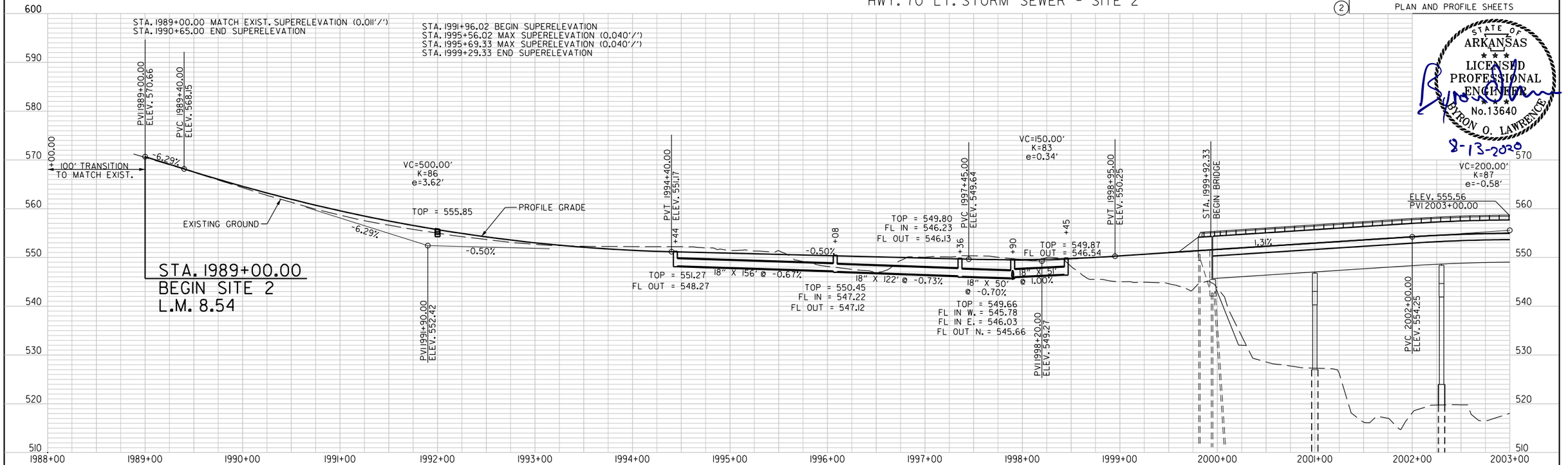
REVISED DATE: $$REVDATE$$

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.		030501	80	178
				(2)		PLAN AND PROFILE SHEETS		

HWY. 70 LT. STORM SEWER - SITE 2



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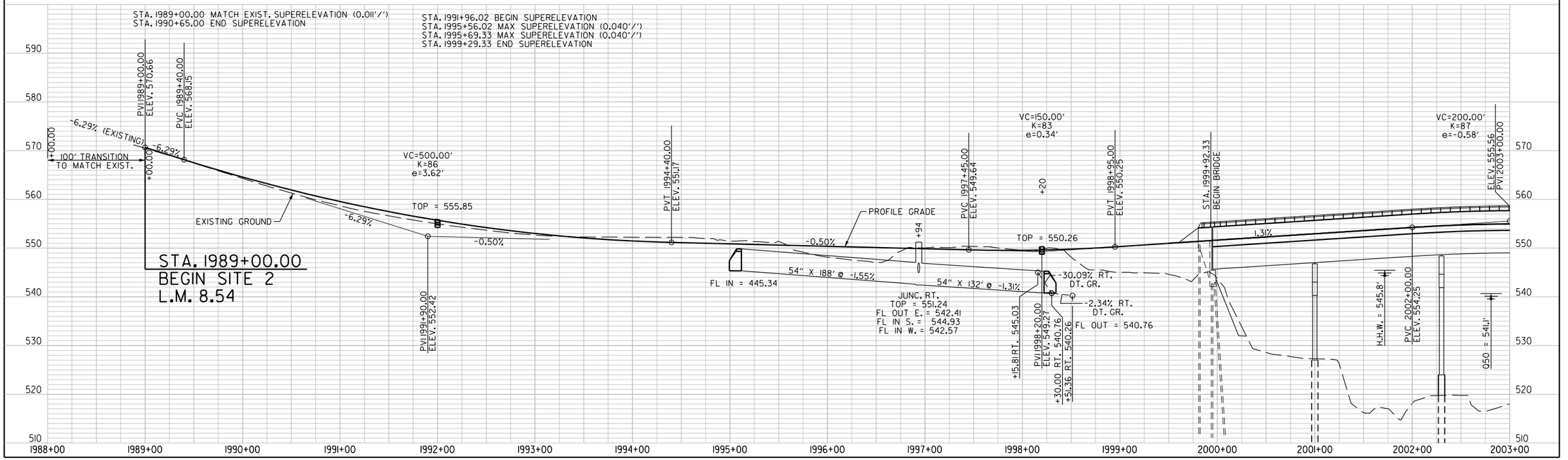
HWY. 70 RT. STORM SEWER - SITE 2



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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.		030501	81	178
				(2)	PLAN AND PROFILE SHEETS			

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STA. 1999+92.33 BRIDGE END
BRIDGE NO. 07441 OVER CADDO RIVER
600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(105'-130'-130'-130'-105')
38'-0" CLEAR ROADWAY
605'-4" BRIDGE LENGTH
STA. 2005+97.67 BRIDGE END

STA. 25+97 - LT. OF
HWY 8 W./70B CONSTRUCT
TYPE 3 WHEELCHAIR
RAMP = 5.3 SQ. YDS.

STA. 2010+00 IN PLACE
30" X 76' PIPE CULVERT
LT. SIDE DRAIN
RETAIN
CONST. APPROACH = 10 CU. YDS.

STA. 25+97 - RT. OF
HWY 8 W./70B CONSTRUCT
TYPE 3 WHEELCHAIR
RAMP = 5.3 SQ. YDS.

STA. 2011+16 IN PLACE
24" X 68' PIPE CULVERT
LT. SIDE DRAIN
RETAIN
CONST. APPROACH = 10 CU. YDS.

STA. 2009+28 19.00' LT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 2010+82 - LT
CULVERT CLEAN OUT
1 EACH

STA. 2012+33.00
CONST. APPROACH
ON LT. =
50 CU. YDS.

STA. 2013+35.00
CONST. APPROACH
ON LT. =
35 CU. YDS.

STA. 2014+26.00
CONST. APPROACH
ON LT. =
15 CU. YDS.

STA. 2014+94.00
CONST. APPROACH
ON LT. =
30 CU. YDS.

STA. 2015+74.00
CONST. APPROACH
ON LT. =
35 CU. YDS.

LEGEND
PAVEMENT TRANSITION
PAVEMENT OBLITERATION

N

EXIST. R/W
2005+00
2010+00
2015+00
CONST. LIMITS
PROP. R/W
2' 28' 2'
4' 32' 4'
PC 27+39.63
PI 28+46.37
PT 29+43.98
HWY. 8 W./70 B
R =200'
R =75'
R =25'
N3°32'30"W
88°45'00"
STA. 2005+97.67
END BRIDGE
STA. 2006+34.17
END APPROACH SLAB
N85°12'30"E
C.L. HWY. 70
39' 37' 40' 26' 20' 32' 34'
PI 2012+47.97
PC 2016+48.96
PT 2018+63.18
S75°18'07"E
S81°11'34"E
18' 31' 38' 24' 8'
C.C.E.
PC 2010+83.97
PI 2014+08.80
POE 2018+68.95
PI 2017+56.17
100' TRANSITION TO MATCH EXIST.
+00 110
+50 66.14
+70 95
+00 111'-90'
+55 90'
+70 111'-85'
+90 75'
+90 90'
+15 70'
+82 114'-72.11'
+85 114'-66.87'
+96.37 70.45
+00 60.04
+25 77'

C.L. HWY. 8 W./70B STA. 25+00.00 =
C.L. HWY. 70 STA. 2007+41.00
Δ = 88°45'00"

C.L. HWY. 70
P.I. = 2012+47.97
Δ = 19°29'23" RT.
D = 6°00'00"
T = 164.00'
L = 324.83'
P.C. = 2010+83.97
P.T. = 2014+08.80
e = 0.040 '/'
Ls = 145'/150'

C.L. HWY. 70
P.I. = 2017+56.17
Δ = 05°53'27" LT.
D = 2°45'00"
T = 107.20'
L = 214.12'
P.C. = 2016+48.96
P.T. = 2018+63.18
e = 0.030 '/'
Ls = 180'

STA. 2014+26 IN PLACE
18" X 89' PIPE CULVERT
RT. SIDE DRAIN
RETAIN
CONST. APPROACH = 265 CU. YDS.

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 2005+85 TO STA. 2006+61 LT. OF CL. = 152 LIN. FT.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	LENGTH	"W"	SQ.YDS.
2008+00.00	2008+50.00	50 LIN. FT.	6'- 0"	33.33
2008+90.00		30 LIN. FT.	4'- 0"	13.33
2009+28.00		38 LIN. FT.	4'- 0"	16.89
2010+40.00		28 LIN. FT.	4'- 0"	12.44
2011+16.00		30 LIN. FT.	4'- 0"	13.33
2013+78.00		25 LIN. FT.	4'- 0"	11.11
2016+14.00		8 LIN. FT.	6'- 0"	5.33

STA. 2009+28.00
CONSTRUCT APPROACH
ON RT. =
180 CU. YDS.

STA. 2008+64 19.00' RT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 2010+18 19.00' RT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 2011+16 19.00' RT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 2013+78 19.00' RT. CONSTRUCT
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET= 4' X 8'

STA. 2014+63 19.00' RT. CONSTRUCT
DROP INLET H = 3'-11"
WITH 18" X 33' PIPE OUTLET
TO DROP INLET @ STA. 2015+00 RT
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 33 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 33 LIN. FT.

STA. 2015+00 19.00' RT. CONSTRUCT
DROP INLET H = 4'-2"
WITH 18" X 36' PIPE OUTLET
TO DROP INLET @ STA. 2014+60
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 36 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 36 LIN. FT.

STA. 2015+40 19.00' RT. CONSTRUCT
DROP INLET H = 4'-8"
WITH 18" X 70' PIPE OUTLET
TO DROP INLET @ STA. 2015+00
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 70 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 70 LIN. FT.

STA. 2016+25.00
END SITE 2

STA. 2016+14 19.00' RT. CONSTRUCT
DROP INLET H = 5'-11"
WITH 18" X 17' PIPE OUTLET AND FES
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 17 LIN. FT.
18" FES = 1 EACH

PLAN SHEET
HWY. 70 - SITE 2

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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.		030501	82	178
				(2)	PLAN AND PROFILE SHEETS			

HWY. 70 LT. STORM SEWER - SITE 2

STA. 2009+83.97 BEGIN SUPERELEVATION
STA. 2011+28.97 MAX SUPERELEVATION (0.040'/')
STA. 2013+78.88 MAX SUPERELEVATION (0.040'/')
STA. 2015+28.88 END SUPERELEVATION

STA. 2015+28.89 BEGIN SUPERELEVATION RT.
STA. 2016+25.00 MATCH EXISTING (0.016'/')

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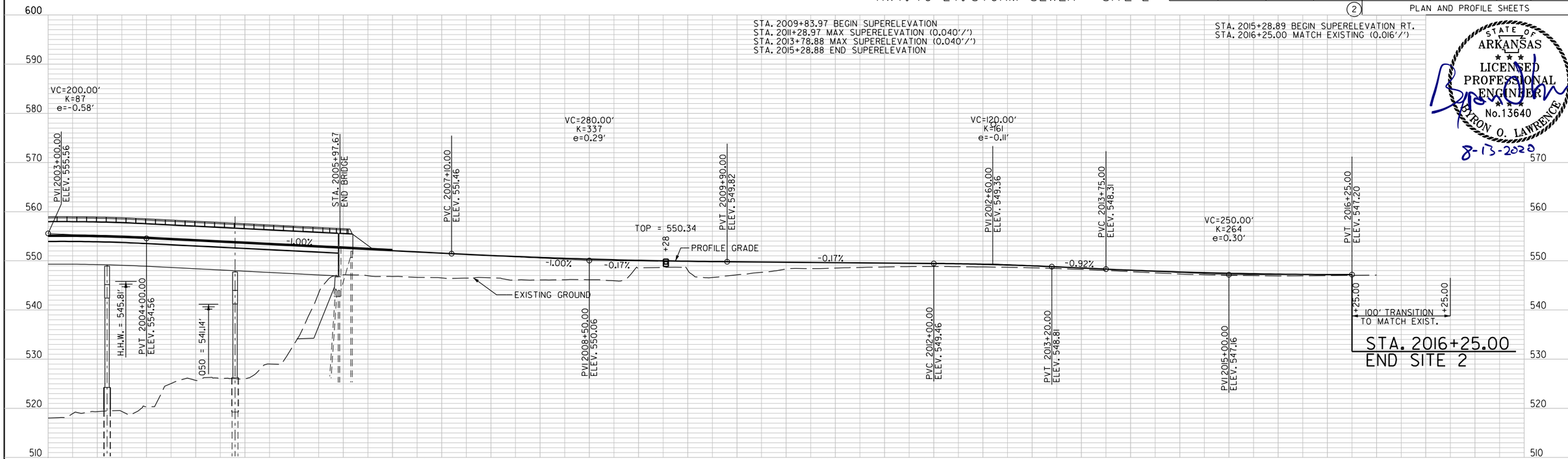
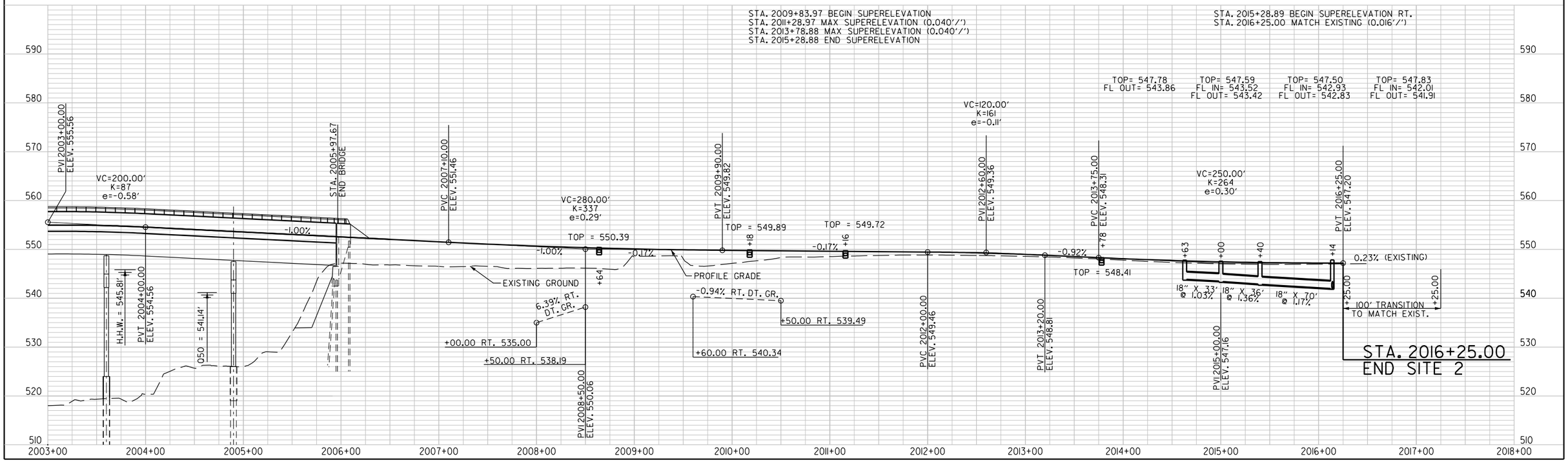


STREAM	STREAM ID	STATION	STREAM TYPE	TOP OF CHANNEL ELEV.
CADDO RIVER	SI	2000+35 - 2005+95	PERENNIAL	542 FT. MSL

HWY. 70 RT. STORM SEWER - SITE 2

STA. 2009+83.97 BEGIN SUPERELEVATION
STA. 2011+28.97 MAX SUPERELEVATION (0.040'/')
STA. 2013+78.88 MAX SUPERELEVATION (0.040'/')
STA. 2015+28.88 END SUPERELEVATION

STA. 2015+28.89 BEGIN SUPERELEVATION RT.
STA. 2016+25.00 MATCH EXISTING (0.016'/')



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				6	ARK.			
				JOB NO.		030501	83	178
				(2)	PLAN AND PROFILE SHEETS			

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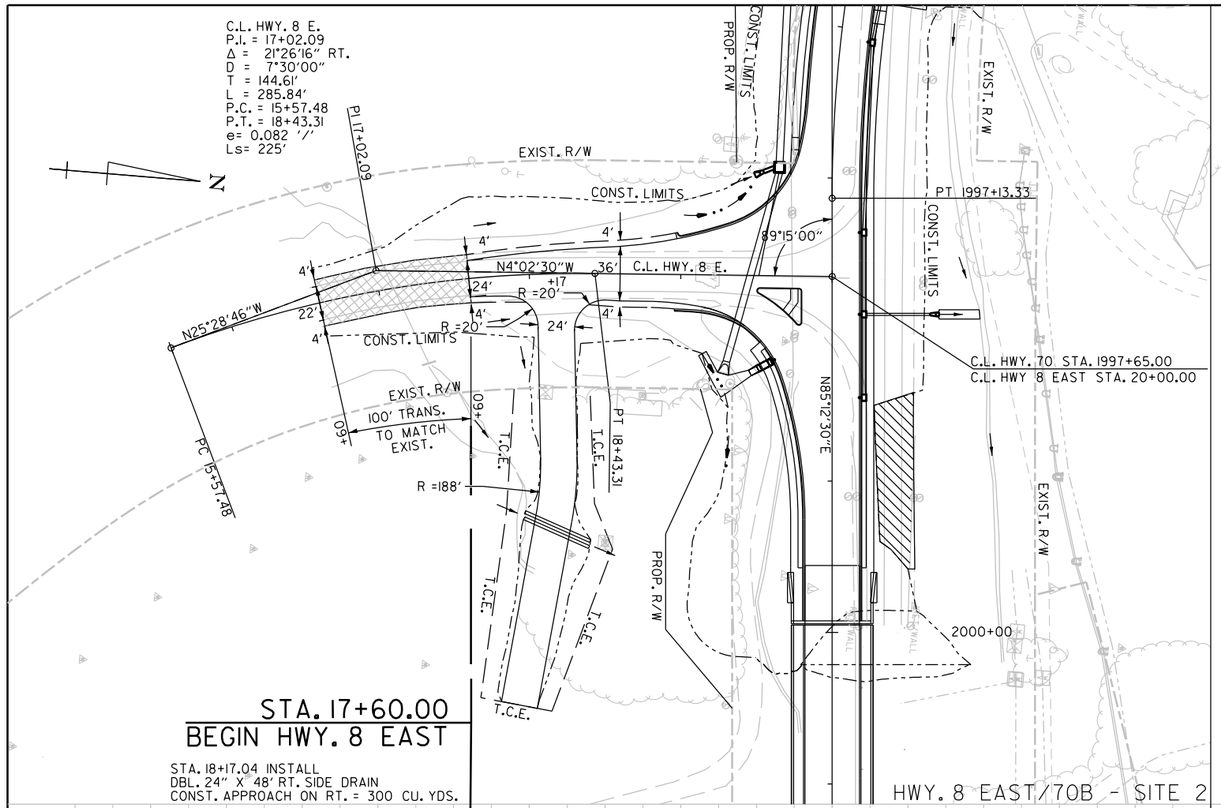
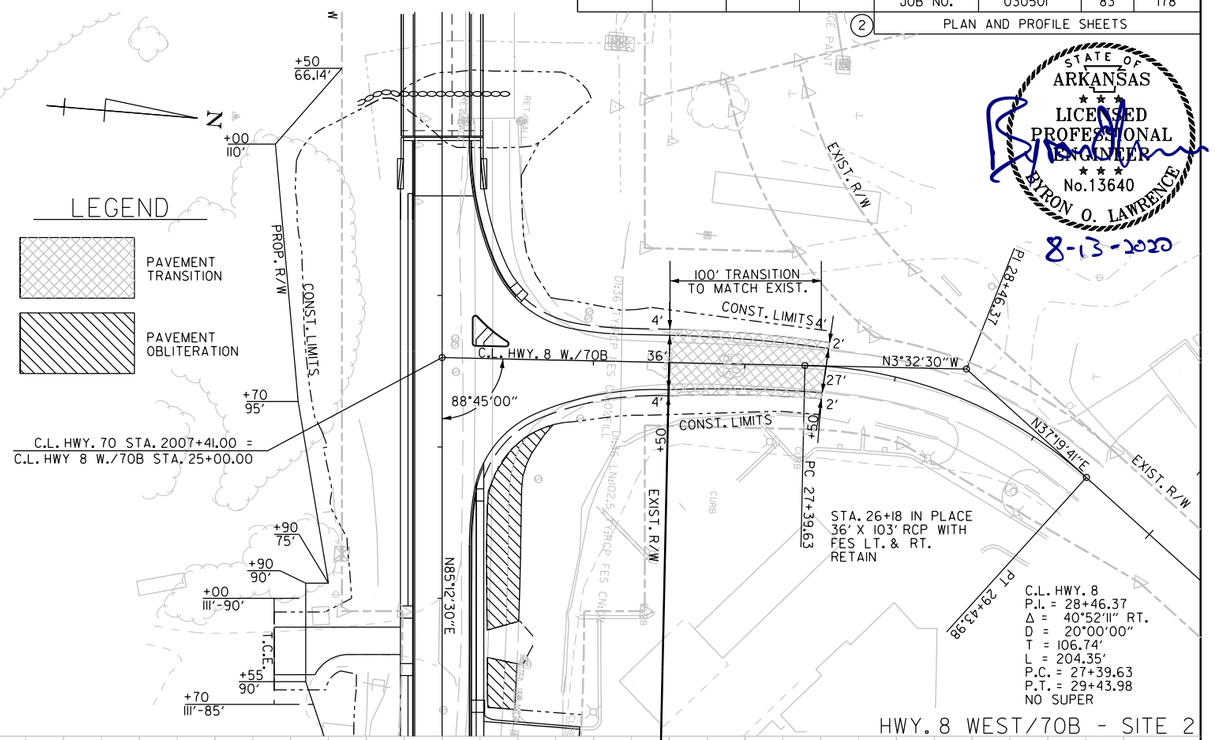
C.L. HWY. 8 E.
P.I. = 17+02.09
Δ = 21°26'16" RT.
D = 7°30'00"
T = 144.61'
L = 285.84'
P.C. = 15+57.48
P.T. = 18+43.31
e= 0.082 '/'
Ls= 225'



STA. 17+60.00
BEGIN HWY. 8 EAST

STA. 18+17.04 INSTALL
DBL. 24" X 48' RT. SIDE DRAIN
CONST. APPROACH ON RT. = 300 CU. YDS.

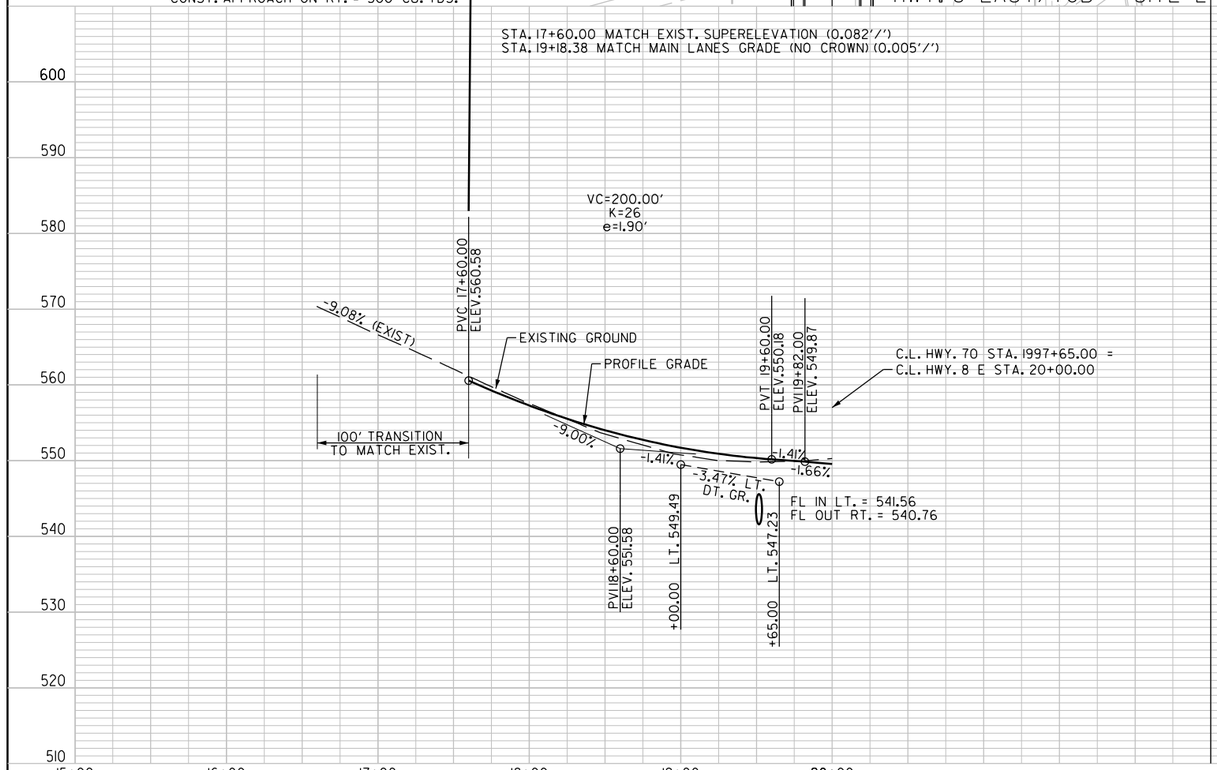
HWY. 8 EAST/70B - SITE 2



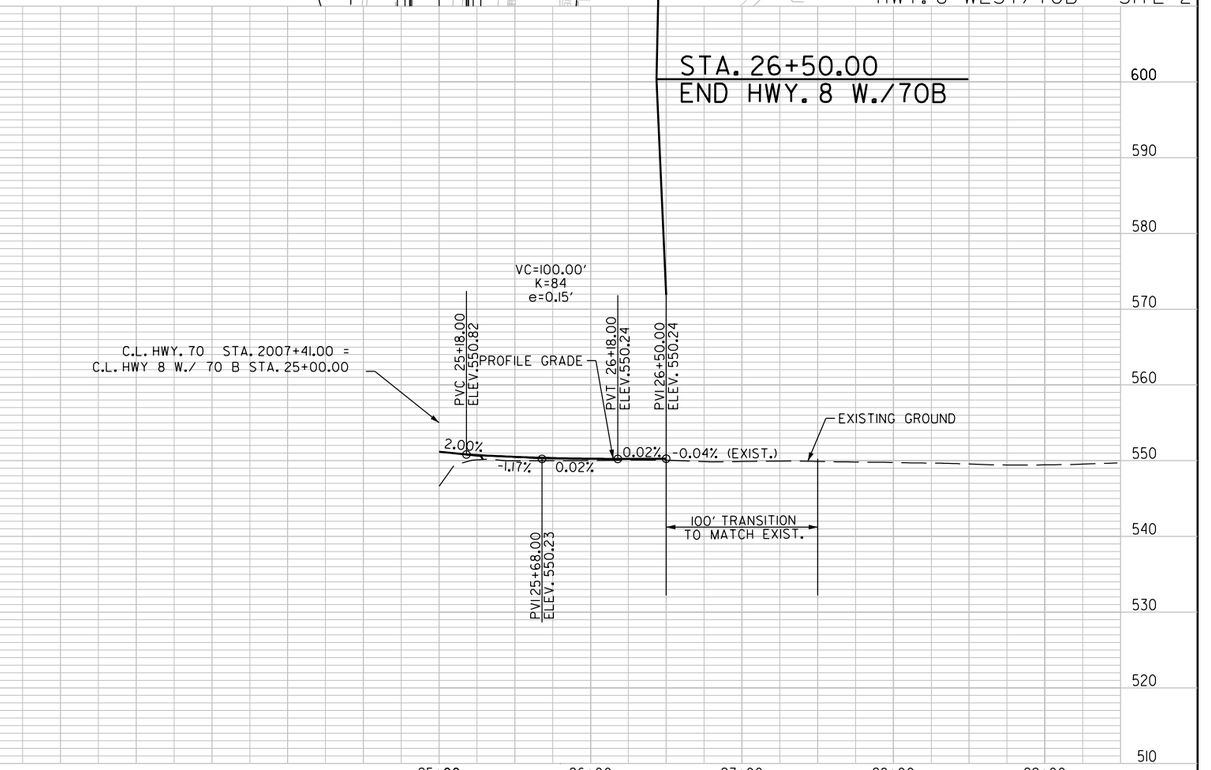
C.L. HWY. 8
P.I. = 28+46.37
Δ = 40°52'11" RT.
D = 20°00'00"
T = 106.74'
L = 204.35'
P.C. = 27+39.63
P.T. = 29+43.98
NO SUPER

HWY. 8 WEST/70B - SITE 2

STA. 17+60.00 MATCH EXIST. SUPERELEVATION (0.082'/')
STA. 19+18.38 MATCH MAIN LANES GRADE (NO CROWN) (0.005'/')



STA. 26+50.00
END HWY. 8 W./70B



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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.		030501	84	178
				(2)	PLAN AND PROFILE SHEETS			

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N

100' TRANSITION TO MATCH EXIST.

C.L. HWY. 278
P.I. = 2980+90.91
Δ = 81°43'38" RT.
D = 9°45'00"
T = 508.38'
L = 838.23'
P.C. = 2975+82.53
P.T. = 2984+20.75
NO SUPER

LEGEND
PAVEMENT TRANSITION

STA. 2984+22.00
BEGIN SITE 3
L.M. 18.82

STA. 2985+21.00
CONSTRUCT APPROACH ON RT. = 45 CU. YDS.

STA. 2986+03.00 IN PLACE
18" X 29' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

C.L. HWY. 278
P.I. = 2987+43.33
Δ = 3°50'31" RT.
D = 2°00'00"
T = 96.09'
L = 192.10'
P.C. = 2986+47.25
P.T. = 2988+39.35
e = 0.048 '/'
Ls = 300'

STA. 2988+48.00 IN PLACE
18" X 30' C.P. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

C.L. HWY. 278
P.I. = 2994+06.86
Δ = 7°41'14" LT.
D = 4°00'00"
T = 96.23'
L = 192.18'
P.C. = 2993+10.63
P.T. = 2995+02.81
e = 0.083 '/'
Ls = 300'

STA. 2990+05.00 IN PLACE
15" X 65' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 2995+73.00 IN PLACE
30" X 18" X 30' C.M. OVAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 74' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 275 CU. YDS.

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
2986+00.00	2988+30.00	RT. =	230 LIN. FT.	9'- 0"	230.00
2986+20.00	2988+90.00	LT. =	270 LIN. FT.	9'- 0"	270.00
2988+65.00	2989+89.00	RT. =	124 LIN. FT.	9'- 0"	124.00
2990+20.00	2996+32.00	RT. =	617 LIN. FT.	9'- 0"	617.00

HWY. 278 - SITE 3

STA. 2984+22.25 BEGIN SUPERELEVATION (MATCH EXIST.)
STA. 2987+22.25 MAX SUPERELEVATION (0.048'/')
STA. 2987+64.35 MAX SUPERELEVATION (0.048'/')
STA. 2990+64.35 END SUPERELEVATION

STA. 2990+85.63 BEGIN SUPERELEVATION
STA. 2993+85.63 MAX SUPERELEVATION (0.083'/')
STA. 2994+27.81 MAX SUPERELEVATION (0.083'/')
STA. 2997+27.81 END SUPERELEVATION

REMOVAL AND DISPOSAL RETAINING WALL

STA.	STA.	LOCATION	LFT.
2989+43	2989+80	RT. OF HWY. 278	40

PVI 2984+22.00 ELEV. 649.33
PVI 2987+00.00 ELEV. 643.77
PROFILE GRADE
EXISTING GROUND
-2.00% (EXIST.)
-2.00%
-2.00%
-5.90%
-4.60% RT. DT. GR.
-5.90%
-5.40% RT. DT. GR.
-4.40% RT. DT. GR.
-5.90%
-3.82% RT. DT. GR.
-0.50%
100' TRANSITION TO MATCH EXIST.
STA. 2983+22.00
PVC 2984+50.00 ELEV. 648.77
+50.00 RT. 640.09
VC=500.00' K=128 e=-2.44'
+16.00 RT. 627.86
PVT 2989+50.00 ELEV. 629.02
+85.00 RT. 617.93
PVC 2991+70.00 ELEV. 616.04
VC=700.00' K=130 e=4.72'
+35.00 RT. 609.83
+85.00 RT. 603.23
PVI 2995+20.00 ELEV. 595.39
+35.00 RT. 593.68
ELEV. 595.61

660 650 640 630 620 610 600 590 580 570 560

2982+00 2983+00 2984+00 2985+00 2986+00 2987+00 2988+00 2989+00 2990+00 2991+00 2992+00 2993+00 2994+00 2995+00 2996+00 2997+00

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WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

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				6	ARK.			
				JOB NO.		030501	85	178
				(2)	PLAN AND PROFILE SHEETS			

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

STA	STA	LOCATION	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
2995+56.74	2997+75.49	RT. OF C.L. HWY. 70	150		
2996+31.74	2997+75.49	LT. OF C.L. HWY. 70	75		
3001+78.51	3003+22.26	RT. OF C.L. HWY. 70	75		
3001+78.51	3003+97.26	LT. OF C.L. HWY. 70	150		
REMOVAL AND DISPOSAL OF GUARDRAIL					
2997+78.00	2998+06.00	RT. & LT. OF I-40 RT. LN.	56		
3001+72.00	3001+99.00	RT. & LT. OF I-40 RT. LN.	54		

STA. 2998+08 TO STA. 3001+71
EXISTING BRIDGE NO. 03602
362.16' X 28.5' COMPOSITE I-BEAM SUPERSTRUCTURE (6@50', 1@60')
& SUBSTRUCTURE COMPOSED OF 2-COLUMN R&C BENTS ON SPREAD FOOTINGS
REMOVE AS EXISTING BRIDGE STRUCTURE
SITE NO. 3 = 1.00 LUMP SUM

STA. 2997+49.40
BEGIN APPROACH SLAB

STA. 2997+85.90 BRIDGE NO. 07442 OVER SALINE RIVER
380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
(67'-82'-82'-82'-67')
34' CLEAR ROADWAY
382'-2½" BRIDGE LENGTH
STA. 3001+68.11 BRIDGE END

STA. 2997+85.90 BR END

SALINE RIVER

STA. 3001+68.10 BR END

PC 3001+98.06

STA. 3002+04.60
END APPROACH SLAB

STA. 3003+81.00
CONSTRUCT APPROACH ON RT. = 165 CU. YDS.

C.L. HWY. 278
P.I. = 3005+21.93
Δ = 3°14'16" LT.
D = 0°30'00"
T = 323.87'
L = 647.57'
P.C. = 3001+98.06
P.R.C. = 3008+45.63
NO SUPER

PI 3005+21.93

STA. 3004+57.00
CONSTRUCT APPROACH ON LT. = 180 CU. YDS.

STA. 3009+83.00 IN PLACE
36" X 31' R.C. PIPE CULVERT &
12" X 17' C.M. PIPE CULVERT
REMOVE AND INSTALL
36" X 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 165 CU. YDS.

STA. 3010+81.00
CONSTRUCT APPROACH ON LT. = 15 CU. YDS.

PRC 3008+45.63

STA. 3008+64.00 IN PLACE
DBL. 10' X 9' X 38' R.C. BOX CULVERT
WITH 31 WINGS LT. AND RT.
RETAIN AND EXTEND 41' RT.
FOR A COMPLETED LENGTH OF 79'
025=1510 CFS DA=940.8 ACRES
SPAN 22'-5"

STA. 3011+23.00 IN PLACE
30" X 55' R.C. PIPE CULVERT
30° LT. FWD. SKEW
WITH HDWLS. LT. AND RT.
REMOVE HDWL. LT. AND RT. AND
EXTEND R.C. PIPE 26' RT. & 5' LT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. AND RT.
025=15.85 CFS DA=3.29 ACRES
30" R.C. PIPE = 39 LIN. FT.
30" FES = 2 EACH

PI 3011+63.77

C.L. HWY. 278
P.I. = 3011+63.77
Δ = 3°10'50" RT.
D = 0°30'00"
T = 318.14'
L = 636.11'
P.R.C. = 3008+45.63
P.T. = 3014+81.74
NO SUPER

STA. 3011+85 RT.
INSTALL
10 CU. YDS.
DUMPED RIPRAP

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
3011+90.00	3012+00.00	RT. =	10 LIN. FT.	6'-0"	6.67

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
BYRON O. LAWRENCE
No.13640
8-13-20

HWY. 278 - SITE 3

STREAM	STREAM ID	STATION	STREAM TYPE	TOP OF CHANNEL ELEV.
SALINE RIVER	S2	2998+60 - 3001+50	PERENNIAL	577 FT. MSL

VC=700.00'
K=130
e=4.72'

VC=120.00'
K=126
e=-0.14'

VC=760.00'
K=117
e=6.19'

ELEV. 595.61

STA. 2997+85.90 BEGIN BRIDGE

PVT. 2998+70.00 ELEV. 593.64

H.H.W. = 585.1'

Q25 = 583.4'

PVI 3000+80.00 ELEV. 592.59

PVI 3001+40.00 ELEV. 592.29

STA. 3001+68.10 END BRIDGE

PVT 3002+00.00 ELEV. 591.42

PVC 3004+40.00 ELEV. 587.94

PROFILE GRADE

EXISTING GROUND

-0.50%

-1.45%

-1.45%

5.07%

PVI 3008+20.00 ELEV. 582.43

FL IN LT. (EXIST.) = 574.60
FL OUT RT. = 574.40

NOTCH WIDEN AND OVERLAY

PVT 3012+00.00 ELEV. 601.70

FL IN LT. = 592.61
FL OUT RT. = 588.12

660 650 640 630 620 610 600 590 580 570 560

2997+00 2998+00 2999+00 3000+00 3001+00 3002+00 3003+00 3004+00 3005+00 3006+00 3007+00 3008+00 3009+00 3010+00 3011+00 3012+00

LeonardSpeed 8/13/2020 12:01:01 PM
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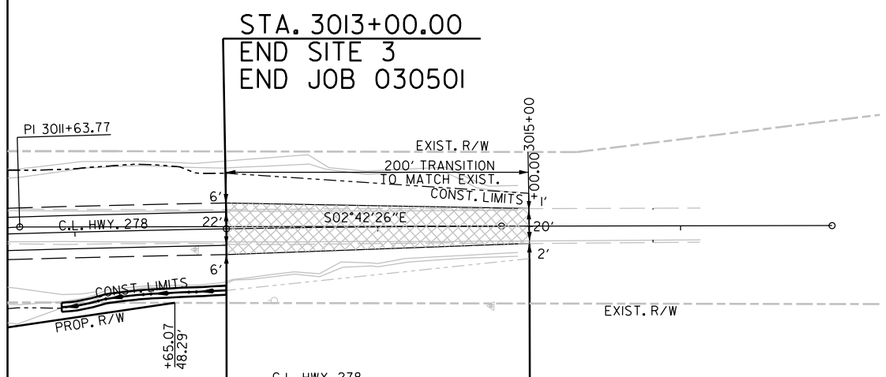
REVISED DATE: $$REVDATE$$

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.		030501	86	178
(2)	PLAN AND PROFILE SHEETS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
AARON O. LAWRENCE
8-13-2020



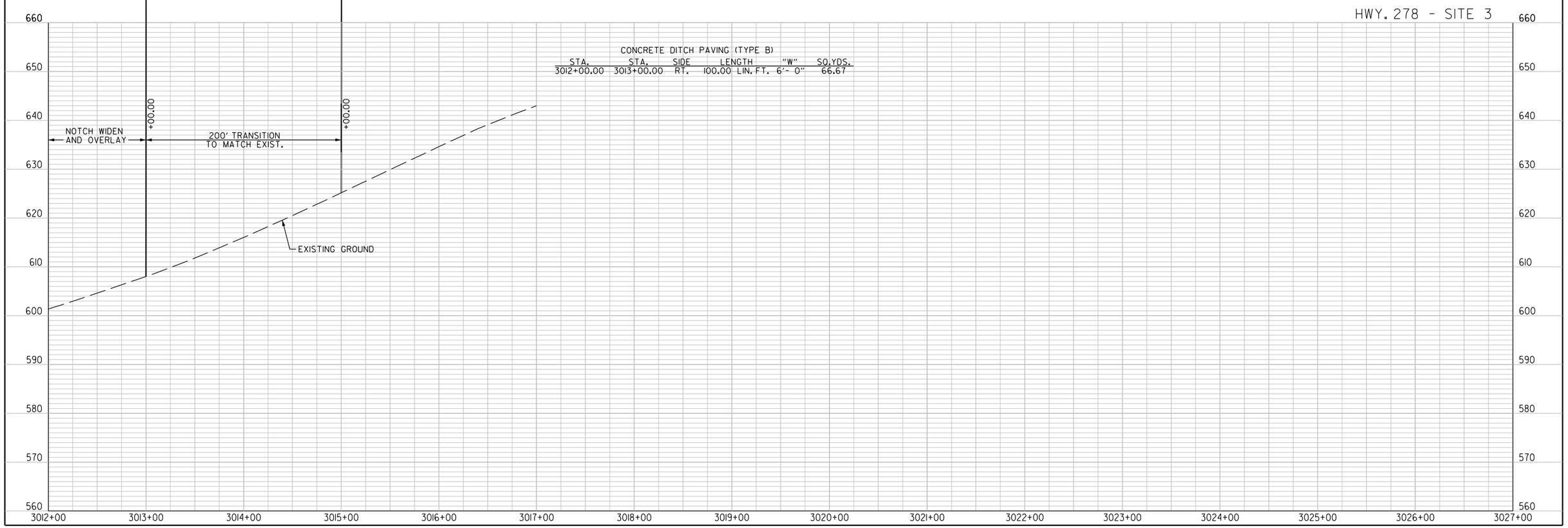
LEGEND

PAVEMENT TRANSITION

HWY. 278 - SITE 3

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
3012+00.00	3013+00.00	RT.	100.00 LIN. FT.	6'- 0"	66.67



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REVISED DATE: $$REVDATE$$

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

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.		030501	87	178
				(1)	07440 - LAYOUT - 60642			

Note:
The contractor shall remove the embankment at the existing east bridge end as shown using IV:2H cut slopes. Cut to Elev. 371. Approx. 800 cu. yds. of excavation.

Notes:
Use Type C1 Approach Slab (width = 24'-0") and Type C Approach Gutters ("w" = 8'-0") at both ends of bridge, See Std. Dwg. Nos. 55040C1 and 55030C respectively.

For General Notes and Soil Borings See Dwg. No. 60643.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	25,400	373.3	373.6
Base	100	29,500	374.3	374.5
Extreme	500	40,200	375.4	376.4
Overtopping	>500	>500	>500	>500

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

Q100 backwater elevation for existing structure = 374.5 feet.

(2) Proposed Bridge Low Chord Elevation = 378.08 feet at Station 1004+85.11.

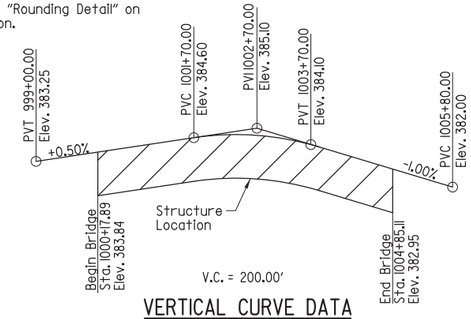
Drainage area = 120 square miles.

Historical H.W. Elev. = 376.0 Feet (from USGS stream gage 07341000 on May 13, 1968 with a Stream-flow of 59,200 cfs)

TABLE OF VARIABLES

Location	"A"	"B"	"C"	"D"	"E"
Bent No. 2	5'-4 15/16"	41'-6"	337.35	329.35	8'-0"
Bent No. 3	5'-4 15/16"	40'-0"	339.32	332.32	7'-0"
Bent No. 4	5'-4 15/16"	25'-6"	353.71	350.71	3'-0"
Bent No. 5	5'-4 15/16"	22'-6"	355.87	352.87	3'-0"

Note:
Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Std. Dwg. No. 55007 for additional information.



VERTICAL CURVE DATA

(Stations and Elevations are along C.L. Bridge)

SHEET 1 OF 2
LAYOUT OF BRIDGE
HWY. 70 OVER SALINE RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
SEVIER AND HOWARD COUNTIES
ROUTE 70 SECTION 2 AND 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

2020.08.13 15:42:44-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DRAWN BY: MKL DATE: 09/2018
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 09/2018
BRIDGE NO. 07440
FILENAME: B030501XL_LXI.dgn
SCALE: 1" = 30'
DRAWING NO. 60642

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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.		030501	88	178
				(1)		07440 - LAYOUT - 60643		

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 with current Interim Specifications.

LIVE LOADING: HL-93

SEISMIC ZONE: I S_{D1} = 0.12 SITE CLASS = D

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Seal Concrete (Bent 2, 3, 4, & 5)	f'c = 2,100 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A, Gr. 60)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi

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

STEEL PILING: All end bent Piling shall be HP14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 135 tons per pile and into material designated as shale on the boring legend. All intermediate bent Piling shall be HP 14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 135 tons per pile and into material designated as shale on the boring legend. Drive all piles to a minimum penetration of 10' below natural ground at Bents Nos. 1 and 6, and 10' below bottom of concrete seal at Bent Nos. 2 through 5. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. The Contractor shall use approved steel H-pile driving points on all piles.

Preboring or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly, but shall be considered incidental to the item "Steel Piling (HP14x73)".

PILE FOOTINGS: The top of the footings at Bents 2 thru 5 shall be set a minimum of 3' below natural ground or at the elevations shown on the plans, whichever is lower. Foundations for footings shall be prepared in accordance with Section 801.04. Excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

PAINTING: All Grade 50W structural steel, except galvanized members, surfaces in contact with concrete, and the expansion device, within 7.5 feet of bridge deck expansion joints shall be painted as specified in Subsection 807.75. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface, top of end bent backwalls, and roadway face and top of both concrete parapets. Class I Protective Surface Treatment shall meet the requirements of Section 803.

DETAIL DRAWINGS	DRAWING NOS.
End Bents	60644-60646
Intermediate Bents	60647-60648
Elastomeric Bearings	60649
465'-0" Cont. Comp. Plate Girder Unit	60650-60657
General Notes For Steel Bridge Structures	55006
Details for Steel Bridge Structures	55007
Neoprene Strip Seal Joint	55009
Steel H-Piling	55020
Type C Approach Gutters	55030C
Type CI Approach Slabs	55040CI

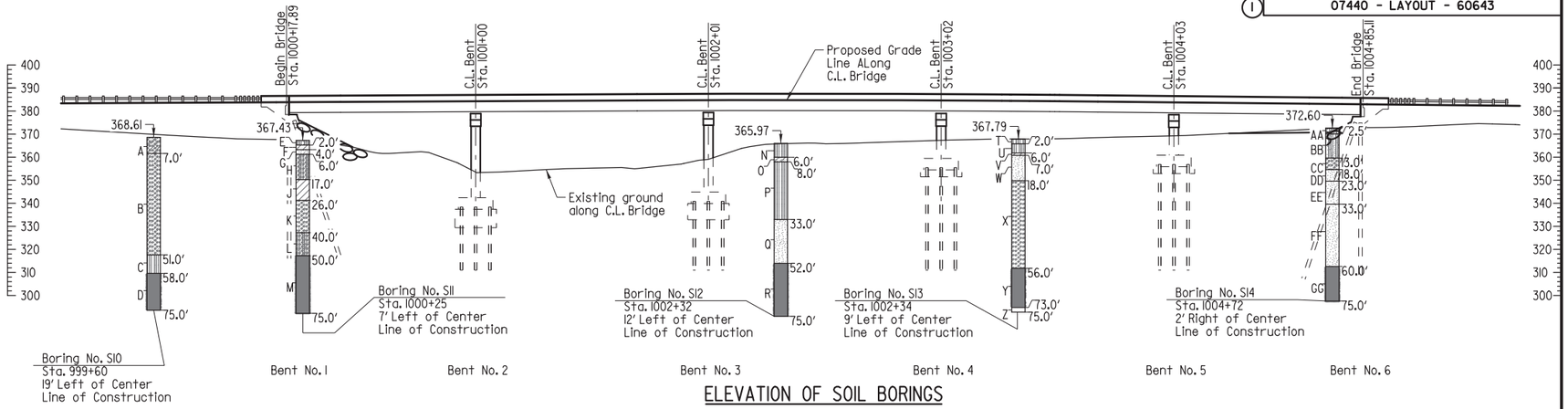
EXISTING BRIDGE: Existing Bridge No. 02082 (Log Mile 7.45) is 31.8' wide and 461.0' long and consists of 7 - 60' and 1 - 37' steel cantilever I-Beam spans (pin & hanger construction) supported by 2 - column concrete bents with web walls on spread footings.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. 02082 in accordance with Section 205. All material from the existing bridge shall become property of the Contractor except the following which shall remain the property of the State:

- Existing Dumped Riprap

The Contractor shall coordinate with the District Engineer regarding the preferred on-site stockpile location. This work shall be considered incidental to the item "Removal of Existing Bridge Structure (Site No. 1)".

MAINTENANCE OF TRAFFIC: See Roadway Plans.



ELEVATION OF SOIL BORINGS

"N" VALUES

Boring No. S10
Sta. 999+60
19' Left of Center Line of Construction

0.5 - 1.5	N=7
2.5 - 3.2	N=50/8"
4.5 - 5.3	N=50/10"
6.5 -	N=25/0"
8.5 -	N=25/0"
13.5-	N=25/0"
18.5-	N=25/0"
23.5-24.3	N=50/10"
28.5-	N=25/0"
33.5-33.7	N=50/2"
38.5-38.8	N=50/3"
43.5-	N=25/0"
48.5-	N=25/0"
53.5-54.0	N=50/6"
58.5-59.2	N=50/8"
63.5-63.8	N=70/4"
69.0-69.4	N=70/5"
74.5-74.8	N=70/3"

Boring No. S11
Sta. 1000+25
7' Left of Center Line of Construction

0.5 - 1.5	N=12
2.5 - 3.5	N=6
4.5 - 5.3	N=50/10"
6.5 -	N=25/0"
9.0 - 10.0	N=27
13.5-	N=25/0"
19.0- 19.4	N=50/5"
24.0-24.5	N=50/6"
28.5-	N=25/0"
34.0-34.4	N=50/5"
39.0-39.4	N=50/5"
44.0-44.3	N=50/3"
49.0-49.3	N=50/4"
53.5-	N=25/0"
58.5-	N=25/0"
63.5-	N=25/0"
68.5-	N=25/0"
73.5-	N=25/0"

Boring No. S12
Sta. 1002+32
12' Left of Center Line of Construction

0.5 - 1.5	N=12
2.5 - 3.5	N=7
4.5 - 5.5	N=6
6.5 - 7.5	N=6
9.0 - 10.0	N=30
14.0-14.7	N=50/8"
18.5-	N=25/0"
23.5-	N=25/0"
28.5-	N=25/0"
33.5-	N=25/0"
38.5-	N=25/0"
43.5-	N=25/0"
48.5-	N=25/0"
53.5-53.9	N=50/5"
58.5-58.9	N=70/5"
63.5-64.0	N=70/6"
68.5-69.0	N=70/6"
74.5-75.0	N=70/6"

Boring No. S13
Sta. 1002+34
9' Left of Center Line of Construction

0.5 - 1.5	N=12
2.5 - 3.5	N=6
4.5 - 5.5	N=5
6.5 - 7.5	N=10
9.0 - 10.0	N=7
14.0-15.0	N=20
54.5-	N=25/0"
58.5-59.0	N=70/6"
63.5-64.0	N=70/6"
68.5-68.8	N=80/4"
74.5-74.8	N=80/3"

Boring No. S14
Sta. 1004+72
2' Right of Center Line of Construction

0.5 - 1.5	N=17
2.5 - 3.5	N=11
4.5 - 5.5	N=8
6.5 - 7.5	N=5
9.0 - 10.0	N=6
14.0-15.0	N=28
19.0-20.0	N=34
24.0-25.0	N=34
29.0-29.8	N=50/10"
34.0-34.7	N=50/8"
38.5-	N=25/0"
43.5-	N=25/0
58.5-59.2	N=50/8"
63.5-63.8	N=50/4"
68.5-68.8	N=50/3"
74.5-75.8	N=50/3"

BORING LEGEND

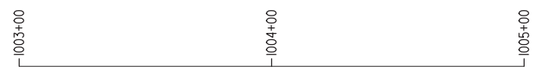
A- Loose to medium dense reddish tan and tan clayey fine to coarse gravel w/ silt and fine to coarse sand (fill) - water at 6ft
B- Dense to very dense reddish tan and tan sandy fine to coarse gravel w/ some cobbles - slightly silty at 23 to 28ft
C- Dense to very dense gray silt, slightly sandy w/ a little fine gravel
D- Moderately hard maroon, tan and gray highly weathered shale, apparent dip ±80° w/ ferrous stains and occasional silty clay laminations - maroon and tan below 68ft

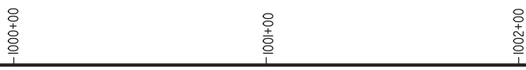
E- Medium dense reddish tan silty fine sand w/ occasional clay pockets (fill)
F- Loose tan clayey fine sand (fill)
G- Dense crushed sandstone fragments w/ fine sand (fill)
H- Medium dense brown silty fine to coarse gravel, sandy - water at 6ft - with some cobbles below 13ft
J- Very stiff to hard bluish gray fine sandy clay, silty - with a little fine to coarse gravel and occasional organic inclusions below 23ft
K- Dense to very dense brown sandy fine to coarse gravel
L- Dense to very dense bluish gray silty fine gravel, sandy
M- Moderately hard to hard yellowish brown, tan and gray weathered shale, steeply bedded

N- Medium dense dark brown silty fine sand (possible fill) - loose below 2ft - water at 4ft
O- Soft brown and gray fine sandy clay, silty
P- Dense brown silty fine to medium sand w/ trace fine to coarse gravel
Q- Dense reddish tan and tan medium to coarse sand w/ a little fine gravel - slightly silty below 48ft
R- Moderately hard maroon and tan weathered shale, apparent dip 80° w/ ferrous stains

T- Medium dense dark brown silty fine sand (fill)
U- Loose tan silty fine sand
V- Medium dense tan and brown clayey fine sand
W- Loose brown silty fine to coarse sand w/ a little fine gravel - water at 8ft - medium dense below 13ft
X- Dense reddish tan and tan sandy fine to coarse gravel w/ occasional cobbles
Y- Moderately hard maroon and tan weathered shale, apparent dip 80° w/ ferrous stains and occasional silty clay laminations
Z- Moderately hard to hard tan and gray fine-grained sandstone

AA-Medium dense dark brown fine sandy silt w/ fine to coarse gravel (fill)
BB-Loose brown silty fine sand w/ trace fine gravel - water at 6ft
CC-Medium dense brown sandy fine to coarse gravel, slightly silty
DD-Dense brown silty fine to coarse sand w/ some fine to coarse gravel - auger refusal at 20ft in gravel and cobbles
EE-Dense brown fine sand, slightly silty - dense to very dense below 28ft
FF-Dense to very dense reddish tan and tan medium to coarse sand w/ some fine gravel
GG-Moderately hard maroon, gray and tan weathered shale, apparent dip 80° w/ occasional silty clay laminations





2020.08.13 15:32:19-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 2
LAYOUT OF BRIDGE
HWY. 70 OVER SALINE RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
SEVIER AND HOWARD COUNTIES
ROUTE 70 SECTION 2 AND 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: MKL DATE: 09/2018 SCALE: 1" = 30'
BRIDGE NO. 07440 DRAWING NO. 60643

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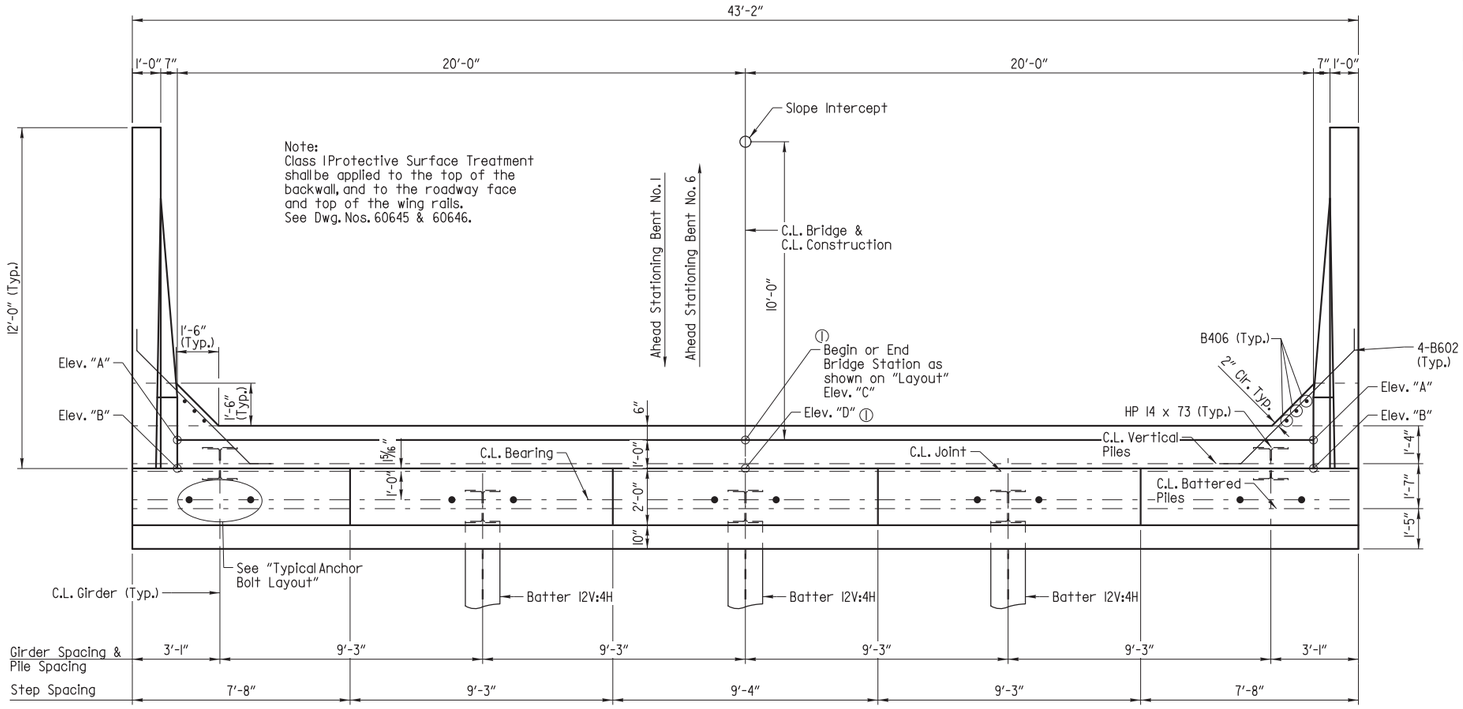
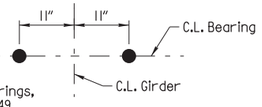
REVISED DATE:

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.		030501	89	178
				①	07440 - END BENTS - 60644			



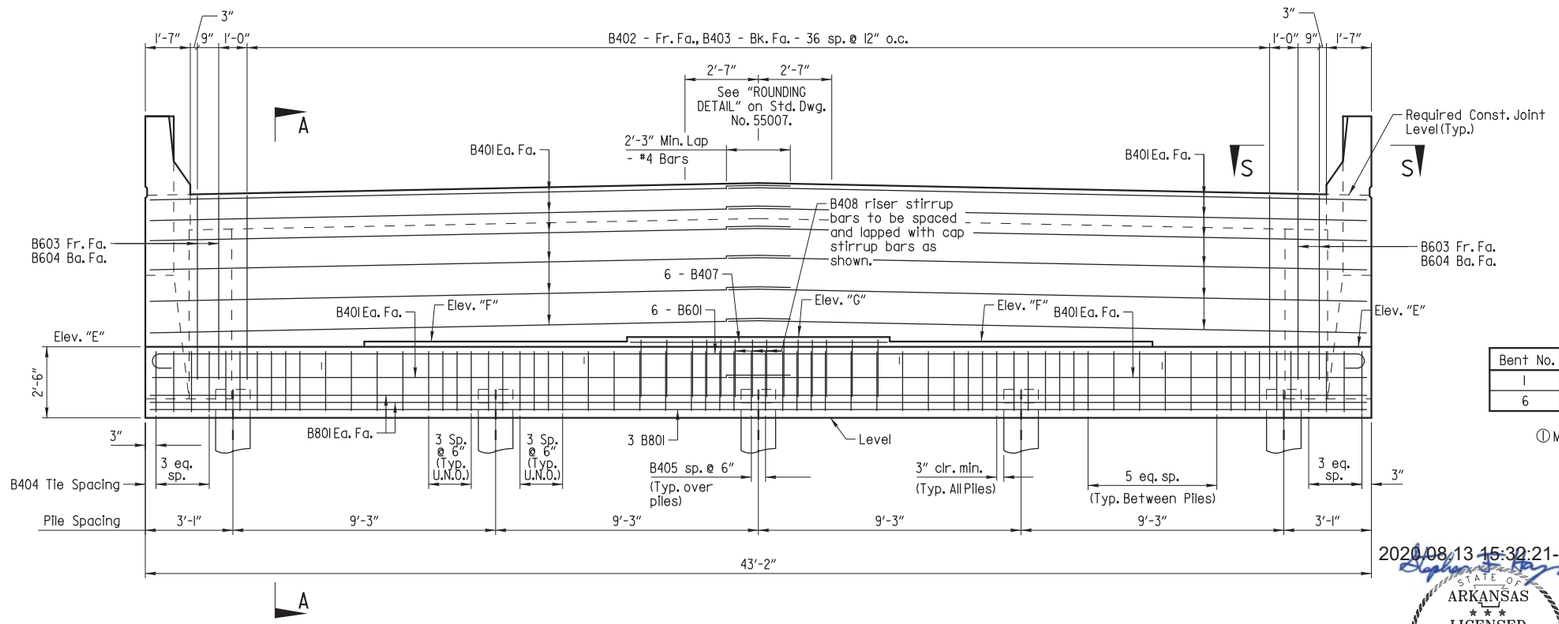
PLAN
⅜" = 1'-0"



For details of elastomeric bearings, See Dwg. No. 60649.

TYPICAL ANCHOR BOLT LAYOUT
No Scale

Note:
U.N.O = Unless Noted Otherwise



ELEVATION
(Looking Back Bent No. 1, Looking Ahead Bent No. 6)
⅜" = 1'-0"

Note:
For "View S-S" and "Section A-A", see Dwg. No. 60645.

For General Notes, see Dwg. No. 60646.

TABLE OF VARIABLES

Bent No.	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"	Elev. "E"	Elev. "F"	Elev. "G"
1	383.44	383.44	383.84	383.84	378.47	378.66	378.82
6	382.55	382.56	382.95	382.96	377.49	377.67	377.83

① Measured to Working Point. See "Rounding Detail" on Std. Dwg. No. 55007.

2020.08.13 15:32:21-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 3
DETAILS OF END BENTS
HWY. 70 OVER SALINE RIVER
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 04/2019 FILENAME: B03050IXI_BII.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 04/2019 SCALE: As Shown
BRIDGE NO. 07440 DRAWING NO. 60644

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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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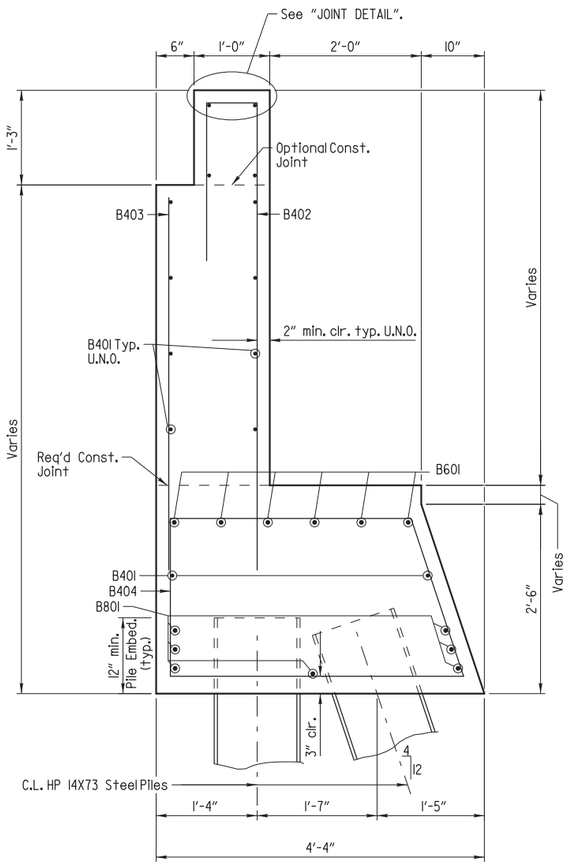
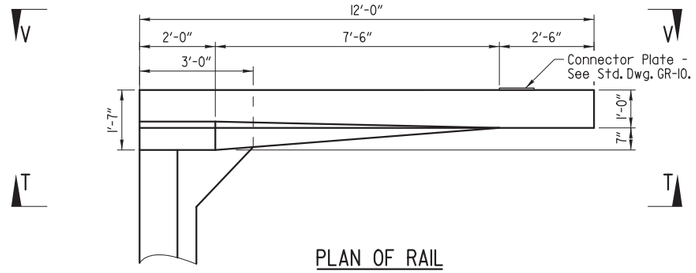
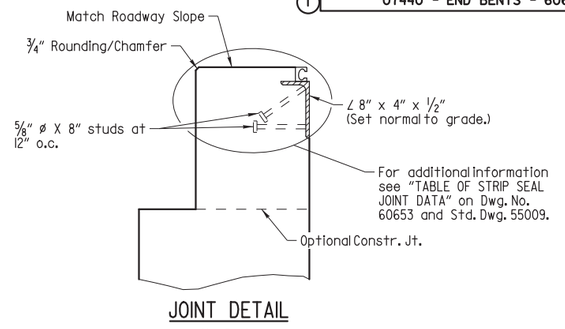
				JOB NO.		030501	90	178
				(1)	07440 - END BENTS - 60645			



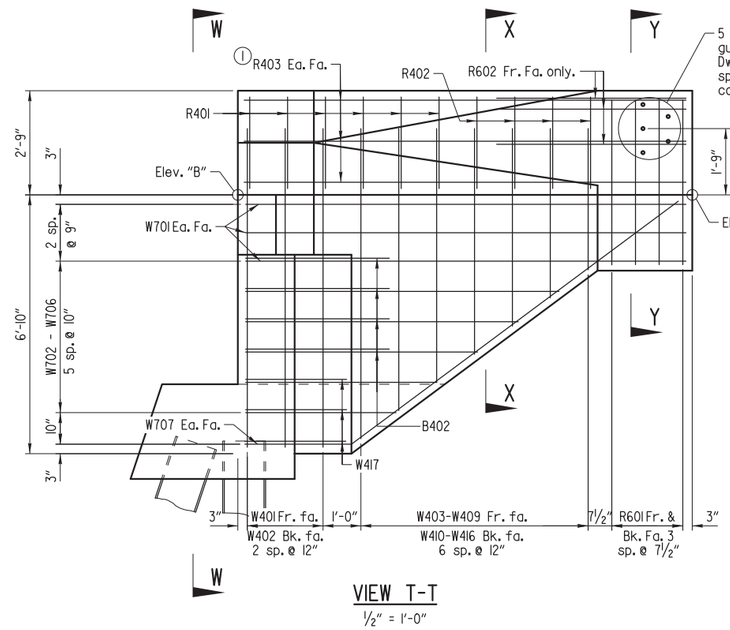
SECTION A-A
1" = 1'-0"



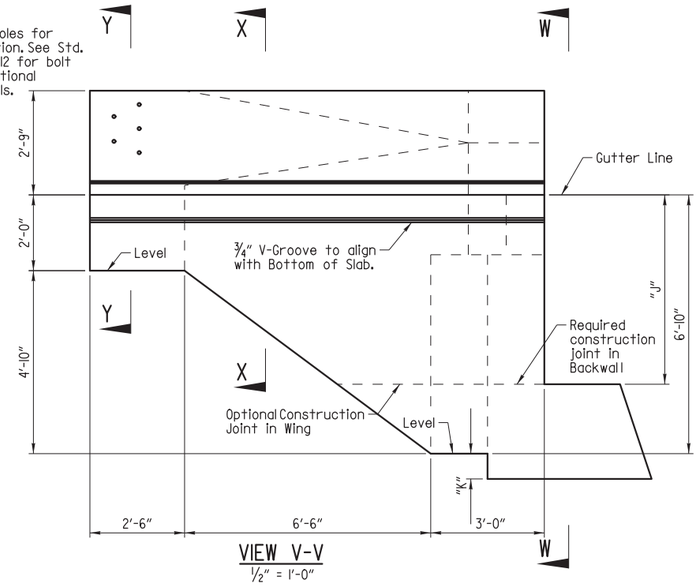
PLAN OF RAIL
1/2" = 1'-0"



JOINT DETAIL
No Scale



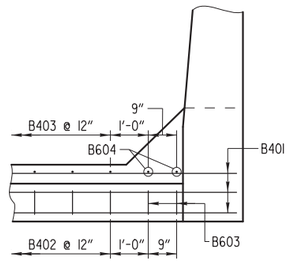
VIEW T-T
1/2" = 1'-0"



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

TABLE OF VARIABLES

Bent No.	Elev. "B"	Elev. "H"	"J"	"K"
1	383.44	383.38	4'-11 5/8"	7 5/8"
6	382.56	382.44	5'-0 13/16"	8 13/16"



VIEW S-S
Shown for all wings.
1/2" = 1'-0"

Notes:
For General Notes see Dwg. No. 60646.

For details of guardrail connection see Std. Dwgs. GR-10 & GR-12.

(1) Place bars parallel to grade.

2020.08.13 15:32:23-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 3
DETAILS OF END BENTS
HWY. 70 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 03/2019 FILENAME: B030501XI_BI2.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 03/2019 SCALE: As Shown
BRIDGE NO. 07440 DRAWING NO. 60645

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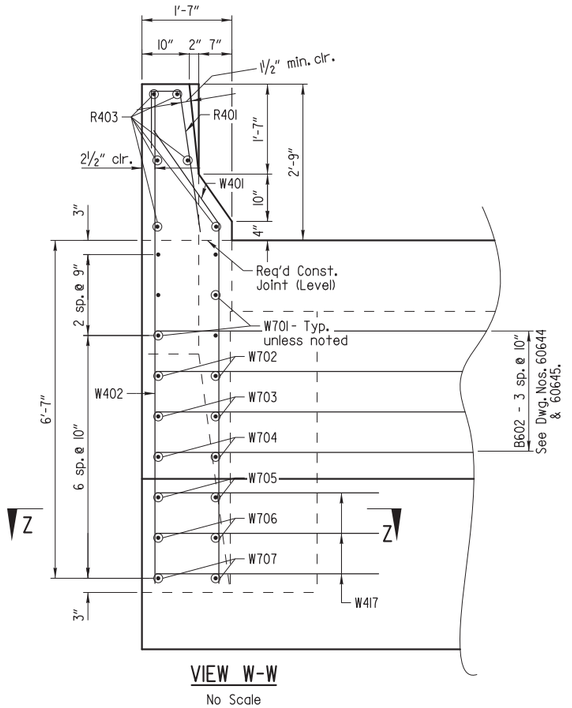
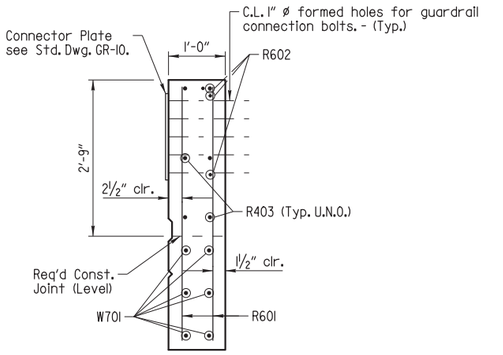
				JOB NO.		030501	91	178
				(1)	07440 - END BENTS - 60646			



VIEW W-W

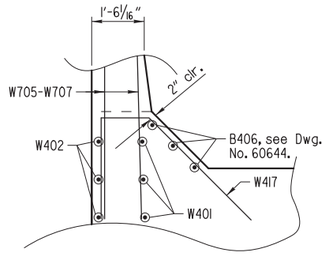
No Scale



SECTION Y-Y

¾" = 1'-0"

Note:
See Roadway Plans for guardrail locations.



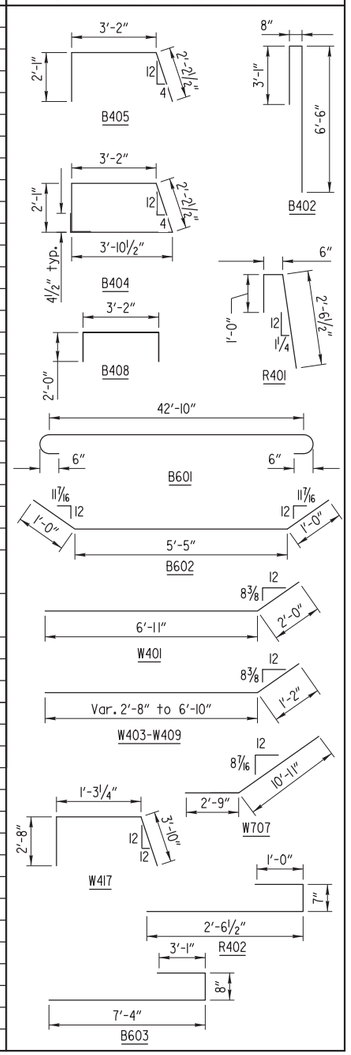
SECTION Z-Z

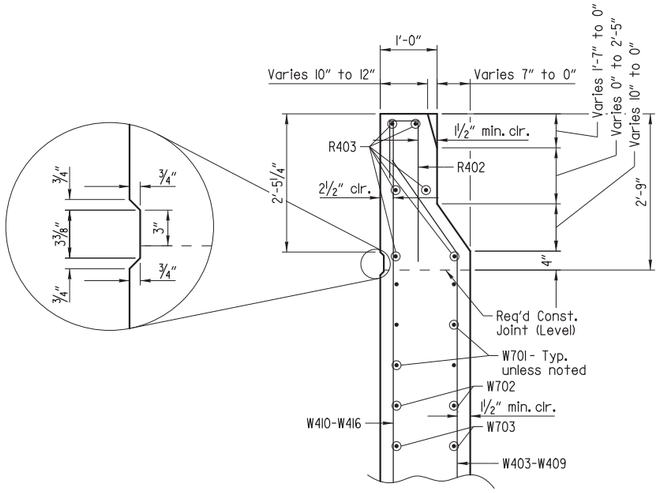
½" = 1'-0"

BAR LIST- PER END BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	28	23'-8"	Str.
B402	37	10'-1"	2"
B403	37	5'-3"	Str.
B404	56	11'-9"	2"
B405	10	7'-3"	2"
B406	6	5'-3"	Str.
B407	6	9'-0"	Str.
B408	14	7'-2"	2"
B601	6	44'-2"	4½"
B602	8	7'-5"	4½"
B603	4	12'-9"	4½'
B604	4	6'-1"	Str.
B801	6	42'-10"	Str.
R401	12	3'-11"	2"
R402	8	4'-0"	2"
R403	12	11'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	6	8'-11"	2"
W402	6	9'-3"	Str.
W403 to W409	2 each	Var. 3'-10" to 8'-0"	2"
W410 to W416	2 each	Var. 5'-0" to 9'-2"	Str.
W417	6	7'-7"	2"
W701	12	11'-8"	Str.
W702	4	8'-7"	Str.
W703	4	7'-6"	Str.
W704	4	6'-4"	Str.
W705	4	5'-3"	Str.
W706	4	4'-2"	Str.
W707	4	13'-8"	5¼"

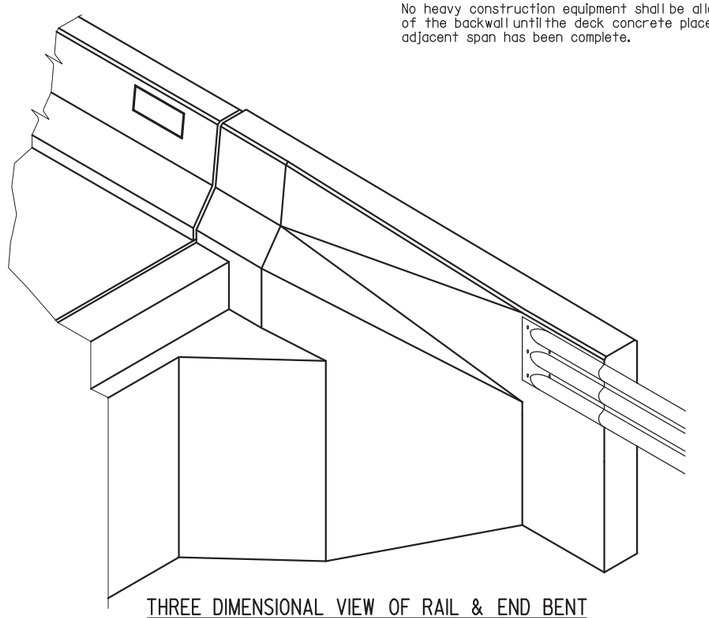
BENDING DIAGRAMS
Dimensions are out to out of bars.





VIEW X-X

No Scale



THREE DIMENSIONAL VIEW OF RAIL & END BENT

2020.08.13 15:32:25-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 3 OF 3
DETAILS OF END BENTS
HWY. 70 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 03/2019 FILENAME: B03050IXI_BI3.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 03/2019 SCALE: As Shown
BRIDGE NO. 07440 DRAWING NO. 60646

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REVISED DATE:

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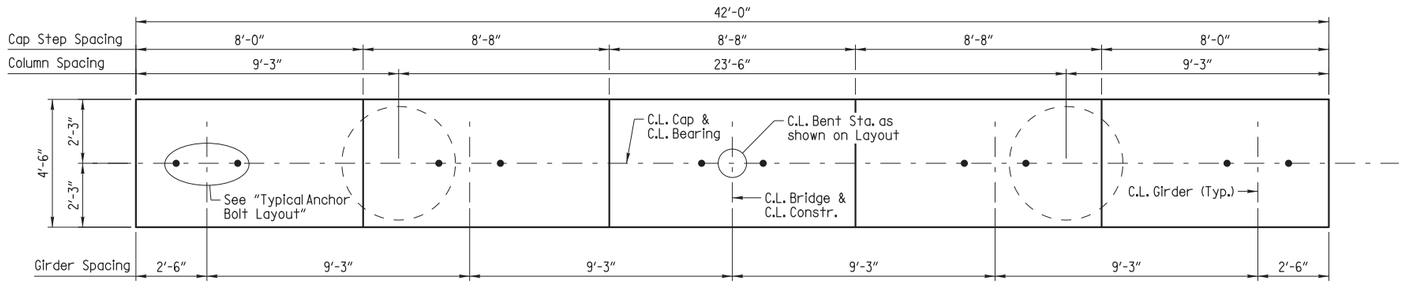
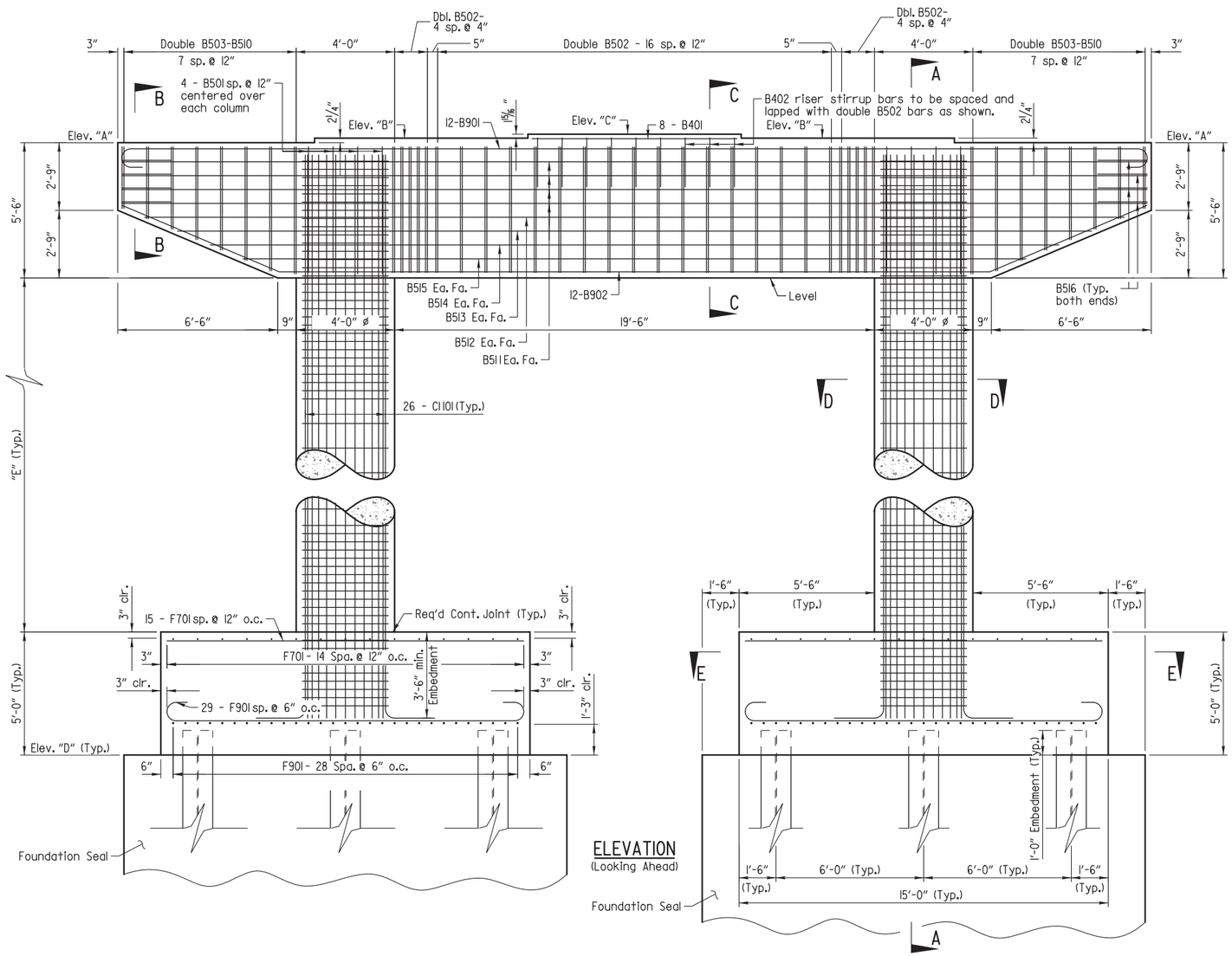


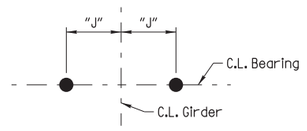
PLAN



ELEVATION
(Looking Ahead)

TABLE OF VARIABLES

Bent No.	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"	"E"	"F"	"G"	"H"	"J"
2	378.89	379.08	379.23	337.35	31'-0"	16	21	16	13 5/16"
3	379.35	379.54	379.70	339.32	29'-6"	16	19	16	13 5/16"
4	379.24	379.43	379.59	353.71	15'-0"	13	7	13	13 5/16"
5	378.41	378.59	378.75	355.87	12'-0"	13	4	13	13 1/8"



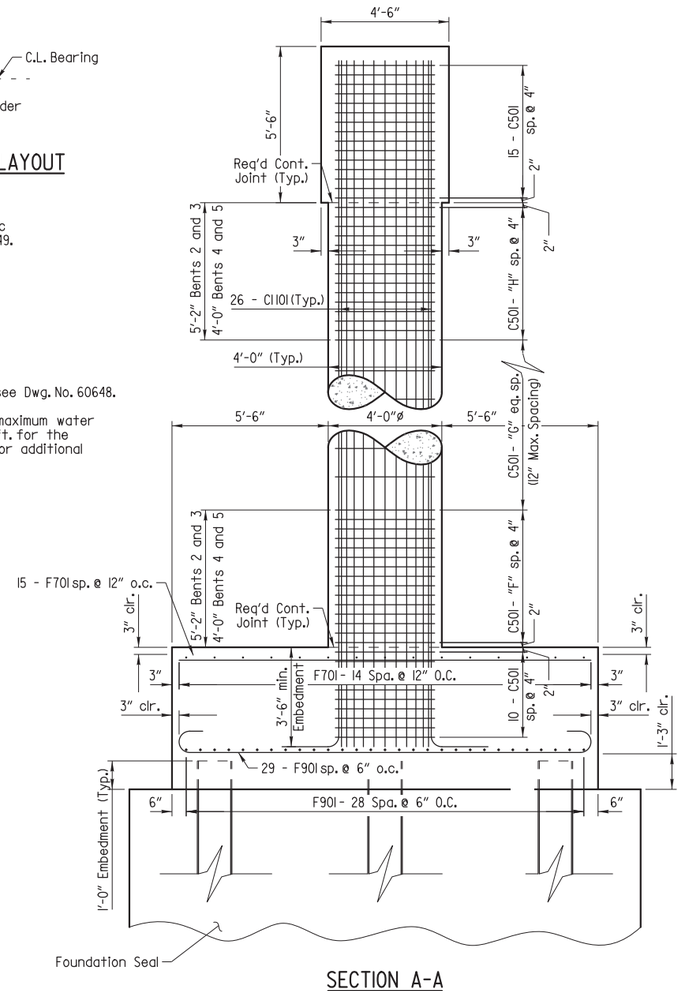
TYPICAL ANCHOR BOLT LAYOUT

No Scale

For details of elastomeric bearings, See Dwg. No. 60649.

Notes:
For sections B-B thru E-E, see Dwg. No. 60648.

For dewatering cofferdam, maximum water surface elevation is 362.0 ft. for the concrete seal sizes shown. For additional information, see Layout.



SECTION A-A

2020.08.13 15:32:27-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
HWY. 70 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 09/2018 FILENAME: B030501XI_B2I.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 09/2018 SCALE: 3/8" = 1'-0"
BRIDGE NO. 07440 DRAWING NO. 60647

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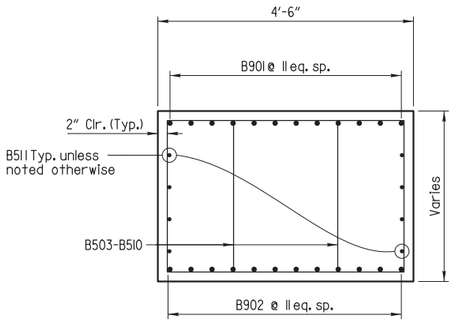
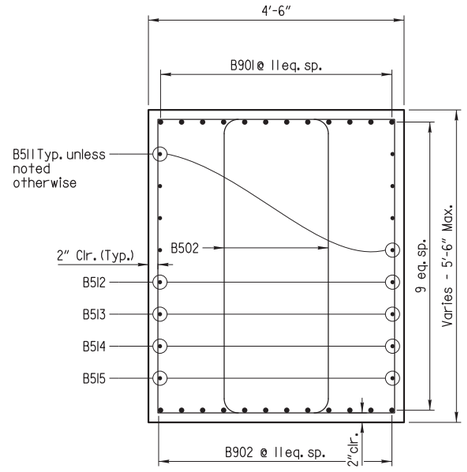


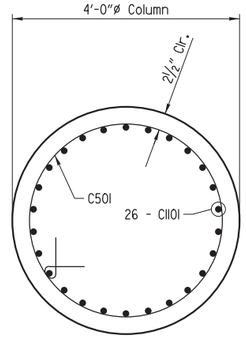
SECTION B-B

3/4" = 1'-0"



SECTION C-C

3/4" = 1'-0"



SECTION D-D

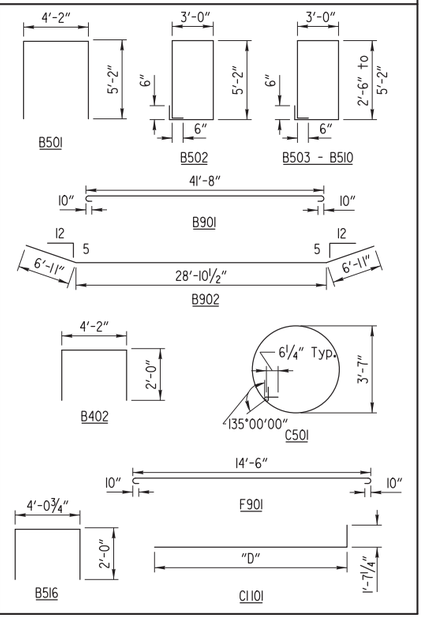
3/4" = 1'-0"

TABLE OF VARIABLES

Bent No.	"A"	"B"	"C"	"D"
2	8'-0"	158	40'-10"	39'-6"
3	7'-0"	154	39'-4"	38'-0"
4	3'-0"	118	24'-10"	23'-6"
5	3'-0"	112	21'-10"	20'-6"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.	BENDING DIAGRAMS Dimensions are out to out of bars.
B401	8	8'-4"	Str.	
B402	9	8'-0"	2"	
B501	8	14'-4"	2 1/2"	
B502	54	16'-10"	2 1/2"	
B503-B510	4 each	11'-6" to 16'-10"	2 1/2"	
B511	8	41'-8"	Str.	
B512	2	39'-10"	Str.	
B513	2	37'-2"	Str.	
B514	2	34'-6"	Str.	
B515	2	31'-10"	Str.	
B516	8	7'-11"	Str.	
B901	12	44'-2"	9"	
B902	12	42'-9"	9"	
C501	"B"	12'-8"	3 3/4"	
C1101	52	"C"	9"	
F701	60	14'-6"	Str.	
F901	116	16'-11"	3 3/4"	

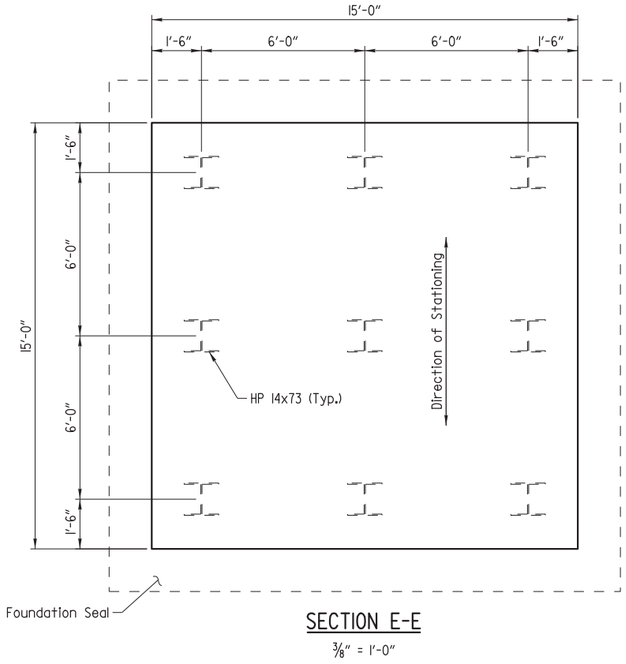


NOTES:

For "GENERAL NOTES" see Std. Dwg. No. 55006.

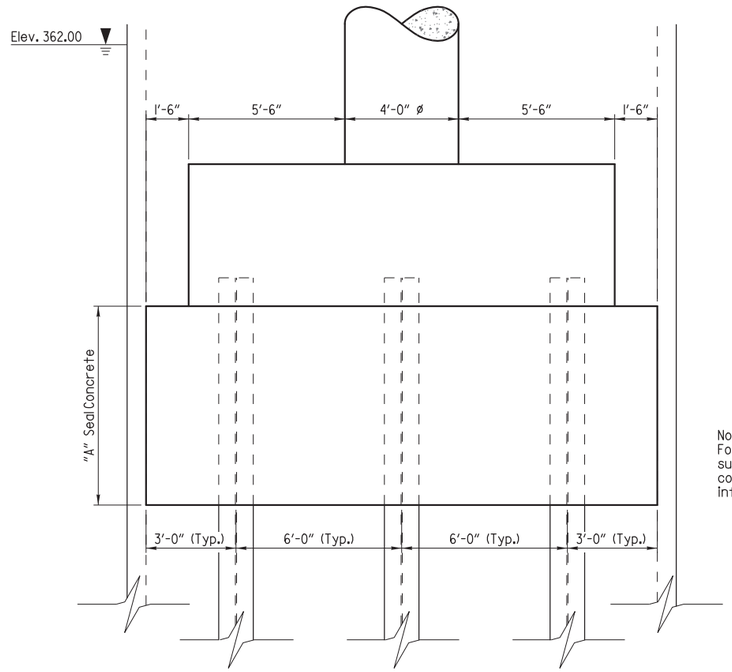
All piling shall be ASTM A709 Grade 50, Fy=50 ksi.

For additional information, see Layout.



SECTION E-E

3/8" = 1'-0"



FOOTING ELEVATION

3/8" = 1'-0"

Notes:
For dewatering cofferdam, maximum water surface elevation is 362.0 ft. for the concrete seal sizes shown. For additional information, see Layout.

2020.08.13 15:32:28-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
HWY. 70 OVER SALINE RIVER
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 04/2019 FILENAME: B030501XL_B22.dgn
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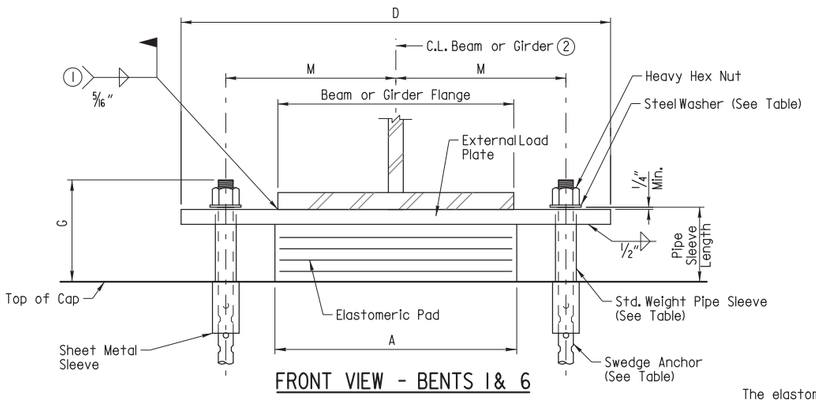
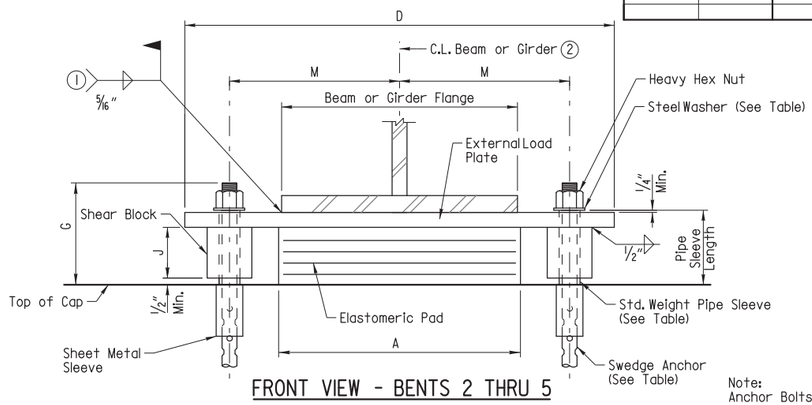


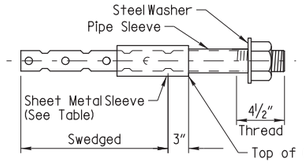
FRONT VIEW - BENTS 1& 6

(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L. Elastomeric pad shall be aligned with C.L. Beam or Girder.



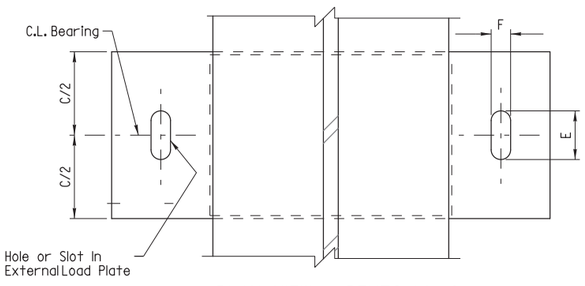
FRONT VIEW - BENTS 2 THRU 5



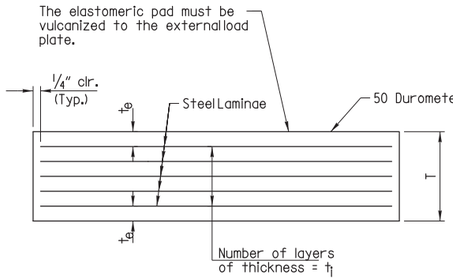
ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (A709, Gr. 50W).

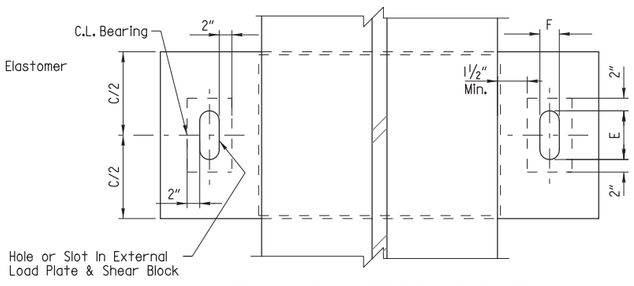


PLAN VIEW - BENTS 1& 6

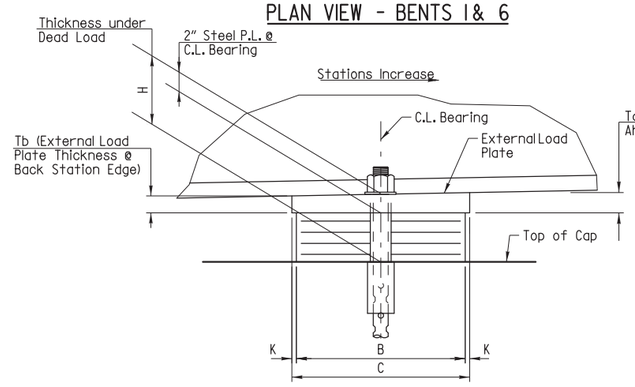


t_i = thickness of elastomer between steel laminae
t_e = thickness of elastomer cover on top and bottom of pad
N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



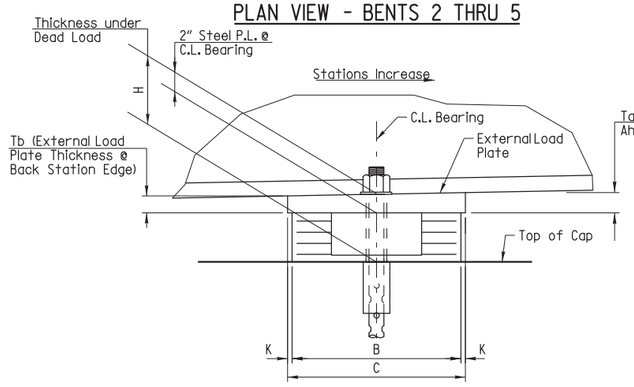
PLAN VIEW - BENTS 2 THRU 5



SIDE VIEW - BENTS 1& 6

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to "Ta" & "Tb" values shown in the "Table of Fabricator Variables".

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to Ta and Tb.



SIDE VIEW - BENTS 2 THRU 5

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

(4) Shear blocks 4 inches or thicker may be fabricated from built-up plates with a 5/16" groove weld on all sides. No plate shall be less than 2" nominal thickness.

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION			BEARING TYPE	NO. OF BEARINGS EACH BENT	(3) MAXIMUM DESIGN LOAD (kips)	ELASTOMERIC PAD						EXTERNAL LOAD PLATE								ANCHOR BOLT			
	BENT NO(S).	UNIT	BEAM OR GIRDER NO.				G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	(4) J	K	M	T_a	T_b	ANCHOR BOLT (Ø x L)	GRADE	PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)
07440	Bent 1	465'	All	Exp.	5	144.3	9"	6 3/16"	16"	11"	6	1/2"	1/4"	7 @ 12ga.	4 1/4"	12"	28 1/2"	6 3/4"	3 1/8"	--	1/2"	11"	2.03"	1.97"	2" x 32"	55	2 1/2" x 6 1/2"	4" x 9"	3 3/4"
	Bent 2	465'	All	Fix.	5	396.5	9"	5 3/16"	17"	15"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	16"	35 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	13 5/16"	2.04"	1.96"	2" x 51/4"	55	2" x 5 1/8"	4" x 9"	3 3/8"
	Bent 3	465'	All	Fix.	5	400.1	9"	5 5/16"	17"	15"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	16"	35 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	13 5/16"	2.02"	1.98"	1 3/4" x 27"	55	2" x 5 1/8"	4" x 9"	3 3/8"
	Bent 4	465'	All	Fix.	5	400.1	9"	5 5/16"	17"	15"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	16"	35 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	13 5/16"	1.96"	2.04"	1 3/4" x 27"	55	2" x 5 1/8"	4" x 9"	3 3/8"
	Bent 5	465'	All	Exp.	5	396.5	9"	5 3/16"	17"	15"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	16"	34 1/2"	4 3/4"	2 1/4"	3 1/16"	1/2"	13 1/8"	1.92"	2.08"	1 1/2" x 27"	55	1 1/2" x 5 1/8"	3" x 9"	3"
	Bent 6	465'	All	Exp.	5	144.3	10"	7 1/4"	16"	11"	8	1/2"	1/4"	9 @ 12ga.	5 1/16"	12"	28 1/2"	6 7/8"	3 1/8"	--	1/2"	11"	1.94"	2.06"	2 1/4" x 36"	55	2 1/2" x 7 3/16"	4" x 9"	4"

(3) Maximum Load = Service I Limit State.

GENERAL NOTES

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

External load plates and shear blocks shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

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

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (A709, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings without masonry plates shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

2020.08.13 15:46:16-05'00'

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DETAILS OF ELASTOMERIC BEARINGS HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 04/2019 FILENAME: B03050IXI_EXI.dgn
CHECKED BY: JPC DATE: 12/2019
DESIGNED BY: MKL DATE: 04/2019 SCALE: No Scale
BRIDGE NO. 07440 DRAWING NO. 60649

Leonard.Speed 8/13/2020 12:02 PM
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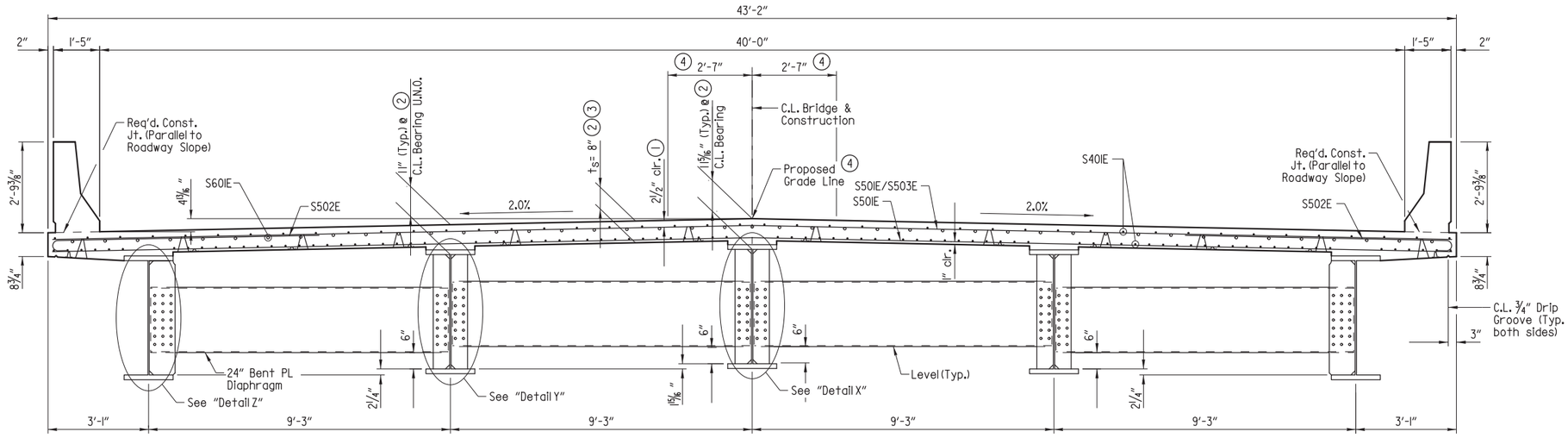
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	95	178
(1)	07440 - 465'-0" CONT. UNIT - 60650			



TYPICAL SECTION

½" = 1'-0"
(Looking Forward)

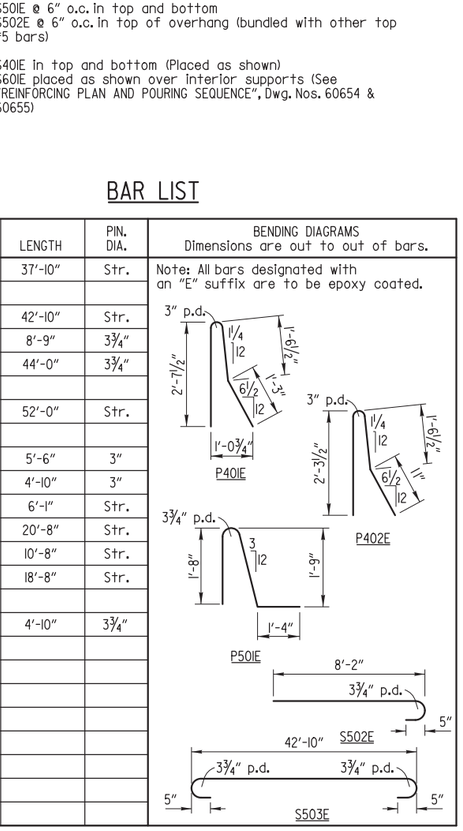
Slab Reinforcing:

Transverse: S50IE @ 6" o.c. in top and bottom
S502E @ 6" o.c. in top of overhang (bundled with other top #5 bars)

Longitudinal: S40IE in top and bottom (Placed as shown)
S60IE placed as shown over interior supports (See "REINFORCING PLAN AND POURING SEQUENCE", Dwg. Nos. 60654 & 60655)

BAR LIST

MARK	NO. REQ'D.	LENGTH	PIN. DIA.	BENDING DIAGRAMS Dimensions are out to out of bars.
S40IE	1716	37'-10"	Str.	Note: All bars designated with an "E" suffix are to be epoxy coated.
S50IE	1394	42'-10"	Str.	
S502E	1858	8'-9"	3¾"	
S503E	465	44'-0"	3¾"	
S60IE	172	52'-0"	Str.	
P40IE	1652	5'-6"	3"	
P402E	208	4'-10"	3"	
P403E	144	6'-1"	Str.	
P404E	28	20'-8"	Str.	
P405E	224	10'-8"	Str.	
P406E	182	18'-8"	Str.	
P50IE	1652	4'-10"	3¾"	



t_s = slab thickness

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

(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) Haunch dimensions may vary within the following limits to maintain the grade and slab thickness tolerance:

Top Flange Thickness	Haunch Adj. Tolerance	
	Plus	Minus
¾"	⅝"	2⅝"
1"	⅞"	2⅜"

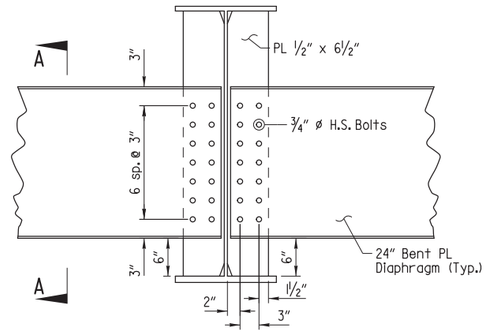
No increase in concrete and structural steel quantities will be made to maintain tolerances. Tolerances shown are applicable for both removable deck forming and permanent steel deck forms. Payment for concrete shall be based on removable deck forming.

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

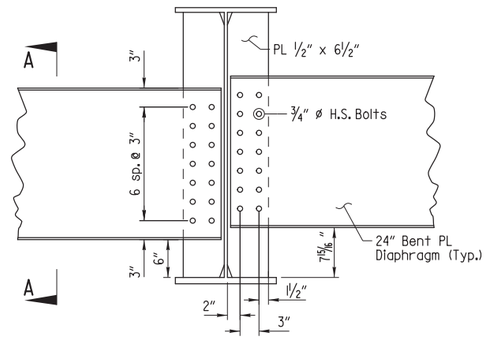
(4) See "ROUNDING DETAIL" on Std. Dwg. No. 55007.

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

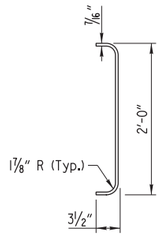
Bar positions and clearances from the forms shall be maintained by means of stays, tie hangers, or other approved devices per Subsection 804.06. Placement of slab bolsters or high chairs with full length lower runners directly on removable deck forms will not be allowed.



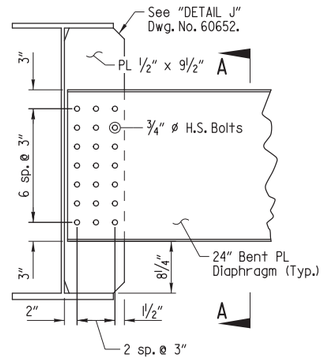
DETAIL X
1" = 1'-0"



DETAIL Y
1" = 1'-0"



SECTION A-A
1" = 1'-0"
Typ. cross-section for all 24" bent plate diaphragms.



DETAIL Z
1" = 1'-0"

2020.08.13 15:32:30-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	04/2018	FILENAME:	B03050IXI_SXI.dgn
CHECKED BY:	JPC	DATE:	04/2019		
DESIGNED BY:	MKL	DATE:	04/2018	SCALE:	As Shown
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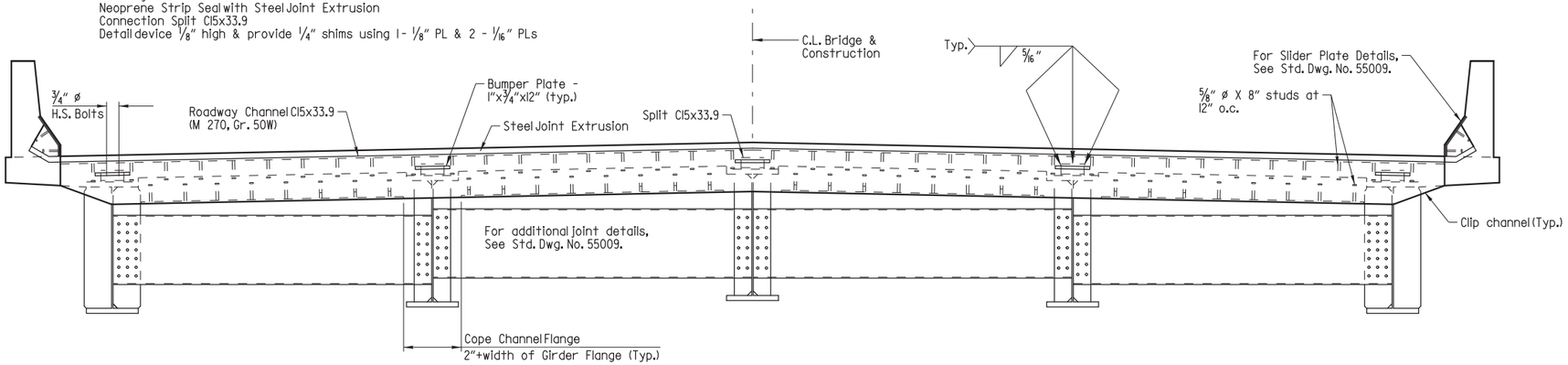
REVISED DATE:

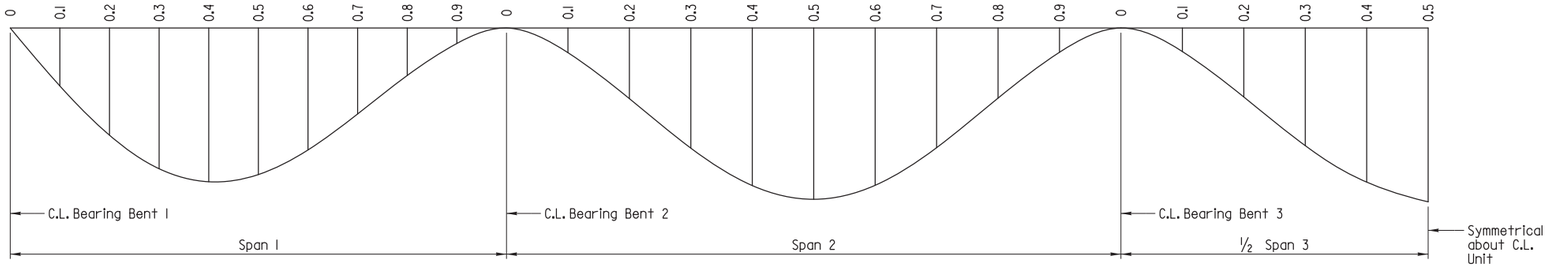
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	96	178
				(1)	07440 - 465'-0" CONT. UNIT - 60651			

Expansion Device
Roadway Channel C15x33.9
Neoprene Strip Seal with Steel Joint Extrusion
Connection Split C15x33.9
Detail device 1/8" high & provide 1/4" shims using 1- 1/8" PL & 2 - 1/16" PLs



TYPICAL SECTION THRU JOINT

1/2" = 1'-0"
(Looking Ahead - Bent No. 1, Looking Back - Bent No. 6)



DEAD LOAD DEFLECTION DIAGRAM

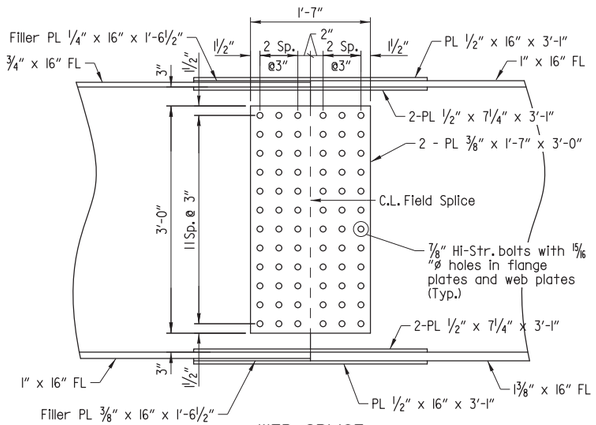
No Scale

TABLE OF DEAD LOAD DEFLECTIONS - INCHES

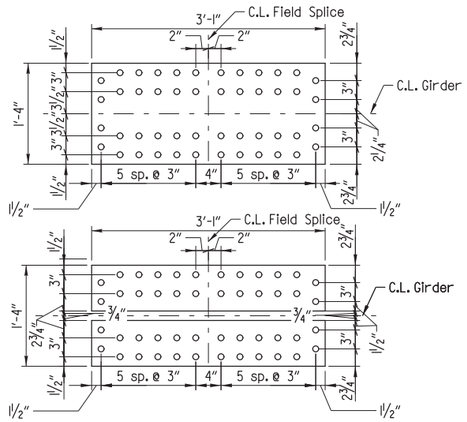
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Rail	
		Ext.	Int.	Ext.	Int.	Ext.	Int.
1	0	0	0	0	0	0	0
	0.1	0.055	0.057	0.307	0.372	0.336	0.339
	0.2	0.101	0.105	0.564	0.683	0.616	0.732
	0.3	0.131	0.136	0.734	0.888	0.802	0.953
	0.4	0.142	0.148	0.800	0.968	0.874	1.039
	0.5	0.134	0.140	0.759	0.919	0.829	0.986
	0.6	0.109	0.114	0.625	0.758	0.684	0.814
	0.7	0.075	0.078	0.434	0.525	0.474	0.564
	0.8	0.038	0.040	0.228	0.277	0.249	0.297
	0.9	0.009	0.010	0.063	0.077	0.069	0.082
2	0	0	0	0	0	0	0
	0.1	0.027	0.028	0.129	0.155	0.141	0.167
	0.2	0.080	0.083	0.395	0.476	0.432	0.512
	0.3	0.136	0.142	0.683	0.825	0.748	0.886
	0.4	0.177	0.185	0.898	1.084	0.983	1.164
	0.5	0.192	0.200	0.975	1.177	1.066	1.264
	0.6	0.175	0.183	0.893	1.078	0.977	1.158
	0.7	0.133	0.138	0.675	0.814	0.739	0.875
	0.8	0.076	0.079	0.385	0.465	0.422	0.500
	0.9	0.025	0.026	0.122	0.148	0.134	0.158
1/2 Span 3	0	0	0	0	0	0	0
	0.1	0.020	0.021	0.111	0.135	0.122	0.145
	0.2	0.068	0.070	0.365	0.440	0.399	0.473
	0.3	0.120	0.126	0.644	0.780	0.705	0.837
	0.4	0.160	0.167	0.855	1.034	0.936	1.111
	0.5	0.175	0.182	0.933	1.128	1.021	1.211

Table is symm. about C.L. Unit

Note:
Camber for Dead Load Deflection plus Vertical Curve + or - 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.



WEB SPLICE



FLANGE SPLICE

DETAILS OF FIELD SPLICES

1" = 1'-0"

Note:
Bolted field splices shown may be eliminated 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 ASTM A709 Gr. 50W steel.

2020.08.13 15:32:32-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 04/2018 FILENAME: B03050IX1_SX2.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 04/2018 SCALE: As Shown
BRIDGE NO. 07440 DRAWING NO. 60651

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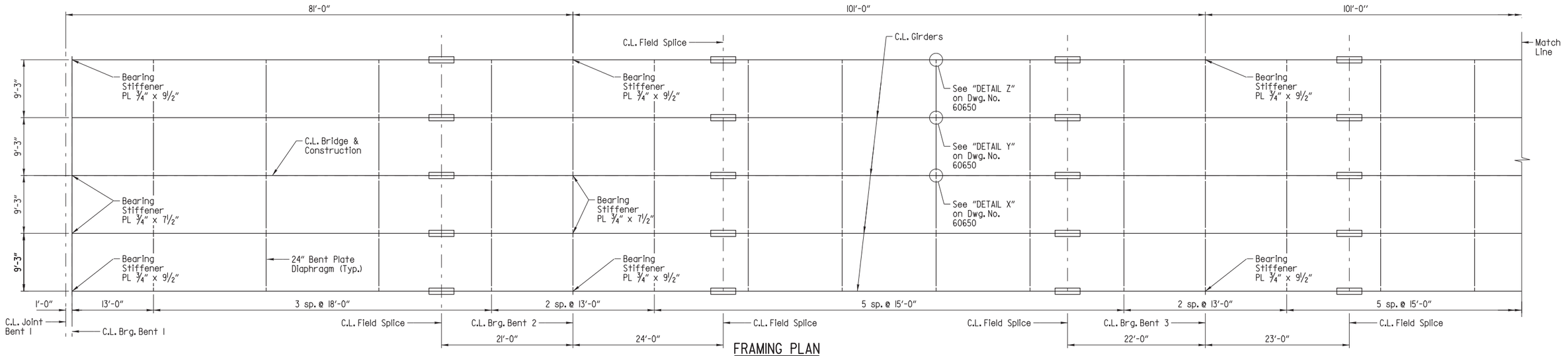
REVISED DATE:

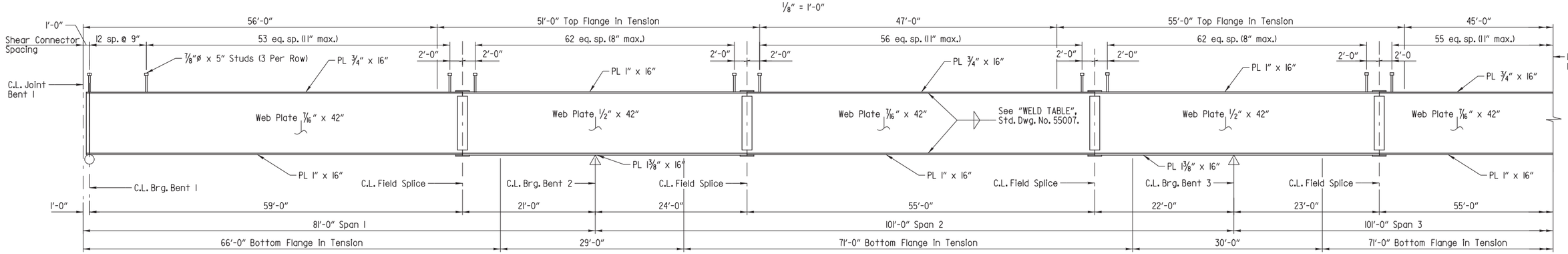
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	97	178
(1)	07440 - 465'-0" CONT. UNIT - 60652			



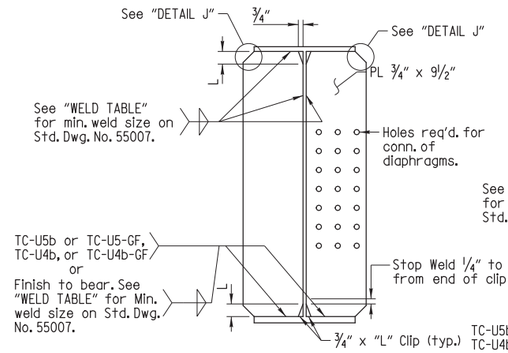
FRAMING PLAN

⅛" = 1'-0"

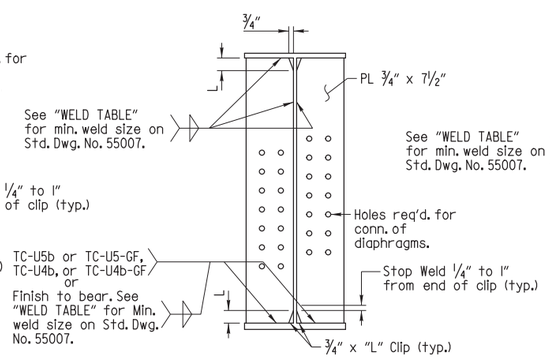


GIRDER ELEVATION

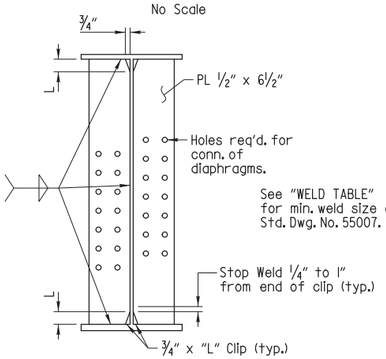
No Scale



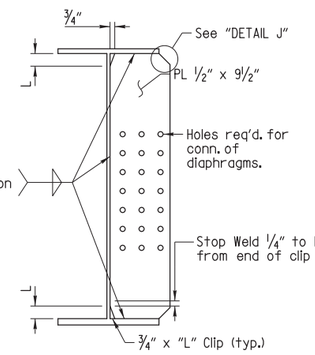
EXTERIOR GIRDER



INTERIOR GIRDER



INTERIOR GIRDER



EXTERIOR GIRDER

CLIP DIMENSION "L"

Web Thickness	"L"
7/16"	1⅞"
½"	2¼"

DETAIL J

No Scale

(1) If permanent steelbridge deck forms are used, the Fabricator shall clip plate as necessary to accommodate the deck form supports.

Note:
U.N.O. all structural steel shall be ASTM A709, Gr. 50W.

BEARING STIFFENER DETAIL

1" = 1'-0"

DIAPHRAGM CONNECTION PLATE DETAIL

1" = 1'-0"

2020.08.13 15:46:46-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 3 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	01/2019	FILENAME:	B03050IXL_SX3.dgn
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DESIGNED BY:	MKL	DATE:	01/2019	SCALE:	As Shown
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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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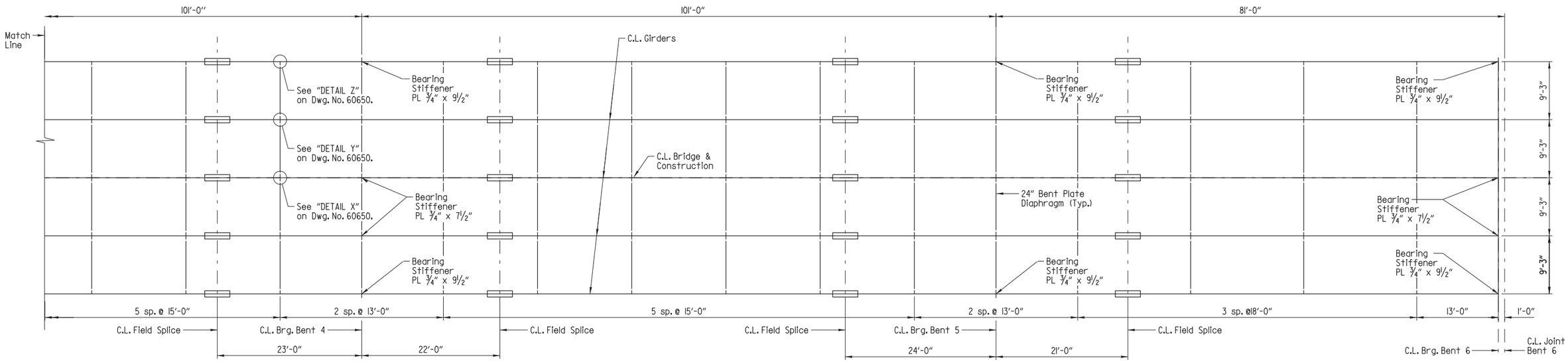
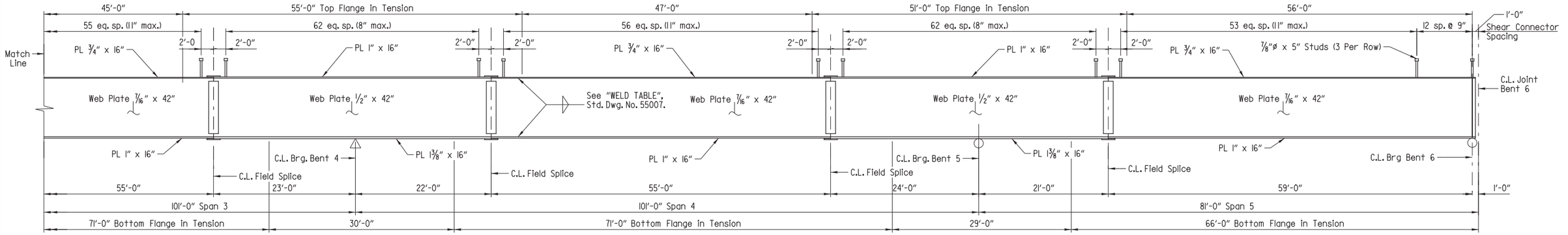


FRAMING PLAN

1/8" = 1'-0"



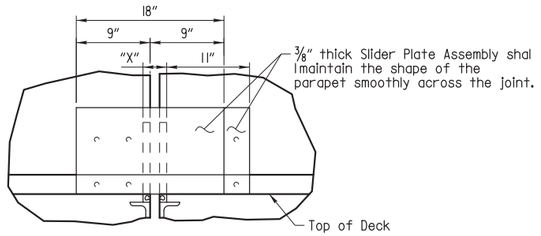
GIRDER ELEVATION

No Scale

TABLE OF STRIP SEAL JOINT DATA

Bent Nos.	Movement Rating	"A" width perpendicular to joint at 24 hour average temperature of:			"B" width perpendicular to joint at 24 hour average temperature of:			"C" width perpendicular to joint at 24 hour average temperature of:	Bumper Plate Size
		40°F	60°F	80°F	40°F	60°F	80°F	60°F	
1	4"	2⅞"	2⅝"	2⅜"	2⅜"	2⅛"	1⅞"	3"	1" x ½"
6	4"	3"	2⅝"	2¼"	2½"	2⅛"	1¾"	3"	1" x ½"

Note:
The temperature used to set the joint opening shall be the approximate average air temperature during the preceding 24 hour period. The Engineer shall establish the temperature. Interpolation of the table may be necessary. Installation is limited to 40°F min. and 80°F max.



Dimension "X" equals the width of opening in parapet to allow for removal or repair of joint. See Std. Dwg. 55009 for additional details.

DETAIL OF PARAPET SLIDER PLATES

No Scale

Note:
U.N.O. all structural steel shall be ASTM A709, Gr. 50W.

2020.08.13 15:32:34-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 4 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 01/2019 FILENAME: B030501XL_SX4.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 01/2019 SCALE: As Shown
BRIDGE NO. 07440 DRAWING NO. 60653

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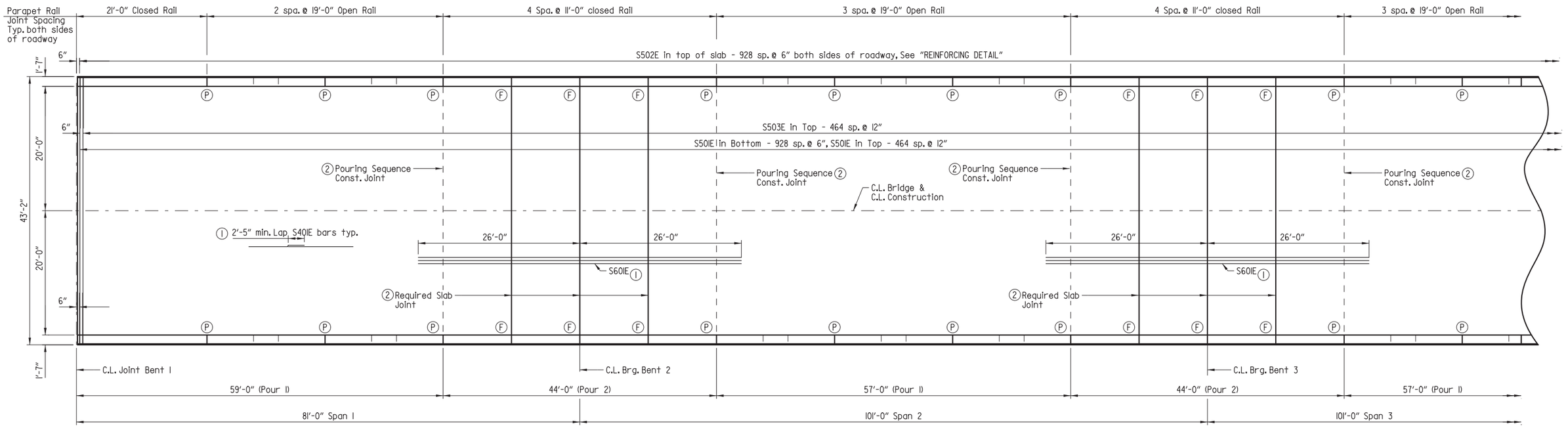
REVISED DATE:

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.		030501	99	178
				(1)	07440 - 465'-0" CONT. UNIT - 60654			



REINFORCING PLAN AND POURING SEQUENCE

1/8" = 1'-0"

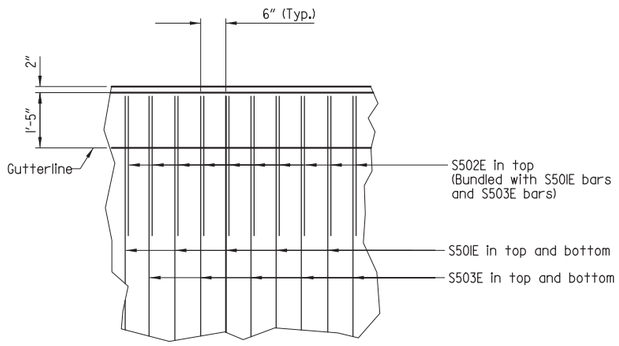
Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Concrete in bridge superstructure shall be placed, consolidated, and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agen. 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 must obtain approval from the Engineer for any deviations from the pouring sequence shown.

(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of slab.)

(F) Full depth parapet joint at this location. (Stop 4" above top of slab.)

(1) Placed as shown in "Typical Section", See Dwg. No. 60650.

(2) Align with parapet open Joint unless noted otherwise.



REINFORCING DETAIL

No Scale

2020.08.13 15:32:36-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 5 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 01/2019 FILENAME: B030501XL_SX5.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 01/2019 SCALE: As Shown
BRIDGE NO. 07440 DRAWING NO. 60654

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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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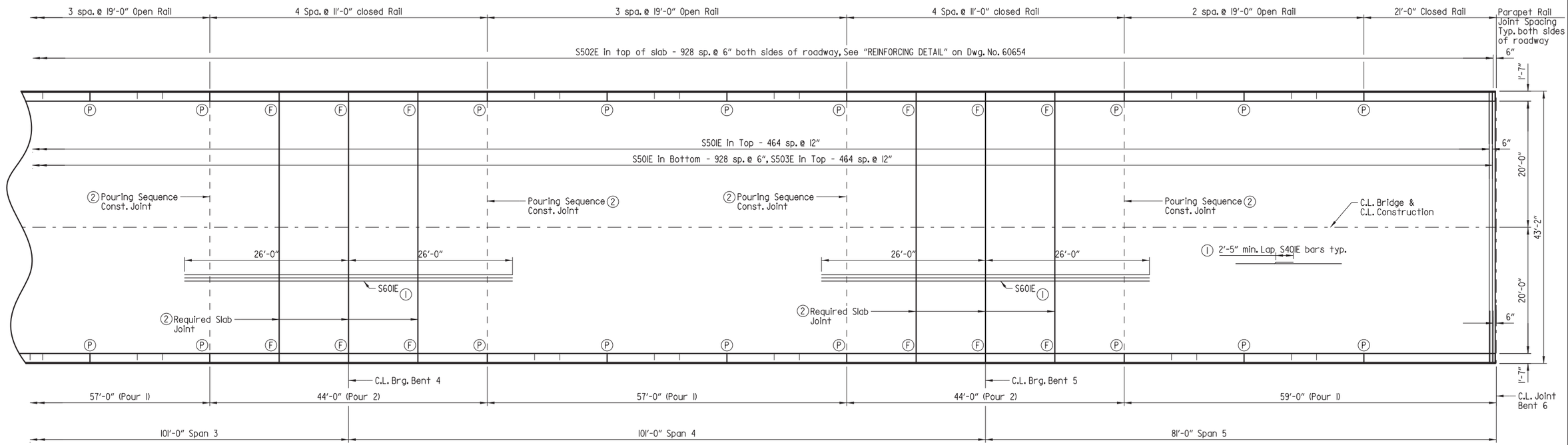
				JOB NO.		030501	100	178
				(1)	07440 - 465'-0" CONT. UNIT - 60655			



REINFORCING PLAN AND POURING SEQUENCE

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Concrete in bridge superstructure shall be placed, consolidated, and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agen. 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 must obtain approval from the Engineer for any deviations from the pouring sequence shown.

(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of slab.)

(F) Full depth parapet joint at this location. (Stop 4" above top of slab.)

(1) Placed as shown in "Typical Section", See Dwg. No. 60650.

(2) Align with parapet open joint unless noted otherwise.

2020.08.13 15:32:38-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 6 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 70 OVER SALINE RIVER
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 01/2019 FILENAME: B03050IXI_SX6.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 01/2019 SCALE: 1/8" = 1'-0"
BRIDGE NO. 07440 DRAWING NO. 60655

LeonardSpeed 8/13/2020 12:27:09 PM
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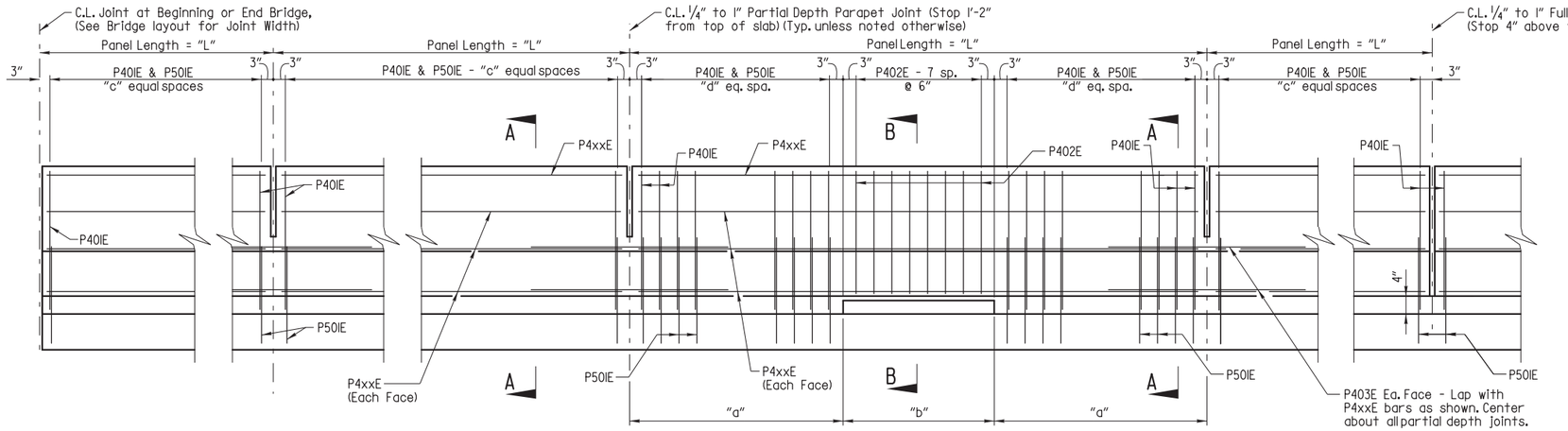
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	101	178

(1) 07440 - 465'-0" CONT. UNIT - 60656



TYPICAL END PANEL

TYPICAL CLOSED PANEL PARAPET RAIL

TYPICAL OPEN PANEL PARAPET RAIL

TYPICAL FULL DEPTH JOINT

Note:
For location of full and partial depth parapet joints, see Dwg. Nos. 60654 & 60655.

PARAPET RAIL VARIABLES

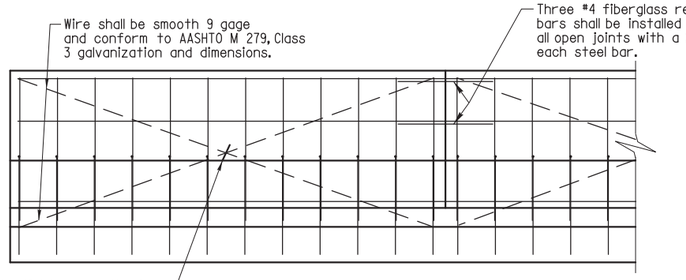
Panel Length "L"	Panel Type	"a"	"b"	"c"	"d"	P4xxE Bars
21'-0"	closed	-----	-----	41	-----	P404E
11'-0"	closed	-----	-----	21	-----	P405E
19'-0"	open	7'-6"	4'-0"	-----	14	P406E

For location of closed and open parapet rails, see Dwg. Nos. 60654 & 60655.

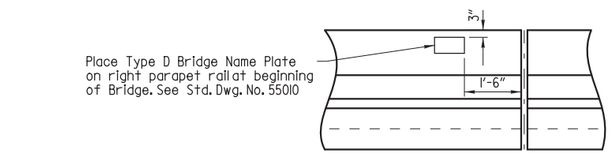
ELEVATION - CONCRETE PARAPET RAIL

(As viewed from roadway side of Parapet)

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.



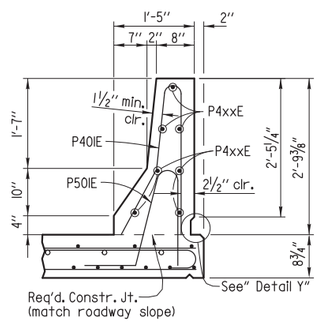
All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.



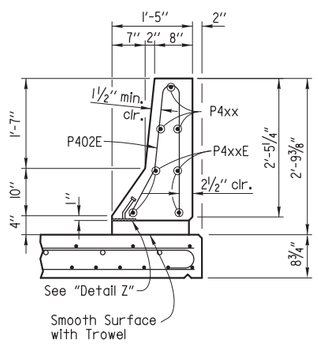
NAME PLATE DETAIL

No Scale

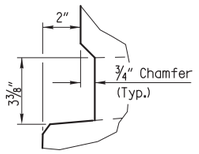
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL



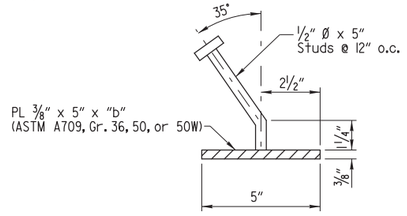
SECTION A-A



SECTION B-B

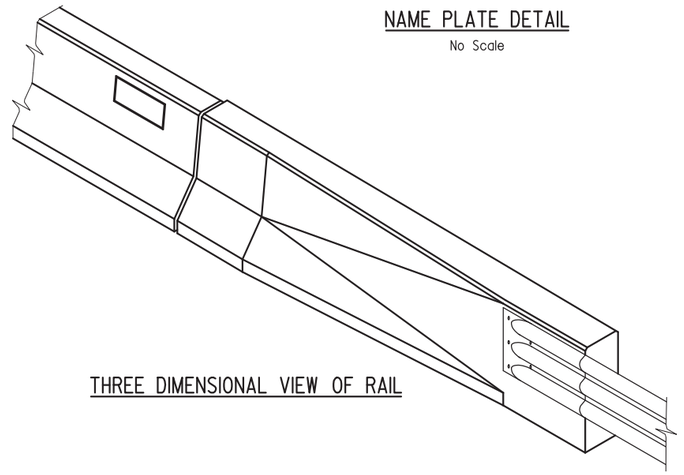


DETAIL Y



DETAIL Z

Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Structural Steel In Plate Girder Spans (M 270, Gr. 50W)". The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel In Plate Girder Spans (A709, Gr. 50W)"



THREE DIMENSIONAL VIEW OF RAIL

2020.08.13 15:47:13-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 7 OF 7
DETAILS OF 465'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 03/2019 FILENAME: B03050IXL_SX7.dgn
CHECKED BY: JPC DATE: 04/2019
DESIGNED BY: MKL DATE: 03/2019 SCALE: No Scale
BRIDGE NO. 07440 DRAWING NO. 60656

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WORKSPACE: ARDOT
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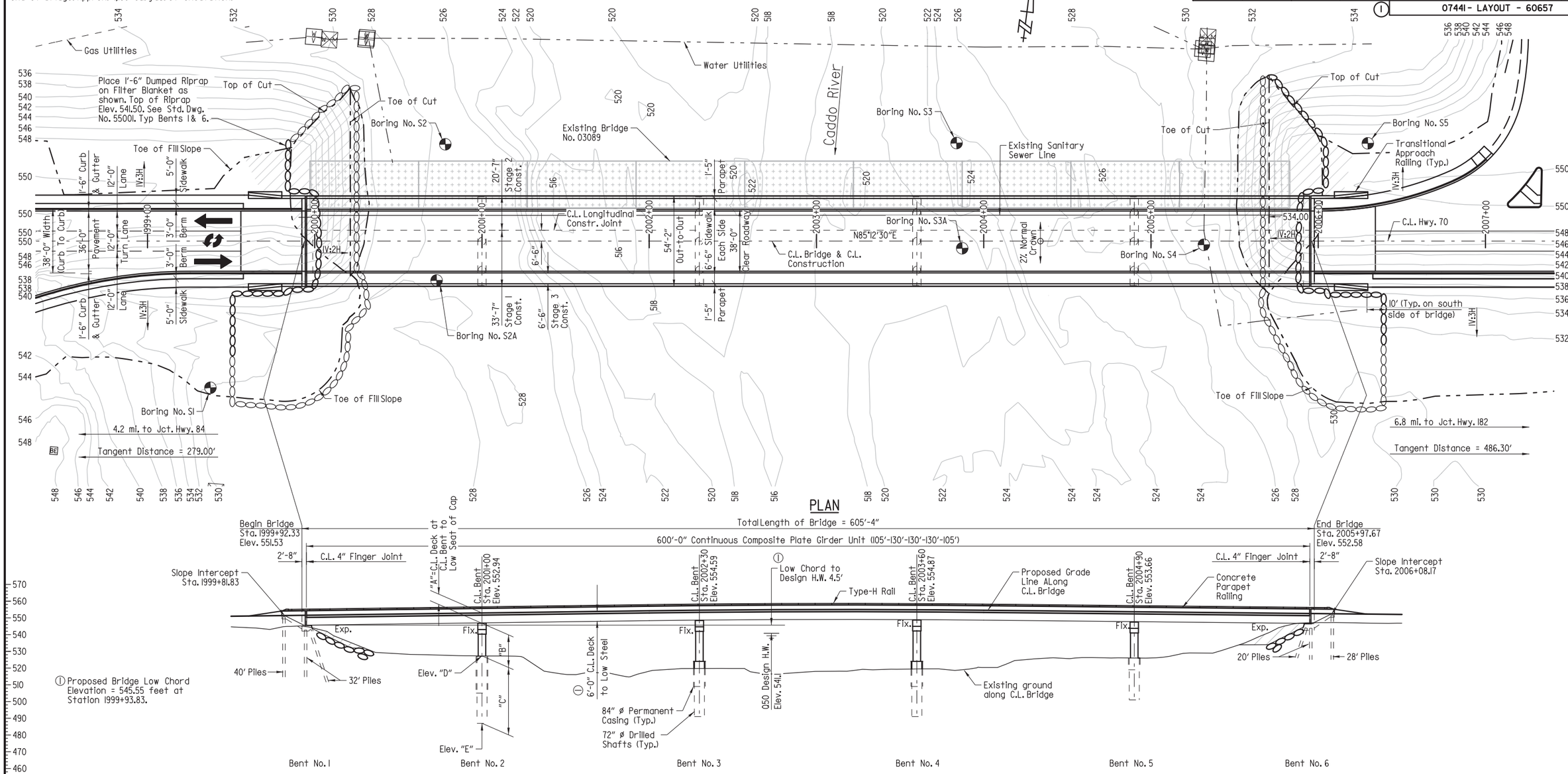
REVISED DATE:

Note:
The contractor shall remove the embankment at the existing bridge ends as shown using IV:2H cut slopes. Cut to Elev. 532 at beginning of bridge and to Elev. 534 at end of bridge. Approx. 1,180 cu. yds. of excavation.

For R/W Data, See Roadway Plans.

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.		030501	102	178
				07441 - LAYOUT - 60657				



PLAN

ELEVATION

TABLE OF VARIABLES

Location	"A"	"B"	"C"	"D"	"E"
Bent No. 2	6'-6 1/2"	19'-5 3/16"	40'-0"	527.00	487.00
Bent No. 3	6'-6 1/2"	24'-1 1/16"	33'-0"	524.00	491.00
Bent No. 4	6'-6 1/2"	24'-4 5/16"	33'-0"	524.00	491.00
Bent No. 5	6'-6 1/2"	21'-1 5/16"	25'-0"	526.00	501.00

Notes:
Use Type 1 Special Approach Slab at West end of Bridge, See Dwg. No. 60677.

Use Type 2 Special Approach Slab at East end of Bridge, See Dwg. No. 60678.

For General Notes, Soil Borings, and Hydraulic Data See Dwg. No. 60658.

Note:
Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Std. Dwg. No. 55007 for additional information.

2020.08.13 15:32:39-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 2
LAYOUT OF BRIDGE
HWY. 70 OVER CADDO RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
PIKE COUNTY
ROUTE 70 SECTION 5

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 09/2018 FILENAME: B03050IX2_LXI.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 09/2018 SCALE: 1" = 30'
BRIDGE NO. 07441 DRAWING NO. 60657

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REVISED DATE:

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 with current Interim Specifications.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 S_{DI} =0.099 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 (ASTM A709, Gr. 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi

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

STEEL PILING: All end bent Piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a safe bearing capacity of 95 tons per pile and into material designated as shale or sandstone on the boring legend. Drive all piles to a minimum penetration of 10' below natural ground at Bent Nos. 1& 6. 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. Piling in end bents shall be driven after embankment to bottom of cap is in place. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points on all piles.

PREBORING: Preboring will be required to obtain the minimum pile penetration requirements. Preboring shall take place after excavation to the bottom of end bent caps is complete. The size of preboring will be determined by the Engineer. The depth of the preboring shall be sufficient to provide the specified minimum penetration and to set the pile tip a minimum of 3' into rock, whichever is greater. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored holes shall be backfilled with an approved non-shrink grout, or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will be included in the item "PREBORING".

DRILLED SHAFTS: Foundations for all intermediate 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. 030501 "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. 030501 "Nondestructive Testing of Drilled Shafts".

PAINTING: All Grade 50W structural steel, except galvanized members and surfaces in contact with concrete, within 9.5 feet of bridge deck expansion joints shall be painted as specified in Subsection 807.75. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

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. Sidewalks shall be given a Class 6 Broomed Finish.

PROTECTIVE SURFACE TREATMENT: Class 1 Protective Surface Treatment shall be applied to the roadway surface, top of end bent backwalls, roadway face and top of both concrete parapets, and sidewalks. Class 1 Protective Surface Treatment shall meet the requirements of Section 803.

DETAIL DRAWINGS	DRAWING NOS.
End Bents	60660-60663
Intermediate Bents	60664-60665
Elastomeric Bearings	60666
600'-0" Cont. Comp. Plate Girder Unit	60667-60676
Type 1 Special Approach Slab	60677
Type 2 Special Approach Slab	60678
Standard General Notes	55006
Details for Steel Bridge Structures	55007
Transitional Approach Railing	55013
Type H Railing	55014
Steel Piling	55020

EXISTING BRIDGE: Existing Bridge No. 03089 (Log Mile 8.78) is 33.5' wide and 587.2' long and consists of nine 65' steel I-beam spans supported by concrete wall piers and end bents on piling.

REMOVAL AND SALVAGE: After the Stage 1 Construction of the new bridge is complete and open to traffic, the Contractor shall remove existing Bridge No. 03089 in accordance with Section 205. The remnant structure to the North of the existing bridge shall also be removed at the direction of the Engineer. All material from the existing bridge shall become property of the Contractor except the following which shall remain the property of the State:

- Dumped Riprap around Existing Intermediate Bents

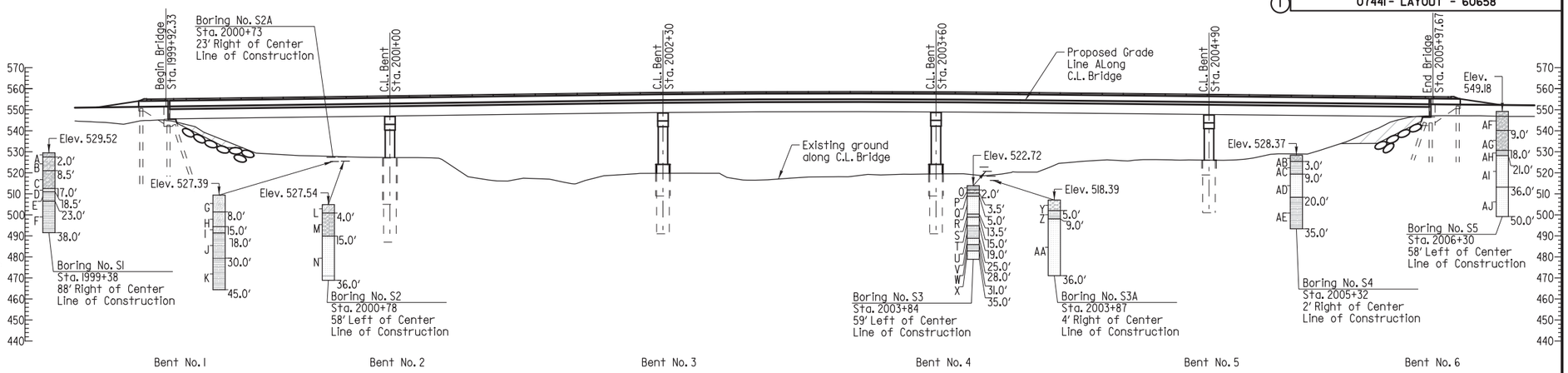
The Contractor shall coordinate with the District Engineer regarding the preferred on-site stockpile location. This work, including removal of the remnant structure from a previous structure, shall be considered incidental to the item "Removal of Existing Bridge Structure (Site No. 2)".

MAINTENANCE OF TRAFFIC: See Roadway Plans.

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.		030501	103	178

1 07441 - LAYOUT - 60658



BORING LEGEND

A- Stiff reddish brown fine sandy clay w/ some fine to coarse gravel (fill)
B- Firm to stiff dark brown fine sandy clay, stiff at 4 - 6 ft, with some fine to coarse gravel below 4 ft, firm to stiff with less gravel below 6 ft
C- Medium dense brown sandy fine to coarse gravel, water at 13 ft, dense below 13 ft, auger refusal at 17 ft on sandstone
D- Moderately hard to hard tan weathered fine-grained sandstone w/ferrous stains
E- Moderately hard dark gray weathered arenaceous shale, apparent dip 85°, highly fractured
F- Moderately hard dark gray arenaceous shale, apparent dip 85°+/- w/thinly interbedded calcareous siltstone seams and occasional slickensides on bedding planes
G- Medium dense to dense brown sandy fine to coarse gravel w/ some cobbles
H- Medium dense to dense brown clayey gravel w/ some sand, clay seam at 15 ft
I- Medium dense to dense brown sandy fine to coarse gravel w/ cobbles
J- Moderately hard to hard dark gray arenaceous shale w/occasional calcareous siltstone partings, apparent dip - 50°+/-
K- Moderately hard dark gray shale w/ some slickensides and fractures, apparent dip - 50°+/-, with occasional calcite veins below 31 ft, numerous fractures and slickensides below 35 ft
L- Stiff brownish tan and reddish tan fine sandy clay, silty w/ fine gravel (fill), with some cobbles below 1ft
M- Medium dense to dense reddish tan and tan sandy fine to coarse gravel, with some silty clay seams below 13.5 ft, water at 14 ft
N- Hard dark gray argillaceous fine-grained sandstone, dip +/-55° w/close shale seams and quartz veins, dark gray shale layer at 33.5 to 34.5 ft
O- Medium dense brown fine sandy silt w/some fine to coarse gravel (fill)
P- Stiff brown silty clay w/ shale fragments
Q- Moderately hard gray and tan weathered shale w/silty clay laminations and seams and ferrous stains, water at 5 ft
R- Hard gray weathered fine-grained sandstone, dip +/-50°, fractured w/ ferrous stains in fractures and occasional silty clay seams, with close dark gray arenaceous shale seams below 10 ft
S- Moderately hard dark gray slightly weathered arenaceous shale w/ very close fine-grained sandstone seams
T- Hard gray and dark gray fine-grained sandstone, apparent dip - 50° w/some slickensides on bedding planes
U- Moderately hard dark gray slightly weathered shale, apparent dip - 50° w/some ferrous stained bedding planes and occasional slickensides on bedding planes, with moderately close thin sandstone seams below 20 ft
V- Hard dark gray fine-grained sandstone, apparent dip - 50°, with very close thin dark gray shale seams below 28 ft
W- Moderately hard dark gray arenaceous shale, apparent dip - 50° w/ close thin fine-grained sandstone seams
X- Hard dark gray fine-grained sandstone, apparent dip - 50° w/ moderately close dark gray shale seams
Y- Dense brown fine to coarse gravel w/ some cobbles
Z- Moderately hard dark gray shale, arenaceous, apparent dip - 65°+/-
AA- Hard dark gray argillaceous sandstone, apparent dip - 65°+/-, with some shale partings below 12.5 ft, shale seams at 13 and 15 ft, with calcareous siltstone inclusions below 16.5 ft, with close calcareous siltstone inclusions and seams below 24.5 ft, slickensided and fractured below 32 ft
AB- Medium dense brown clayey fine sand, silty
AC- Moderately hard tan and dark gray weathered shale, moderately hard to hard below 6 ft
AD- Hard light gray and gray weathered fine-grained sandstone, apparent dip - 50°, w/ occasional calcite veins and calcite crystal filled fractures, with some dark gray shale partings below 14 ft, dark gray shale layer at 15 - 15.5 ft, with occasional pyrite inclusions below 16 ft, near vertical joint with calcite crystals from 16.5 - 17.5 ft
AE- Hard dark gray arenaceous shale, apparent dip - 50° w/ calcite veins, slickensided bedding planes and apparent fault scarp at 21- 22 ft, 24.8 - 25.5 ft, 26.5 - 27.5 ft, and 28.5 - 29 ft, with fewer slickensides below 29.5 ft
AF- Firm to stiff reddish brown fine sandy clay w/numerous crushed sandstone fragments (fill), with brown fine sandy silt seams below 2 ft, soft at 4 to 6 ft, stiff below 6 ft, reddish brown, gray and brown below 6 ft
AG- Stiff tan and gray fine sandy clay w/ numerous shale fragments, water at 12 ft
AH- Moderately hard tan and dark gray weathered shale w/silty clay seams and ferrous stains
AI- Hard gray and dark gray slightly weathered fine-grained sandstone, argillaceous, apparent dip - 50° w/some near vertical fractures and occasional very thin quartz veins
AJ- Hard gray fine-grained sandstone, apparent dip 50°+/- w/ very thin, very close dark gray shale partings and occasional calcareous veins, with thicker sandstone bedding below 40 ft, with some pyrite crystals on bedding planes below 46 ft

ELEVATION OF SOIL BORINGS

"N" VALUES

Boring No. S1
Sta. 1999+38
88' Right of Center Line of Construction

0.5 - 1.5	N=20
2.5 - 3.5	N=10
4.5 - 5.5	N=11
6.5 - 7.5	N=10
9.0 - 10.0	N=21
14.0 - 15.0	N=32

Boring No. S2A
Sta. 2000+73
23' Right of Center Line of Construction

0.0 - 0.7	N=50/8"

Boring No. S2
Sta. 2000+78
58' Left of Center Line of Construction

0.5 - 1.5	N=23
2.0 -	N=25/0"
4.0 -	N=25/0"

Boring No. S3
Sta. 2003+84
59' Left of Center Line of Construction

0.5 - 1.5	N=21
3.5 - 4.5	N=16
4.0 - 4.6	N=50/7"

Boring No. S3A
Sta. 2003+87
4' Right of Center Line of Construction

0.5 - 1.5	N=34

Boring No. S4
Sta. 2005+32
2' Right of Center Line of Construction

0.5 - 1.5	N=13
3.5 - 4.1	N=50/7"
4.0 - 4.3	N=50/4"
6.5 -	N=25/0"
8.5 -	N=25/0"

Boring No. S5
Sta. 2006+30
58' Left of Center Line of Construction

0.5 - 1.5	N=10
2.5 - 3.5	N=12
4.5 - 5.5	N=6
6.5 - 7.5	N=16
9.0 - 10.0	N=17
14.0 - 15.0	N=17
19.0 - 19.7	N=50/8"

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	58,500	539.7	541.1
Base	100	67,600	541.6	543.0
Extreme	500	90,200	546.0	546.4
Overtopping	>500	>500	>500	>500

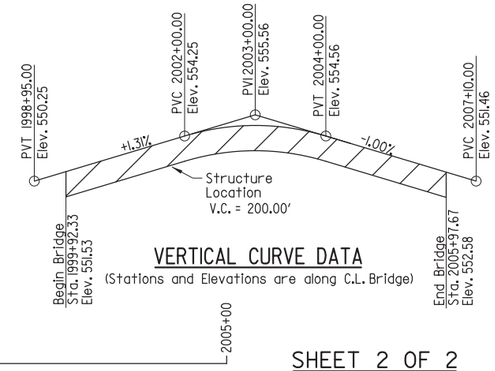
(1) Unconstricted water surface without structure or roadway approaches.

Q100 backwater elevation for existing structure = 543.1 feet.

Proposed Bride Low Chord Elevation = 545.55 feet at Station 1999+93.83.

Drainage area = 202 square miles.

Historical H.W. Elev. = 545.8 Feet (from USGS stream gage 07359700 on May 13, 1968 with a Stream-flow of 88,000 cfs)



VERTICAL CURVE DATA

(Stations and Elevations are along C.L. Bridge)

2000+00 2001+00 2002+00 2003+00

2020.08.13 15:32:41-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 2
LAYOUT OF BRIDGE
HWY. 70 OVER CADDO RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
PIKE COUNTY
ROUTE 70 SECTION 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	09/2018	FILENAME:	B030501X2_LX2.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	JPC	DATE:	09/2018	SCALE:	1" = 30'
BRIDGE NO.	07441			DRAWING NO.	60658

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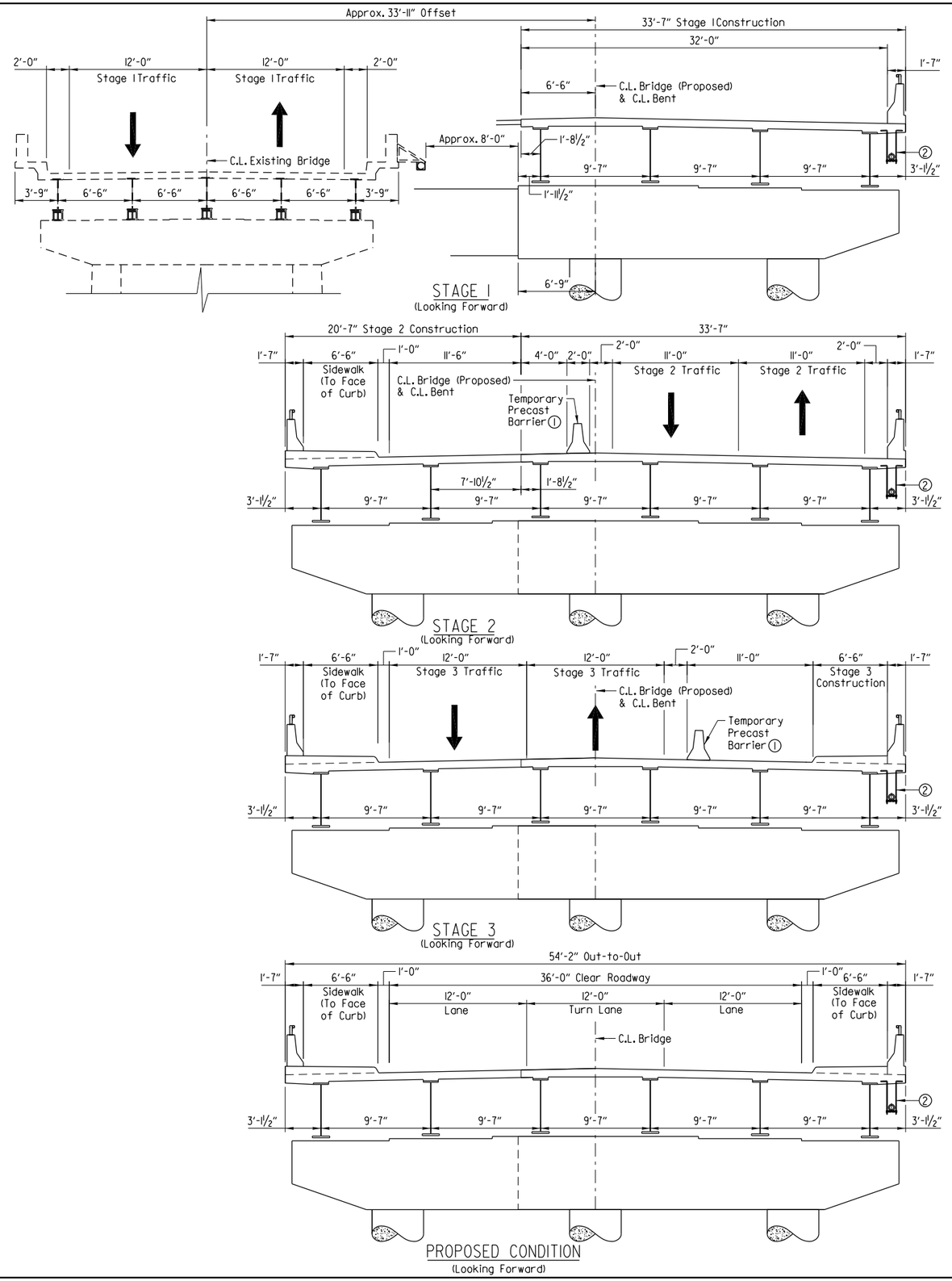
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
⚠ 09-08-2020				6	ARK.			
				JOB NO.		030501	104	178
				(1)	07441 - STAGE CONSTRUCTION - 60659			

⚠ Revised note for existing sanitary sewer line.



Sections for Stage Construction are shown at Intermediate Bents, End Bents are similar.

See Roadway plans for additional details of Stage Construction and Maintenance of Traffic.

(1) For Details of Temporary Precast Barrier, see Std. Dwg. TC-4, (Do not connect to new deck).

⚠ (2) Cast-in-place anchors for possible sanitary sewer utility attachment. If utility attachment to the bridge is necessary, the anchors will be supplied by the Utility Company to the Contractor for installation in the deck. Any labor necessary to install these anchors will be added to the Contract by the way of Change Order. Installation of hangers and pipe for the utility will not be part of this Contract, but will be the responsibility of others.

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

9/8/2020

BRIDGE ENGINEER
PRINT DATE: 9/8/2020

DETAILS OF STAGE CONSTRUCTION
HWY. 70 OVER CADDO RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
PIKE COUNTY
ROUTE 70 SECTION 5

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	09/2018	FILENAME:	B03050IX2_SCI.dgn
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DESIGNED BY:	JPC	DATE:	09/2018	SCALE:	1/4" = 1'-0"
BRIDGE NO.	07441			DRAWING NO.	60659

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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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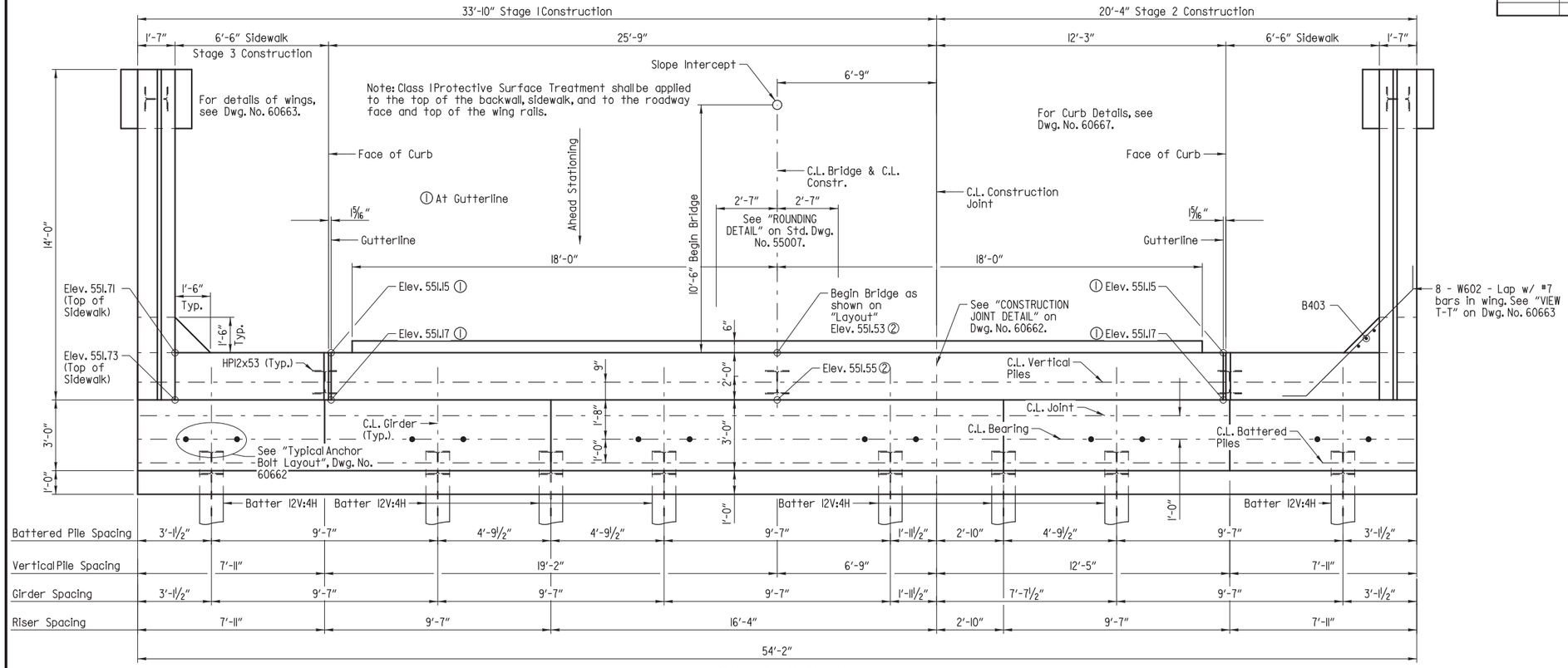
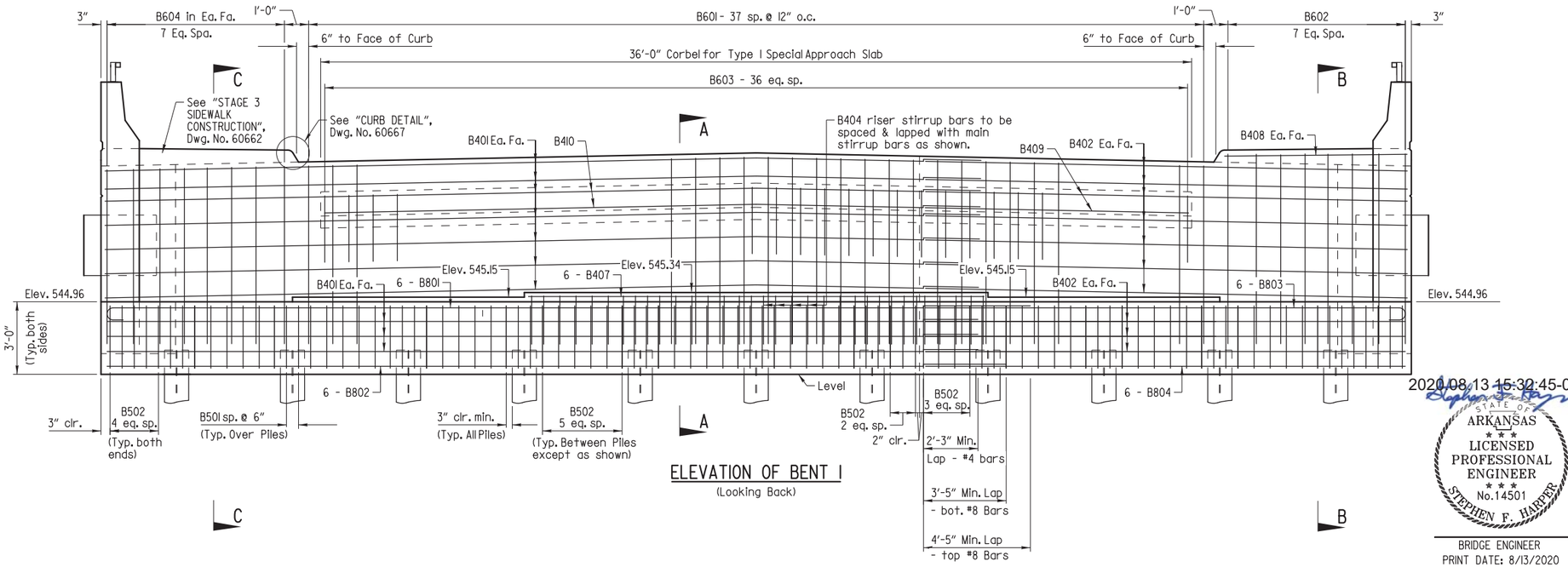
				JOB NO.		030501	105	178
				①	07441 - END BENTS - 60660			



PLAN OF BENT 1



ELEVATION OF BENT 1
(Looking Back)

Note:
For Sections A-A, B-B, & C-C, see Dwg. No. 60662.

② Measured to Working Point. See "Rounding Detail" on Std. Dwg. No. 55007.

Note:
Finger joint not shown for clarity, see Dwg. Nos. 60674-60675 for details of finger joints.

2020.08.13 15:32:45-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 4
DETAILS OF END BENTS
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME:	B03050IX2_Bll.dgn
CHECKED BY:	SFH	DATE:	12/2019		
DESIGNED BY:	JPC	DATE:	03/2019	SCALE:	3/8" = 1'-0"
BRIDGE NO.	07441	DRAWING NO.	60660		

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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.		030501	106	178
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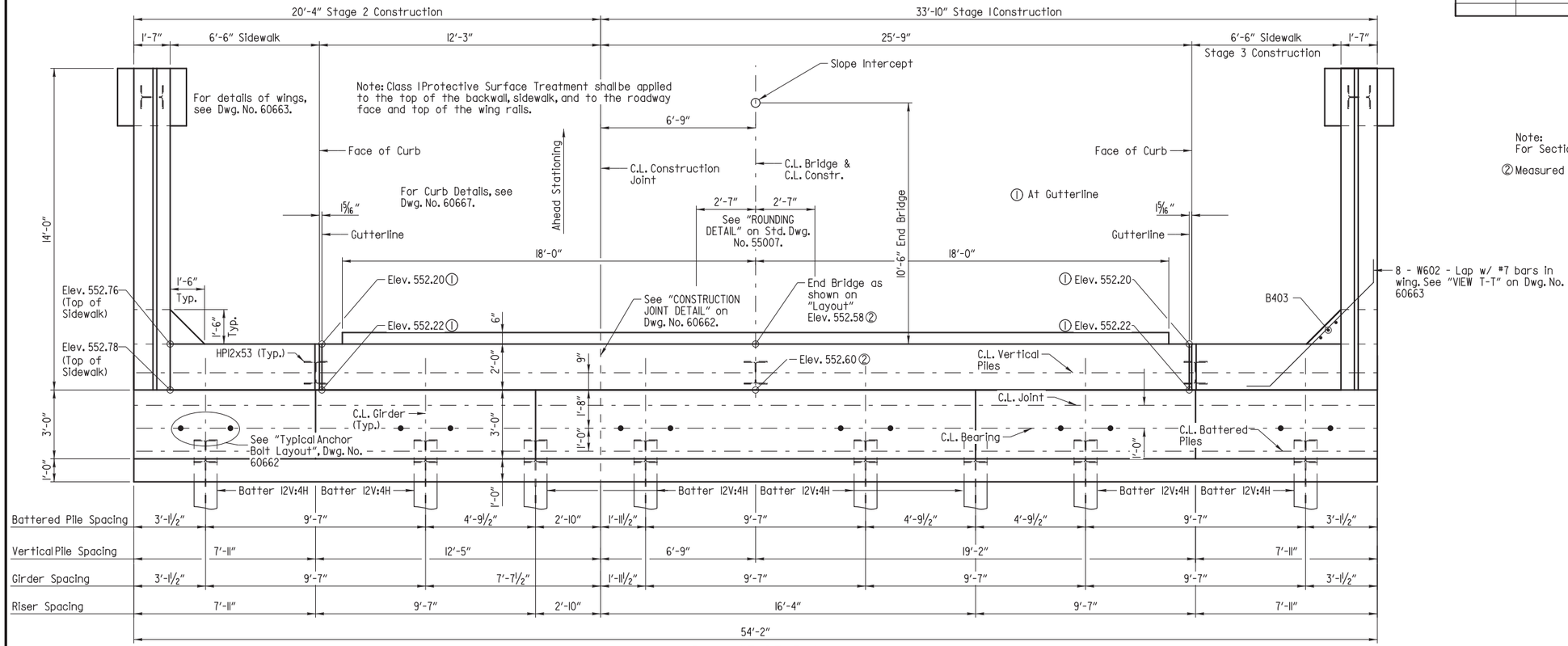
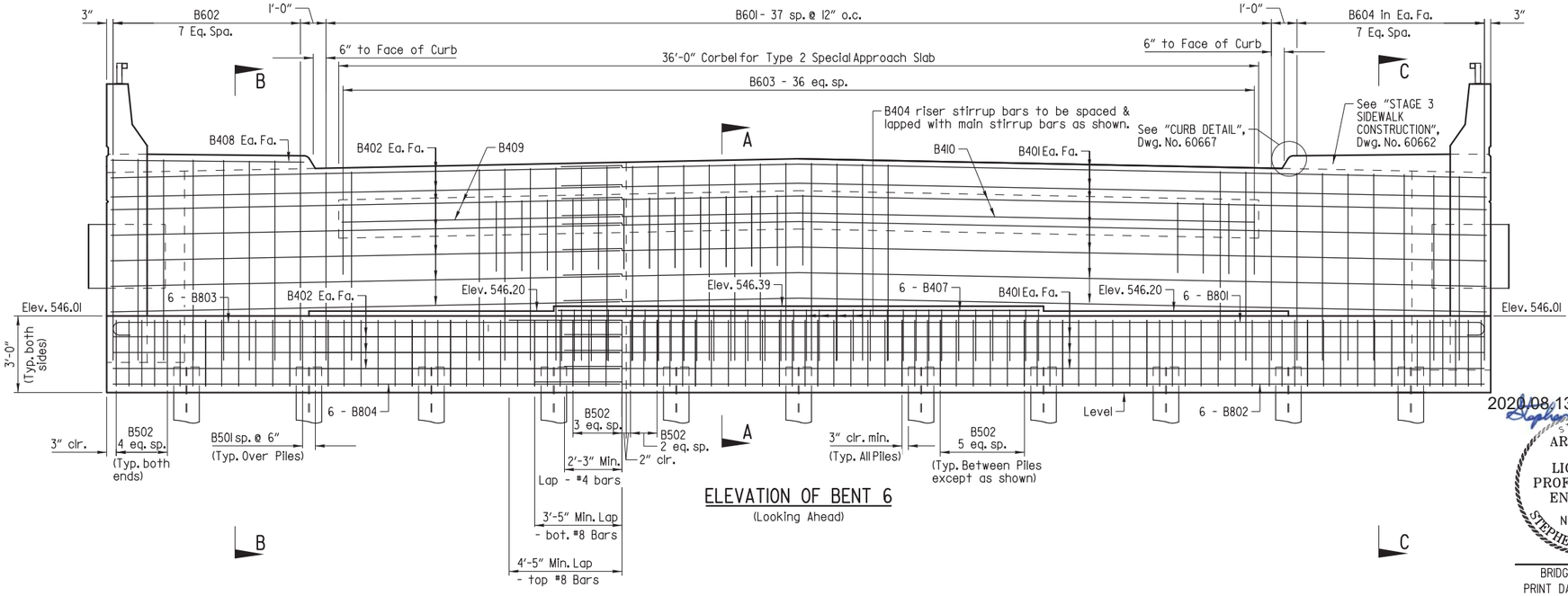


PLAN OF BENT 6

Note:
For Sections A-A, B-B, & C-C, see Dwg. No. 60662.

② Measured to Working Point. See "Rounding Detail" on Std. Dwg. No. 55007.



ELEVATION OF BENT 6
(Looking Ahead)

Note:
Finger joint not shown for clarity, see Dwg. Nos. 60674-60675 for details of finger joints.

2020.08.13 15:32:47-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 4
DETAILS OF END BENTS
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME:	B03050lX2_B6l.dgn
CHECKED BY:	SFH	DATE:	12/2019		
DESIGNED BY:	JPC	DATE:	03/2019	SCALE:	3/8" = 1'-0"
BRIDGE NO.	07441			DRAWING NO.	60661

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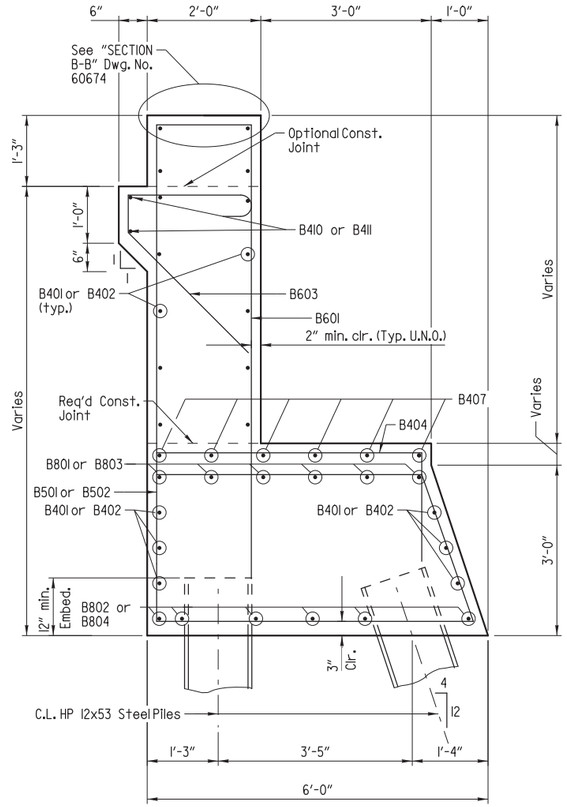
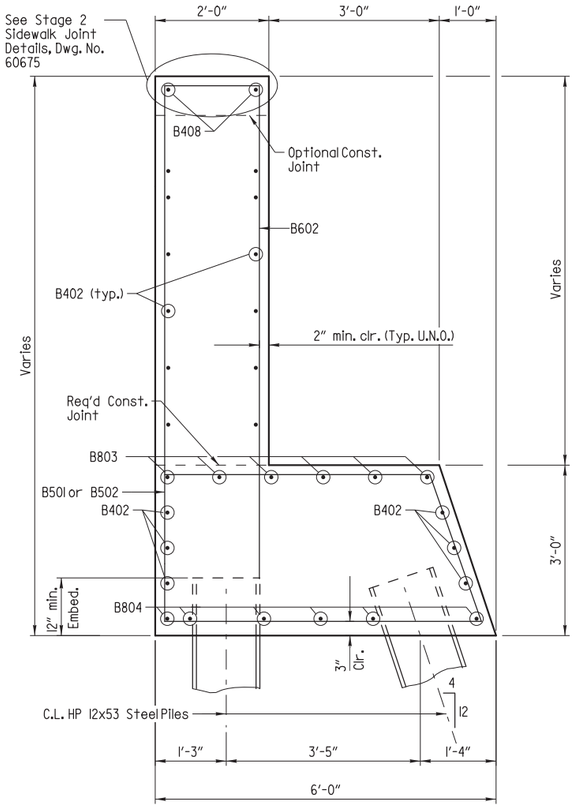
REVISED DATE:

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.		030501	107	178
				(1)	07441 - END BENTS - 60662			



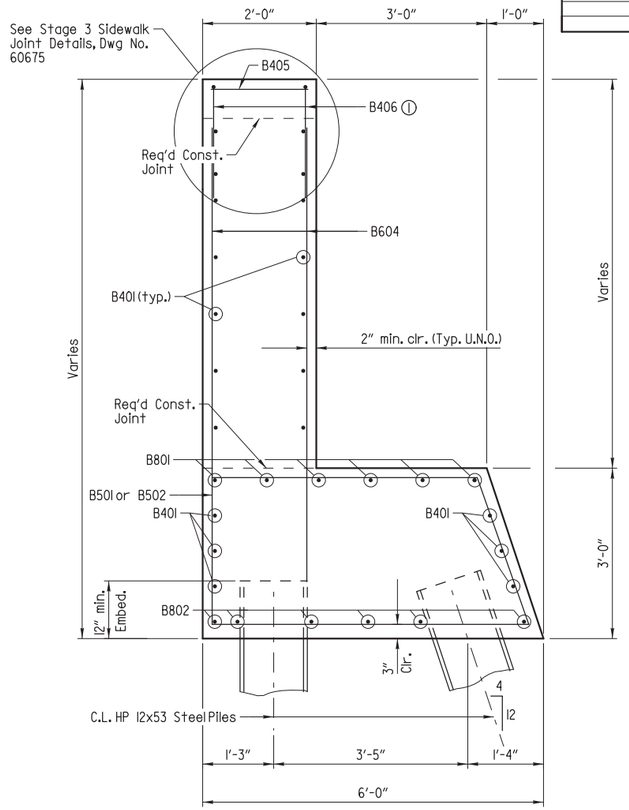
SECTION A-A

3/4" = 1'-0"



SECTION B-B

3/4" = 1'-0"



SECTION C-C

3/4" = 1'-0"

Notes:

For "GENERAL NOTES" see Std. Dwg. No. 55006.

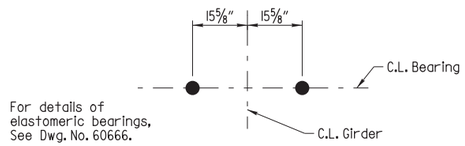
All pilling shall be ASTM A709, Gr. 50, Fy=50 ksi.

No portion of the backwall shall be poured until the girders are in place.

Finish top of backwall to match the bridge deck.

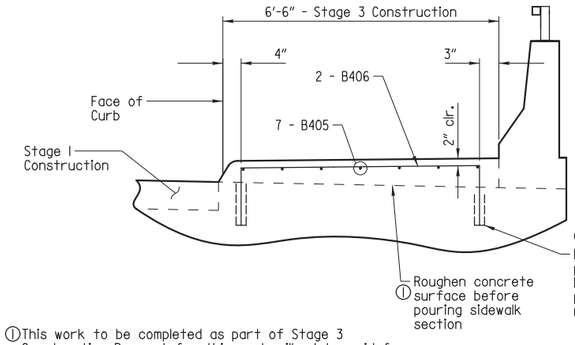
Structural steel in end bents shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (ASTM A709, GR. 50W)".

No heavy construction equipment shall be allowed within 10' of the backwall until the deck concrete placement for the adjacent span has been complete.



TYPICAL ANCHOR BOLT LAYOUT

No Scale

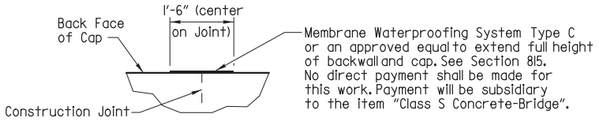


(1) Drill 12" deep holes and grout B406 bars into place as shown using an approved epoxy grout listed on the QPL. Hole diameter, and installation procedure shall be as recommended by the grout manufacturer.

(1) This work to be completed as part of Stage 3 Construction. Payment for this work will not be paid for directly, but shall be considered subsidiary to the item "Class S Concrete".

STAGE 3 SIDEWALK CONSTRUCTION

No Scale



CONSTRUCTION JOINT DETAIL

No Scale

2020.08.13 15:47:40-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 3 OF 4
DETAILS OF END BENTS
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME:	B03050IX2_BI2.dgn
CHECKED BY:	SFH	DATE:	12/2019		
DESIGNED BY:	JPC	DATE:	03/2019	SCALE:	As Shown
BRIDGE NO.	07441			DRAWING NO.	60662

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WORKSPACE: ARDOT
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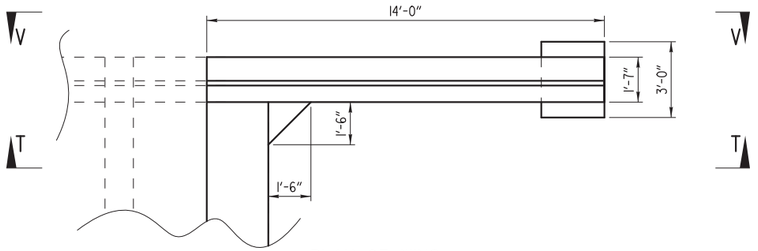
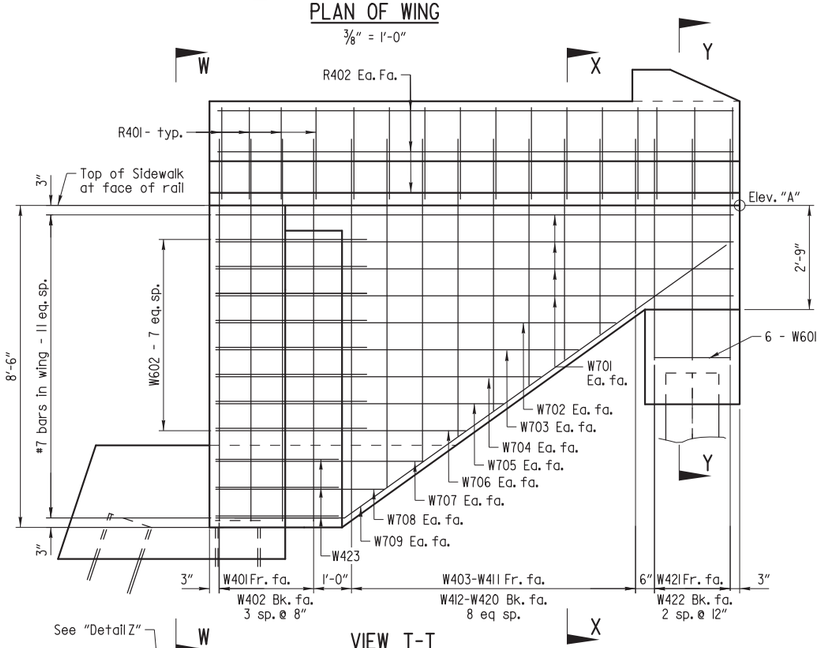
REVISED DATE:



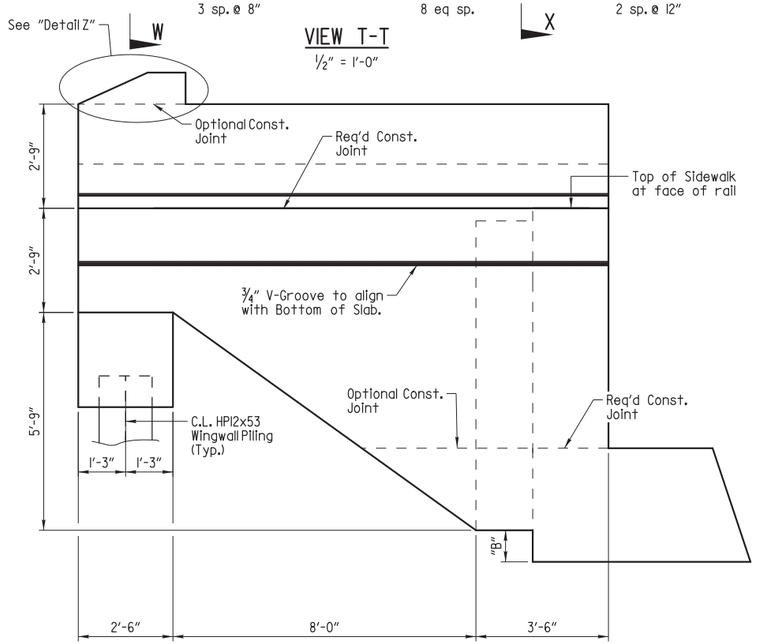
PLAN OF WING

3/8" = 1'-0"



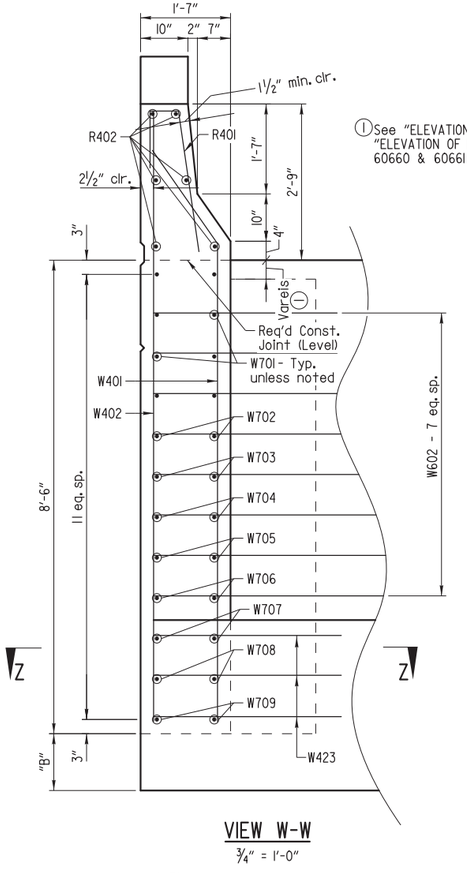
VIEW T-T

1/2" = 1'-0"



VIEW V-V

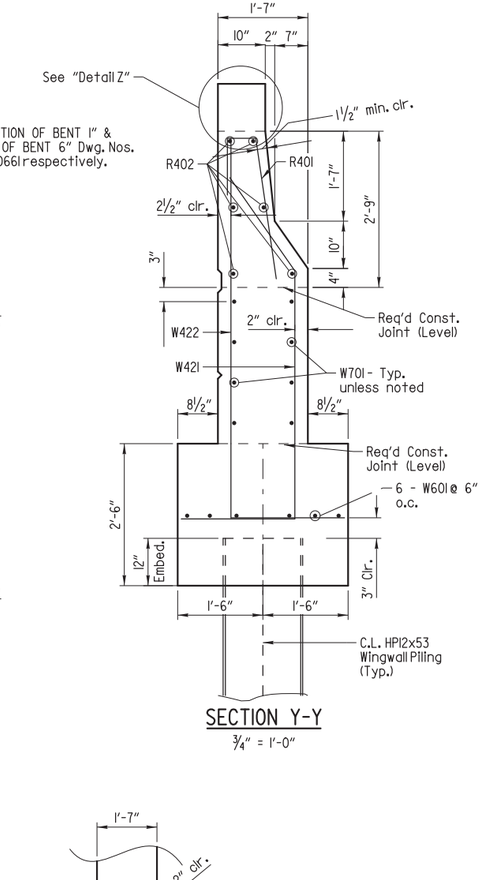
1/2" = 1'-0"



(1) See "ELEVATION OF BENT 1" & "ELEVATION OF BENT 6" Dwg. Nos. 60660 & 60661 respectively.

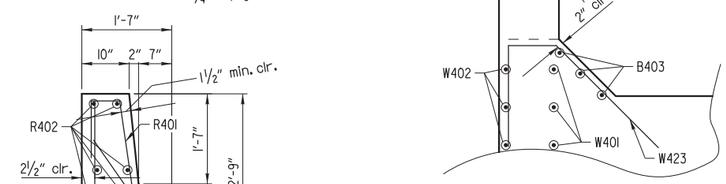
VIEW W-W

3/4" = 1'-0"



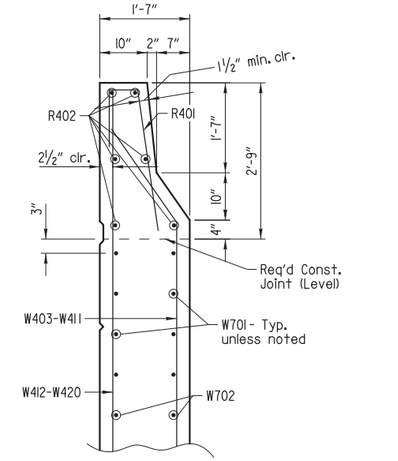
SECTION Y-Y

3/4" = 1'-0"



SECTION Z-Z

1/2" = 1'-0"



SECTION X-X

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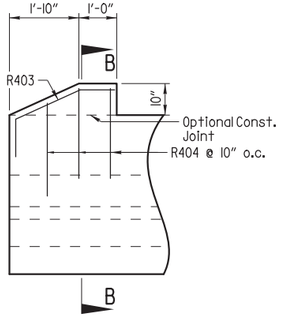
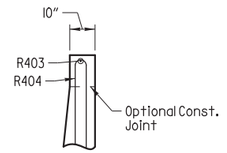


DETAIL Z

1/2" = 1'-0"



SECTION B-B

No Scale

TABLE OF VARIABLES

Bent No.	Elev. "A"	"B"
1	551.55	1'-1 1/16"
6	552.65	1'-1 11/16"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

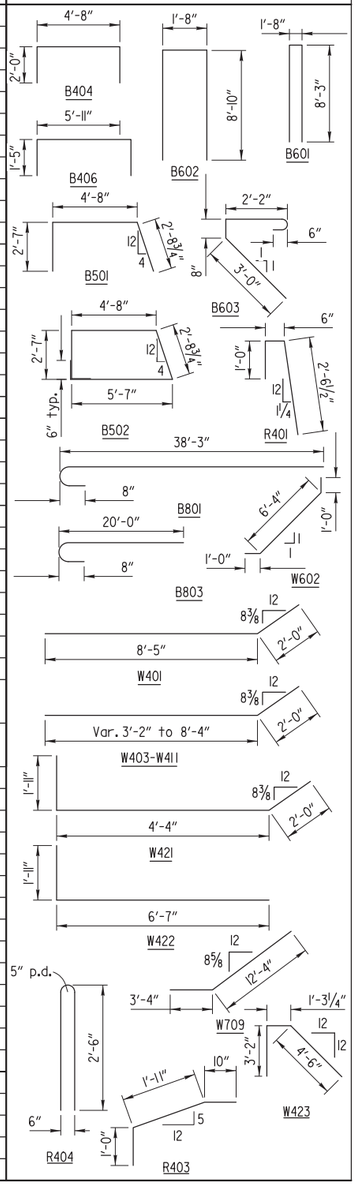
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	108	178

(1) 07441 - END BENTS - 60663

BAR LIST- PER END BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	20	36'-1"	Str.
B402	20	20'-0"	Str.
B403	6	7'-5"	Str.
B404	33	8'-6"	2"
B405	7	1'-8"	Str.
B406	2	8'-7"	2"
B407	6	18'-10"	Str.
B408	2	7'-7"	Str.
B409	2	10'-11"	Str.
B410	2	27'-0"	Str.
B501	22	9'-10"	2 1/2"
B502	71	16'-1"	2 1/2"
B601	38	17'-10"	4 1/2"
B602	8	19'-0"	4 1/2"
B603	37	6'-3"	4 1/2"
B604	16	8'-3"	Str.
B801	6	39'-2"	6"
B802	6	38'-3"	Str.
B803	6	20'-11"	6"
B804	6	20'-0"	Str.
R401	32	3'-11"	2"
R402	12	13'-8"	Str.
R403	2	3'-8"	2"
R404	6	5'-5"	5"
W401	8	10'-5"	2"
W402	8	10'-11"	Str.
W403 to W411	2 each	Var. 5'-2" to 10'-4"	2"
W412 to W420	2 each	Var. 5'-5" to 10'-10"	Str.
W421	6	8'-2"	2"
W422	6	8'-5"	2"
W423	6	8'-9"	2"
W601	12	2'-2"	Str.
W602	16	8'-4"	4 1/2"
W701	16	13'-8"	Str.
W702	4	10'-6"	Str.
W703	4	9'-7"	Str.
W704	4	8'-7"	Str.
W705	4	7'-7"	Str.
W706	4	6'-7"	Str.
W707	4	5'-5"	Str.
W708	4	4'-5"	Str.
W709	4	15'-8"	5 1/4"

BENDING DIAGRAMS
Dimensions are out to out of bars.



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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 4 OF 4
DETAILS OF END BENTS
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 03/2019 FILENAME: B03050IX2_BXI.dgn
CHECKED BY: SFH DATE: 12/2019
DESIGNED BY: JPC DATE: 03/2019 SCALE: As Shown
BRIDGE NO. 07441 DRAWING NO. 60663

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REVISED DATE:

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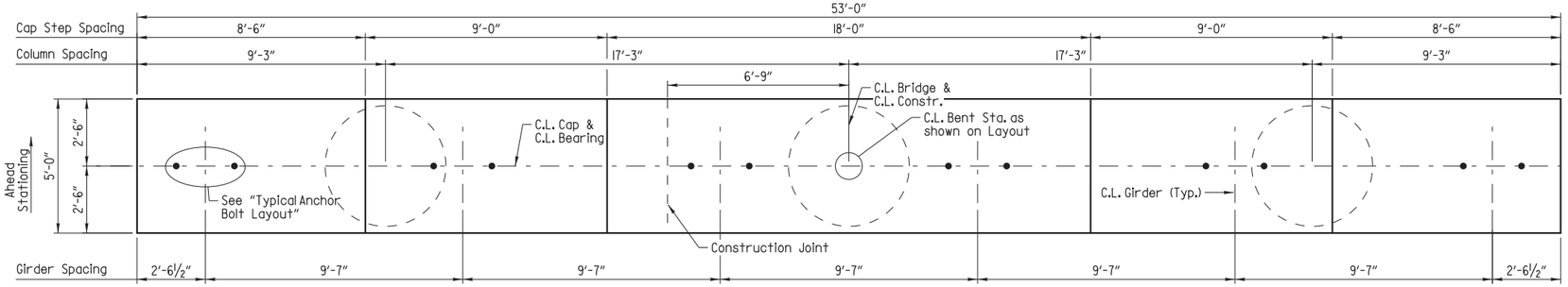
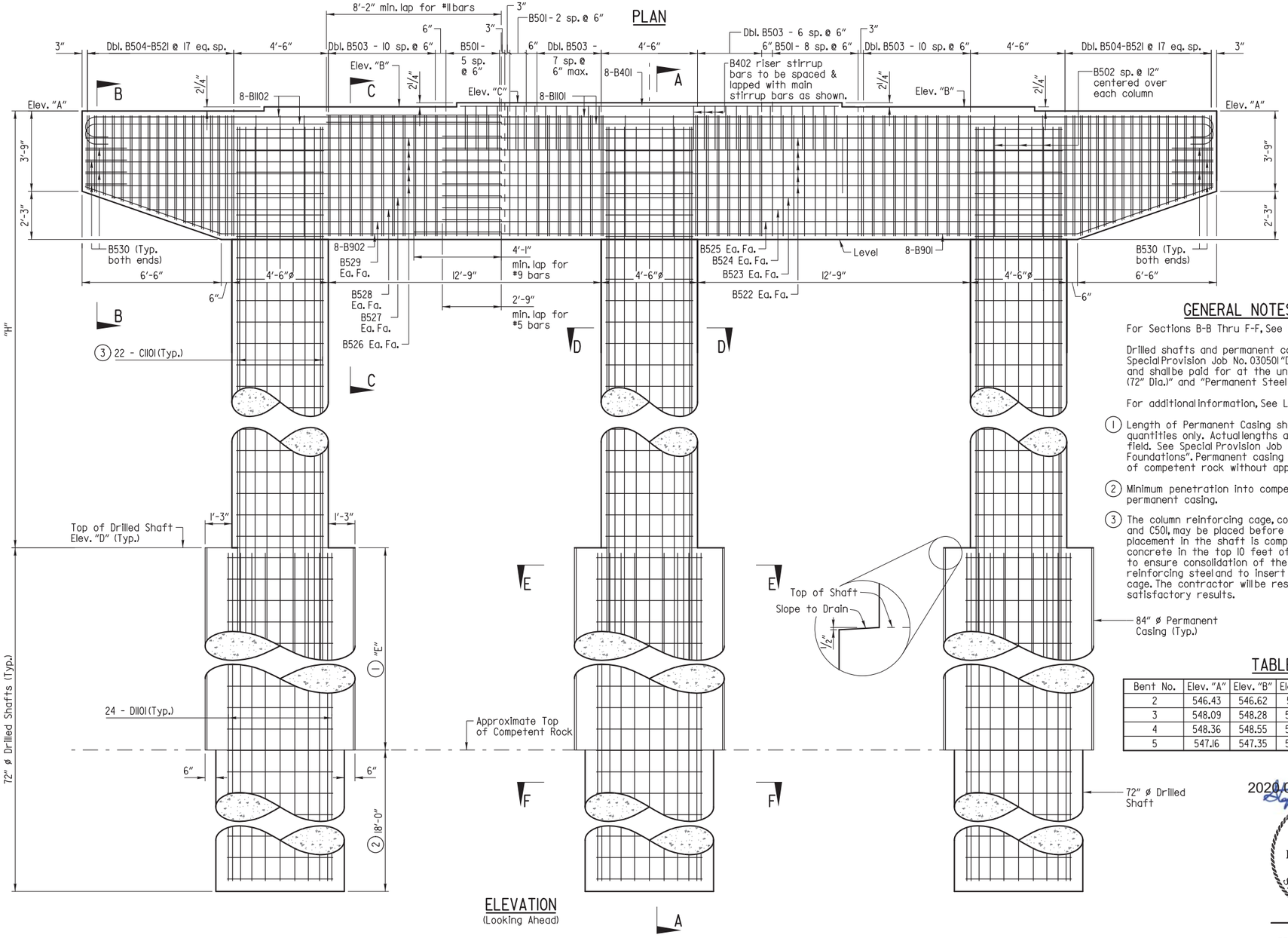
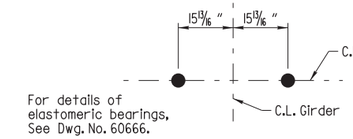
				6	ARK.			
				JOB NO.		030501	109	178

(1) 07441 - INTERMEDIATE BENTS - 60664



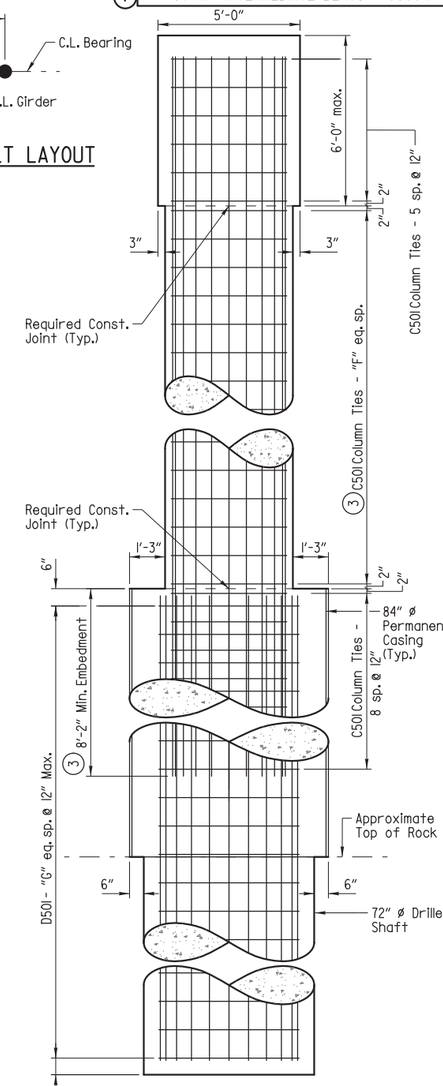




For details of elastomeric bearings, See Dwg. No. 60666.

TYPICAL ANCHOR BOLT LAYOUT

No Scale



SECTION A-A

GENERAL NOTES

For Sections B-B Thru F-F, See Dwg. No. 60665.

Drilled shafts and permanent casing shall conform to Special Provision Job No. 030501 "Drilled Shaft Foundations" and shall be paid for at the unit bid price for "Drilled Shaft (72" Dia.)" and "Permanent Steel Casing (84" Dia.)".

For additional information, See Layout.

(1) Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job No. 030501 "Drilled Shaft Foundations". Permanent casing shall not extend below top of competent rock without approval from the Engineer.

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

(3) The column reinforcing cage, consisting of bars C1101 and C501, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

TABLE OF VARIABLES

Bent No.	Elev. "A"	Elev. "B"	Elev. "C"	"Elev. D"	"E"	"F"	"G"	"H"
2	546.43	546.62	546.81	527.00	22'-0"	14	39	19'-5 3/16"
3	548.09	548.28	548.47	524.00	15'-0"	19	32	24'-1 1/16"
4	548.36	548.55	548.75	524.00	15'-0"	19	32	24'-4 5/16"
5	547.16	547.35	547.54	526.00	7'-0"	16	24	21'-1 5/16"

2020.08.13 15:32:53-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 09/2018
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DRAWING NO. 60664

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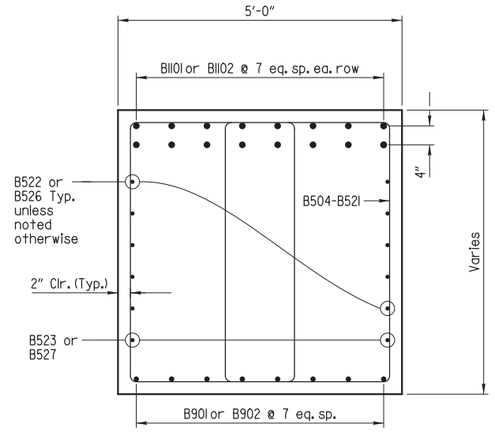
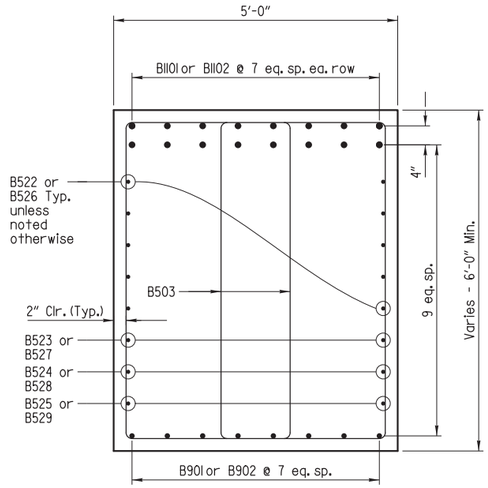
				JOB NO.		030501	110	178
				(1)	07441- INTERMEDIATE BENTS - 60665			



SECTION B-B

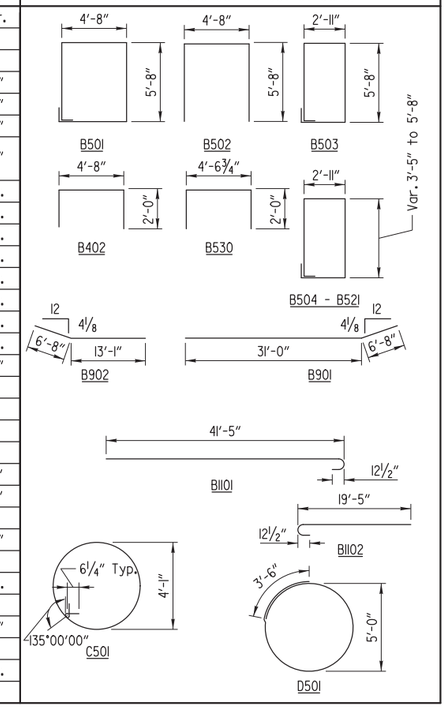


SECTION C-C

BAR LIST- PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	8	17'-8"	Str.
B402	31	8'-6"	2"
B501	18	21'-2"	2½"
B502	9	15'-10"	2½"
B503	72	17'-8"	2½"
B504-B521	4 each	Var. 13'-2" to 17'-8"	2½"
B522	10	36'-0"	Str.
B523	2	34'-8"	Str.
B524	2	33'-0"	Str.
B525	2	31'-6"	Str.
B526	10	19'-5"	Str.
B527	2	18'-3"	Str.
B528	2	16'-7"	Str.
B529	2	14'-0"	Str.
B530	8	8'-5"	2½"
B901	8	37'-8"	9"
B902	8	19'-9"	9"
B1101	16	43'-0"	11¼"
B1102	16	21'-0"	11¼"
C501	"A"	14'-2"	3¾"
C1101	66	"C"	Str.
(1) D501	"B"	19'-3"	3¾"
(1) D1101	72	"D"	Str.

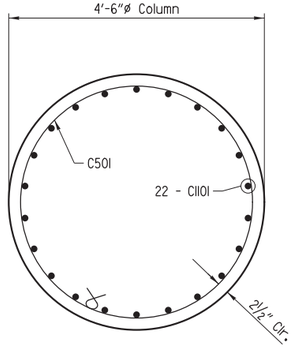
BENDING DIAGRAMS
Dimensions are out to out of bars.



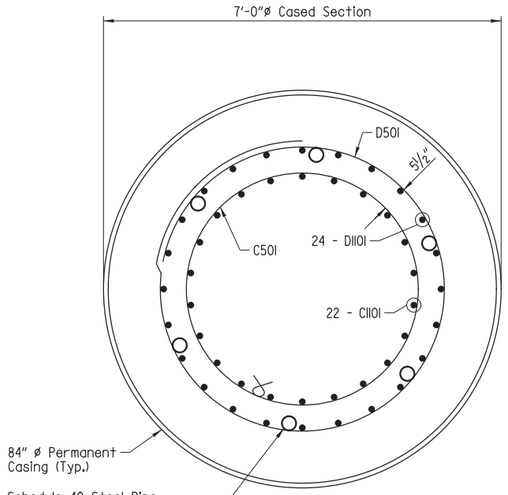
(1) Non-Pay Item - Subsidiary to Pay Item "Drilled Shaft (72" Dia.)"

TABLE OF VARIABLES

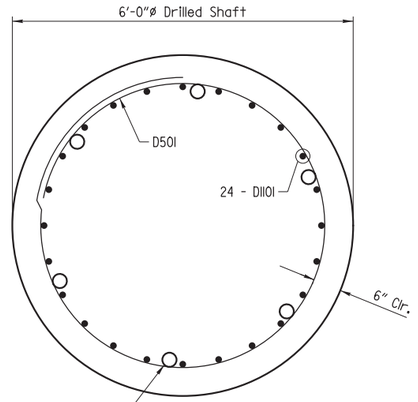
Bent No.	"A"	"B"	"C"	"D"
2	87	120	27'-1"	39'-3"
3	102	99	31'-9"	32'-3"
4	102	99	32'-0"	32'-3"
5	93	75	28'-10"	24'-3"



SECTION D-D



SECTION E-E



SECTION F-F

2020.08.13 15:32:55-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 09/2018 SCALE: ¾" = 1'-0"
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REVISED DATE:

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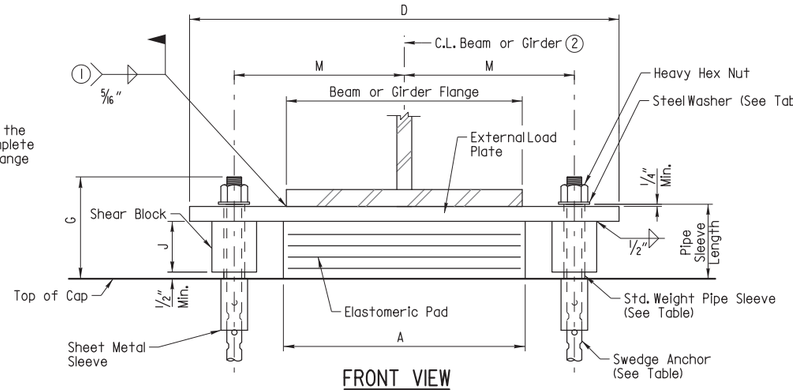
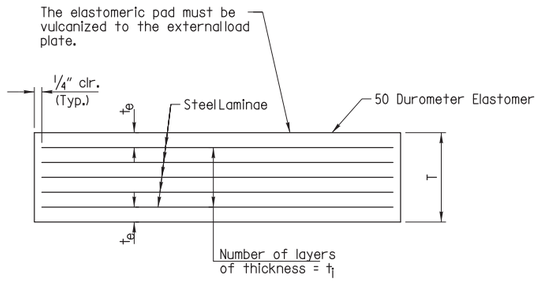
				6	ARK.			
				JOB NO.		030501	III	178
				(1)	07441 - BEARINGS - 60666			

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② C.L. Elastomeric pad shall be aligned with C.L. Beam or Girder.

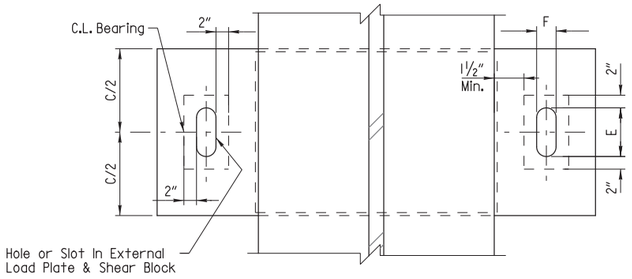


FRONT VIEW

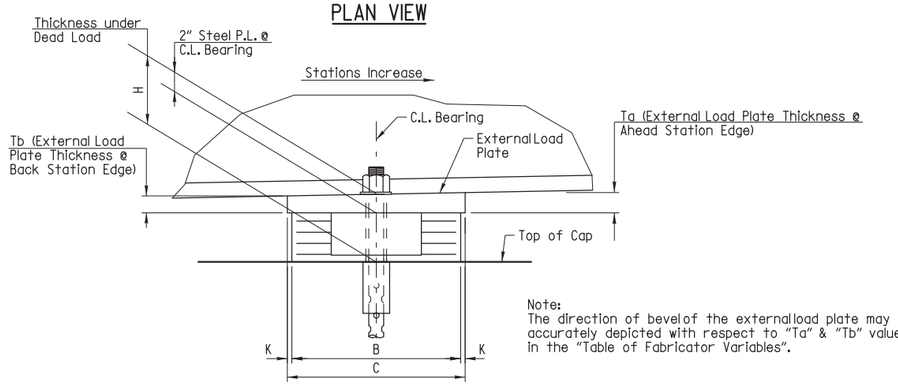


t_i = thickness of elastomer between steel laminae
t_e = thickness of elastomer cover on top and bottom of pad
N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



PLAN VIEW

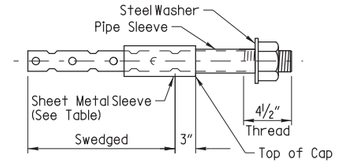


SIDE VIEW

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to "Ta" & "Tb" values shown in the "Table of Fabricator Variables".

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

④ Shear blocks 4 inches or thicker may be fabricated from built-up plates with a 5/16" groove weld on all sides. No plate shall be less than 2" nominal thickness.



ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (A709, Gr. 50W).

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to Ta and Tb.

GENERAL NOTES

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

External load plates and shear blocks shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

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

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (A709, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings without masonry plates shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION			BEARING TYPE	NO. OF BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (kips)	ELASTOMERIC PAD							EXTERNAL LOAD PLATE					④					ANCHOR BOLT				
	BENT NO(S).	UNIT	BEAM OR GIRDER NO.				G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT (Ø x L)	GRADE	PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)
07441	Bent 1	600'	All	Exp.	6	190.5	10"	7 3/8"	22"	8"	8	1/2"	1/4"	9 @ 12ga.	5 7/16"	9"	39 1/2"	6 3/4"	2 1/4"	4 7/8"	1/2"	15 5/8"	2.06"	1.94"	1 1/2" x 28"	55	1 1/2" x 7 11/16"	3" x 9"	3"
	Bent 2	600'	All	Fix.	6	496.2	9"	5 7/16"	22"	14"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	15"	40 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	15 11/16"	2.10"	1.90"	1 3/4" x 30"	55	2" x 5 7/8"	4" x 12"	3 3/4"
	Bent 3	600'	All	Fix.	6	500.9	9"	5 9/16"	22"	14"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	15"	40 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	15 11/16"	2.07"	1.93"	1 3/4" x 30"	55	2" x 5 7/8"	4" x 12"	3 3/4"
	Bent 4	600'	All	Fix.	6	500.9	9"	5 9/16"	22"	14"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	15"	40 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	15 11/16"	1.96"	2.04"	1 3/4" x 30"	55	2" x 5 7/8"	4" x 12"	3 3/4"
	Bent 5	600'	All	Fix.	6	496.2	9"	5 7/16"	22"	14"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	15"	40 1/4"	2 5/8"	2 5/8"	3 1/16"	1/2"	15 11/16"	1.93"	2.07"	1 3/4" x 30"	55	2" x 5 7/8"	4" x 12"	3 3/8"
	Bent 6	600'	All	Exp.	6	190.5	10"	7 3/8"	22"	8"	8	1/2"	1/4"	9 @ 12ga.	5 7/16"	9"	39 1/2"	6 3/4"	2 1/4"	4 7/8"	1/2"	15 5/8"	1.96"	2.04"	1 1/2" x 28"	55	1 1/2" x 7 11/16"	3" x 9"	3"

③ Maximum Load = Service I Limit State.

2020.08.13 16:48:36-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DETAILS OF ELASTOMERIC BEARINGS HWY. 70 OVER CADDO RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 03/2019 FILENAME: B03050IX3_EXI.dgn
CHECKED BY: SFH DATE: 12/2019
DESIGNED BY: JPC DATE: 03/2019 SCALE: No Scale
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REVISED DATE:

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				JOB NO.		030501	112	178
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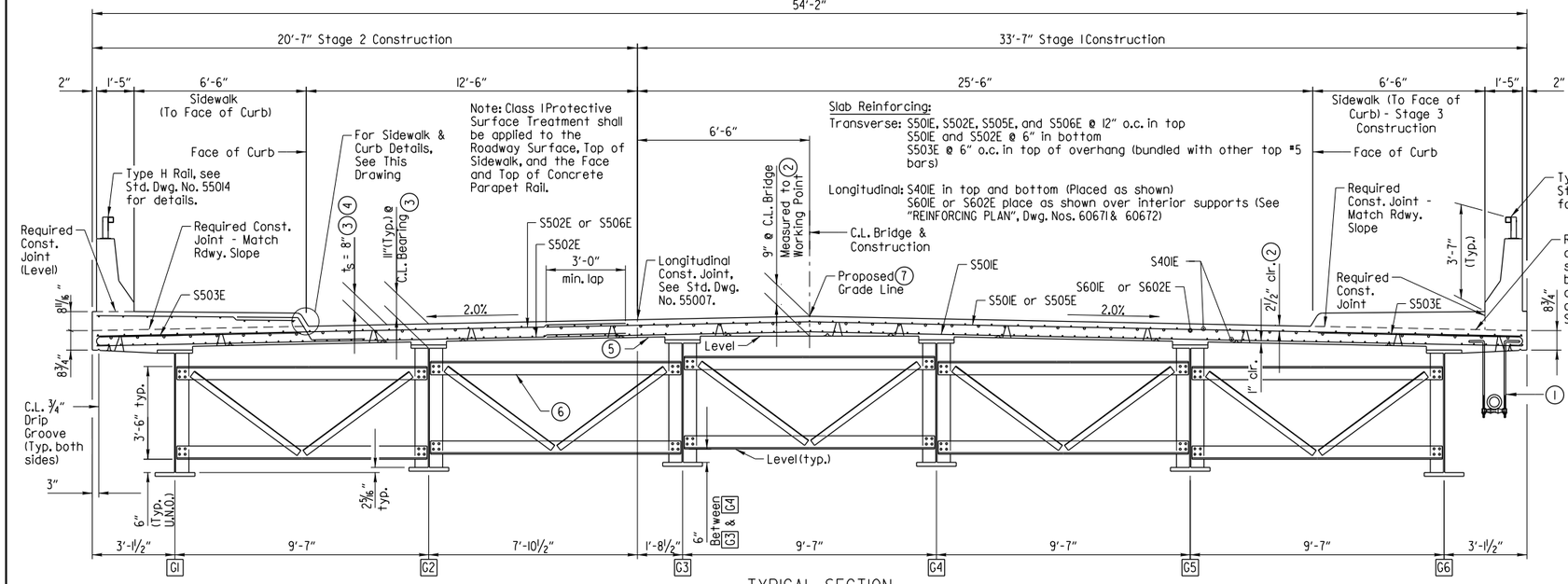


TYPICAL SECTION

3/8" = 1'-0"
(Looking Forward)

⚠(1) Cast-in-place anchors for possible sanitary sewer utility attachment. If utility attachment to the bridge is necessary, the anchors will be supplied by the Utility Company to the Contractor for installation in the deck. Any labor necessary to install these anchors will be added to the Contract by the way of Change Order. Installation of hangers and pipe for the utility will not be part of this Contract, but will be the responsibility of others.

(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 60669.

(3) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 60669.

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

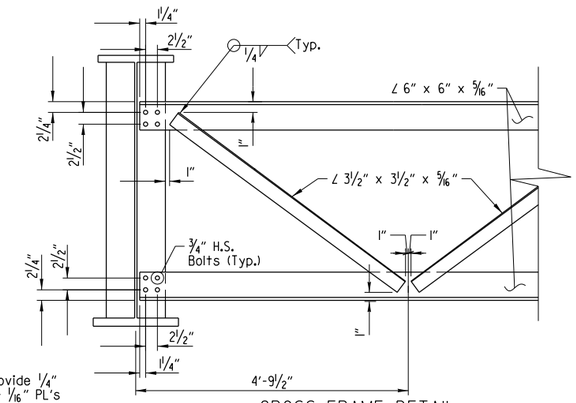
(5) An external means of supporting the Stage 1 overhang between Girders 2 and 3 shall be provided and shall remain in place until after completion of the Stage 2 deck pour. See "DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT" on Dwg. No. 60668.

(6) In this bay, connection plate widths and crossframe lengths shall be fabricated, as necessary, to facilitate installation of diaphragms between adjacent beams with differential deflections. Hole diameters of 15/16" shall be provided for these connections with a washer supplied under both the nut and head of bolt.

Before the Stage 2 deck pour, loosely install as many bolts as possible on both ends of the diaphragm in this bay to the satisfaction of the Engineer. Install remaining bolts and fully tighten all bolts as soon as practical after completion of the Stage 2 deck pour.

(7) See "ROUNDING DETAIL" on Std. Dwg. No. 55007.

(8) Roughen concrete surfaces before constructing sidewalk.



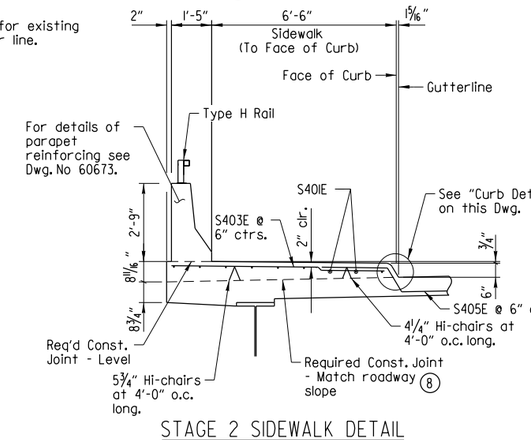
Expansion Device
4" Finger Joint
Roadway Channel MC18x42.7
Channel Conn. - WT 8x38.5
Finger Joint - 4" Movement
Detail Device ⅛" high and provide ¼" shims using 1 - ⅛" PL and 2 - 1/16" PL's

For Additional Details of Expansion Device, See Dwg. Nos. 60674 & 60675.

CROSS-FRAME DETAIL

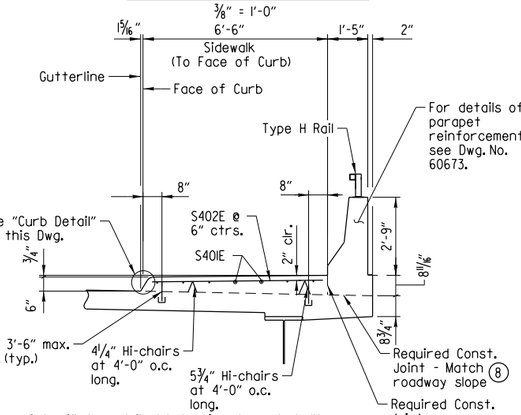
¾" = 1'-0"

⚠ Revised note for existing sanitary sewer line.



STAGE 2 SIDEWALK DETAIL

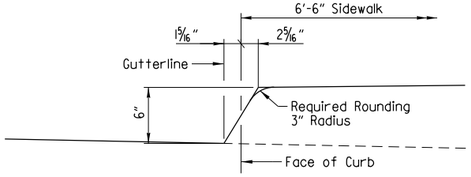
⅜" = 1'-0"



(9) Grout S404E bars into 4" deep drilled holes. Grout used shall be an approved epoxy grout listed on the QPL. Hole diameter and installation procedure shall be as recommended by the grout manufacturer. Dowels shall be located to avoid damaging deck reinforcing. Payment for grouting and placement shall be considered subsidiary to "Epoxy Coated Reinforcing Steel (Grade 60)".

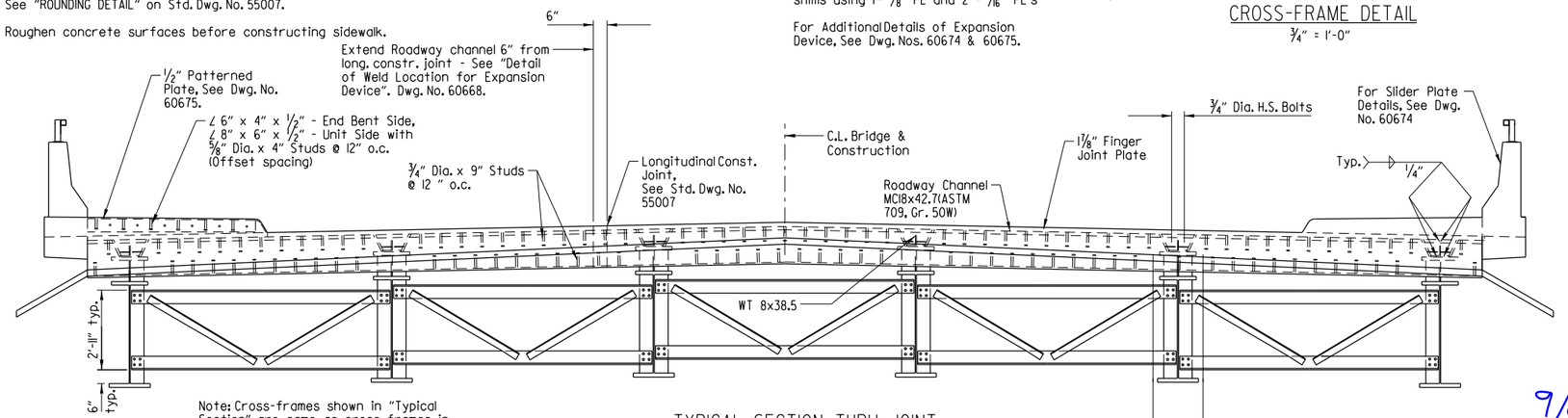
STAGE 3 SIDEWALK DETAIL

⅜" = 1'-0"



CURB DETAIL

No Scale



Note: Cross-frames shown in "Typical Section" are same as cross frames in "Typical Section Thru Joint" except as noted.

TYPICAL SECTION THRU JOINT

⅜" = 1'-0"
(Looking Forward - Bent No. 1, Bent No. 6 Similar)

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

9/8/2020

BRIDGE ENGINEER
PRINT DATE: 9/8/2020

SHEET 1 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	09/2018	FILENAME:	B030501X2_SX1.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	JPC	DATE:	09/2018	SCALE:	As Shown
BRIDGE NO.	07441			DRAWING NO.	60667

Megan.Land 9/8/2020 9:53:21 AM
WORKSPACE: ARDOT
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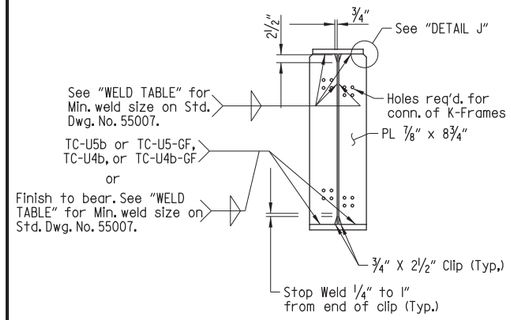
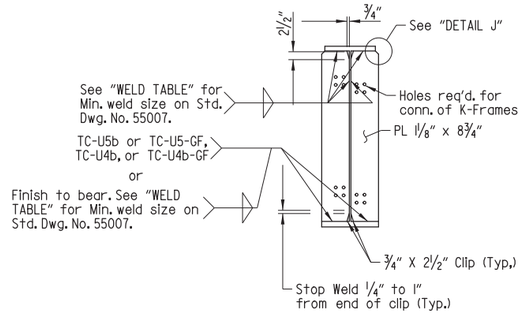
REVISED DATE:



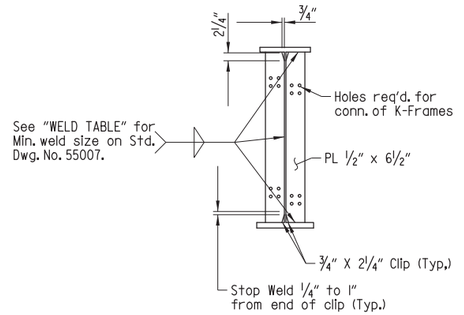
END BEARING STIFFENER DETAIL

½" = 1'-0"



INT. BEARING STIFFENER DETAIL

½" = 1'-0"



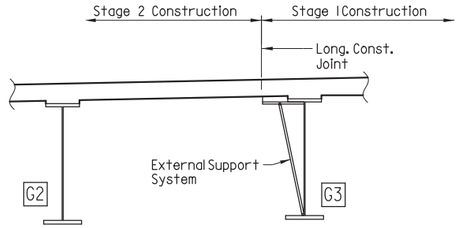
CROSS-FRAME CONNECTION PLATE DETAIL

½" = 1'-0"

DETAIL J

No Scale

① If permanent steel bridge deck forms are used, the Fabricator shall clip plate as necessary to accommodate the deck form supports.



Stage 1 external supports in this bay shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding their removal.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

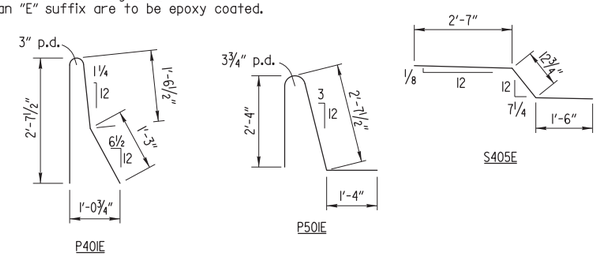
Looking Ahead
No Scale

BAR LIST

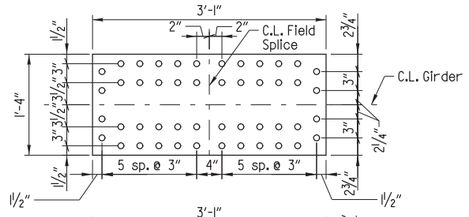
	MARK	NO. REQ'D.	LENGTH	PIN DIA.
	S40IE	2848	39'-10"	Str.
	S402E	1197	6'-1"	Str.
	S403E	1197	7'-8"	Str.
	S404E	344	8"	Str.
	S405E	1197	5'-2"	3"
	S50IE	1795	36'-7"	Str.
	S502E	1795	20'-3"	Str.
	S503E	2394	9'-0"	3¾"
	S504E	20	9'-1"	Str.
	S505E	599	37'-2"	3¾"
	S506E	599	20'-10"	3¾"
	S60IE	216	16'-3"	Str.
	S602E	216	60'-0"	Str.
	P40IE	2400	5'-6"	3"
	P402E	200	5'-6"	Str.
	P403E	364	14'-8"	Str.
	P404E	168	17'-2"	Str.
	P50IE	2400	6'-5"	3¾"
③	X40IE	64	4'-0"	Str.
③	X402E	64	5'-6"	Str.
③	X60IE	64	9'-6"	Str.

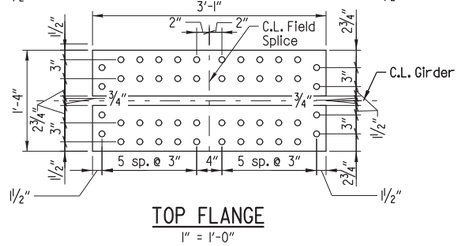
BENDING DIAGRAMS
Dimensions are out to out of bars.

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



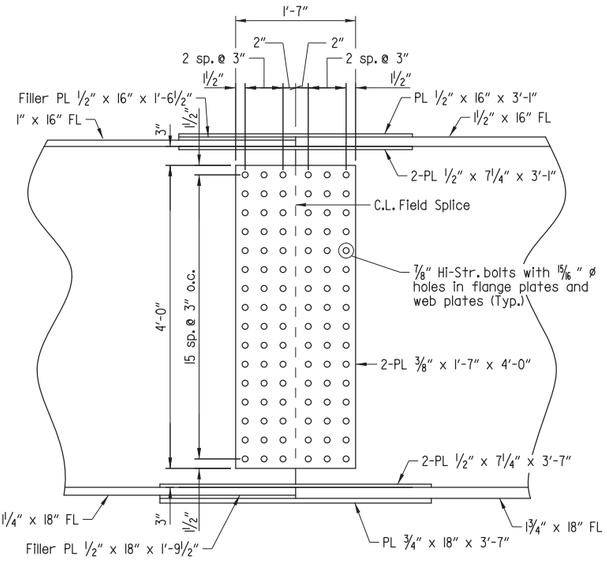
③ See details of deck drains on Dwg. No. 60676.





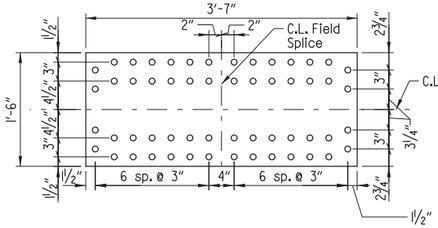
TOP FLANGE

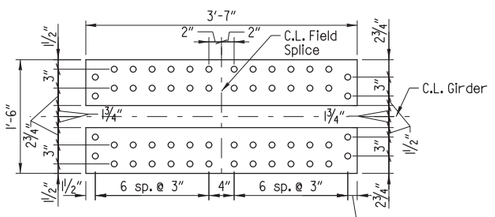
1" = 1'-0"



TYPICAL FIELD SPLICE DETAILS

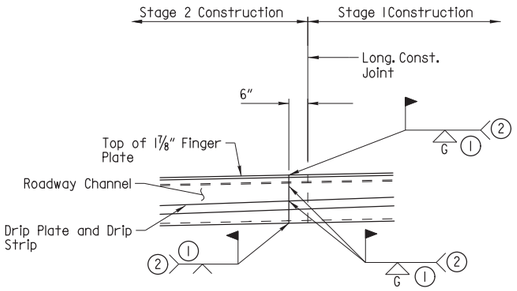
1" = 1'-0"





BOTTOM FLANGE

1" = 1'-0"



① Grind flush top of finger plate, face of roadway channel, top of drip strip and top of drip plate.

② Weld after Stage 1 pour and prior to Stage 2 pour.

DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

No Scale

Note:
Bolted field splices shown may be eliminated 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 ⅞" ø Hi-str. bolts.
All holes for splice bolts shall be 15/16" ø.
All field splice plates shall be ASTM A709 Gr. 50W steel.

2020.08.13 15:49:40-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

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.		030501	113	178
				① 07441 - 600'-0" CONT. UNIT - 60668				

SHEET 2 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME:	B030501X2_SX2.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	JPC	DATE:	03/2019	SCALE:	As Shown
BRIDGE NO.	07441			DRAWING NO.	60668

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WORKSPACE: ARDOT
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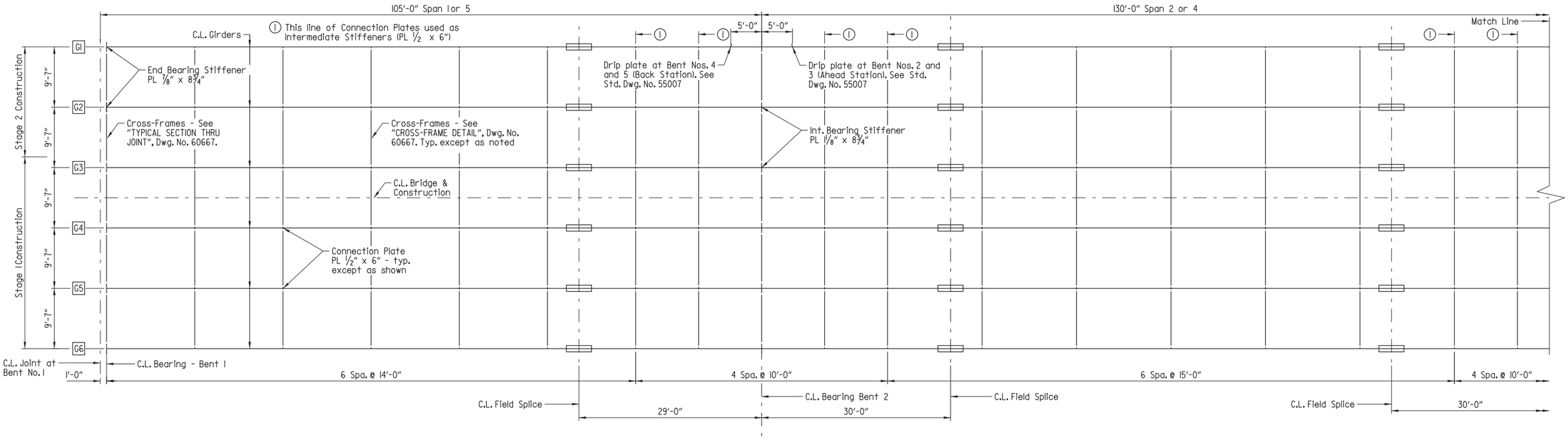
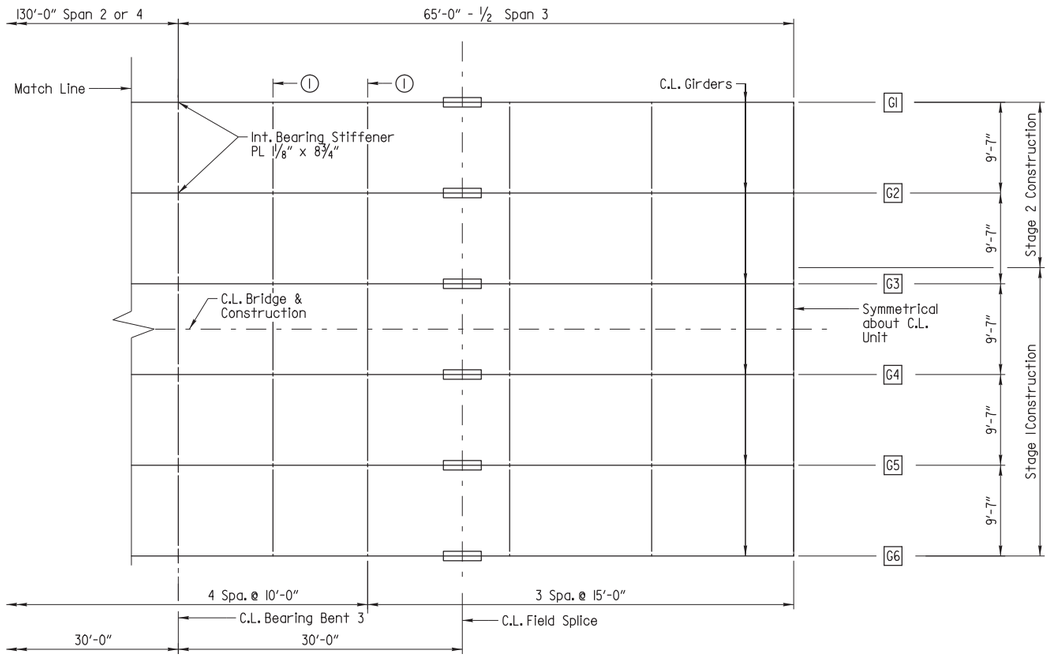
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

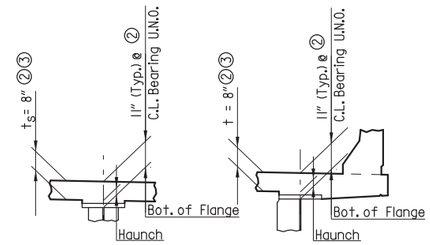
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	114	178
(1)	07441 - 600'-0" CONT. UNIT - 60669			



HALF FRAMING PLAN



HALF FRAMING PLAN



ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

Top Flange Thickness	Haunch Plus	Adj. Tolerance Minus
1"	7/8"	2 3/8"
1 1/2"	1 3/8"	1 7/8"

Note:
U.N.O. all structural steel shall be ASTM A709, Gr. 50W.

2020.08.13 15:32:57-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 3 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 70 OVER CADDO RIVER
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 09/2018 FILENAME: B03050IX2_SX3.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 09/2018 SCALE: No Scale
BRIDGE NO. 07441 DRAWING NO. 60669

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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.		030501	115	178
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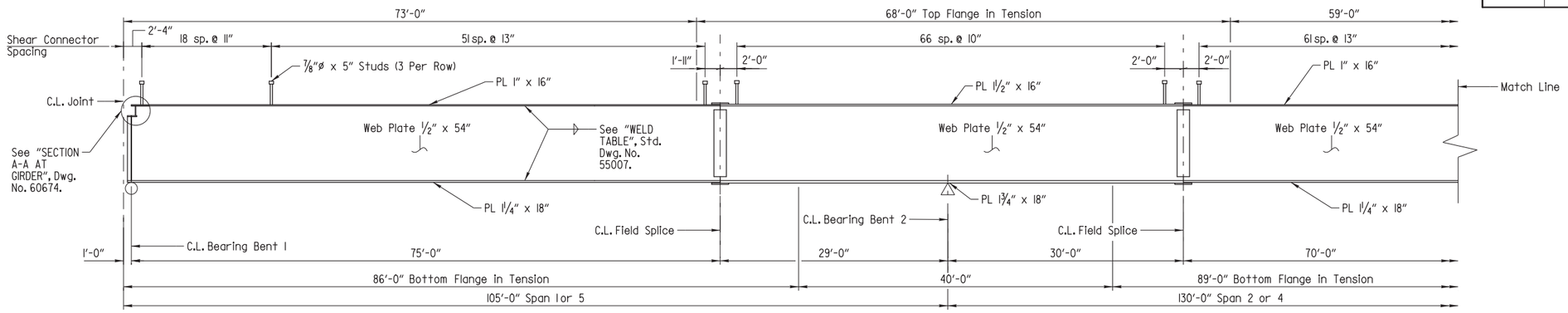
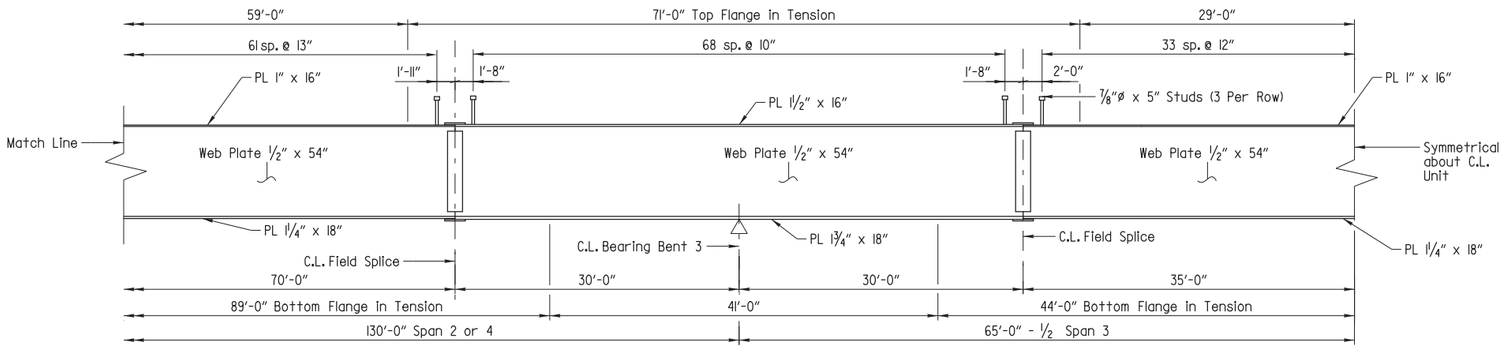
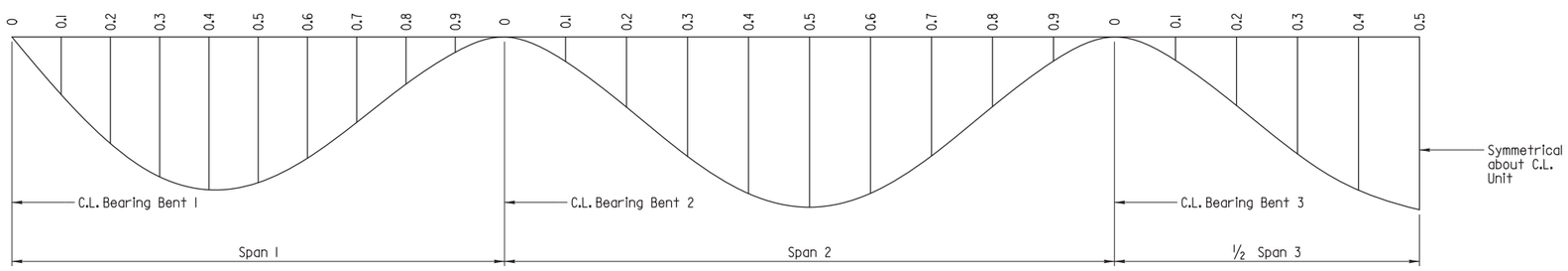




HALF GIRDER ELEVATION

Note:
U.N.O. all structural steel shall be ASTM 709, Gr. 50W.



DEAD LOAD DEFLECTION DIAGRAM

TABLE OF DEAD LOAD DEFLECTIONS - INCHES

Span	Point of Deflection	Structural Steel				Structural Steel + Slab				Structural Steel + Slab + Rail + Sidewalk			
		G1 G6	G2 G5	G3 G4		G1 G6	G2 G5	G3 G4		G1 G6	G2 G5	G3 G4	
1	0	0	0	0		0	0	0		0	0	0	
	0.1	0.097	0.102	0.102		0.419	0.507	0.507		0.550	0.592	0.548	
	0.2	0.177	0.187	0.187		0.769	0.931	0.931		1.010	1.086	1.006	
	0.3	0.230	0.242	0.242		1.001	1.213	1.213		1.307	1.416	1.310	
	0.4	0.250	0.264	0.264		1.091	1.323	1.323		1.437	1.544	1.429	
	0.5	0.235	0.249	0.249		1.035	1.256	1.256		1.366	1.468	1.358	
	0.6	0.193	0.205	0.205		0.856	1.040	1.040		1.320	1.216	1.124	
	0.7	0.133	0.141	0.141		0.596	0.724	0.724		0.789	0.847	0.783	
	0.8	0.068	0.073	0.073		0.317	0.386	0.386		0.421	0.453	0.419	
	0.9	0.019	0.020	0.020		0.093	0.113	0.113		0.123	0.132	0.122	
2	0	0	0	0		0	0	0		0	0	0	
	0.1	0.042	0.043	0.043		0.153	0.183	0.183		0.203	0.216	0.199	
	0.2	0.126	0.131	0.131		0.484	0.582	0.582		0.641	0.684	0.631	
	0.3	0.217	0.226	0.226		0.849	1.021	1.021		1.123	1.199	1.107	
	0.4	0.285	0.297	0.297		1.124	1.352	1.352		1.484	1.586	1.464	
	0.5	0.308	0.322	0.322		1.223	1.473	1.473		1.616	1.727	1.595	
	0.6	0.282	0.295	0.295		1.121	1.350	1.350		1.481	1.583	1.462	
	0.7	0.213	0.222	0.222		0.845	1.017	1.017		1.118	1.194	1.103	
	0.8	0.122	0.127	0.127		0.480	0.578	0.578		0.636	0.679	0.626	
	0.9	0.038	0.040	0.040		0.149	0.180	0.180		0.199	0.212	0.196	
1/2 Span 3	0	0	0	0		0	0	0		0	0	0	
	0.1	0.034	0.036	0.036		0.145	0.176	0.176		0.193	0.206	0.191	
	0.2	0.112	0.118	0.118		0.471	0.569	0.569		0.624	0.668	0.616	
	0.3	0.199	0.209	0.209		0.831	1.005	1.005		1.101	1.178	1.088	
	0.4	0.266	0.279	0.279		1.105	1.335	1.335		1.460	1.563	1.445	
	0.5	0.289	0.304	0.304		1.204	1.456	1.456		1.592	1.705	1.576	

Table is symm. about C.L. Unit

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.

For girder locations, see Dwg. No. 60669.

2020.08.13 15:32:59-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 4 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 09/2018 FILENAME: B030501X2_SX4.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 09/2018 SCALE: No Scale
BRIDGE NO. 07441 DRAWING NO. 60670

Leonard.Speed 8/13/2020 1:27:43 PM
WORKSPACE: ARDOT
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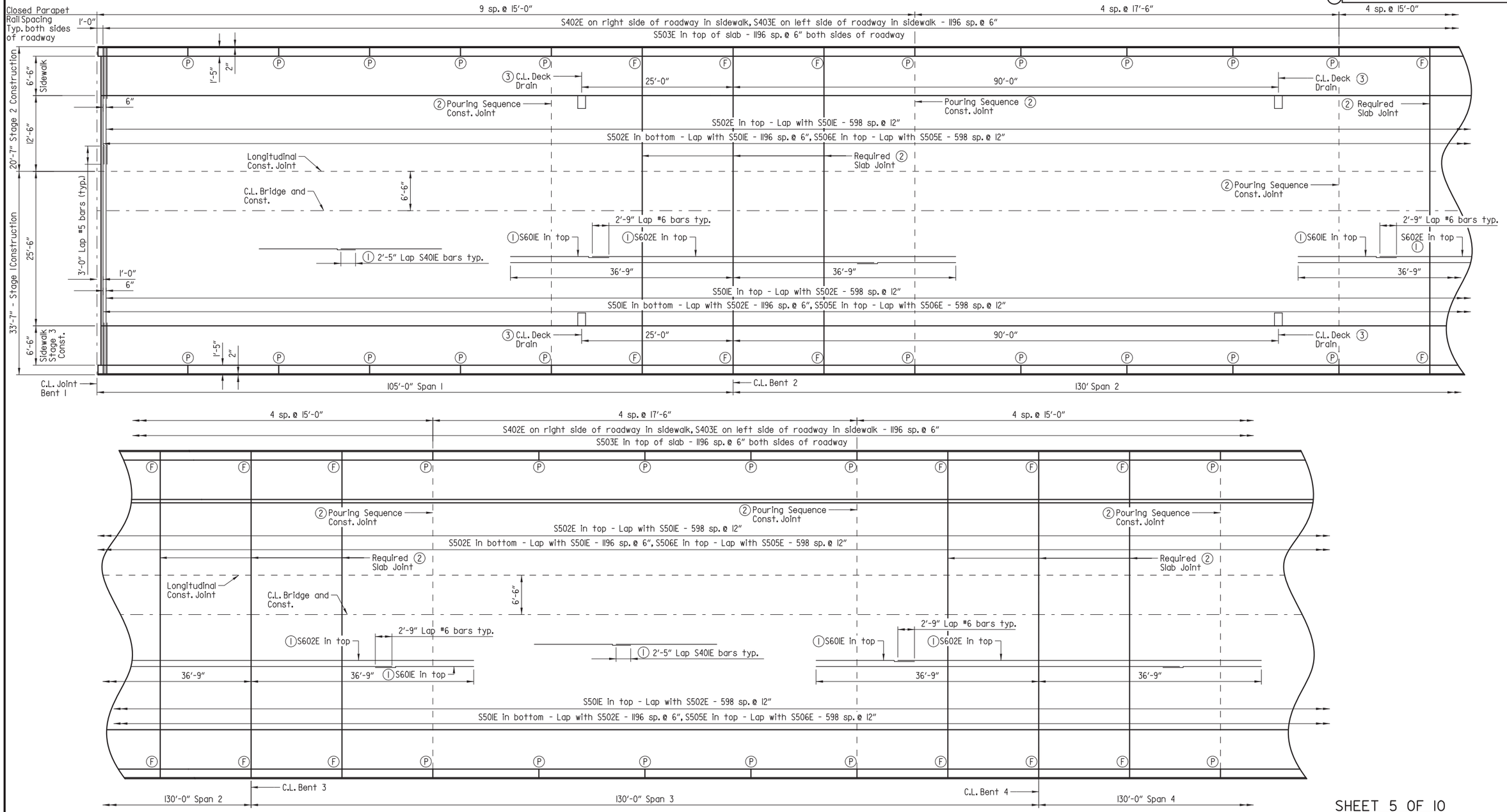
REVISED DATE:

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.		030501	116	178

(1) 07441 - 600'-0" CONT. UNIT - 60671



REINFORCING PLAN

(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of sidewalk)

(F) Full depth parapet joint at this location. (Stop 4" above top of sidewalk)

(1) Placed as shown in "Typical Section", See Dwg. No. 60667.

(2) Align with parapet open joint unless noted otherwise.

(3) For Details of Deck Drain, see Dwg. No. 60676.

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

2020.08.13 15:50:09-05'00'

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 5 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME:	B03050IX2_SX5.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	JPC	DATE:	03/2019	SCALE:	1/8" = 1'-0"
BRIDGE NO.	07441			DRAWING NO.	60671

Leonard.Speed 8/13/2020 1:27:44 PM
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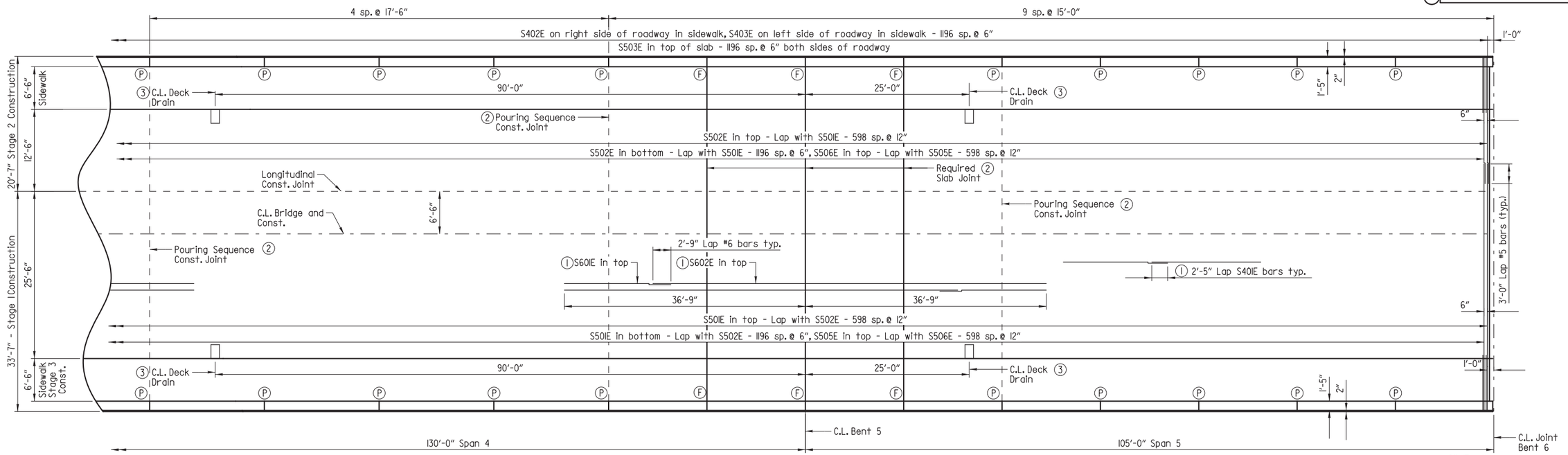
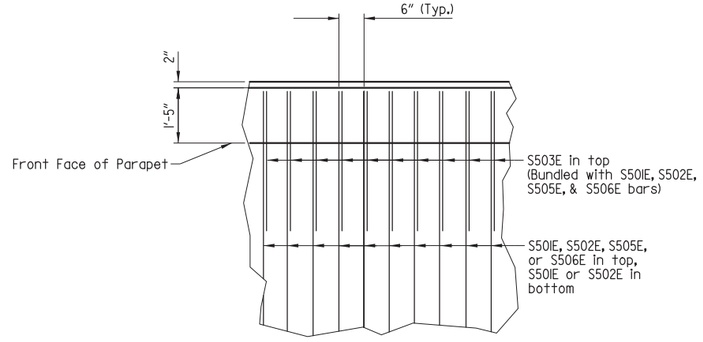
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	117	178
				(1)	07441 - 600'-0" CONT. UNIT - 60672			



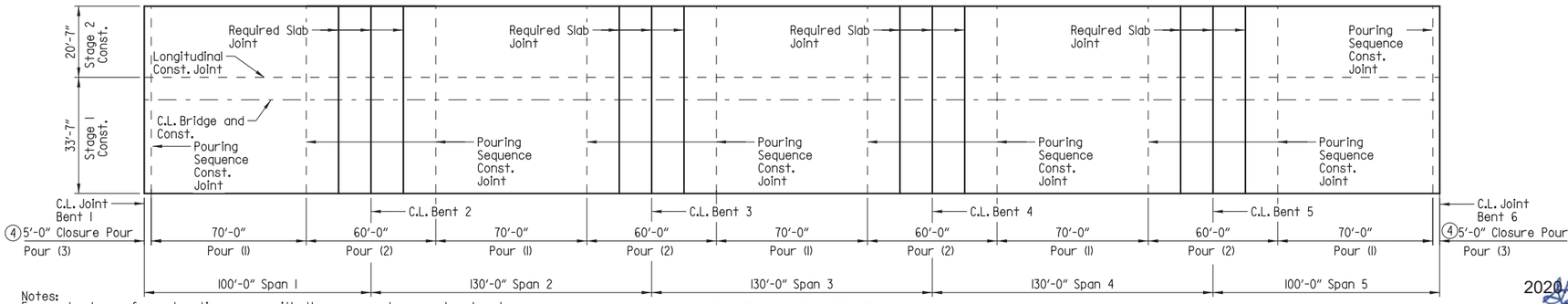
REINFORCING PLAN

(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of sidewalk)
(F) Full depth parapet joint at this location. (Stop 4" above top of sidewalk)
(1) Placed as shown in "Typical Section", See Dwg. No. 60667.
(2) Align with parapet open joint unless noted otherwise.
(3) For Details of Deck Drain, see Dwg. No. 60676.



REINFORCING DETAIL

No Scale



POURING SEQUENCE

No Scale

Notes:
For each stage of construction, pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed and all Pours (2) must be placed before Pours (3) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Concrete in bridge superstructure shall be placed, consolidated, and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. 72 hours shall elapse between completion of the deck and the pouring of the sidewalk or railing. Any sidewalk pours made before the entire slab unit for each stage of construction has been placed must be approved by the Engineer.

(4) Closure pours at the finger joints shall be made after all incremental pours for each stage of construction have been placed (Pours 1 and 2 for each stage). 48 hours shall elapse between the last incremental pour and the closure pours.

The Contractor must obtain approval from the Engineer for any deviations from the pouring Sequence shown.

2020.08.13 15:38:03-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 6 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME: B030501X2_SX6.dgn
CHECKED BY:	SFH	DATE:	04/2019	
DESIGNED BY:	JPC	DATE:	03/2019	SCALE: As Shown
BRIDGE NO.	07441			DRAWING NO. 60672

Leonard.Speed 8/13/2020 12:27:46 PM
WORKSPACE: ARDOT
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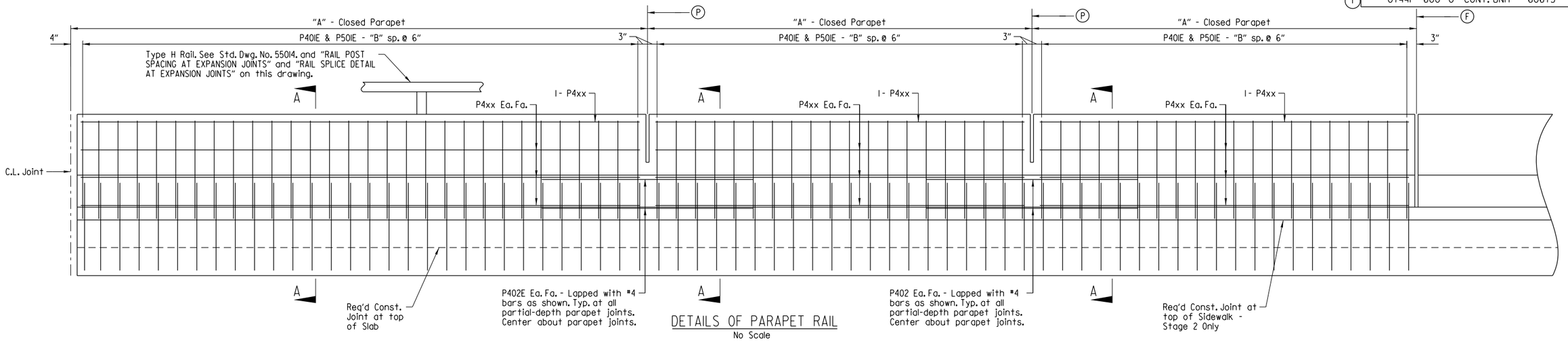
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
09-08-2020			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	118	178
(1) 07441 - 600'-0" CONT. UNIT - 60673				

⚠1 Revised note for existing sanitary sewer line.



DETAILS OF PARAPET RAIL
No Scale

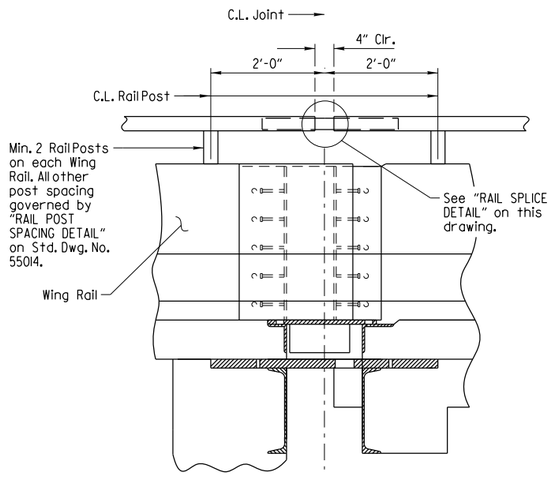
TABLE OF VARIABLES

"A" Closed Parapet	"B"	P4xx Bar
15'-0"	29	P403E
17'-6"	34	P404E

For location of Closed Parapet Panels, see "Reinforcing Plan", Dwg. No. Nos. 60671& 60672.

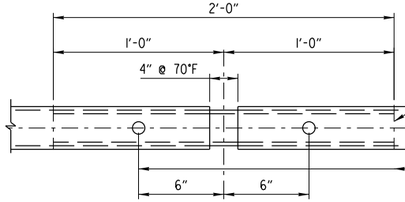
(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of sidewalk) as shown in "Reinforcing Plan", Dwg. Nos. 60671& 60672.

(F) Full depth parapet joint at this location. (Stop 4" above top of sidewalk) as shown in "Reinforcing Plan", Dwg. Nos. 60671& 60672.



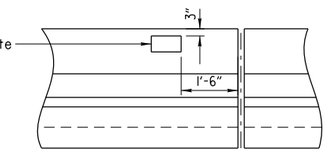
RAIL POST SPACING AT EXPANSION JOINTS
No Scale

(Use this detail in place of "RAIL POST SPACING AT EXPANSION JOINTS" on Std. Dwg. No. 55014. All other post spacing governed by "RAIL POST SPACING DETAIL" on Std. Dwg. No. 55014.)

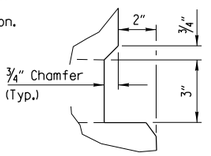


RAIL SPLICE DETAIL AT EXPANSION JOINTS
No Scale

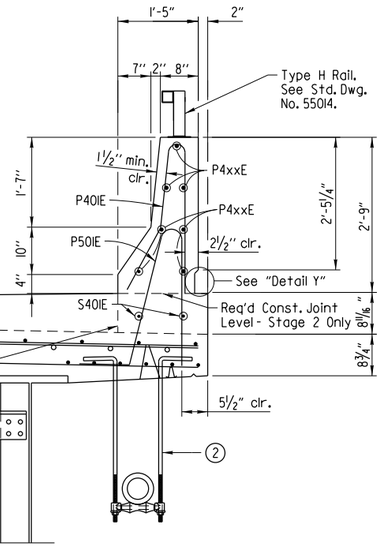
(Use this detail in place of "SPLICE DETAIL" on Std. Dwg. No. 55014 at rail splices across expansion joints. For all other Rail Splices, see "SPLICE DETAIL" on Std. Dwg. No. 55014.)



NAME PLATE DETAIL
No Scale

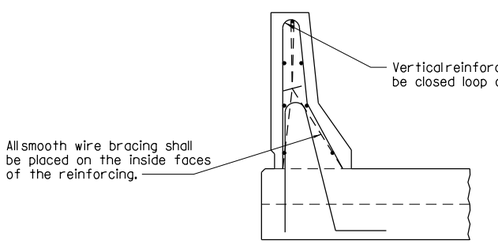


DETAIL Y
No Scale

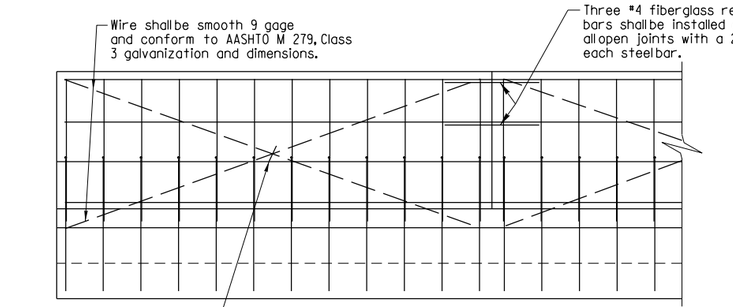


SECTION A-A
3/4" = 1'-0"

(1) For additional information and details see "Stage 2 Sidewalk Detail" or "Stage 3 Sidewalk Detail", Dwg. No. 60667.



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 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale

⚠2 Cast-in-place anchors for possible sanitary sewer utility attachment. If utility attachment to the bridge is necessary, the anchors will be supplied by the Utility Company to the Contractor for installation in the deck. Any labor necessary to install these anchors will be added to the Contract by the way of Change Order. Installation of hangers and pipe for the utility will not be part of this Contract, but will be the responsibility of others.

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

9/8/2020

BRIDGE ENGINEER
PRINT DATE: 9/8/2020

SHEET 7 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME:	B030501X2_SX7.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	JPC	DATE:	03/2019	SCALE:	As Shown
BRIDGE NO.	07441			DRAWING NO.	60673

Megan.Land 9/8/2020 9:53:22 AM
WORKSPACE: ARDOT
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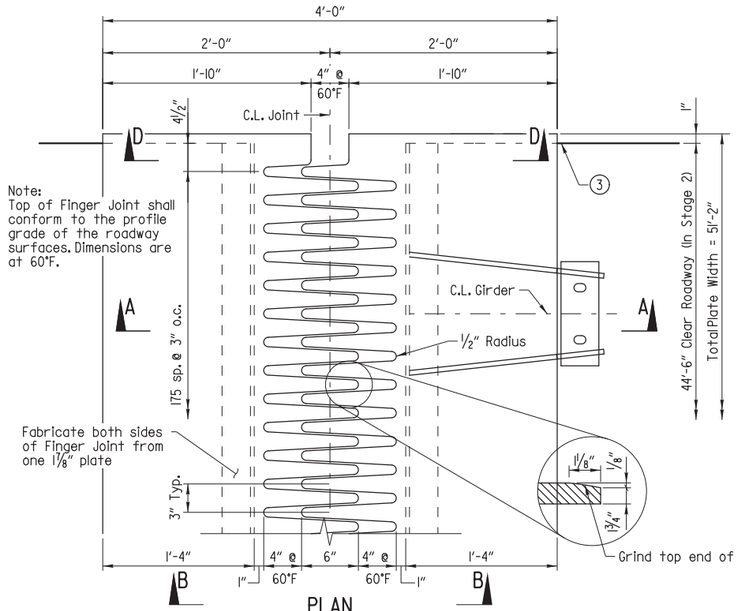
REVISED DATE:

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.		030501	119	178

(1) 07441 - 600'-0" CONT. UNIT - 60674



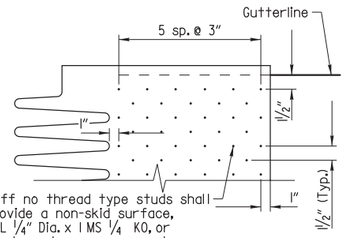
Bent No.	Joint Width at 24 hour Average Temperature		
	40°F	60°F	80°F
1,6	4½"	4"	3½"

Note:
Before joint closure pours are done, joint shall be set and adjusted for grade. Set joint width by interpolating from table.

(1) Varies - 8½" at C.L. Bridge

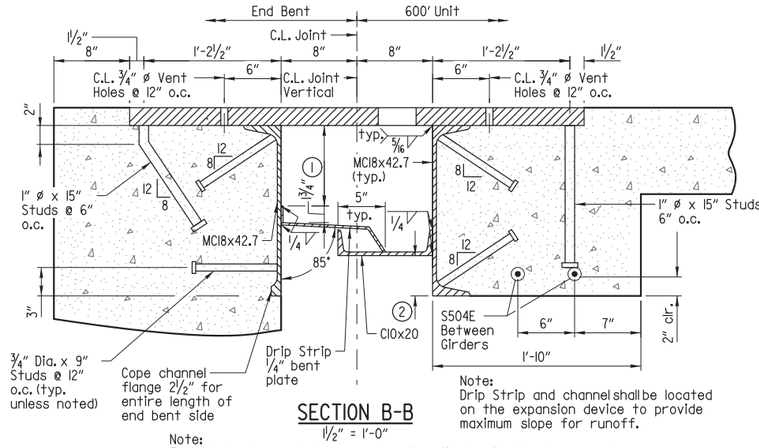
(2) Varies - ½" at end of channel

(3) Gutterline on left side or temporary face of parapet (Stage 2 Traffic) on right side.



Fluxed knock-off no thread type studs shall be used to provide a non-skid surface, Nelson Stud NBL ¼" Dia. x 1 MS ¼ KO, or equivelent, placed as shown on exposed roadway surface of all finger plates. Length after knock-off to be ¼". Knock-off studs will not be paid for directly, but will be considered subsidiary to "STRUCTUREAL STEEL IN PLATE GIRDER SPANS (ASTM A709, Gr. 50W)".

ANTI-SKID TREATMENT
1½" = 1'-0"

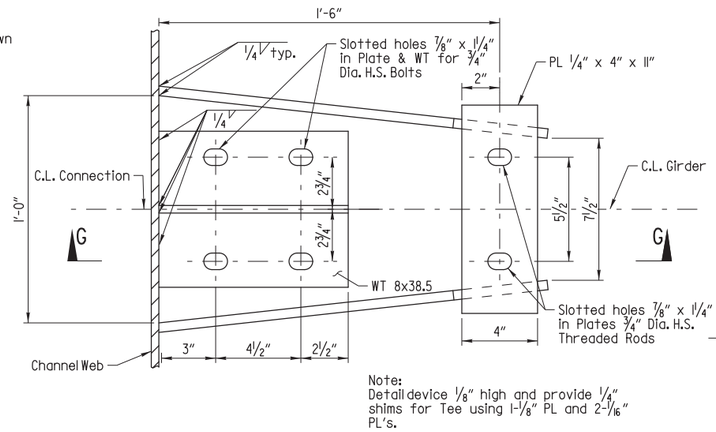


SECTION B-B
1½" = 1'-0"

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

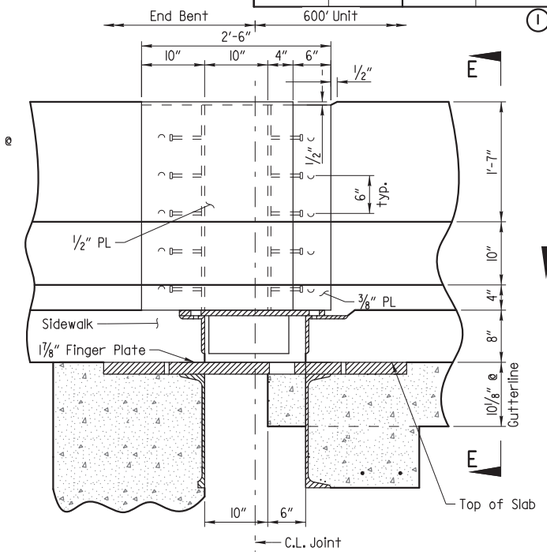
Note:
The Studs shown shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the channel in accordance with recommendations of the manufacturer.

Concrete shall be hand packed under the joint armor.

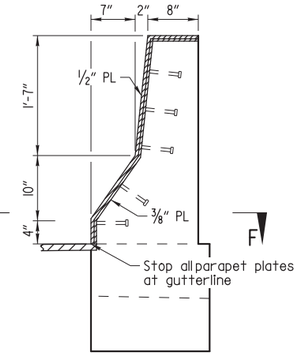


Note:
Detail device ⅛" high and provide ¼" shims for Tee using 1-⅛" PL and 2-1/16" PL's.

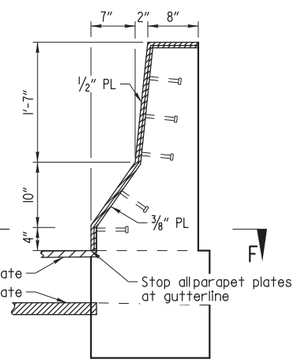
PLAN OF CONNECTION TO GIRDER
3" = 1'-0"



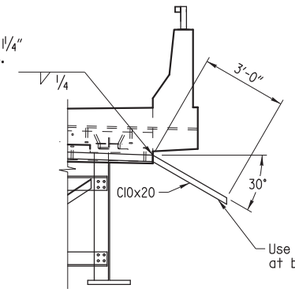
SECTION D-D
(Shown for RT. of C.L., similar for LT. of C.L. except for Finger Plate stops at gutterline)
1" = 1'-0"



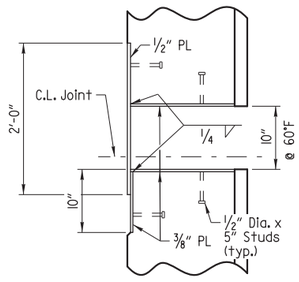
SECTION E-E
(LT. side of bridge)
1" = 1'-0"



SECTION E-E
(RT. side of bridge)
1" = 1'-0"



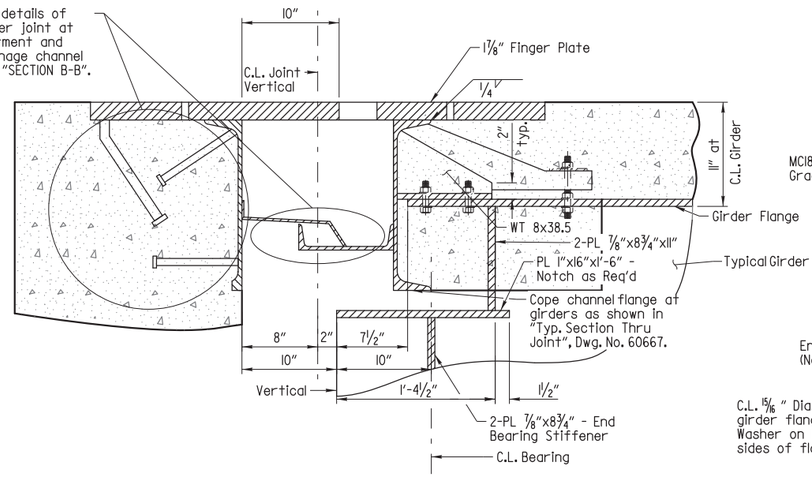
DRAIN DETAIL
No Scale



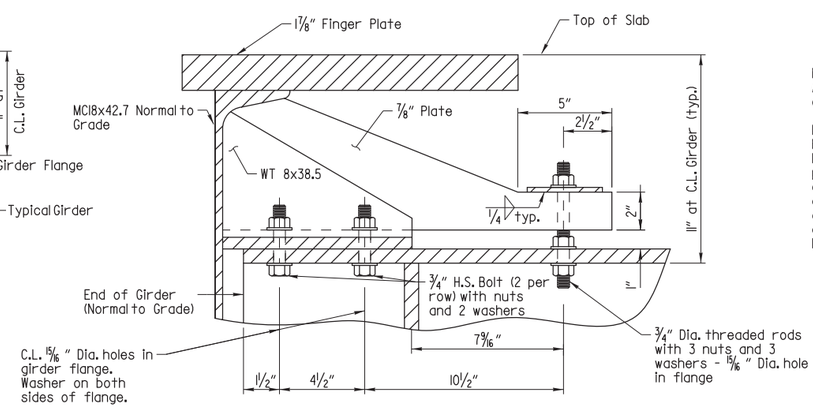
SECTION F-F
1" = 1'-0"

Note:
All structural steel shall be ASTM 709, Gr. 50W unless noted otherwise.

Parapet slider plates and sidewalk patterned floor plates shall be ASTM A709, Gr. 36 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (ASTM A709, Gr. 50W)". The surfaces of the plates which will not be in contact with the concrete shall be cleaned and painted in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting shall not be paid directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (ASTM A709, Gr. 50W)".



SECTION A-A AT GIRDER
1½" = 1'-0"



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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
2020.08.13 15:50:39-05'00'

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 8 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 70 OVER CADDO RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	03/2019	FILENAME: B030501X2_SX8.dgn
CHECKED BY:	SFH	DATE:	12/2019	
DESIGNED BY:	JPC	DATE:	03/2019	SCALE: As Shown
BRIDGE NO.	07441			DRAWING NO. 60674

REVISED DATE:
WORKSPACE: ARDOT
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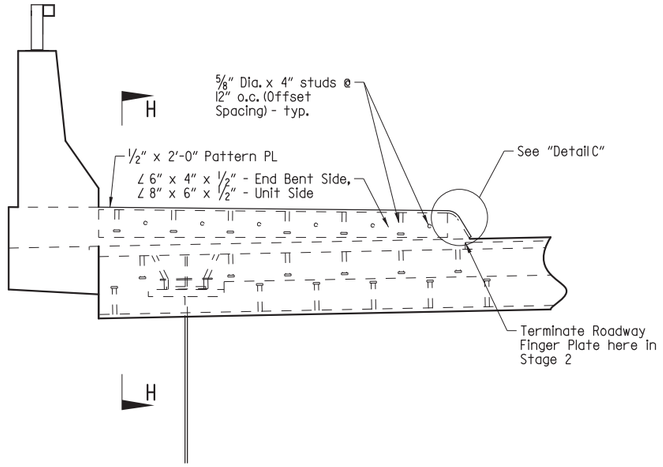
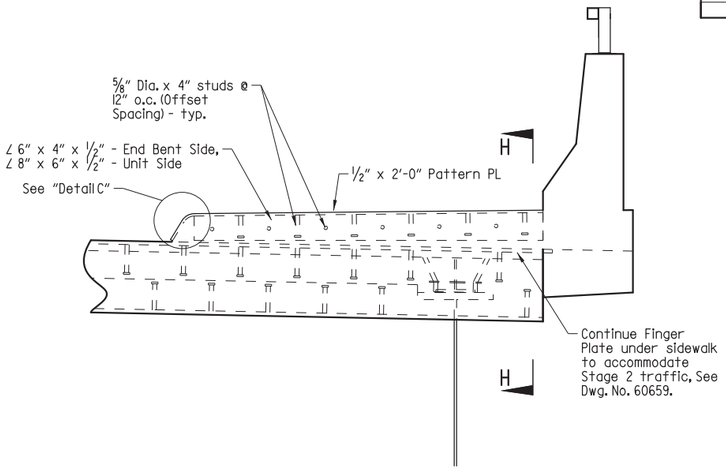
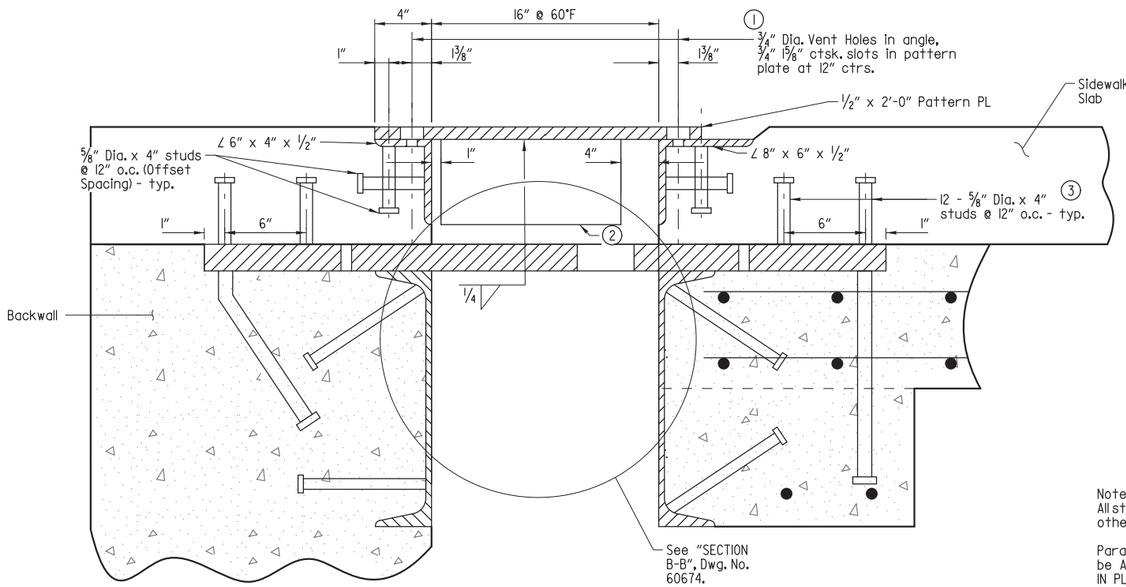
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	120	178
				(1)	07441 - 600'-0" CONT. UNIT - 60675			



SECTION THRU SIDEWALK - STAGE 2



SECTION THRU SIDEWALK - STAGE 3



SECTION H-H

(1) 3/4" x 1 5/8" Ctsk. Slots in 1/2" Pattern Plates. Tap 8" leg of angle for 5/8" Dia. flat head cap screws @ 12" o.c. Install screws in the shop and ship as unit. Remove screws on span side after erection is complete.

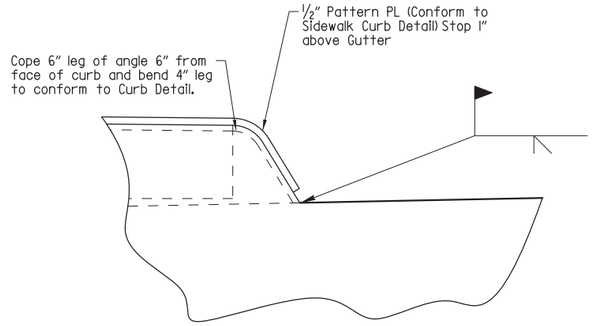
(2) 1/2" x 4" x 11" Stiffener PLs @ 1'-0" o.c. (5 per sidewalk location)

(3) Stud Shear Connectors shall be automatically end welded to the plate in accordance with the recommendations of the Manufacturer. These will be field welded during Stage 3 construction in accordance with 807.26. Not shown on "SECTION THRU SIDEWALK - STAGE 3" for clarity.

Note:
Concrete shall be hand packed under the joint armor in the backwall and in the span.

Note:
All structural steel shall be ASTM A709, Gr. 50W unless noted otherwise.

Parapet slider plates and sidewalk patterned floor plates shall be ASTM A709, Gr. 36 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (ASTM A709, Gr. 50W)". The surfaces of the plates which will not be in contact with the concrete shall be cleaned and painted in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting shall not be paid directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (ASTM A709, Gr. 50W)".



DETAIL C

2020.08.13 15:39:09-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 9 OF 10
DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 70 OVER CADDO RIVER
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 03/2019 FILENAME: B030501X2_SX9.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 03/2019 SCALE: None
BRIDGE NO. 07441 DRAWING NO. 60675

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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.		030501	121	178
				(1)	07441 - 600'-0" CONT. UNIT - 60676			

GENERAL NOTES

For Location of Deck Drains, see Superstructure Details.

Drain location may be adjusted to clear cross frame connections and avoid reinforcing bars.

Standard Weight Pipe for Deck Drains shall conform to ASTM A501. All other structural steel shall be ASTM A709, Grade 36. After fabrication, all structural steel in drains shall be Galvanized in accordance with AASHTO M 111. Steel Fasteners shall be Galvanized in accordance with AASHTO M 232 or M 298, Class 40 or 50.

Structural Steel in Deck Drains shall not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans, (ASTM A709, Gr. 50W.)"

Top longitudinal reinforcing steel in the slab shall be cut as required to install the deck drains. Two additional No. 4 x 4'-0" straight bars shall be placed longitudinally on each side of the drain.

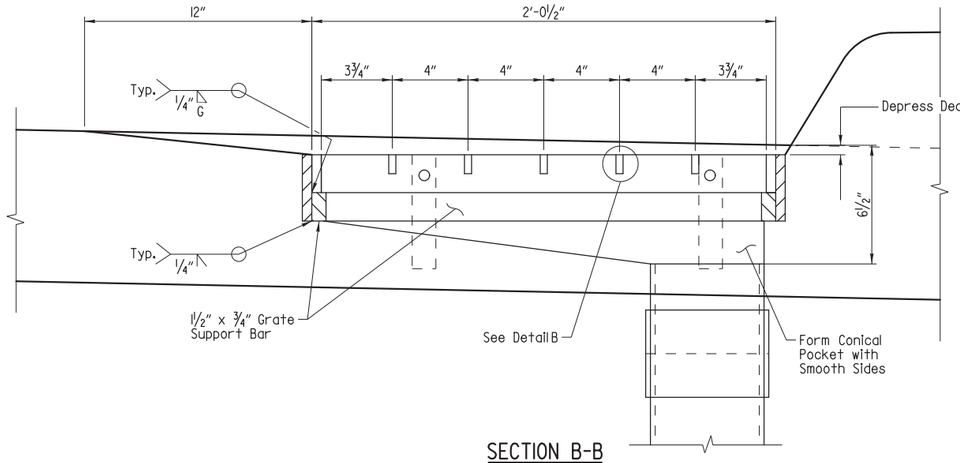
Top and bottom transverse reinforcing steel in the slab shall be cut as required (Up to a maximum of three bars per mat) to install the deck drain. Two additional No. 6 x 9'-6" straight bars shall be placed transversely per mat on each side of the drain.

One additional No. 4 x 5'-6" straight bar shall be placed at a 45ø angle to each corner in both top and bottom mats.

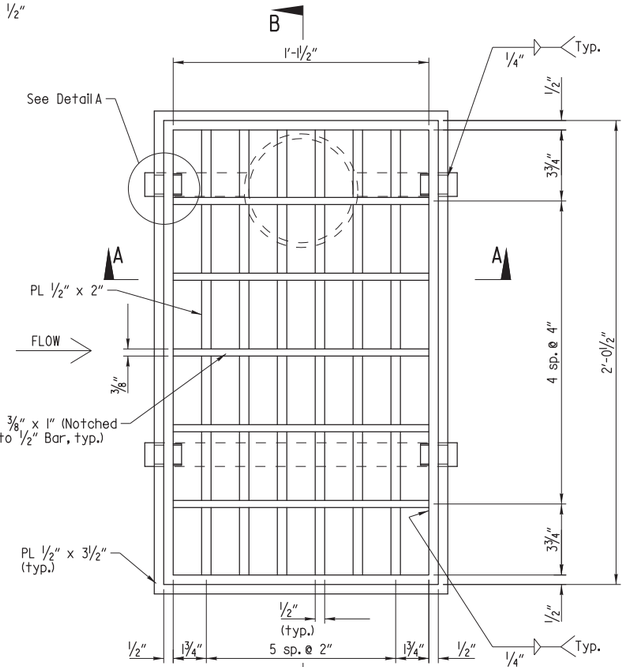
Repair all cut or damaged epoxy bars in accordance with the Standard Specifications.

All additional Reinforcing Steel placed around the deck drains shall be epoxy-coated and shall be paid for at the unit price bid for "Epoxy Coated Reinforcing Steel (Grade 60)".

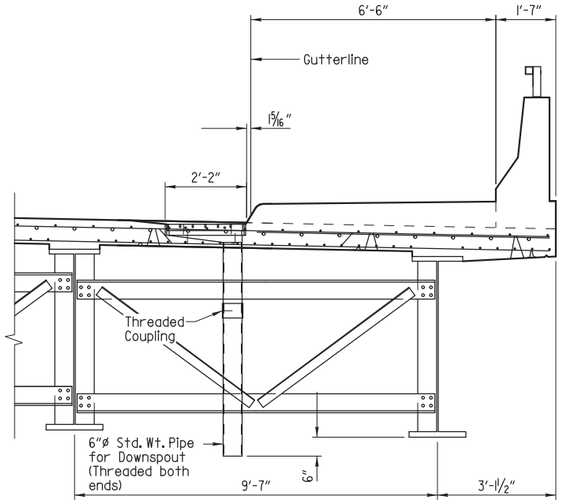
Note: A Pre-Manufactured Grate or Grate and Frame may be submitted for approval by the Engineer in place of the steel fabrication shown in the Plans. Grate shall have on AASHTO-AGC-ARTBA Type 5 or 6 Configuration and shall be designed for a 16,000 lb. wheel load.



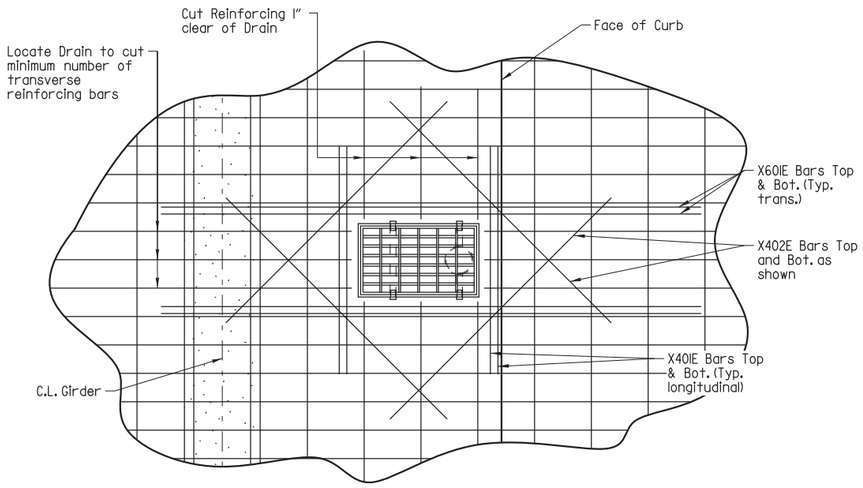
SECTION B-B
3" = 1'-0"



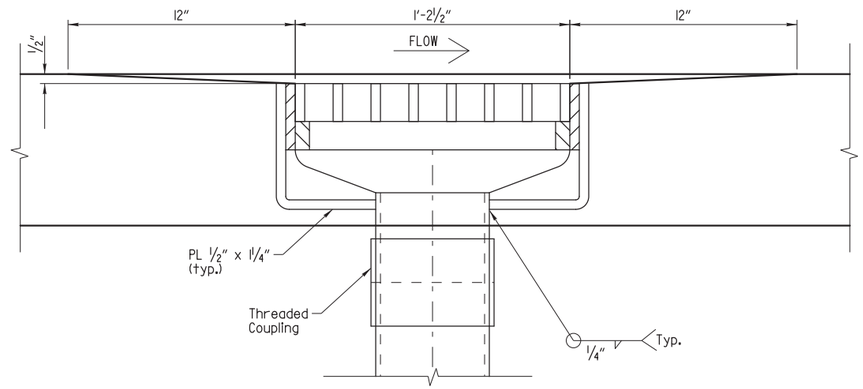
PLAN
3" = 1'-0"



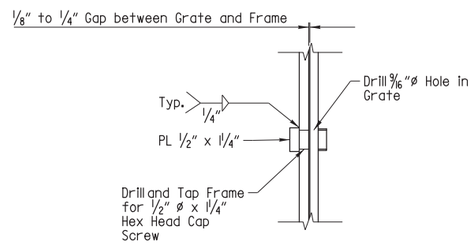
ROADWAY SECTION AT DECK DRAIN
½" = 1'-0"



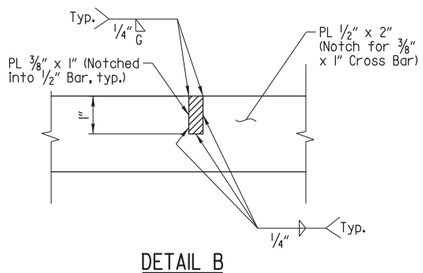
PLAN OF REINFORCING AT DECK DRAINS
¾" = 1'-0"



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



DETAIL A
No Scale



DETAIL B
No Scale

BAR LIST FOR ONE DRAIN

(FOR INFORMATION ONLY)

Mark	No. Req'd.	Length
X401E	8	4'-0"
X402E	8	5'-6"
X601E	8	9'-6"

2020.08.13 15:38:11-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 10 OF 10

DETAILS OF 600'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 70 OVER CADDO RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	04/2019	FILENAME:	B030501X2_SX10.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	JPC	DATE:	04/2019	SCALE:	As Shown
BRIDGE NO.	07441			DRAWING NO.	60676

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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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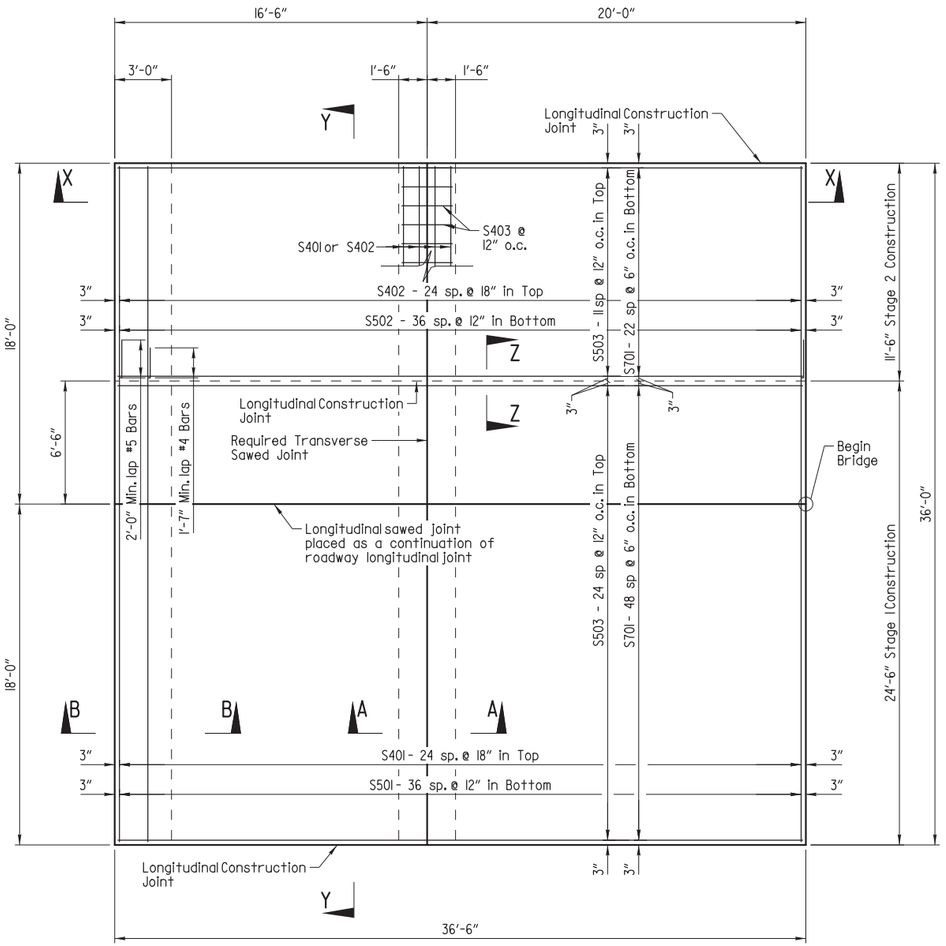
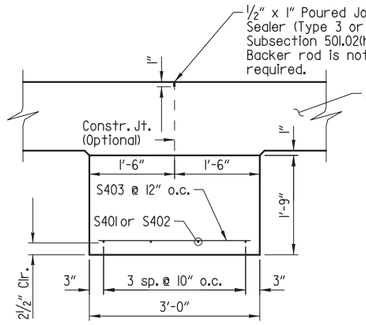
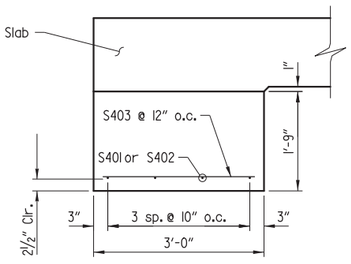
				JOB NO.		030501	122	178
				(1)	07441 - APPROACH SLAB 1 - 60677			



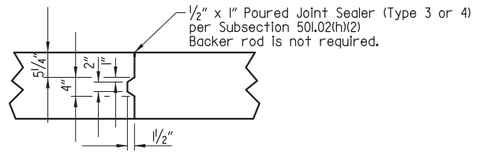
PLAN
1/4" = 1'-0"



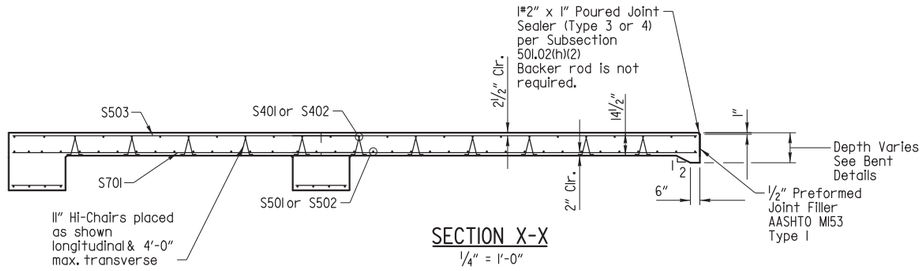
SECTION A-A
3/4" = 1'-0"



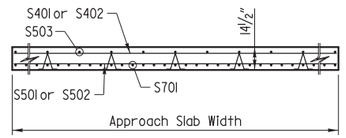
SECTION B-B
3/4" = 1'-0"



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



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



SECTION Y-Y
(No Scale)

GENERAL NOTES

All concrete shall be Class S(AE) (f'c = 4,000 psi) and shall be poured in the dry.

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.

QUANTITIES FOR TYPE I SPECIAL APPROACH SLAB

Slab Width	Reinforcing Steel (lbs.)	Concrete (cubic yds)
36'-0"	9125	73.47

BAR LIST FOR TYPE I SPECIAL APPROACH SLAB

MARK	NO. REQ'D.	LENGTH	PIN DIA.
S401	33	26'-1"	Str.
S402	33	11'-2"	Str.
S403	74	2'-8"	Str.
S501	37	26'-6"	Str.
S502	37	11'-2"	Str.
S503	37	36'-2"	Str.
S701	72	36'-2"	Str.

2020.08.13 15:39:13-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DETAILS OF TYPE I SPECIAL APPROACH SLAB

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 04/2019 FILENAME: B030501X2_ASI.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 04/2019 SCALE: As Shown
BRIDGE NO. 07441 DRAWING NO. 60677

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REVISED DATE:

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				JOB NO.		030501	123	178
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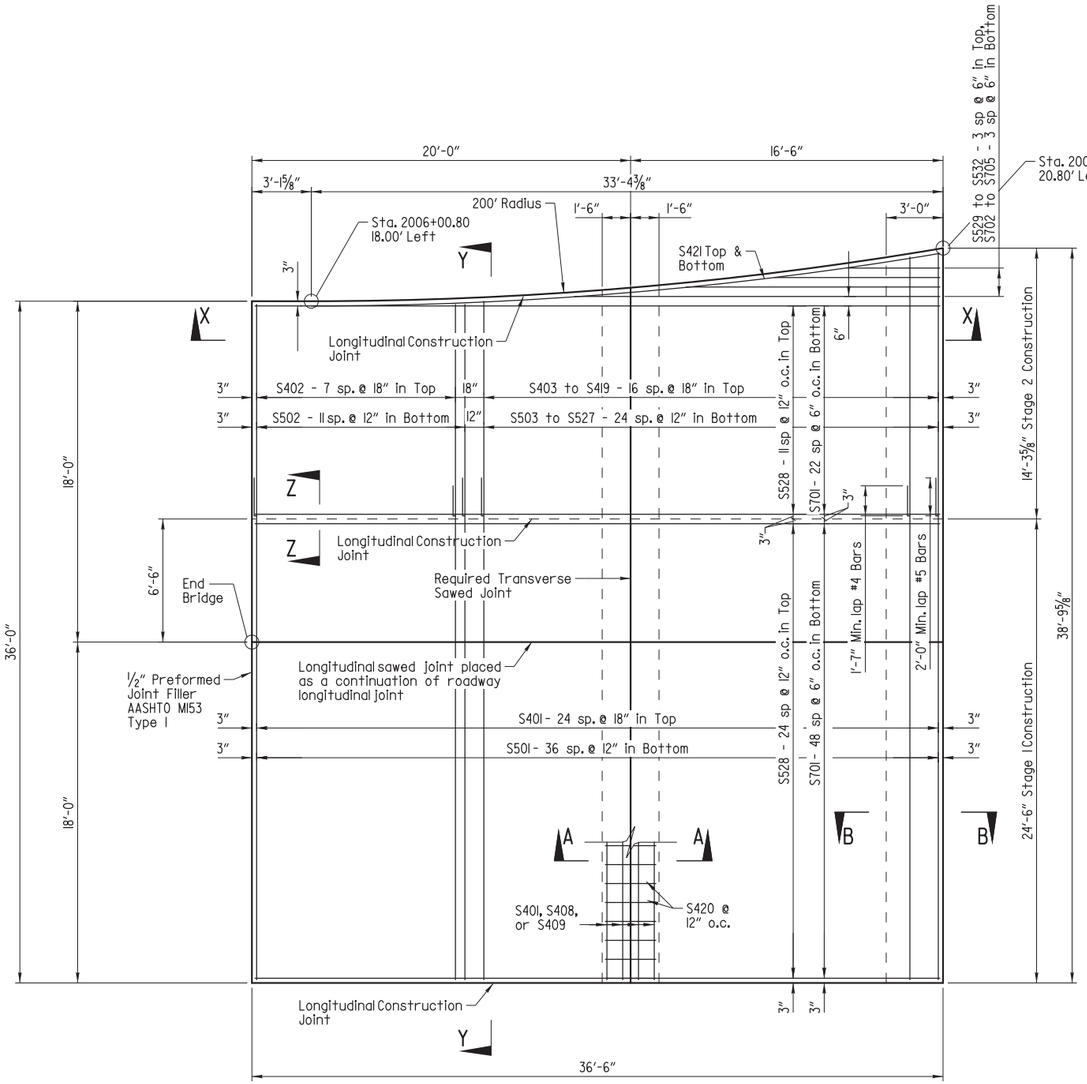
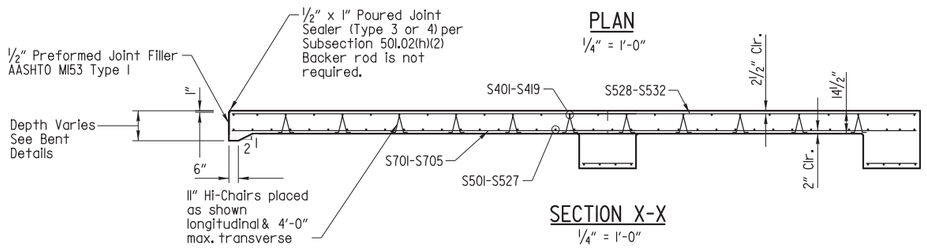
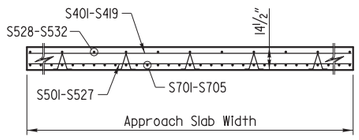


PLAN
¼" = 1'-0"



SECTION X-X
¼" = 1'-0"



SECTION Y-Y
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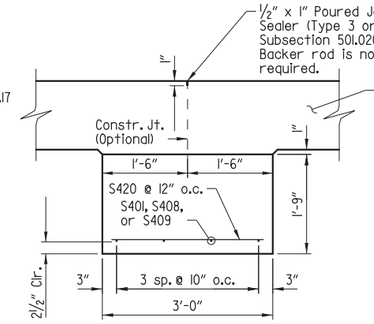
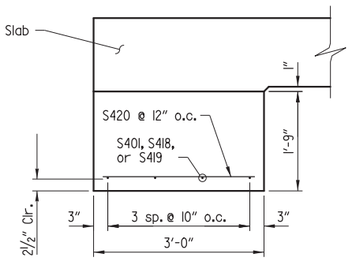
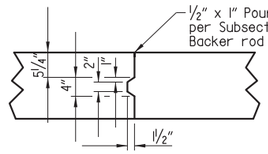


SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"



SECTION Z-Z
¾" = 1'-0"

GENERAL NOTES

All concrete shall be Class S(AE) (f'c = 4,000 psi) and shall be poured in the dry.

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.

QUANTITIES FOR TYPE 2 SPECIAL APPROACH SLAB

Slab Width	Reinforcing Steel (lbs.)	Concrete (cubic yds)
Varies 36'-0" to 38'-9⅝"	9396	75.41

BAR LIST FOR TYPE 2 SPECIAL APPROACH SLAB

MARK	NO. REQ'D.	LENGTH	PIN DIA.
S401	33	26'-7"	Str.
S402	8	11'-2"	Str.
S403 to S407	1 ea.	10'-10" to 11'-0"	Str.
S408	3 ea.	11'-2"	Str.
S409	3 ea.	11'-4"	Str.
S410 to S417	1 ea.	11'-6" to 12'-11"	Str.
S418	3 ea.	13'-2"	Str.
S419	3 ea.	13'-6"	Str.
S420	78	2'-8"	Str.
S421	2	33'-4"	Str.
S501	37	27'-0"	Str.
S502	12	11'-2"	Str.
S503 to S527	1 ea.	10'-10" to 13'-6"	Str.
S528	37	36'-2"	Str.
S529 to S532	1 ea.	19'-3" to 4'-11"	Str.
S701	72	36'-2"	Str.
S702 to S705	1 ea.	19'-3" to 4'-11"	Str.

2020.08.13 15:30:15-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DETAILS OF TYPE 2 SPECIAL APPROACH SLAB

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 04/2019 FILENAME: B030501X2_AS2.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: JPC DATE: 04/2019 SCALE: As Shown
BRIDGE NO. 07441 DRAWING NO. 60678

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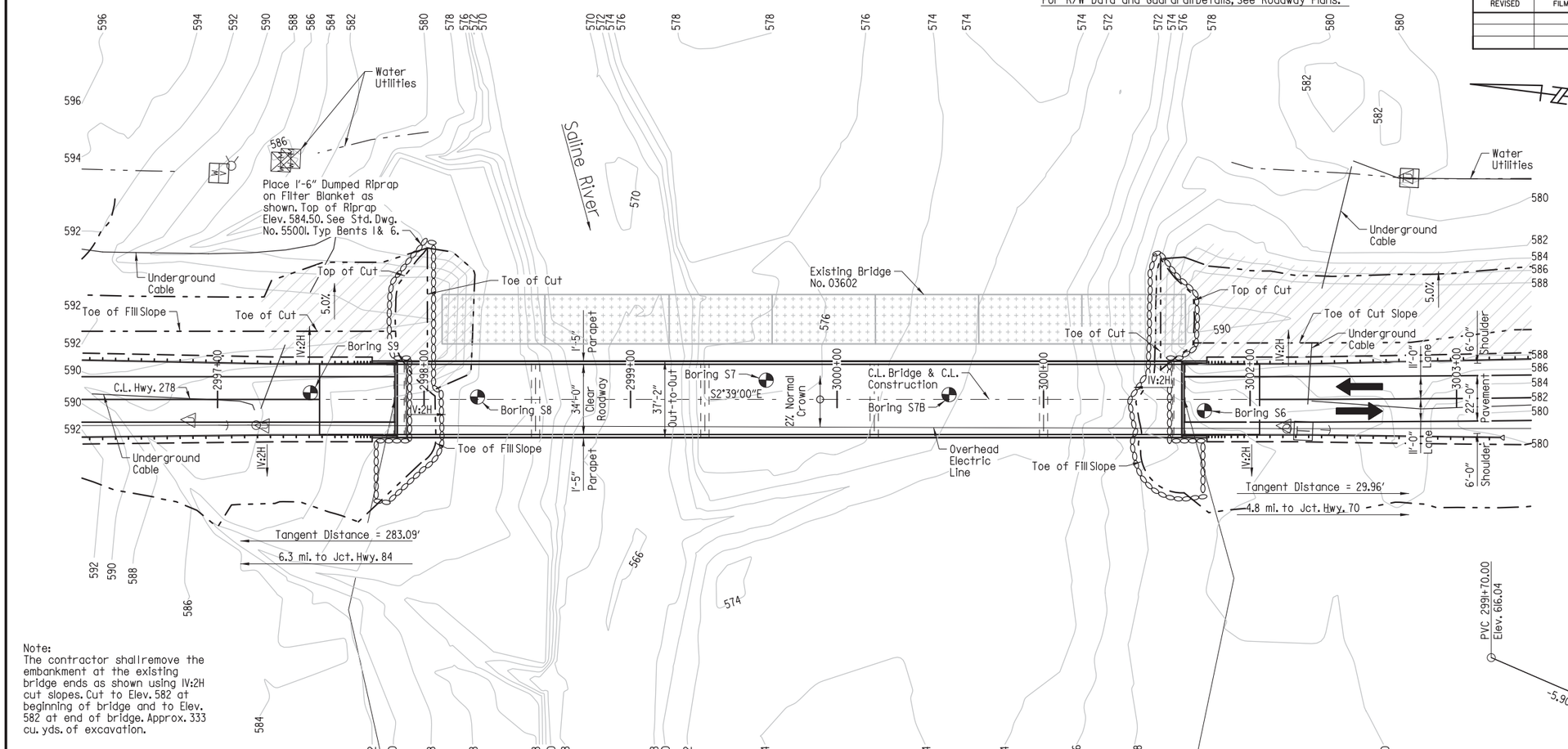
REVISED DATE:

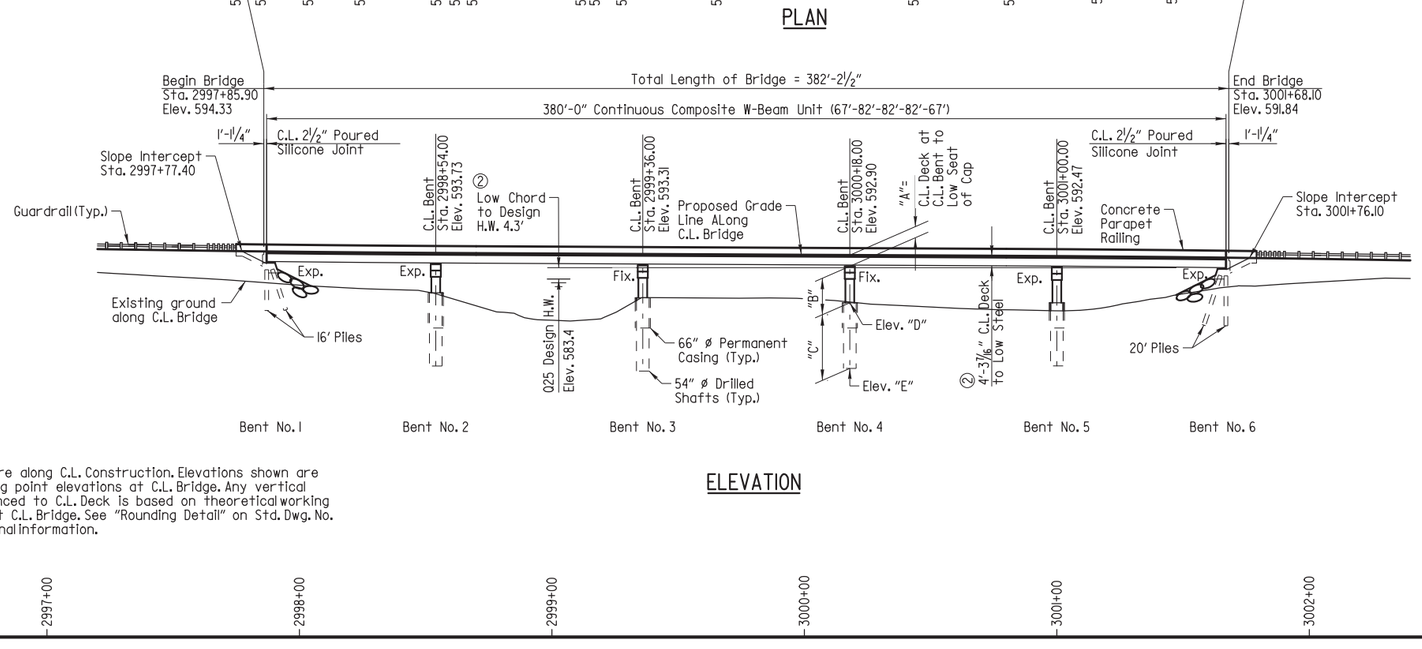
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	124	178
				①	07442 - LAYOUT - 60679			

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



PLAN

Note:
The contractor shall remove the embankment at the existing bridge ends as shown using 1V:2H cut slopes. Cut to Elev. 582 at beginning of bridge and to Elev. 582 at end of bridge. Approx. 333 cu. yds. of excavation.



ELEVATION

Note:
Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Std. Dwg. No. 55007 for additional information.

Notes:
For Soil Borings
See Dwg. No. 60680.

Note:
Use Type 3 Special Approach Slab and Type C Approach Gutters ("w" = 6'-0") at both ends of bridge, See Dwg. No. 60693 and Std. Dwg. No. 55030C, respectively.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	①NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	15,000	582.9	583.4
Base	100	21,000	584.3	585.0
Extreme	500	28,900	585.8	586.8
Overtopping	>500	>500	>500	>500

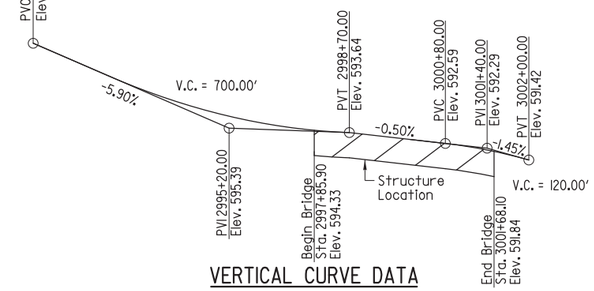
① Unconstricted water surface without structure or roadway approaches.

Q100 backwater elevation for existing structure = 585.1 feet.

② Proposed Bridge Low Chord Elevation = 587.47 feet at Station 3001+68.10.

Drainage area = 57.1 square miles.

Historical H.W. Elev. = 585.1 Feet (from 1961 Construction plans)



VERTICAL CURVE DATA

(Stations and Elevations are along C.L. Bridge)

TABLE OF VARIABLES

Location	"A"	"B"	"C"	"D"	"E"
Bent No. 2	4'-9 9/16"	10'-11 3/4"	29'-0"	578.00	549.00
Bent No. 3	4'-9 9/16"	12'-6 3/4"	29'-0"	576.00	547.00
Bent No. 4	4'-9 9/16"	14'-1 13/16"	26'-0"	574.00	548.00
Bent No. 5	4'-9 9/16"	13'-8 3/4"	25'-0"	574.00	549.00

SHEET 1 OF 2
LAYOUT OF BRIDGE
HWY. 278 OVER SALINE RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
HOWARD COUNTY
ROUTE 278 SECTION 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

2020.08.13 15:51:36-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DRAWN BY: JPC DATE: 03/2018
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: MKL DATE: 03/2018
BRIDGE NO. 07442
FILENAME: B030501X3_LXI.dgn
SCALE: 1" = 30'
DRAWING NO. 60679

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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
08/25/2020				6	ARK.			
				JOB NO.		030501	125	178
				(1)	07442 - LAYOUT - 60680			

⚠ Revised Removal and Salvage note. SFH 08/25/2020

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 with current Interim Specifications.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 S_{D1} =0.087 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 (ASTM A709, Gr. 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi

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

STEEL PILING: All end bent Piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a safe bearing capacity of 95 tons per pile and into material designated as shale or sandstone on the boring legend. Drive all piles to a minimum penetration of 10' below natural ground at Bent Nos. 1 and 6. 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. Piling in end bents shall be driven after embankment to bottom of cap is in place.

PREBORING: Preboring will be required at Bents 1 & 6 to obtain the minimum pile penetration requirements. Preboring shall take place after excavation to the bottom of leveling pad is complete. The size of preboring will be determined by the Engineer. The depth of preboring shall be sufficient to provide the specified minimum penetration and to set the pile tip a minimum of 3' into rock, which ever is greater. Preboring will be measured from bottom of leveling pad. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored holes shall be backfilled with an approved non-shrink grout, or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will be included in the item "PREBORING".

DRILLED SHAFTS: Foundations for all intermediate 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. 030501 "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. 030501 "Nondestructive Testing of Drilled Shafts".

PAINTING: All Grade 50W structural steel, except galvanized members and surfaces in contact with concrete, within 5 feet of bridge deck expansion joints shall be painted as specified in Subsection 807.75. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface, top of end bent backwalls, and roadway face and top of both concrete parapets. Class I Protective Surface Treatment shall meet the requirements of Section 803.

DETAIL DRAWINGS	DRAWING NOS.
End Bents	60681-60683
Intermediate Bents	60684-60685
Elastomeric Bearings	60686
380'-0" Cont. Comp. W-Beam Unit	60687-60692
Type 3 Special Approach Slab	60693
General Notes For Steel Bridge Structures	55006
Details for Steel Bridge Structures	55007
Poured Silicone Joint	55008
Steel H-Piling	55020
Type C Approach Gutters	55030C

EXISTING BRIDGE: Existing Bridge No. 03602 (Log Mile 19.09) is 28.5' wide and 362.2' long and consists of 6 - 50' steel beam spans and 1- 60' steel beam span supported by 2-column concrete intermediate bents on spread footings and end bents on piling.

⚠ REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. 03602 in accordance with Section 205. All material from the existing bridge shall become property of the Contractor except the following:

- Existing Dumped Riprap
- Existing Steel I-Beams and Framing Elements

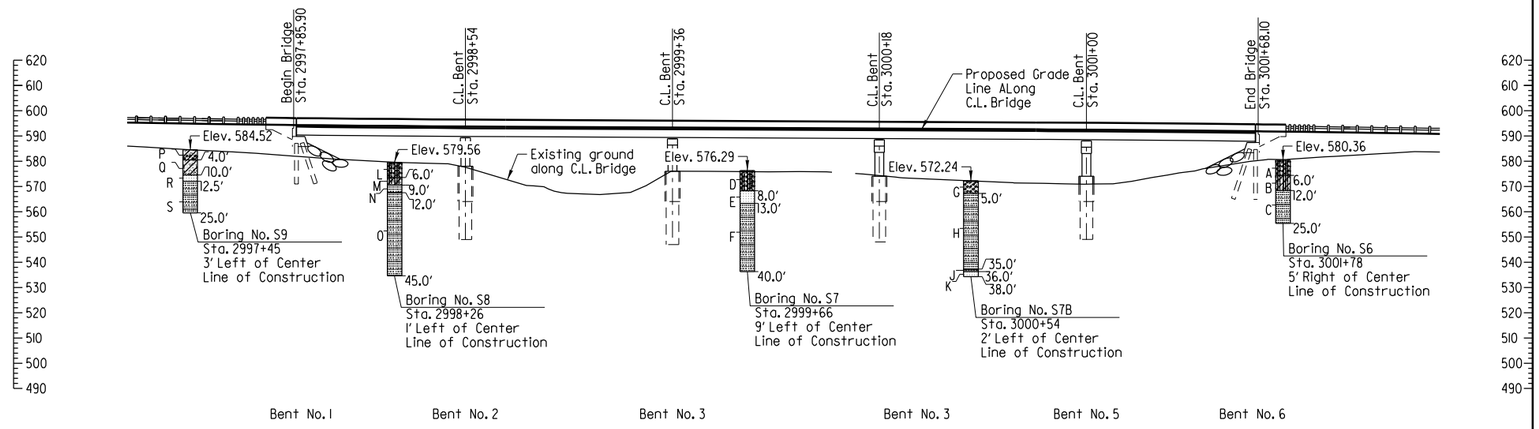
The existing riprap shall remain the property of the State. The Contractor shall coordinate with the District Engineer regarding the preferred on-site stockpile location.

The existing steel I-Beams shall become the property of Howard Coundty. The Contractor shall carefully remove the existing steel beams and transport them to the County's facility at the address shown below. The County will provide the labor and equipment needed to unload the steel beams from the transporting vehicles at the time fo delivery.

1004 S. 4th Street
Nashville, AR 71852

This work shall be considered incidental to the item "Removal of Existing Bridge Structure (Site No. 3)".

MAINTENANCE OF TRAFFIC: See Roadway Plans.



ELEVATION OF SOIL BORINGS

BORING LEGEND

A- Dense tan silty fine to coarse gravel w/ some fine to coarse sand (fill) - medium dense below 2 ft - with more fine to coarse gravel below 4 ft
B- Loose to medium dense brown silty fine to coarse sand, slightly clayey w/ some cobbles - water at 10 ft
C- Moderately hard dark gray weathered shale, apparent dip 30°± w/ closely spaced gray calcareous siltstone partings and very thin calcite veins - with close slickensides below 16 ft - with moderately close sandstone seams below 17.5 ft - with very close calcareous siltstone inclusions below 21ft

D- Medium dense brown fine to medium sand, slightly silty w/ some fine to coarse gravel (fill) - loose below 4 ft
E- Moderately hard dark gray argillaceous siltstone, slightly weathered, apparent dip 30°±
F- Moderately hard dark gray shale, apparent dip 30°± w/ closely spaced calcareous siltstone partings and very thin calcite veins - with slickensides below 15 ft - argillaceous siltsone layer at 21.2-22 ft - near vertical calcite vein and fracture 23.2 ft - with very close shears and slickensides from 28-29.5 ft, 31-32.8 ft and 34-35 ft

G- Medium dense brown sandy fine to coarse gravel w/ numerous cobbles - water at 2 ft
H- Moderately hard dark gray weathered shale, apparent dip 5° w/ very thin moderately spaced gray fine-grained sandstone partings - with very close slickensides below 10 ft - frequent mechanical fractures below 10.5 ft - with very close fractures and shears below 20 ft - with very close, very thin quartz veins below 20 ft - with very close sandstone partings and seams below 30 ft - frequent slickensides from 31-34 ft
J- Moderately hard dark gray shale w/ very close fine-grained sandstone partings
K- Hard gray fine-grained sandstone - with near-vertical calcite vein with pyrite precipitant from 36-37 ft - dark gray shale seam at 37.2 ft - with very close thin shale seams below 37.7 ft

L- Medium dense brown silty fine to medium sand w/ a little fine to coarse gravel (fill) - loose to medium dense below 4 ft
M- Loose reddish tan and tan fine sandy silt, slightly clayey w/ ferrous nodules and stains - with sandstone fragments below 8.5 ft.
N- Low hardness dark gray and brown weathered shale - water at 10 ft
O- Moderately hard dark gray shale, apparent dip 30°± w/ moderately close calcite veins and calcareous siltstone partings and seams - with close slickensides below 15 ft - interbedded shale and calareous siltstone below 16 ft - predominately shale below 25.5 ft - with close calcite seams at 28.3ft , 32 ft, 33.5 ft, and 42 ft - with close shears below 37 ft

P- Stiff reddish tan fine sandy clay (fill) - firm with some fine to coarse gravel at below 2-4 ft
Q- Stiff reddish tan and tan fine sandy clay w/ ferrous nodules and stains - with sandstone fragments below 8 ft
R- Moderately hard tan weathered fine-grained sandstone, fractured w/ some silty clay seams
S- Moderately hard dark gray shale w/ moderately close calcareous siltstone seams and partings and calcite veins

"N" VALUES

Boring No. S6
Sta. 3001+78
5' Right of Center Line of Construction

0.5 - 1.5	N=41
2.5 - 3.5	N=20
4.5 -	N=25/0"

Boring No. S7
Sta. 2999+66
9' Left of Center Line of Construction

0.5 - 1.5	N=12
2.5 - 3.5	N=14
4.5 - 5.5	N=9
8.0 -	N=25/0"

Boring No. S7B
Sta. 3000+54
2' Left of Center Line of Construction

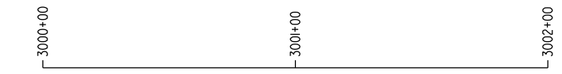
0.5 - 1.5	N=19
9.0 -	N=25/0"

Boring No. S8
Sta. 2998+26
1' Left of Center Line of Construction

0.5 - 1.5	N=16
2.5 - 3.5	N=30
4.5 - 5.5	N=10
6.5 - 7.5	N=8
9.0 -	N=25/0"

Boring No. S9
Sta. 2997+45
3' Left of Center Line of Construction

0.5 - 1.5	N=16
2.5 - 3.5	N=9
4.5 - 5.5	N=12
6.5 - 7.5	N=14
13.5 -	N=25/0"



2020.08.25 11:59:28-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/25/2020

2998+00 2999+00

SHEET 2 OF 2
LAYOUT OF BRIDGE
HWY. 278 OVER SALINE RIVER
SALINE & CADDO RIVERS
STRS. & APPRS. (S)
HOWARD COUNTY
ROUTE 278 SECTION 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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DESIGNED BY:	MKL	DATE:	09/2018	SCALE:	1" = 30'
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KennethHolmes 8/25/2020 11:43:23 AM
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REVISED DATE:

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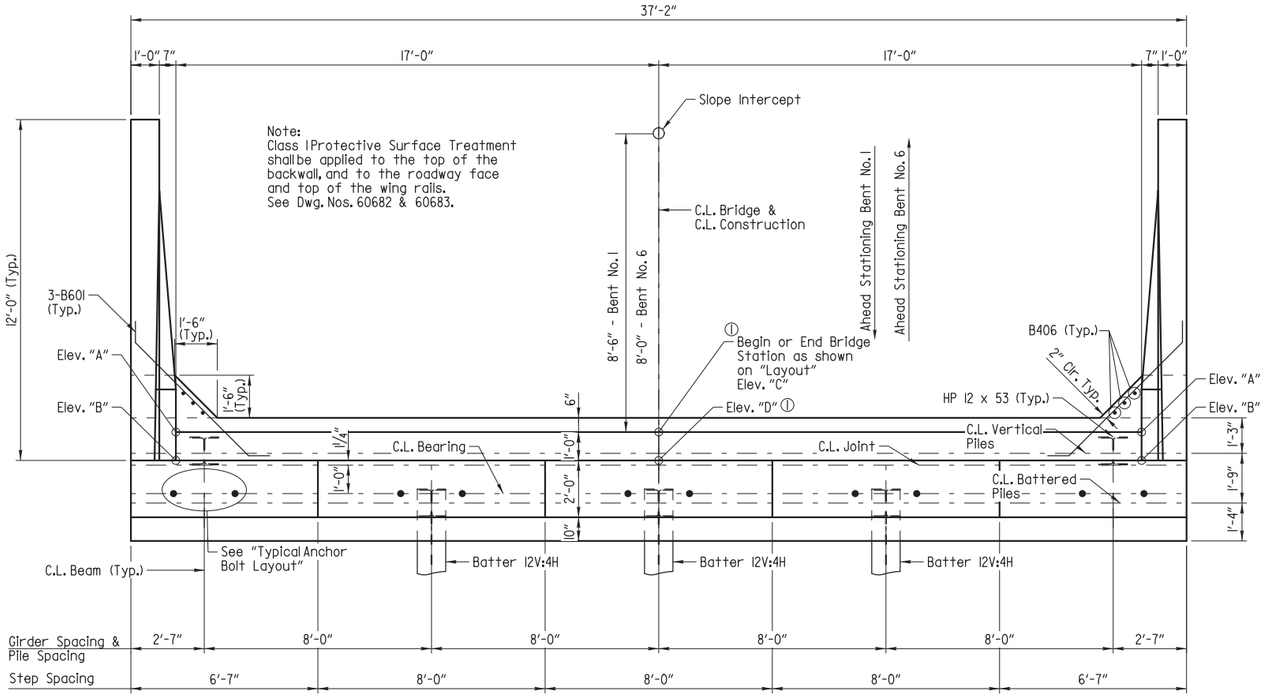
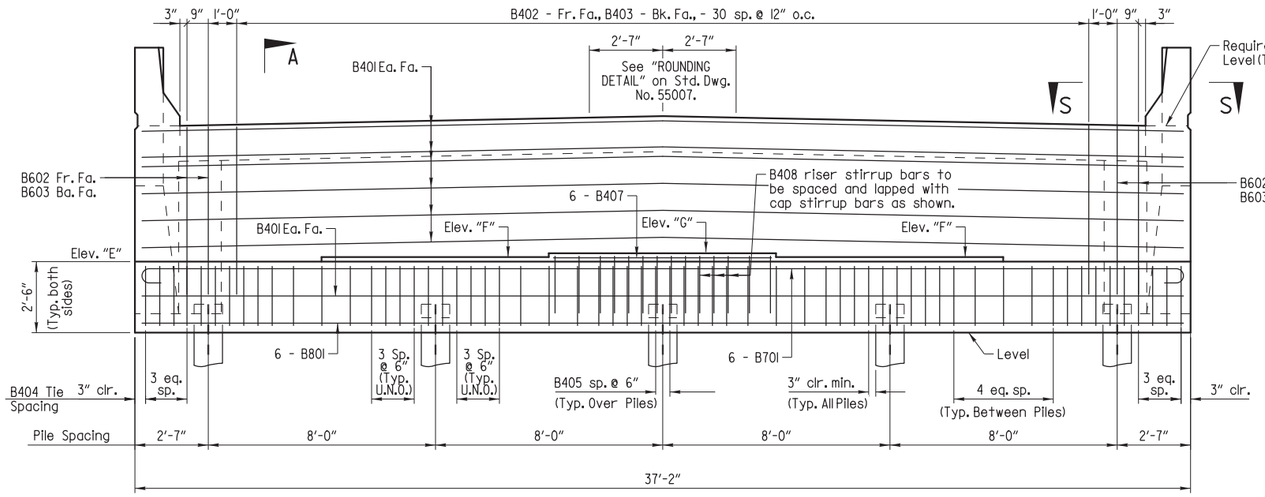
				JOB NO.		030501	126	178
				①	07442 - END BENTS - 60681			



PLAN

3/8" = 1'-0"



ELEVATION

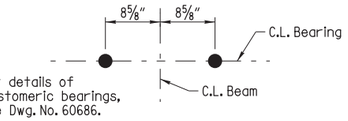
(Looking Back Bent No. 1, Looking Ahead Bent No. 6)

3/8" = 1'-0"

Note: U.N.O = Unless Noted Otherwise

Note:
For "View S-S" and "Section A-A" see Dwg. No. 60682.

For General Notes, see Dwg. No. 60683.



For details of elastomeric bearings, See Dwg. No. 60686.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

TABLE OF VARIABLES

Bent No.	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"	Elev. "E"	Elev. "F"	Elev. "G"
1	593.99	593.98	594.33	594.32	589.56	589.72	589.86
6	591.50	591.51	591.84	591.85	587.12	587.28	587.41

① Measured to Working Point. See "Rounding Detail" on Std. Dwg. No. 55007.

2020.08.13 15:52:14 -05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 3
DETAILS OF END BENTS
HWY. 278 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 04/2019
CHECKED BY: SFH DATE: 05/2019
DESIGNED BY: SCR DATE: 04/2019
BRIDGE NO. 07442
FILENAME: B030501X3_B11.dgn
SCALE: As Shown
DRAWING NO. 60681

Leonard.Speed 8/13/2020 1:28:07 PM
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REVISED DATE:

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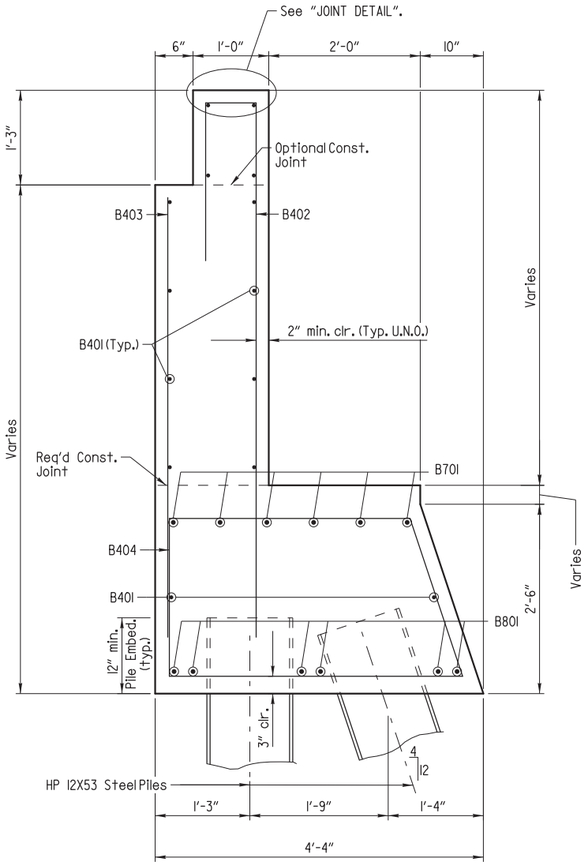
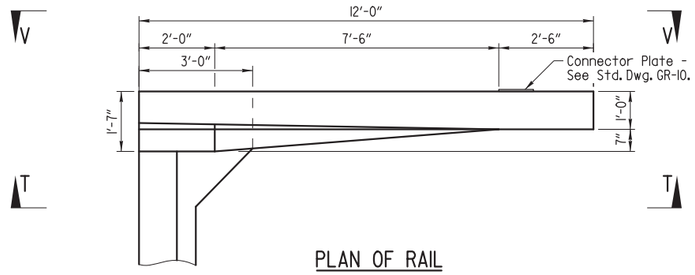
				6	ARK.			
				JOB NO.		030501	127	178
				(1)	07442 - END BENTS - 60682			



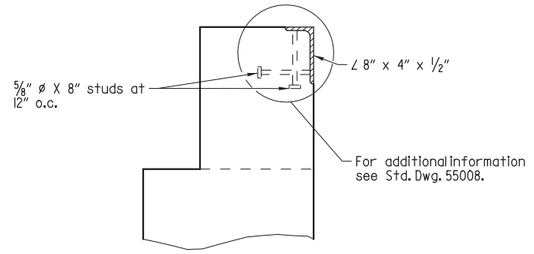
SECTION A-A

1" = 1'-0"



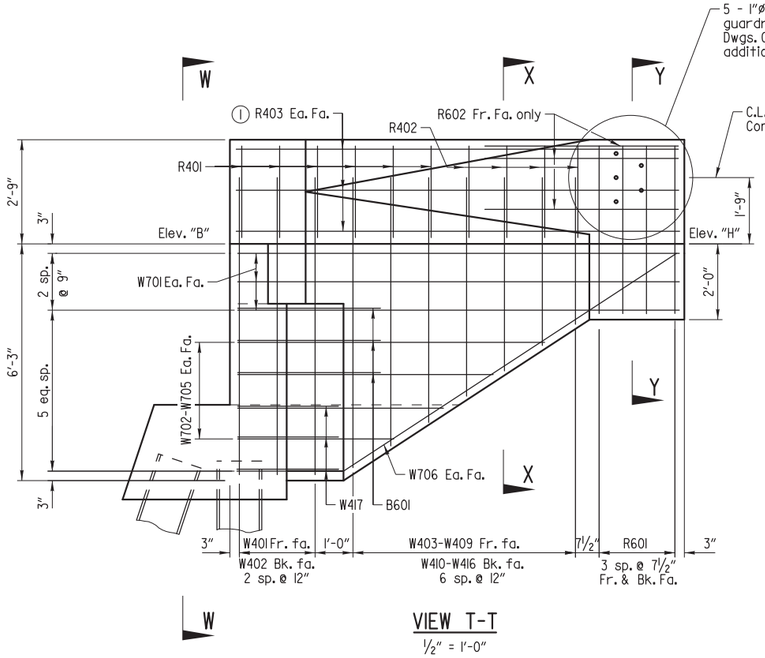
PLAN OF RAIL

1/2" = 1'-0"



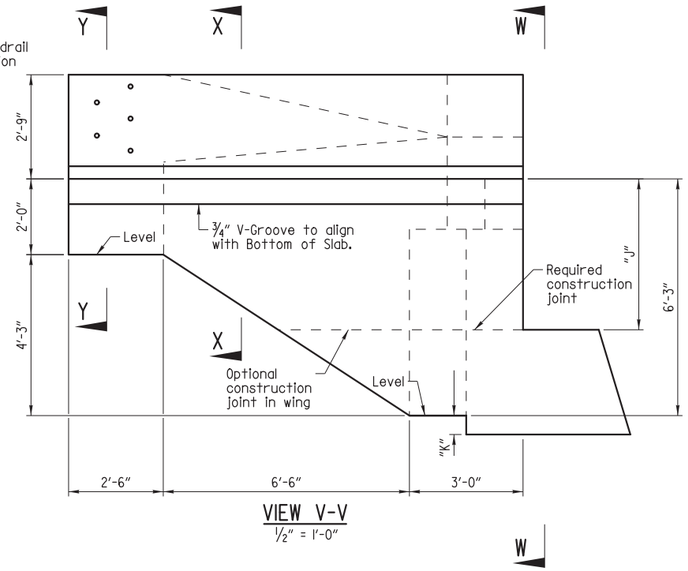
JOINT DETAIL

No Scale



VIEW T-T

1/2" = 1'-0"

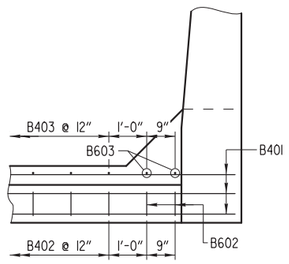


VIEW V-V

1/2" = 1'-0"

TABLE OF VARIABLES

Bent No.	Elev. "B"	Elev. "H"	"J"	"K"
1	593.98	594.12	4'-5 1/16"	8 1/16"
6	591.51	591.37	4'-4 11/16"	7 11/16"



VIEW S-S

Shown for all wings.
1/2" = 1'-0"

Notes:
For General Notes see Dwg. No. 60683.

For details of guardrail connection see Std. Dwgs. GR-10 & GR-12.

For Sections W-W, X-X, and Y-Y, see Dwg. No. 60683.

(1) Place bars parallel to grade.

2020.08.13 15:39:19-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 3
DETAILS OF END BENTS
HWY. 278 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	SCR	DATE:	04/2019	FILENAME: B030501X3_Bl2.dgn
CHECKED BY:	SFH	DATE:	05/2019	
DESIGNED BY:	SCR	DATE:	04/2019	SCALE: As Shown
BRIDGE NO.	07442			DRAWING NO. 60682

Leonard.Speed 8/13/2020 1:28:08 PM
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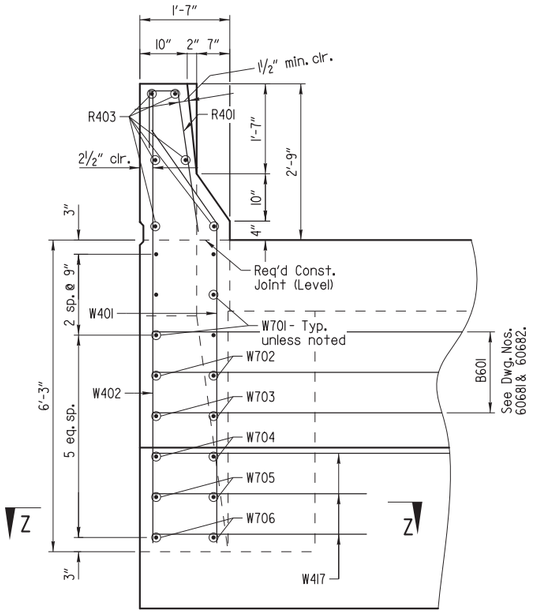
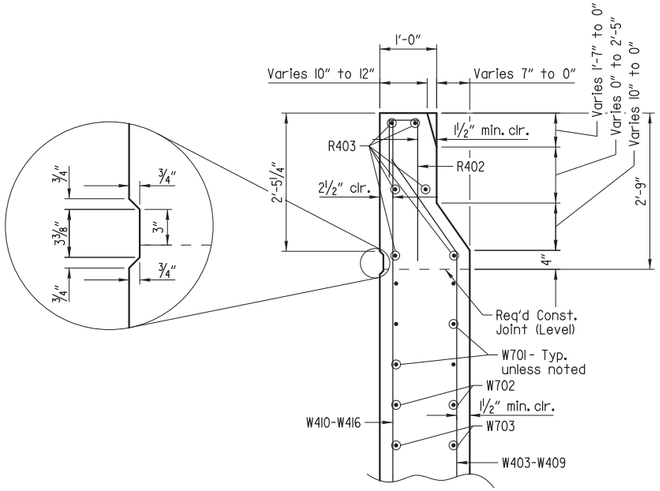
REVISED DATE:



VIEW W-W

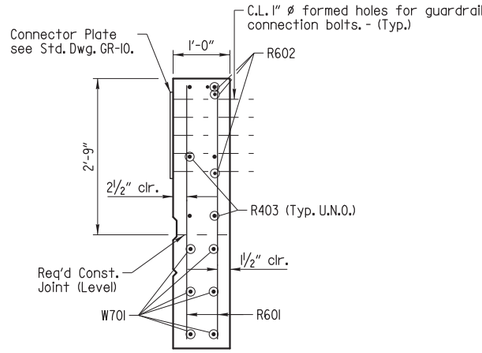
No Scale



VIEW X-X

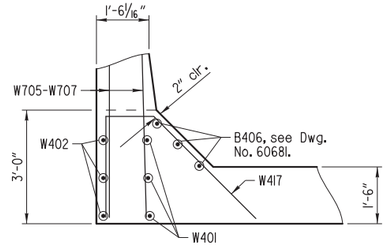
No Scale

Note:
See Roadway Plans for guardrail locations.



SECTION Y-Y

3/4" = 1'-0"



SECTION Z-Z

1/2" = 1'-0"

NOTES:

For "GENERAL NOTES" see Std. Dwg. No. 55006.

All piling shall be ASTM A709, Grade 50, Fy=50 ksi.

No portion of the backwall shall be poured until the girders are in place. Refer to "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Std. Dwg. No. 55009.

Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be ASTM A709 Gr. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)".

For additional information, see Layout.

No heavy construction equipment shall be allowed within 5' of the backwall until the deck concrete placemet for the adjacent span has been complete.

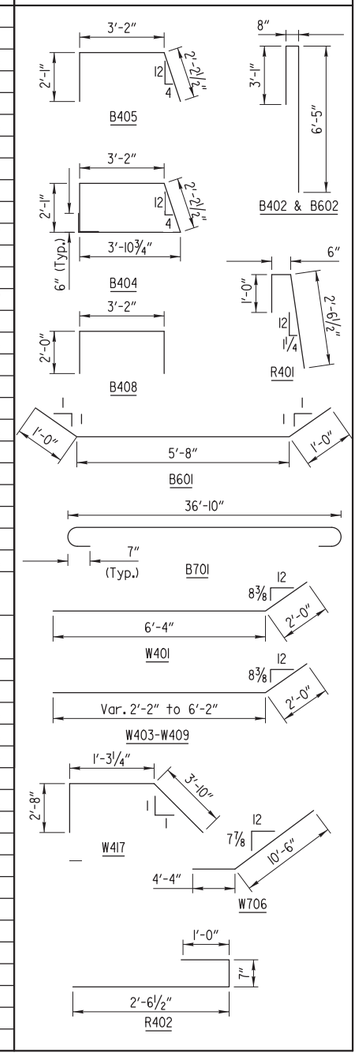
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	128	178
(1)	07442 - END BENTS - 60683			

BAR LIST- PER END BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	14	36'-10"	Str.
B402	31	10'-0"	2"
B403	31	5'-2"	Str.
B404	52	11'-11"	2"
B405	10	7'-4"	2"
B406	6	4'-8"	Str.
B407	6	7'-8"	Str.
B408	14	7'-0"	2"
B601	6	7'-8"	4 1/2"
B602	4	9'-10"	4 1/2"
B603	4	5'-4"	Str.
B701	6	38'-6"	5 1/4"
B801	6	36'-10"	Str.
R401	12	3'-11"	2"
R402	8	4'-0"	2"
R403	12	11'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	6	8'-4"	2"
W402	6	8'-8"	Str.
W403 to W409	2 each	Var. 4'-2" to 8'-2"	2"
W410 to W416	2 each	Var. 4'-7" to 8'-6"	Str.
W417	6	7'-8"	2"
W701	12	11'-8"	Str.
W702	4	8'-1"	Str.
W703	4	6'-9"	Str.
W704	4	5'-5"	Str.
W705	4	4'-2"	Str.
W706	4	14'-10"	5 1/4"

BENDING DIAGRAMS
Dimensions are out to out of bars.



2020.08.13 15:30:22-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 3 OF 3
DETAILS OF END BENTS
HWY. 278 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 04/2019 FILENAME: B030501X3_BI3.dgn
CHECKED BY: SFH DATE: 05/2019
DESIGNED BY: SCR DATE: 04/2019 SCALE: As Shown
BRIDGE NO. 07442 DRAWING NO. 60683

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REVISED DATE:

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				JOB NO.		030501	129	178
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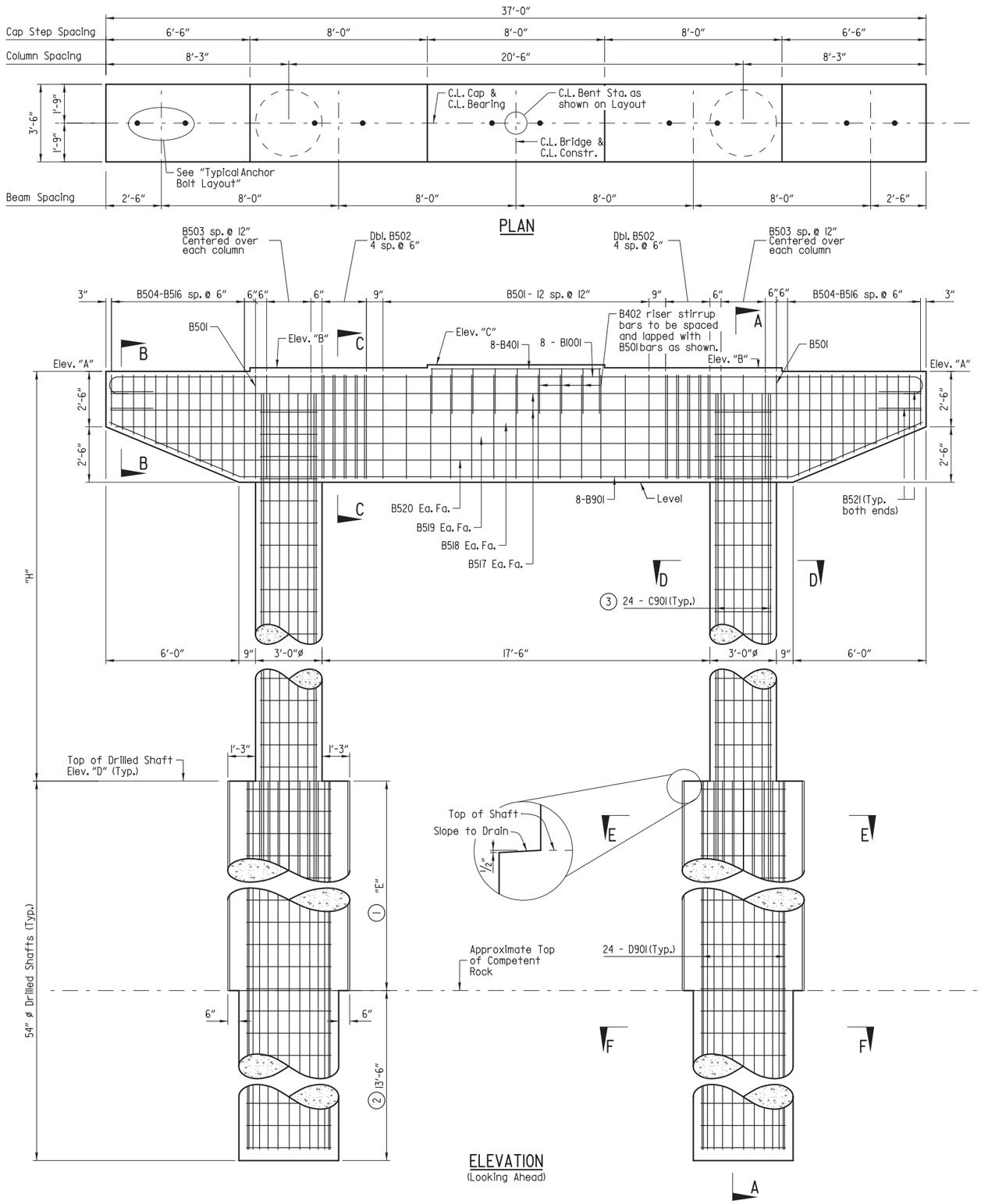
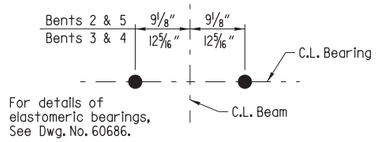




TYPICAL ANCHOR BOLT LAYOUT

No Scale

TABLE OF VARIABLES

Bent No.	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"	"E"	"F"	"G"	"H"
2	588.98	589.14	589.28	578.00	15'-6"	16	28	10'-11 3/4"
3	588.56	588.72	588.86	576.00	15'-6"	17	28	12'-6 3/4"
4	588.15	588.31	588.45	574.00	12'-6"	19	25	14'-1 15/16"
5	587.73	587.89	588.02	574.00	11'-6"	19	24	13'-8 3/4"

GENERAL NOTES

For Sections B-B Thru F-F, See Dwg. No. 60685.

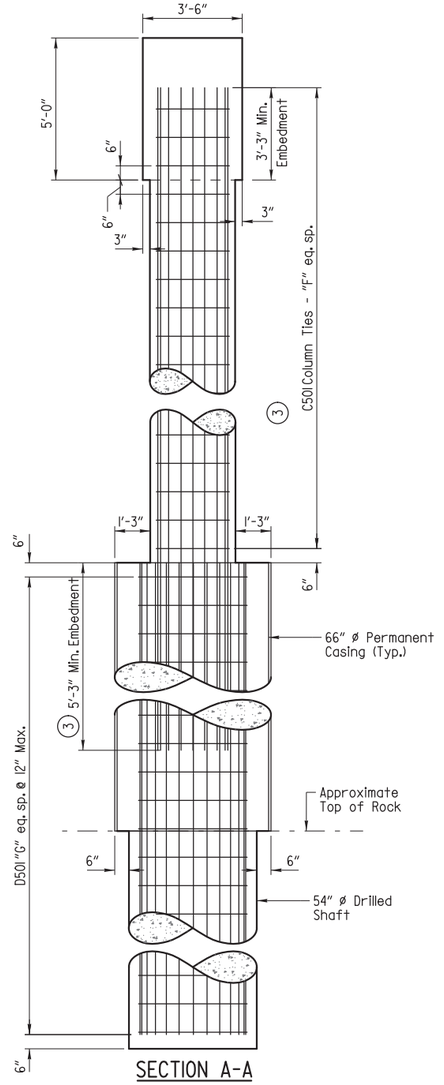
Drilled shafts and permanent casing shall conform to Special Provision Job No. 030501 "Drilled Shaft Foundations" and shall be paid for at the unit bid price for "Drilled Shaft (54" Dia.)" and "Permanent Steel Casing (66" Dia.)".

For additional information, See Layout.

(1) Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job No. 030501 "Drilled Shaft Foundations". Permanent casing shall not extend below top of competent rock without approval from the Engineer.

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

(3) The column reinforcing cage, consisting of bars C901 and C501, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.



SECTION A-A

2020.08.13 15:38:24-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
HWY. 278 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	SCR	DATE:	09/2018	FILENAME:	B03050lX3_B2l.dgn
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BRIDGE NO.	07442			DRAWING NO.	60684

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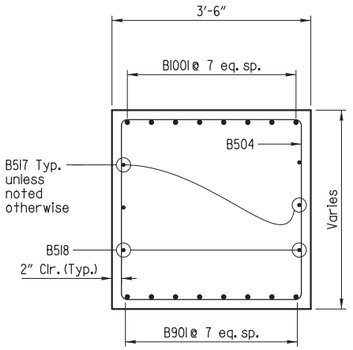
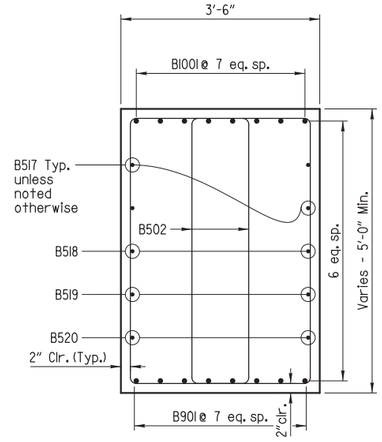
REVISED DATE:

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.		030501	130	178

(1) 07442 - INTERMEDIATE BENTS - 60685



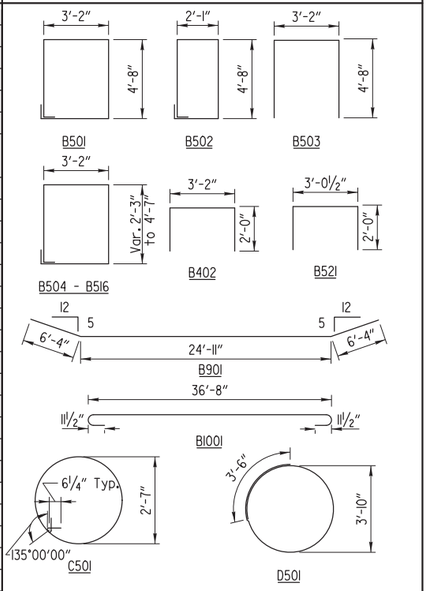
SECTION B-B



SECTION C-C

BAR LIST- PER BENT

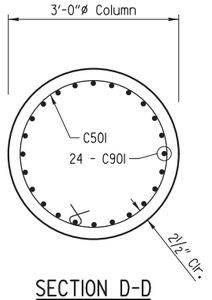
	MARK	NO. REQ'D.	LENGTH	PIN DIA.	BENDING DIAGRAMS Dimensions are out to out of bars.
	B401	8	7'-8"	Str.	
	B402	9	7'-0"	2"	
	B501	15	16'-2"	2½"	
	B502	20	14'-0"	2½"	
	B503	6	12'-4"	2½"	
	B504-B516	2 each	Var. 11'-4" to 16'-0"	2½"	
	B517	4	36'-8"	Str.	
	B518	2	36'-2"	Str.	
	B519	2	32'-6"	Str.	
	B520	2	29'-0"	Str.	
	B521	4	6'-10"	2½"	
	B901	8	37'-7"	9"	
	B1001	8	39'-6"	10"	
	C501	"A"	9'-7"	3¾"	
	C901	48	"C"	Str.	
(1)	D501	"B"	15'-7"	3¾"	
(1)	D901	48	"D"	Str.	



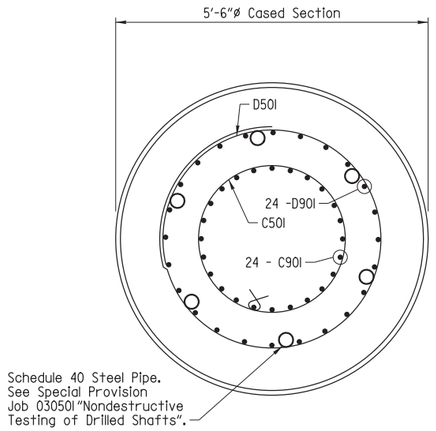
(1) Non-Pay Item - Subsidiary to Pay Item "Drilled Shaft (54" Dia.)"

TABLE OF VARIABLES

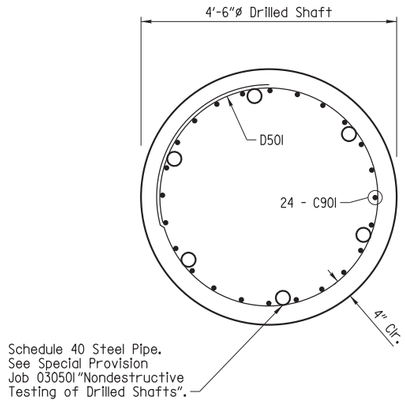
Bent No.	"A"	"B"	"C"	"D"
2	17	29	15'-9"	28'-0"
3	18	29	17'-4"	28'-0"
4	20	26	18'-11"	25'-0"
5	20	25	18'-6"	24'-0"



SECTION D-D



SECTION E-E



SECTION F-F

2020.08.13 15:30:26-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

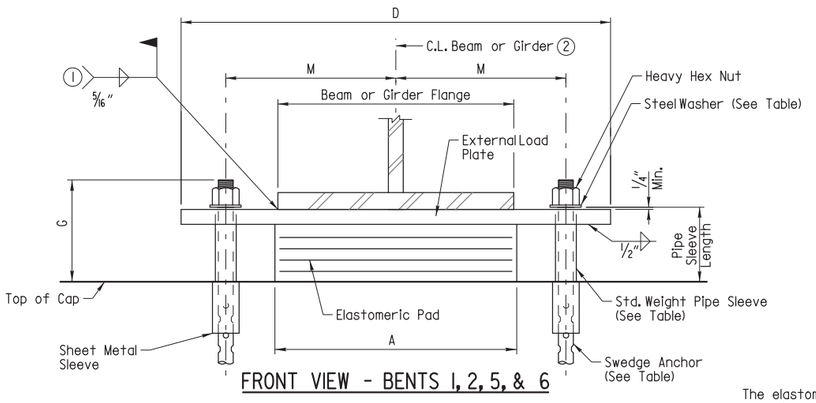
SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
HWY. 278 OVER SALINE RIVER
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 09/2018 FILENAME: B030501X3_B22.dgn
CHECKED BY: SFH DATE: 05/2019
DESIGNED BY: SCR DATE: 09/2018 SCALE: ¾" = 1'-0"
BRIDGE NO. 07442 DRAWING NO. 60685

LeonardSpeed 8/13/2020 12812 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\BRIDGE\Drawings\B030501X3_B22.dgn
REVISED DATE:

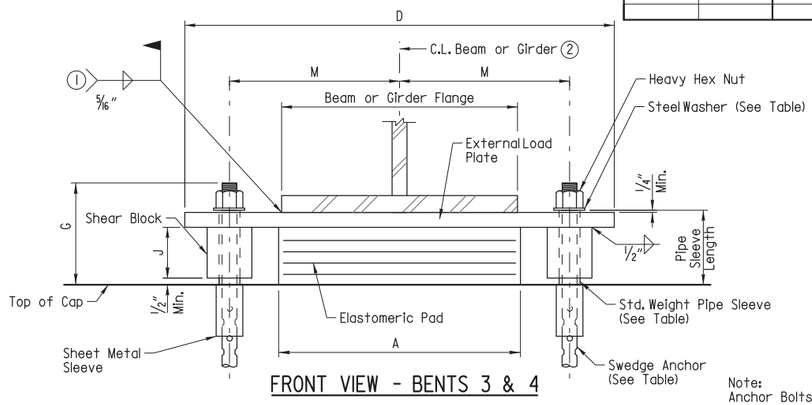
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	131	178
				(1)	07442 - BEARINGS - 60686			



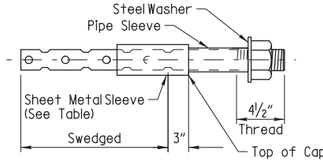
FRONT VIEW - BENTS 1, 2, 5, & 6

(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L. Elastomeric pad shall be aligned with C.L. Beam or Girder.



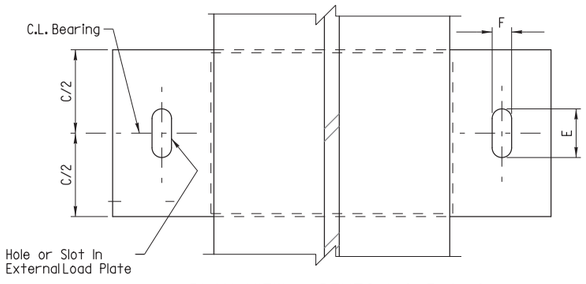
FRONT VIEW - BENTS 3 & 4



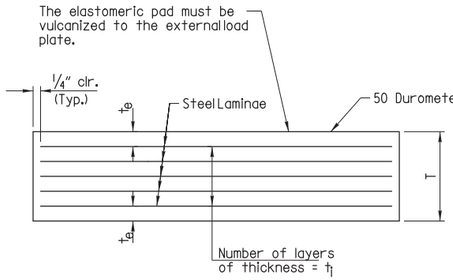
ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (A709, Gr. 50W).

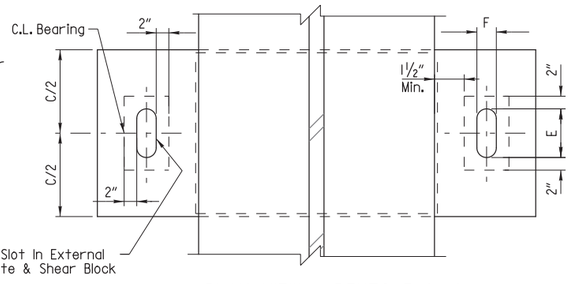


PLAN VIEW - BENTS 1, 2, 5, & 6

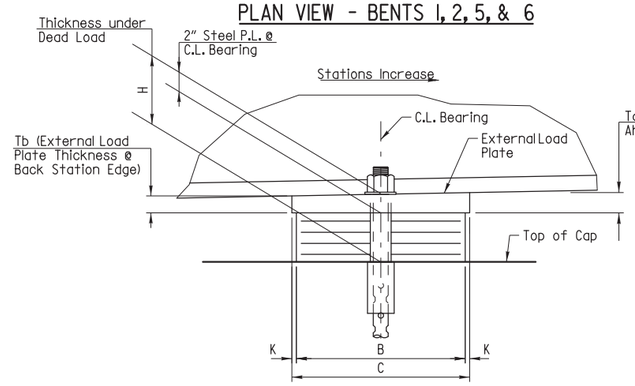


t_i = thickness of elastomer between steel laminae
t_e = thickness of elastomer cover on top and bottom of pad
N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



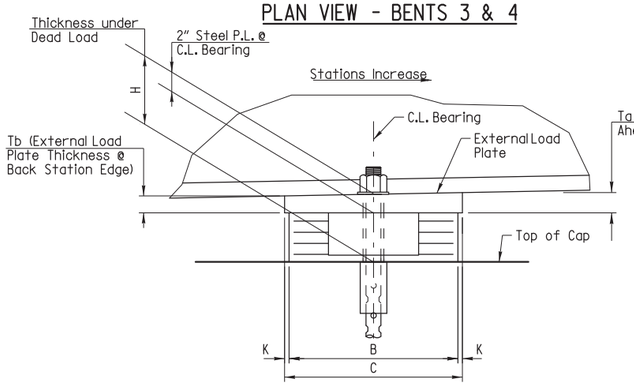
PLAN VIEW - BENTS 3 & 4



SIDE VIEW - BENTS 1, 2, 5, & 6

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to "Ta" & "Tb" values shown in the "Table of Fabricator Variables".

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to Ta and Tb.



SIDE VIEW - BENTS 3 & 4

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

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION			BEARING TYPE	NO. OF BEARINGS EACH BENT	(3) MAXIMUM DESIGN LOAD (kips)	ELASTOMERIC PAD								EXTERNAL LOAD PLATE									ANCHOR BOLT			
	BENT NO(S).	UNIT	BEAM OR GIRDER NO.				G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	(4) J	K	M	T_a	T_b	ANCHOR BOLT (Ø x L)	ANCHOR BOLT GRADE	PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)
07442	Bents 1& 6	380'	All	Exp.	5	117.0	8 3/8"	5 9/16"	12"	10"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	11"	23 1/4"	5 3/8"	2 5/8"	--	1/2"	8 5/8"	1.94"	2.06"	1 3/4" x 29"	55	2" x 5 7/8"	4" x 9"	3 3/8"
	Bents 2 & 5	380'	All	Exp.	5	269.1	9 1/8"	5 9/16"	15"	14"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	15"	25 1/4"	5 3/8"	3 3/4"	--	1/2"	9 1/8"	1.96"	2.04"	2 1/2" x 37"	55	3" x 5 7/8"	4" x 9"	4 1/2"
	Bents 3 & 4	380'	All	Fix.	5	271.5	8 7/8"	5 9/16"	15"	14"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	15"	34 1/4"	5 3/8"	5 3/8"	3 1/16"	1/2"	12 5/16"	1.96"	2.04"	1 3/4" x 30"	55	2" x 5 7/8"	4" x 9"	3 3/8"

(3) Maximum Load = Service I Limit State.

(4) Shear blocks 4 inches or thicker may be fabricated from built-up plates with a 5/16" groove weld on all sides. No plate shall be less than 2" nominal thickness.

GENERAL NOTES

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

External load plates and shear blocks shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

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

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (A709, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings without masonry plates shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

2020.08.13 15:52:46-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DETAILS OF ELASTOMERIC BEARINGS HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 03/2019 FILENAME: B03050IX3_EXI.dgn
CHECKED BY: SFH DATE: 12/2019
DESIGNED BY: MKL DATE: 03/2019 SCALE: No Scale
BRIDGE NO. 07442 DRAWING NO. 60686

LeonardSpeed 8/13/2020 12:18:13 PM
WORKSPACE: ARDOT
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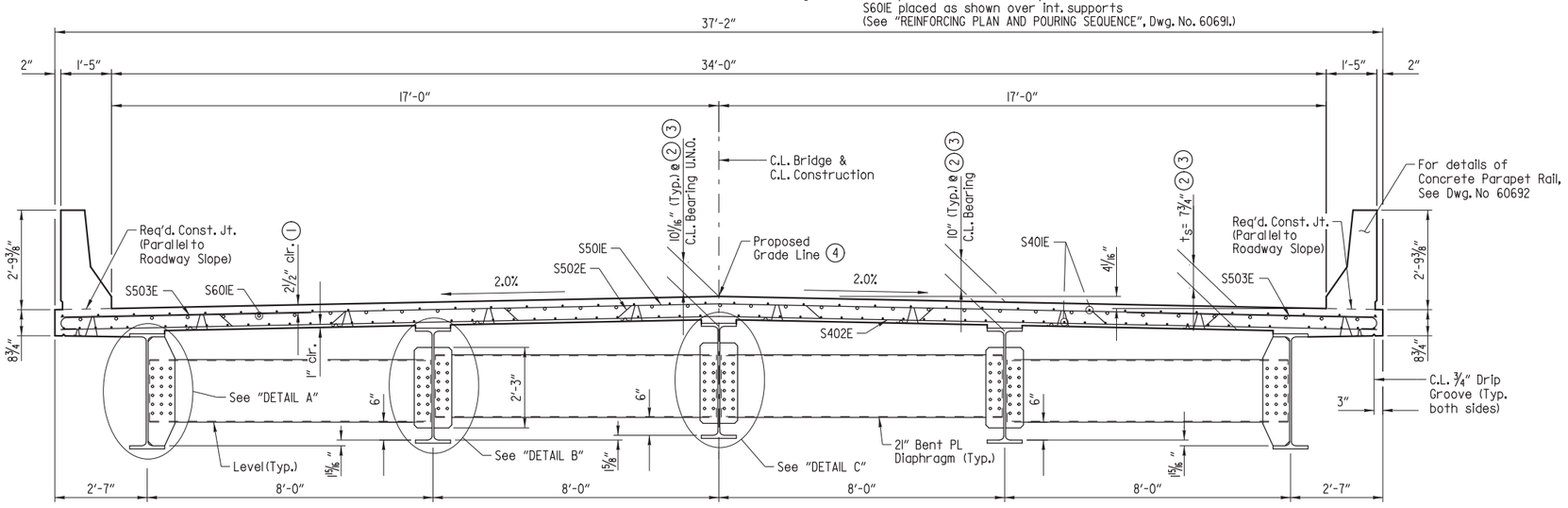
REVISED DATE:

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.		030501	132	178
				(1)	07442 - 380'-0" CONT. UNIT - 60687			

Slab Reinforcing:

Transverse: S502E @ 12" o.c. bent up over beams
S402E @ 12" o.c. in bottom — Alternate
S501E @ 12" o.c. in top
S503E @ 6" o.c. under each parapet bundled w/ #5 in top @ both gutterlines

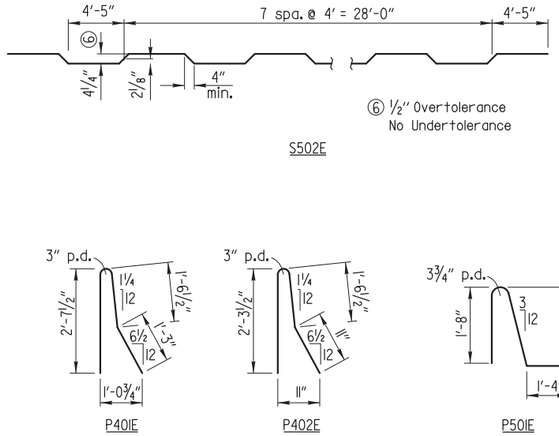
Longitudinal: S401E placed as shown in top and bottom
S601E placed as shown over int. supports
(See "REINFORCING PLAN AND POURING SEQUENCE", Dwg. No. 60691.)

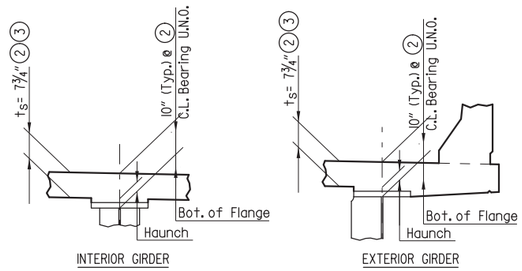


TYPICAL SECTION
(Looking Forward)
1/2" = 1'-0"

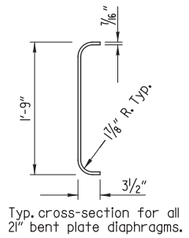
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401E	1100	36'-9"	Str.	Dimensions are out to out of bars. Note: All bars designated with an "E" suffix are to be epoxy coated
S402E	380	36'-10"	Str.	
S501E	380	38'-0"	3 3/4"	
S502E	379	37'-8"	3"	
S503E	1518	7'-7"	3 3/4"	
S601E	148	41'-2"	Str.	
P401E	1320	5'-6"	3"	
P402E	208	4'-10"	3"	
P403E	144	5'-6"	Str.	
P404E	84	16'-4"	Str.	
P405E	112	16'-8"	Str.	
P406E	126	15'-8"	Str.	
P501E	1320	4'-10"	3 3/4"	





t_s = slab thickness



Typ. cross-section for all 21" bent plate diaphragms.

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

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

(1) Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Haunch dimensions may vary within the following limits to maintain the grade and slab thickness tolerance:

Top Flange Thickness	Haunch Adj. Tolerance	
	Plus	Minus
13/16"	1 1/2"	1 1/2"
1"	1 5/8"	1 3/8"

No increase in concrete and structural steel quantities will be made to maintain tolerances. Tolerances shown are applicable for both removable deck forming and permanent steel deck forms. Payment for concrete shall be based on removable deck forming.

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

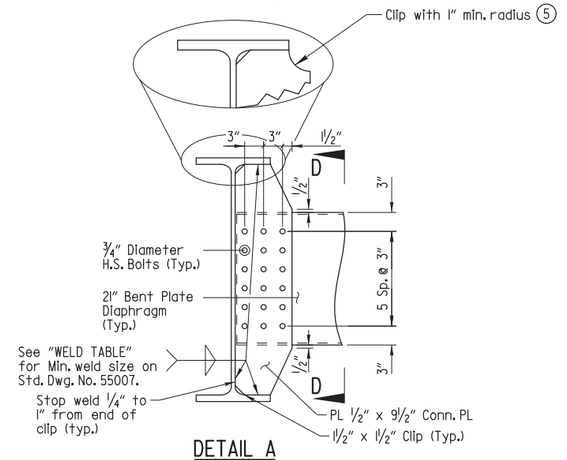
(4) See "ROUNDING DETAIL" on Std. Dwg. No. 55007.

(5) If permanent steel bridge deck forms are used, the fabricator shall clip plates as necessary to accommodate the deck form supports.

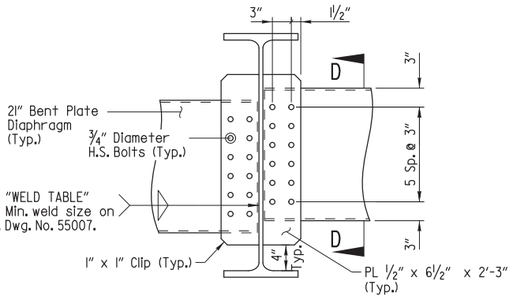
Notes:
Class I Protective Surface Treatment shall be applied to the Roadway Surface, and the Face and Top of Concrete Parapet Rail.

Bar positions and clearances from the forms shall be maintained by means of stays, tie hangers, or other approved devices per Subsection 804.06. Placement of slab bolsters or high chairs with full length lower runners directly on removable deck forms will not be allowed.

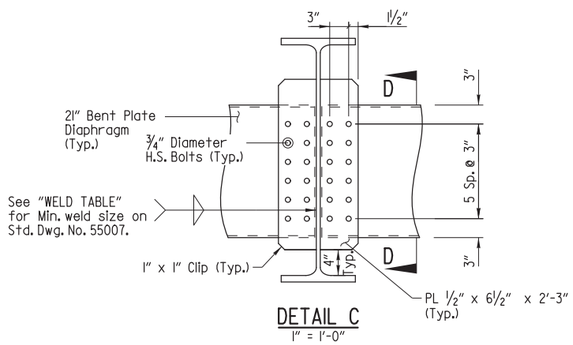
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for Bar S502E. Payment for reinforcing will be based on the weight of Bar S502E.



DETAIL A
1" = 1'-0"



DETAIL B
1" = 1'-0"



DETAIL C
1" = 1'-0"

2020.08.13 15:38:28-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 1 OF 6
DETAILS OF 380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	04/2018	FILENAME:	B030501X3_SXI.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	MKL	DATE:	04/2018	SCALE:	As Shown
BRIDGE NO.	07442			DRAWING NO.	60687

Leonard Speed 8/13/2020 12:28:15 PM
WORKSPACE: ARDOT
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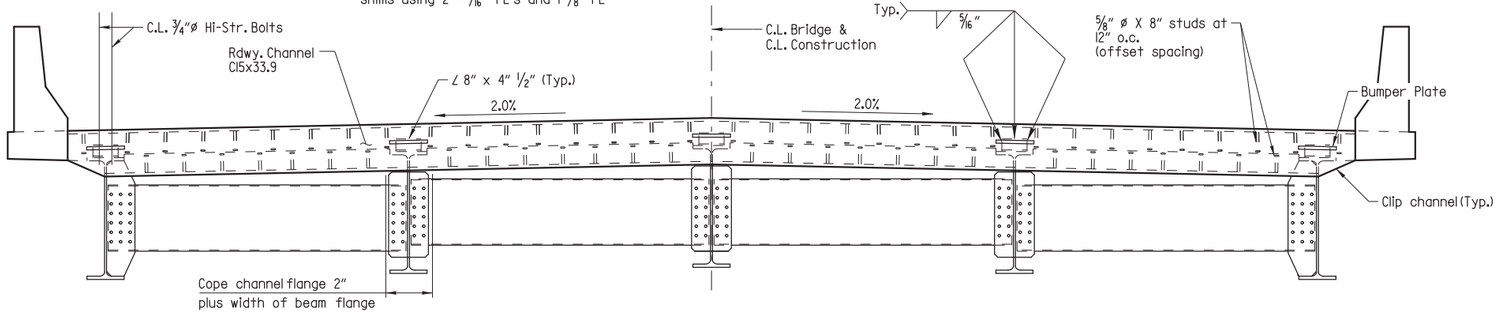
REVISED DATE:

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.		030501	133	178
				(1)	07442 - 380'-0" CONT. UNIT - 60688			

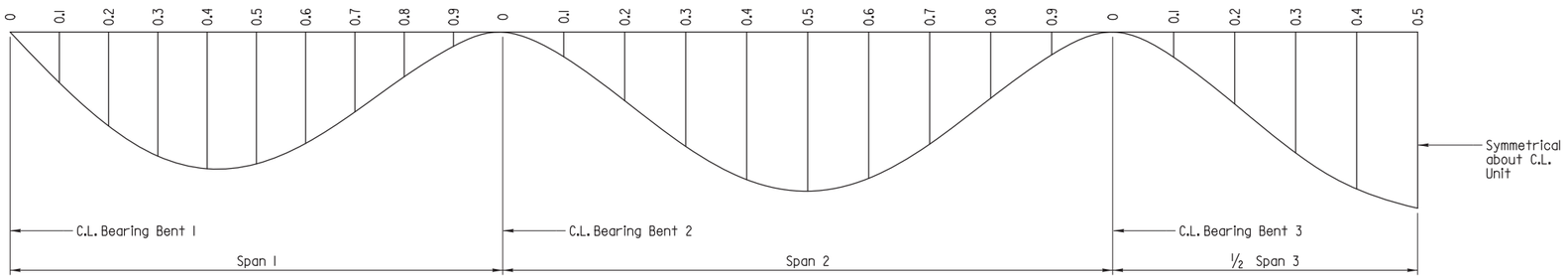
Expansion Device
Rdwy. Channel C15x33.9
Conn. ∠'s 8" x 4" x 1/2"
Detail Device 1/8" high and provide 1/4" shims using 2 - 1/16" PL's and 1-1/8" PL



TYPICAL SECTION THRU JOINT

(Looking Forward)

For additional joint details, See Std. Dwg. No. 55008



DEAD LOAD DEFLECTION DIAGRAM

No Scale

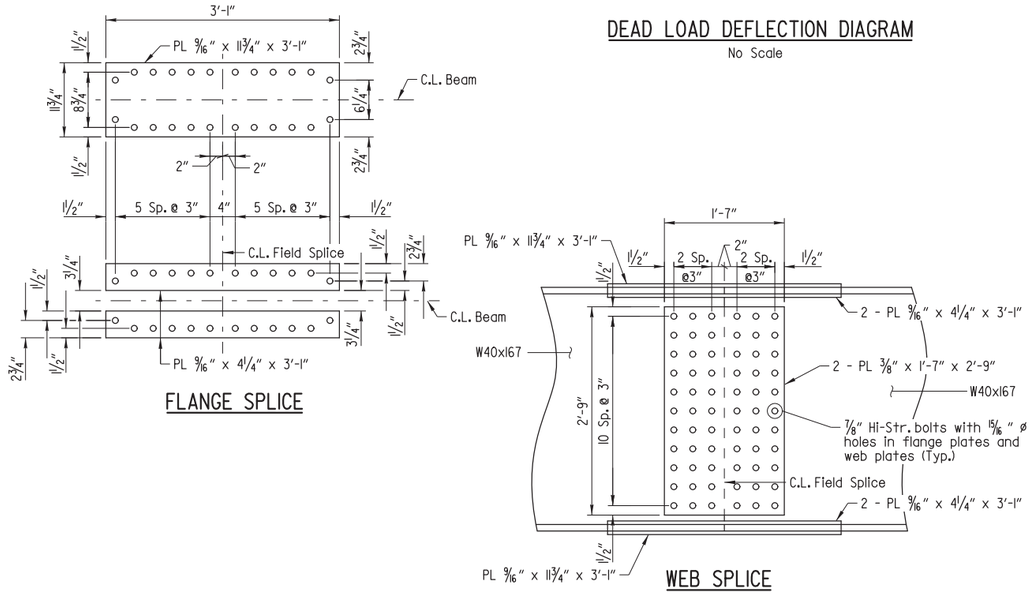
TABLE OF DEAD LOAD DEFLECTIONS - INCHES

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	0.039	0.037	0.213	0.174	0.233	0.195
	0.2	0.071	0.068	0.392	0.321	0.429	0.360
	0.3	0.094	0.090	0.515	0.422	0.563	0.472
	0.4	0.103	0.099	0.567	0.465	0.619	0.519
	0.5	0.099	0.095	0.545	0.447	0.596	0.500
	0.6	0.083	0.079	0.459	0.375	0.502	0.421
	0.7	0.059	0.056	0.327	0.267	0.357	0.299
	0.8	0.031	0.030	0.177	0.145	0.194	0.162
	0.9	0.009	0.008	0.052	0.042	0.056	0.047
2	0	0	0	0	0	0	0
	0.1	0.018	0.017	0.091	0.074	0.099	0.083
	0.2	0.053	0.051	0.277	0.227	0.303	0.255
	0.3	0.091	0.087	0.473	0.388	0.517	0.434
	0.4	0.118	0.113	0.614	0.504	0.671	0.563
	0.5	0.128	0.122	0.663	0.543	0.724	0.609
	0.6	0.118	0.113	0.608	0.499	0.665	0.559
	0.7	0.091	0.087	0.462	0.380	0.506	0.426
	0.8	0.054	0.052	0.266	0.219	0.291	0.245
	0.9	0.018	0.017	0.082	0.067	0.090	0.076
1/2 Span 3	0	0	0	0	0	0	0
	0.1	0.013	0.012	0.093	0.075	0.101	0.084
	0.2	0.044	0.043	0.289	0.236	0.316	0.264
	0.3	0.079	0.076	0.501	0.409	0.548	0.457
	0.4	0.105	0.101	0.658	0.537	0.719	0.600
	0.5	0.115	0.110	0.716	0.583	0.781	0.653

Table is symm. about C.L. Unit

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.

DETAILS OF FIELD SPLICES 1 AND 4

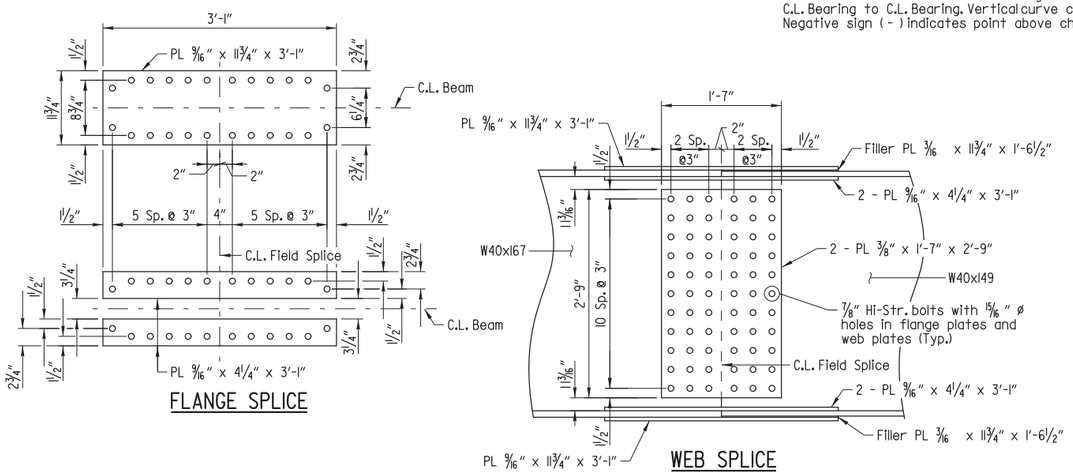


FLANGE SPLICE

WEB SPLICE

DETAILS OF FIELD SPLICES 2 AND 3

(Shown for Field Splice 2, mirrored for Field Splice 3)



FLANGE SPLICE

WEB SPLICE

Note:
Bolted field splices shown may be eliminated 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 ASTM A709 Gr. 50W steel.

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

2020.08.13 15:53:19-05'00'

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 2 OF 6
DETAILS OF 380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	04/2018	FILENAME:	B03050IXI_SX2.dgn
CHECKED BY:	SFH	DATE:	04/2019		
DESIGNED BY:	MKL	DATE:	04/2018	SCALE:	As Shown
BRIDGE NO.	07442			DRAWING NO.	60688

Leonard,Speed 8/13/2020 12:8:16 PM
WORKSPACE: ARDOT
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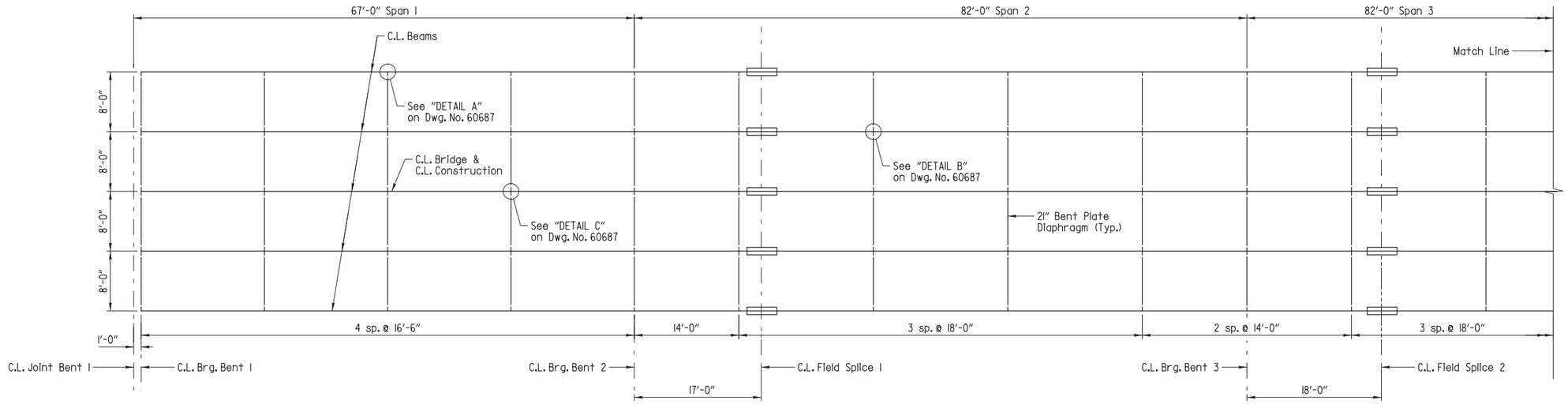
REVISED DATE:

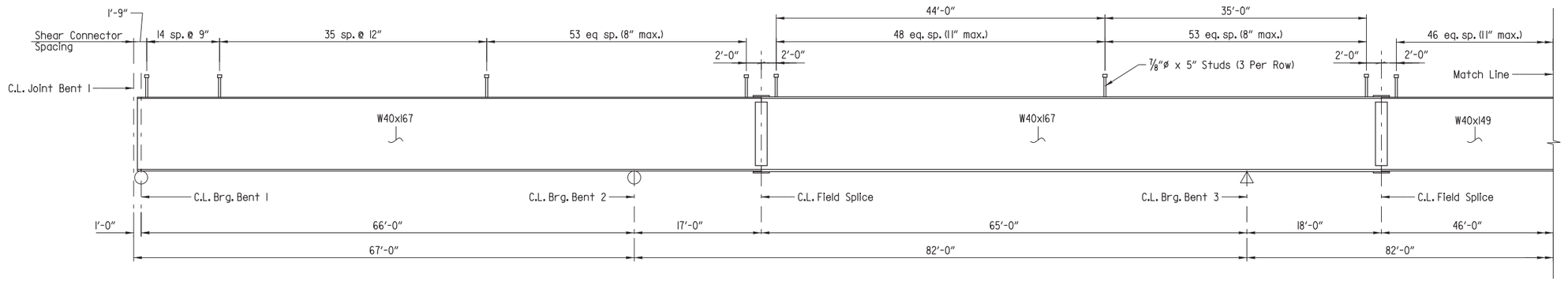
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	134	178
(1)	07442 - 380'-0" CONT. UNIT - 60689			



FRAMING PLAN

1/8" = 1'-0"



GIRDER ELEVATION

No Scale

Note:
U.N.O. all structural steel shall be ASTM A709, Gr. 50W.

2020.08.13 15:39:33-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 3 OF 6
DETAILS OF 380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 04/2018 FILENAME: B03050IX3_SX3.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: MKL DATE: 04/2018 SCALE: As Shown
BRIDGE NO. 07442 DRAWING NO. 60689

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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.		030501	135	178
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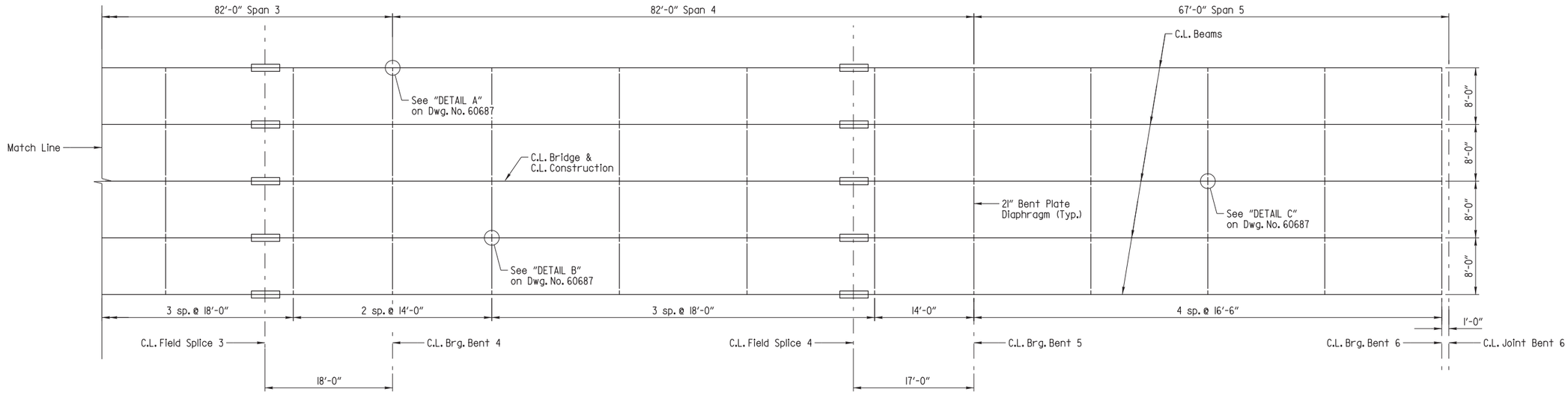
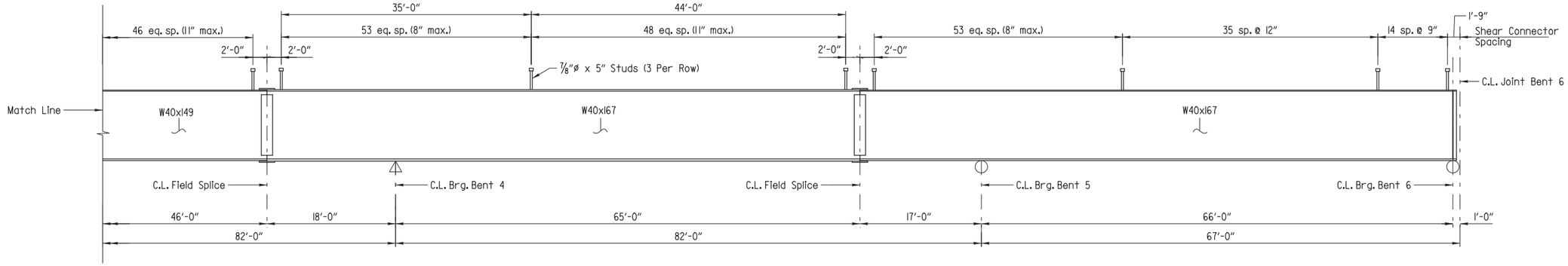


FRAMING PLAN

1/8" = 1'-0"



GIRDER ELEVATION

No Scale

SILICONE JOINT DATA

Bridge Location	Bent Nos.	"A" Joint Width Perpendicular To Joint 24 Hour Average Temperature (1) Of :			"B" Perpendicular To Joint @ 60°F
		40°F	60°F	80°F	
Saline River	1 & 6	2 3/4"	2 1/2"	2 1/4"	2 1/2" ±

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

Note:
U.N.O. all structural steel shall be ASTM A709, Gr. 50W.

2020.08.13 15:38:35-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 4 OF 6
DETAILS OF 380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	JPC	DATE:	04/2018	FILENAME:	B03050IX3_SX4.dgn
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DESIGNED BY:	MKL	DATE:	04/2018	SCALE:	As Shown
BRIDGE NO.	07442			DRAWING NO.	60690

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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.		030501	136	178
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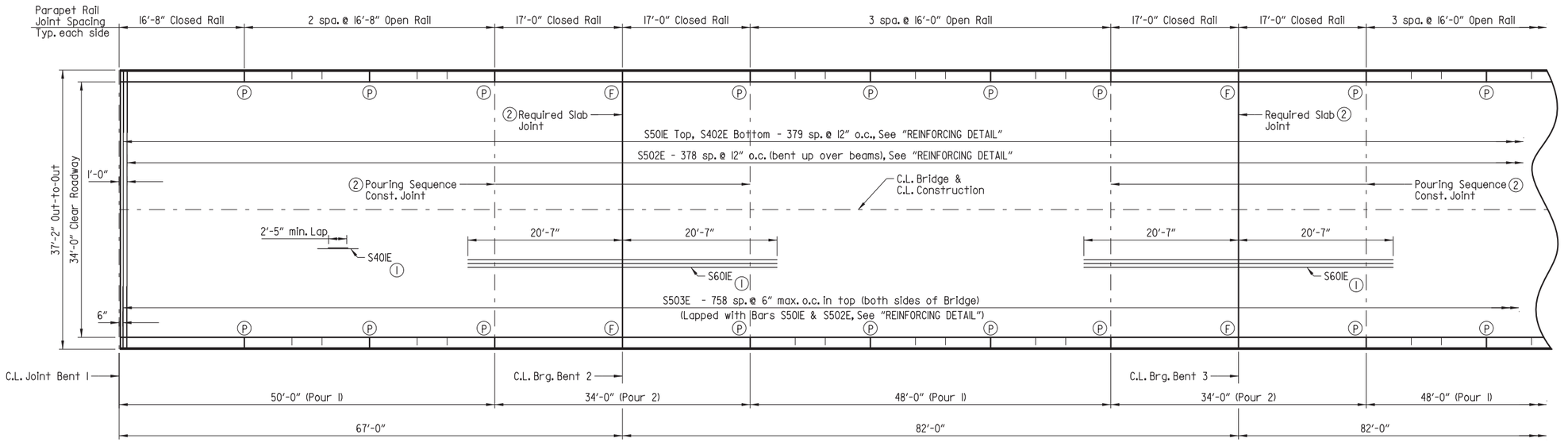
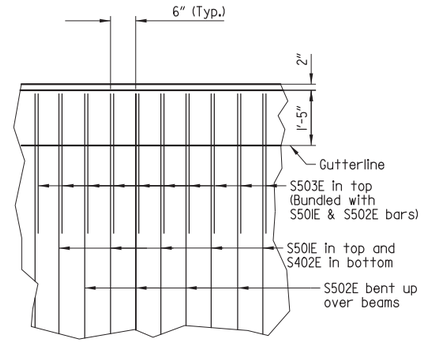
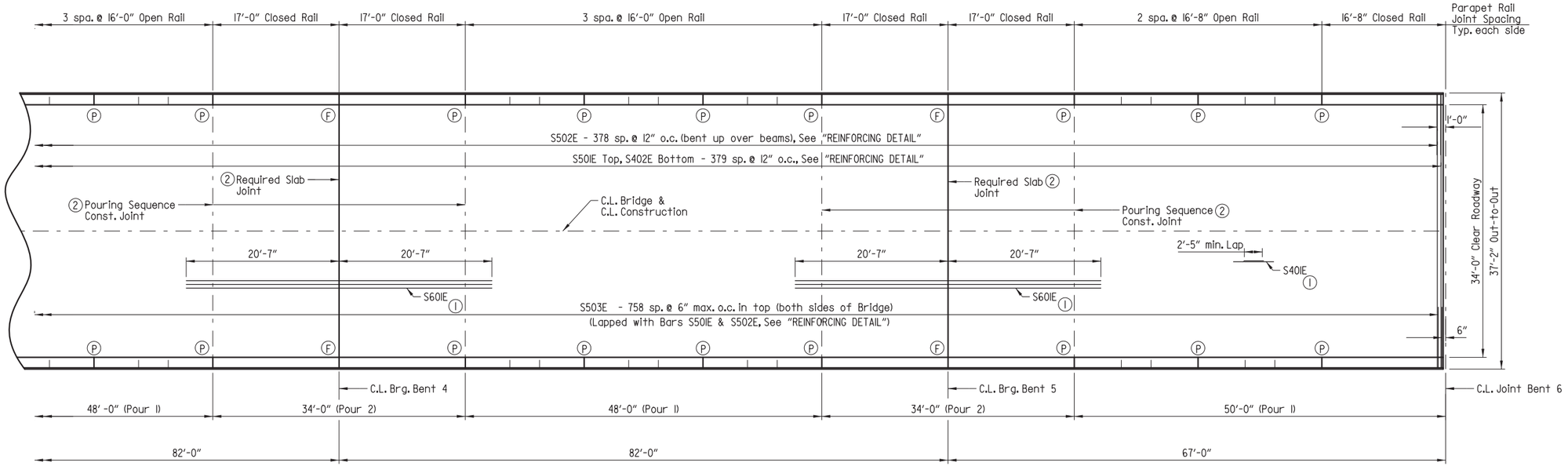




REINFORCING DETAIL

No Scale



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

REINFORCING PLAN AND POURING SEQUENCE

(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of slab)

(F) Full depth parapet joint at this location. (Stop 4" above top of slab)

(1) Placed as shown in "Typical Section", See Dwg. No. 60687.

(2) Align with parapet open joint unless noted otherwise.

2020.08.13 15:30:37-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 5 OF 6
DETAILS OF 380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	01/2019	FILENAME:	B03050IX3_SX5.dgn
CHECKED BY:	SFH	DATE:	04/2019	SCALE:	1/8" = 1'-0"
DESIGNED BY:	MKL	DATE:	01/2019		
BRIDGE NO.	07442		DRAWING NO.		60691

Leonard.Speed 8/13/2020 12:18 PM
WORKSPACE: ARDOT
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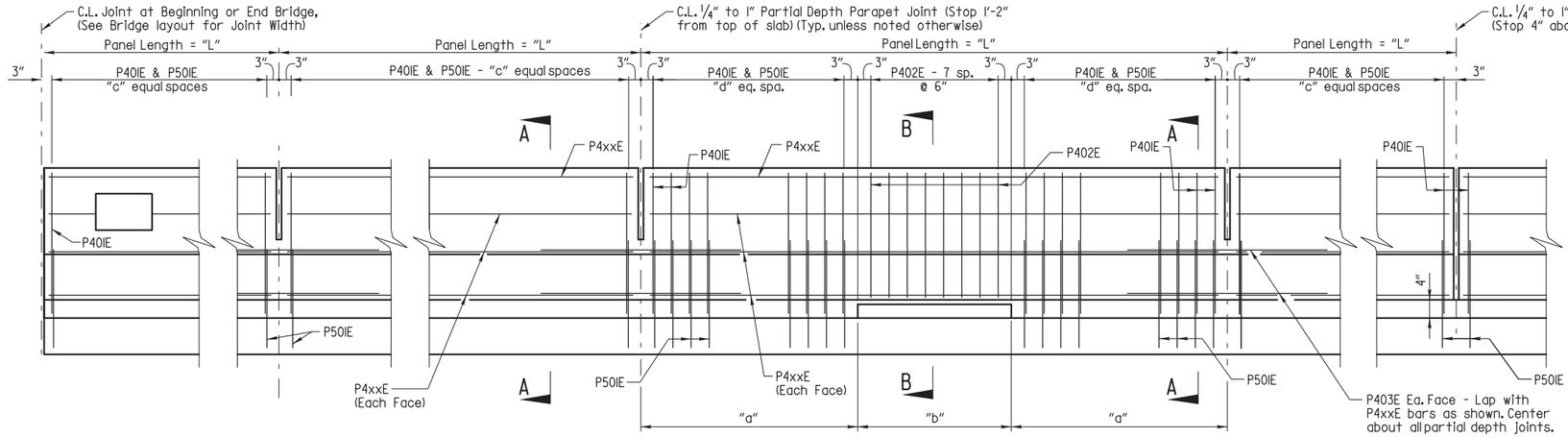
REVISED DATE:

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.		030501	137	178
1	07442 - 380'-0" CONT. UNIT - 60692			



Note:
For location of full and partial depth parapet joints, see Dwg. No. 60691.

PARAPET RAIL VARIABLES

Panel Length "L"	Panel Type	"a"	"b"	"c"	"d"	P4xxE Bars
16'-8"	closed	-----	-----	33	-----	P404E
17'-0"	closed	-----	-----	33	-----	P405E
16'-8"	open	6'-4"	4'-0"	-----	12	P404E
16'-0"	open	6'-0"	4'-0"	-----	11	P406E

TYPICAL END PANEL

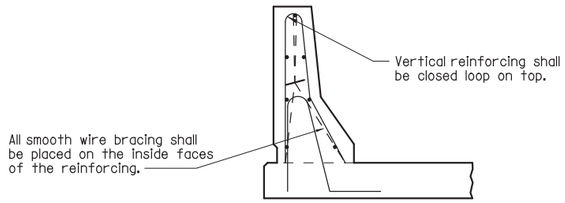
TYPICAL CLOSED PANEL PARAPET RAIL

TYPICAL OPEN PANEL PARAPET RAIL

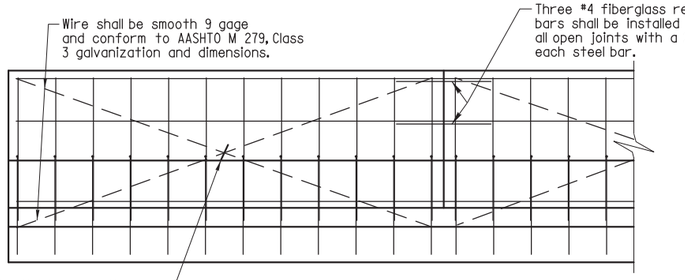
TYPICAL FULL DEPTH JOINT

ELEVATION - CONCRETE PARAPET RAIL

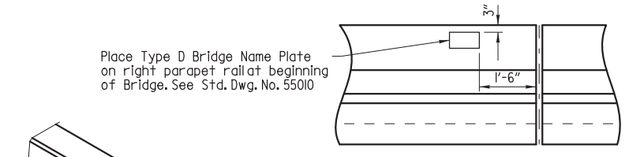
(As viewed from roadway side of Parapet)



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.



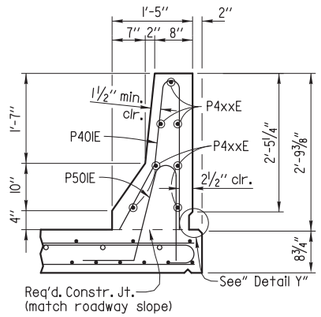
All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.



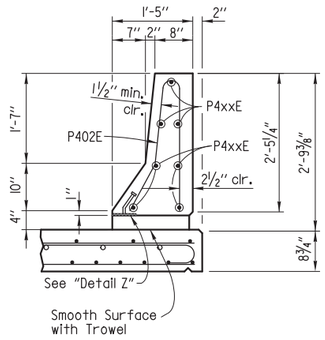
NAME PLATE DETAIL

No Scale

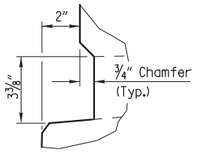
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL



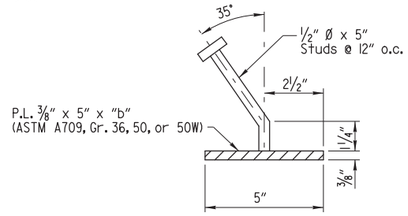
SECTION A-A



SECTION B-B

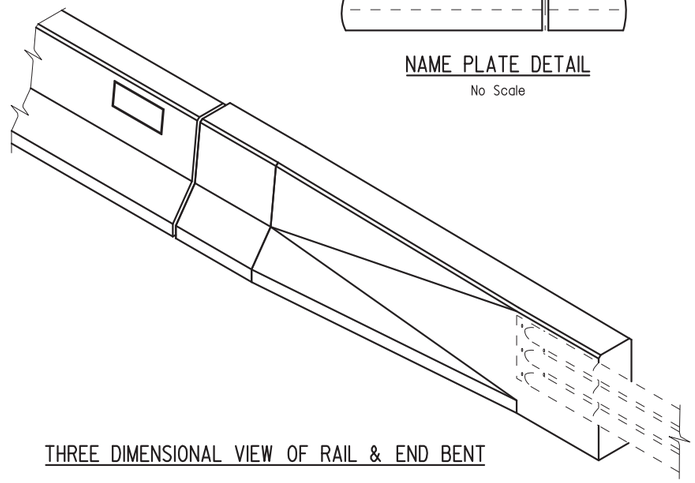


DETAIL Y



DETAIL Z

Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".
The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted in accordance with Section 638 or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (A709, Gr. 50W)"



THREE DIMENSIONAL VIEW OF RAIL & END BENT

2020.08.13 15:54:05-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

SHEET 6 OF 6
DETAILS OF 380'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HWY. 278 OVER SALINE RIVER

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	01/2019
CHECKED BY:	SFH	DATE:	04/2019
DESIGNED BY:	MKL	DATE:	01/2019
BRIDGE NO.	07442	DRAWING NO.	60692

FILENAME: B030501X3_SX6.dgn
SCALE: No Scale

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REVISED DATE:

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				JOB NO.		030501	138	178
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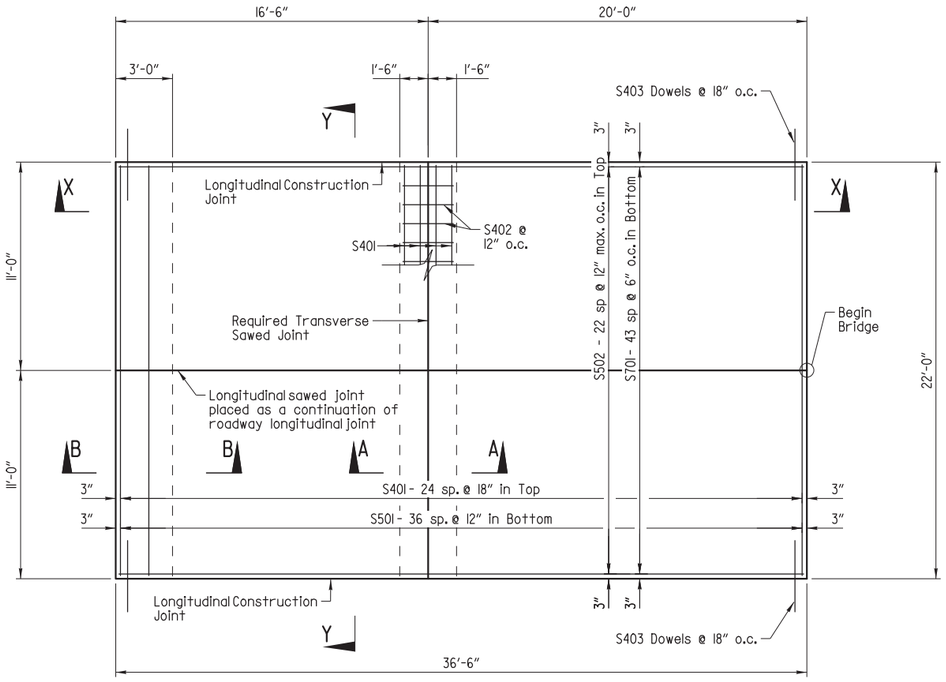
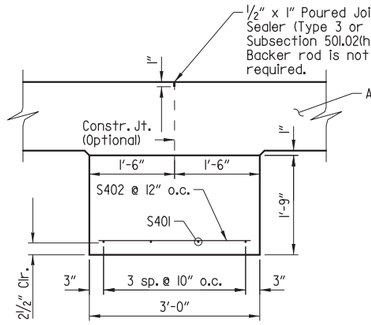
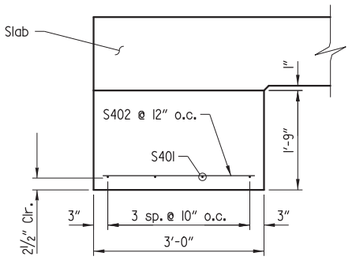


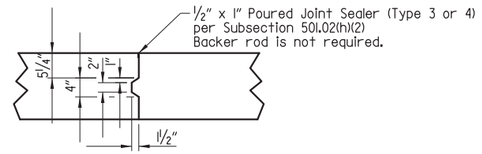
PLAN
1/4" = 1'-0"
(Shown for Begin Bridge - End Bridge Similar)



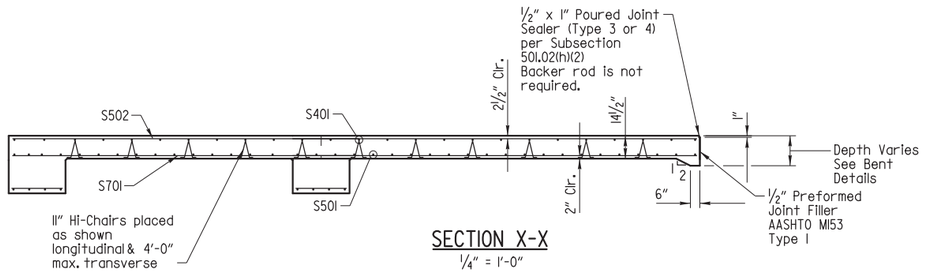
SECTION A-A
3/4" = 1'-0"



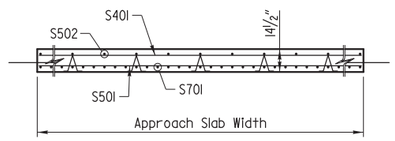
SECTION B-B
3/4" = 1'-0"



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
3/4" = 1'-0"



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



SECTION Y-Y
(No Scale)

GENERAL NOTES

All concrete shall be Class S(AE) (f'c = 4,000 psi) and shall be poured in the dry.

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.

QUANTITIES FOR ONE TYPE 3 SPECIAL APPROACH SLAB

Slab Width	Reinforcing Steel (lbs.)	Concrete (cubic yds)
22'-0"	5616	44.90

BAR LIST FOR ONE TYPE 3 SPECIAL APPROACH SLAB

MARK	NO. REQ'D.	LENGTH	PIN DIA.
S401	33	21'-8"	Str.
S402	46	2'-8"	Str.
S403	50	3'-0"	Str.
S501	37	21'-8"	Str.
S502	23	36'-2"	Str.
S701	44	36'-2"	Str.

2020.08.13 15:39:39-05'00'

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

BRIDGE ENGINEER
PRINT DATE: 8/13/2020

DETAILS OF TYPE 3 SPECIAL APPROACH SLAB

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 04/2019 FILENAME: B03050IX3_ASI.dgn
CHECKED BY: SFH DATE: 04/2019
DESIGNED BY: SCR DATE: 04/2019 SCALE: As Shown
BRIDGE NO. 07442 DRAWING NO. 60693

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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.		030501	139	178
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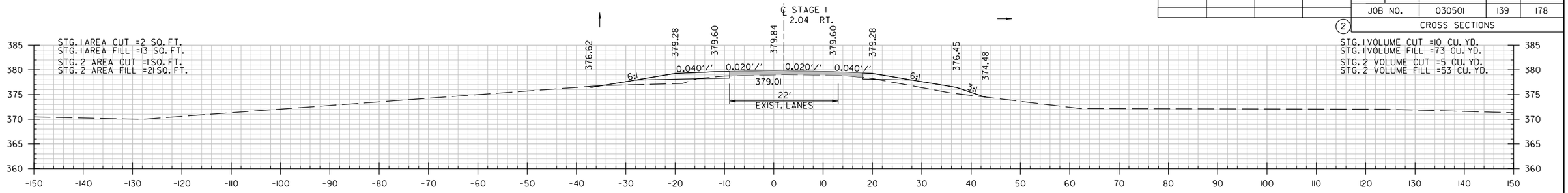

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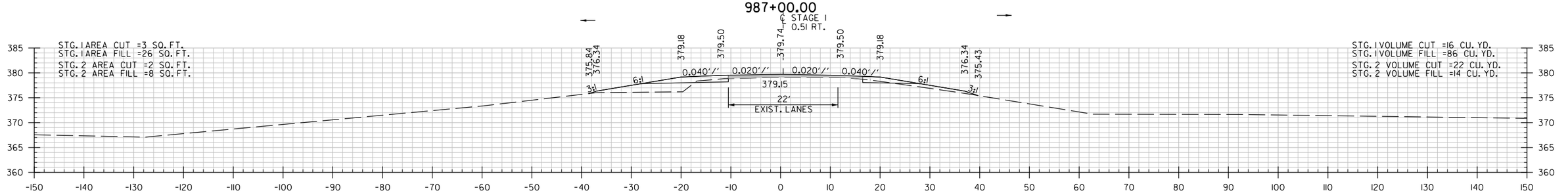

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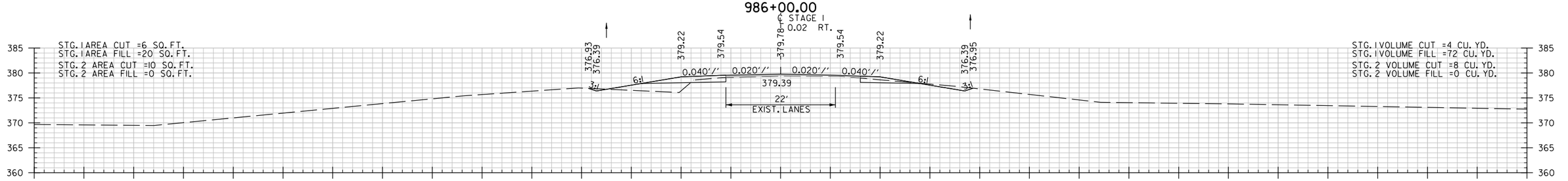

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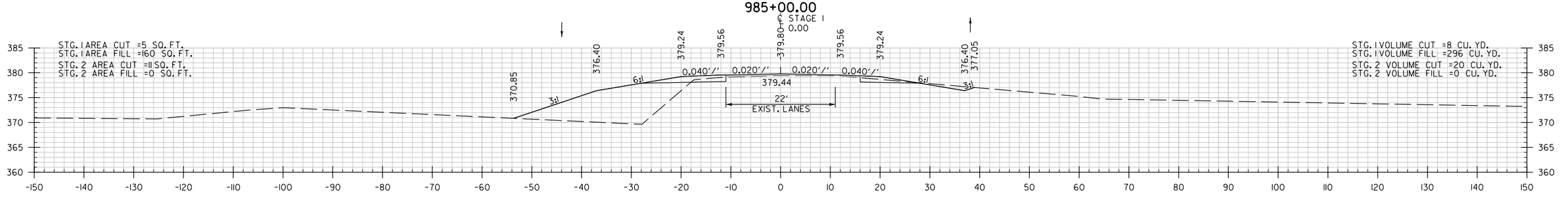
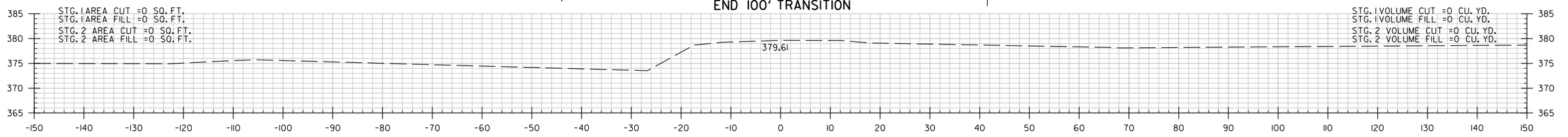


984+78.45
STA. 984+78.45 BEGIN HWY. 70 - SITE 1 & END 100' TRANSITION



983+78.45
STA. 983+78.45 BEGIN 100' TRANSITION HWY. 70 - SITE 1

STA. 983+78 TO STA. 987+00

LeonardSpeed 8/13/2020 12:20 PM
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.		030501	140	178
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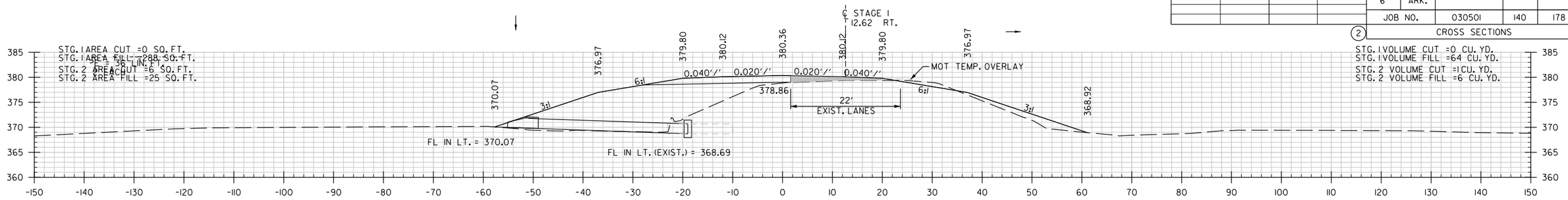
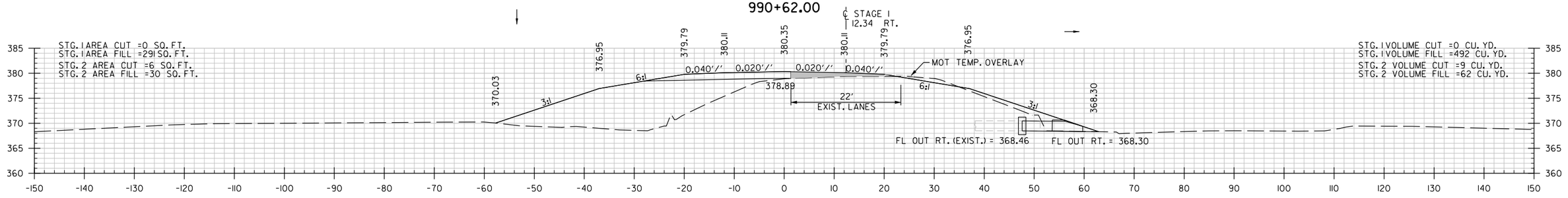
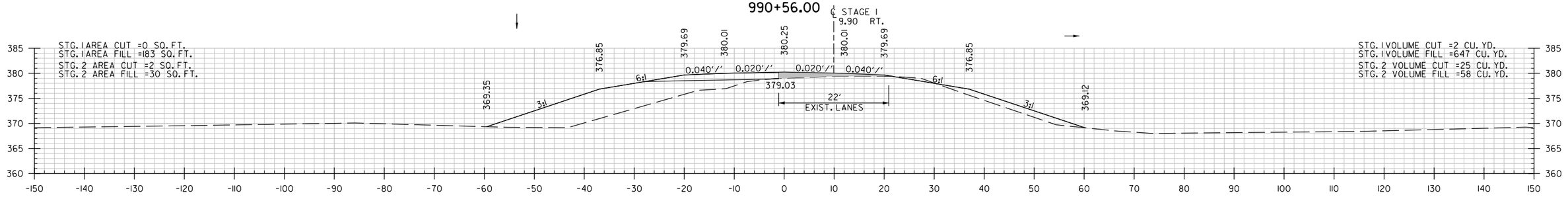


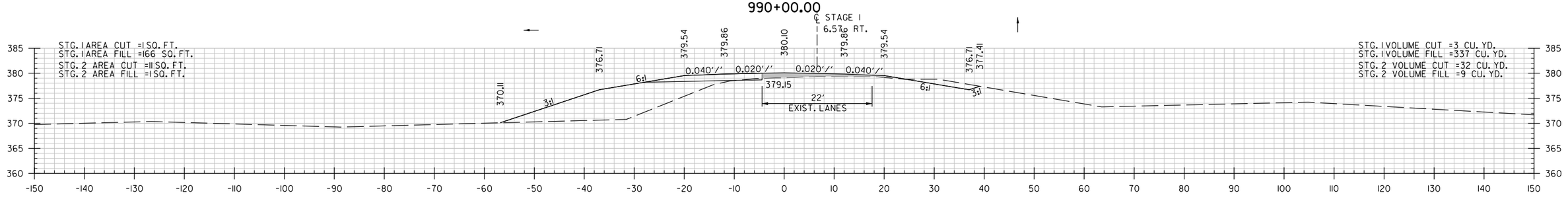
990+62.00



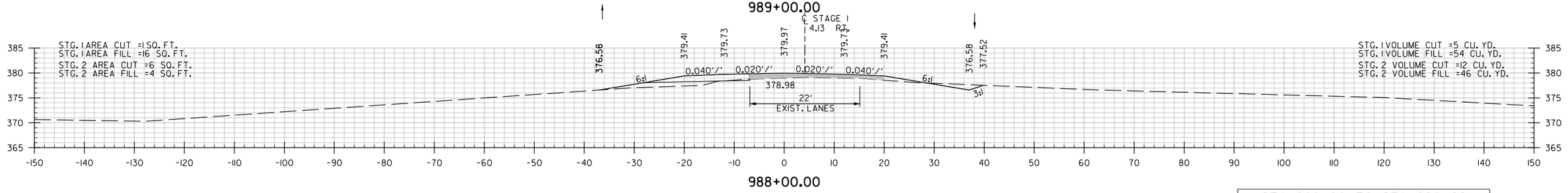
990+56.00



990+00.00



989+00.00



988+00.00

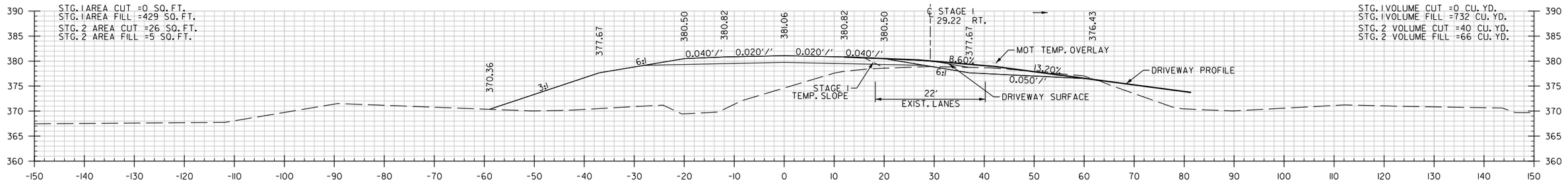
HWY. 70 - SITE I

STA. 988+00 TO STA. 990+62

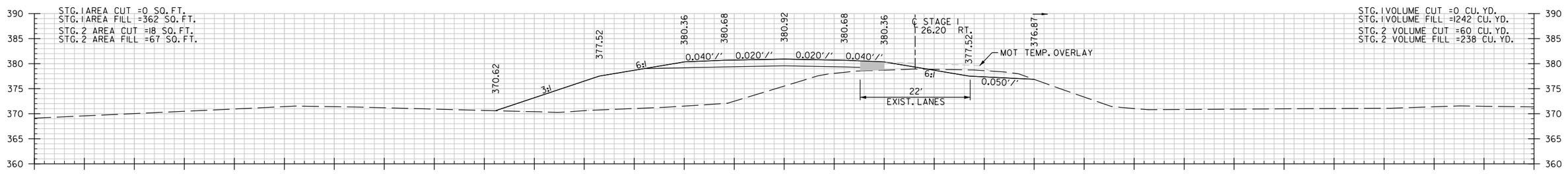
Leonard,Speed 8/13/2020 12:21:21 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_I6613\030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	141	178
				(2)	CROSS SECTIONS			

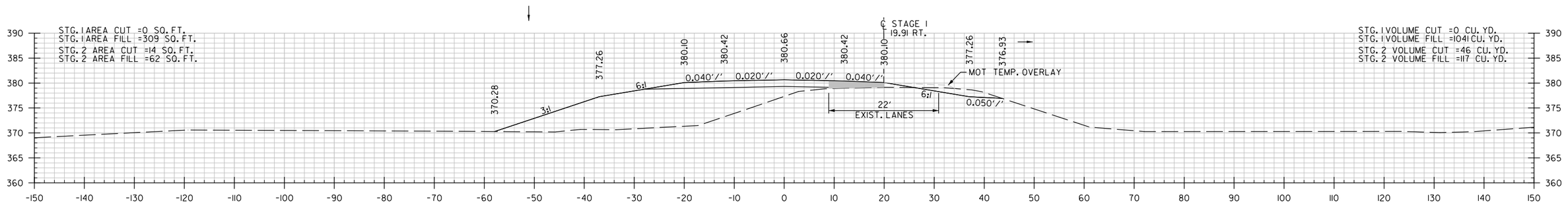
STA. 993+50.00
CONST. APPROACH ON RT. =
25 CU. YDS.



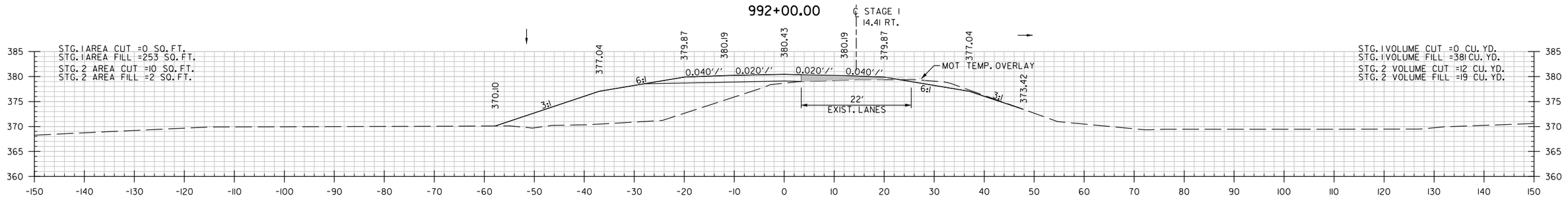
993+50.00



993+00.00



992+00.00



991+00.00

HWY. 70 - SITE I

STA. 991+00 TO STA. 993+50

Leonard.Speed 8/13/2020 12:22:22 PM
WORKSPACE: ARDOT
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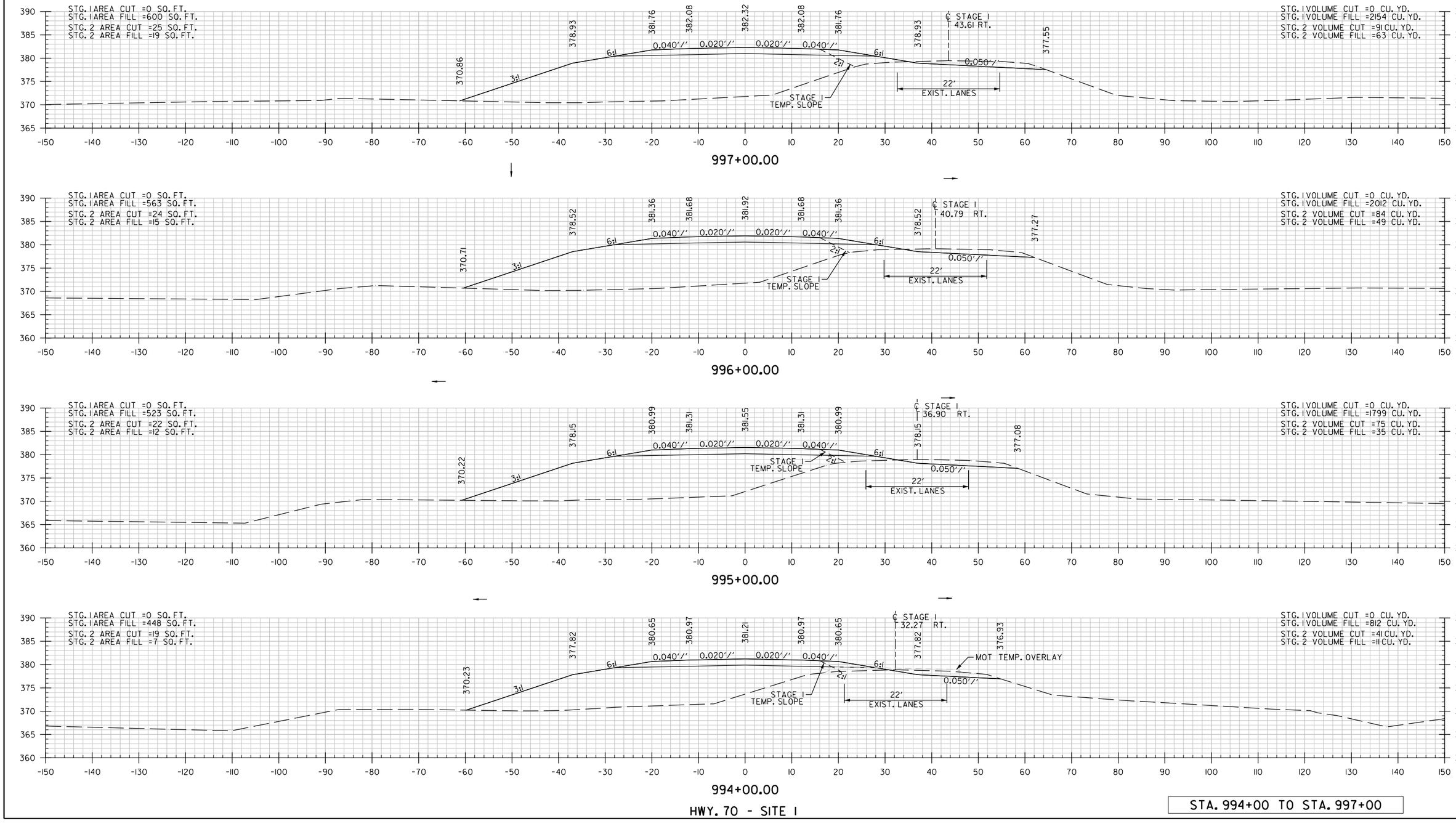
REVISED DATE: $$REVDATE$$

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.		030501	142	178

(2) CROSS SECTIONS



HWY. 70 - SITE 1

STA. 994+00 TO STA. 997+00

Leonard,Speed 8/31/2020 11:22:22 PM
WORKSPACE: ARDOT
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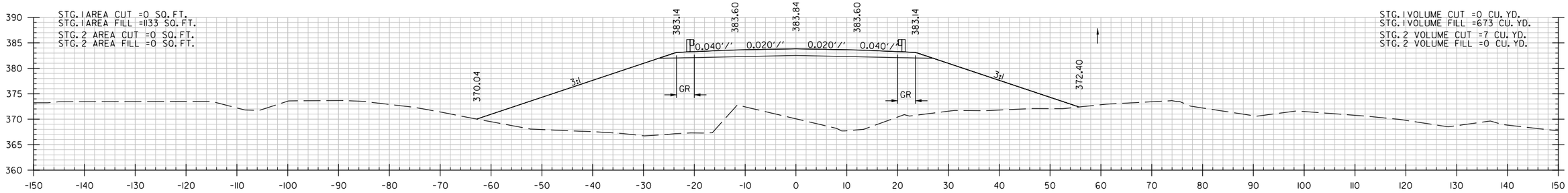
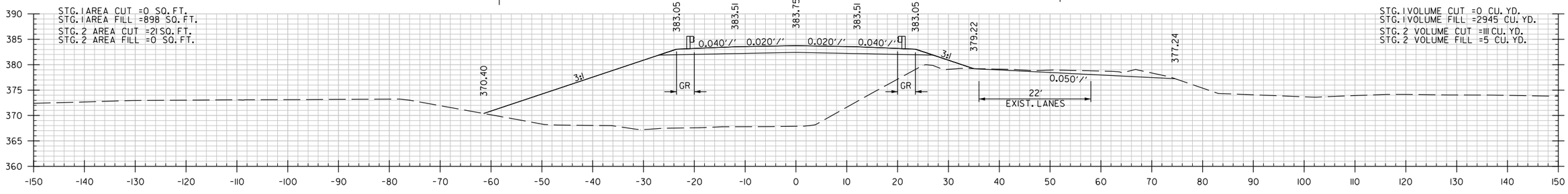
REVISED DATE: $$REVDATE$$

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.		030501	143	178
				(2)	CROSS SECTIONS			

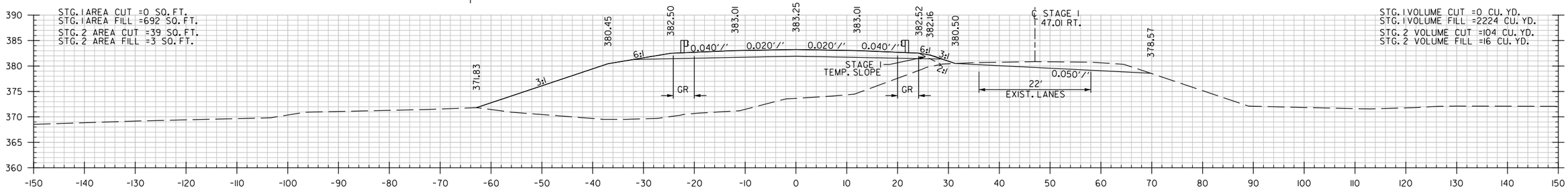
BEGIN BRIDGE - STA. 1000+17.89



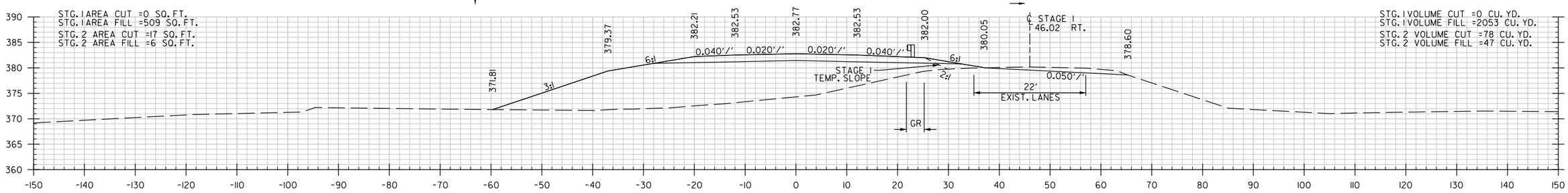
1000+17.89



1000+00.00



999+00.00



998+00.00

HWY. 70 - SITE 1

STA. 998+00 TO STA. 1000+18

Leonard,Speed 8/31/2020 11:22:23 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

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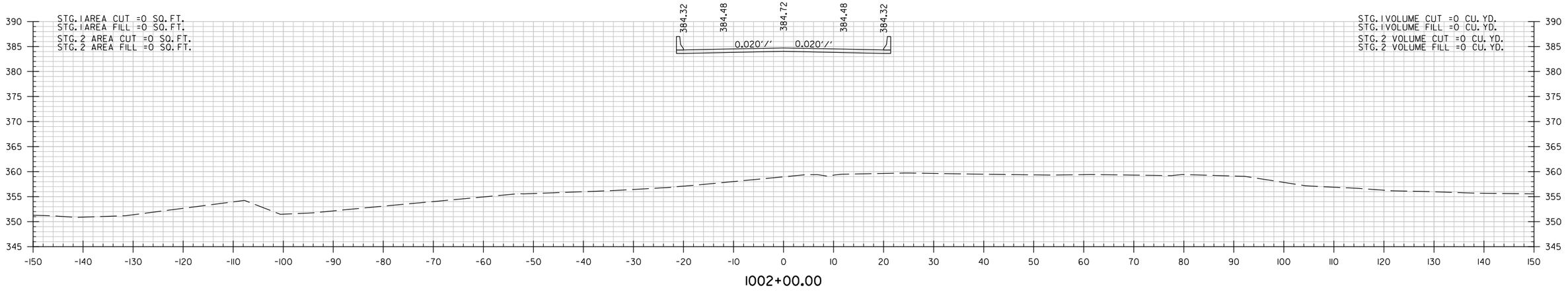
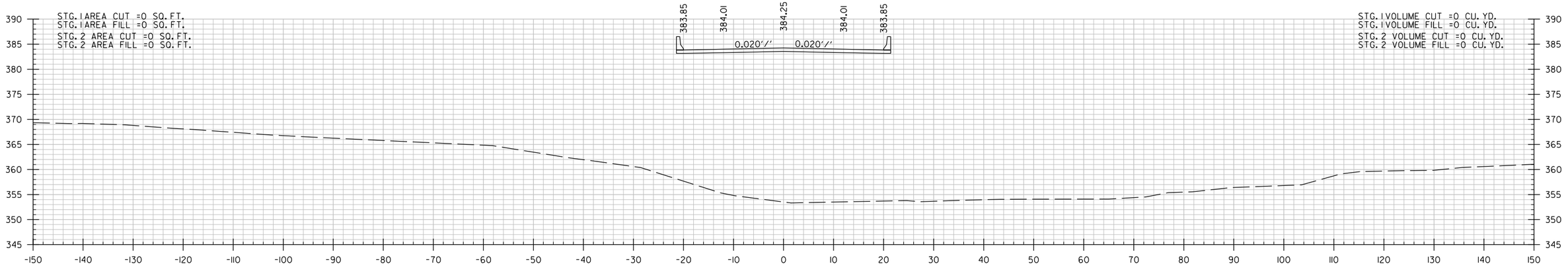
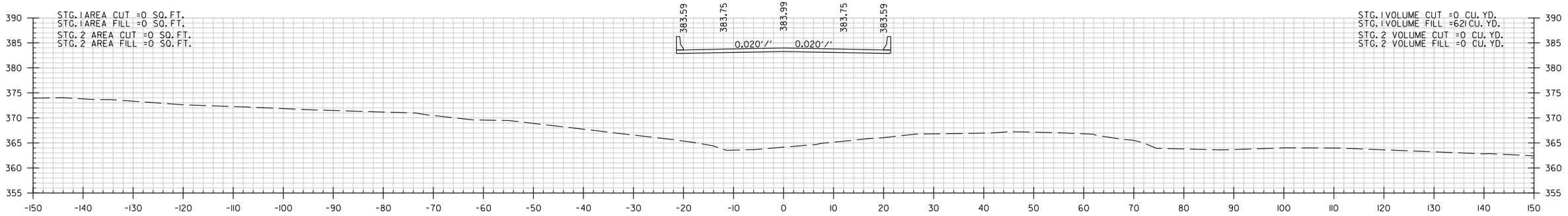
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	144	178
(2)	CROSS SECTIONS			



1002+00.00



1001+00.00



1000+47.50

BRIDGE TOE OF SLOPE - STA. 1000+47.50

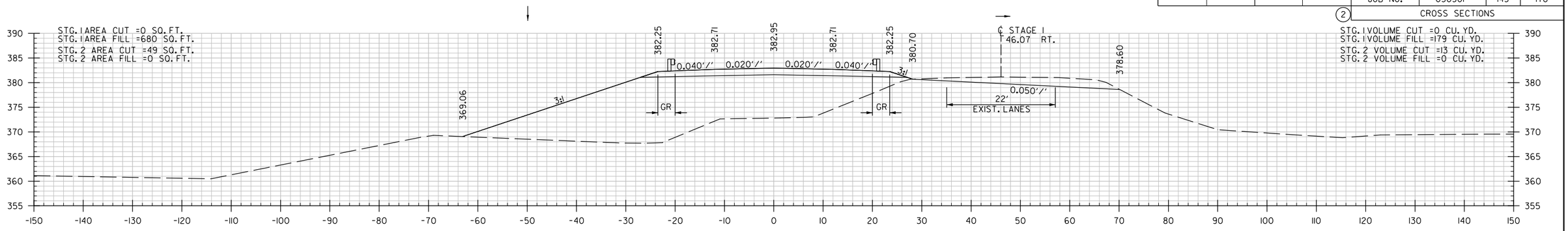
HWY. 70 - SITE 1

STA. 1000+47 TO STA. 1002+00

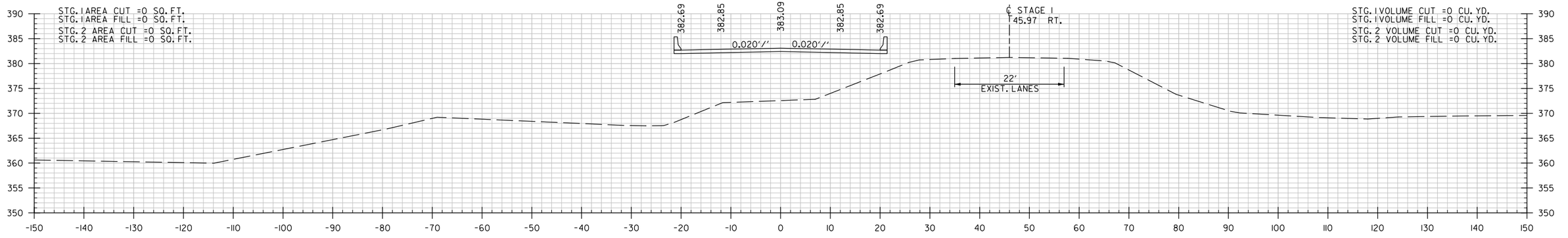
Leonard.Speed 8/13/2020 12:22:23 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1661_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	145	178

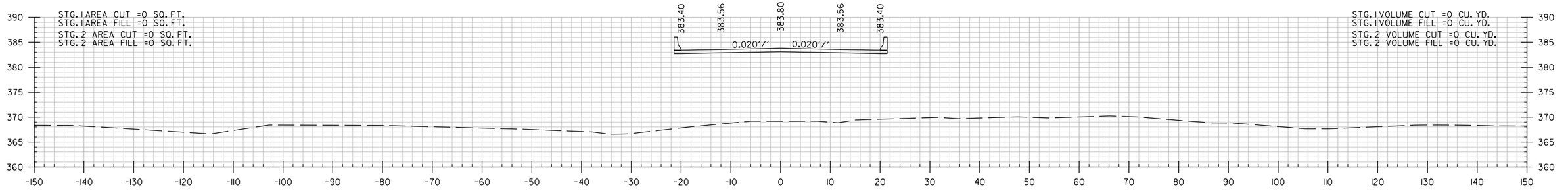
(2) CROSS SECTIONS



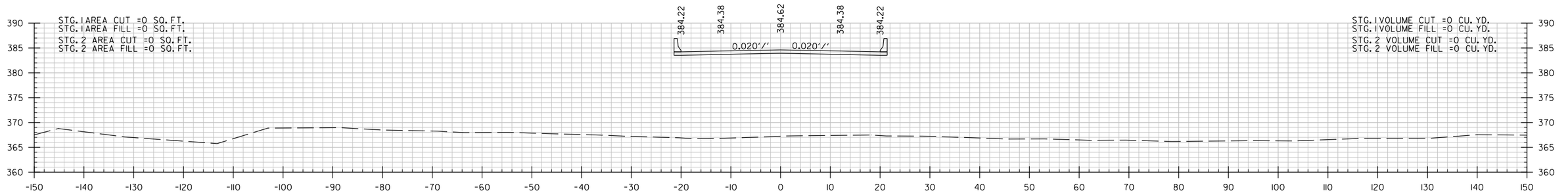
1004+85.11
END BRIDGE - STA. 1004+85.11



1004+70.89
BRIDGE TOE OF SLOPE - STA. 1004+70.89



1004+00.00



1003+00.00

HWY. 70 - SITE 1

STA. 1003+00 TO STA. 1004+85

Leonard.Speed 8/31/2020 11:22:24 PM
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.		030501	146	178
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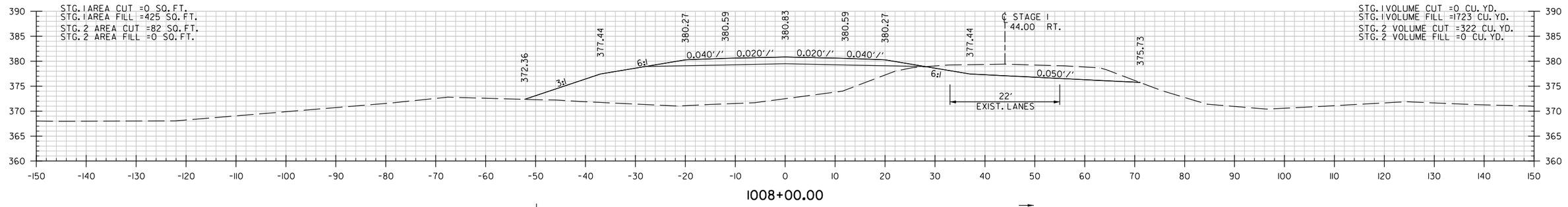

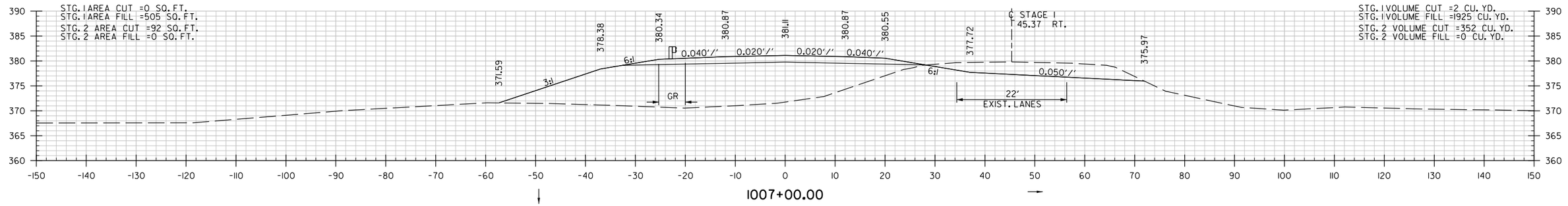

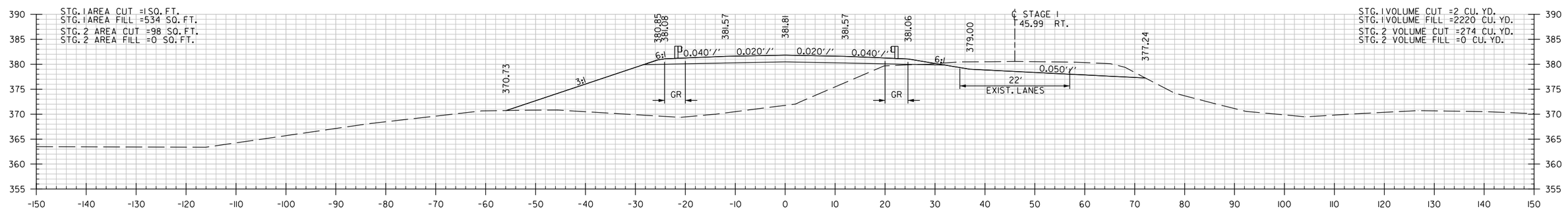

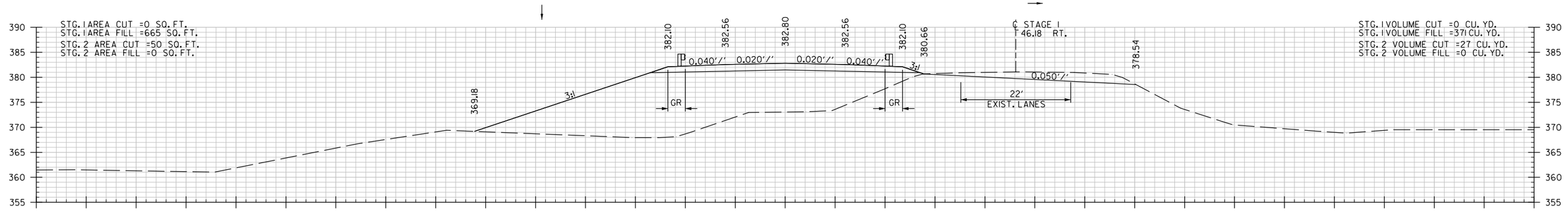

HWY. 70 - SITE I

STA. 1005+00 TO STA. 1008+00

Leonard.Speed 8/13/2020 12:22:25 PM
WORKSPACE: ARDOT
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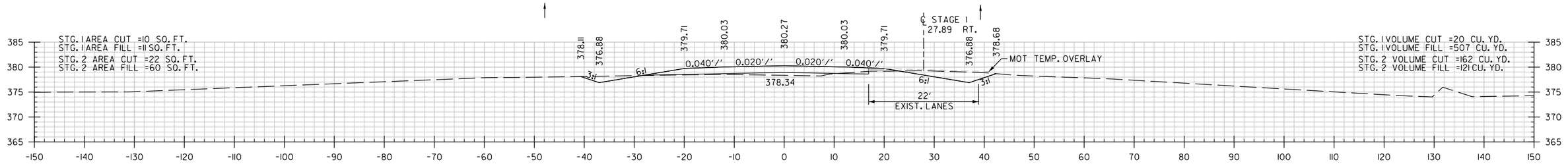
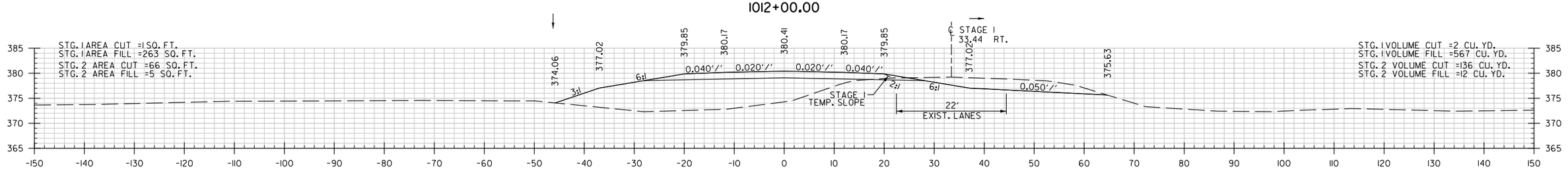
REVISED DATE: $$REVDATE$$

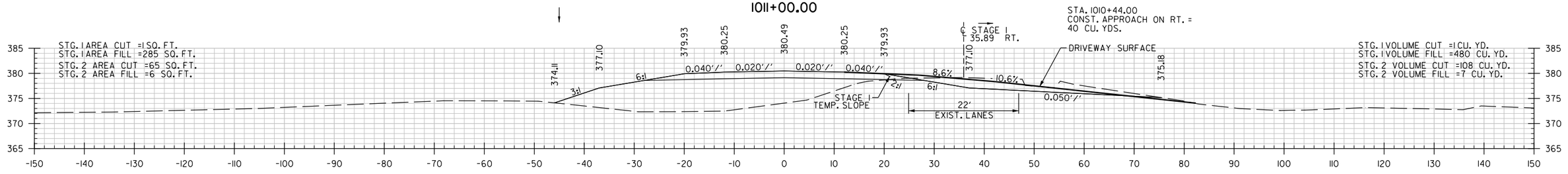
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	147	178
				(2)	CROSS SECTIONS			



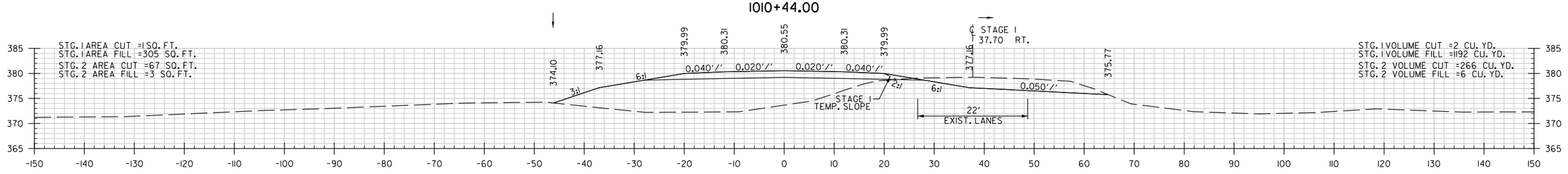
1012+00.00



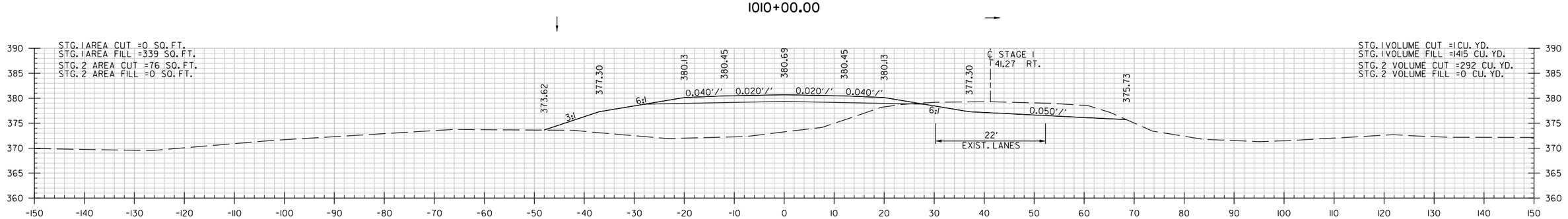
1011+00.00



1010+44.00



1010+00.00



1009+00.00

HWY. 70 - SITE 1

STA. 1009+00 TO STA. 1012+00

LeonardSpeed 8/13/2020 12:22:26 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1603_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_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
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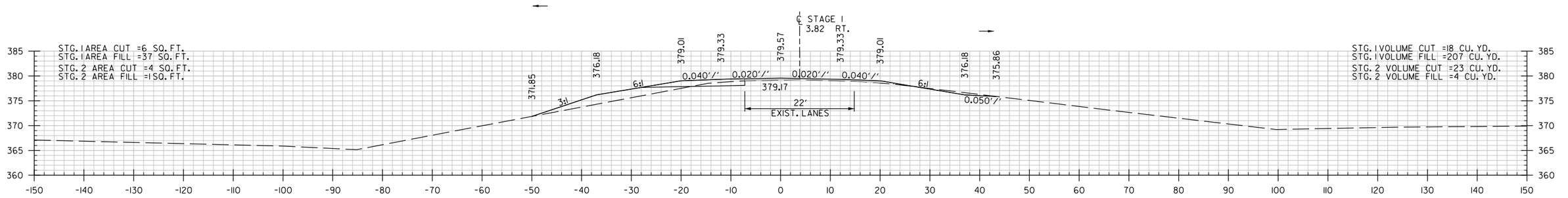
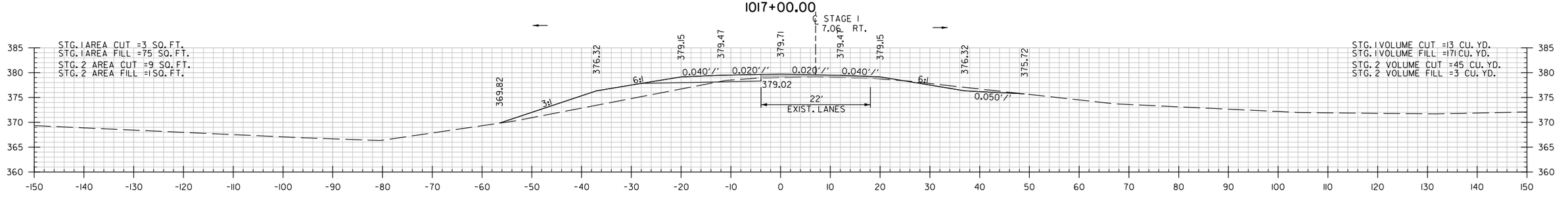
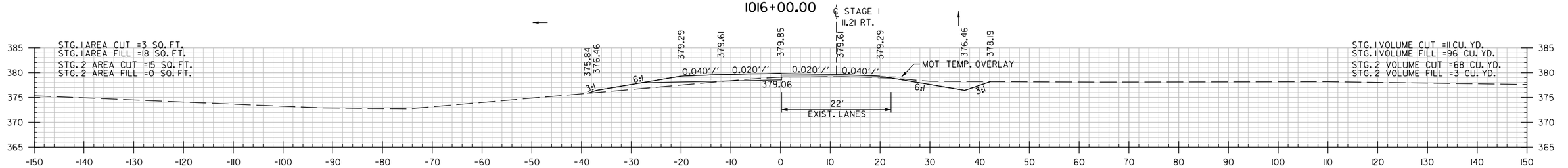
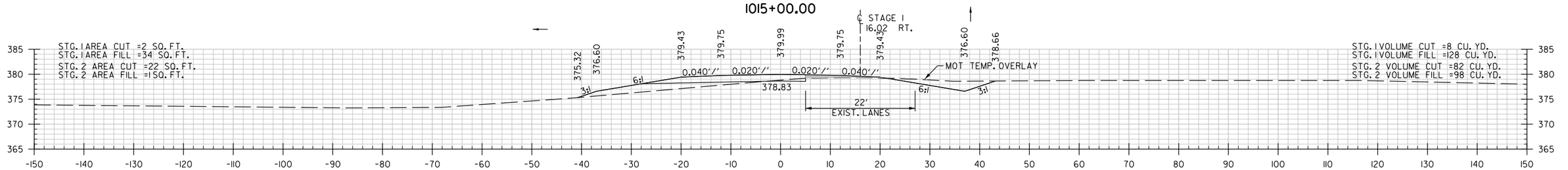
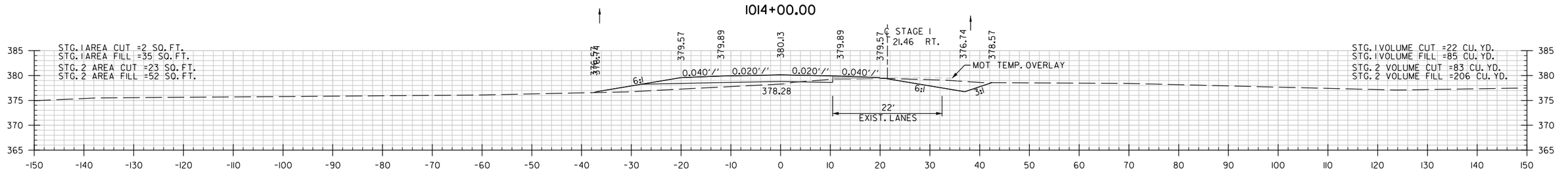
				JOB NO.		030501	148	178
				(2)	CROSS SECTIONS			









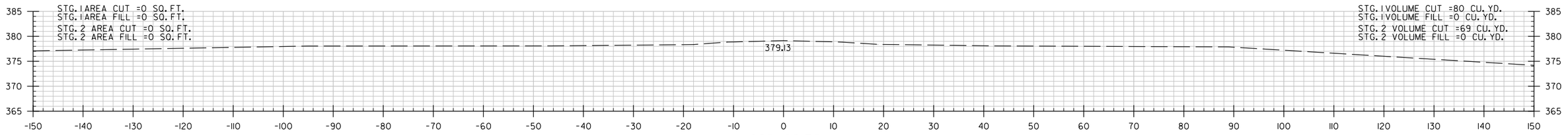


HWY. 70 - SITE 1

STA. 1013+00 TO STA. 1017+00

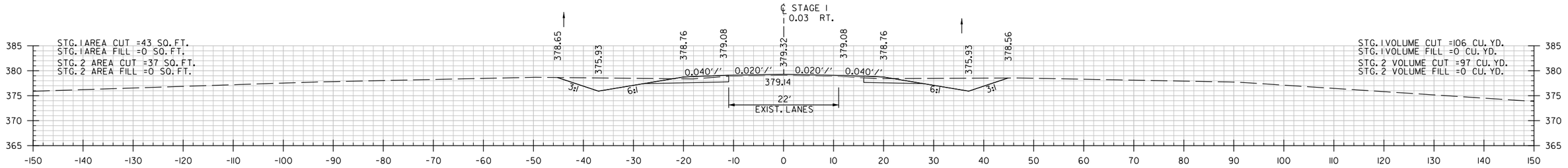
LeonardSpeed 8/13/2020 12226 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_I66(3)_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	149	178
				(2)	CROSS SECTIONS			



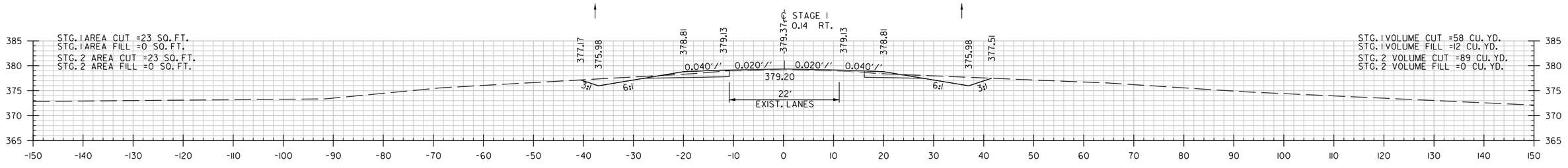
1020+86.36

STA. 1020+86.36 END 100' TRANSITION

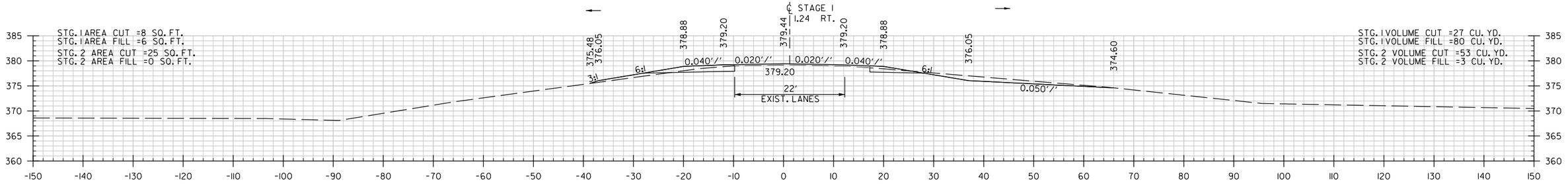


1019+86.36

STA. 1019+86.36 END HWY. 70 - SITE 1



1019+00.00



1018+00.00

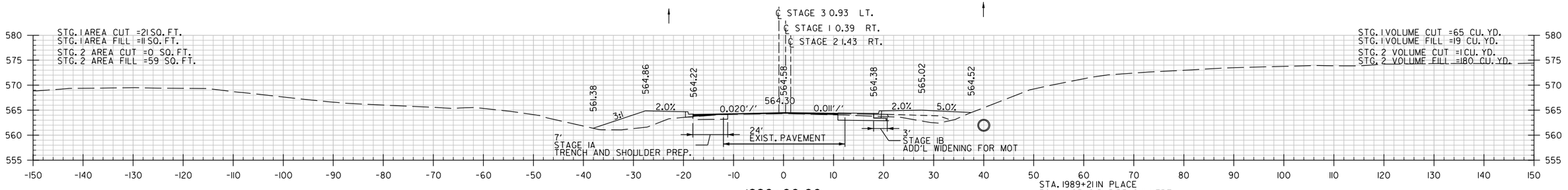
HWY. 70 - SITE 1

STA. 1018+00 TO STA. 1020+86

Leonard.Speed 8/13/2020 1:22:27 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613\030501-Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_001.dgn
REVISED DATE: $$REVDATE$$

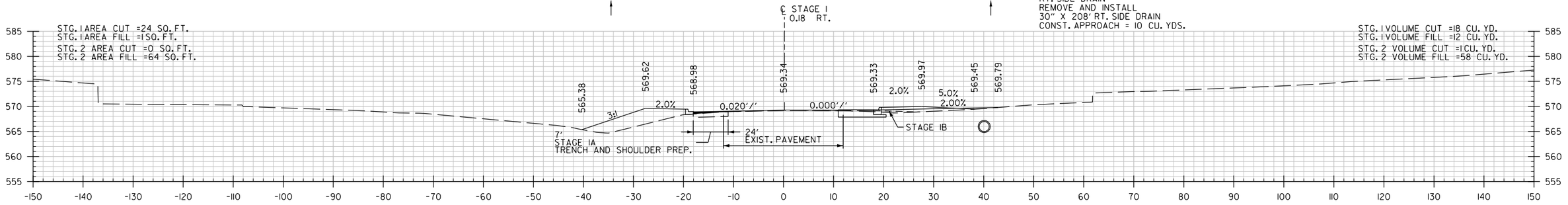
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	150	178

(2)

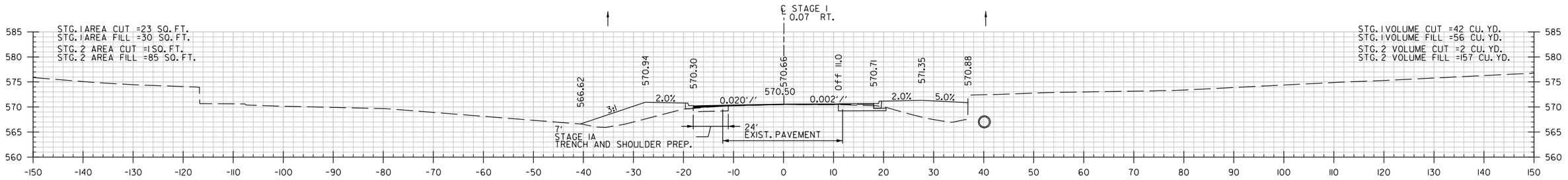


1990+00.00

STA. 1989+21 IN PLACE
30" X 25' C.P. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
30" X 208' RT. SIDE DRAIN
CONST. APPROACH = 10 CU. YDS.

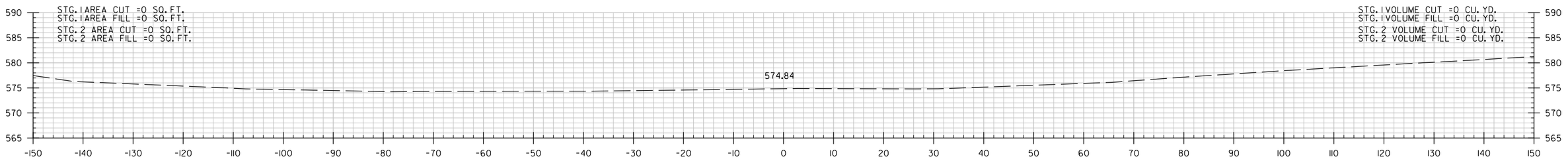


1989+21.00



1989+00.00

STA. 1989+00.00 BEGIN HWY. 70 - SITE 2



1988+00.00

STA. 1988+00.00 BEGIN 100' TRANSITION

HWY. 70 - SITE 2

STA. 1988+00 TO STA. 1990+00

LeonardSpeed 8/13/2020 12:16 PM
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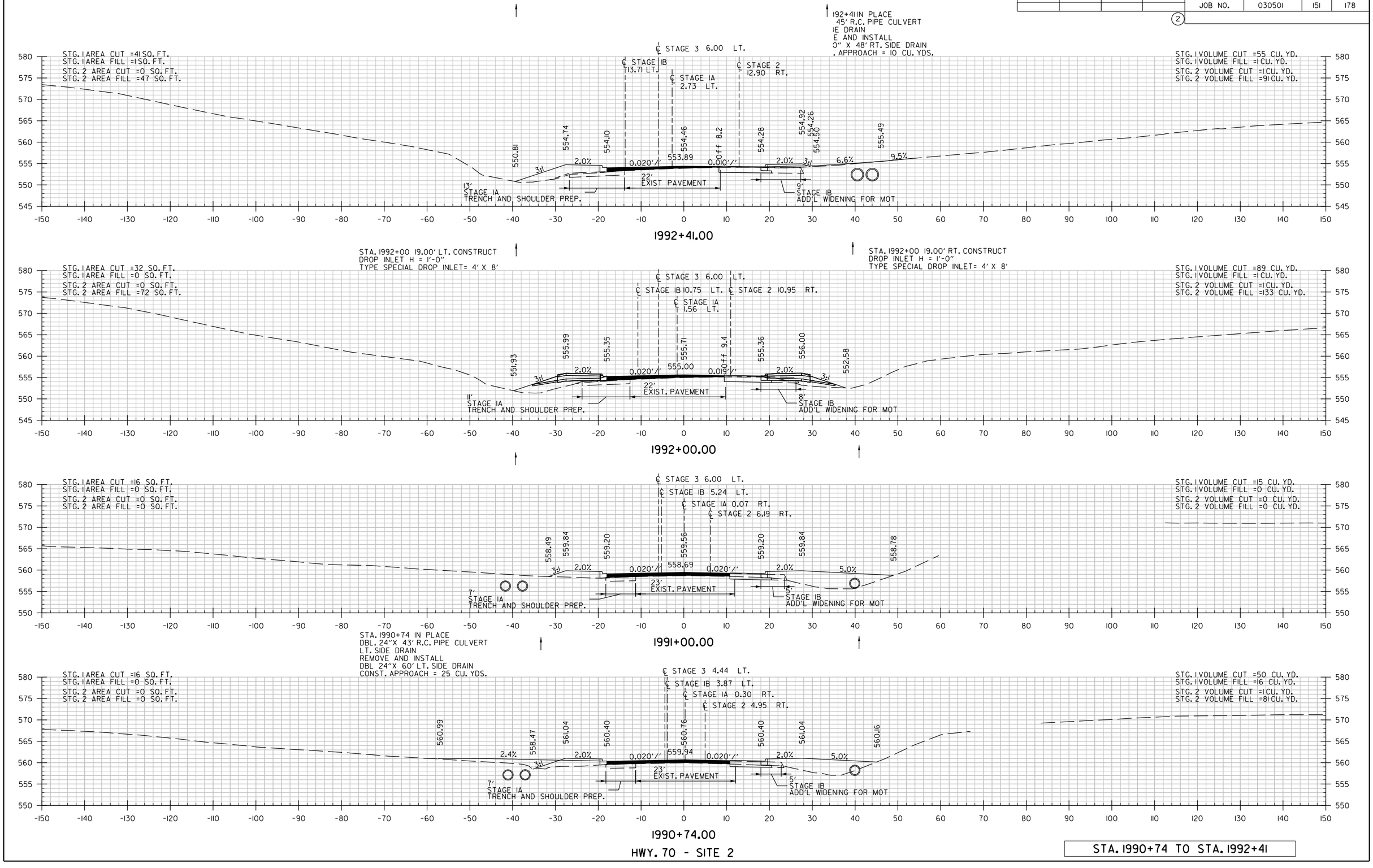
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	151	178

(2)



HWY. 70 - SITE 2

STA. 1990+74 TO STA. 1992+41

Leonard.Speed 8/31/2020 11:23:17 PM
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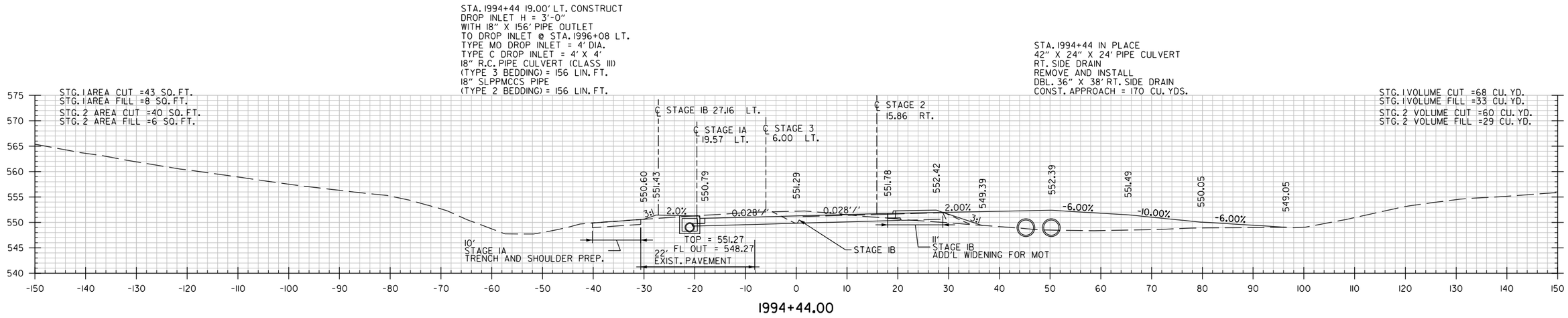
				6	ARK.			
				JOB NO.		030501	152	178

(2)



HWY. 70 - SITE 2

STA. 1993+00 TO STA. 1994+44

LeonardSpeed 8/13/2020 12:38 PM
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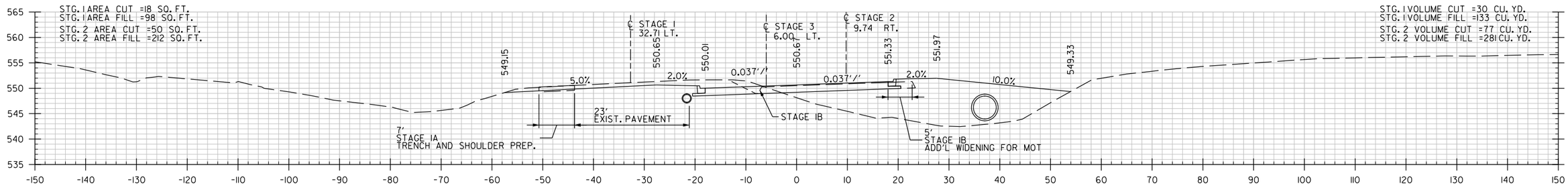
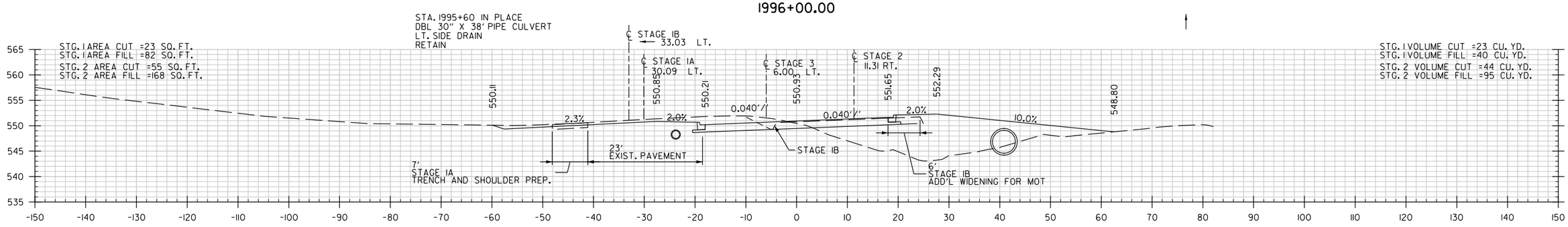
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	153	178

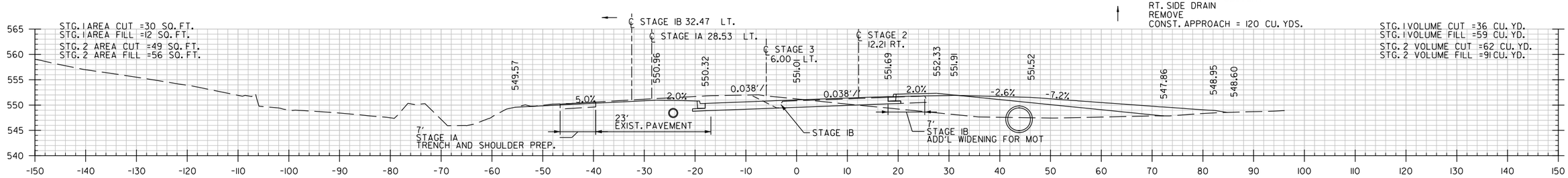
(2)



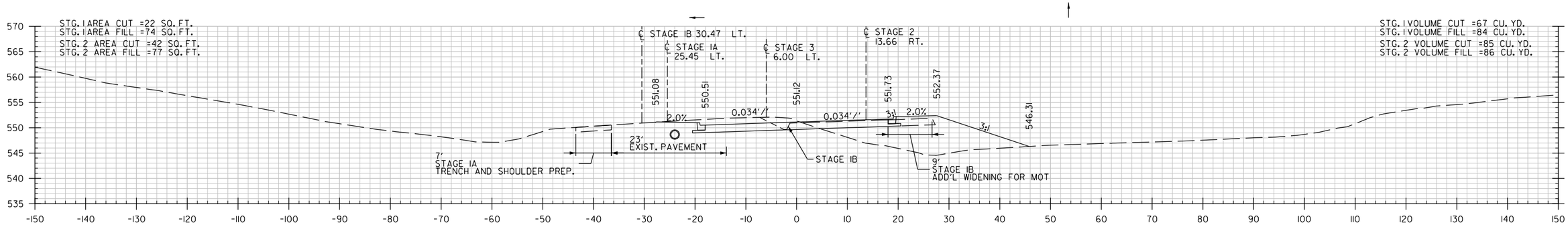
1996+00.00



1995+60.00



1995+37.00



1995+00.00

HWY. 70 - SITE 2

STA. 1995+00 TO STA. 1996+00

Leonard.Speed 8/13/2020 12:39 PM
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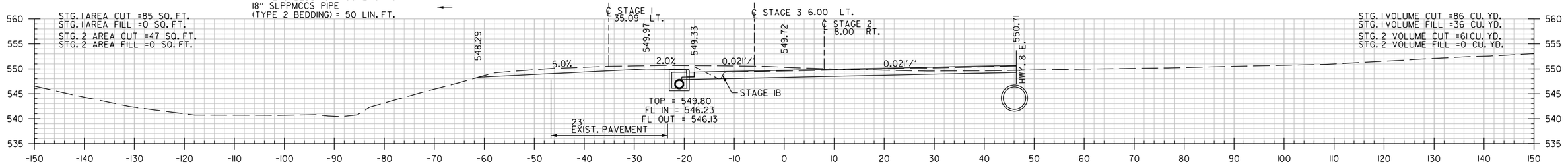
REVISED DATE: $$REVDATE$$

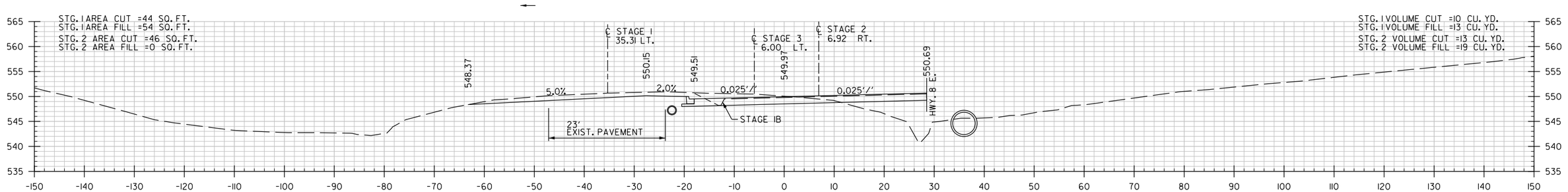
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	154	178

(2)

STA. 1997+36 19.00' LT. CONSTRUCT
DROP INLET H = 3'-8"
WITH 18" X 50' PIPE OUTLET
TO DROP INLET @ STA. 1997+90 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 50 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 50 LIN. FT.

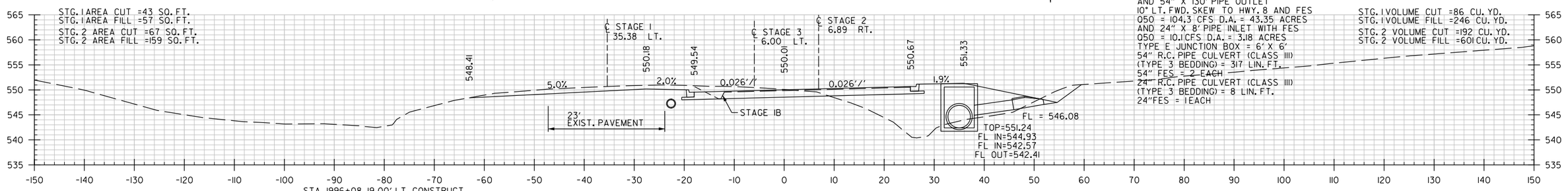


1997+36.00



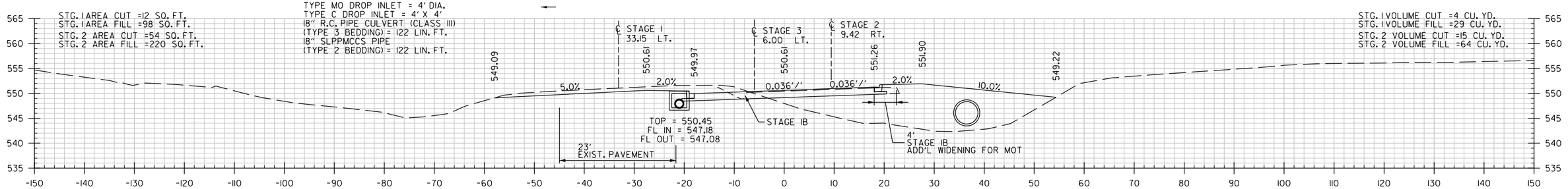
1997+00.00

STA. 1996+94 35.00' RT. CONSTRUCT
JUNCTION BOX H = 8'-10"
WITH 54" X 187' PIPE INLET AND FES
Q50 = 98.1 CFS D.A. = 40.17 ACRES
AND 54" X 130' PIPE OUTLET
10° LT. FWD. SKEW TO HWY. 8 AND FES
Q50 = 104.3 CFS D.A. = 43.35 ACRES
AND 24" X 8' PIPE INLET WITH FES
Q50 = 10.1 CFS D.A. = 3.18 ACRES
TYPE E JUNCTION BOX = 6' X 6'
54" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 317 LIN. FT.
54" FES = 2 EACH
24" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 8 LIN. FT.
24"FES = 1 EACH



1996+93.66

STA. 1996+08 19.00' LT. CONSTRUCT
DROP INLET H = 3'-4"
WITH 18" X 122' PIPE OUTLET
TO DROP INLET @ STA. 1997+36 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 122 LIN. FT.
18" SLPPMCCS PIPE
(TYPE 2 BEDDING) = 122 LIN. FT.



1996+08.00
HWY. 70 - SITE 2

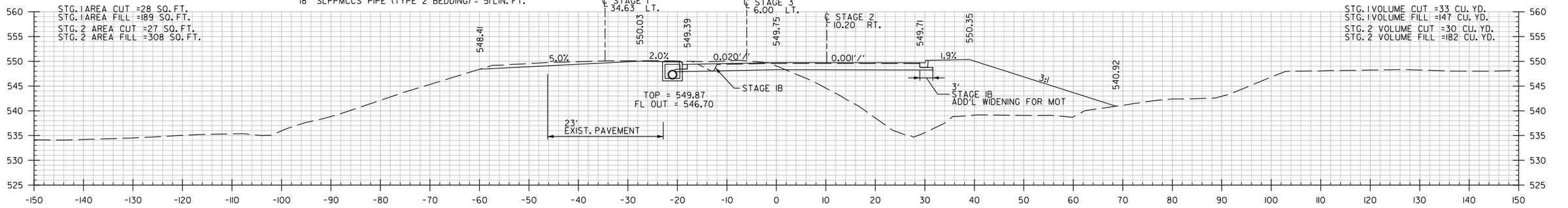
STA. 1996+08 TO STA. 1997+36

Leonard.Speed 8/13/2020 12:39 PM
WORKSPACE: AHTD
Y:\Projects\ArDOT_16613\030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501.21.CX.002.dgn
REVISED DATE: $$REVDATE$$

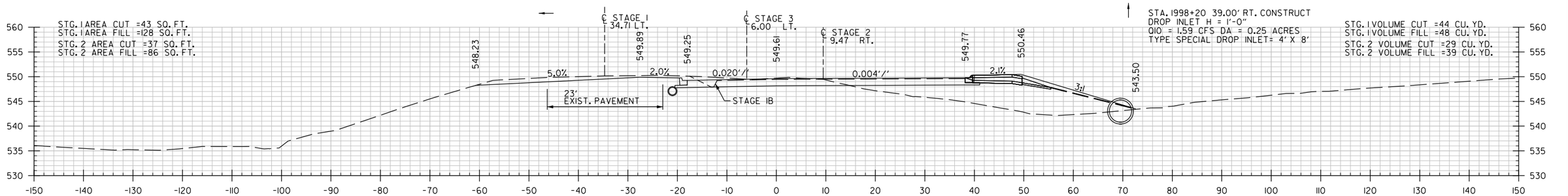
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	155	178

(2)

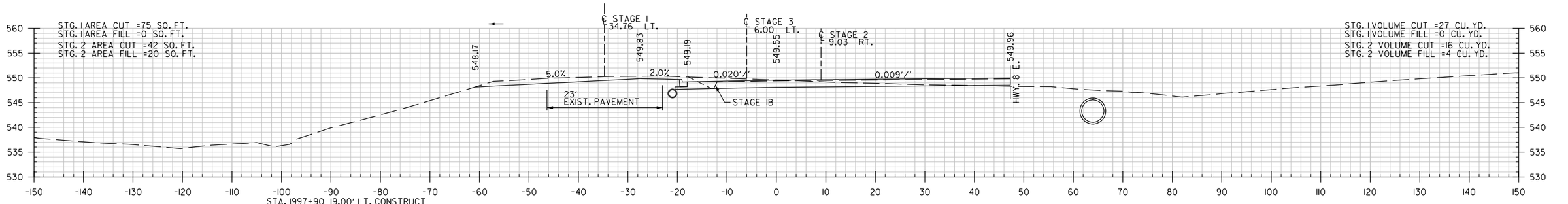
STA. 1998+45 19.00' LT. CONSTRUCT
DROP INLET H = 3'-4"
WITH 18" X 51' PIPE OUTLET
TO DROP INLET @ STA. 1997+90 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 51 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 51 LIN. FT.



1998+45.00

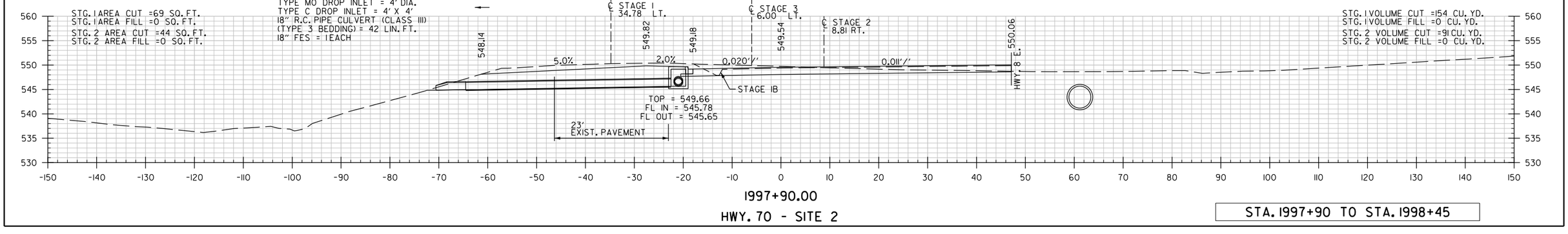


1998+20.00



1998+00.00

STA. 1997+90 19.00' LT. CONSTRUCT
DROP INLET H = 4'-0"
WITH 18" X 42' PIPE OUTLET
WITH 18" FES @ OUTLET
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 4'
18" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 42 LIN. FT.
18" FES = 1 EACH



1997+90.00

HWY. 70 - SITE 2

STA. 1997+90 TO STA. 1998+45

Leonard.Speed 8/13/2020 1:23:20 PM
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REVISED DATE: $$REVDATE$$

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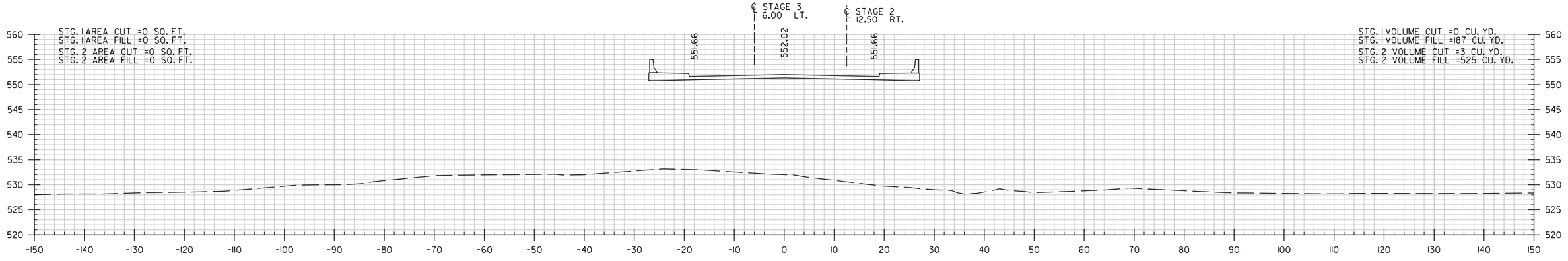
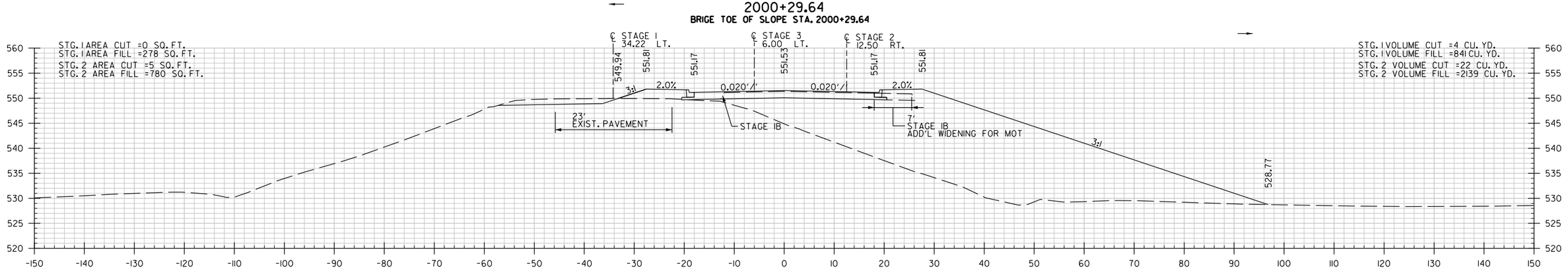
				6	ARK.			
				JOB NO.		030501	156	178

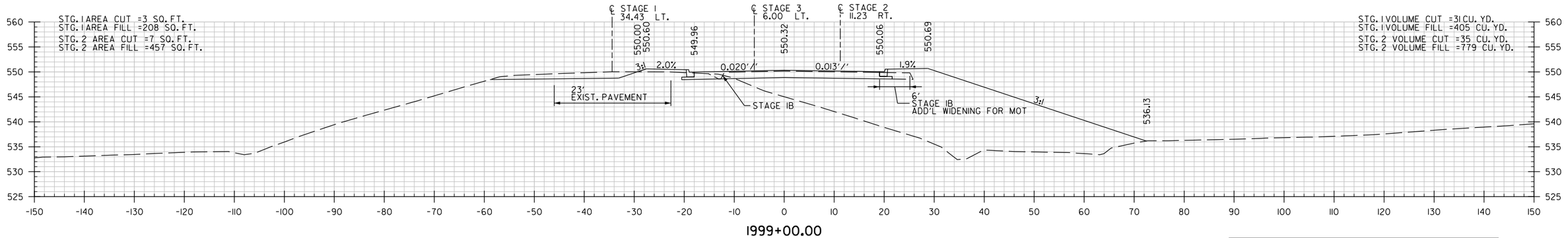
(2)



2000+29.64
BRIGE TOE OF SLOPE STA. 2000+29.64



1999+92.33
END BRIDGE STA. 1999+92.33



1999+00.00

HWY. 70 - SITE 2

STA. 1999+00 TO STA. 2000+30

LeonardSpeed 8/13/2020 12:32:12PM
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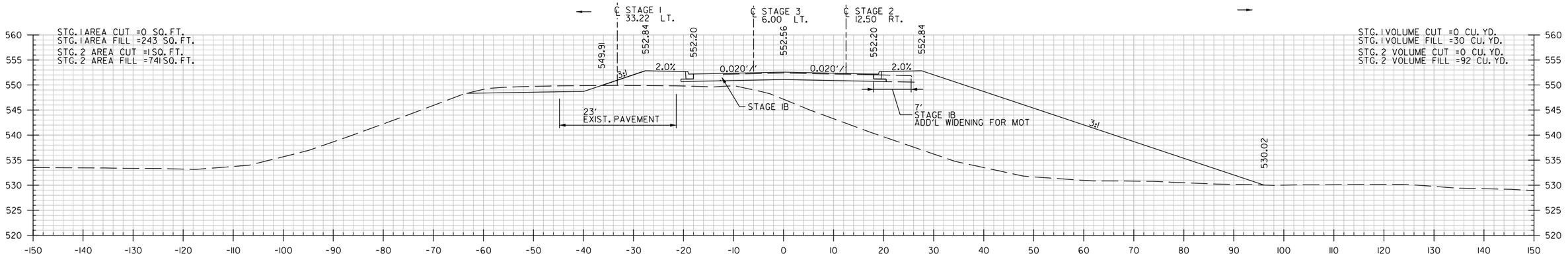
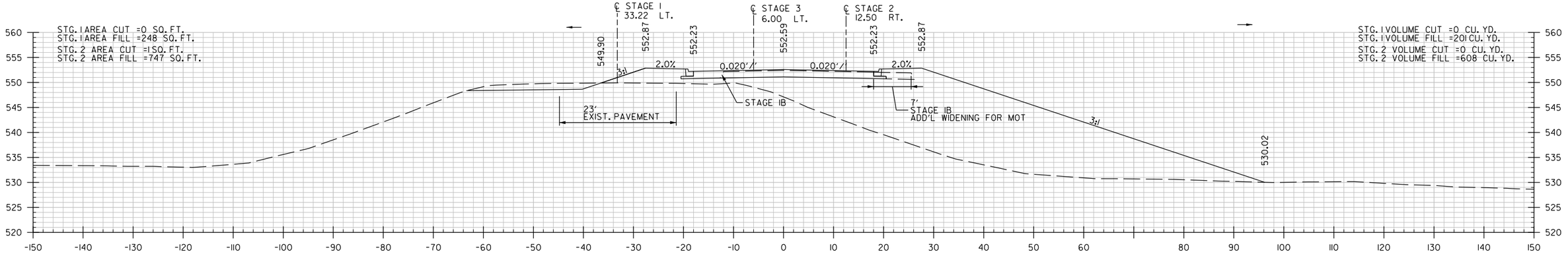
				6	ARK.			
				JOB NO.		030501	157	178

(2)

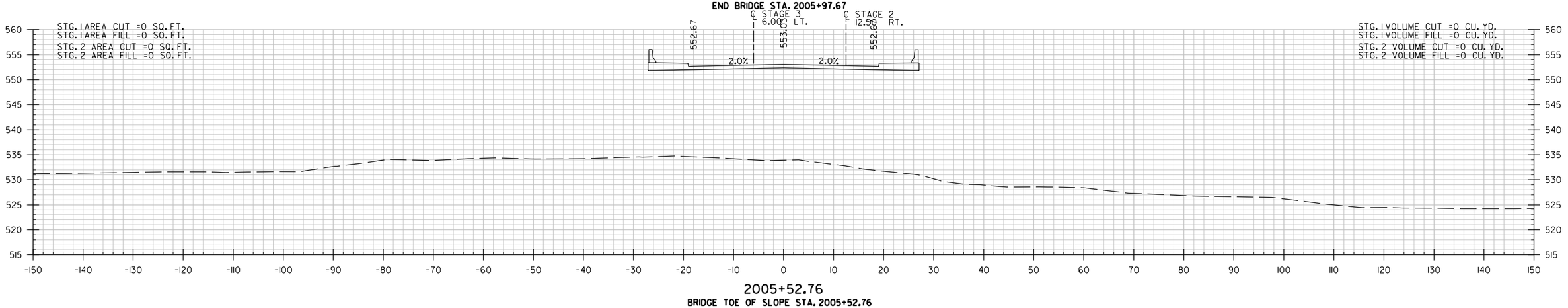


2006+00.00



2005+96.67

END BRIDGE STA. 2005+97.67



2005+52.76

BRIDGE TOE OF SLOPE STA. 2005+52.76

HWY. 70 - SITE 2

STA. 2005+53 TO STA. 2006+00

LeonardSpeed 8/13/2020 12:32:22 PM
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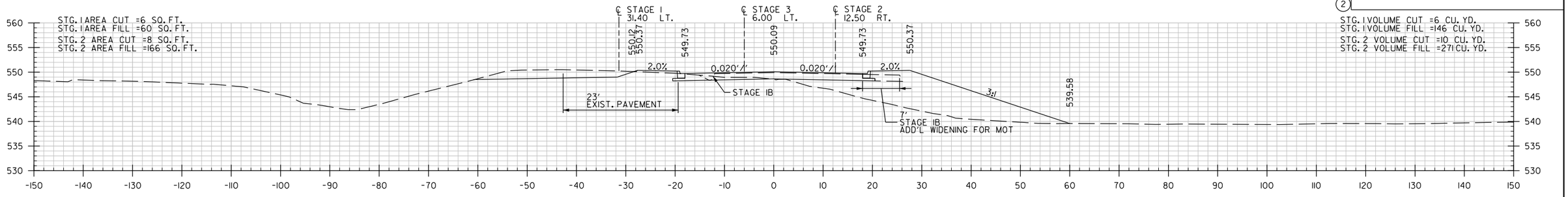
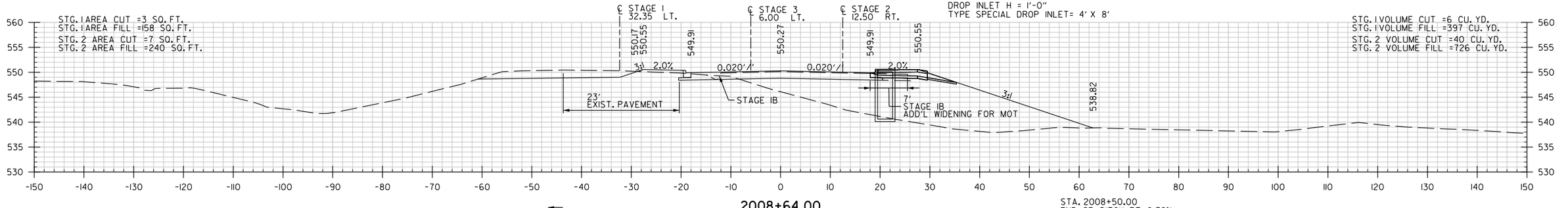
				JOB NO.		030501	158	178

(2)



2009+00.00

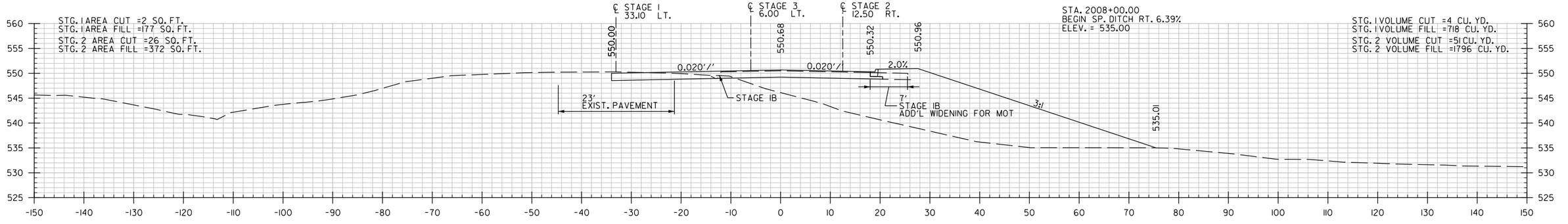
STA. 2008+64 19.00' RT. CONSTRUCT DROP INLET H = 1'-0" TYPE SPECIAL DROP INLET= 4' X 8'



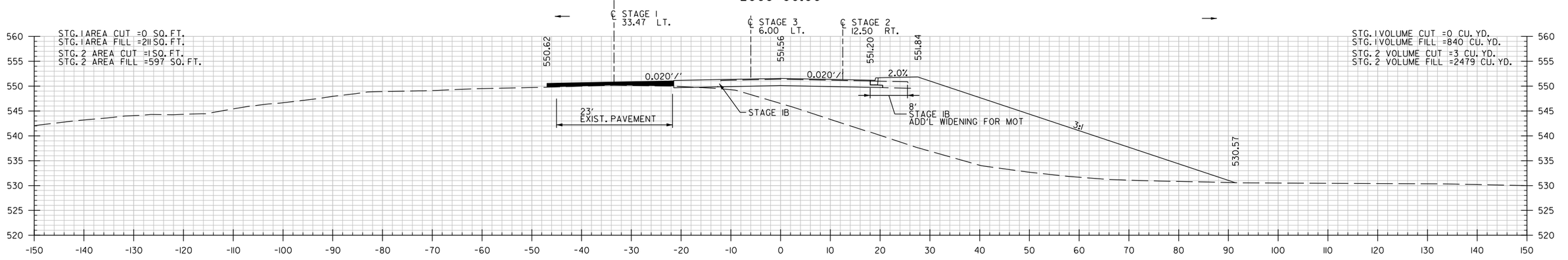
2008+64.00

STA. 2008+50.00
END SP. DITCH RT. 6.39%
ELEV. = 538.19

STA. 2008+00.00
BEGIN SP. DITCH RT. 6.39%
ELEV. = 535.00



2008+00.00



2007+00.00

HWY. 70 - SITE 2

STA. 2007+00 TO STA. 2009+00

Leonard.Speed 8/13/2020 12:23:22 PM
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				6	ARK.			
				JOB NO.		030501	159	178

(2)

Leonard.Speed 8/13/2020 12:23:23 PM
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Leonard.Speed 8/13/2020 1:23:24 PM
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				6	ARK.			
				JOB NO.		030501	161	178
				(2)				

Leonard.Speed 8/31/2020 12:23:25 PM
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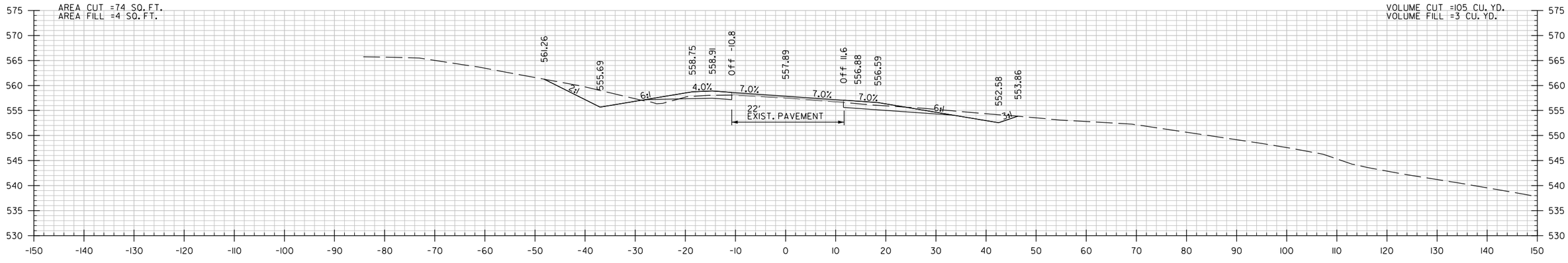
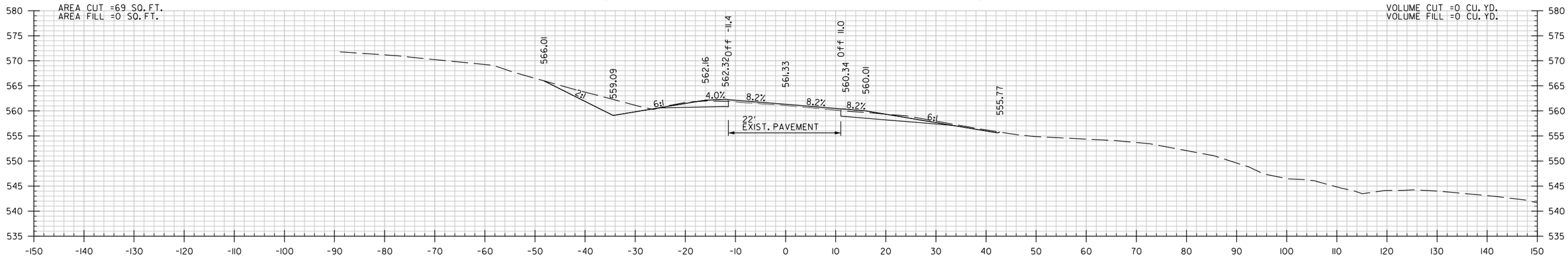
				(2)		CROSS SECTIONS		

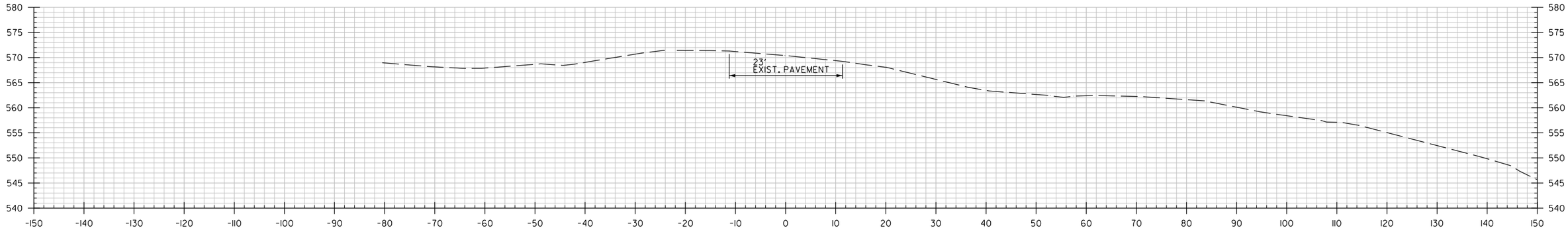


18+00.00



17+60.00

STA. 17+60.00 BEGIN HWY. 8 E. - SITE 2



16+60.00

BEGIN 100' TRANSITION

STA. 16+60 TO STA. 18+00

HWY. 8 E - SITE 2

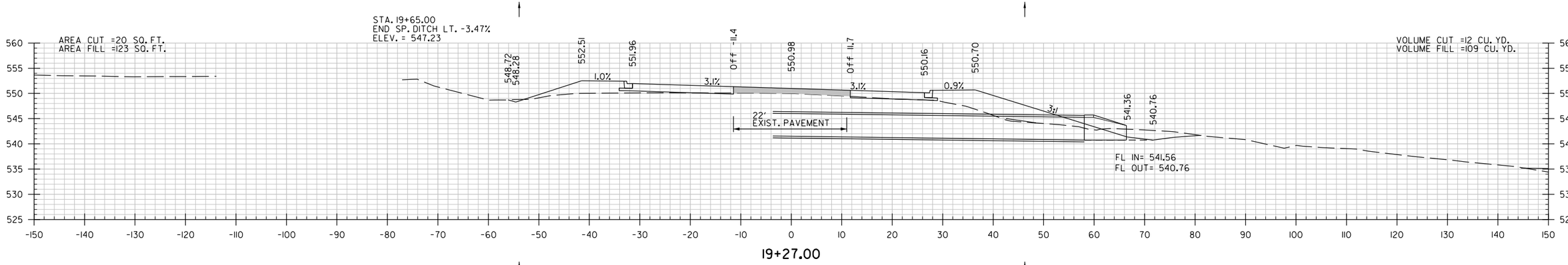
Leonard.Speed 8/13/2020 12:23:25 PM
WORKSPACE: AHTD
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_002.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

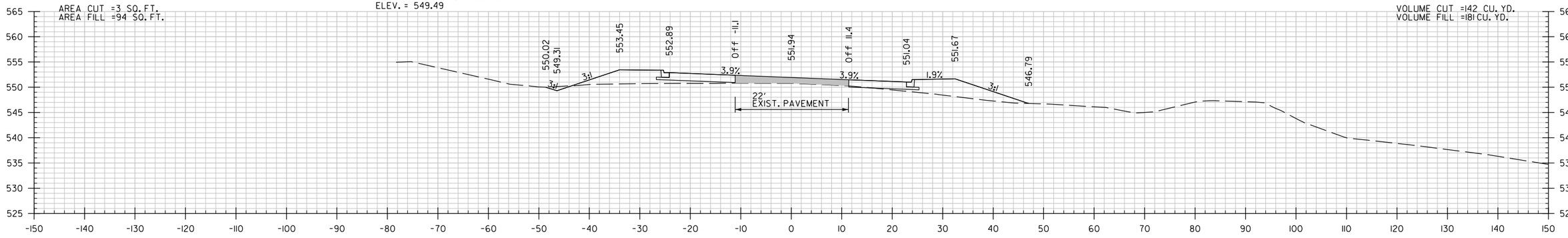
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	163	178
(2)	CROSS SECTIONS			

STA. 19+82.00 END HWY. 8 E. - SITE 2

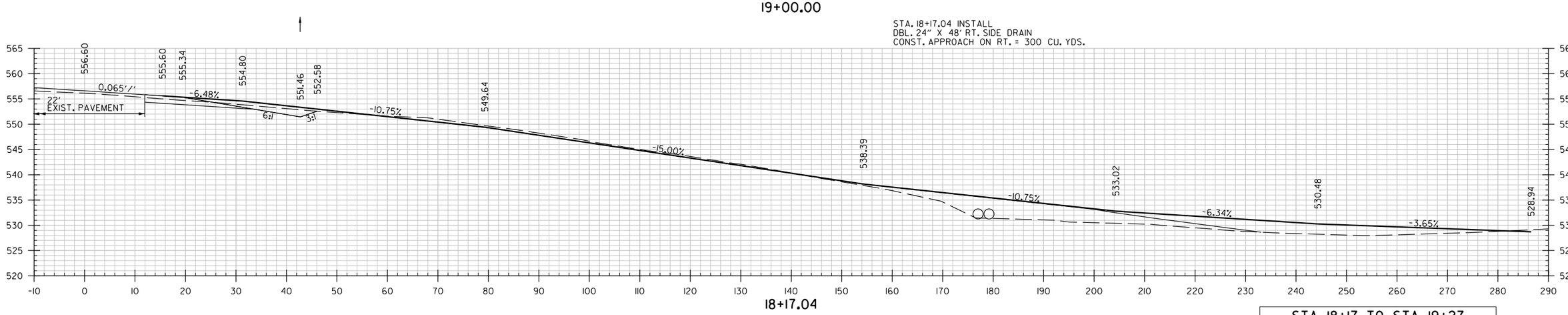
STA. 19+82.00 MATCH HWY. 70 EDGE OF PAVEMENT



19+27.00



19+00.00



18+17.04

STA. 18+17 TO STA. 19+27

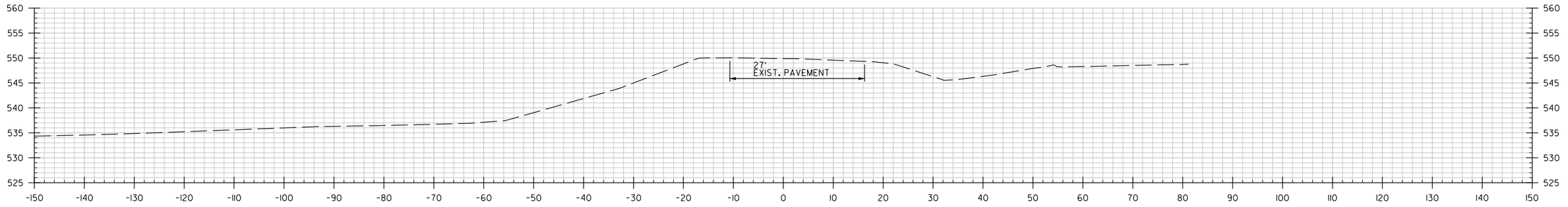
HWY. 8 E - SITE 2

Leonard,Speed 8/13/2020 12:32:6 PM
WORKSPACE: AHTD
Y:\Projects\ArDOT_166131_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_002.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

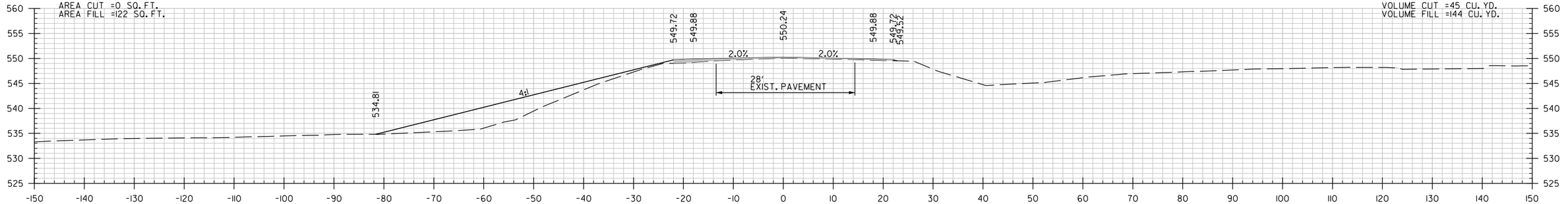
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	164	178
(2)	CROSS SECTIONS			

END 100' TRANSITION

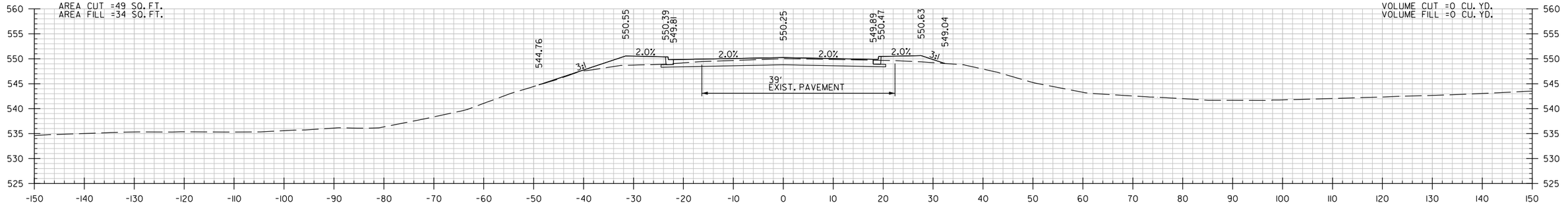


27+50.00

STA. 26+50.00 END HWY. 8 W./70B - SITE 2



26+50.00



26+00.00

STA. 26+18.00 MATCH HWY. 70 EDGE OF PAVEMENT

STA. 25+18.00 BEGIN HWY. 8 W./70B - SITE 2

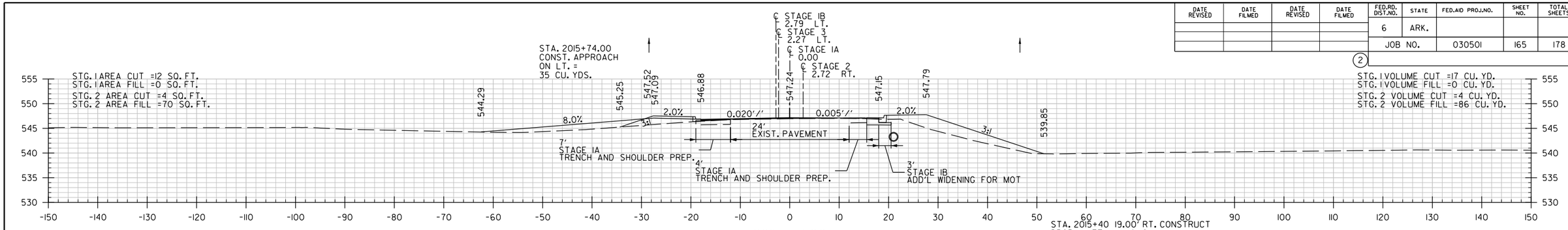
HWY. 8 W - SITE 2

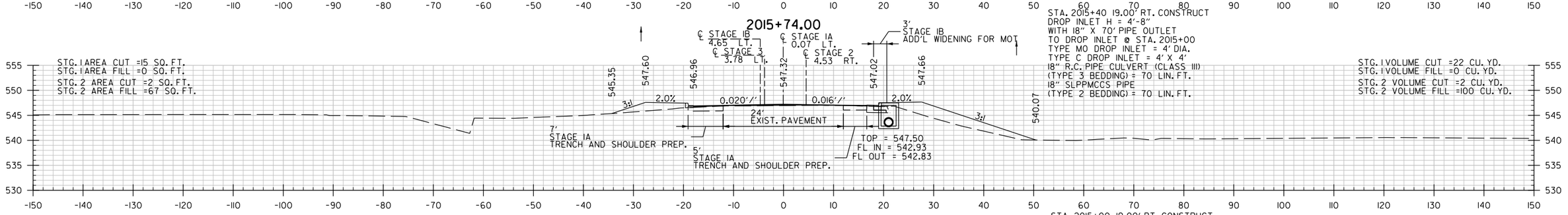
STA. 27+50 TO STA. 26+50

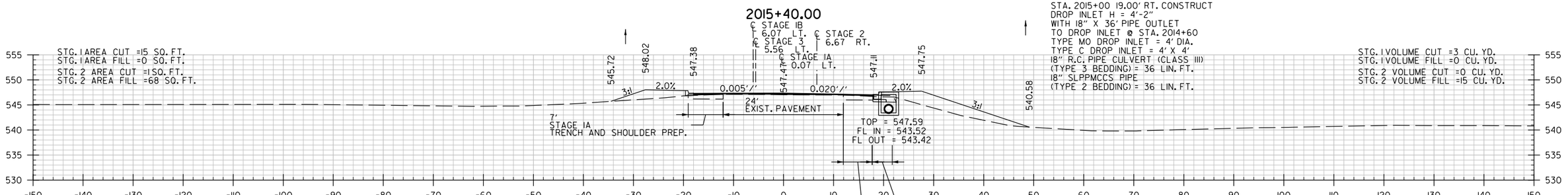
Leonard,Speed 8/13/2020 12:32:7 PM
WORKSPACE: AHTD
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_002.dgn
REVISED DATE: $$REVDATE$$

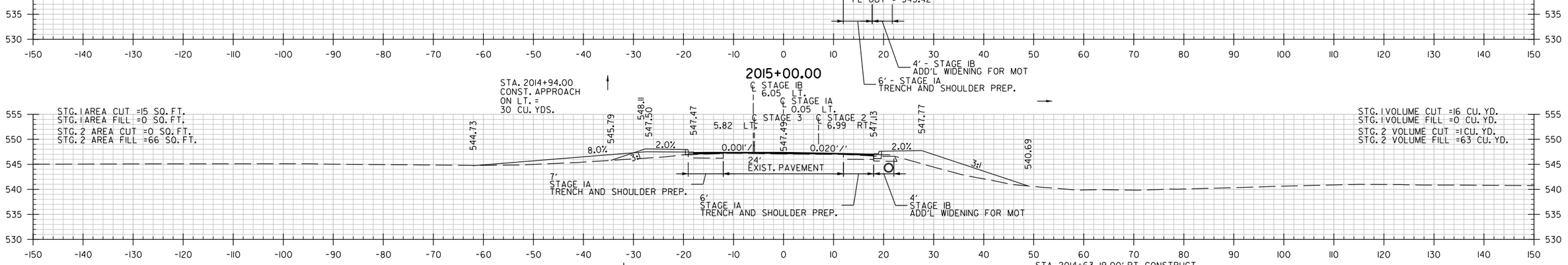
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	165	178

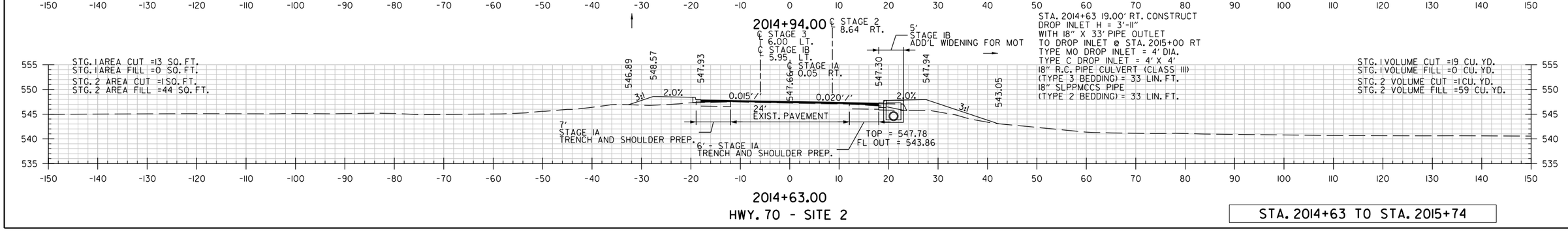
(2)











2014+63.00
HWY. 70 - SITE 2

STA. 2014+63 TO STA. 2015+74

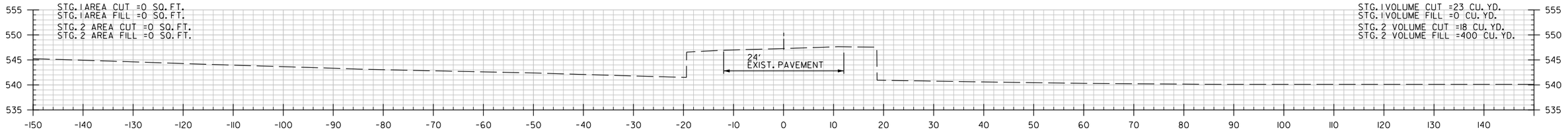
Leonard.Speed 8/13/2020 12:32:28 PM
WORKSPACE: AHTD
Y:\Projects\Ar-DOT-16(3)_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_002.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	166	178

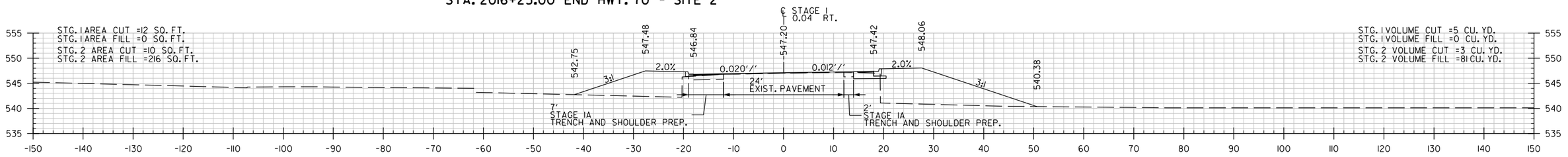
(2)

STA. 2017+25.00 END 100' TRANSITION

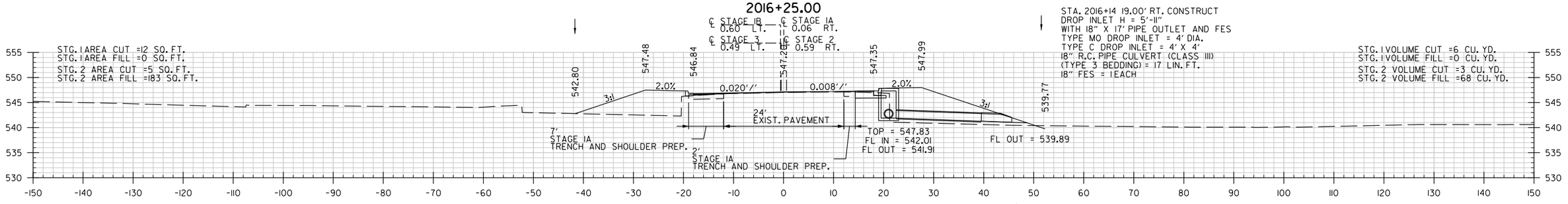


STA. 2016+25.00 END HWY. 70 - SITE 2

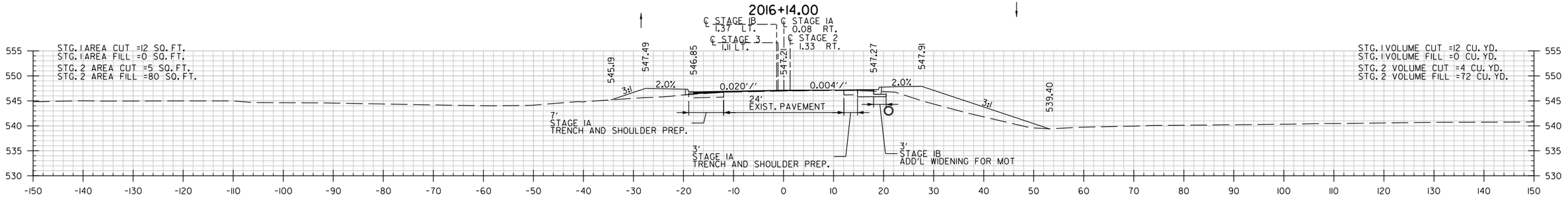
2017+25.00



2016+25.00



2016+14.00



2016+00.00

HWY. 70 - SITE 2

STA. 2016+00 TO STA. 2017+25

Leonard.Speed 8/13/2020 12:29 PM
WORKSPACE: AHTD
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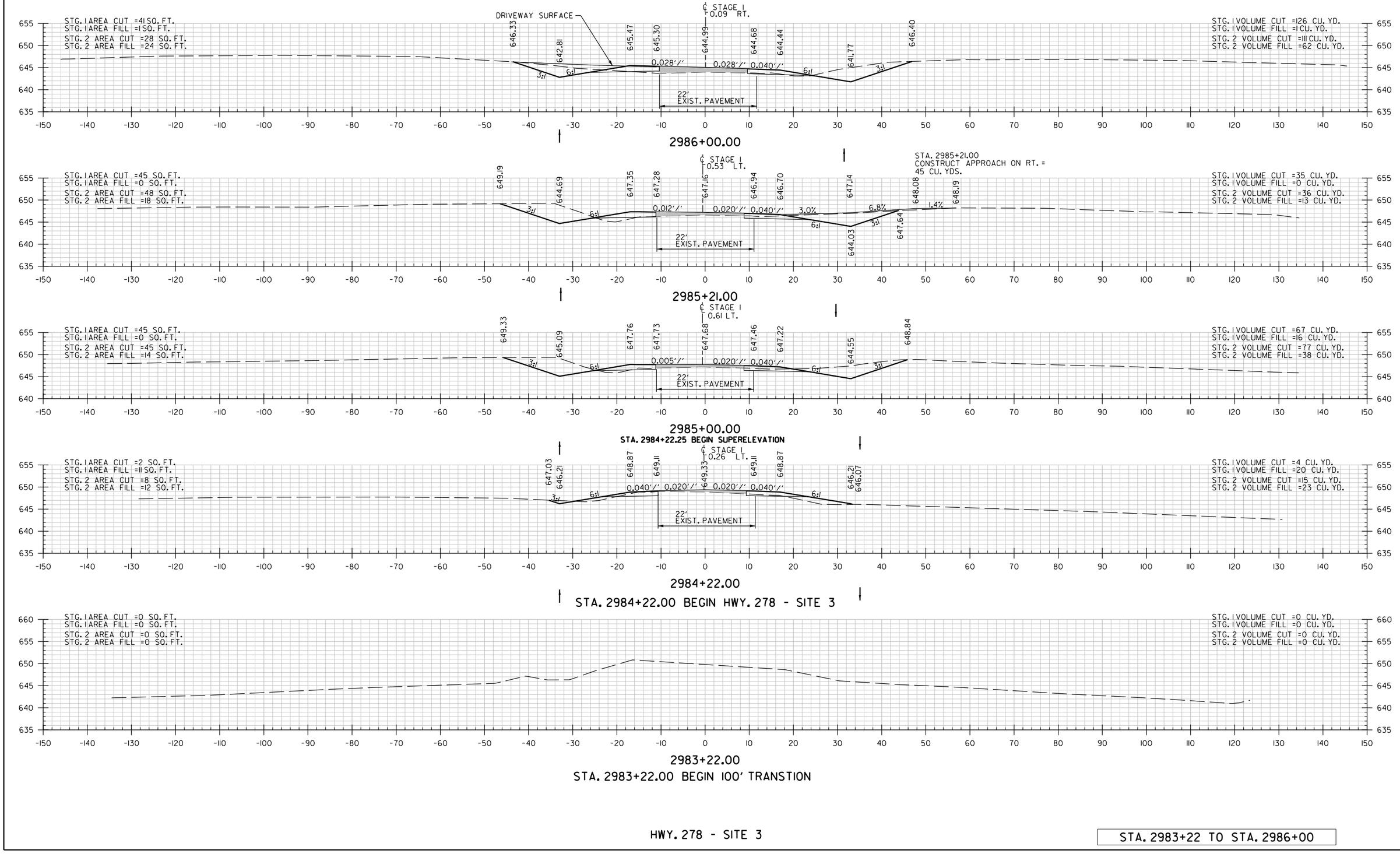
REVISED DATE: $$REVDATE$$

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.		030501	167	178
				(2)	CROSS SECTIONS			

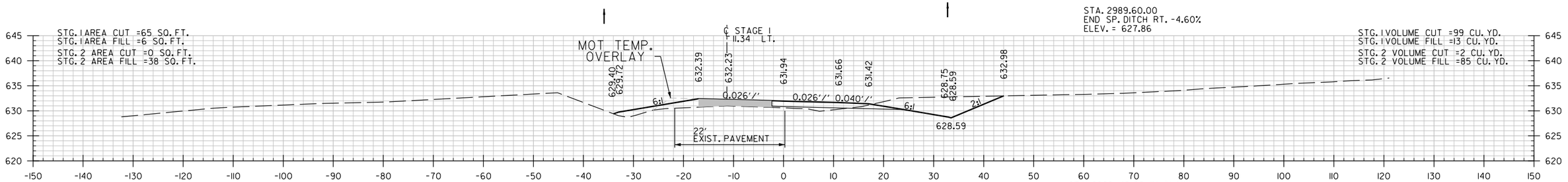


HWY. 278 - SITE 3

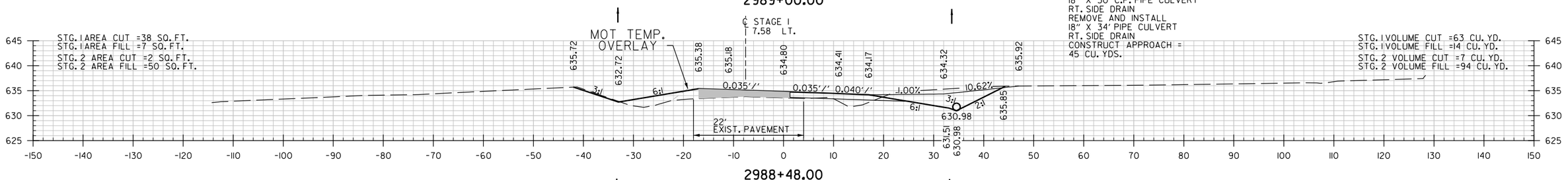
STA. 2983+22 TO STA. 2986+00

LeonardSpeed 8/13/2020 12:06 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1663\030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_003.dgn
REVISED DATE: $$REVDATE$$

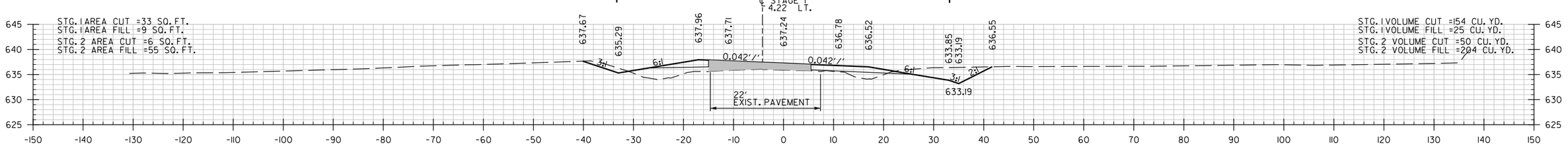
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	168	178
				(2)	CROSS SECTIONS			



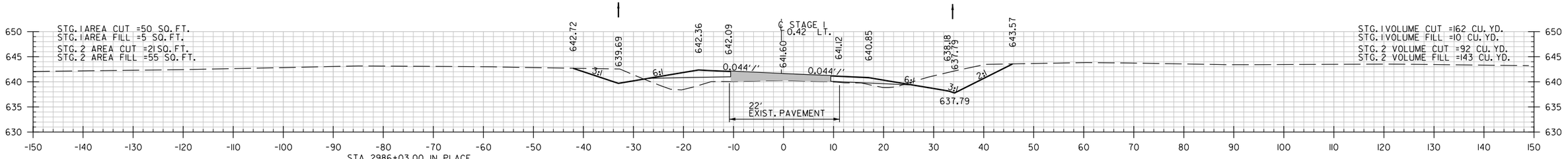
2989+00.00



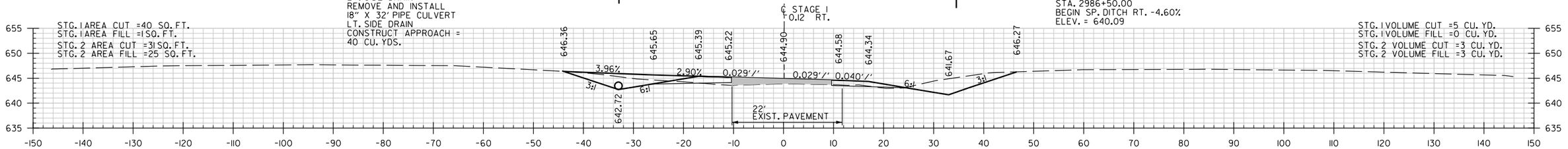
2988+48.00



2988+00.00



2987+00.00

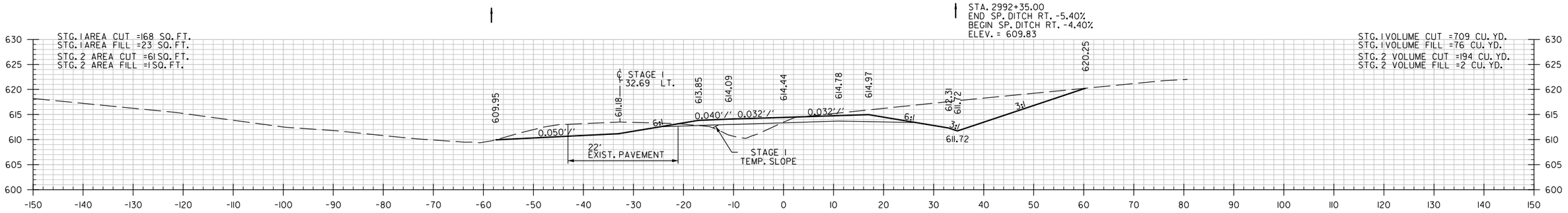


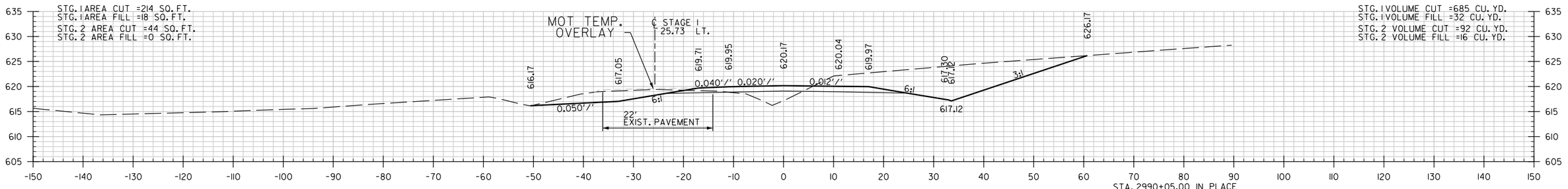
2986+03.00
HWY. 278 - SITE 3

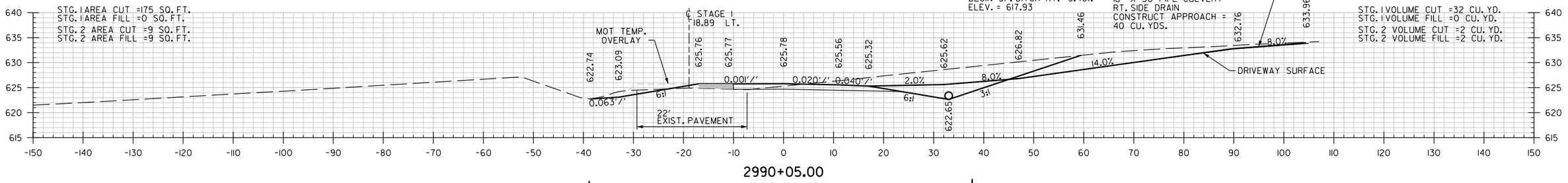
STA. 2986+03 TO STA. 2989+00

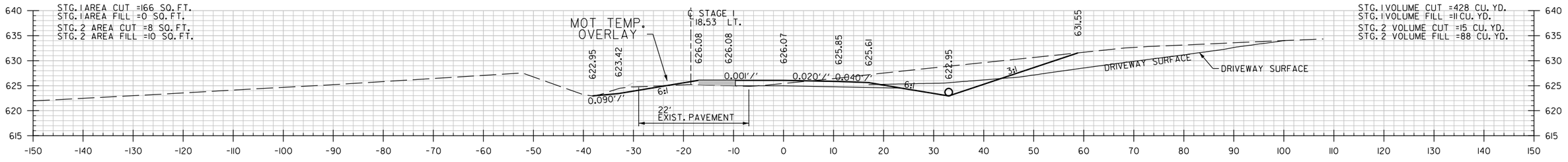
Leonard.Speed 8/13/2020 1:2407 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613\030501-Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_2I_CX_003.dgn
REVISED DATE: $$REVDATE$$

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.		030501	169	178
				(2)	CROSS SECTIONS			







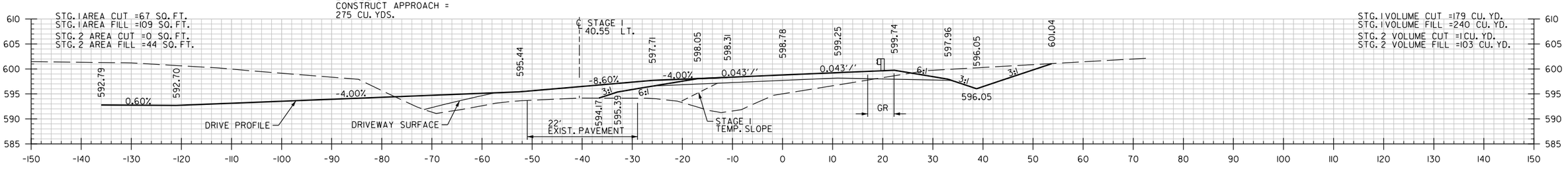


STA. 2990+00 TO STA. 2992+00

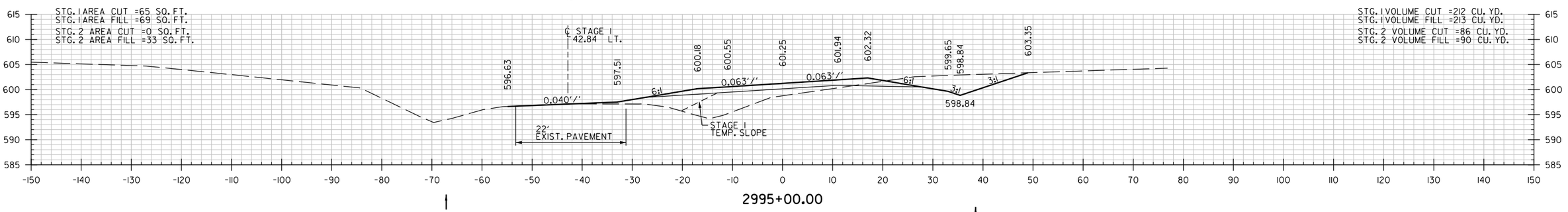
LeonardSpeed 8/13/2020 12:40:8 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_1603_03050_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R03050I_21_CX_003.dgn
REVISED DATE: $$REVDATE$$

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.		030501	170	178
				(2)	CROSS SECTIONS			

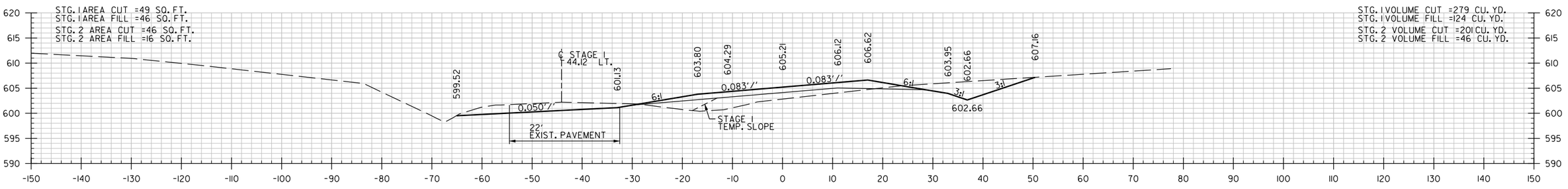
STA. 2995+73.00 IN PLACE
30" X 18" X 30' C.M. OVAL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 74' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
275 CU. YDS.



2995+73.00

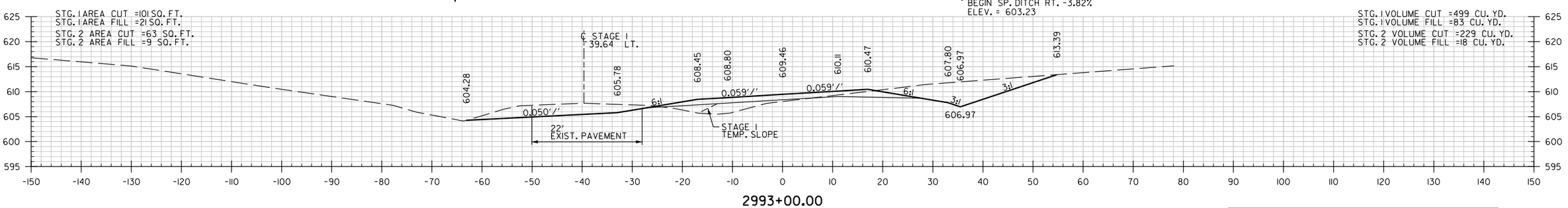


2995+00.00



2994+00.00

STA. 2993+85.00
END SP. DITCH RT. -4.40%
BEGIN SP. DITCH RT. -3.82%
ELEV. = 603.23



2993+00.00
HWY. 278 - SITE 3

STA. 2993+00 TO STA. 2995+73

Leonard.Speed 8/13/2020 12:40:9 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_I66(3)_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501-2I_CX_003.dgn
REVISED DATE: $$REVDATE$$

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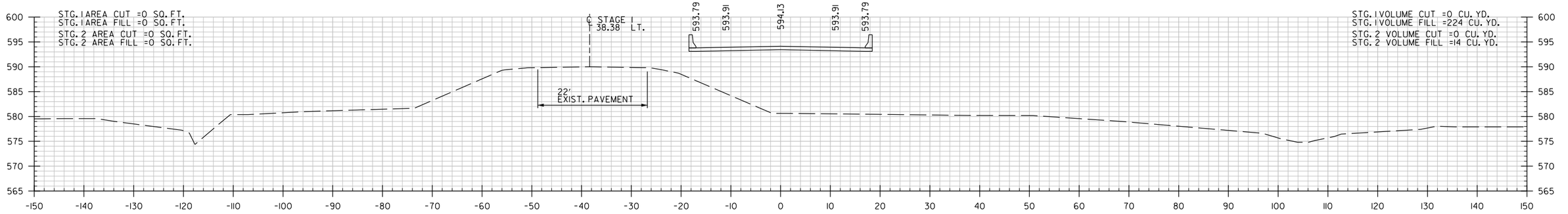
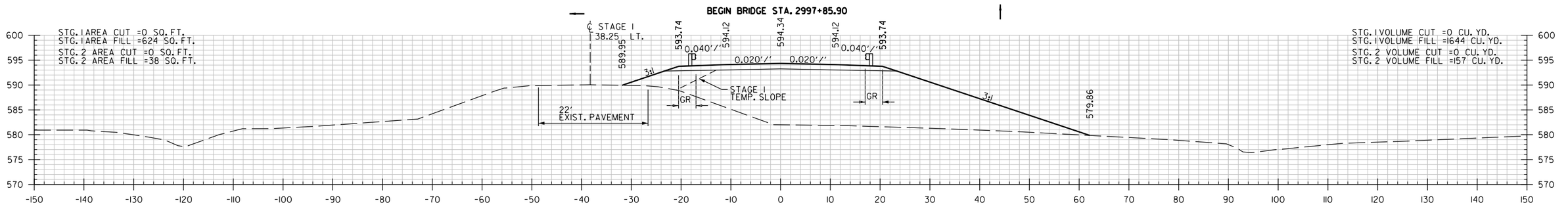
				6	ARK.			
				JOB NO.		030501	171	178
				(2)	CROSS SECTIONS			

BRIDGE TOE OF SLOPE STA. 2998+05.34

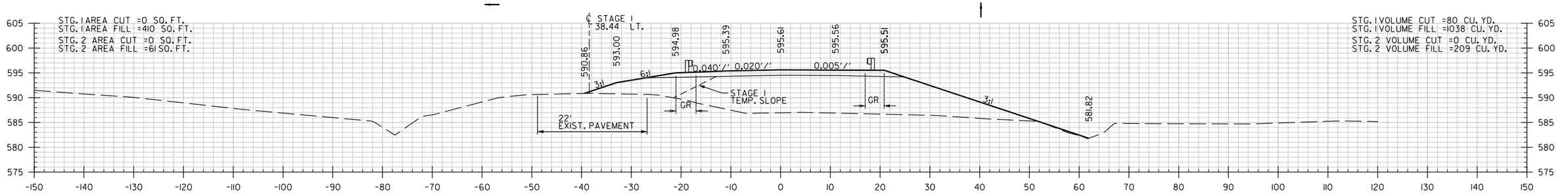


2998+05.34

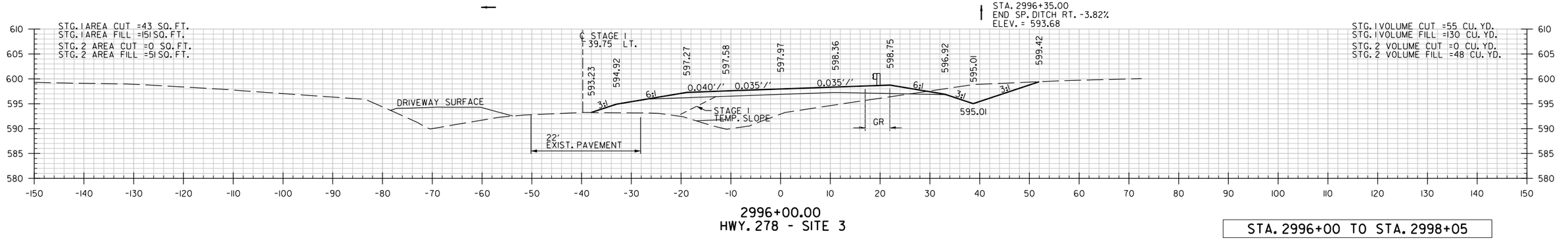
BEGIN BRIDGE STA. 2997+85.90



2997+85.90



2997+00.00

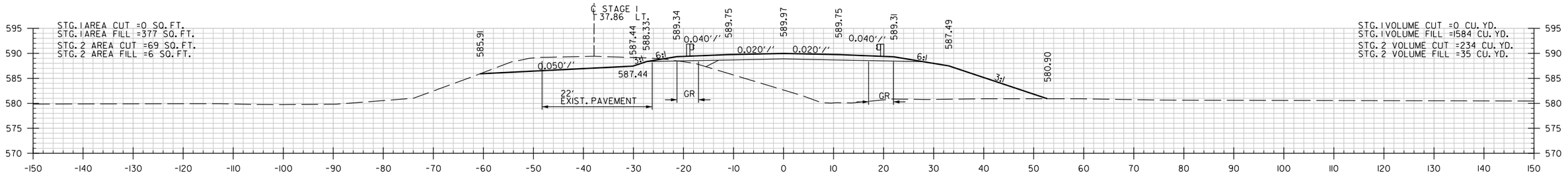


2996+00.00
HWY. 278 - SITE 3

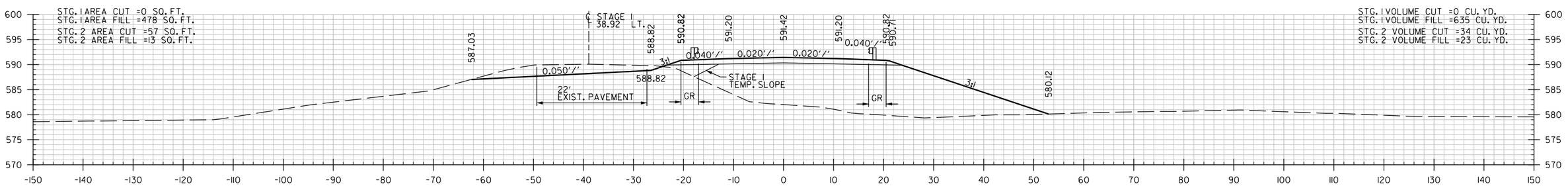
STA. 2996+00 TO STA. 2998+05

Leonard.Speed 8/31/2020 12:40:9 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613\03050\Caddo & Saline River Bridges\Design\CIVIL\Drawings\R03050\2\CX_003.dgn
REVISED DATE: $$REVDATE$$

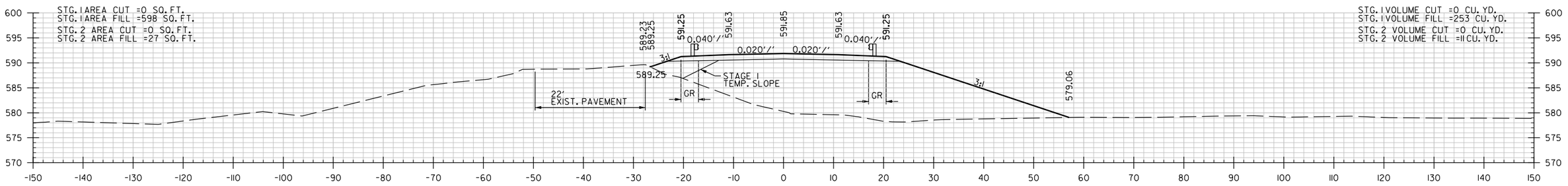
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030501	172	178
				(2)	CROSS SECTIONS			



3003+00.00



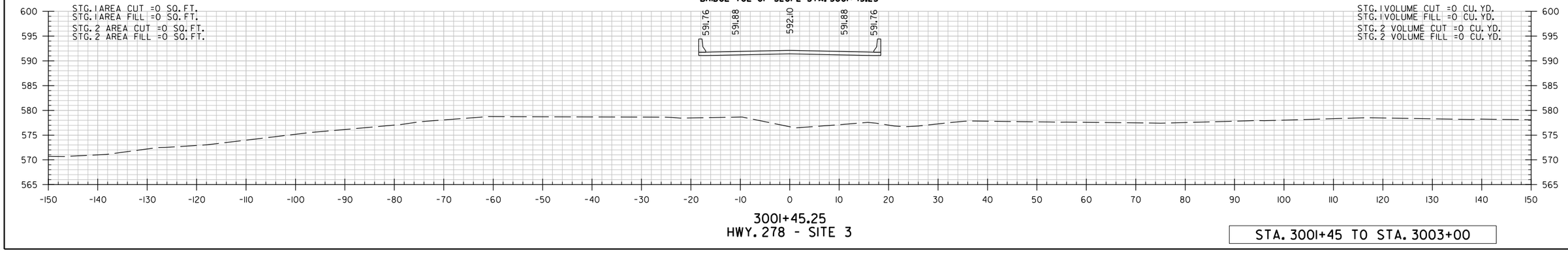
3002+00.00



3001+68.10

BEGIN BRIDGE STA. 3001+68.10

BRIDGE TOE OF SLOPE STA. 3001+45.25



3001+45.25

HWY. 278 - SITE 3

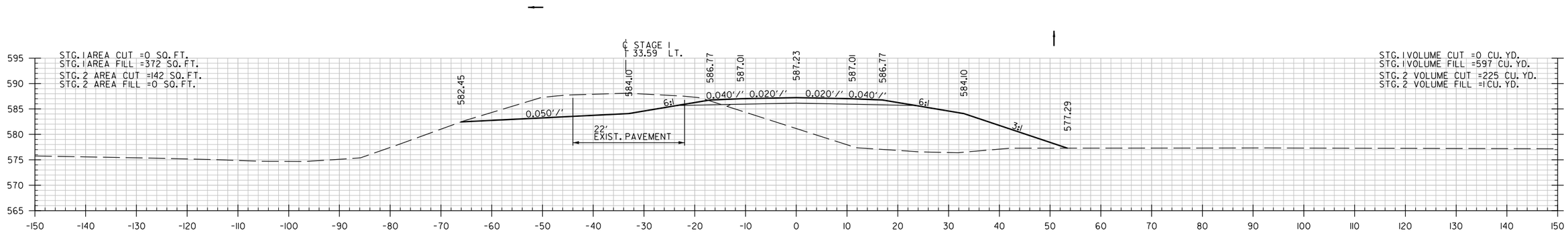
STA. 3001+45 TO STA. 3003+00

Leonard.Speed 8/13/2020 12:41:10 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_16613_030501_Caddo & Saline River Bridges\Design\CIVIL\Drawings\R030501_21_CX_003.dgn
REVISED DATE: $$REVDATE$$

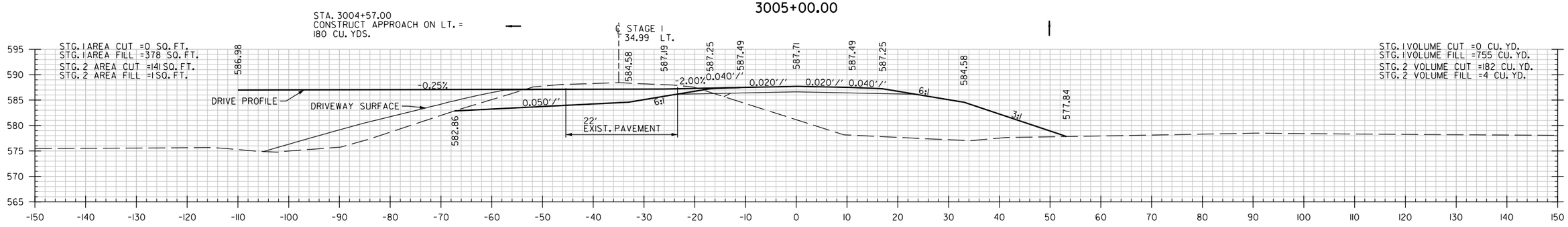
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	173	178

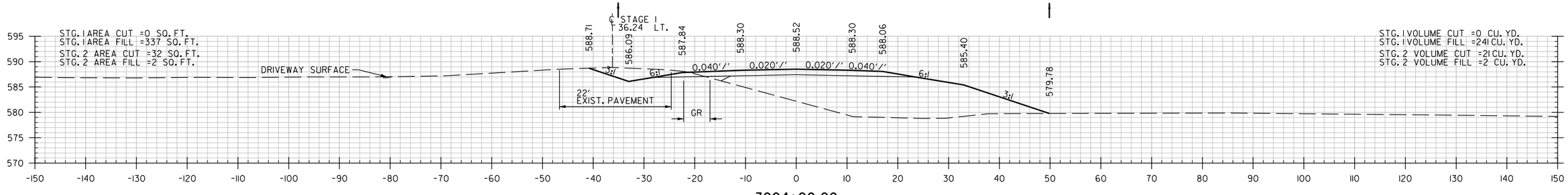
(2) CROSS SECTIONS



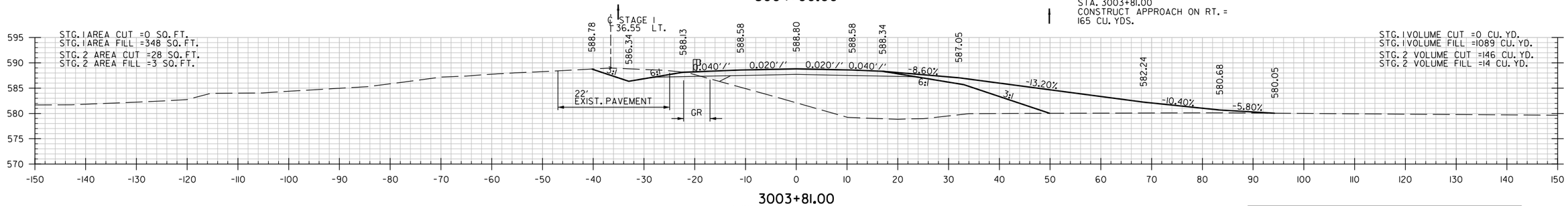
3005+00.00



3004+57.00



3004+00.00



3003+81.00
HWY. 278 - SITE 3

STA. 3003+81 TO STA. 3005+00

Leonard.Speed 8/13/2020 12:41 PM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

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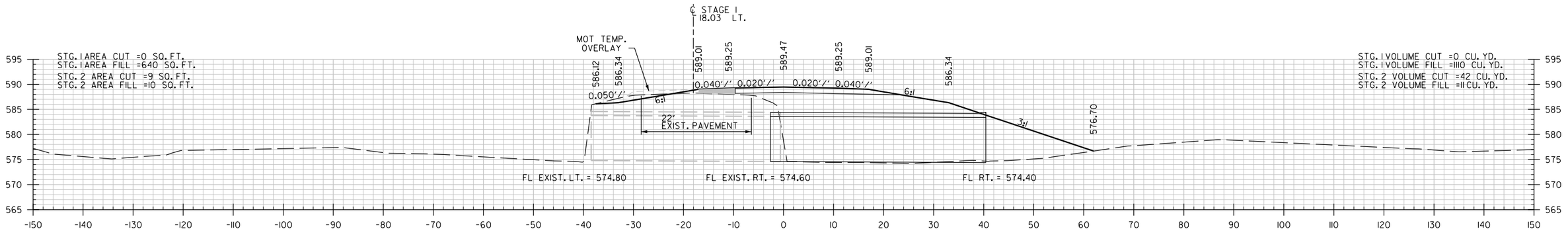

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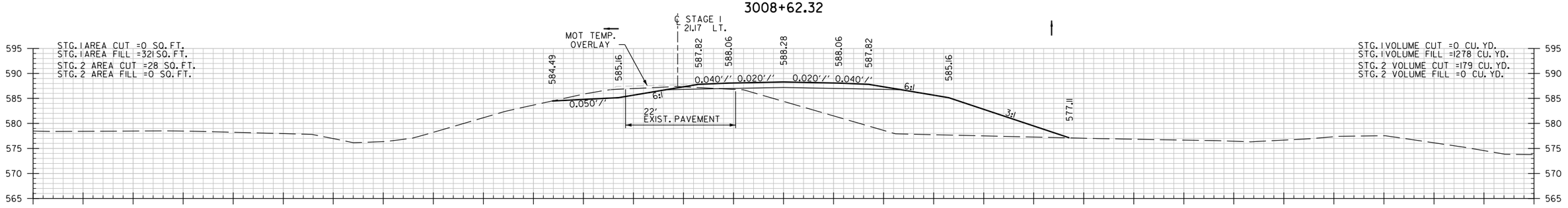

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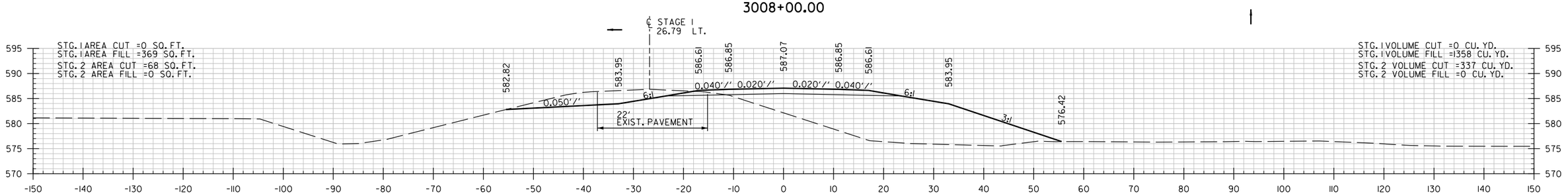

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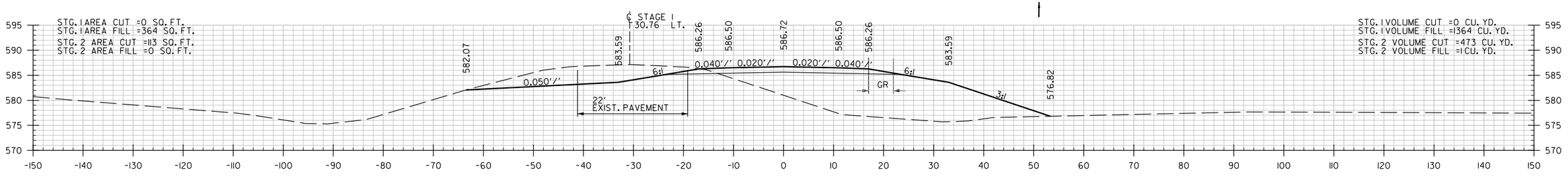

3006+00.00
HWY. 278 - SITE 3

STA. 3006+00 TO STA. 3008+62

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REVISED DATE: $$REVDATE$$

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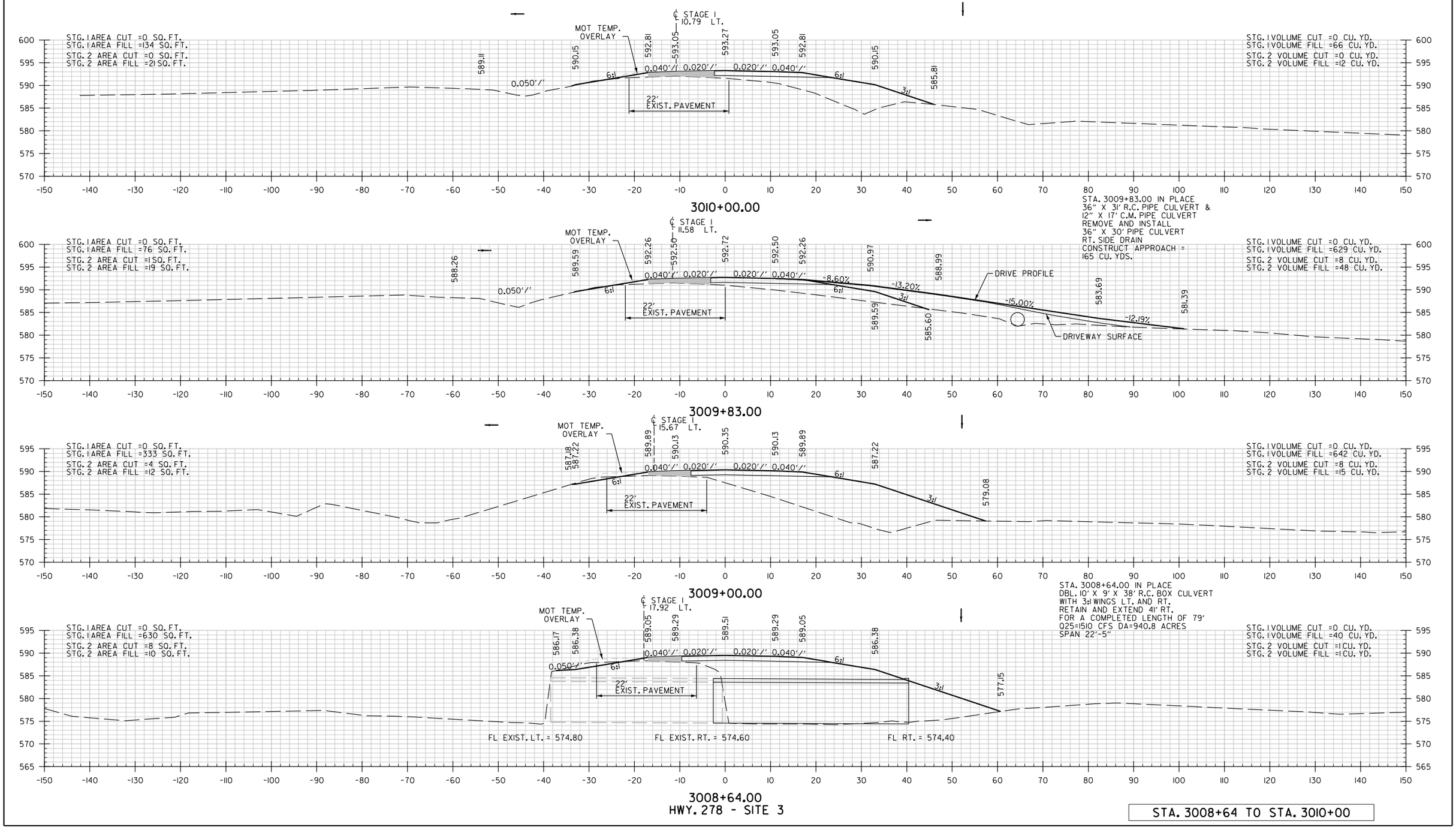

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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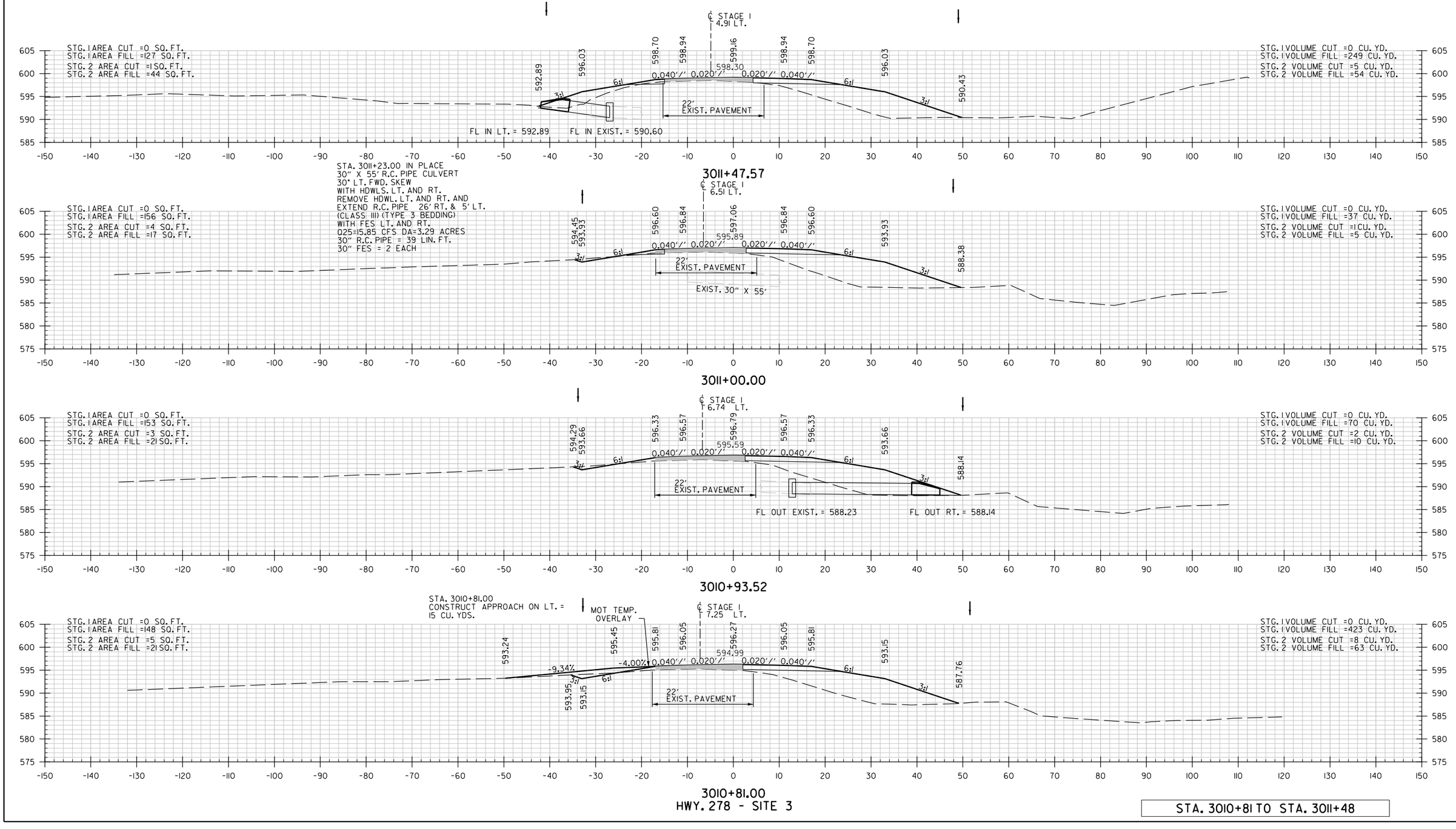
				JOB NO.		030501	176	178
				(2)	CROSS SECTIONS			



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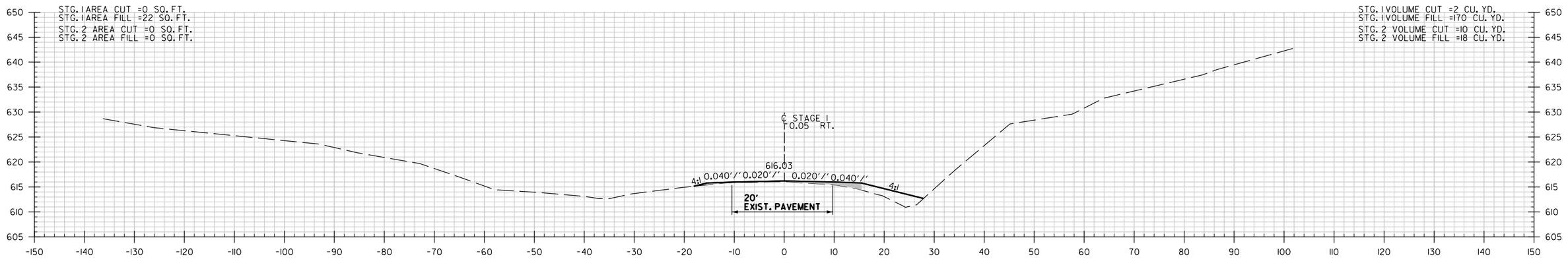
REVISED DATE: $$REVDATE$$

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.		030501	177	178

(2) CROSS SECTIONS



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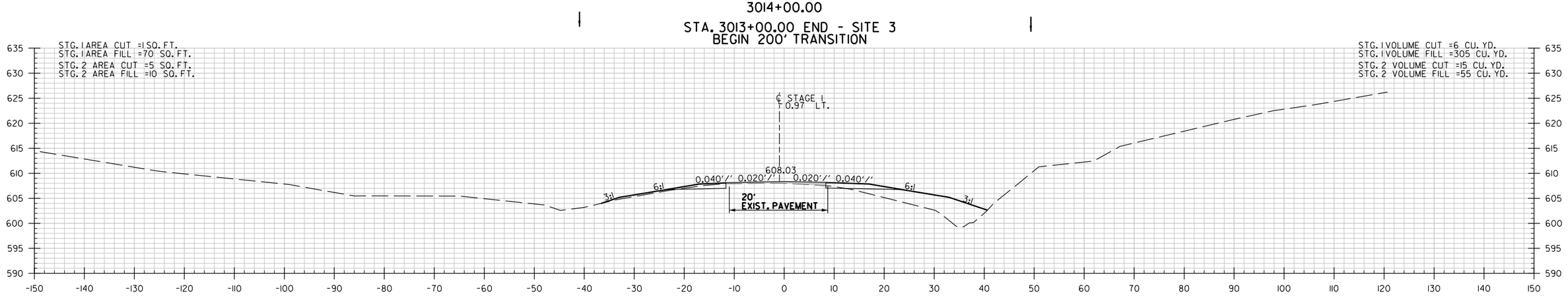
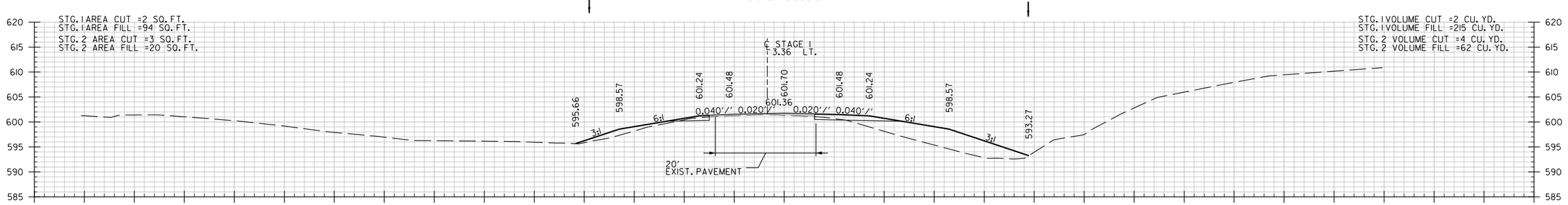
BEGIN 200' TRANSITION



3013+00.00



3012+00.00

STA. 3012+00.00 END PROFILE GRADE - BEGIN NOTCH, WIDEN, & OVERLAY
HWY. 278 - SITE 3

STA. 3012+00 TO STA. 3014+00

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REVISED DATE: $$REVDATE$$

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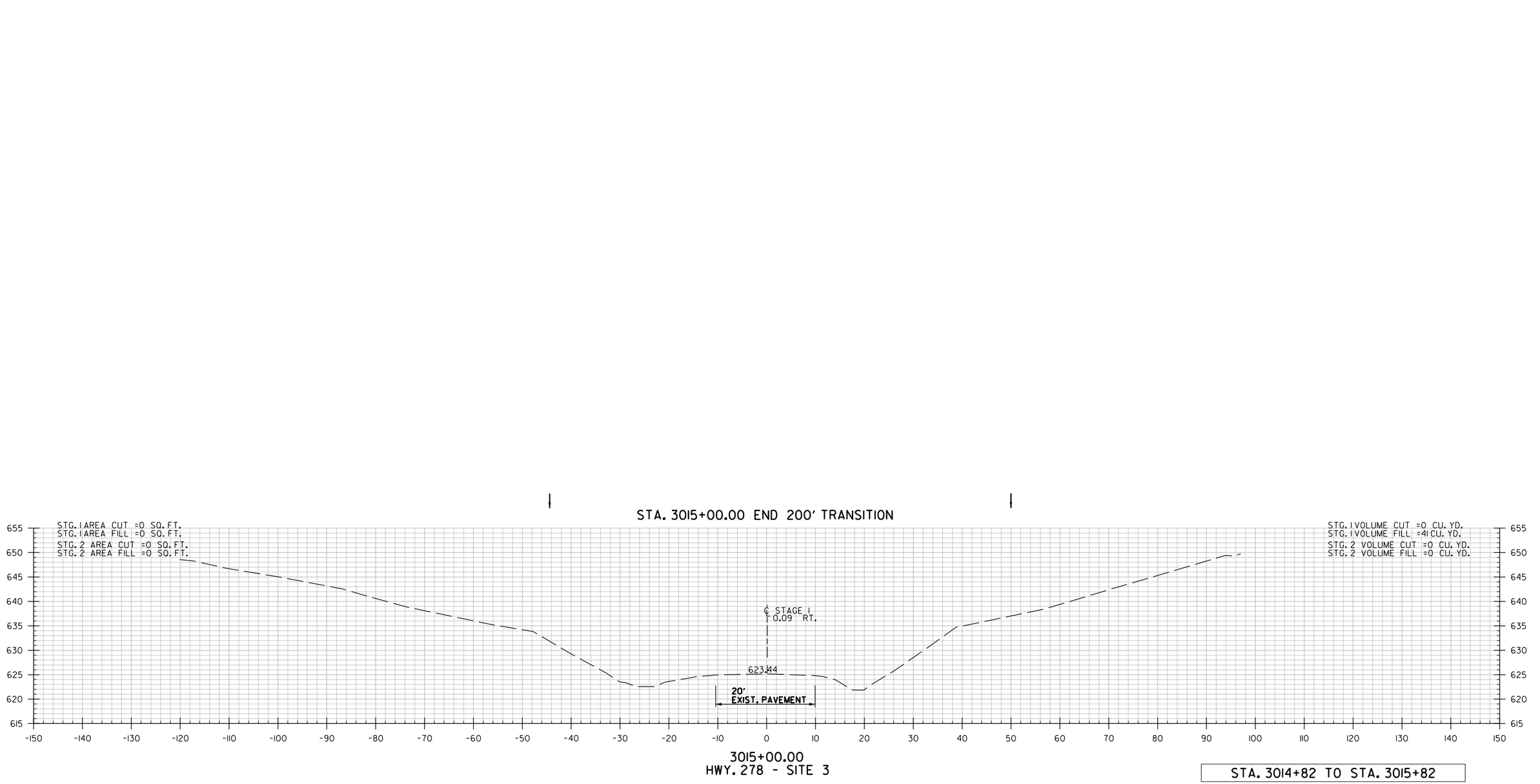
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030501	178	178

(2) CROSS SECTIONS



STA. 3014+82 TO STA. 3015+82

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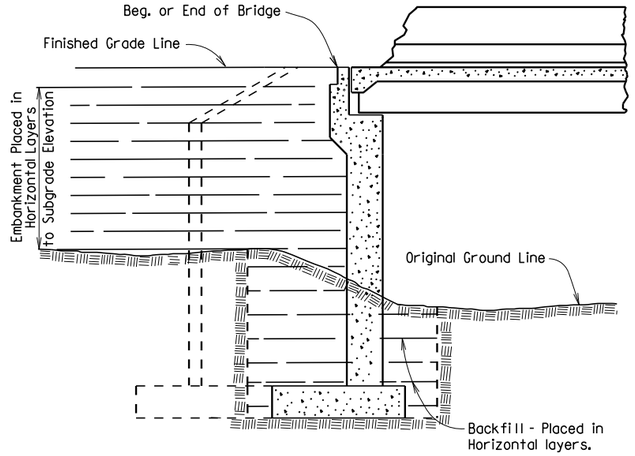
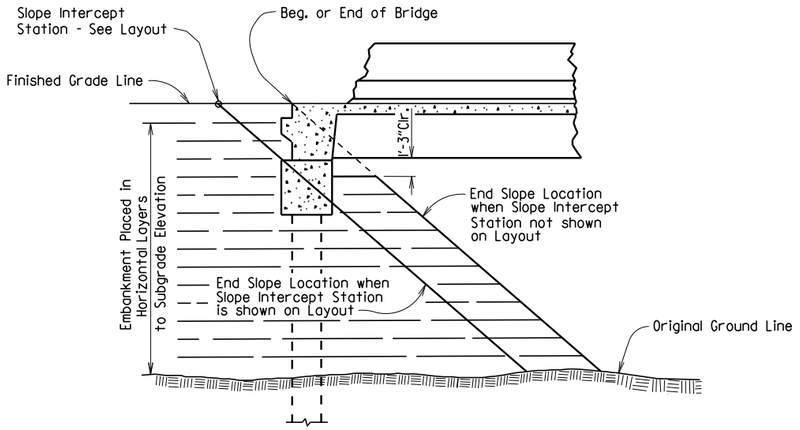
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

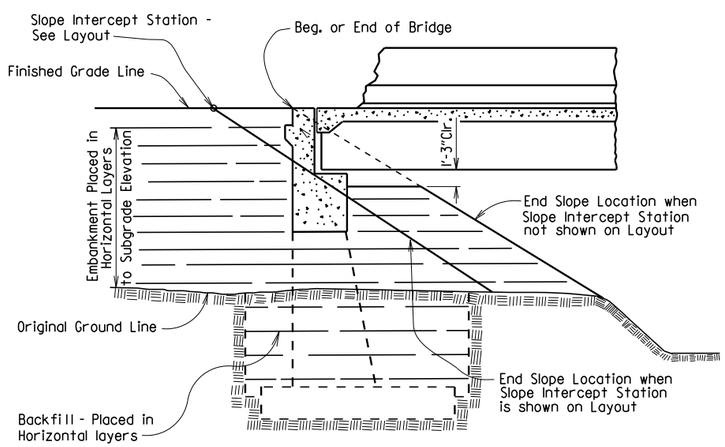
1 EMBANKMENT & BACKFILL 55000



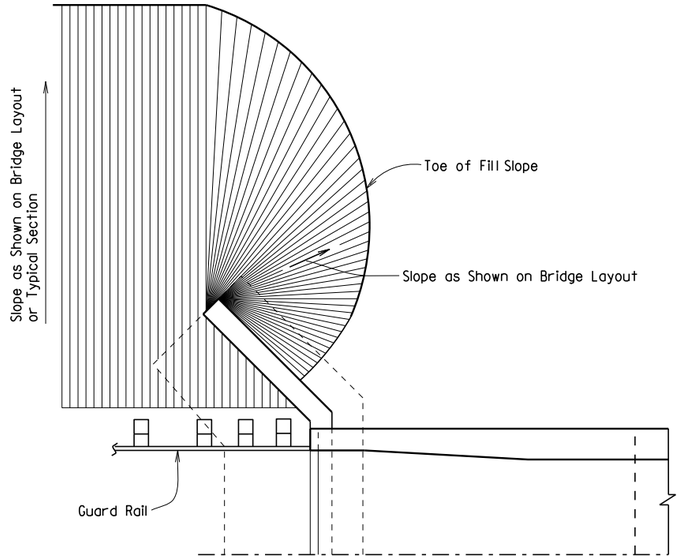
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



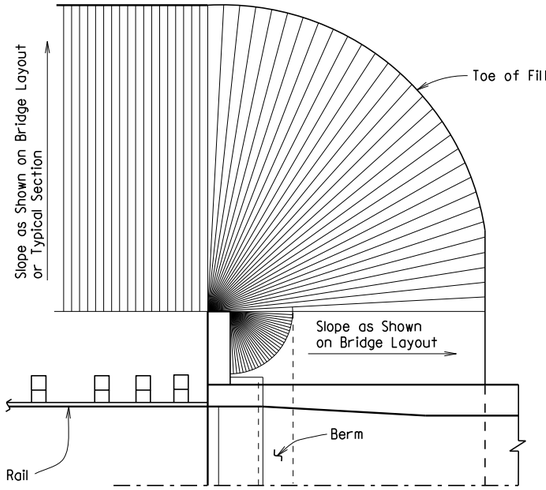
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



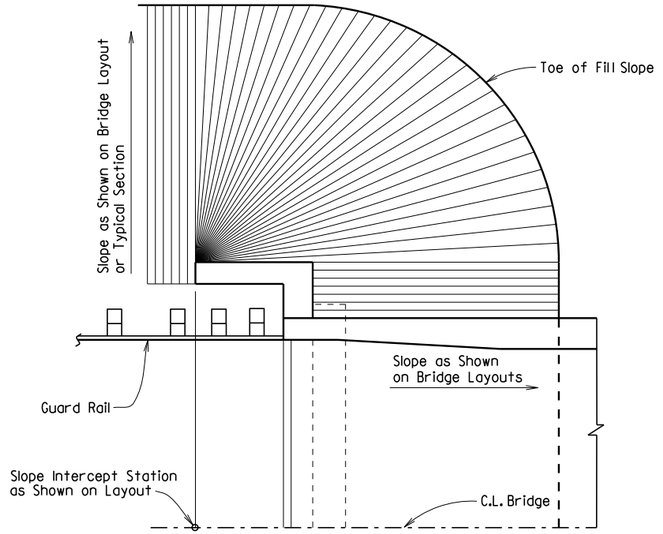
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



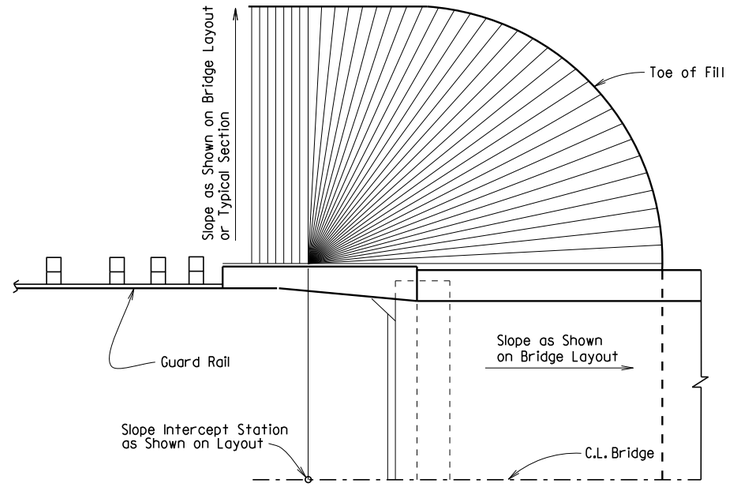
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

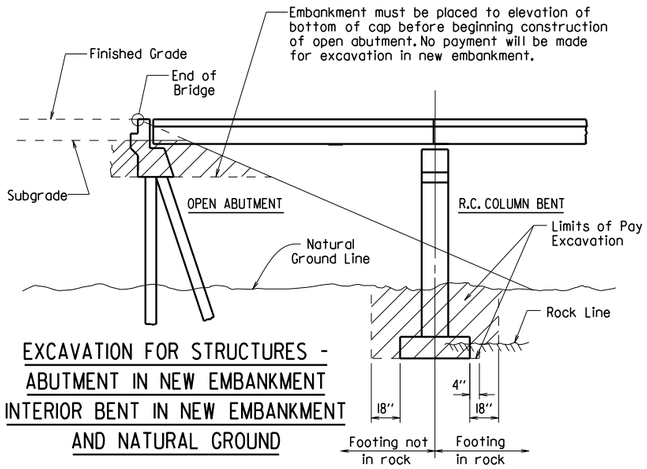
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

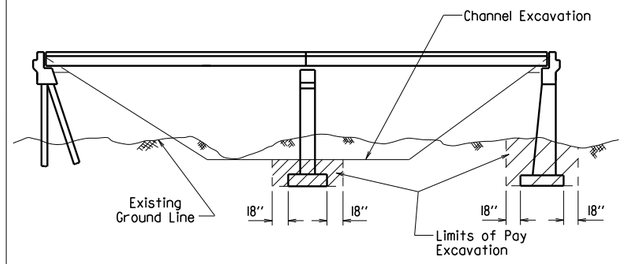
DRAWING NO. 55000

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

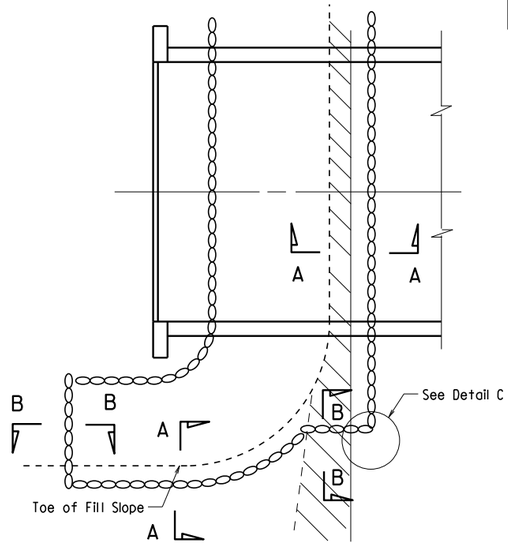
1 RIPRAP & EXCAV. 55001



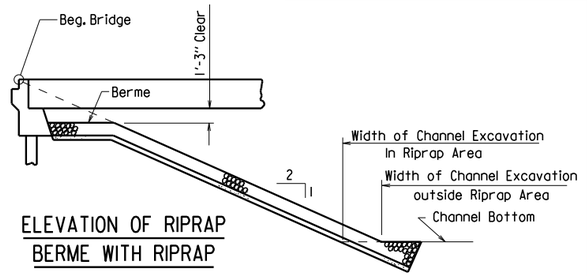
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



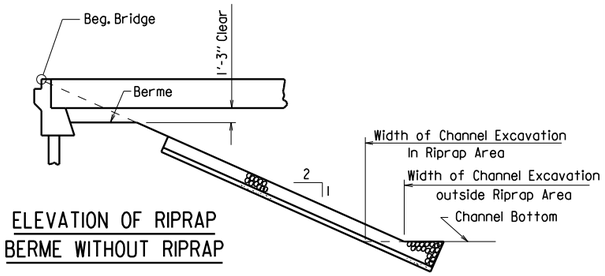
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



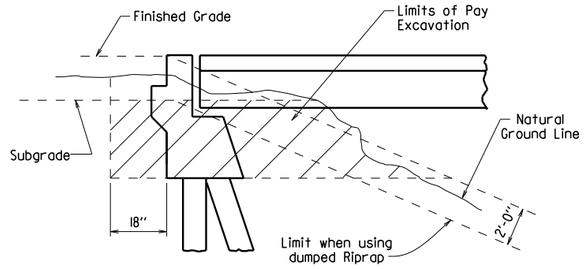
PLAN OF DUMPED RIPRAP



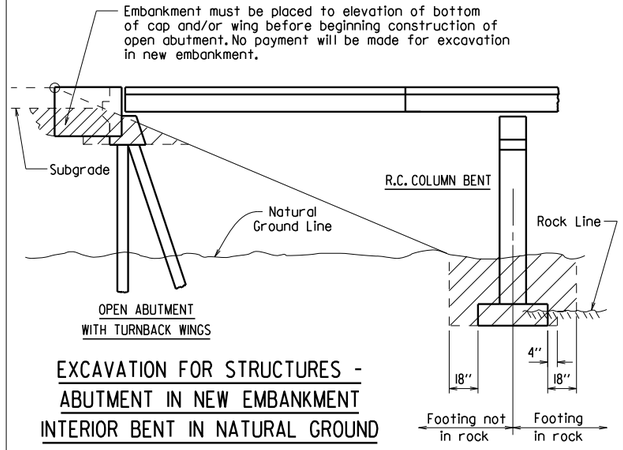
ELEVATION OF RIPRAP BERME WITH RIPRAP



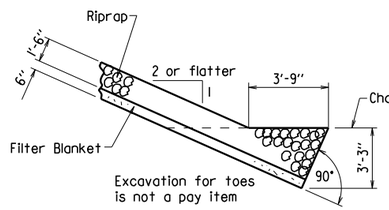
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND

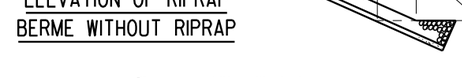


EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND

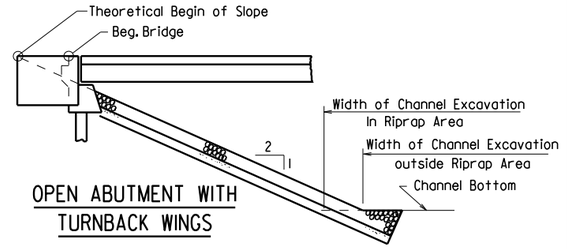


SECTION A-A

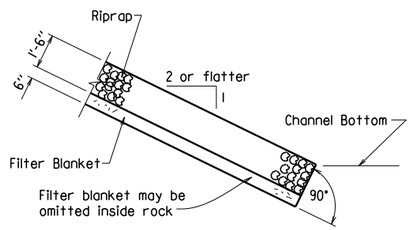
(Toe Excavation in Soil)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



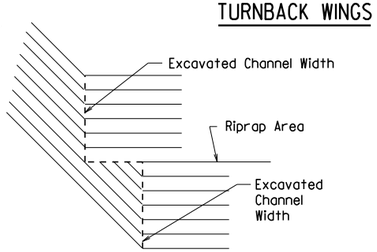
SECTION A-A

(Toe Excavation in Rock)

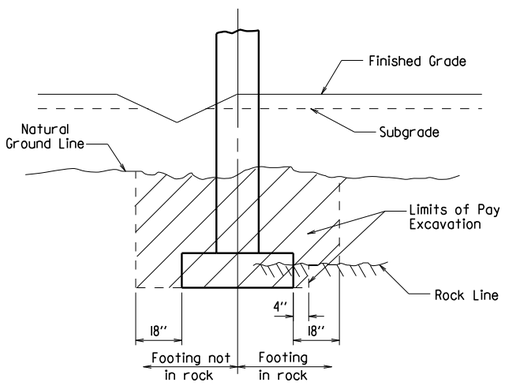
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

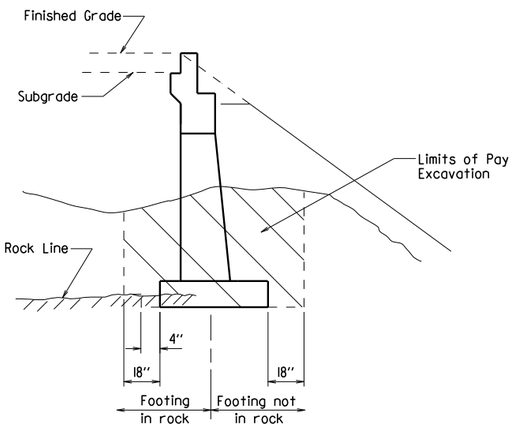
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



DETAIL C



EXCAVATION FOR STRUCTURES - 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.

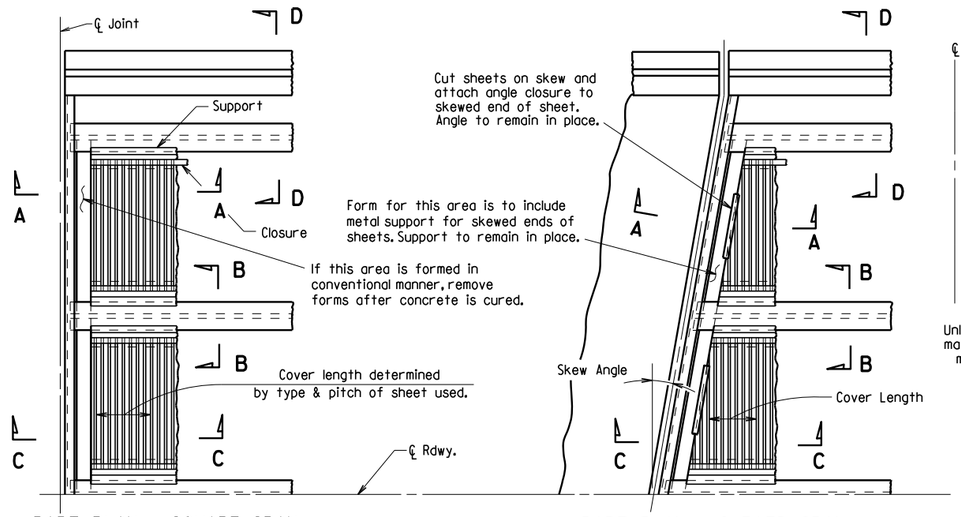
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b5500l.dgn

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

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

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

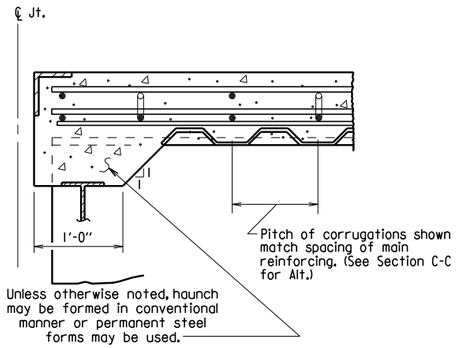


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

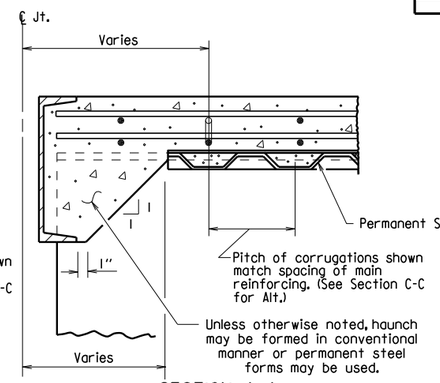
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



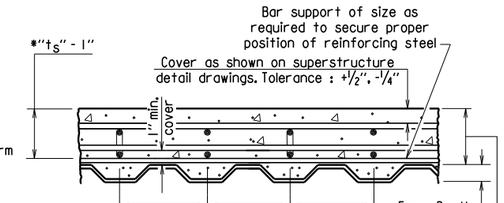
SECTION A-A

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



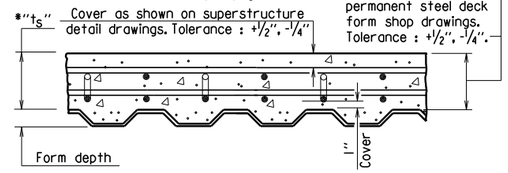
SECTION A-A

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



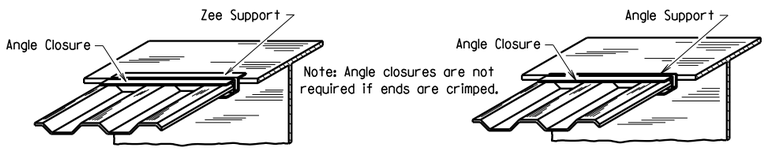
SECTION C-C

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.

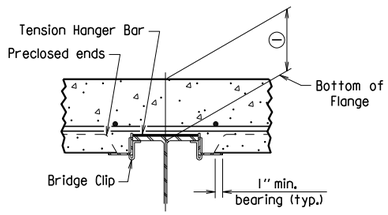
SECTION B-B

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.)

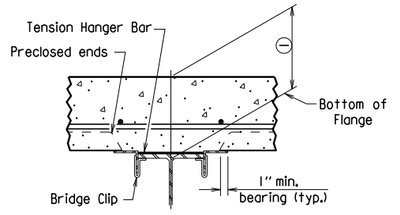
SECTION B-B

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



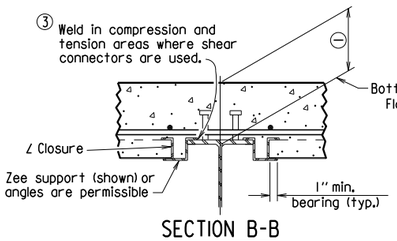
SECTION B-B

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



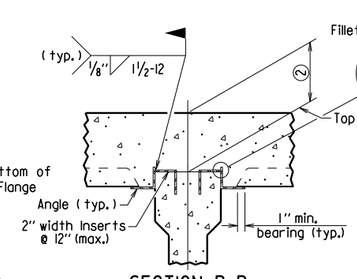
SECTION B-B

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



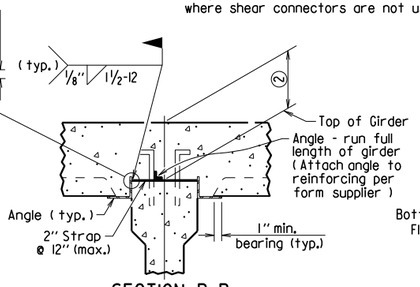
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



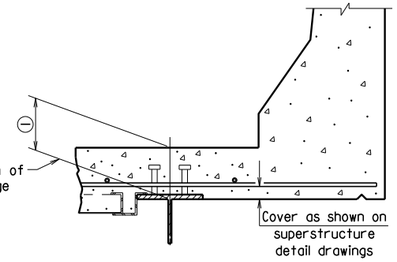
SECTION B-B (FOR CONCRETE GIRDERS)

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 13/16 " 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.

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

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

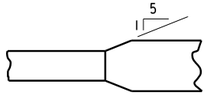
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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

DRAWING NO. 55006

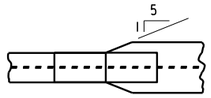
PRINT DATE: 11/7/2019

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			

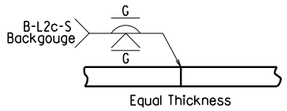


Plan-Unequal Width (Flg.)

FLANGE SPLICE

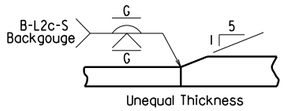


FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



Equal Thickness

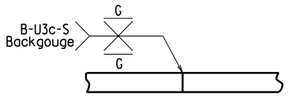
WEB & FLANGE SPLICE



Unequal Thickness

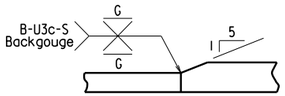
FLANGE SPLICE

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



Equal Thickness

WEB & FLANGE SPLICE

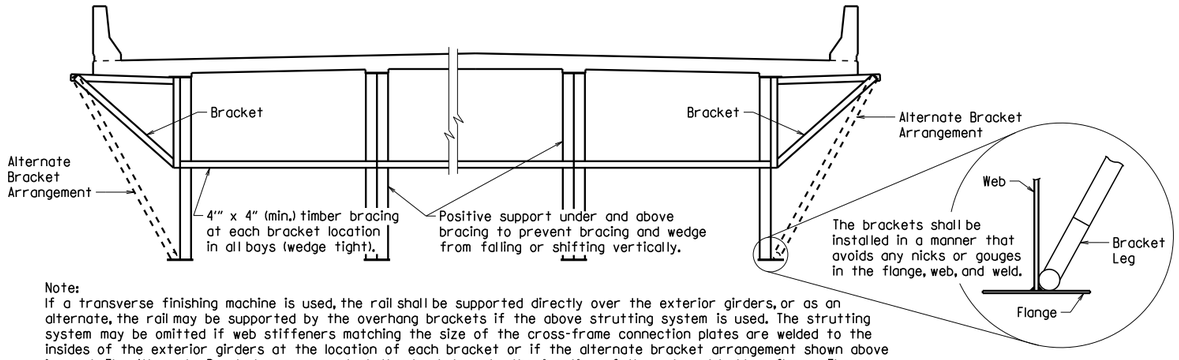


Unequal Thickness

FLANGE SPLICE

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

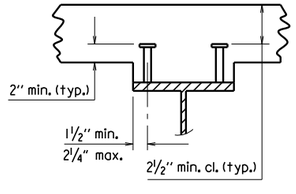
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



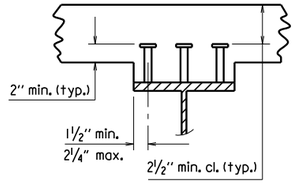
Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners matching the size of the 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)



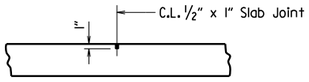
2 STUDS PER ROW



3 STUDS PER ROW

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

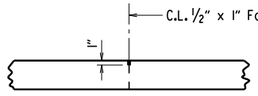
SHEAR CONNECTOR DETAIL



Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

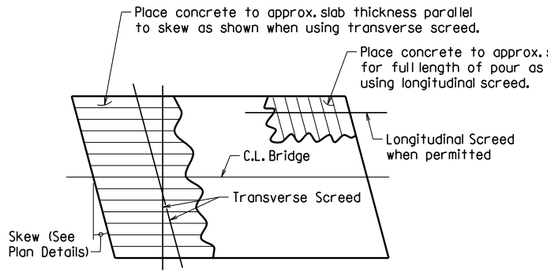
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and acrosss the top of the sidwalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

TRANSVERSE SLAB JOINT DETAIL



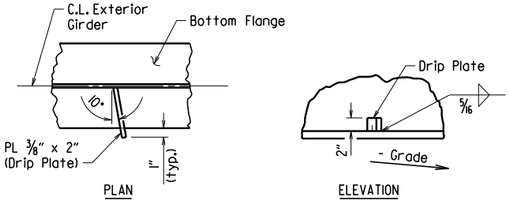
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C. L. Bridge.

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW



PLAN

ELEVATION

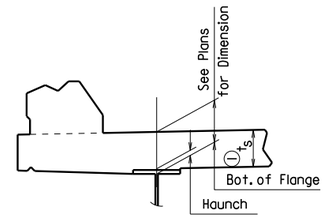
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

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

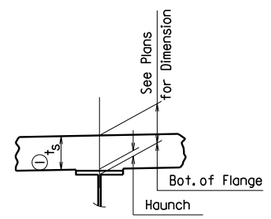
BOTTOM FLANGE DRIP PLATE

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

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



EXTERIOR BEAM OR GIRDER



INTERIOR BEAM OR GIRDER

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"	⅝"	

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.

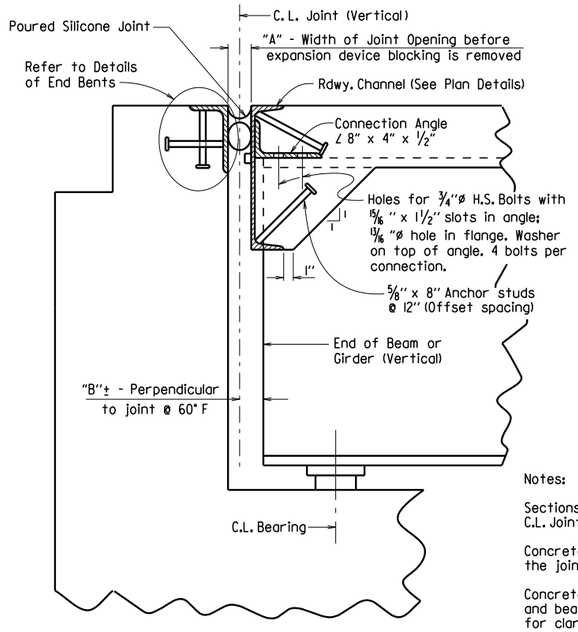
DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55007.dgn

CHECKED BY: AMS DATE: 2/11/2016 SCALE: No Scale

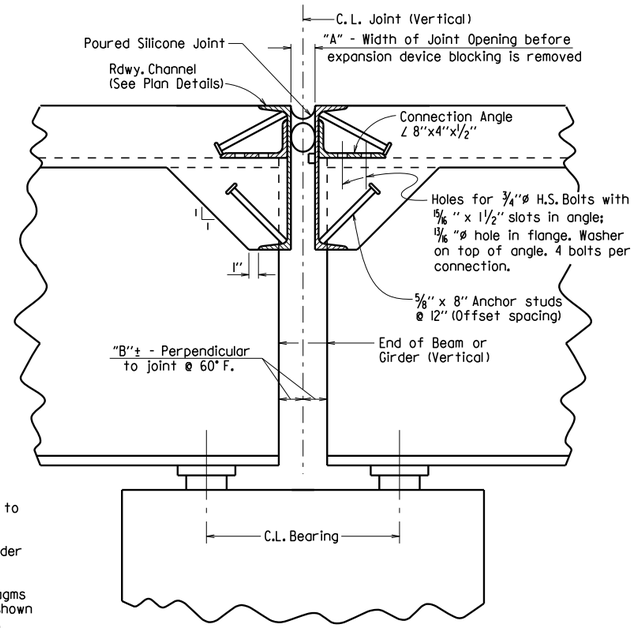
DESIGNED BY: STD. DATE: —

DRAWING NO. 55007

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	POURED SILICONE JOINT			55008



SECTION THRU JOINT AT END BENT



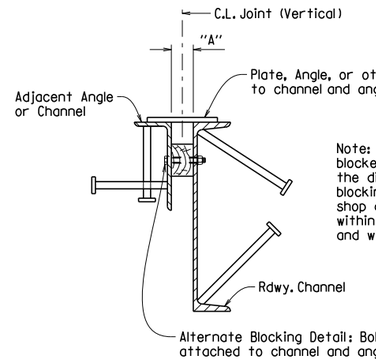
SECTION THRU JOINT AT INTERMEDIATE BENT

Notes:

Sections are taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragms, steel diaphragms and bearing stiffeners are not shown for clarity. See plans for details.



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

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

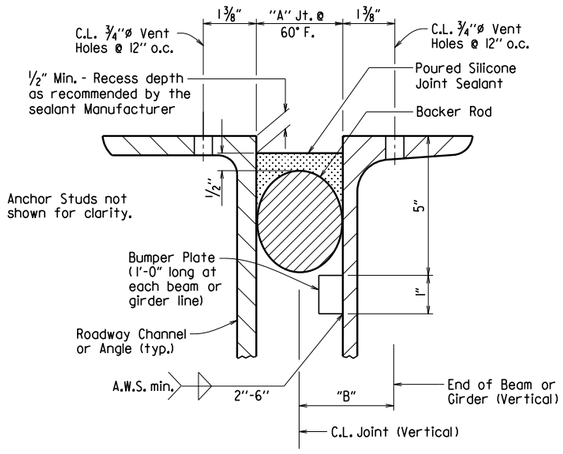
1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams or girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior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

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.



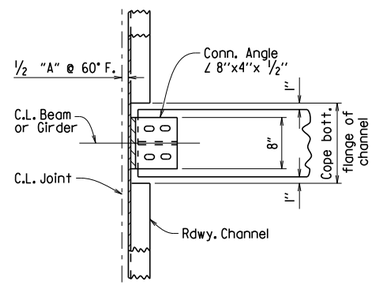
DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

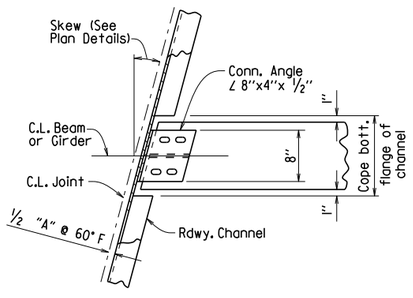
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

When bridge deck is constructed in stages, backer rods shall be extended beyond length of poured joint in initial construction stage so that the two pieces can be properly spliced together prior to installing sealant in subsequent stages. Manufacturer's recommendations shall be followed to prevent sealant from "running out of joint" during stage construction.



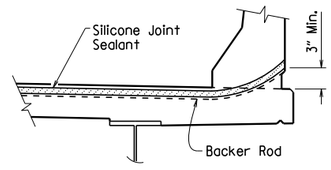
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW

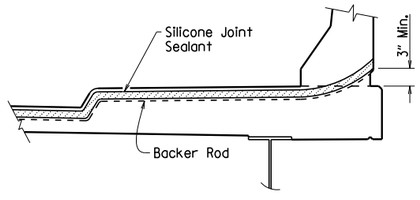


CHANNEL CONNECTION DETAIL

BENTS WITH SKEW



JOINT SEAL PLACEMENT AT RAIL



JOINT SEAL PLACEMENT AT SIDEWALK

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. SEE "TABLE OF SILICONE JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A" AND "B", AND BUMPER PLATE SIZE.

STANDARD DETAILS FOR POURED SILICONE JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55008.dgn

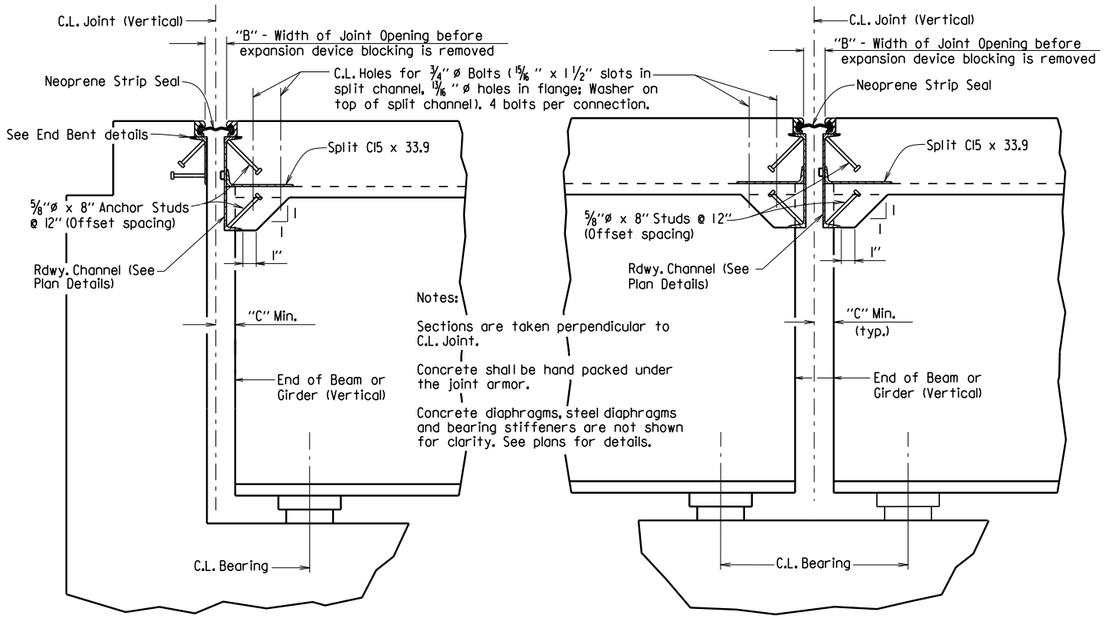
CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale

DESIGNED BY: STD. DATE: —

DRAWING NO. 55008

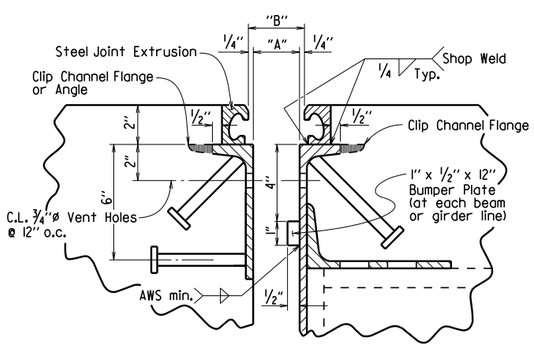
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

1 STRIP SEAL JOINT 55009



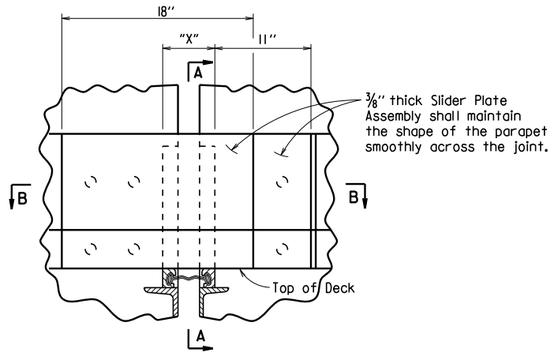
SECTION THRU JOINT AT END BENT

SECTION THRU JOINT AT INTERMEDIATE BENT



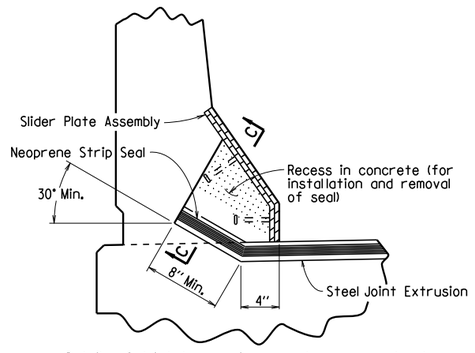
DETAIL OF STRIP SEAL JOINT

Detail shown at End Bent,
Details similar at Intermediate Bent



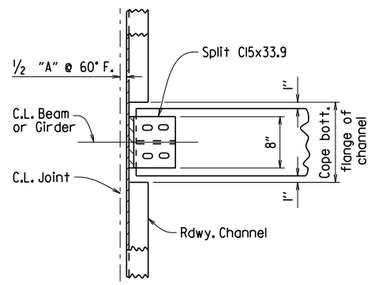
Dimension "X" equals the width of opening in parapet to allow for removal or repair of joint.

DETAIL OF PARAPET SLIDER PLATES



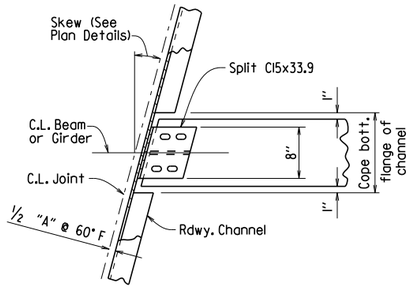
Details of Joint turn-up in parapet are general and show basic design controls only. See plan details for joint installation at sidewalks.

SECTION A-A



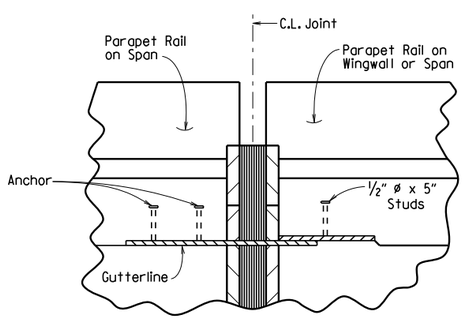
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW



CHANNEL CONNECTION DETAIL

BENTS WITH SKEW

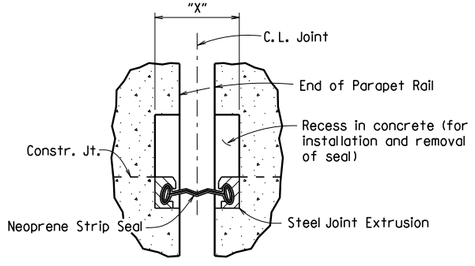


The method of attachment of the slider plate assembly shall allow for removal to provide for future replacement of the neoprene seal. Anchors shall not be paid for directly, but shall be considered subsidiary to the item "Armored Joint with Neoprene Strip Seal".

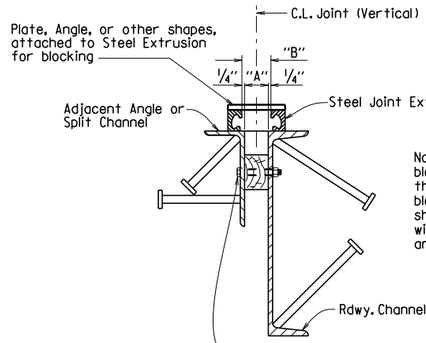
Method of installation and fabrication shall be determined by the Manufacturer.

SECTION B-B

BENTS WITHOUT SKEW SHOWN



SECTION C-C



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

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

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

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES FOR NEOPRENE STRIP SEAL JOINTS:

The steel extrusion and neoprene strip seal material and installation shall be in accordance with Section 809.

The expansion device shall provide for the movement rating(s) shown in the "TABLE OF STRIP SEAL JOINT DATA" in the plan details. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to the Engineer for approval prior to the fabrication of any structural steel at the expansion device.

All structural steel shall conform to AASHTO M 270, Grade 50W and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). The parapet slider plates and structural steel completely embedded in concrete shall conform to AASHTO M 270, Grade 36, 50 or 50W steel. Unless otherwise noted in the plans, all exposed surfaces of the parapet slider plates shall be cleaned and painted in accordance with Section 638. Painting shall not be paid for directly and structural steel completely embedded in concrete need not be painted. Payment for structural steel shall be as specified in the plans.

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. SEE "TABLE OF STRIP SEAL JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A", "B", AND "C".

STANDARD DETAILS FOR NEOPRENE STRIP SEAL JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: L.J.B. DATE: 2/11/2016 FILENAME: b55009.dgn
CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: —

DRAWING NO. 55009

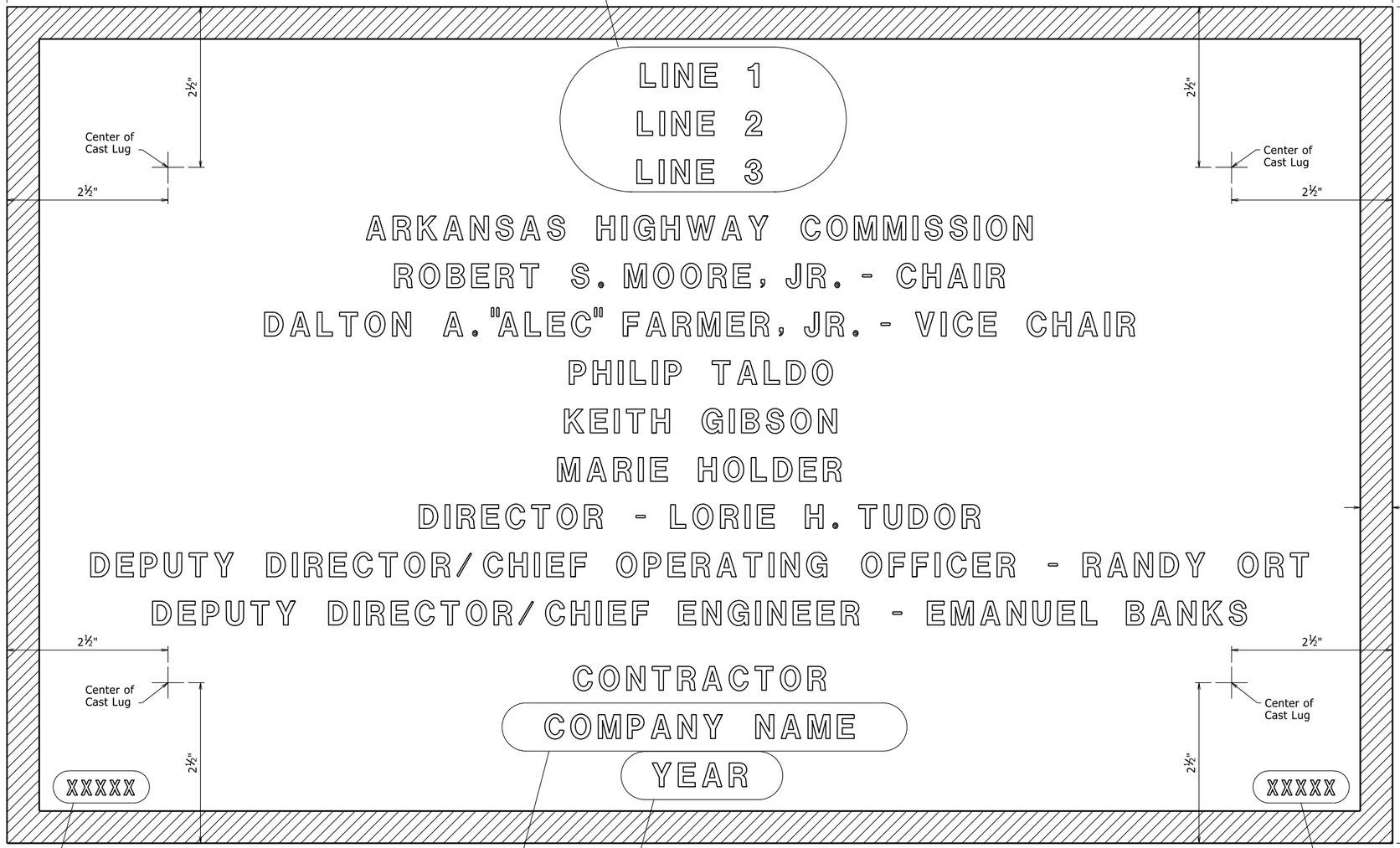
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-1-14		1-15-19	
1-14-15		3-24-2020	
1-17-17			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.				

(1) TYPE D NAME PLATE - 55010

The name of the bridge as shown on the plans shall be placed on Lines 1-3 using ⅛" raised letters and numerals ⅜" 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	



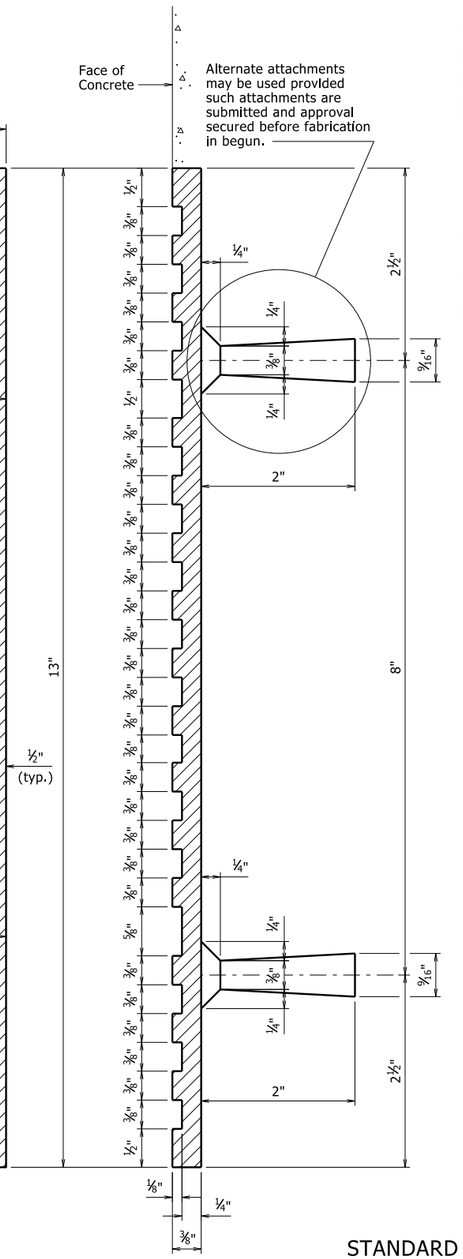
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

Place the Year in which Contract was awarded here using ⅛" raised numerals ⅜" high. Example: 2001

Place the name of the company awarded the construction contract here using ⅛" raised letters and numerals ⅜" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using ⅛" raised letters and numerals ¼" high. Examples: A1234, 05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

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

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

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to 9/16" x 2" long. The border and all lettering shall be raised ⅛" 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.

(5) Revised Director, Deputy Director/Chief Operating Officer, Chair, Vice Chair and added New Commissioner
3-24-2020 CGP Checked By: CRE

(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

ROUTE SEC.

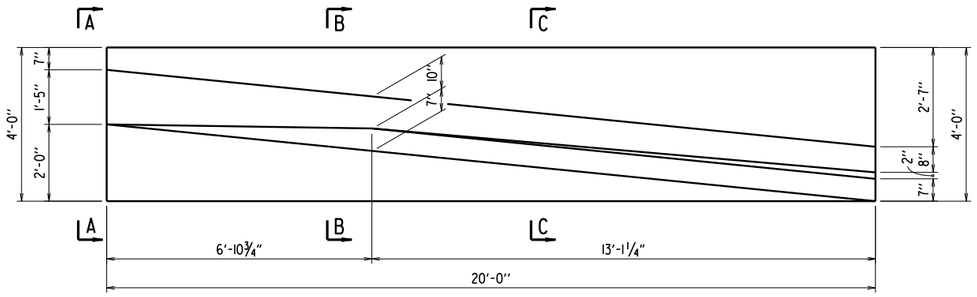
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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

PRINT DATE: 4/6/2020

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	TRANSITIONAL RAIL		55013	



PLAN OF TRANSITIONAL APPROACH RAILING

(RAILINGS ON EACH SIDE OF ROADWAY ARE OPPOSITE HAND TO EACH OTHER)
½" = 1'-0"

GENERAL NOTES

Transitional Approach Railing shall be placed at locations shown in the plans.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Construction. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Construction.

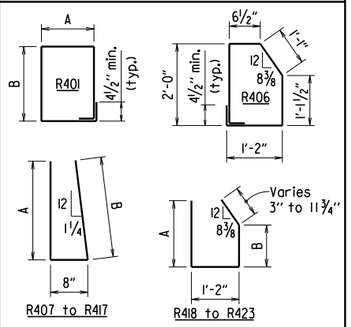
Unless otherwise required in the plans, curing and finishing shall be in accordance with Subsection 806.05(c) and the surface finish type and areas of application shall match that used on the adjacent bridge railing or concrete barrier wall. See Subsection 802.19(3) for Class 3 Textured Coating Finish or Subsections 803.03(a) or 803.03(b) for Class 1 or 2 Protective Surface Treatment, respectively. Payment for surface finishes shall not be paid for directly, but shall be considered incidental to the unit price bid for "Transitional Approach Railing".

When alternate surface and/or architectural finishes are specified in the plans, no direct payment will be made, and the alternate finish shall be considered incidental to the unit price bid for "Transitional Approach Railing". See plan details for additional information when architectural finishes are specified.

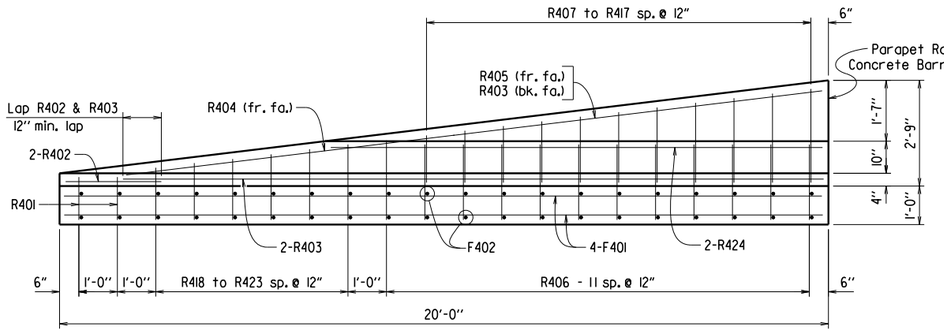
Transitional Approach Railing shall be paid for at the contract unit price bid for "Transitional Approach Railing". See Section 806 for additional information.

BAR LIST - ONE TRANSITIONAL RAIL

Mark	No. Req'd	Length	A	B	Pin Dia.	Bending Diagrams
F401	8	19'-8"			Str.	
F402	40	3'-8"			Str.	
R401	2	4'-10"	1'-2"	1'-1"	2"	
R402	2	3'-0"			Str.	
R403	3	17'-9"			Str.	
R404	1	5'-0"			Str.	
R405	1	12'-9"			Str.	
R406	12	6'-3"			2"	
R407 to R417	1 ea.	3'-0" to 5'-5"	1'-3" to 2'-5½"	1'-3" to 2'-5½"	2"	
R418 to R423	1 ea.	3'-9" to 5'-1"	1'-4" to 1'-11¼"	1'-1½"	2"	
R424	2	12'-0"			Str.	



Dimensions are out to out of bars.



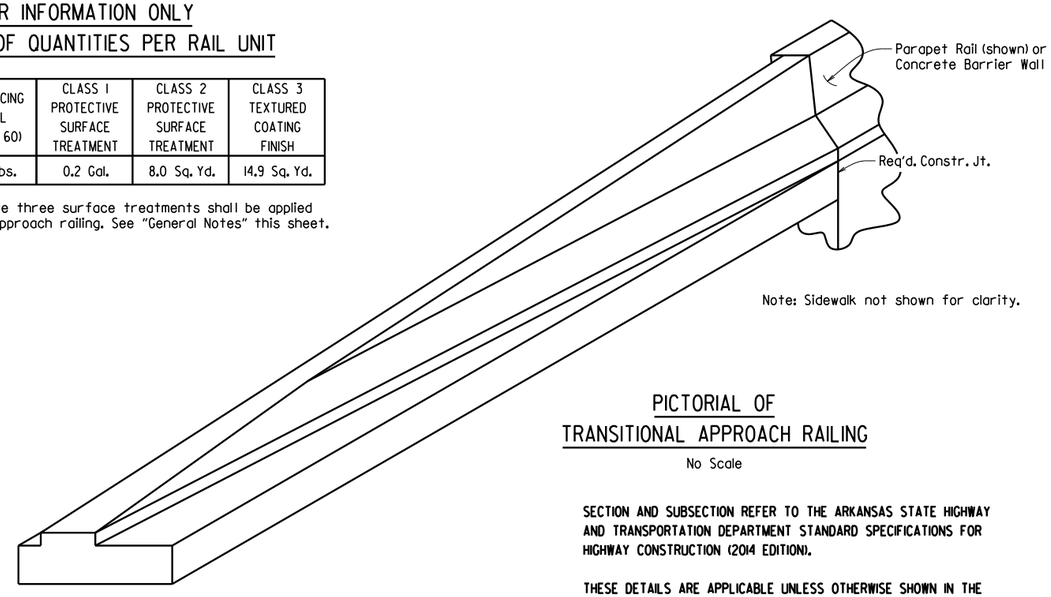
ELEVATION OF TRANSITIONAL APPROACH RAILING

½" = 1'-0"

FOR INFORMATION ONLY
SCHEDULE OF QUANTITIES PER RAIL UNIT

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS 1 PROTECTIVE SURFACE TREATMENT	CLASS 2 PROTECTIVE SURFACE TREATMENT	CLASS 3 TEXTURED COATING FINISH
4.20 Cu. Yds.	376 Lbs.	0.2 Gal.	8.0 Sq. Yd.	14.9 Sq. Yd.

Only one of the above three surface treatments shall be applied to the transitional approach railing. See "General Notes" this sheet.

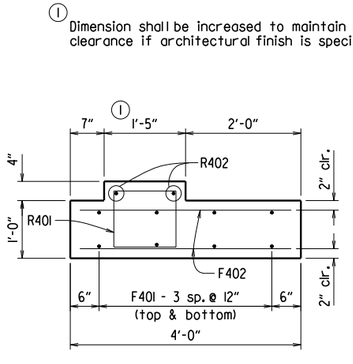


Note: Sidewalk not shown for clarity.

PICTORIAL OF TRANSITIONAL APPROACH RAILING

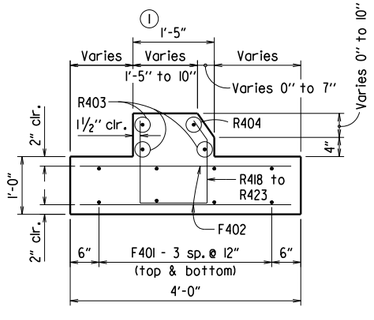
No Scale

① Dimension shall be increased to maintain 1½" clearance if architectural finish is specified.



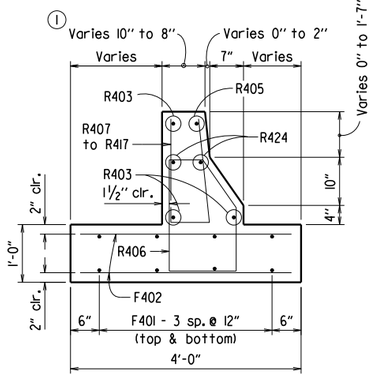
VIEW A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

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 TRANSITIONAL APPROACH RAILING

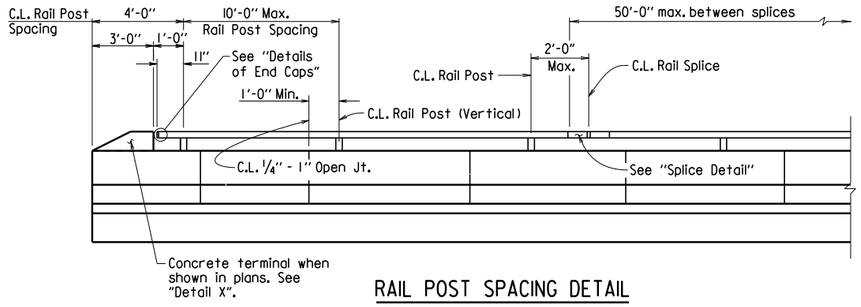
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55013.dgn
CHECKED BY: AMS DATE: 2/11/2016 SCALE: As Noted
DESIGNED BY: STD. DATE: —

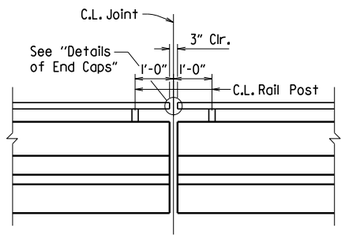
DRAWING NO. 55013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	TYPE H RAILING		55014	

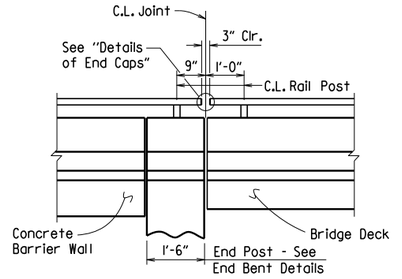


RAIL POST SPACING DETAIL

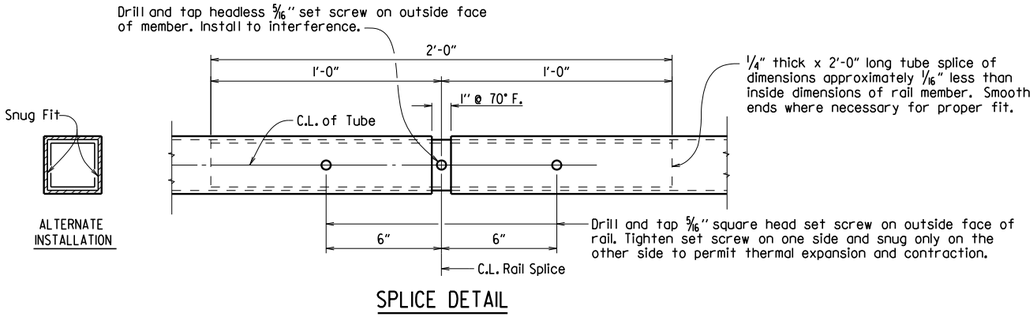
(Horizontal dimensions are along face of rail)



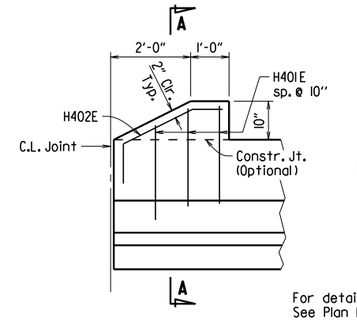
RAIL POST SPACING AT EXPANSION JOINTS



RAIL POST SPACING AT BRIDGE ENDS WITH CONCRETE BARRIER WALL

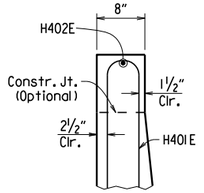


SPLICE DETAIL

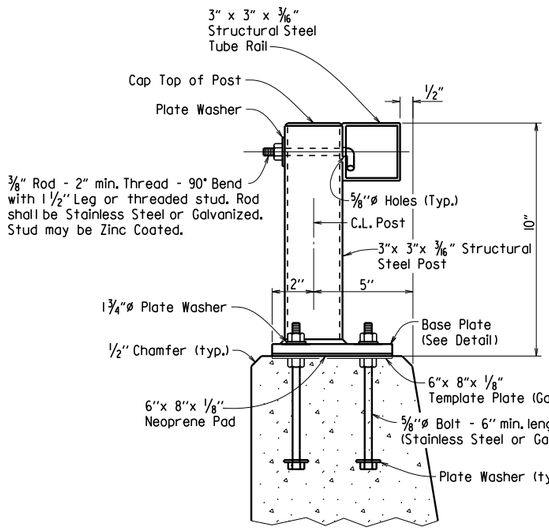


DETAIL X

For details of reinforcing steel, See Plan Details.

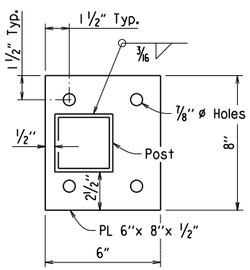


SECTION A-A

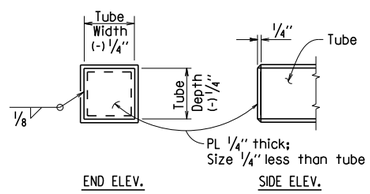


DETAILS OF POST ANCHOR SYSTEM

(CAST-IN-PLACE BOLTS)

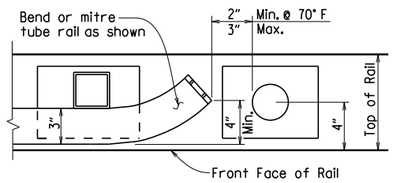


BASE PLATE



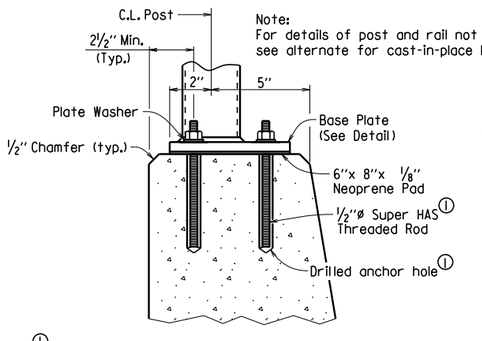
END ELEV. SIDE ELEV.

DETAILS OF END CAPS



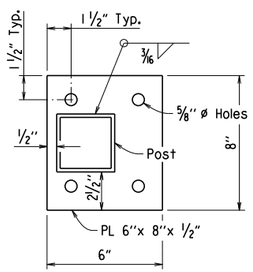
DETAILS OF RAIL TERMINUS AT FENCE POST

(When Chain Link Fence is required)



① HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System (or approved equal) shall be installed in accordance with Manufacturer's recommendations.



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(EPOXY ADHESIVE ANCHORS)

MATERIALS:

Rail tubing, posts, end caps, and base plates shall conform to AASHTO M 270, Gr. 36 or ASTM A 500-Grade B, and shall be galvanized after fabrication in accordance with Subsection 806.02(c). When required elsewhere in the plans, steel rail members shall receive a powder coating process after galvanizing. Galvanized surfaces shall be prepared in accordance with Subsection 807.87 and the manufacturer's recommendations prior to application of the powder coating process.

The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2 to 4 mils. The top coat shall be tough polyester powder with a minimum thickness of 2 to 4 mils. The color shall be as shown in the plans. Coated galvanized framework shall have a salt spray resistance of 3000 hours using ASTM B 117 without loss of adhesion. The powder coating process shall be in accordance with manufacturer's recommendations. Any damage to the powder coated finish shall be repaired with a compatible touch-up system in accordance with manufacturer's recommendations and to the satisfaction of the Engineer at the Contractor's expense.

Cast-in-place anchor bolts, nuts, washers, and set screws shall be galvanized high-strength steel or stainless steel. Mixing of galvanized fasteners and stainless steel will not be permitted.

High-Strength Steel:
Cast-in-place anchor bolts shall conform to ASTM A325, Type 1.
Nuts shall conform to ASTM A563, Grade DH or AASHTO M 292, Grade 2H.
Washers shall conform to ASTM F436.
Plate Washers shall conform to AASHTO M 270, Gr. 36.
Splice Set Screws shall conform to AASHTO M 270, Grade 36.
Anchor bolts, nuts, washers, plate washers, and set screws shall be galvanized in accordance with AASHTO M 232, Class C or ASTM B695, Class 50.

Stainless Steel:
Cast-in-place anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi.
Nuts shall conform to AASHTO M 292, Grade 8 or ASTM A563.
Washers shall conform to ASTM A240, Type 302.
Plate Washers shall conform to ASTM A240, Type 302.
Splice Set Screws shall conform to ASTM A193 or A320-Grade B8.

Threads on bolts, screws, and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series). Neoprene pads shall conform to the requirements of Subsection 807.15(b).

GENERAL NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of bridge. All posts shall be vertical.

Maximum post spacing = 10'-0". Minimum distance from centerline post to centerline open or contraction joints in parapet rail = 1'-0".

Splices in rail tubing shall be at 50' maximum spacing. The centerline of splices shall be located a maximum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

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

Bridge railing, including posts, template and base plates, fasteners, and neoprene pads shall be paid for at the contract unit price bid per linear foot for "Metal Bridge Railing (Type H)". When required elsewhere in the plans, powdered coating finish and repair of powdered coating finish shall be considered subsidiary to the item "Metal Bridge Railing (Type H)".

Shop drawings showing details of railing shall be submitted and approval secured prior to fabrication.

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 TYPE H RAILING

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55014.dgn
CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: ——

BRIDGE NO. DRAWING NO. 55014

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

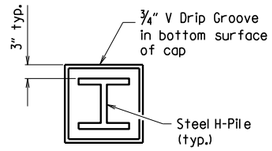
GENERAL NOTES FOR STEEL H-PILES:

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

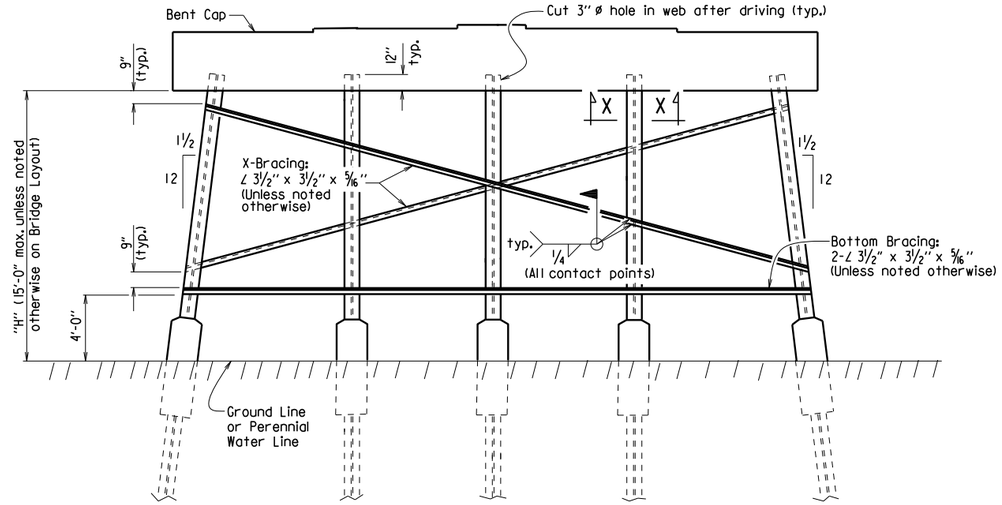
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

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.

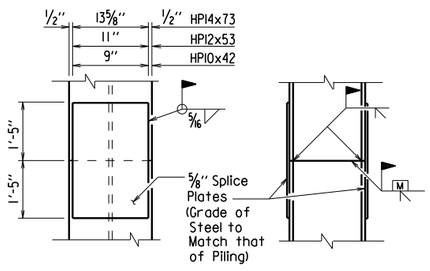
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

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)



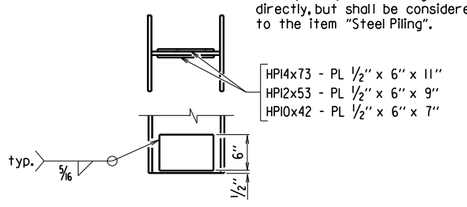
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

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:

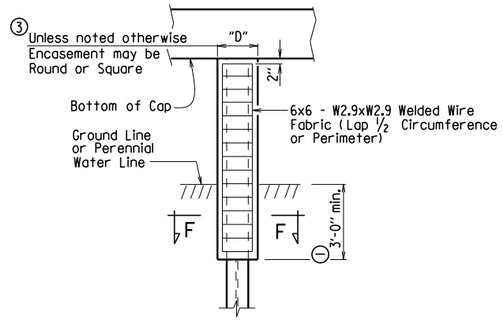
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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.

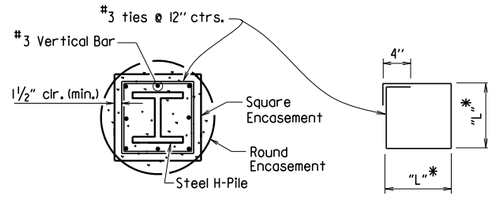
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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)

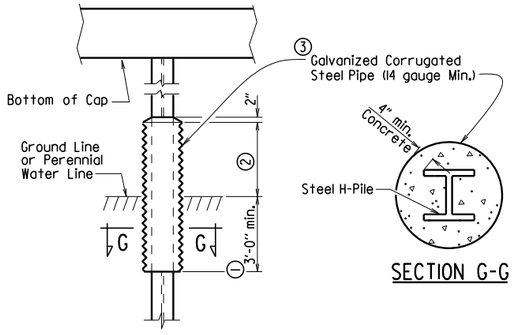


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HPI0x42	1'-7"	2'-0"	1'-4"
HPI2x53	1'-8"	2'-2"	1'-5"
HPI4x73	1'-11"	2'-6"	1'-8"



SECTION G-G

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

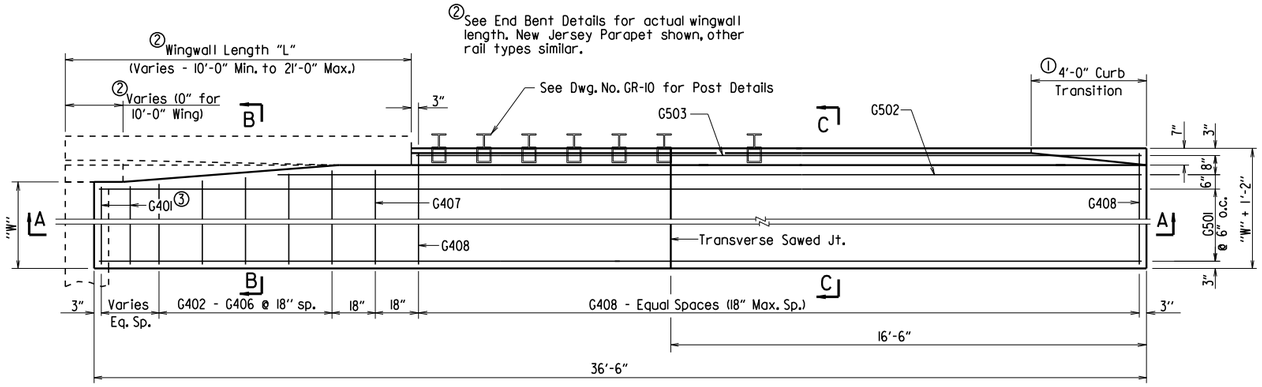
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	TYPE C GUTTERS		55030C	

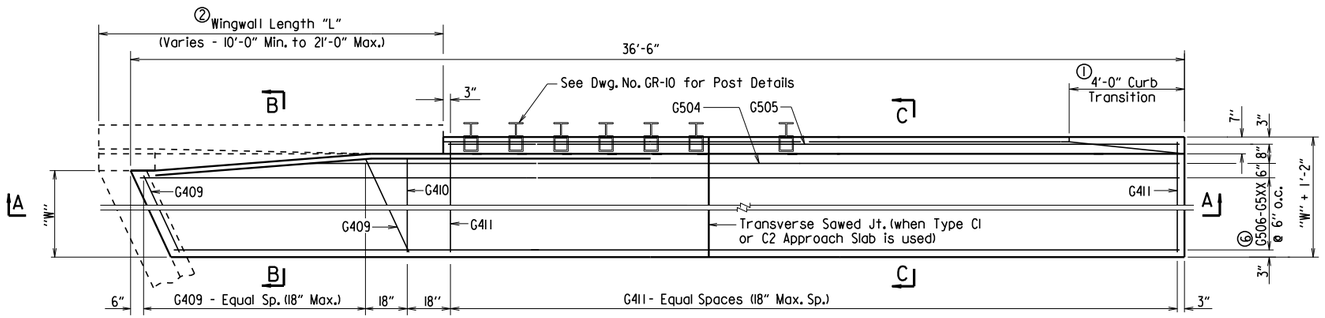
① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

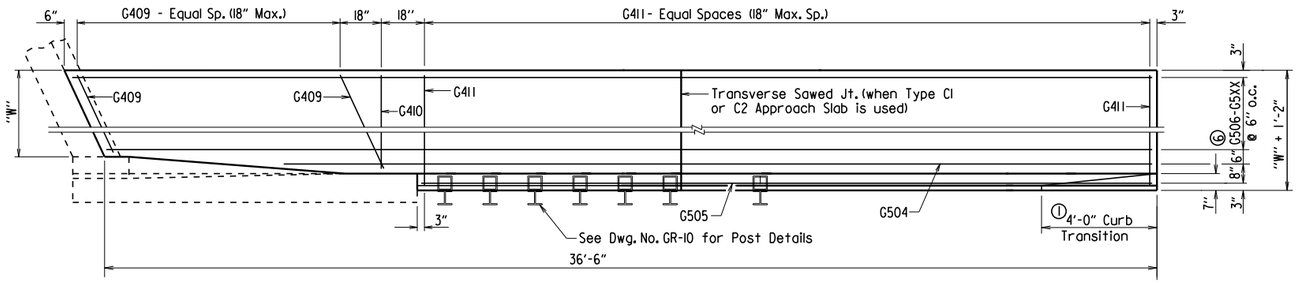
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



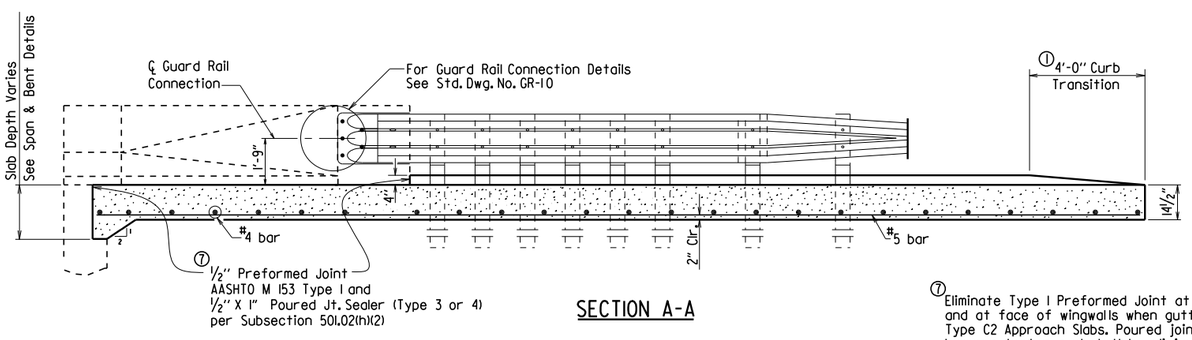
③ Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.

HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

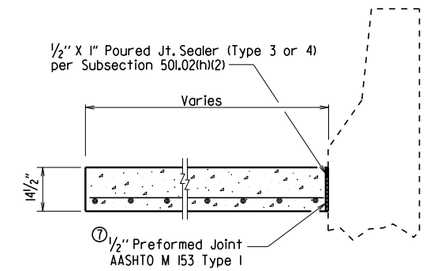




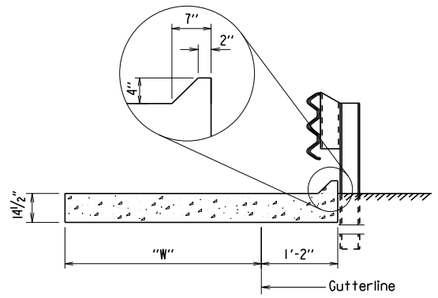
PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



SECTION A-A



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

BAR LIST FOR ONE TYPE C GUTTER

	Mark	No. Req'd. for Width "W" 4'-0"	6'-0"	8'-0"	10'-0"	Length
Square Bridge	G401	④	④	④	④	"W"- 4"
	G402-G406	1 each	1 each	1 each	1 each	"W"-3" to "W"+2"
	G407	1	1	1	1	"W"+3"
	G408	④	④	④	④	"W"+ 10"
	G501	8	12	16	20	36'-2"
	G502	1	1	1	1	(41'-11") - "L"
	G503	1	1	1	1	(37'-2") - "L"
Skewed Bridge	G409	④	④	④	④	⑤
	G410	1	1	1	1	"W"+3"
	G411	④	④	④	④	"W"+ 10"
	G504	1	1	1	1	⑤
	G505	1	1	1	1	⑤
	G506 - G5XX ⑥	1 each	1 each	1 each	1 each	⑤

④ No. Req'd. varies with Skew and Wingwall Length.

⑤ Bar Lengths vary with Skew and Wingwall Length.

⑥ G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'
G525 for "W" = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	445	8.30
6	630	11.55
8	810	14.80
10	995	18.10

Quantities are based on "L" = 10'-0".

Note:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

⑦ Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

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

Approach Gutters will be measured and paid for in accordance with Section 504.

STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

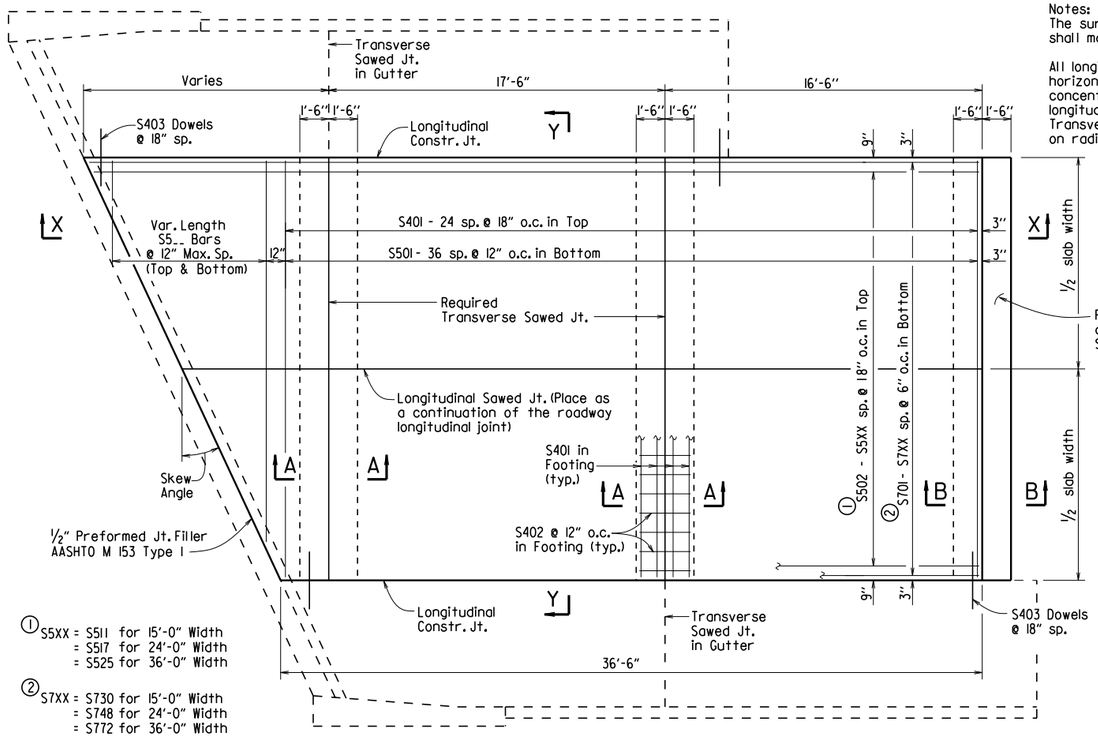
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: 3/8" = 1'-0" or As Shown
DESIGNED BY: STD. DATE:

DRAWING NO. 55030C

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.				

TYPE CI APPROACH SLAB 55040CI



① S5XX = S511 for 15'-0" Width
= S517 for 24'-0" Width
= S525 for 36'-0" Width

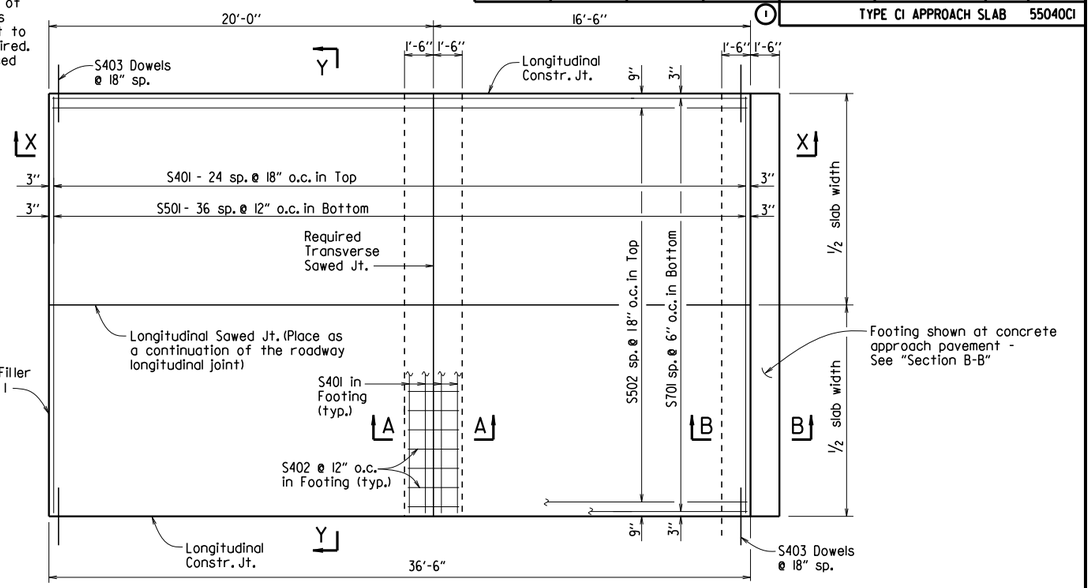
② S7XX = S730 for 15'-0" Width
= S748 for 24'-0" Width
= S772 for 36'-0" Width

PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

1/4" = 1'-0"

Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.



PLAN - SQUARE APPROACH SLAB

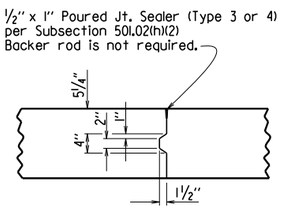
1/4" = 1'-0"

BAR LIST

(Square & Skewed Approach Slabs)

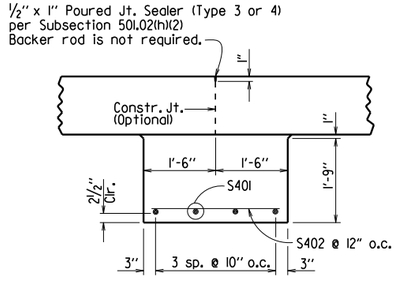
	Mark	Square No. Req'd.	Square Length	Skewed No. Req'd.	Skewed Length
15'-0" Slab Width	S401	33	14'-8"	37	14'-8"
	S402	30	2'-8"	45	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	14'-8"	37	14'-8"
	S502	10	36'-2"	—	—
	S502 - S511	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 14.25' (tan skew angle)
	S5..	—	—	2 Ea.	14.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	30	36'-2"	—	—
	S701 - S730	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 14.75' (tan skew angle)
24'-0" Slab Width	S401	33	23'-8"	37	23'-8"
	S402	48	2'-8"	72	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	23'-8"	37	23'-8"
	S502	16	36'-2"	—	—
	S502 - S517	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 23.25' (tan skew angle)
	S5..	—	—	2 Ea.	23.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	48	36'-2"	—	—
	S701 - S748	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 23.75' (tan skew angle)
36'-0" Slab Width	S401	33	35'-8"	37	35'-8"
	S402	72	2'-8"	108	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	35'-8"	37	35'-8"
	S502	24	36'-2"	—	—
	S502 - S525	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 35.25' (tan skew angle)
	S5..	—	—	2 Ea.	35.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	72	36'-2"	—	—
	S701 - S772	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 35.75' (tan skew angle)

* Varies with skew angle



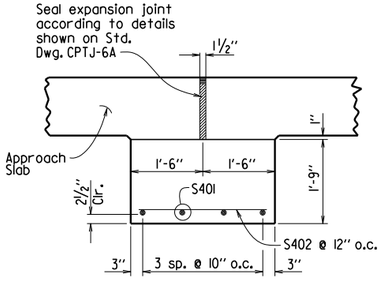
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"



SECTION A-A

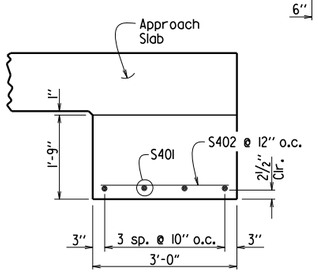
N.T.S.



SECTION B-B

AT CONCRETE APPROACH PAVEMENT

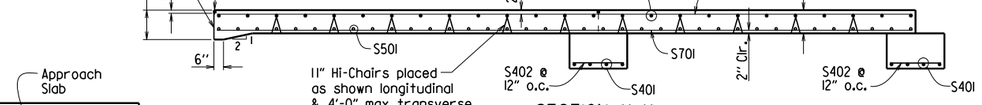
N.T.S.



SECTION B-B

AT ASPHALT APPROACH PAVEMENT

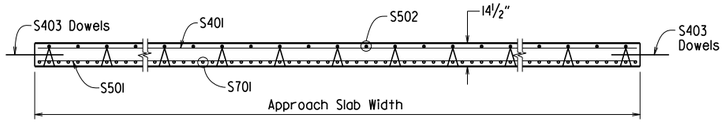
N.T.S.



SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" = 1'-0"



SECTION Y-Y

N.T.S.

TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
15'-0"	3640	30.75
24'-0"	5775	49.15
36'-0"	8620	73.75

GENERAL NOTES

This drawing shall be used for Approach Slabs in Seismic Performance Zone 1 and for the maximum skew angles shown below:

15'-0" Slab Width: Maximum Skew Angle = 50°
24'-0" Slab Width: Maximum Skew Angle = 40°
36'-0" Slab Width: Maximum Skew Angle = 30°

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

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

Approach Slabs will be measured and paid for in accordance with Section 504.

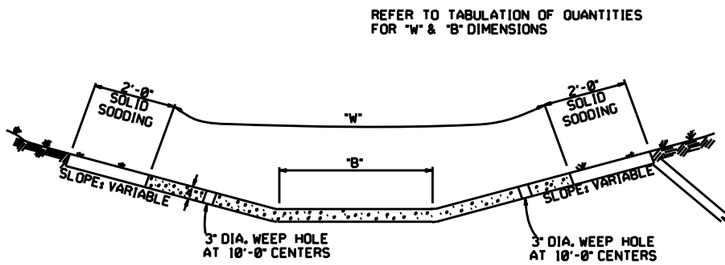
STANDARD DETAILS FOR TYPE CI APPROACH SLAB

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

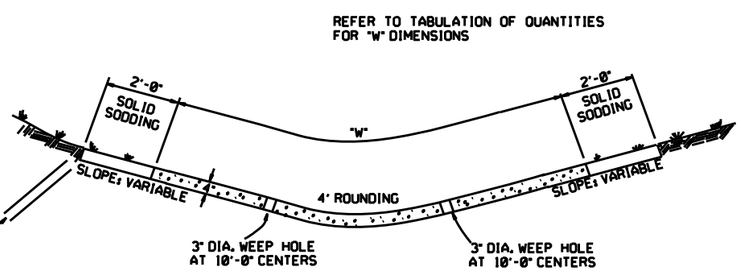
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040ci.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

DRAWING NO. 55040CI



TYPE A

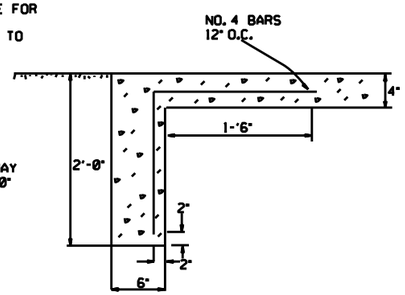
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



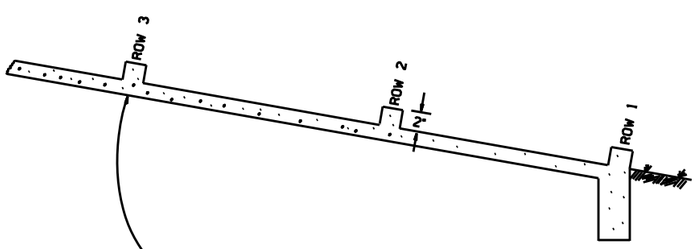
TYPE B

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

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

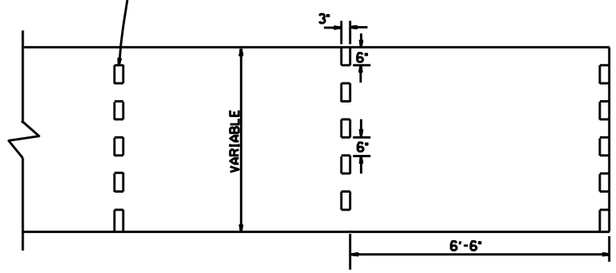


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

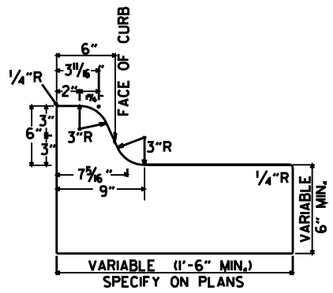
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

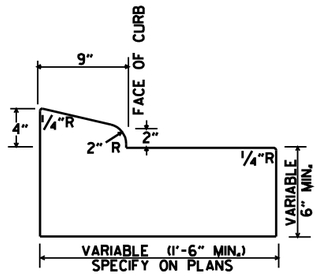
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

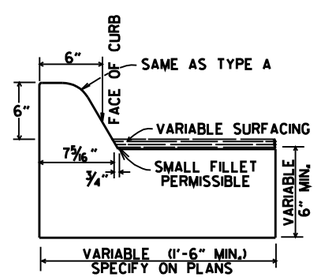
STANDARD DRAWING CDP-1



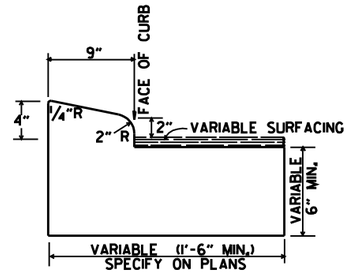
TYPE A



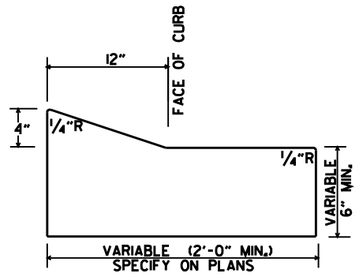
TYPE B-1



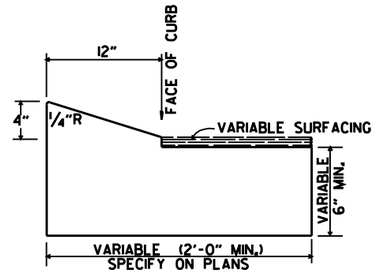
TYPE C



TYPE B-2

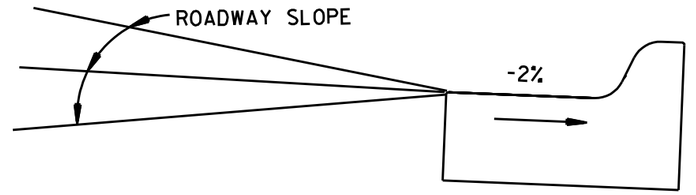


TYPE E-1



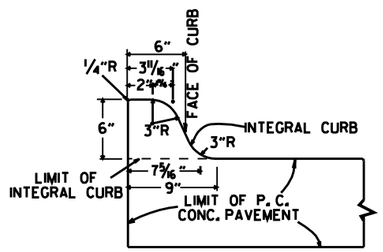
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

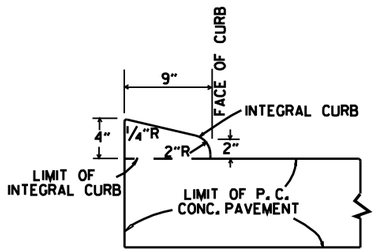


DETAIL OF GUTTER SLOPE

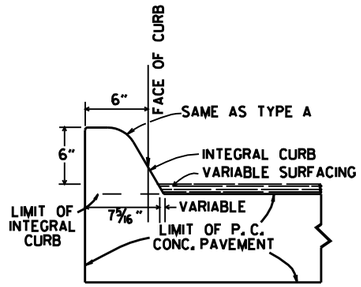
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

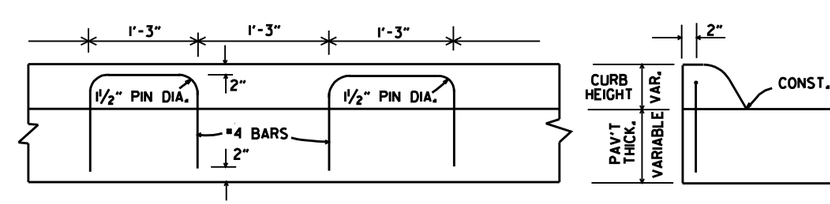


TYPE B

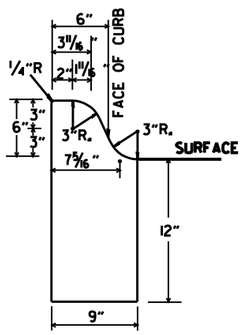


TYPE C

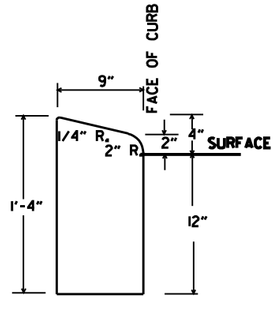
INTEGRAL CURB



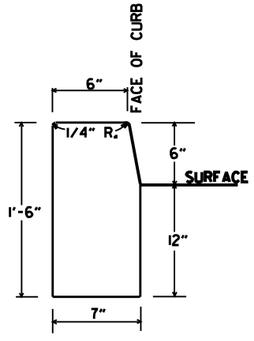
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



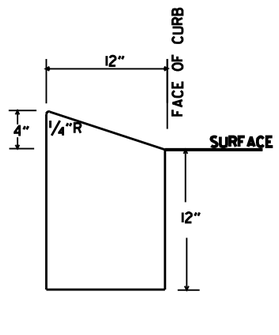
TYPE A



TYPE B

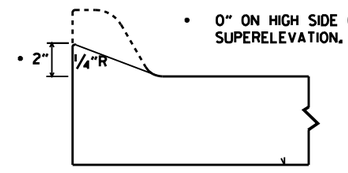


TYPE D



TYPE E

CONCRETE CURB



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

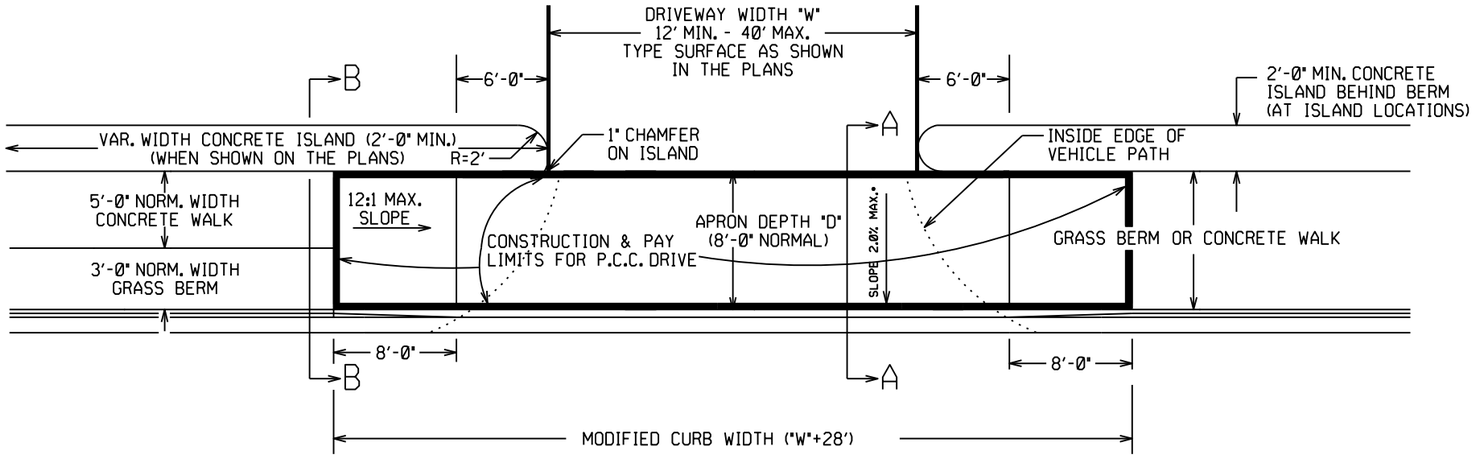
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	52-10-2-72

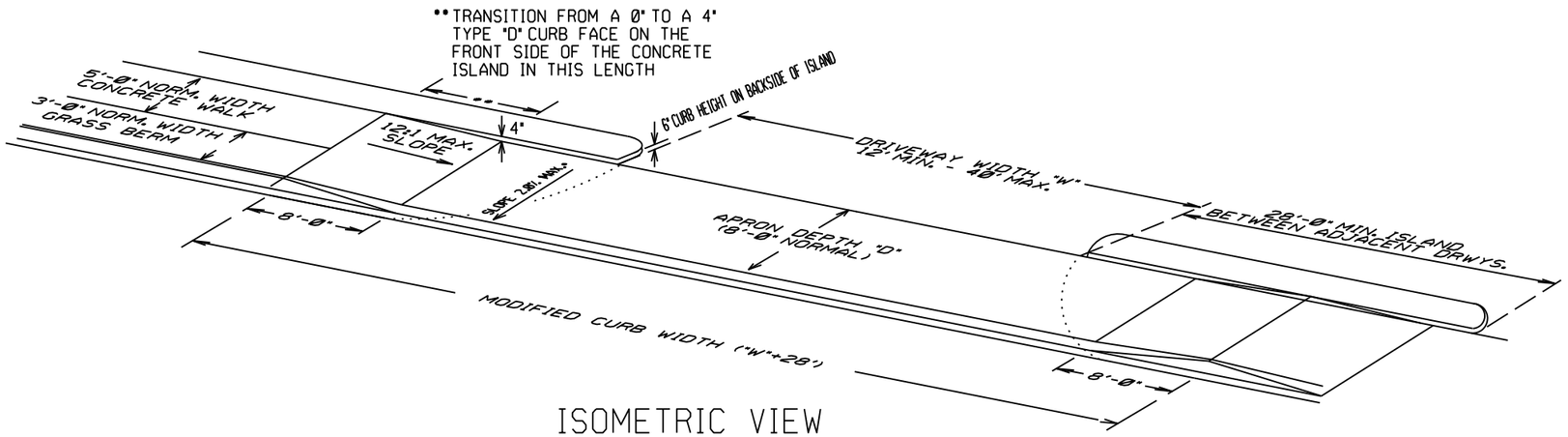
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

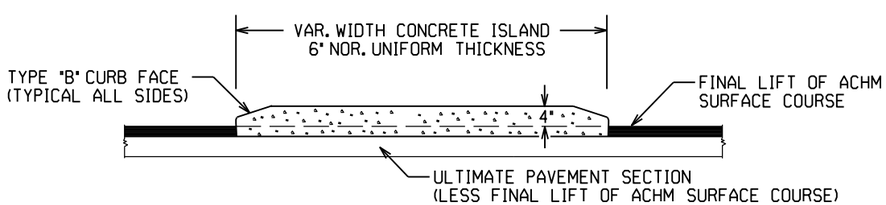
STANDARD DRAWING CG-1



PLAN VIEW

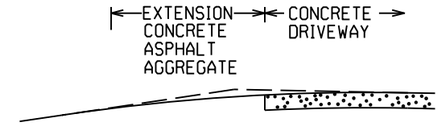


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

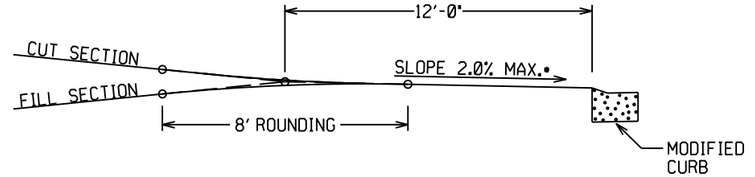
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

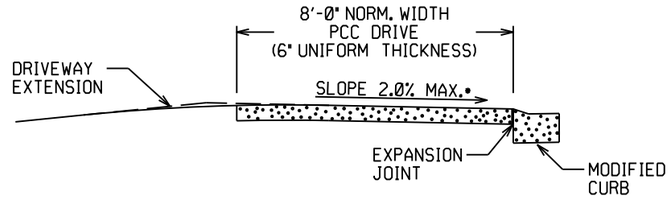
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

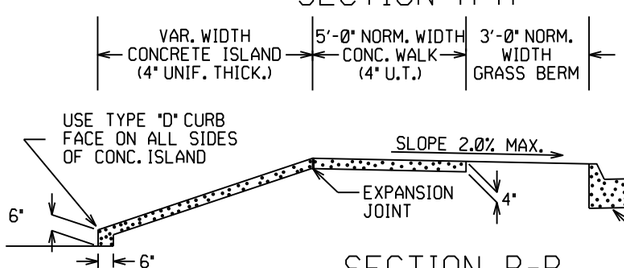


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



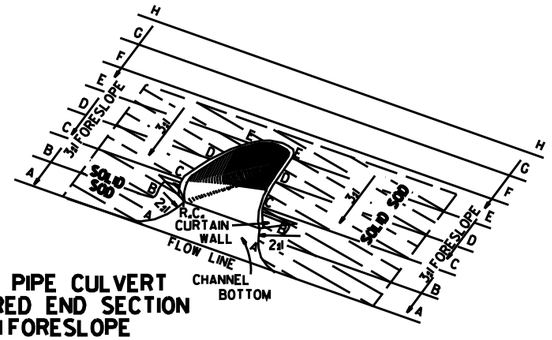
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-07-19		REVISED WALK DETAILS
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

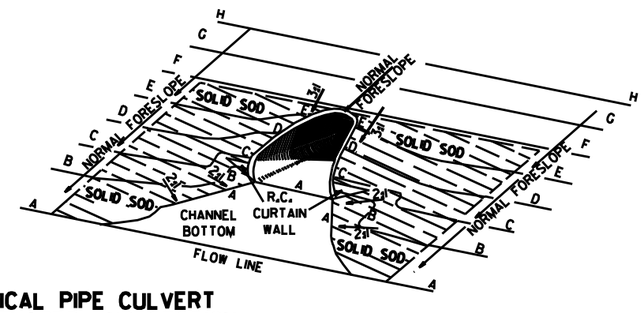
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

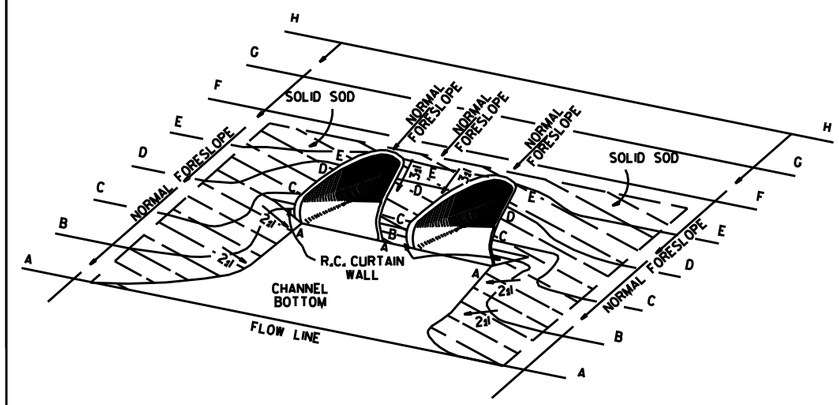
STANDARD DRAWING DR-1



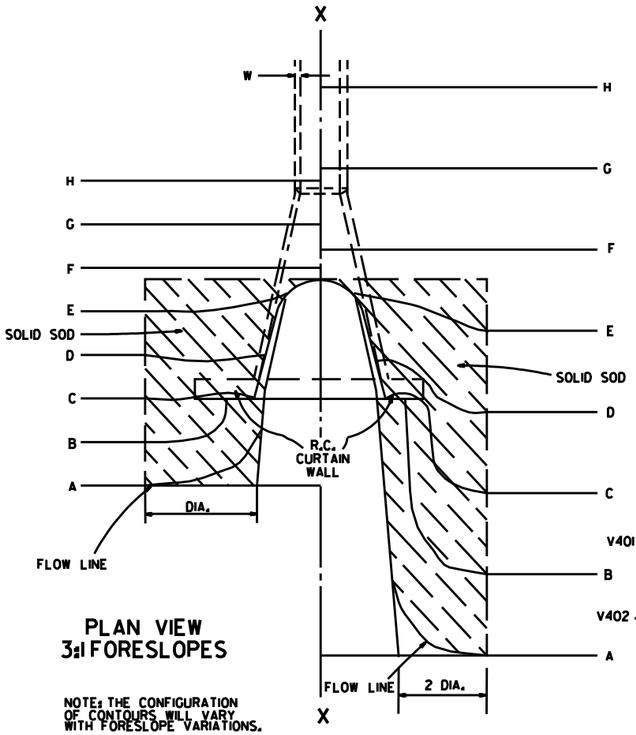
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

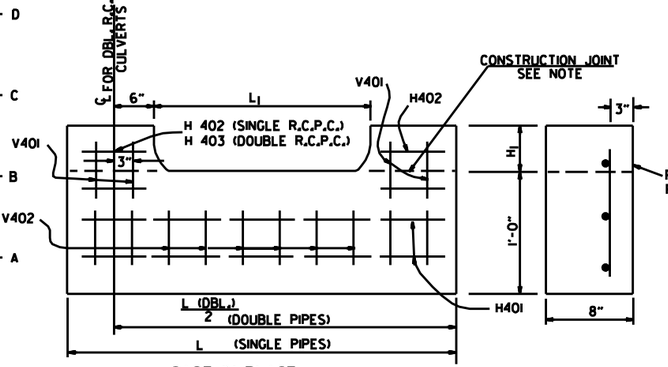
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

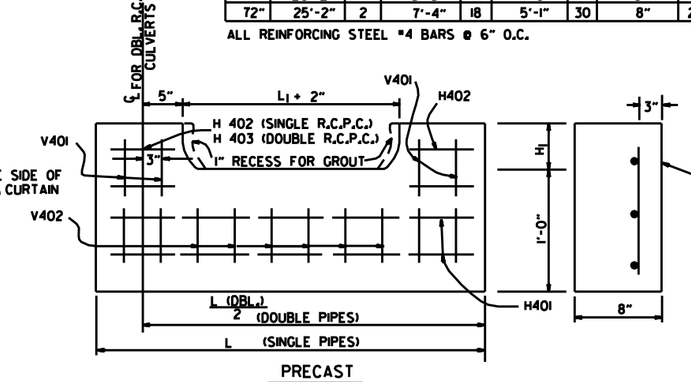
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC. CU. YDS.	SINGLE R.C.P.C. REINF. STEEL LBS.	DOUBLE R.C.P.C. CONC. CU. YDS.	DOUBLE R.C.P.C. REINF. STEEL LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

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



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

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

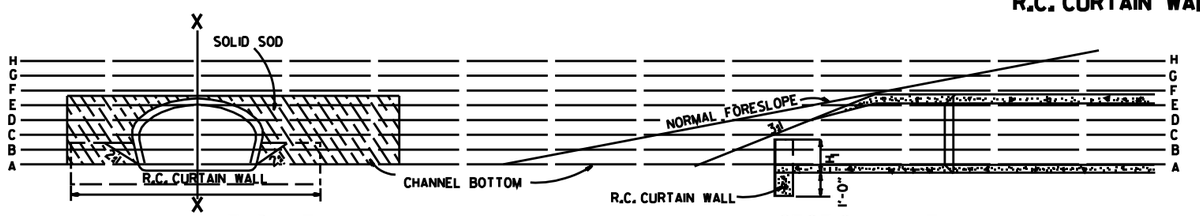
SOLID SODDING

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

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

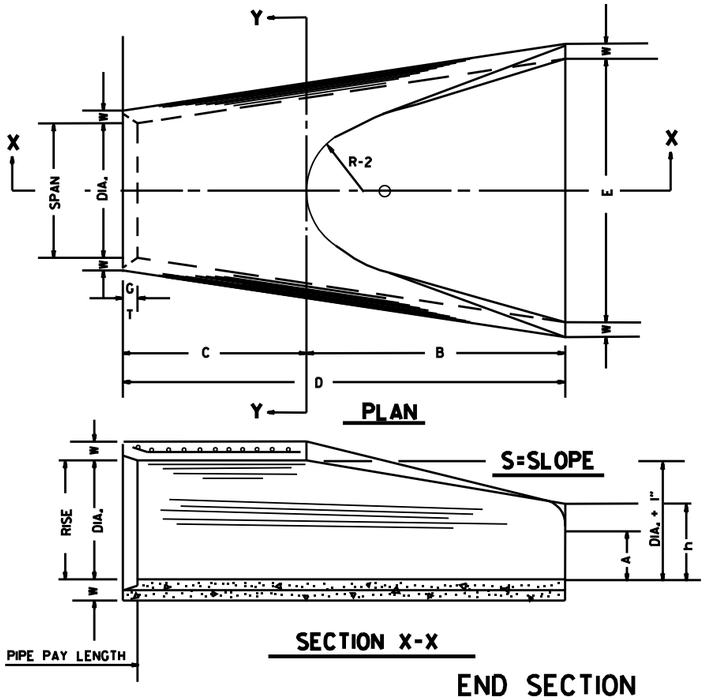
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

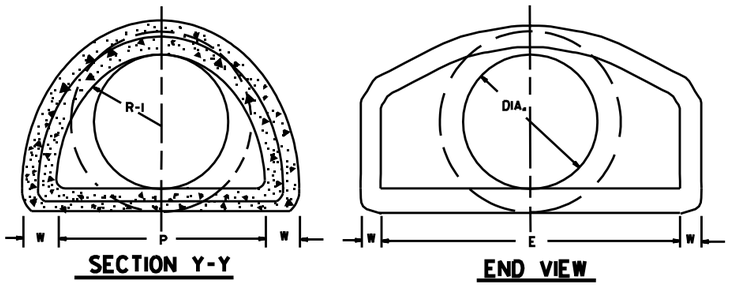
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3st	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3st	25"	33⅜"	16⅛"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3st	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3st	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3st	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3st	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3st	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3st	61"	72½"	36⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3st	73"	77⅛"	38⅝"	24"	5"	13250	4'-6"

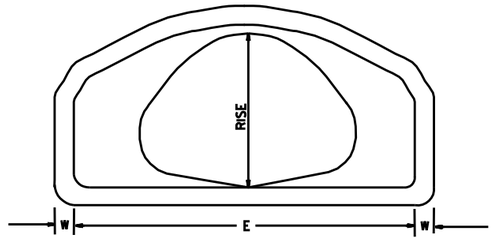


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

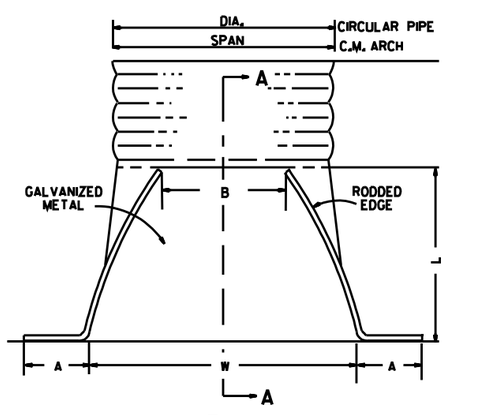
ARCH PIPE

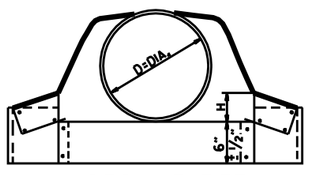
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½st
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½st
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½st
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅛"	15"	2½"	2½st
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½st
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅞"	22"	3½"	2½st
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½st
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅜"	24"	4¼"	2½st
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼st
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅛"	24"	5"	2¼st

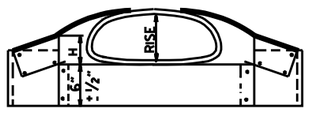
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE







CIRCULAR PIPE

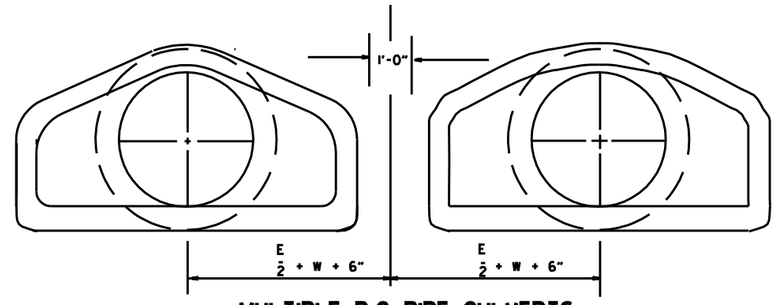
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½st
15	16	7	8	6	26	30	2½st
18	16	8	10	6	31	36	2½st
21	16	9	12	6	36	42	2½st
24	16	10	13	6	41	48	2½st
30	14	12	16	8	51	60	2½st
36	14	14	19	9	60	72	2½st
42	12	16	22	11	69	84	2½st
48	12	18	27	12	78	90	2½st
54	12	18	30	12	84	102	2st
60	12	18	33	12	87	114	1½st
66	12	18	36	12	87	120	1½st
72	12	18	39	12	87	126	1 1/3st

C.M. ARCH PIPE

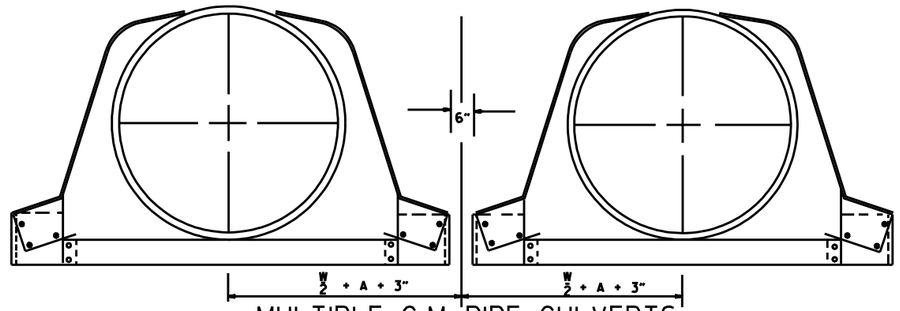
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½st	16
18"	21	15	7	10	6	23	36	2½st	16
21"	24	18	8	12	6	28	42	2½st	16
24"	28	20	9	14	6	32	48	2½st	16
30"	35	24	10	16	6	39	60	2½st	14
36"	42	29	12	18	8	46	75	2½st	14
42"	49	33	13	21	9	53	85	2½st	12
48"	57	38	18	26	12	63	90	2½st	12
54"	64	43	18	30	12	70	102	2½st	12
60"	71	47	18	33	12	77	114	2½st	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



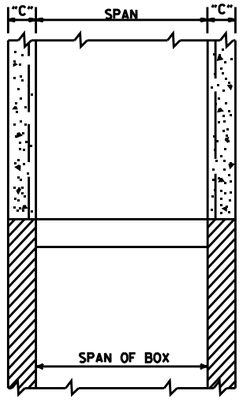
MULTIPLE C.M. PIPE CULVERTS

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

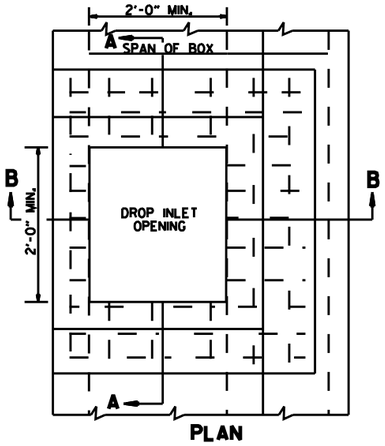
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

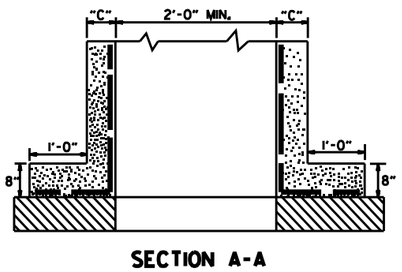
STANDARD DRAWING FES-2



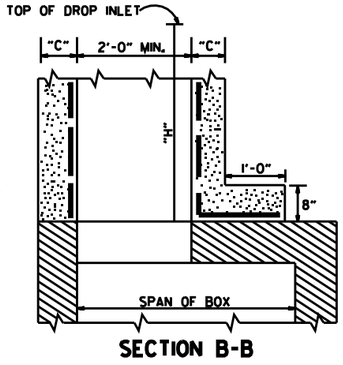
SECTION B-B



PLAN

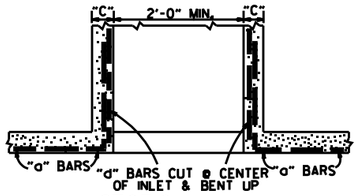


SECTION A-A

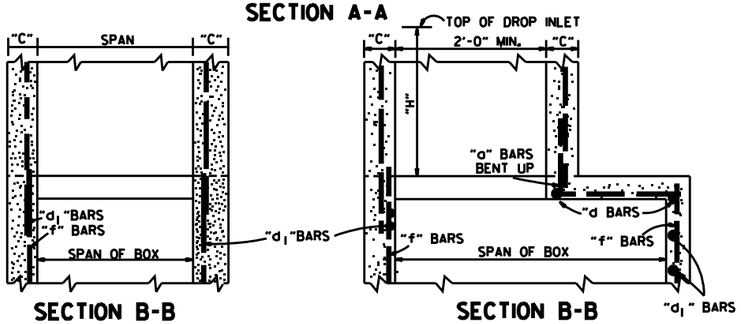


SECTION B-B

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



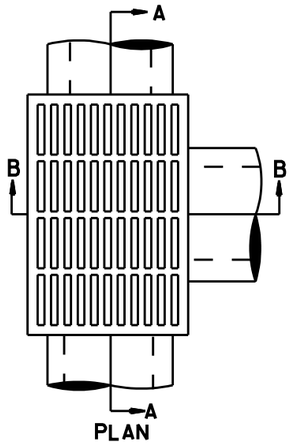
SECTION A-A



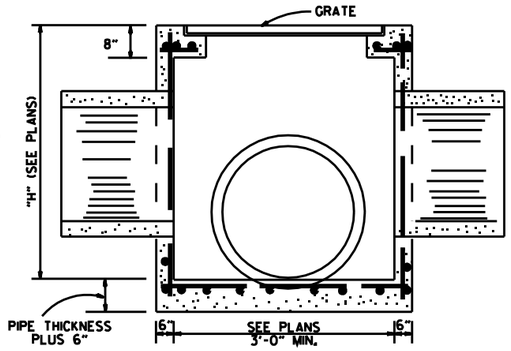
SECTION B-B SECTION B-B

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

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

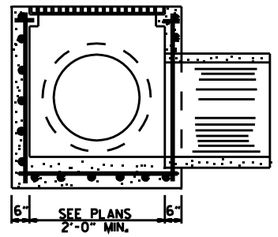


PLAN



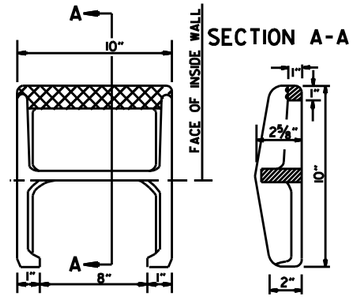
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)



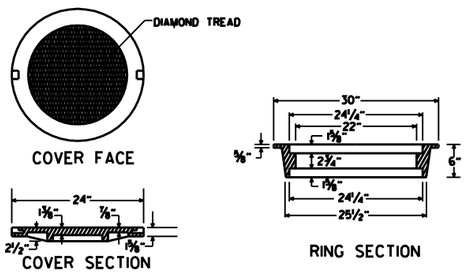
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

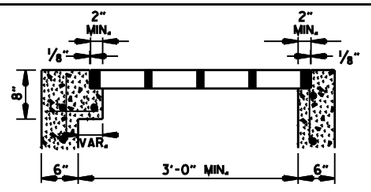
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

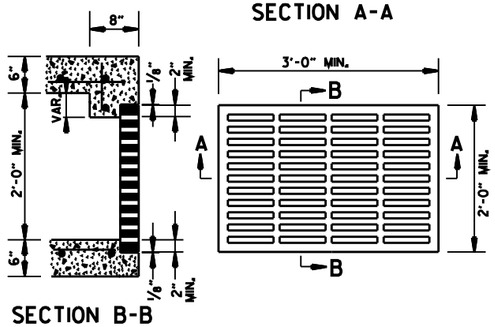


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



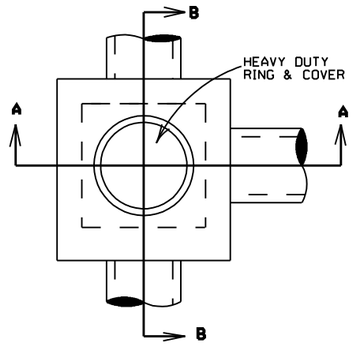
SECTION A-A



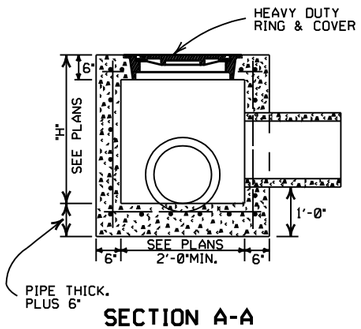
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

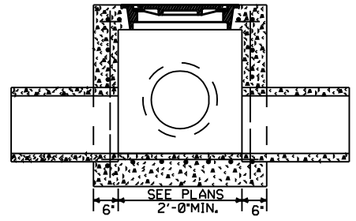


PLAN



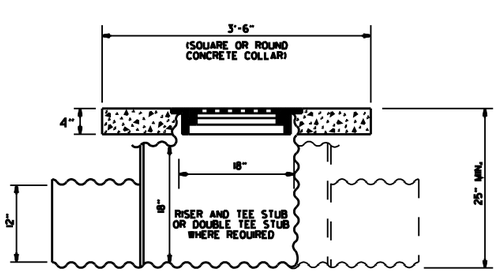
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

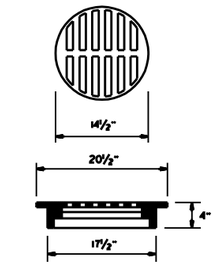


SECTION B-B

JUNCTION BOX (TYPE E)



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



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

4'-0" LENGTH DROP INLET

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

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

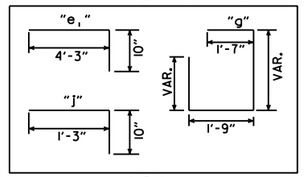
DROP INLET EXTENSION

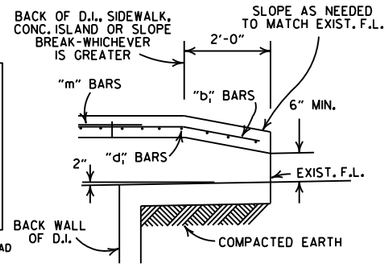
4'-0" CLASS A CONC. CU. YDS.	4'-0" REINF. STEEL POUNDS	8'-0" CLASS A CONC. CU. YDS.	8'-0" REINF. STEEL POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

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

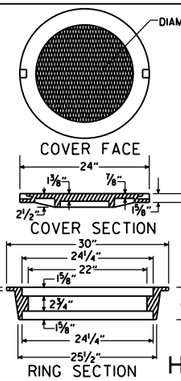
BAR DIAMETER





BACK OPENING

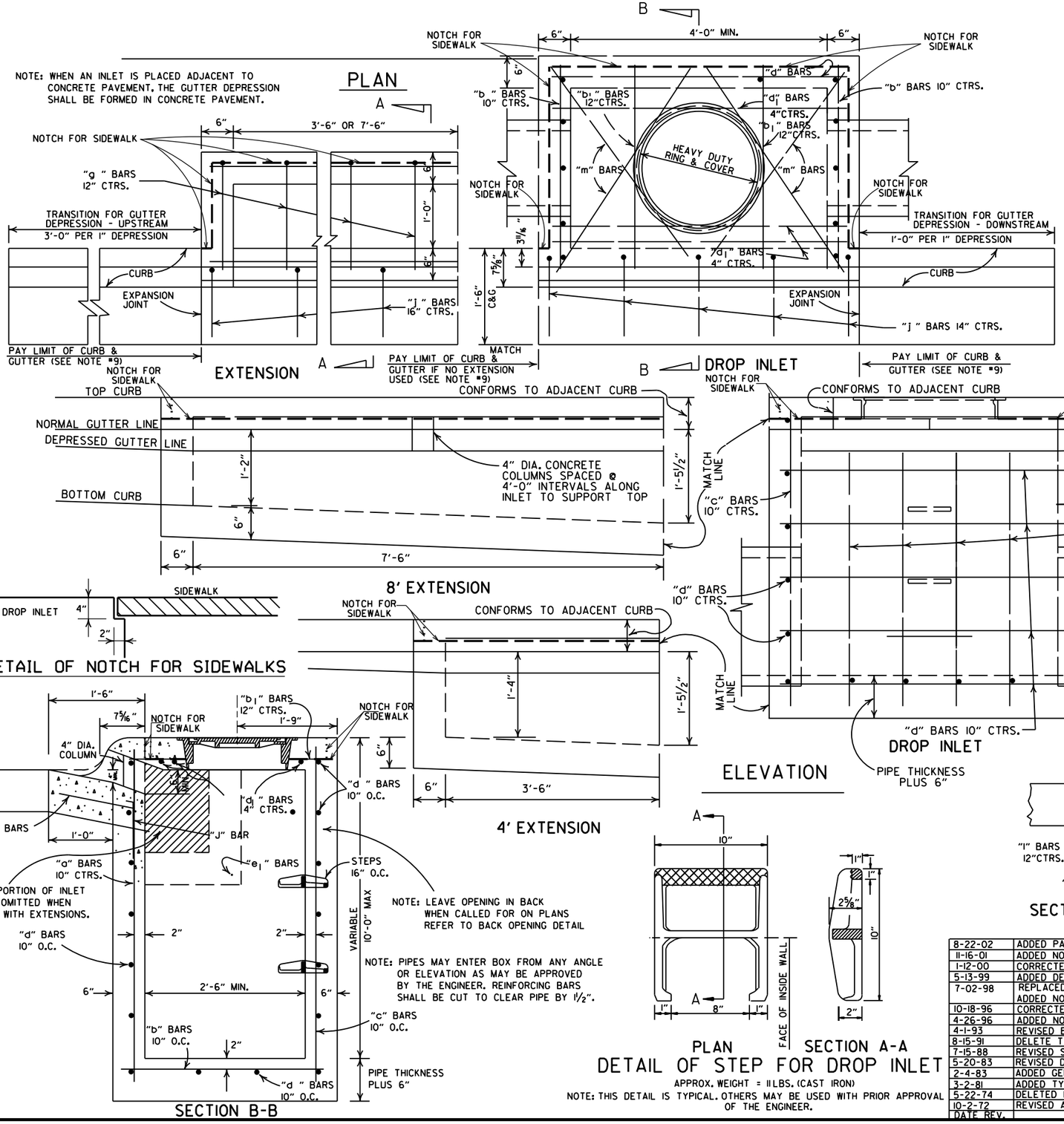
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (FPC-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"×2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



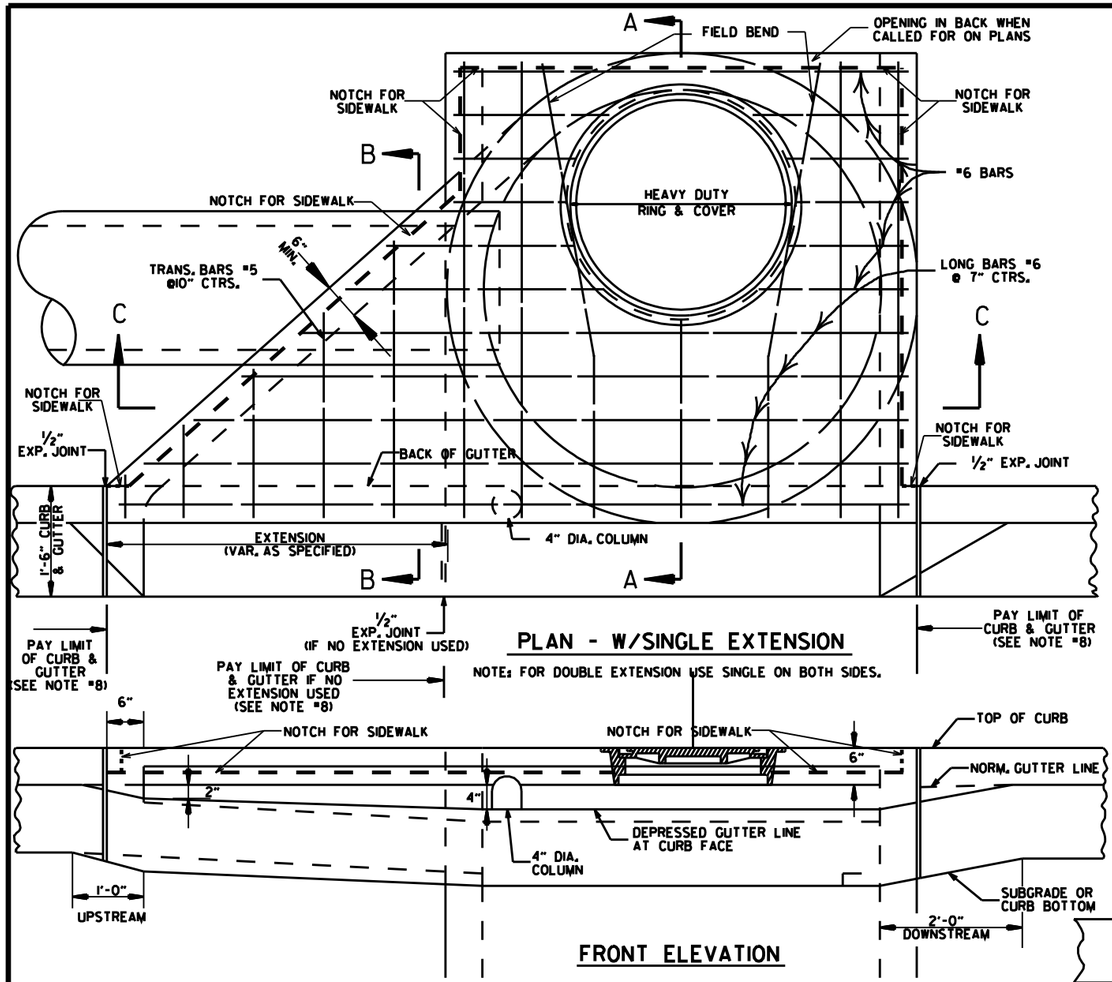
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

(TYPE C)

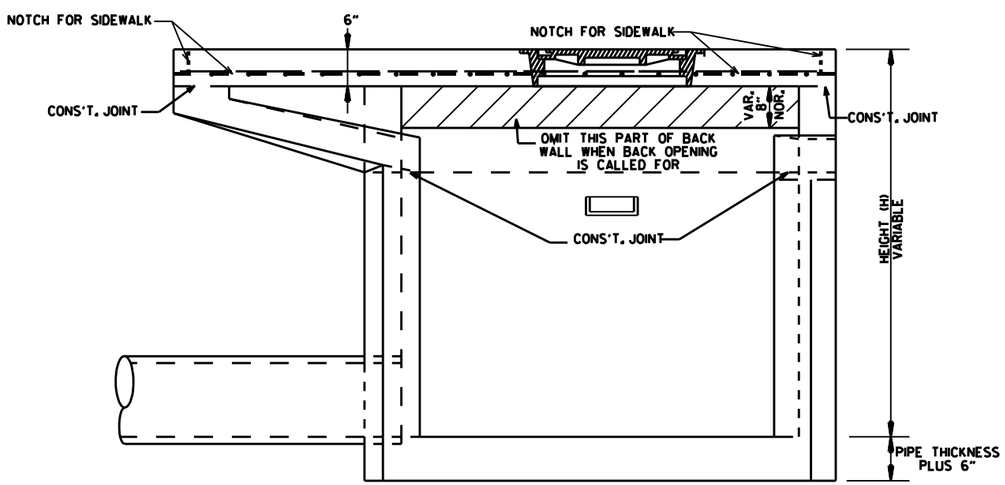
STANDARD DRAWING FPC-9E



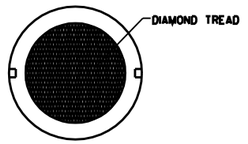
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



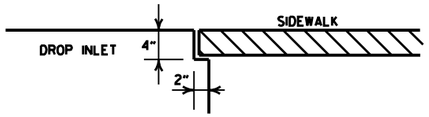
SECTION C-C



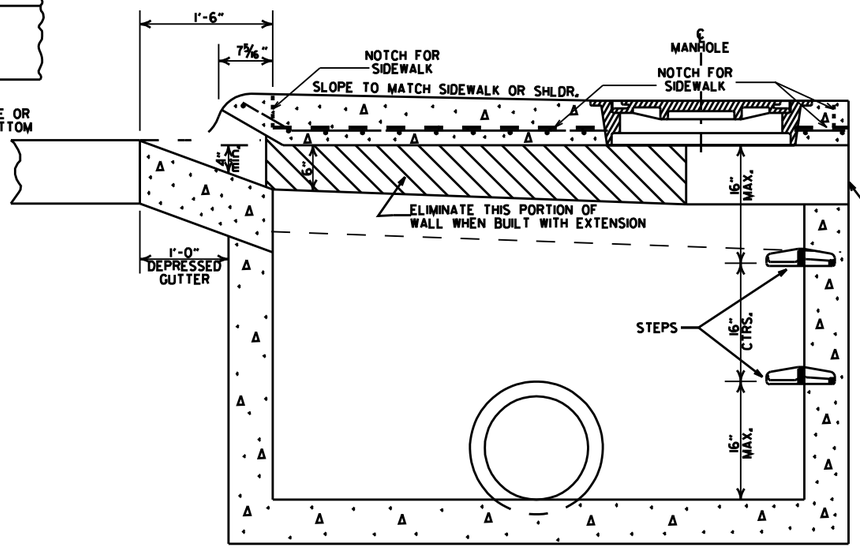
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

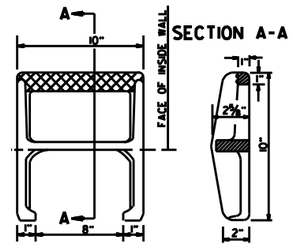
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON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



DETAIL OF NOTCH FOR SIDEWALKS



SECTION A-A

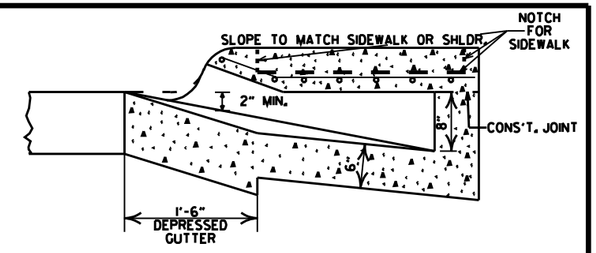


APPROX. WEIGHT = 11 LBS. (CAST IRON)

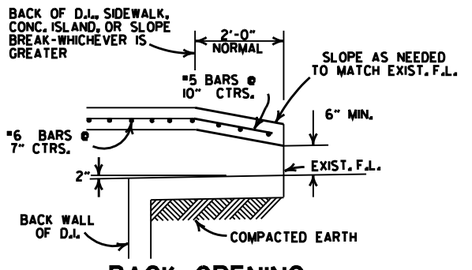
PLAN

NOTE: THIS DETAIL IS TYPICAL, OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B



BACK OPENING

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

GENERAL NOTES:

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

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

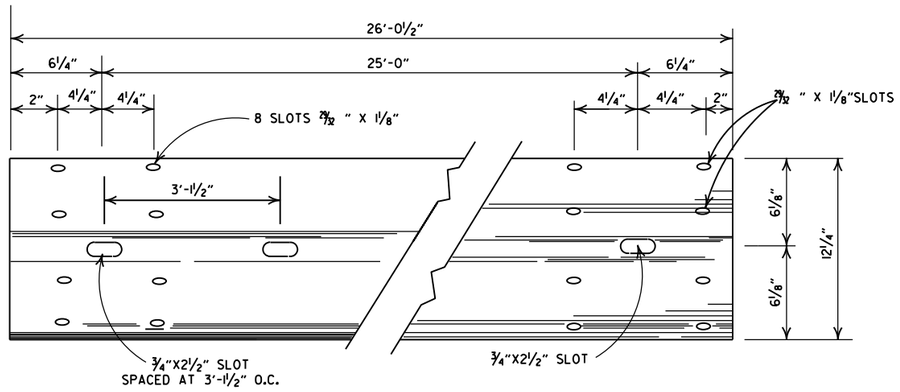
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

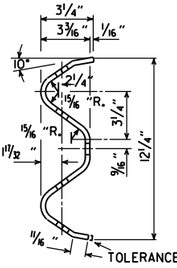
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REV. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 & ADJ. OPENING DIMENSION	
10-12-95	CORRECTED *5 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-1-94	REVISED GENERAL NOTES	11-1-94
4-1-93	REV BACK OPEN DETAIL & NOTE	4-1-93
8-14-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-14-91
11-20-89	ADDED NOTE NO.12	11-20-89
4-21-89	ADDED NOTE 8 & MINIMUM WALL THICKNESS	4A1-4-21-89
7-25-88	ADDED EXTEND NOTE TO SECTION A-A	4A9-7-25-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

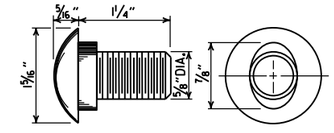
STANDARD DRAWING FPC-9M



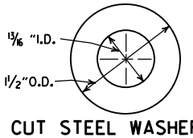


DETAILS OF W-BEAM GUARDRAIL

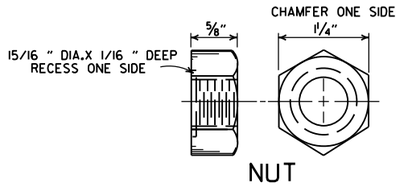
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



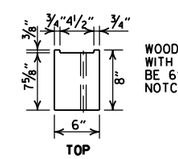
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



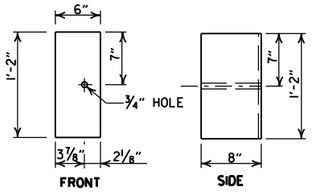
CUT STEEL WASHER



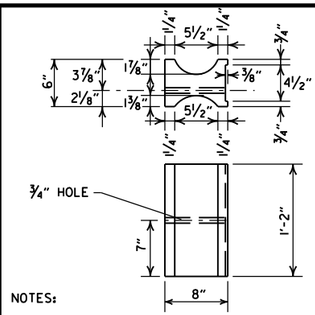
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"xl'-2" WITH NO NOTCH REQUIRED.



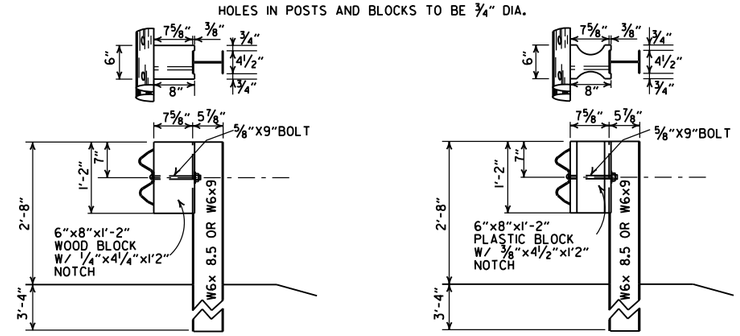
WOOD BLOCKOUT (W-BEAM)



NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

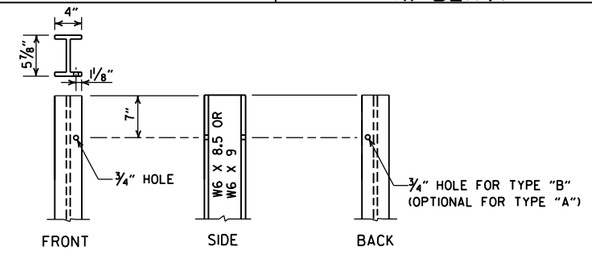
PLASTIC BLOCKOUT (W-BEAM)



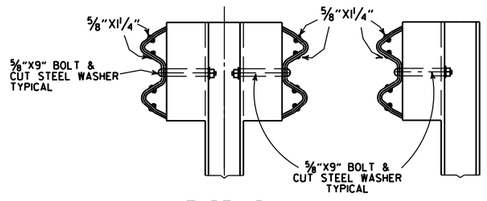
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

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

USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL 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 GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

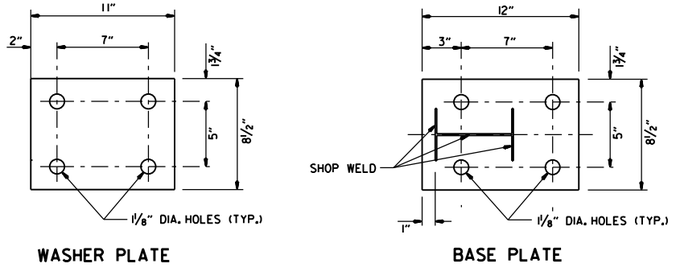
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 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 GUARDRAIL 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 GUARDRAIL 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

GUARDRAIL DETAILS

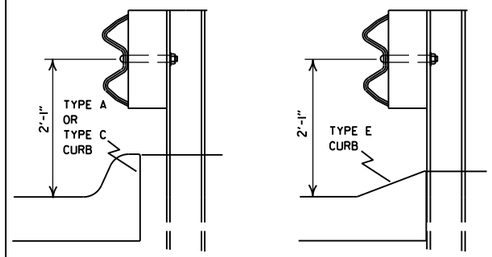
STANDARD DRAWING GR-6



WASHER PLATE

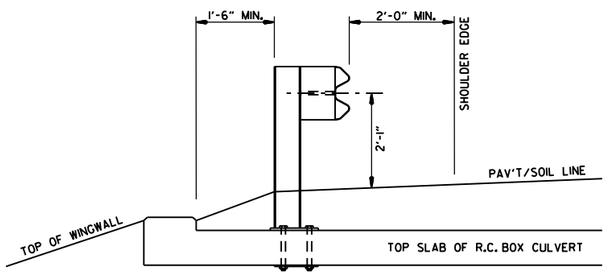
BASE PLATE

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

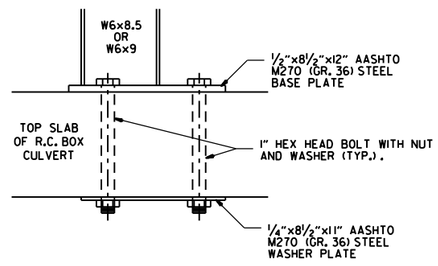


DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

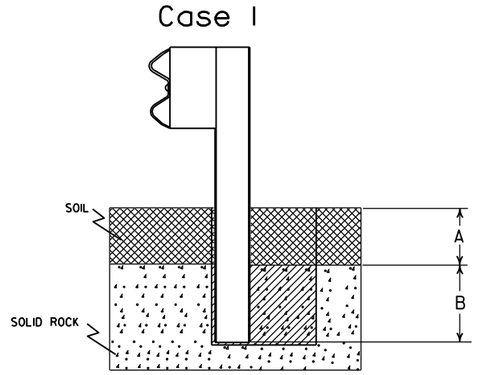
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A

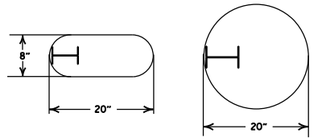


DETAIL OF CONNECTION



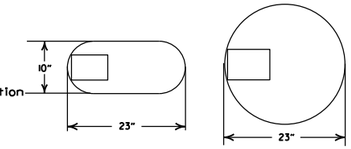
Plan View Steel Posts

Either hole configuration acceptable



Plan View Wood Posts

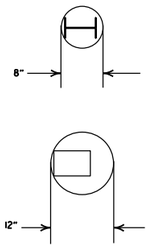
Either hole configuration acceptable



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

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

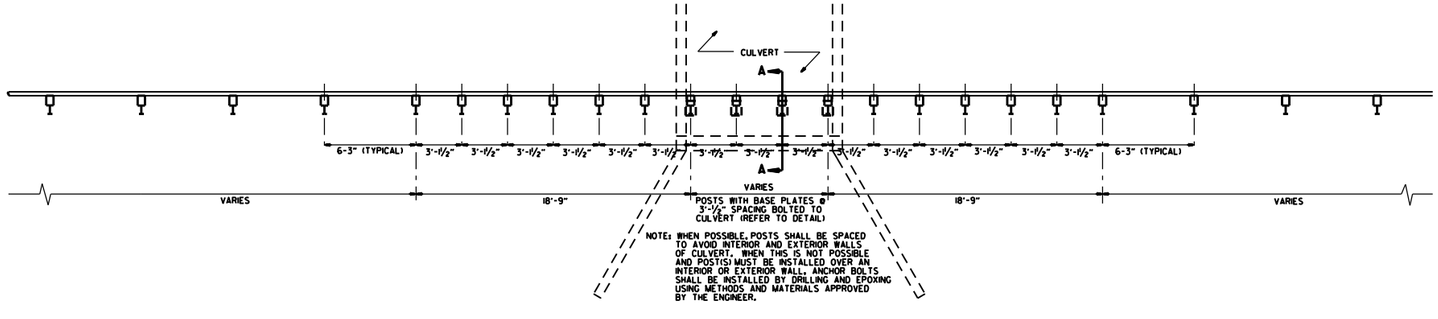
Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.



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

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

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



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DWG. GR-6.

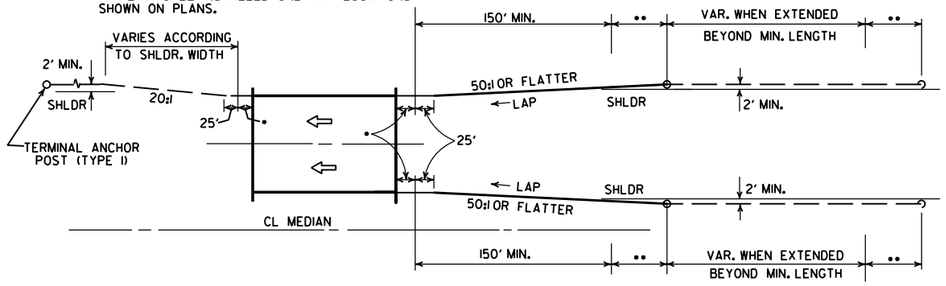
DATE	REVISION	FILMED
11-07-19	RENUMBERED, RENAMED, REVISED REFERENCE	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
04-12-07	REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL 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 GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

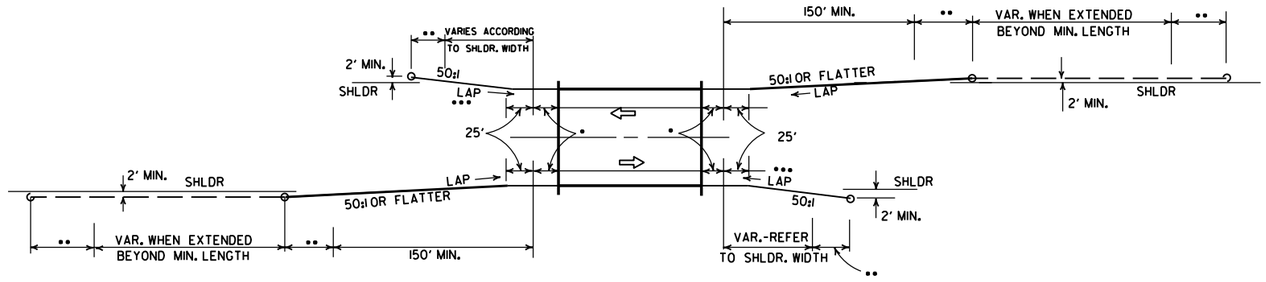
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

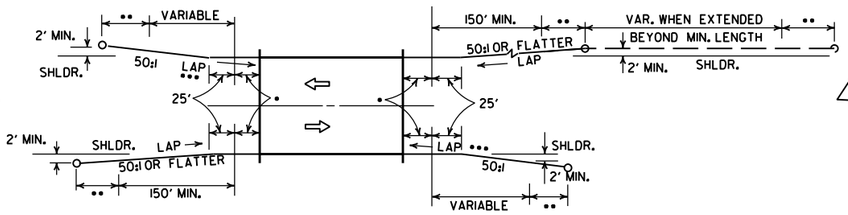
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

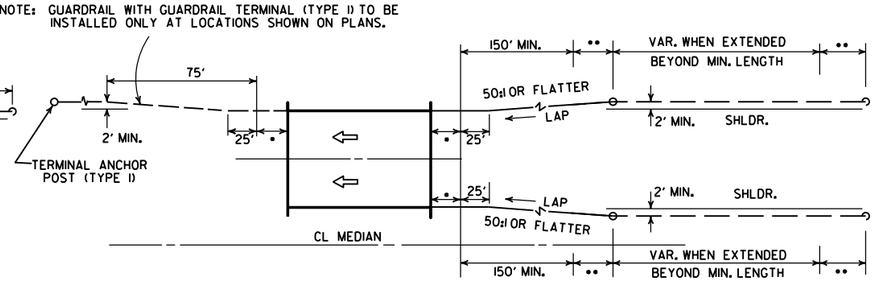
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

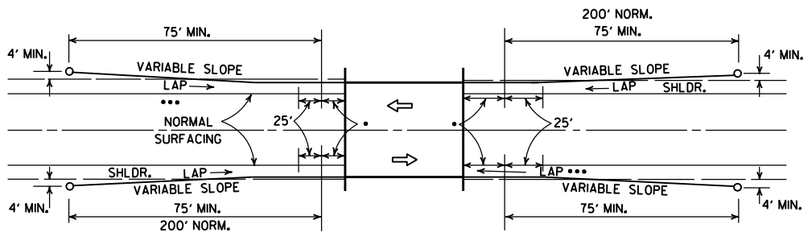
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

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

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



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

LEGEND

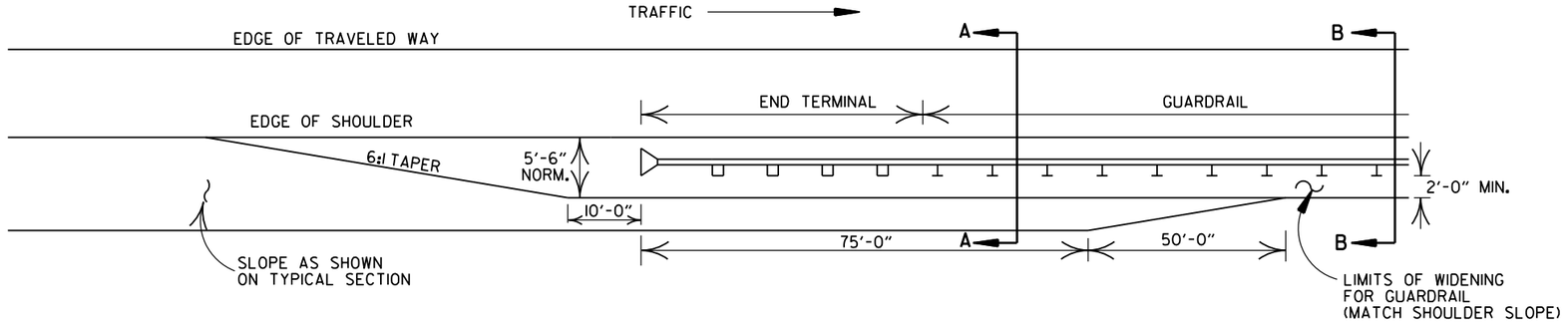
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

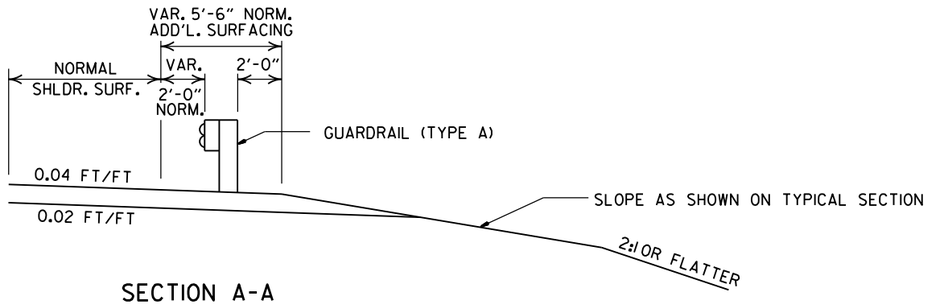
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

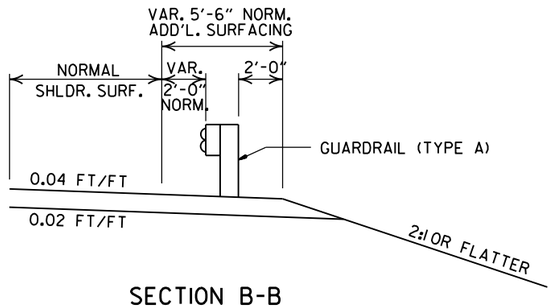
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



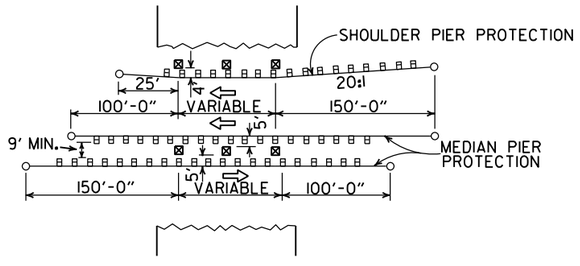


SECTION A-A



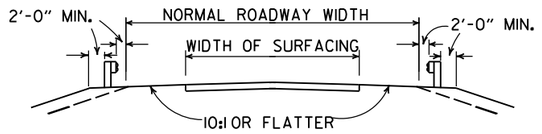
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

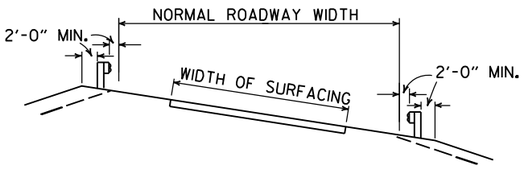


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

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



SECTION ON TANGENT



SECTION ON CURVE

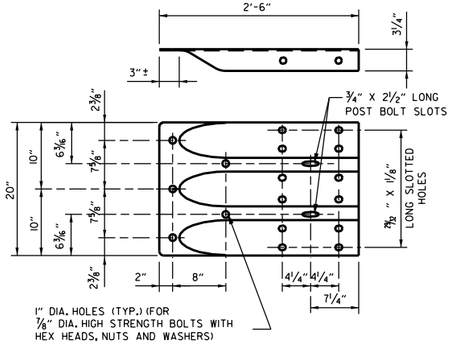
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

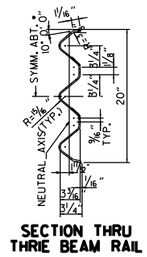
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

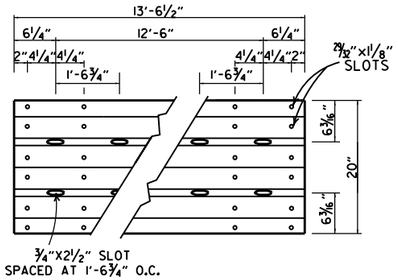
STANDARD DRAWING GR-9



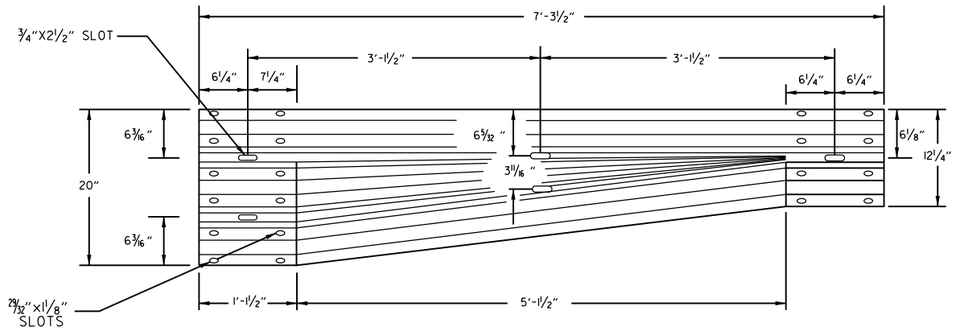
SPECIAL END SHOE



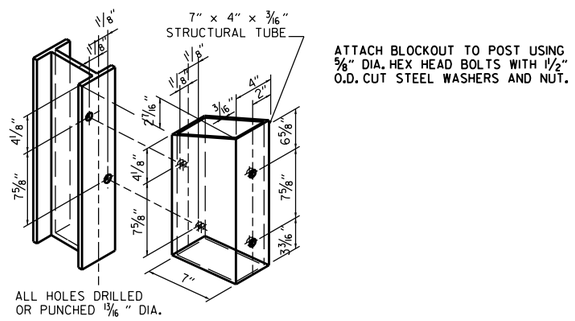
SECTION THRU THRIE BEAM RAIL



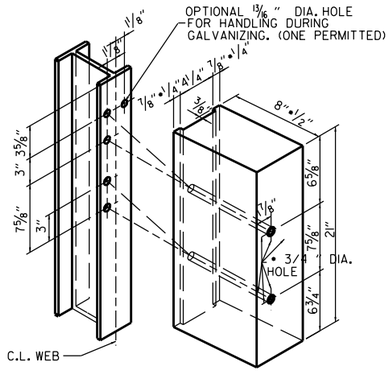
THRIE BEAM RAIL



TRANSITION SECTION



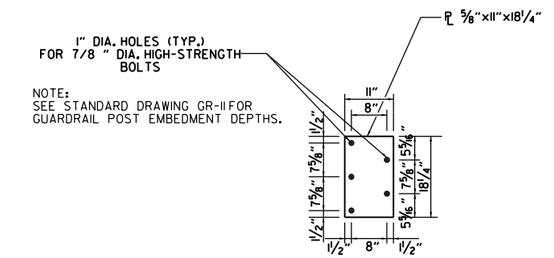
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

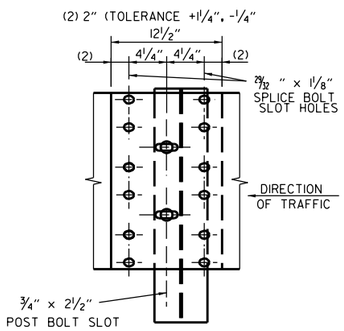
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

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



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

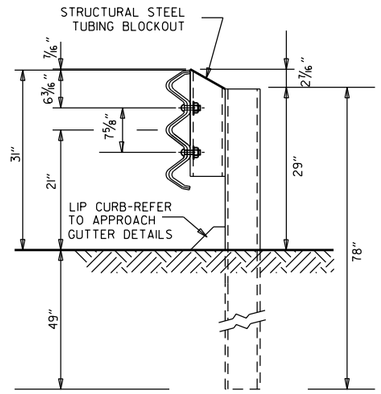
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
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	

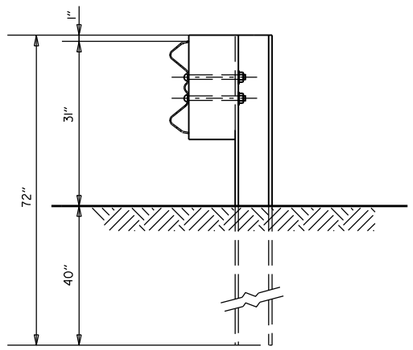
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

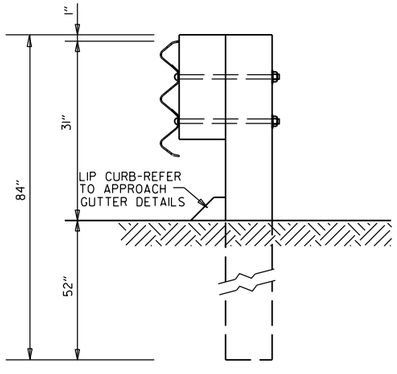
STANDARD DRAWING GR-10



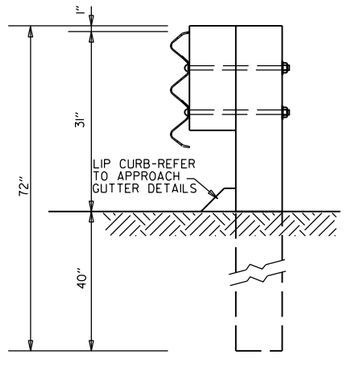
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



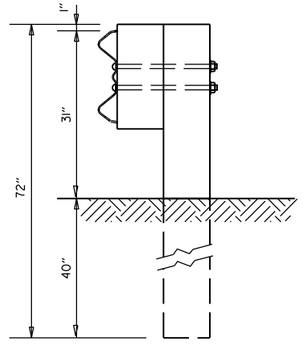
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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.

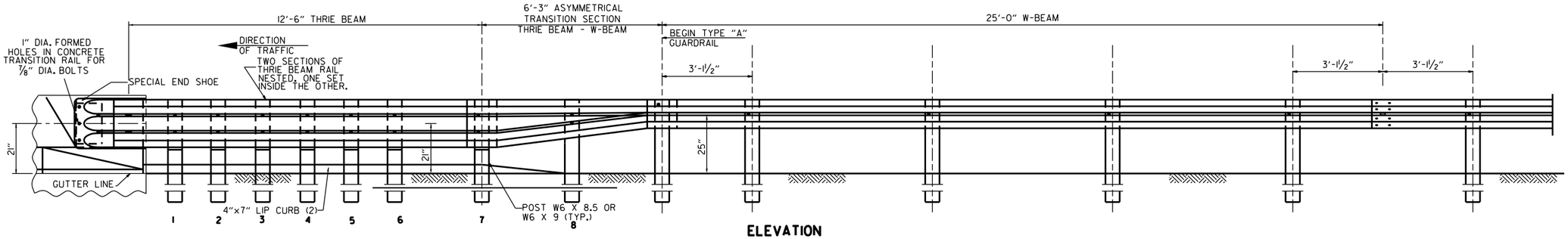
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL 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	

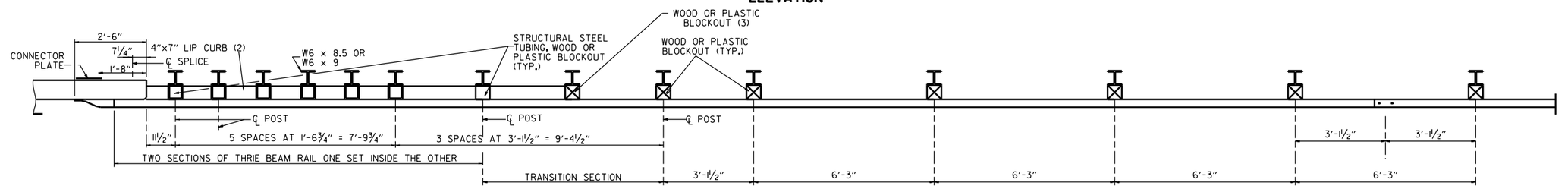
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

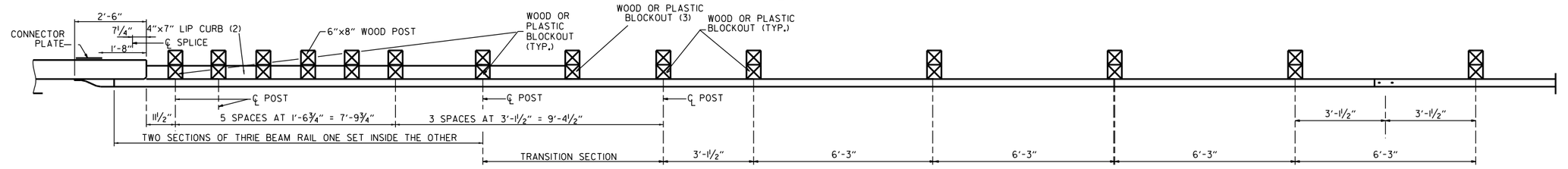
STANDARD DRAWING GR-11



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 GUARDRAIL 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-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

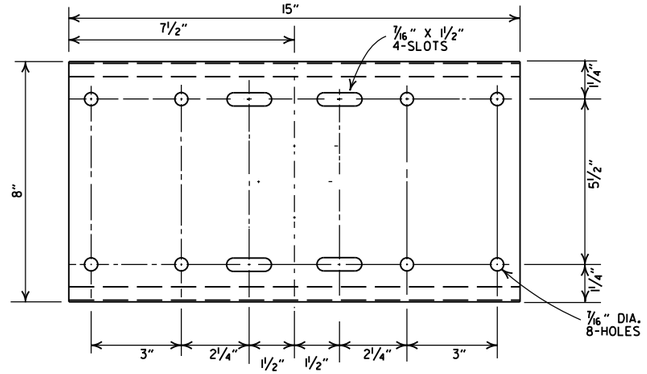
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

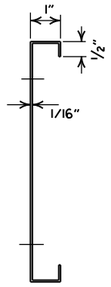
ARKANSAS STATE HIGHWAY COMMISSION

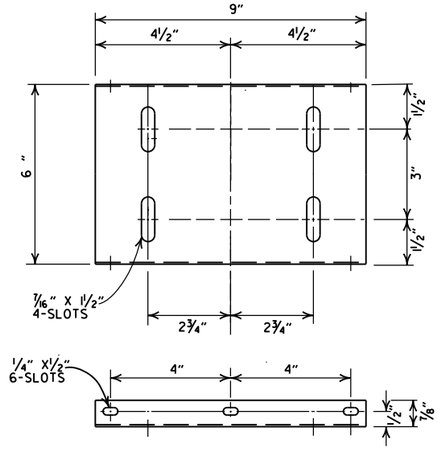
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

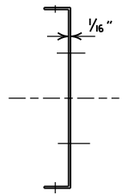


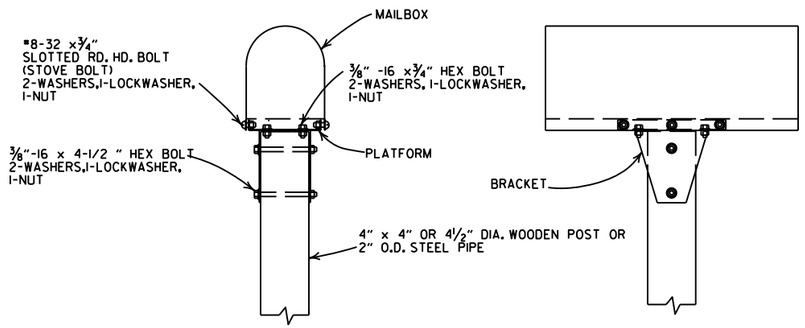
SHELF



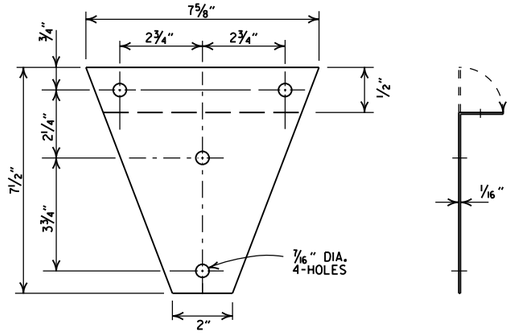


PLATFORM





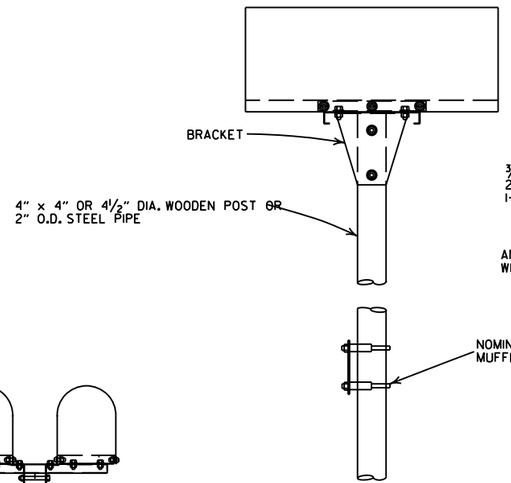
SINGLE INSTALLATION



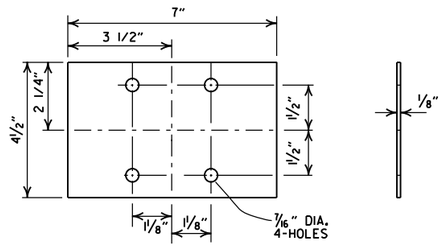
BRACKET

GENERAL NOTES

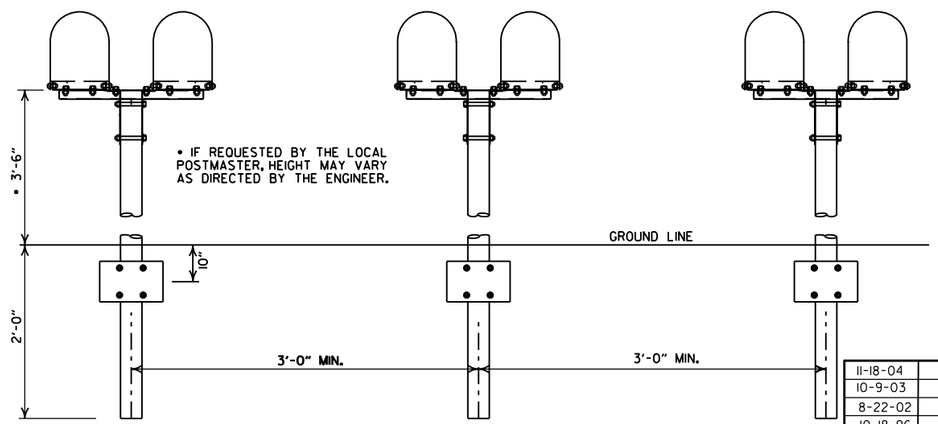
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



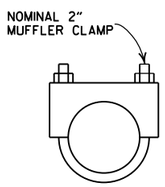
DOUBLE INSTALLATION



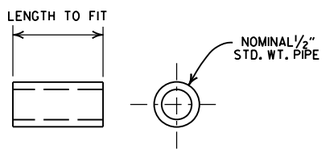
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



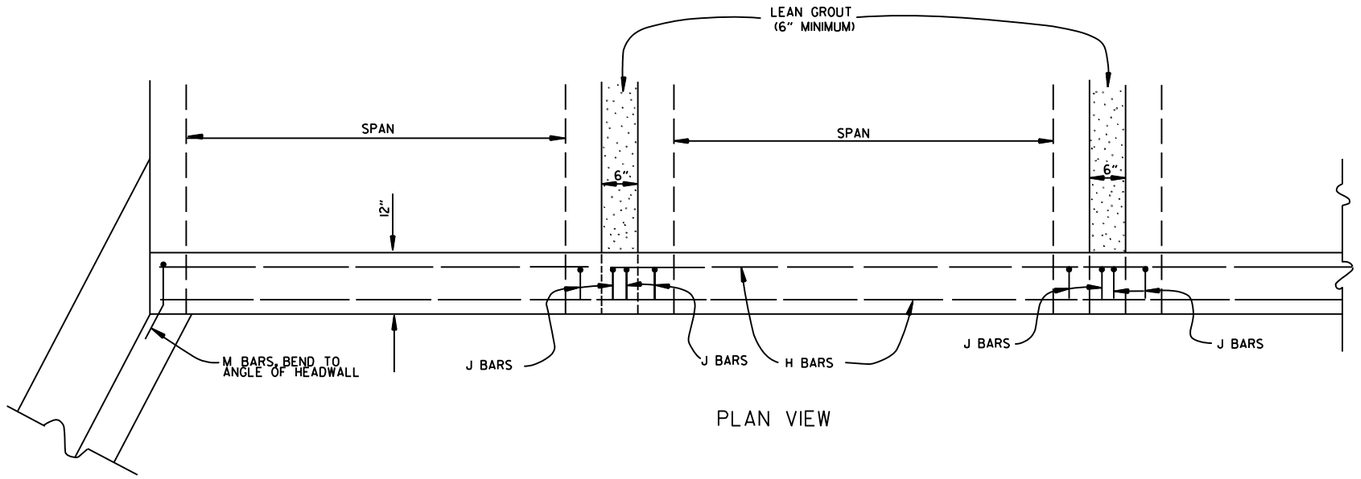
SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

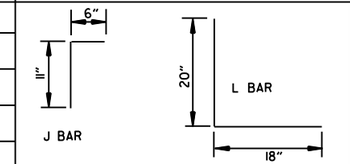
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

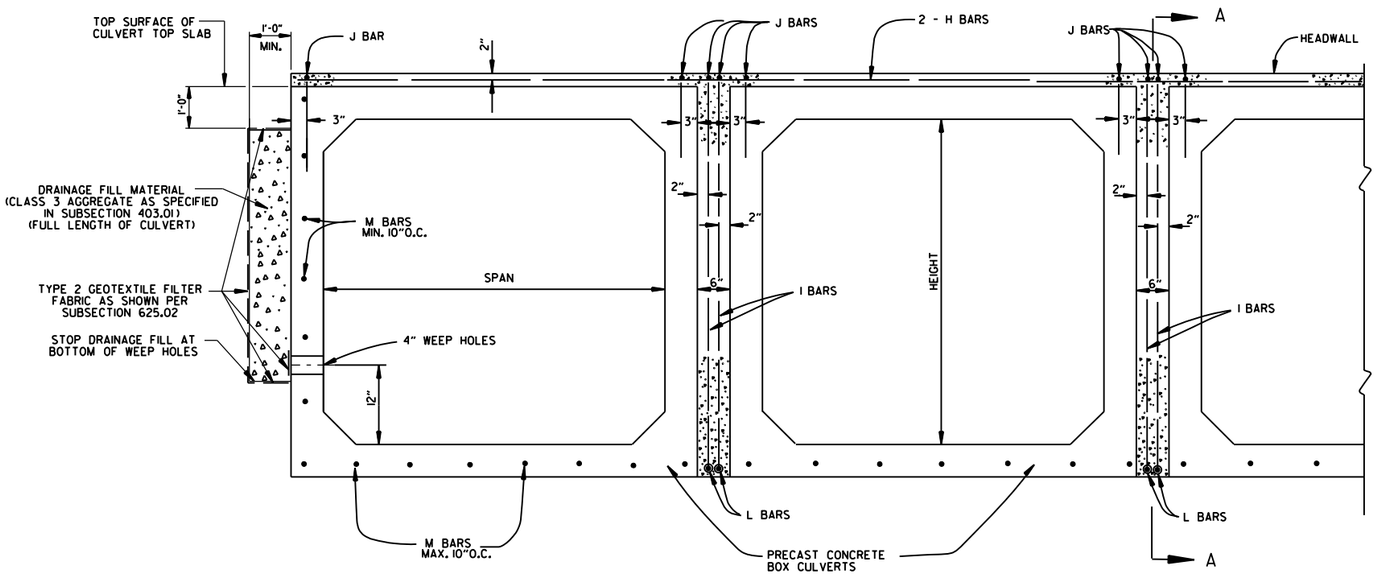
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

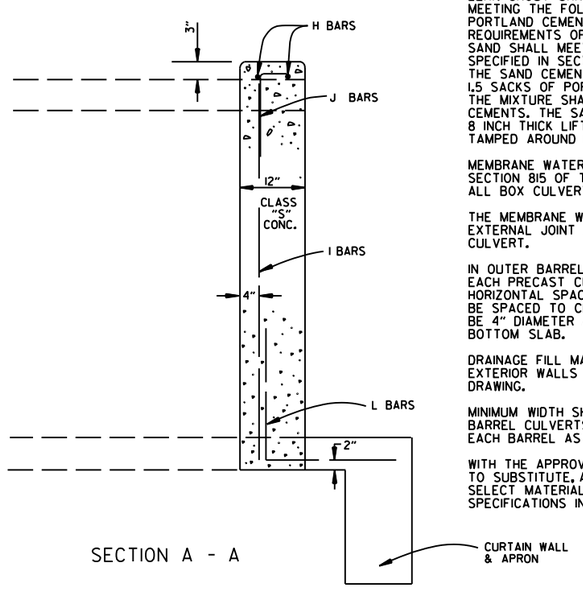
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅜	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

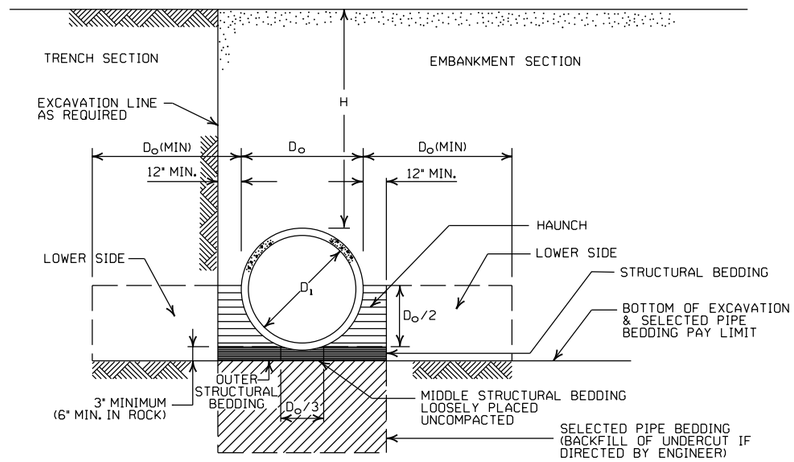
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

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

CORRUGATED METAL PIPE ARCHES

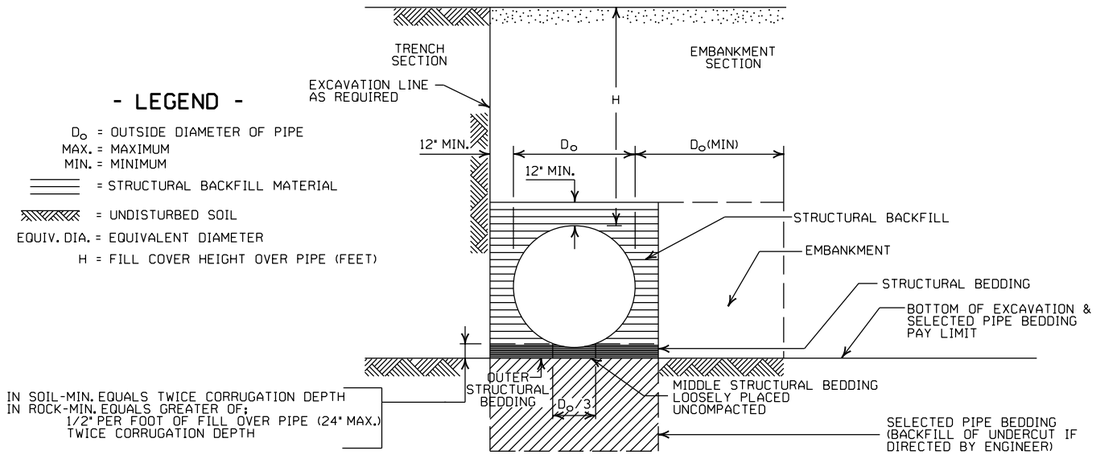
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)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

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

② WHERE THE STANDARD 2 2/3"x 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.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. 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 DEPARTMENT OF TRANSPORTATION 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."

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

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

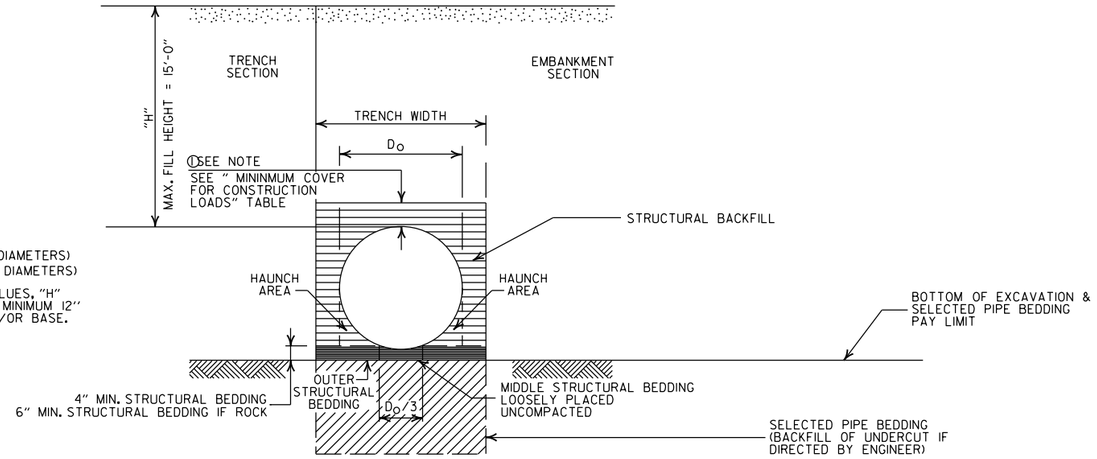
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

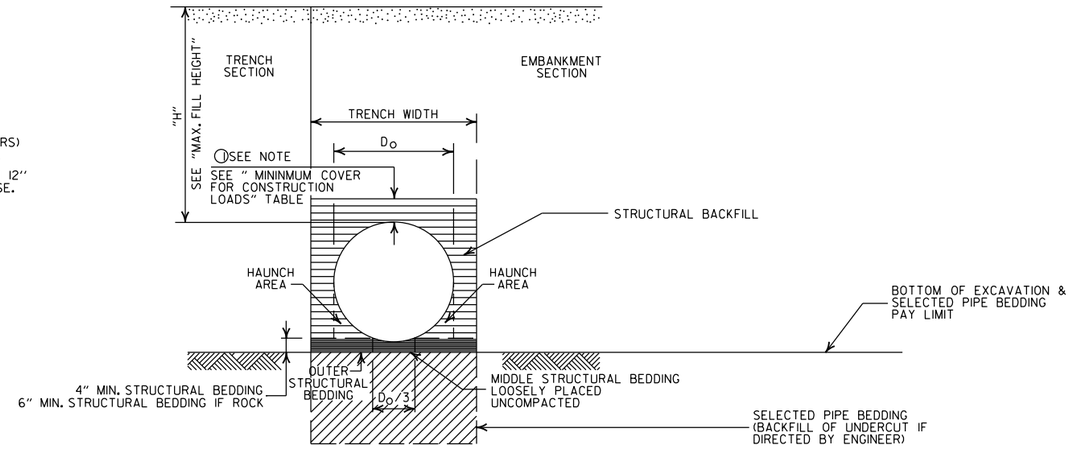
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

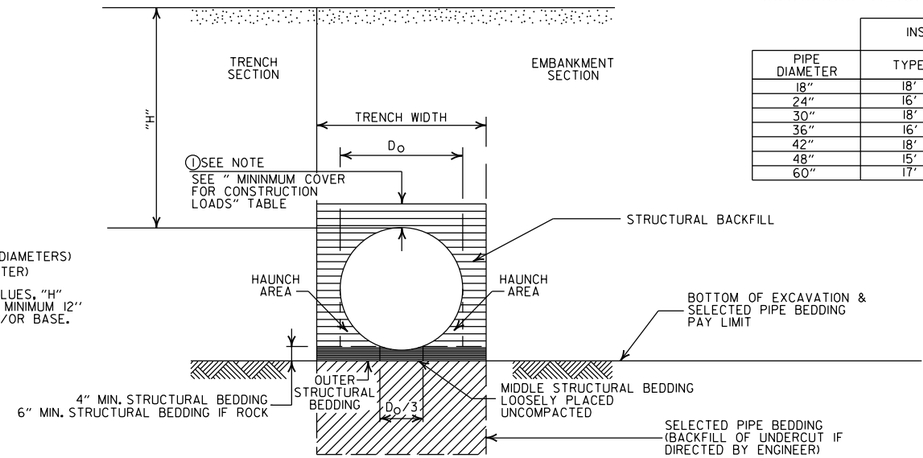
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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

MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'



MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S, INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

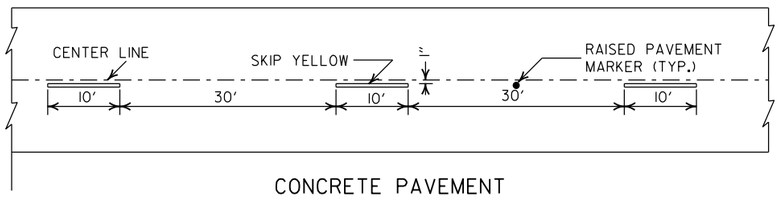
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

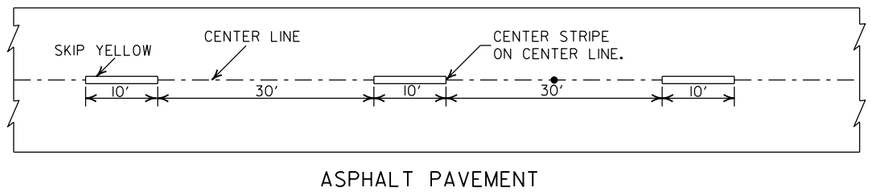
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

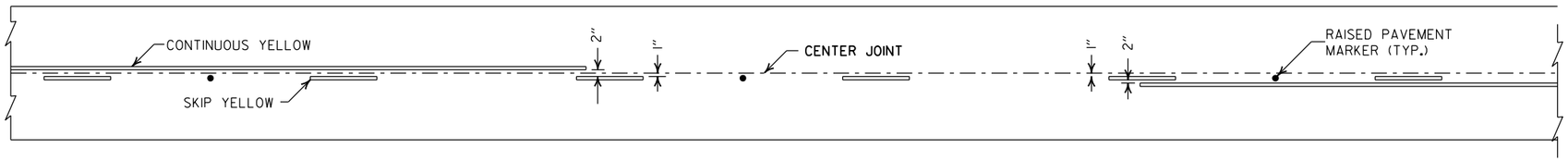


CONCRETE PAVEMENT

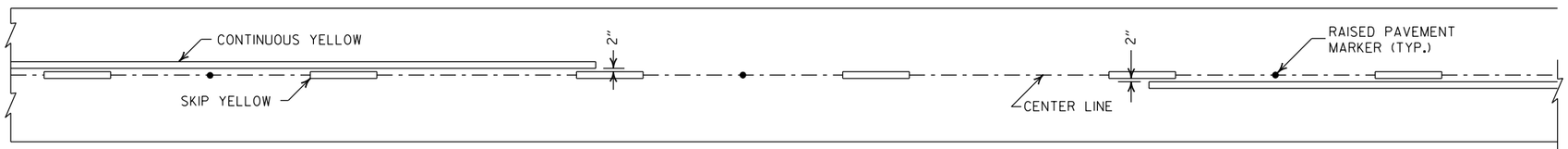


ASPHALT PAVEMENT

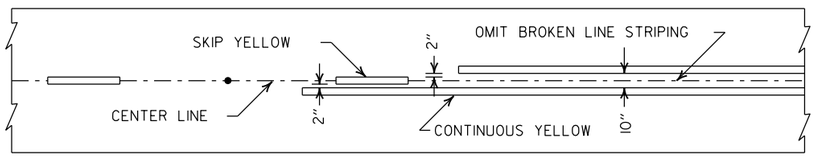
BROKEN LINE STRIPING



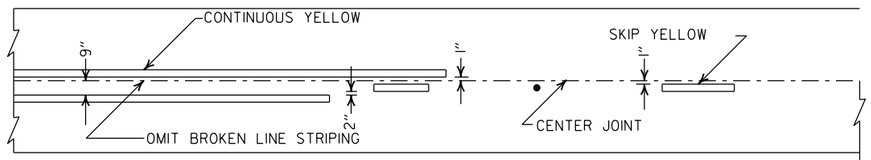
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

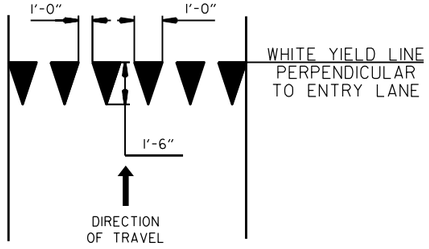


ASPHALT PAVEMENT

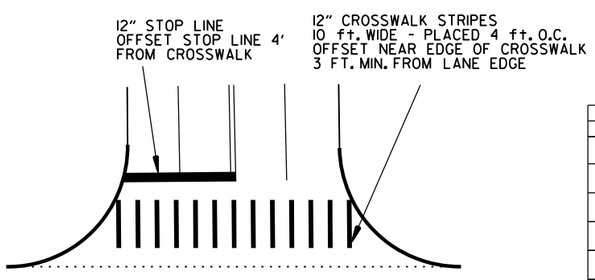


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

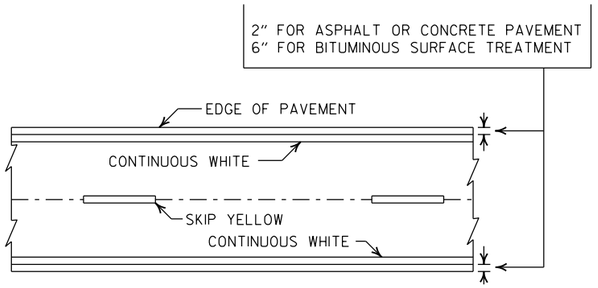


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

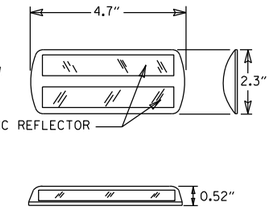
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



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 ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
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

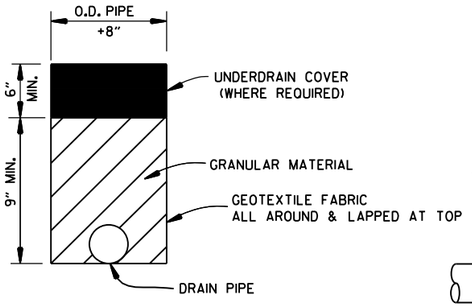
PAVEMENT MARKING DETAILS

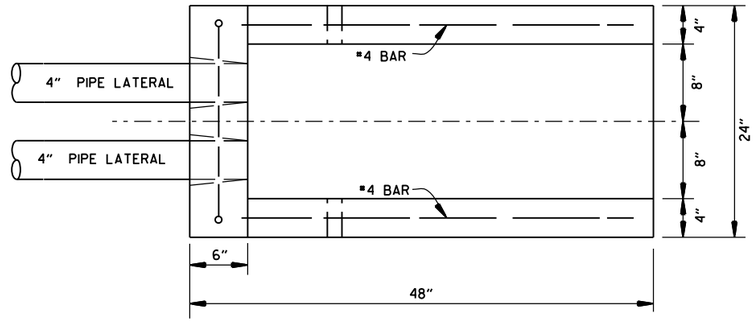
STANDARD DRAWING PM-1

NOTE:

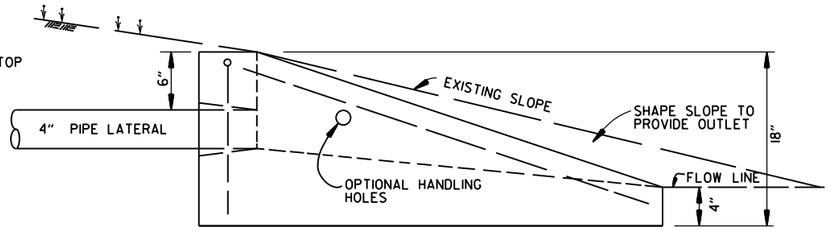
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

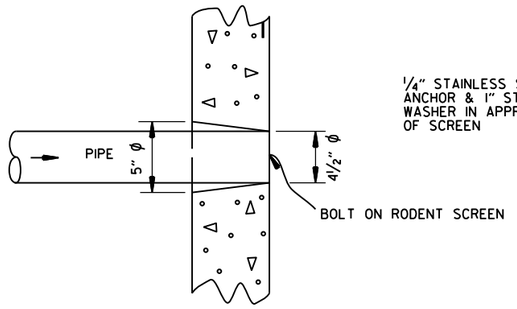




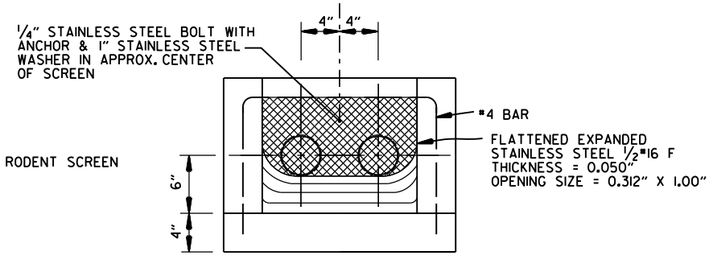
PLAN VIEW



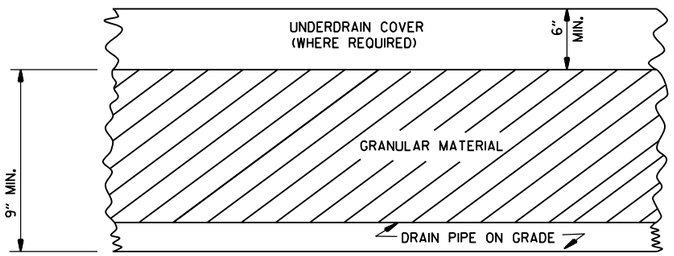
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

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

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

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

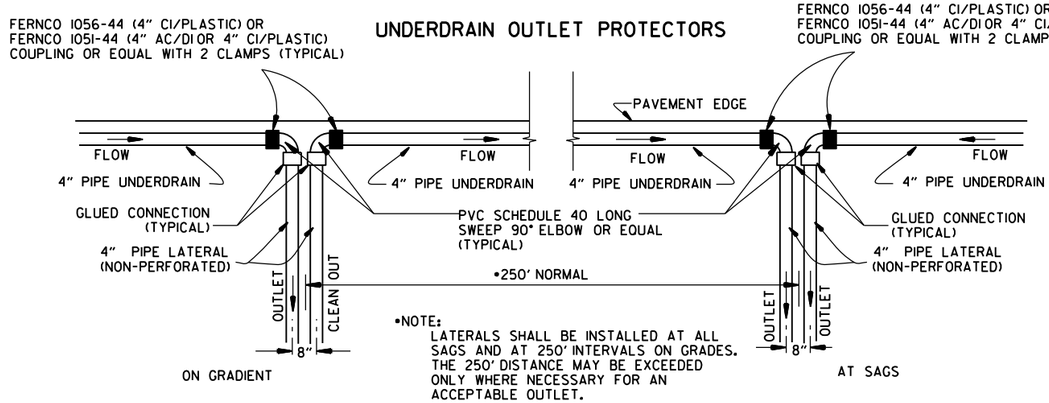
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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

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

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

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS
WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

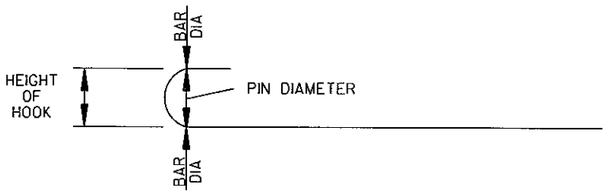
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

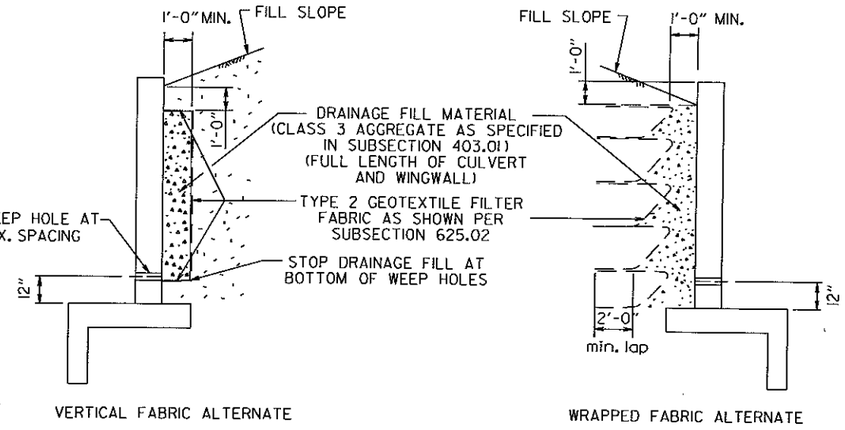
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

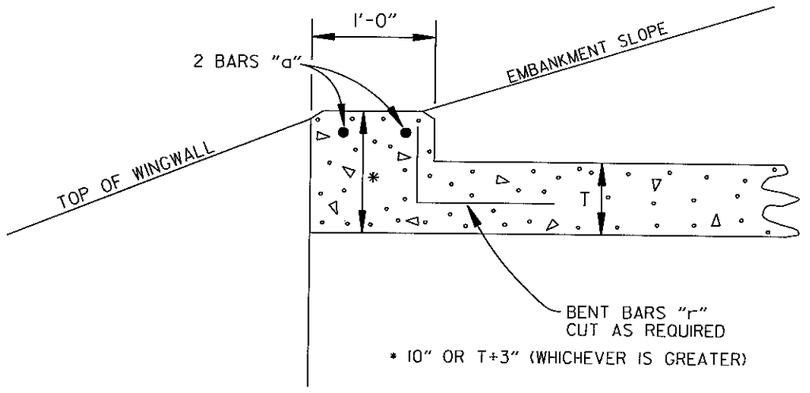
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

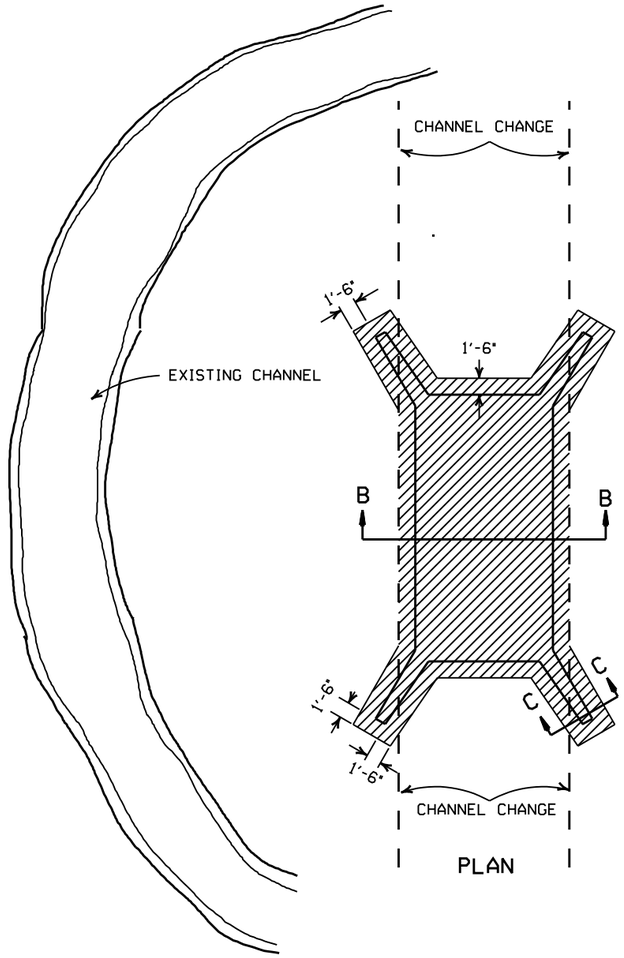
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

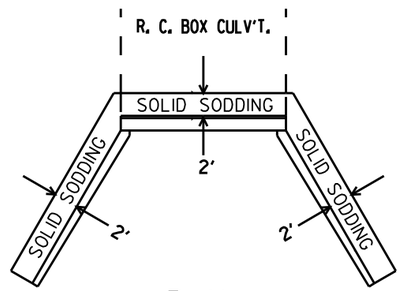
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



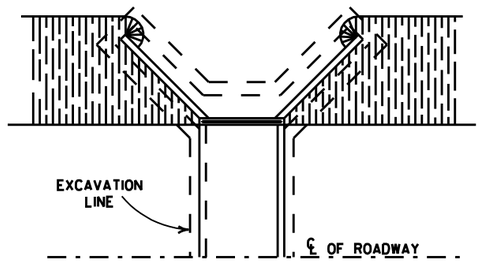
PLAN



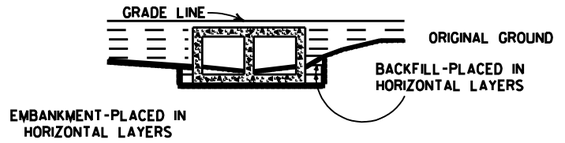
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

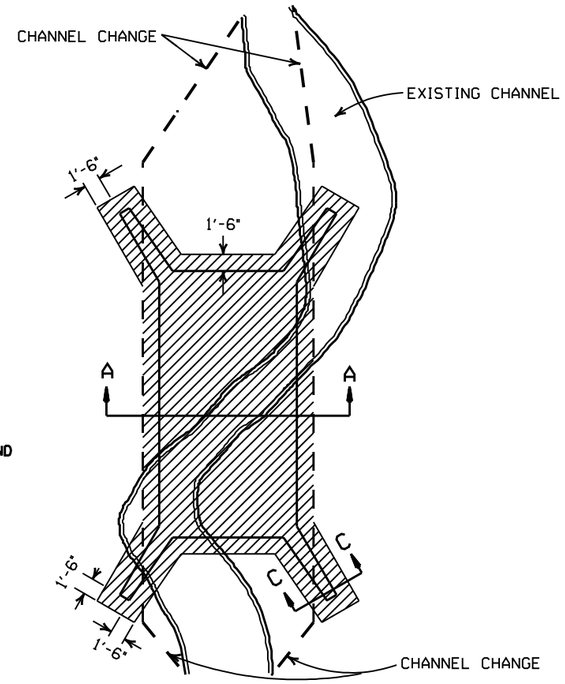


PLAN

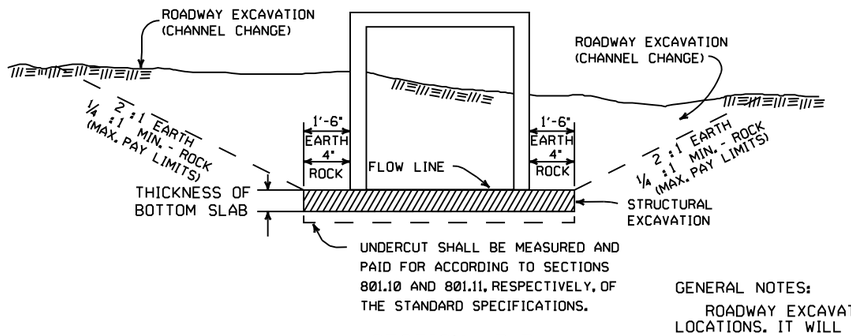


LONGITUDINAL SECTION

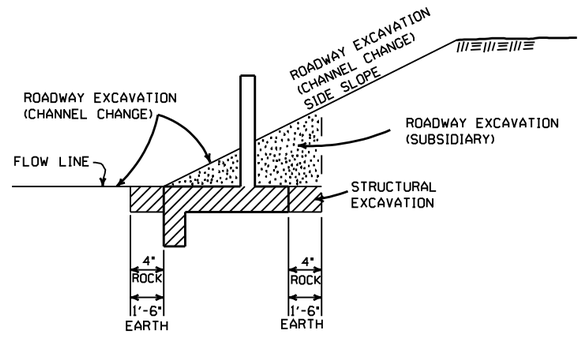
BACKFILL DETAILS FOR BOX CULVERT



PLAN

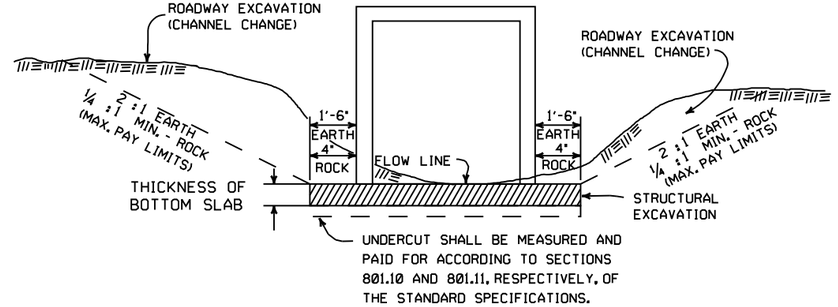


SECTION B-B



SECTION C-C

DETAILS FOR NEW CHANNELS



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

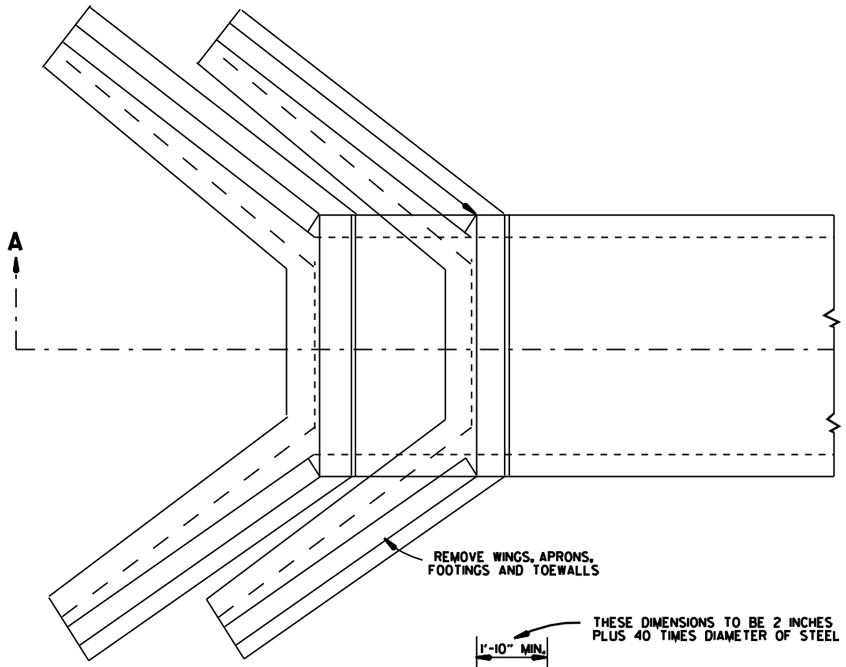
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

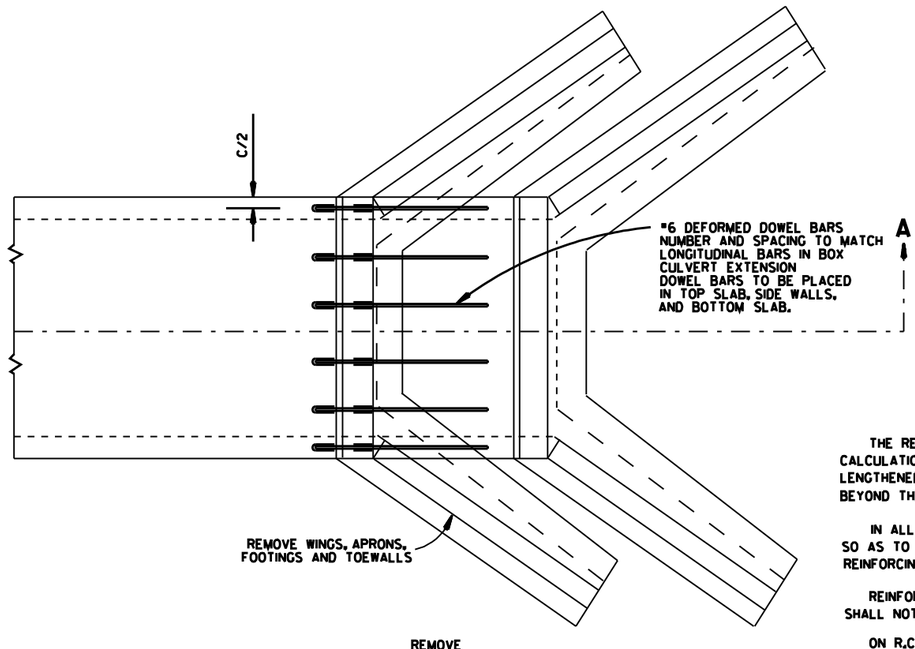
STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON, THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER. THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER, AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2, REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		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		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139	300	0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257	300	D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300	D MAX = 13° 45'																			
14° 00'	0.080	180		0.094	222																								
15° 00'	0.082	184		0.096	226																								
16° 00'	0.086	191		0.098	230																								
17° 00'	0.088	194		0.100	234																								
18° 00'	0.090	198	250	D MAX = 19° 30'																									
19° 00'	0.092	202																											
20° 00'	0.094	205																											
21° 00'	0.096	209																											
22° 00'	0.096	209																											
23° 00'	0.098	212																											
24° 00'	0.098	212																											
25° 00'	0.100	216																											
D MAX = 28° 30'																													

ABBREVIATIONS

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

GENERAL NOTES

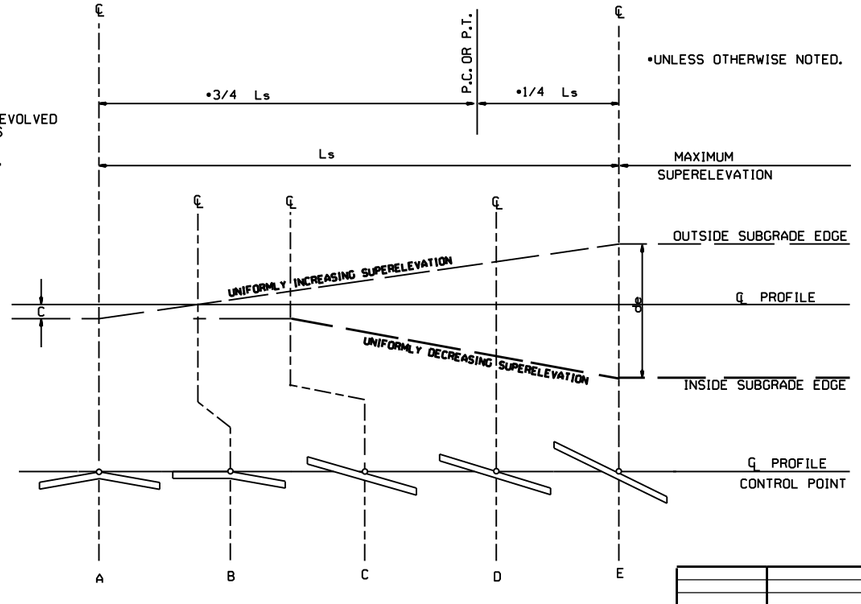
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED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

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

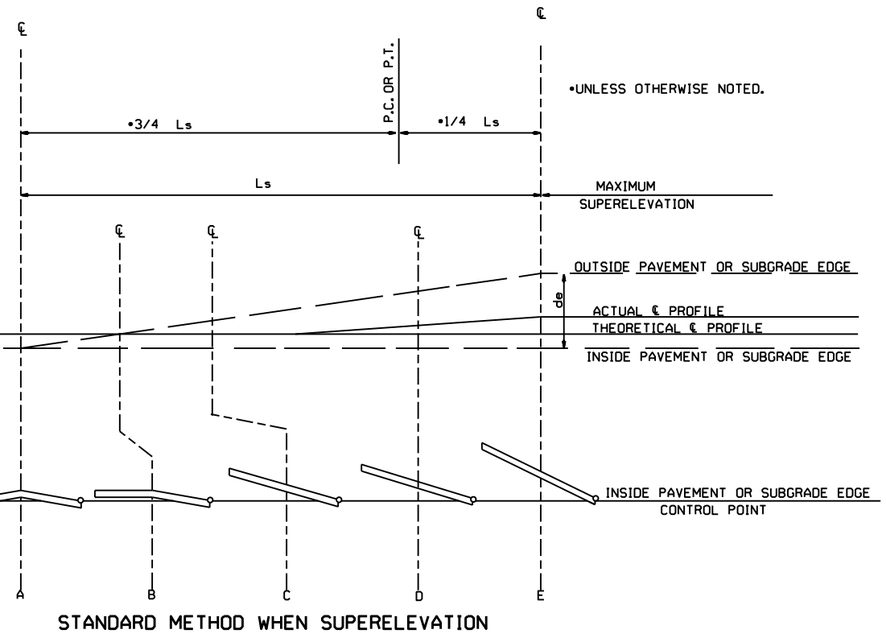
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

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

DATE	REVISION	DATE FILLMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

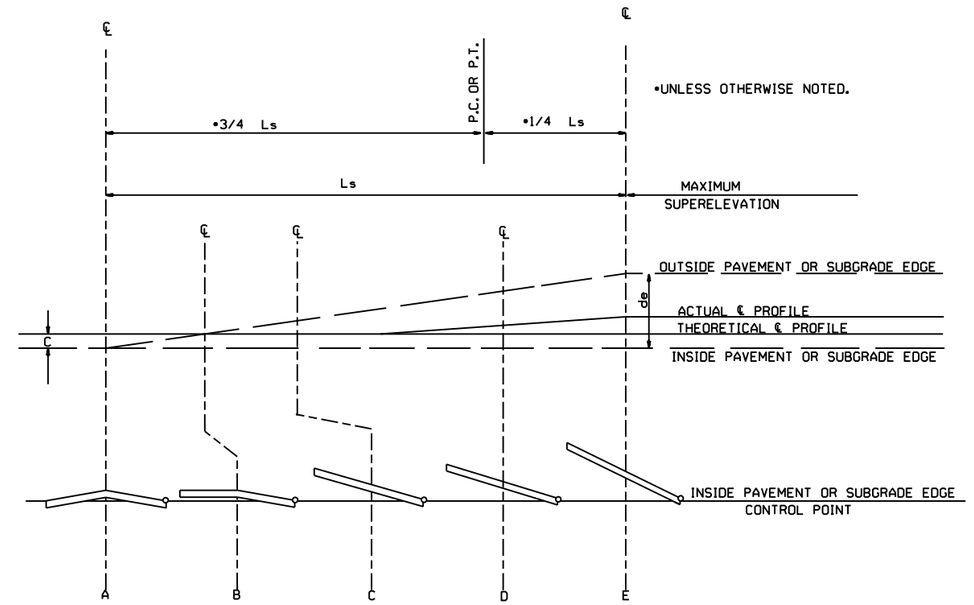
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC (4% MAXIMUM)

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	DEGREE OF CURVE	35 MPH e	35 MPH Ls (FT) MINIMUM	35 MPH Ls (FT) DESIRABLE	DEGREE OF CURVE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	DEGREE OF CURVE	45 MPH e	45 MPH Ls (FT) MINIMUM	45 MPH Ls (FT) DESIRABLE
0° 15'	NC			0° 15'	NC			0° 15'	NC			0° 15'	NC		
0° 30'				0° 30'				0° 30'				0° 30'			
0° 45'				0° 45'				0° 45'				0° 45'			
1° 00'				1° 00'				1° 00'				1° 00'	RC	90	125
1° 15'				1° 15'				1° 15'				1° 15'			
1° 30'				1° 30'				1° 30'	RC	84	100	1° 30'	0.022	95	
1° 45'				1° 45'				1° 45'				1° 45'	0.024	99	
2° 00'				2° 00'	RC	78	100	2° 00'	0.022	88		2° 00'	0.026	104	
2° 15'	RC	72	100	2° 15'				2° 15'	0.024	92	125	2° 15'			
2° 30'				2° 30'	0.022	82		2° 30'	0.026	97		2° 30'	0.028	108	150
2° 45'				2° 45'				2° 45'				2° 45'	0.030	113	
3° 00'				3° 00'	0.024	86	125	3° 00'				3° 00'			
3° 15'	0.022	75		3° 15'				3° 15'	0.028	101		3° 15'	0.032	117	
3° 30'				3° 30'				3° 30'				3° 30'			
3° 45'	0.024	79		3° 45'	0.026	90		3° 45'	0.030	105		3° 45'	0.034	122	
4° 00'				4° 00'				4° 00'				4° 00'			
4° 15'				4° 15'				4° 15'	0.032	109		4° 15'			
4° 30'				4° 30'	0.028	94		4° 30'				4° 30'	0.036	126	
4° 45'	0.026	83		4° 45'				4° 45'				4° 45'			
5° 00'				5° 00'	0.030	98		5° 00'	0.034	113		5° 00'	0.038	131	
5° 30'				5° 30'				5° 30'				5° 30'			
6° 00'				6° 00'	0.032	101		6° 00'	0.036	118	150	6° 00'	0.040	135	
6° 30'	0.028	86		6° 30'				6° 30'							
7° 00'				7° 00'			150	7° 00'	0.038	122					
7° 30'	0.030	90		7° 30'	0.034	105		7° 30'							
8° 00'				8° 00'				8° 00'	0.040	126					
8° 30'	0.032	93		8° 30'	0.036	109									
9° 00'				9° 00'											
9° 30'				9° 30'											
10° 00'	0.034	97		10° 00'	0.038	113									
10° 30'				10° 30'											
11° 00'				11° 00'											
11° 30'			125	11° 30'	0.040	117									
12° 00'	0.036	100													
12° 30'															
13° 00'															
13° 30'															
14° 00'	0.038	104													
14° 30'															
15° 00'															
15° 30'															
16° 00'															
16° 30'	0.040	108	150												

D MAX = 22° 45' | D MAX = 15° 15' | D MAX = 10° 30' | D MAX = 8° 00'

ABBREVIATIONS

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



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

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

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

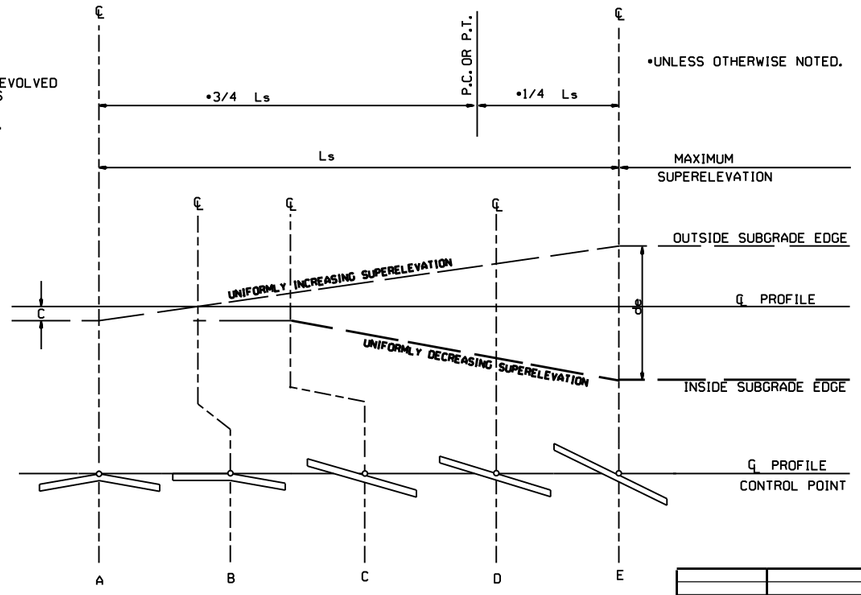
GENERAL NOTES

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

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

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

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



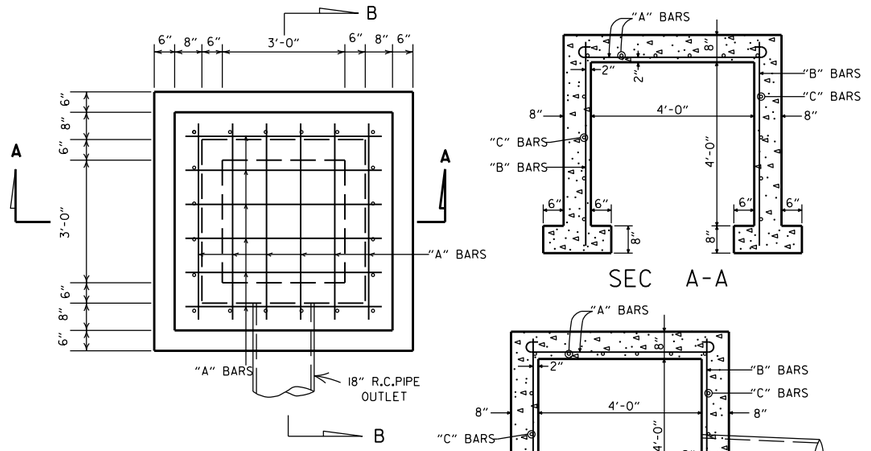
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

11-07-19	ISSUED	
DATE	REVISION	DATE FILMED

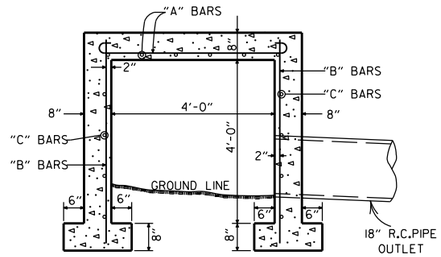
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC (4% MAXIMUM)

STANDARD DRAWING SE-3



SEC A-A



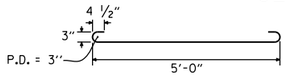
SEC B-B

NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



"A" BARS

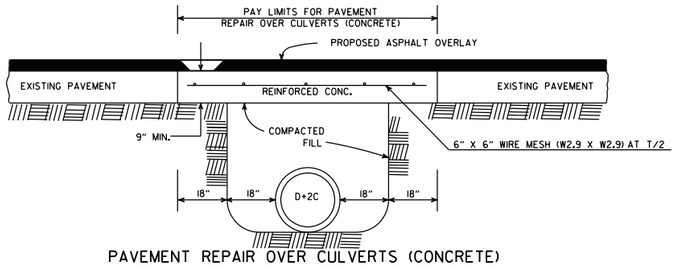
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

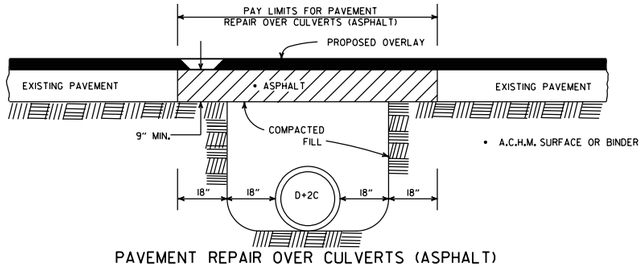
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



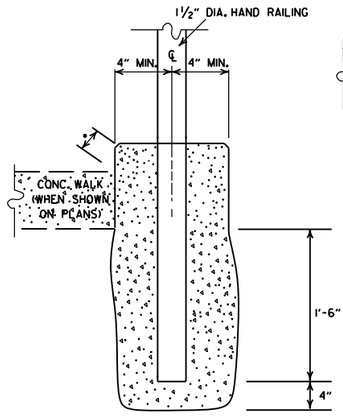
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



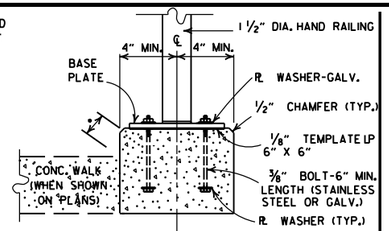
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

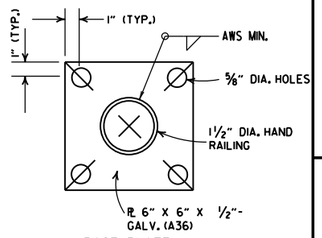
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

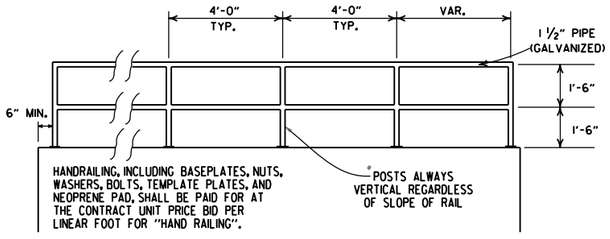


POST CONNECTION TO WALL

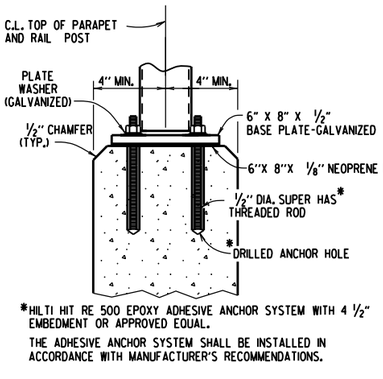


BASE PLATE

POST CONNECTION DETAILS



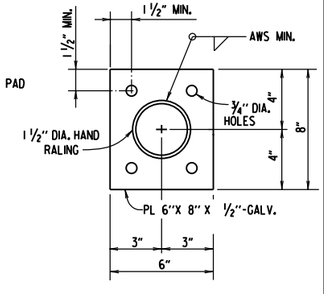
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

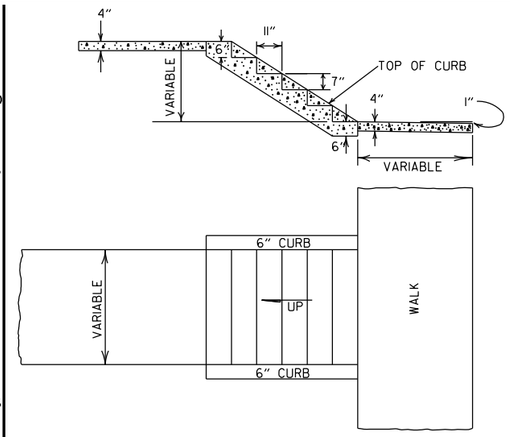
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-94	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

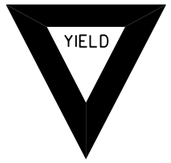
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

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"

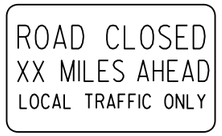
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

W21-5a

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

W1-1

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

W1-2

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

W1-3

STD. 48"X48"

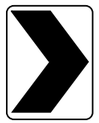
W1-4

STD. 48"X48"

W1-6

STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

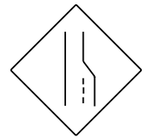
W3-1

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"

W13-1

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"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

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

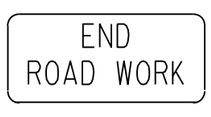
W8-9

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

G20-1

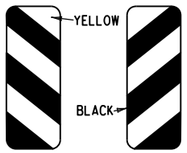
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

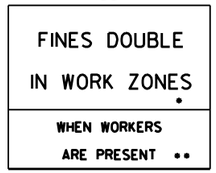
M4-9

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.

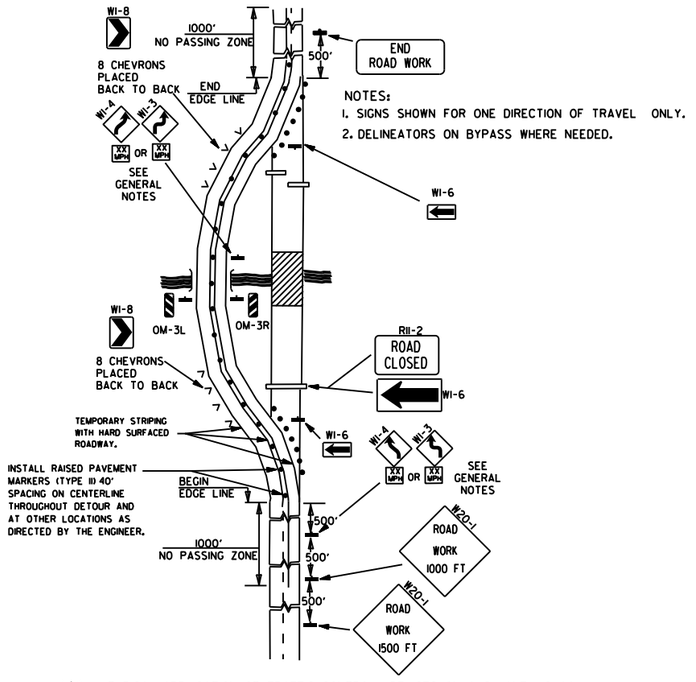
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
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

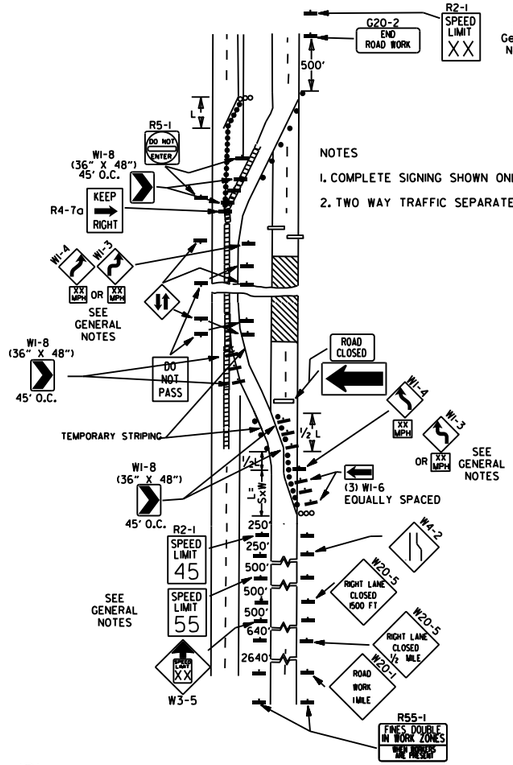
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



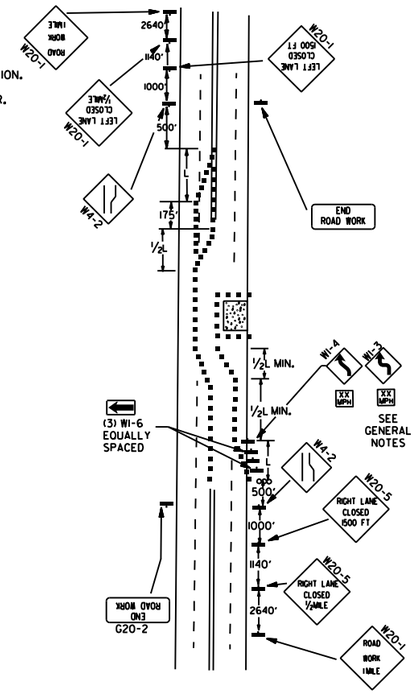
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

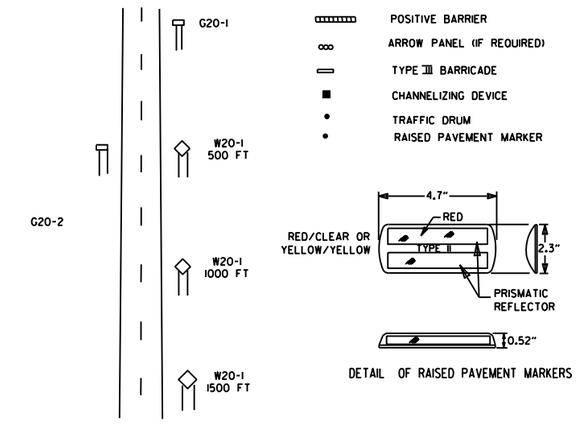


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



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:

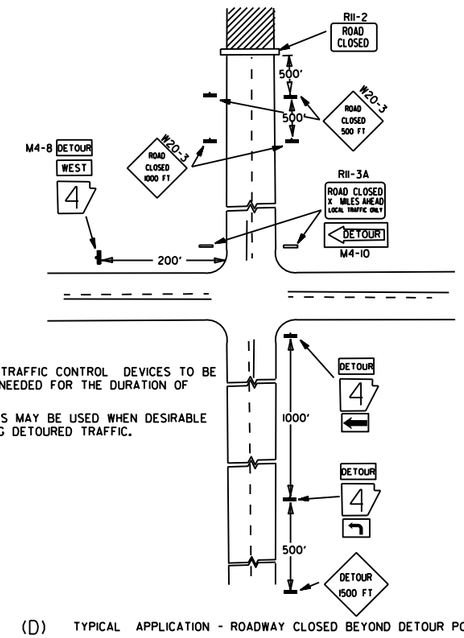
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

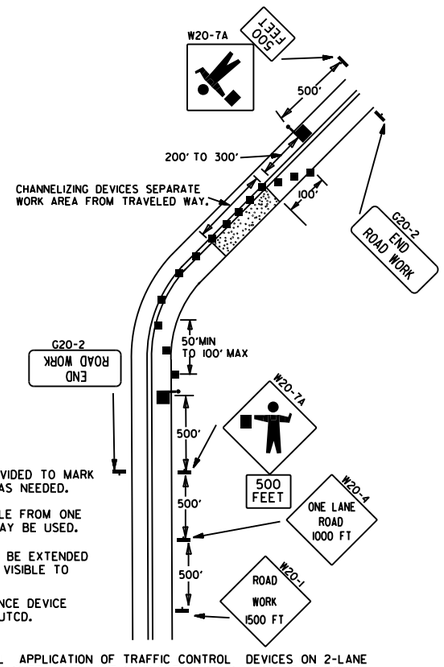
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. 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 R2-1(55) 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 R2-1(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 R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. 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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



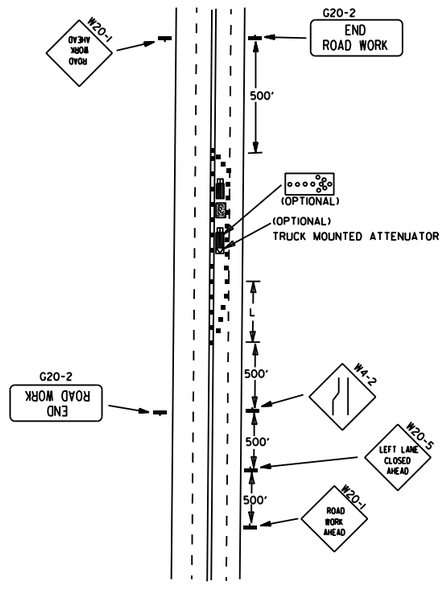
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



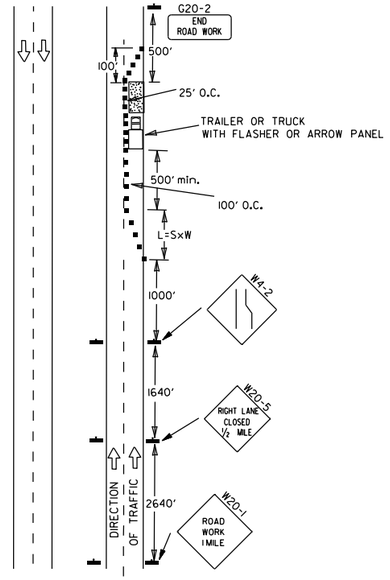
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

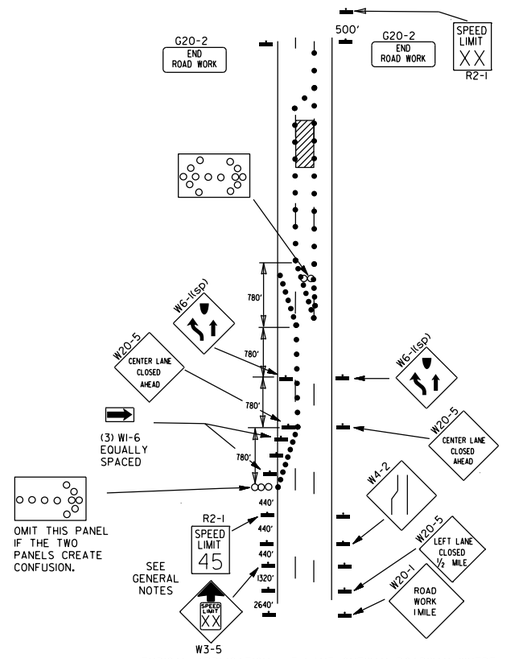
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

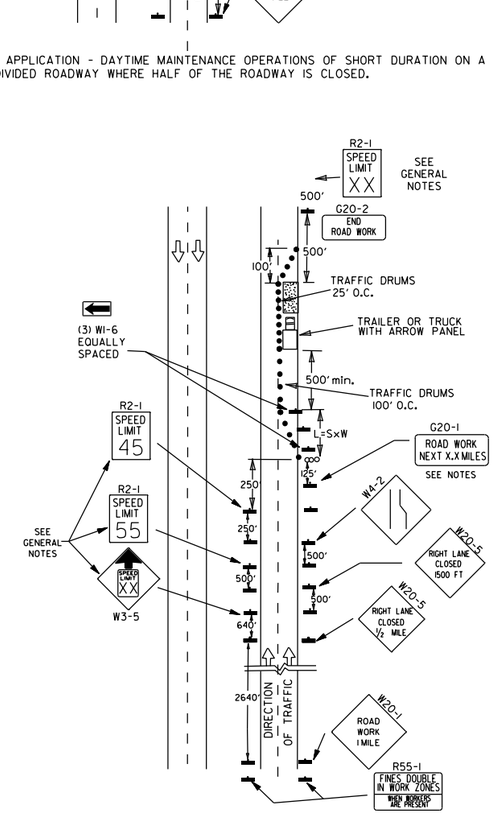
STANDARD DRAWING TC-2



(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:

ooo ARROW PANEL (IF REQUIRED)

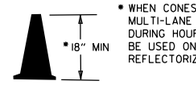
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

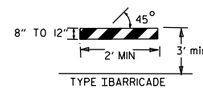
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

CHANNELIZING DEVICES

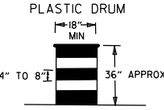


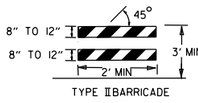
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

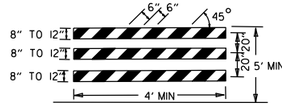
CONES



PLASTIC DRUM

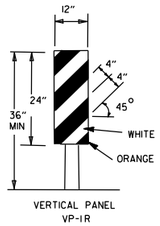




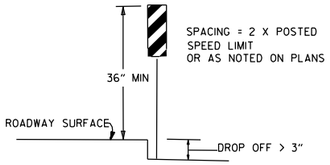


TYPE III BARRICADE

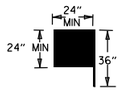
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



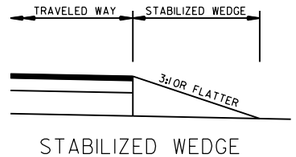
VERTICAL PANEL PLACEMENT



FLAG

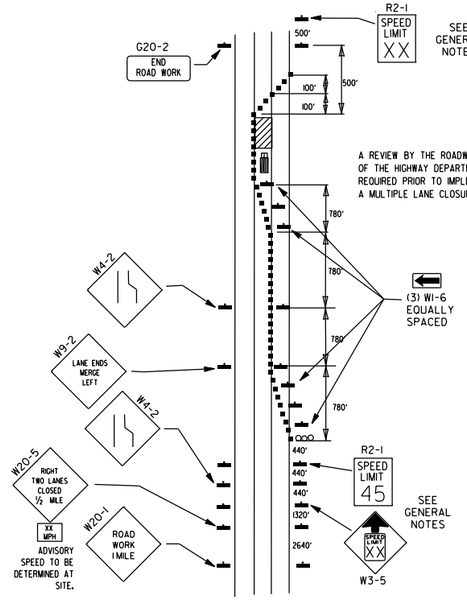


FLAG SHALL BE OF GOOD GRADE RED MATERIAL



STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

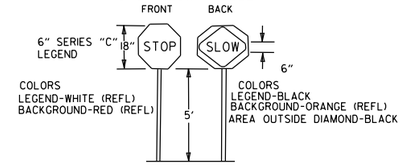
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

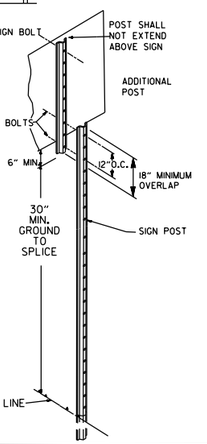
INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE



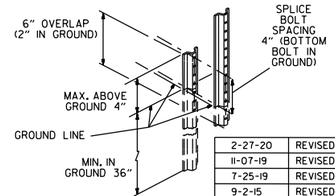
DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

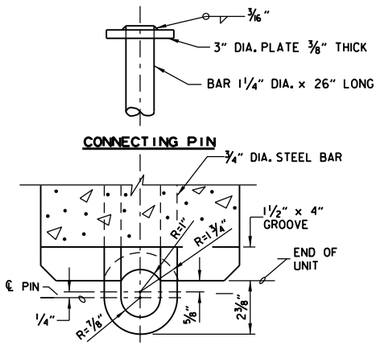
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

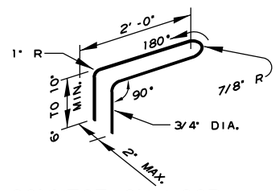
REINFORCING BAR TABLE PER BARRIER UNIT

MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

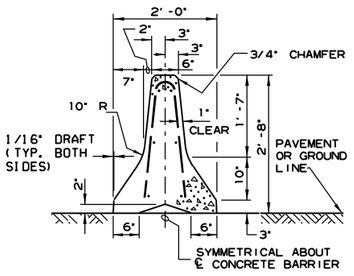


SECTION E-E

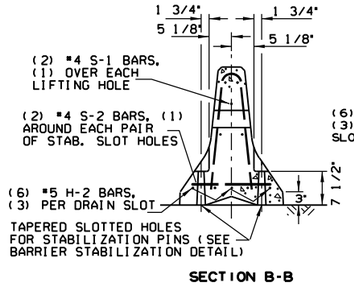
CONNECTION DETAILS



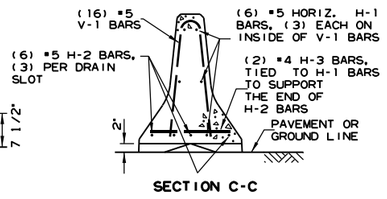
CONNECTION LOOP



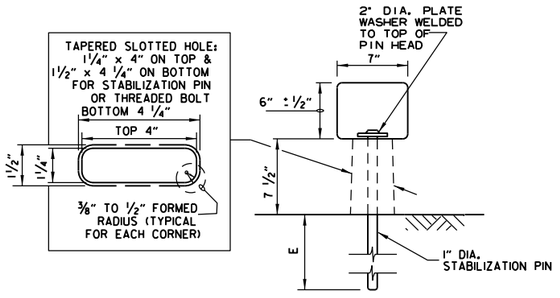
SECTION A-A



SECTION B-B



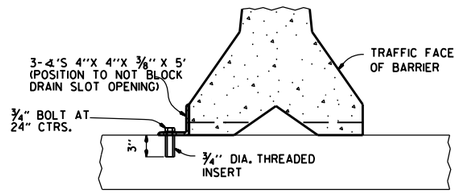
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

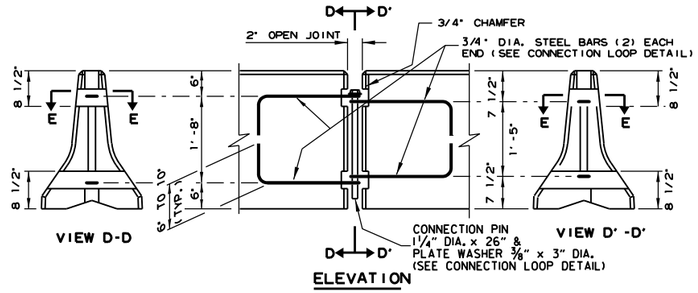
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



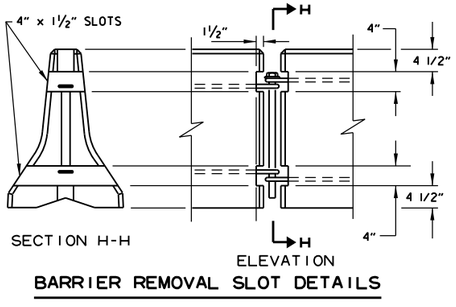
NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL

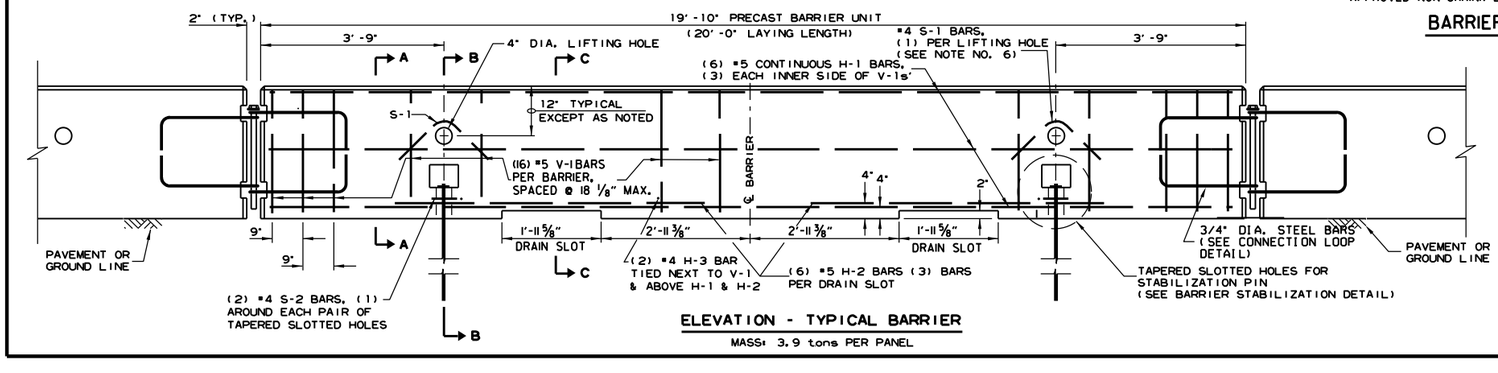
BRIDGE DECKS



ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

GENERAL NOTES

(1) THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

(2) MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

IN APPLICATIONS WHERE BARRIER WALL IS 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 ARDOT 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 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 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 MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). 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.

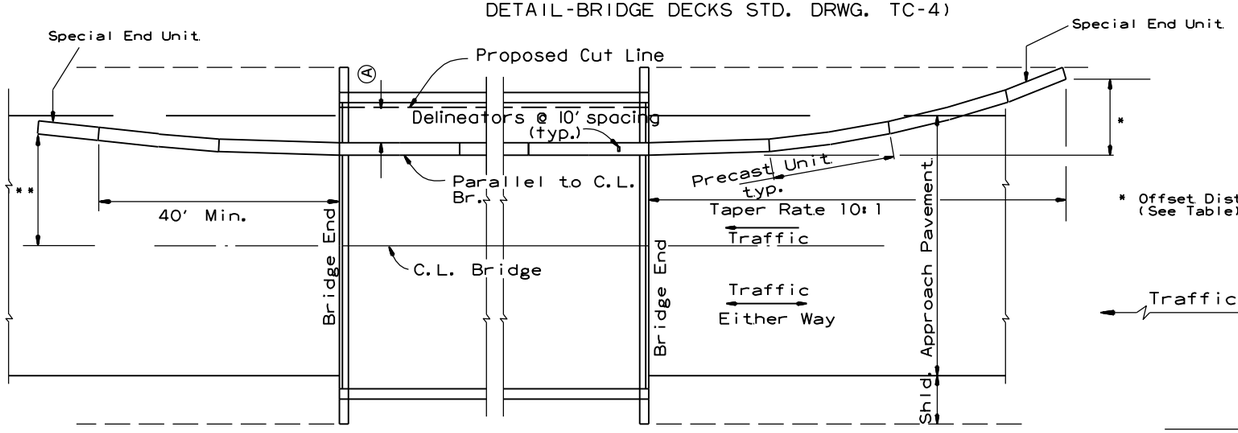
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED 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

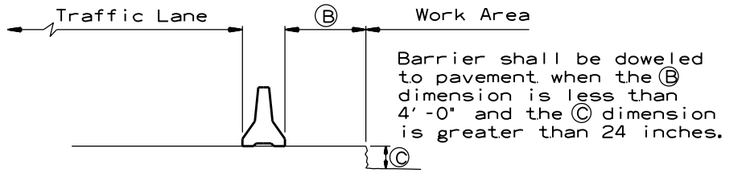
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

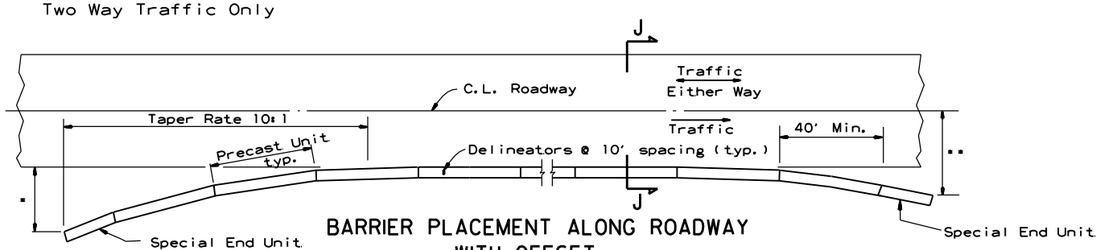


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

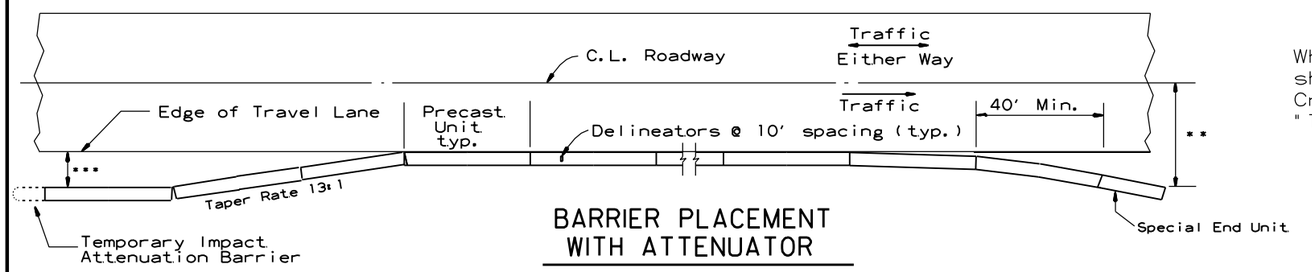
* Offset Distance (See Table)

** 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.

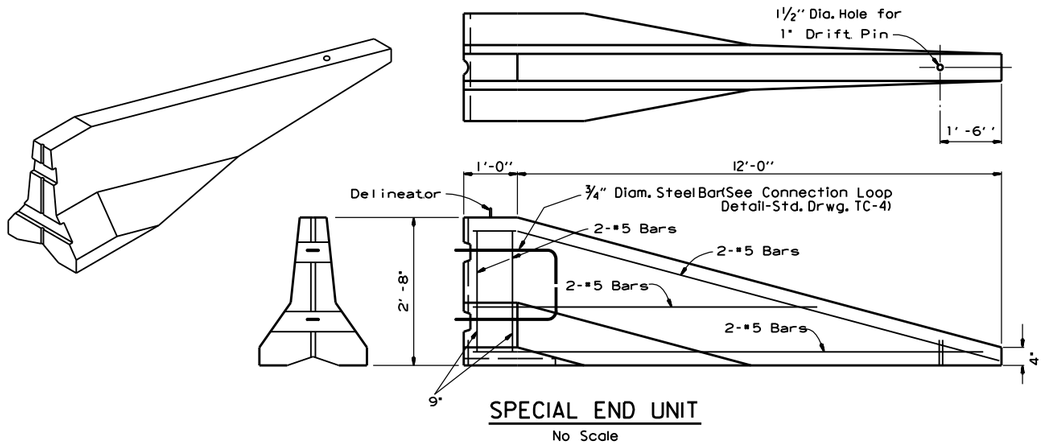


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a 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
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

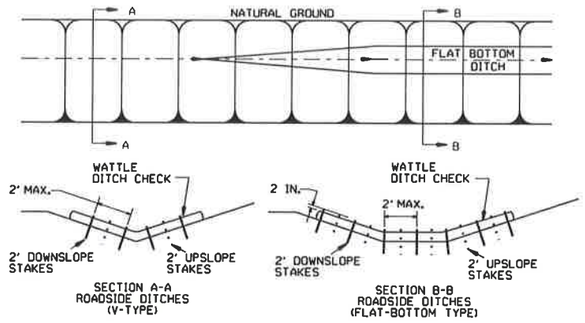
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

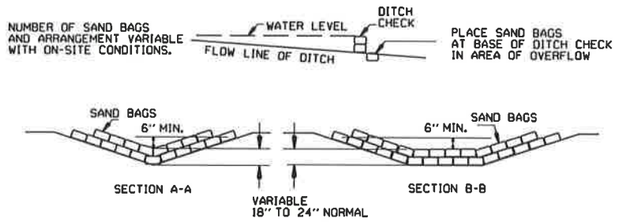
STANDARD DRAWING TC-5

GENERAL NOTES

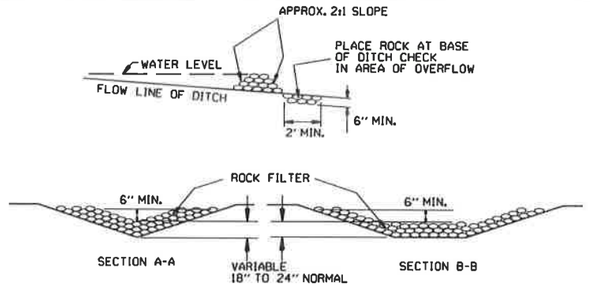
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

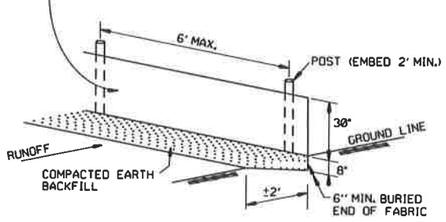


ROCK DITCH CHECK (E-6)

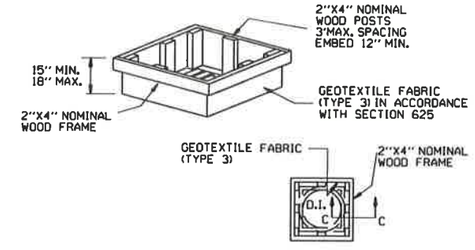
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

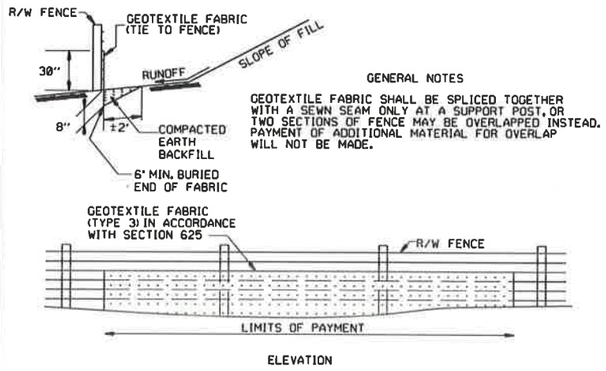
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



GENERAL NOTES

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

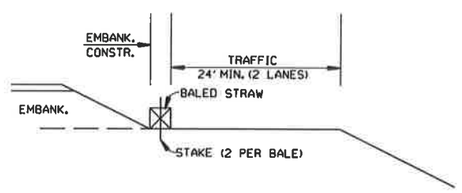
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

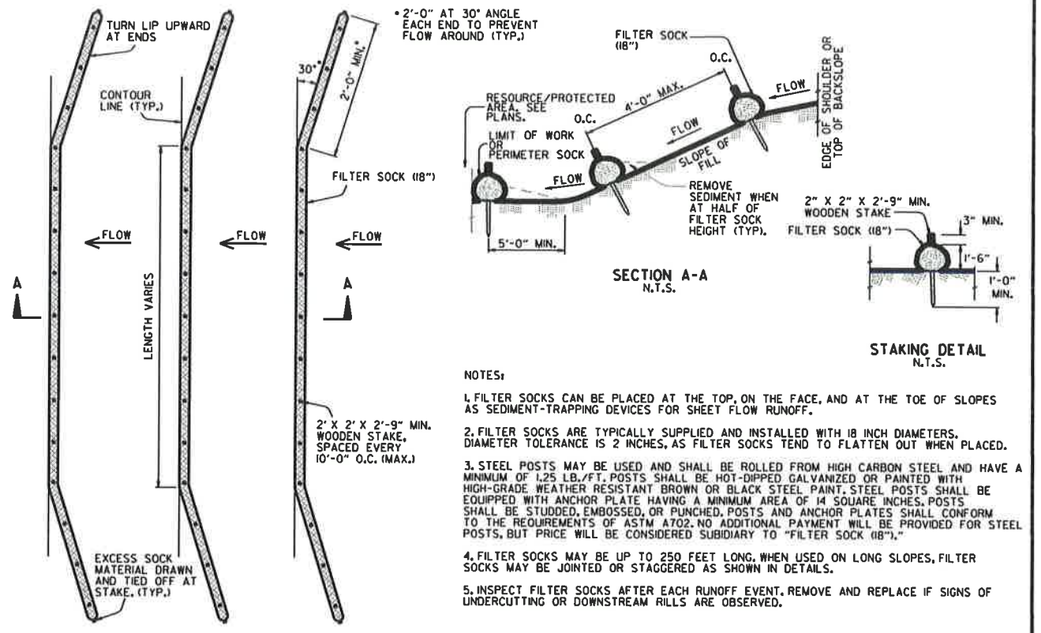
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

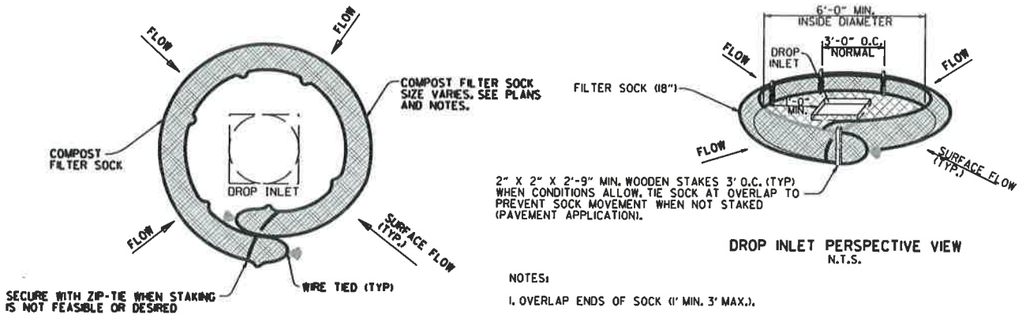
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

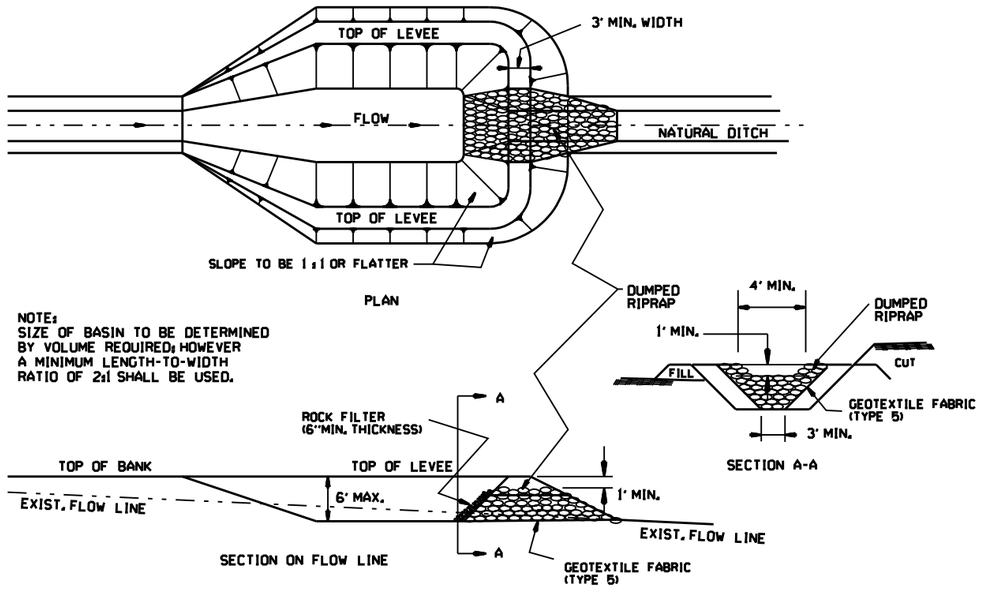
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

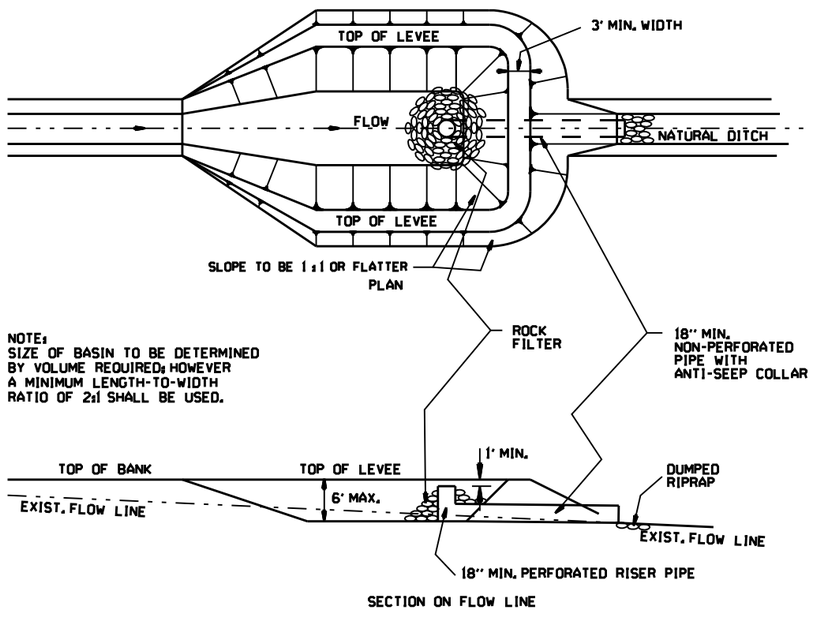
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

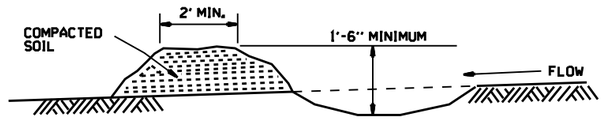
STANDARD DRAWING TEC-1



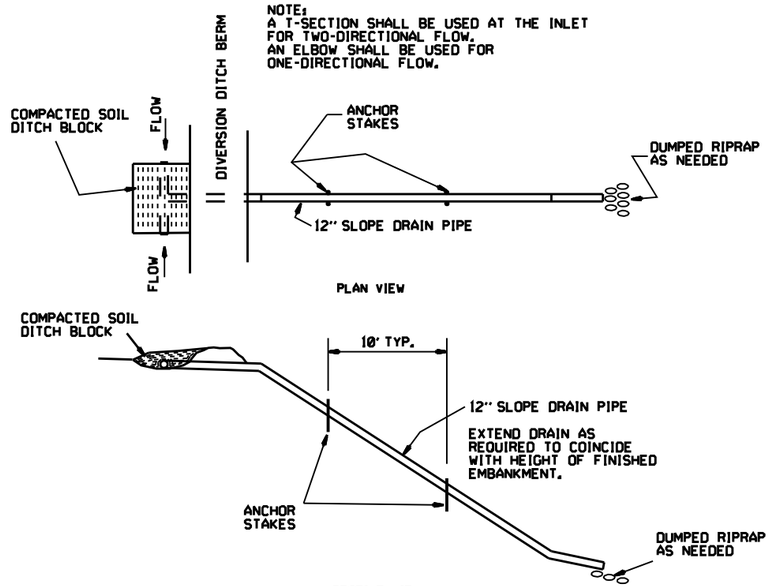
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



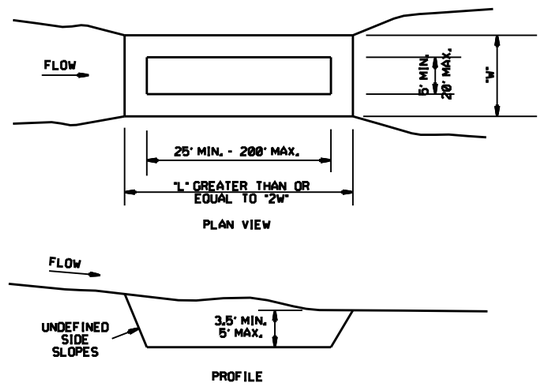
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

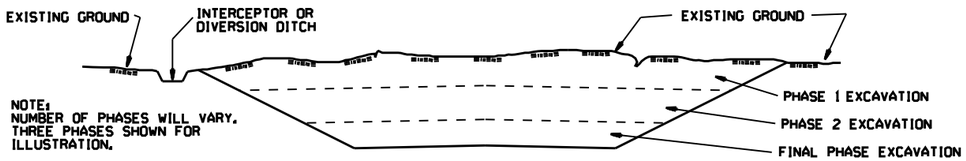
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



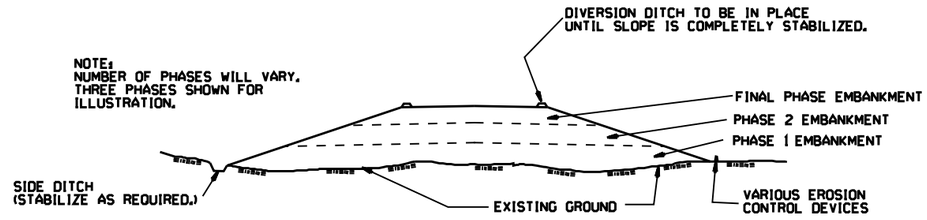
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

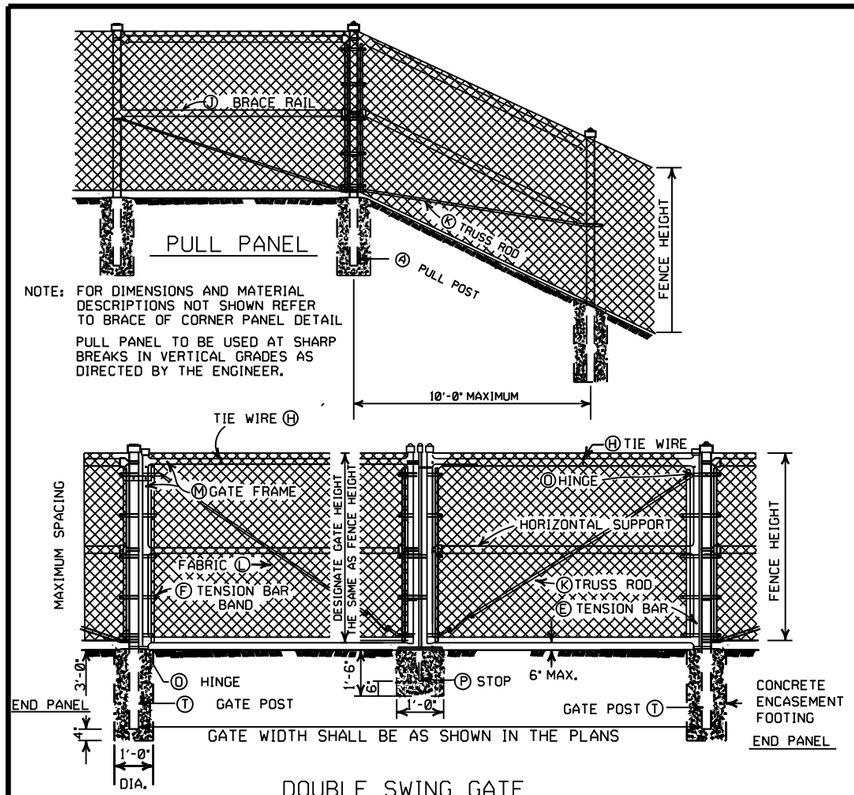
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

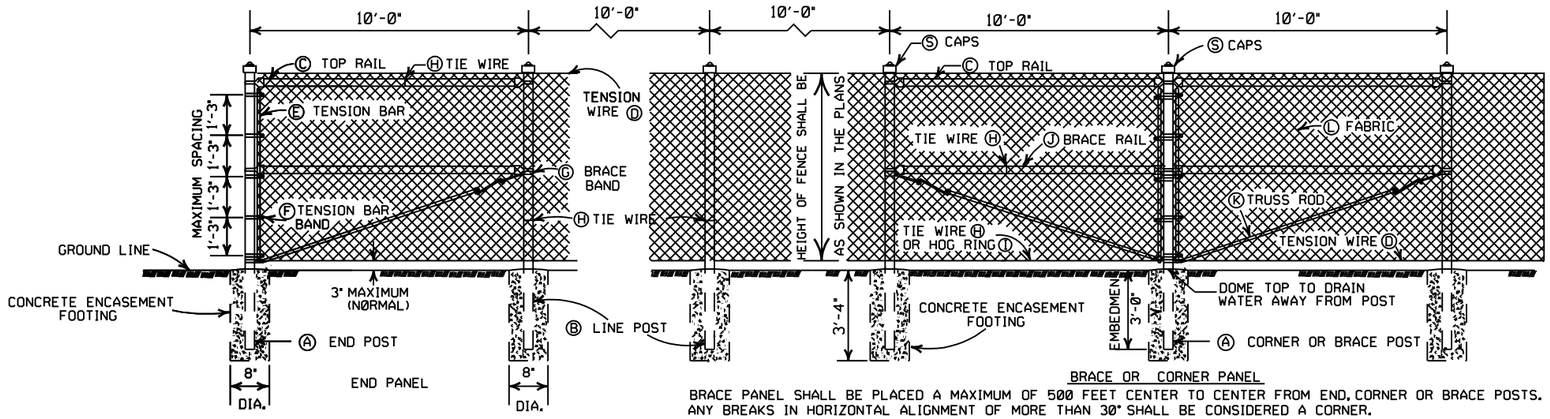


NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.

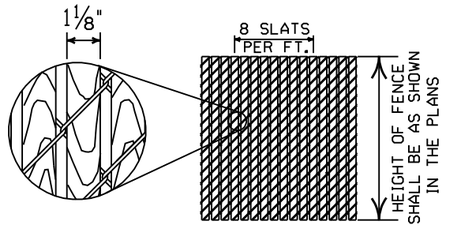
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

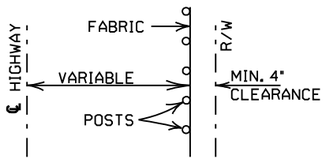
HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE 180° SWING	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅝" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK-ING AND/OR TWIST-ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

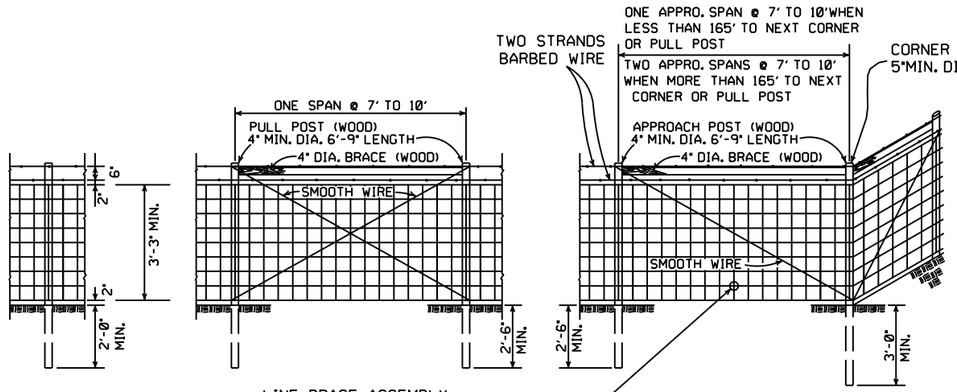
TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

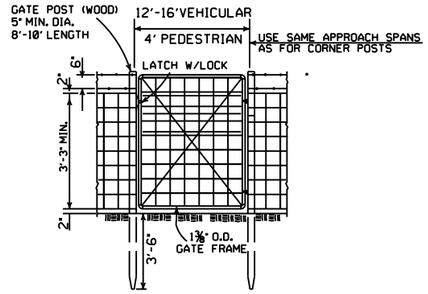
ARKANSAS STATE HIGHWAY COMMISSION

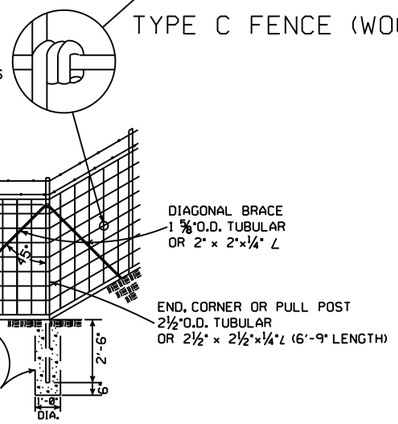
CHAIN LINK FENCE

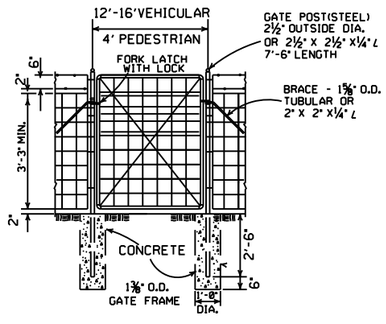
STANDARD DRAWING WF-3



TYPE C FENCE (WOOD POSTS)

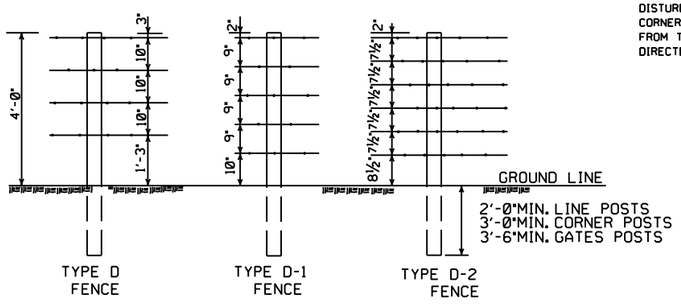




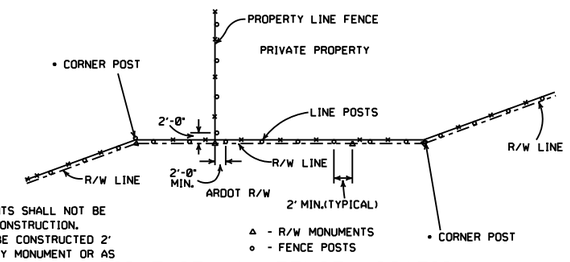


NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

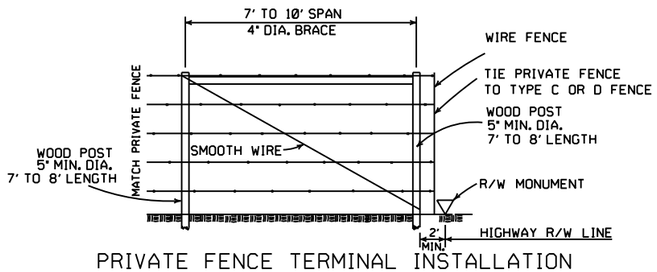


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



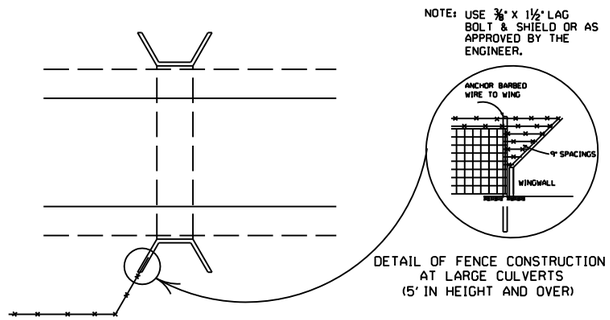
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION

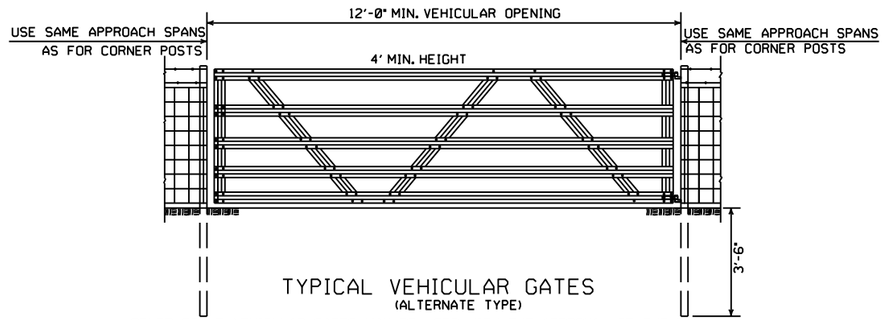


PRIVATE FENCE TERMINAL INSTALLATION

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



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



TYPICAL VEHICULAR GATES

(ALTERNATE TYPE)

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

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

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

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

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

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

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

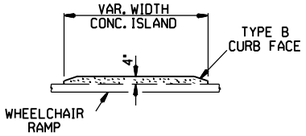
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

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

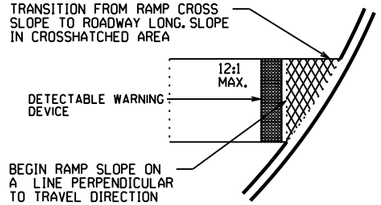
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

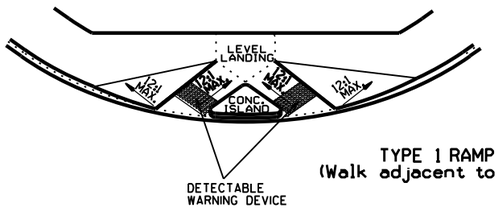
STANDARD DRAWING WF-4



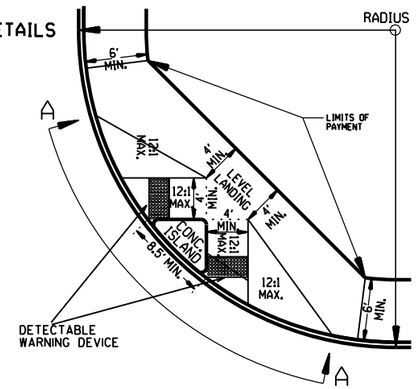
CONCRETE ISLAND DETAIL

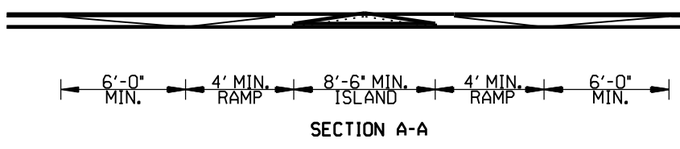


SLOPE TRANSITION DETAILS



TYPE 1 RAMP
(Walk adjacent to curb)

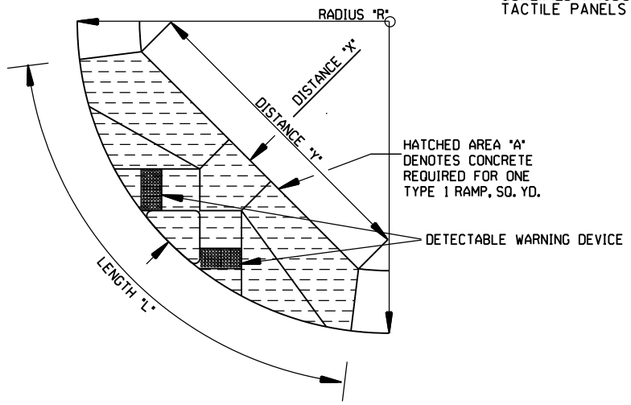




SECTION A-A

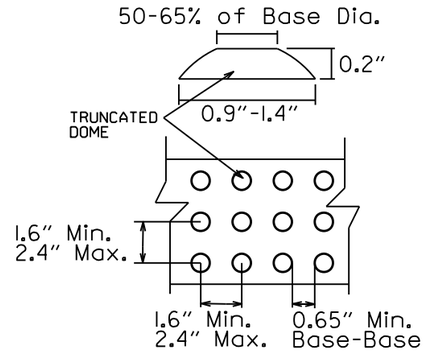
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

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



GENERAL NOTES FOR DETECTABLE WARNING DEVICES

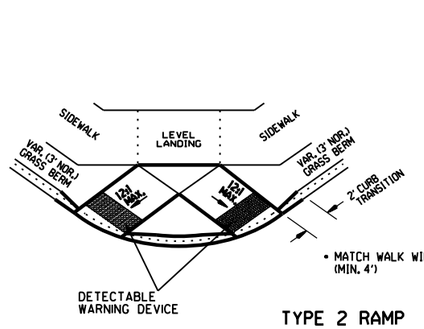
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT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



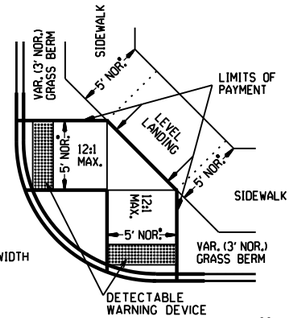
DETECTABLE WARNING DEVICE DETAIL

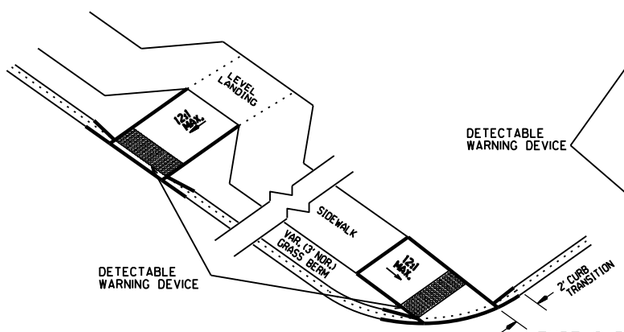
GENERAL NOTES:

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

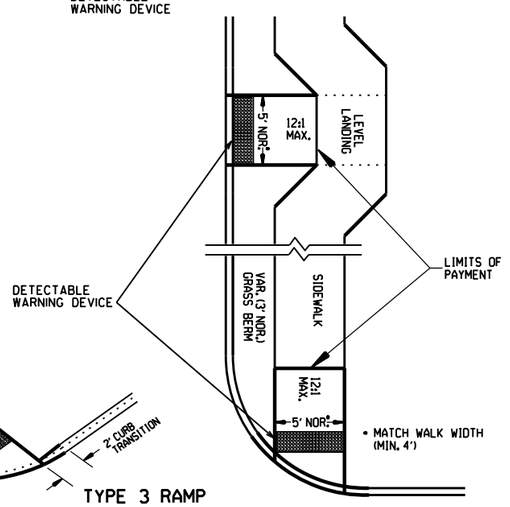


TYPE 2 RAMP

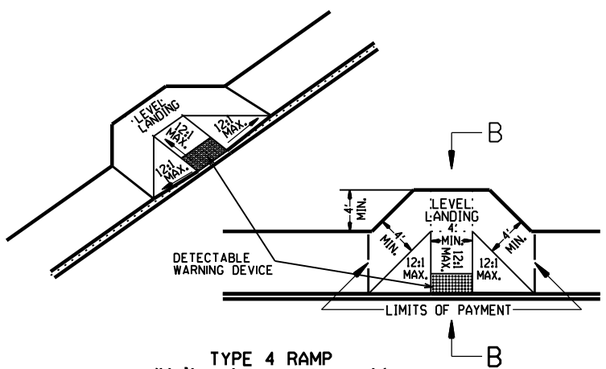




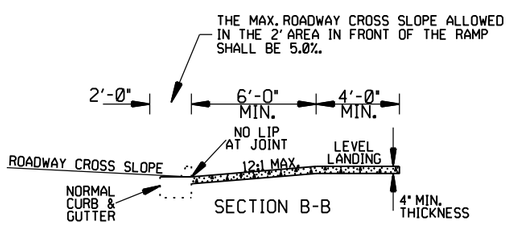
TYPE 3 RAMP



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



TYPE 4 RAMP
(Walk adjacent to curb)



SECTION B-B

RAMP SELECTION CRITERIA

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

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8#TO12#MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

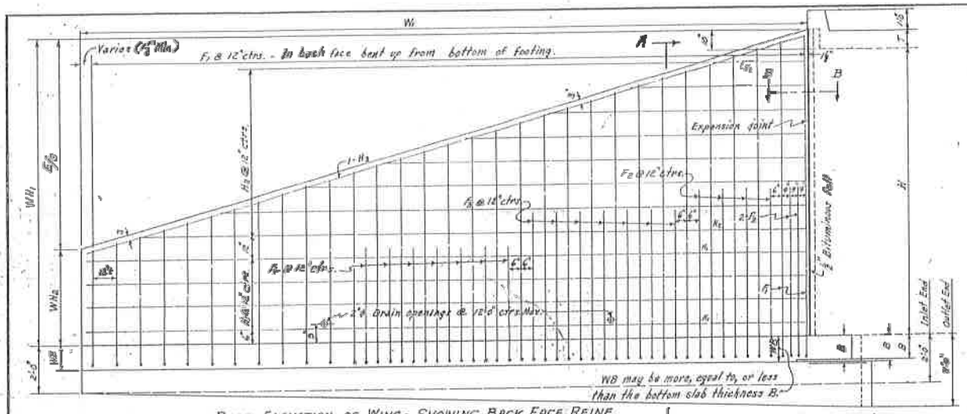
STANDARD DRAWING WR-1

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

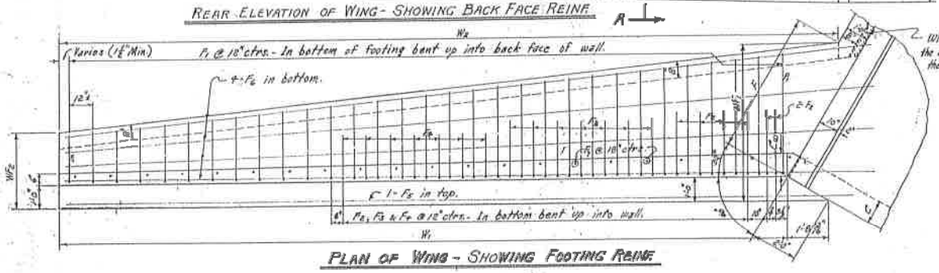
BAR LIST FOR BARREL SECTION 60'0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'a' bars STRAIGHT — In Top and Bottom Slab of Barrel. & Adj. in Apron and Headwall-Each.				'b' bars BENT - See Diagram below. — In Bottom of Top Slab bent up over Division Wall - Inside. Alternate with 'a' and 'c' bars.						'b2' bars STRAIGHT — In Top of Bottom Slab bent down over Division Wall - Inside. Alternate with 'a' and 'c' bars.						'c' bars STRAIGHT — In Top and Bottom Slab of Barrel. Alternate with 'b' and 'b2' bars.						'd' bars STRAIGHT — Longitudinal in Top Slab of Barrel.		'd1' bars STRAIGHT — Longitudinal in Sidewalls and Division Walls.		'e' bars STRAIGHT — Longitudinal in Bottom Slab of Barrel.		'f' bars STRAIGHT — Vertical in Sidewalls and Division Walls.			
			SIZE	SPACING	NUMBER REQ'D 3/1	NUMBER REQ'D 4/1	LENGTH	SIZE	SPACING	NUMBER REQ'D 3/1	NUMBER REQ'D 4/1	LENGTH	X	Y	Z	SIZE	SPACING	NUMBER REQ'D 3/1	NUMBER REQ'D 4/1	LENGTH	X	Y	Z	SIZE	SPACING	NUMBER REQ'D		SIZE	SPACING	NUMBER REQ'D		SIZE	SPACING	NUMBER REQ'D		SIZE	SPACING	NUMBER REQ'D 3/1	NUMBER REQ'D 4/1	LENGTH
D	S	H																																				
0'-0" TO 5'-6" MAXIMUM.	4'-0"	3'	#5	12"	128	128	9'-5"	#5	12"	59	59	10'-2"	0'-9"	2'-2½"	3'-4"	#5	12"	59	59	10'-5"	0'-2½"	2'-3½"	3'-4"	#5	12"	59	59	10'-5"	0'-2½"	2'-3½"	3'-4"	#5	12"	120	120	4'-8"	#5	12"	120	120	4'-8"																		

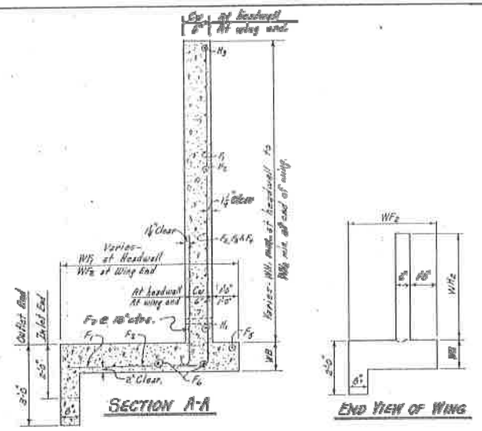
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.



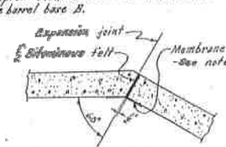
PLAN OF WING - SHOWING FOOTING REINF.



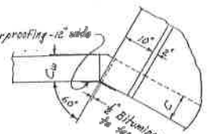
SECTION A-A

END VIEW OF WING

When B is more than W8, the shaded portion of the apron shall be made the same thickness as the barrel base B.



SECTION B-B THRU EXPANSION JOINT



DETAIL AT TOP OF WING

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING PARTIES	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	PERPENDICULAR DISTANCE FROM HEADWALL TO END OF WING	PERPENDICULAR DIST. FROM HEADWALL TO END OF WING	LENGTH OF WINGWALLS	FOOTING EXTENSION DIMENSION	* QUANTITY PER WING CLASS S CONCRETE INLET END	* QUANTITY PER WING CLASS S CONCRETE OUTLET END
H	W8	C	W1	W2	W3	W4	F	E	W	W5	Cu.Yds.	Cu.Yds.
9'	10"	9"	9'-0"	3'-0"	6'-2"	2'-10½"	4'-3"	20'-0"	23'-9"	24'-10"	7.498	7.810
10'	11"	10"	10'-0"	3'-6"	6'-8"	3'-1½"	4'-10"	20'-0"	25'-11½"	27'-0"	8.504	8.865
11'	12"	11"	11'-0"	3'-8"	6'-2"	3'-1½"	5'-5"	20'-0"	28'-0"	30'-1¼"	10.977	12.381
12'	13"	12"	12'-0"	4'-0"	6'-8"	3'-5"	6'-0"	20'-0"	30'-2½"	32'-3½"	11.791	13.236

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W8.

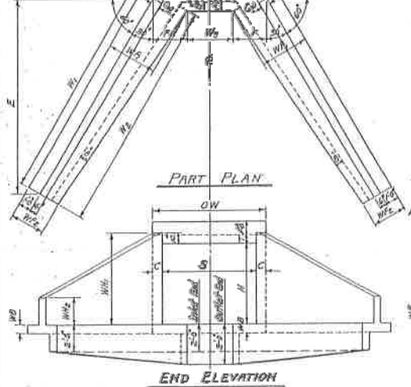
W3 - (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2 - FOOTING THICKNESS	SINGLE BARREL CULVERT OW	SINGLE BARREL CULVERT W3	DOUBLE BARREL CULVERT OW	DOUBLE BARREL CULVERT W3	TRIPLE BARREL CULVERT OW	TRIPLE BARREL CULVERT W3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE BARREL CULVERT W3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE BARREL CULVERT W3
S	H	2F										
7'	9'	0'-6"	8'-6"	8'-8"	16'-5"	7'-11"	24'-4"	15'-11"	32'-3"	23'-9"	40'-2"	31'-8"
8'	9'	0'-6"	9'-6"	9'-8"	18'-5"	9'-11"	27'-4"	18'-11"	36'-3"	27'-9"	45'-2"	36'-8"
	10'	0'-6"	9'-6"	9'-8"	18'-8"	9'-10"	27'-8"	18'-6"	36'-8"	27'-6"	45'-8"	36'-6"
9'	9'	0'-6"	10'-6"	10'-8"	20'-5"	10'-11"	30'-4"	21'-10"	40'-3"	31'-9"	50'-2"	41'-8"
	10'	0'-6"	10'-6"	10'-8"	20'-8"	10'-10"	30'-8"	21'-8"	40'-8"	31'-6"	50'-8"	41'-6"
	11'	0'-6"	10'-6"	10'-8"	20'-10"	10'-10"	30'-10"	20'-10"	40'-11"	30'-10"	50'-10"	40'-10"
10'	9'	0'-6"	11'-6"	11'-8"	22'-5"	12'-0"	33'-4"	24'-0"	44'-3"	36'-0"	55'-2"	46'-8"
	10'	0'-6"	11'-6"	11'-8"	22'-8"	12'-0"	33'-8"	24'-0"	44'-8"	36'-0"	55'-8"	46'-8"
	11'	0'-6"	11'-6"	11'-8"	22'-10"	12'-0"	33'-10"	23'-10"	44'-10"	35'-8"	55'-10"	45'-10"
	12'	0'-6"	12'-6"	12'-8"	23'-0"	11'-8"	34'-0"	22'-10"	45'-0"	33'-0"	56'-0"	44'-0"
11'	9'	0'-6"	12'-6"	12'-8"	24'-5"	13'-0"	36'-4"	25'-10"	48'-3"	38'-8"		
	10'	0'-6"	12'-6"	12'-8"	24'-8"	13'-0"	36'-8"	25'-8"	48'-8"	38'-6"		
	11'	0'-6"	12'-6"	12'-8"	24'-10"	13'-0"	36'-10"	25'-6"	48'-11"	38'-4"		
	12'	0'-6"	13'-6"	13'-8"	25'-0"	13'-0"	37'-0"	25'-0"	49'-0"	37'-0"		
12'	9'	0'-6"	12'-6"	12'-8"	24'-5"	12'-11"	36'-4"	25'-10"	48'-3"	38'-8"		
	10'	0'-6"	12'-6"	12'-8"	24'-8"	12'-10"	36'-8"	25'-8"	48'-8"	38'-6"		
	11'	0'-6"	12'-6"	12'-8"	24'-10"	12'-10"	36'-10"	25'-6"	48'-11"	38'-4"		
	12'	0'-6"	13'-6"	13'-8"	25'-0"	12'-10"	37'-0"	25'-0"	49'-0"	37'-0"		
13'	9'	0'-6"	13'-6"	13'-8"	26'-5"	13'-11"	39'-4"	27'-10"	52'-3"	41'-8"		
	10'	0'-6"	13'-6"	13'-8"	26'-8"	13'-10"	39'-8"	27'-8"	52'-8"	41'-6"		
	11'	0'-6"	13'-6"	13'-8"	26'-10"	13'-10"	39'-10"	27'-6"	52'-10"	41'-4"		
	12'	0'-6"	14'-6"	14'-8"	27'-0"	13'-10"	40'-0"	27'-0"	53'-0"	40'-0"		

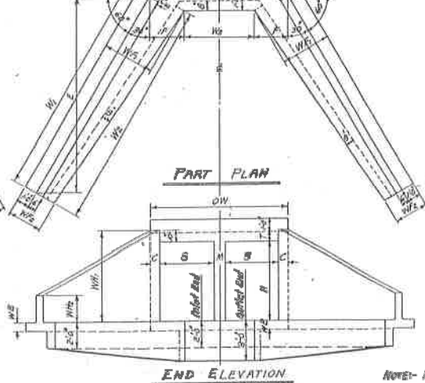
QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WINGS AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS *	CLASS S CONCRETE - 4 WINGS (HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRON) SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	C	W9	Lbs.	Cu.Yds.	Cu.Yds.	Cu.Yds.	Cu.Yds.	Cu.Yds.
7'	9'	9"	10"	2133.2	34.16	33.84	34.51	36.19	37.87
8'	9'	9"	10"	2133.2	34.39	33.28	33.16	37.05	38.94
	10'	10"	11"	2651.5	39.96	41.48	43.90	45.33	47.25
9'	9'	9"	10"	2133.2	34.61	33.73	35.81	37.91	40.01
	10'	10"	11"	2651.5	39.93	41.93	44.05	46.26	48.33
	11'	11"	12"	3249.1	49.39	51.26	53.70	55.87	58.02
10'	9'	9"	10"	2133.2	31.83	34.17	36.57	38.73	41.12
	10'	10"	11"	2651.5	46.01	42.27	44.78	47.05	49.41
	11'	11"	12"	3249.1	49.62	52.66	54.36	56.73	59.11
	12'	12"	13"	4049.2	60.79	63.15	65.57	67.97	70.87
11'	9'	9"	10"	2133.2	32.04	34.64	37.15	39.68	
	10'	10"	11"	2651.5	49.32	48.83	49.39	47.89	
	11'	11"	12"	3249.1	49.99	52.45	55.01	57.61	
	12'	12"	13"	4049.2	61.01	63.64	66.24	68.85	
12'	9'	9"	10"	2133.2	31.87	34.41	37.04	39.69	
	10'	10"	11"	2651.5	49.44	48.20	49.96	49.82	
	11'	11"	12"	3249.1	50.06	52.92	55.68	58.98	
	12'	12"	13"	4049.2	61.24	64.10	66.90	69.73	

* For reinforcing steel in headwalls and aprons, see Details of Standard Barrel Sections for R.C. Box Culverts for the desired span and height.

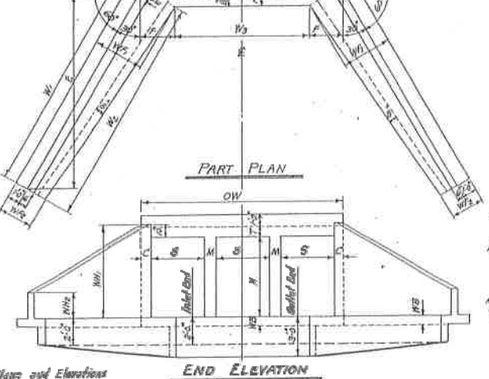


SINGLE BARREL CULVERT

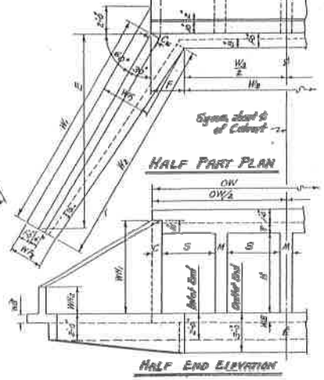


DOUBLE BARREL CULVERT

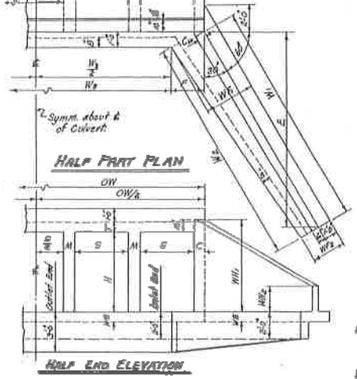
Note:- Plans and Elevations are not to scale.



TRIPLE BARREL CULVERT



QUADRUPLE BARREL CULVERT



QUINTUPLE BARREL CULVERT

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, footings and sidewalls shall be only where shown on plans.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopping of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the expansion joints.

Payment for the membrane waterproofing and bituminous felt shall be included in unit price bid for Class S Concrete.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=8) 1200 ℔/□"
Reinforcing Steel 24,000 ℔/□"

Note:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 BENT: In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MIN.	MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	F2 BENT: In bottom of footing, bent up into back face of wing. All with F1 bars. SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	F3 BENT: In bottom of footing, bent up into back face of wing. All with F1 bars. SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	F4 BENT: In bottom of footing, bent up into back face of wing. All with F1 bars. SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	F5 STRAIGHT: Longitudinal 12" top of wing footing heel. SIZE	NO. REQ'D	LENGTH	F6 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO. REQ'D	LENGTH	W1 STRAIGHT: Horizontal to back face of wing. SIZE	SPACING	NO. REQ'D	LENGTH	W2 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.	W3 STRAIGHT: In back face of wing at top - as slope SIZE	NO. REQ'D	LENGTH	F7 BENT: Footing dowels extending up into front face of wing. SIZE	SPACING	NO. REQ'D	LENGTH	X	QUANTITY REINFORCING STEEL PER WING LB.
H																																																				
9'	#5	12"	24	5'-8"	13'-10"	1'-6"	3'-9"	3'-9"	10'-9"	#5	12"	3	7'-4"	2'-1"	6'-6"	#4	12"	7	6'-6"	1'-8"	4'-9"	—	—	—	—	—	—	#6	1	20'-8"	#4	4	22'-8"	#4	12"	3	22'-6"	#4	12"	6	24'-8"	#4	1	24'-1"	#4	18"	16	4'-8"	3'-6"	629.3
10'	#5	12"	27	5'-4"	15'-5"	1'-7"	4'-2"	3'-10"	11'-9"	#5	12"	2	8'-6"	2'-4"	6'-3"	#5	12"	4	7'-6"	2'-1"	5'-6"	#4	12"	7	6'-8"	1'-8"	6'-5"	#4	1	20'-8"	#4	4	23'-0"	#4	12"	3	25'-8"	#4	12"	7	26'-7"	#4	1	26'-6"	#4	18"	18	4'-9"	3'-8"	662.3
11'	#5	12"	29	6'-0"	16'-11"	1'-9"	4'-7"	4'-1"	12'-9"	#5	12"	6	8'-6"	2'-4"	6'-8"	#5	12"	9	7'-6"	2'-1"	5'-8"	#4	12"	7	6'-8"	1'-8"	6'-5"	#4	1	23'-0"	#4	4	24'-0"	#4	12"	4	26'-0"	#4	12"	8	28'-6"	#4	1	28'-1"	#4	18"	19	4'-9"	4'-3"	910.8
12'	#5	12"	31	6'-8"	18'-5"	1'-11"	5'-0"	4'-3"	13'-6"	#7	12"	6	9'-6"	2'-4"	7'-10"	#6	12"	7	8'-6"	2'-4"	6'-8"	#5	12"	9	7'-6"	2'-1"	6'-11"	#4	1	25'-3"	#4	4	25'-0"	#4	12"	4	30'-0"	#4	12"	9	30'-6"	#4	1	30'-6"	#4	21	21	5'-6"	4'-6"	1012.3

@ Except as shown at headwall.

BAR BENDING DIAGRAMS

Note:- Dimensions are to bar centers.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 9'-0" & OVER.

STANDARD DRAWING NO. W-X003-2

Designed By- W.C.H. 7-25-62 Checked By- Date- 1-3-63
Drawn By- W.C.H. 12-21-62 Checked By- Date- 1-31-63
Quantities By- W.C.H. 1-11-63 Checked By- Date- Rechecked By-