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.		050413	1	92
				(2)	CADRON CREEK STR. & APPRS. (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

CADRON CREEK STR. & APPRS. (S)

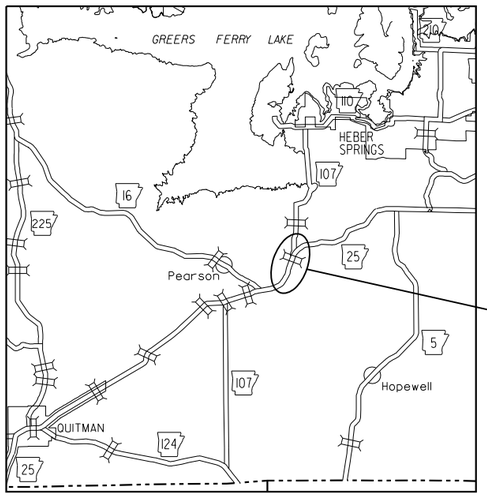
CLEBURNE COUNTY

ROUTE 25 SECTION 2

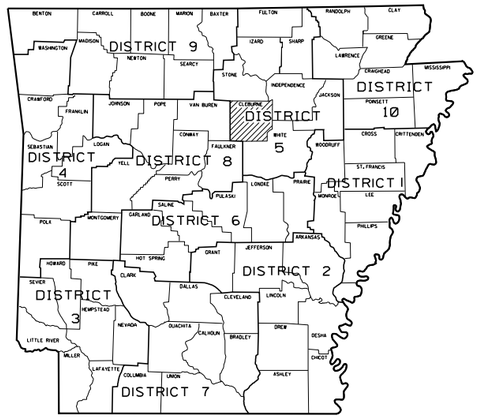
JOB 050413

FED. AID PROJ. NHPP-0012(40)

NOT TO SCALE



VICINITY MAP



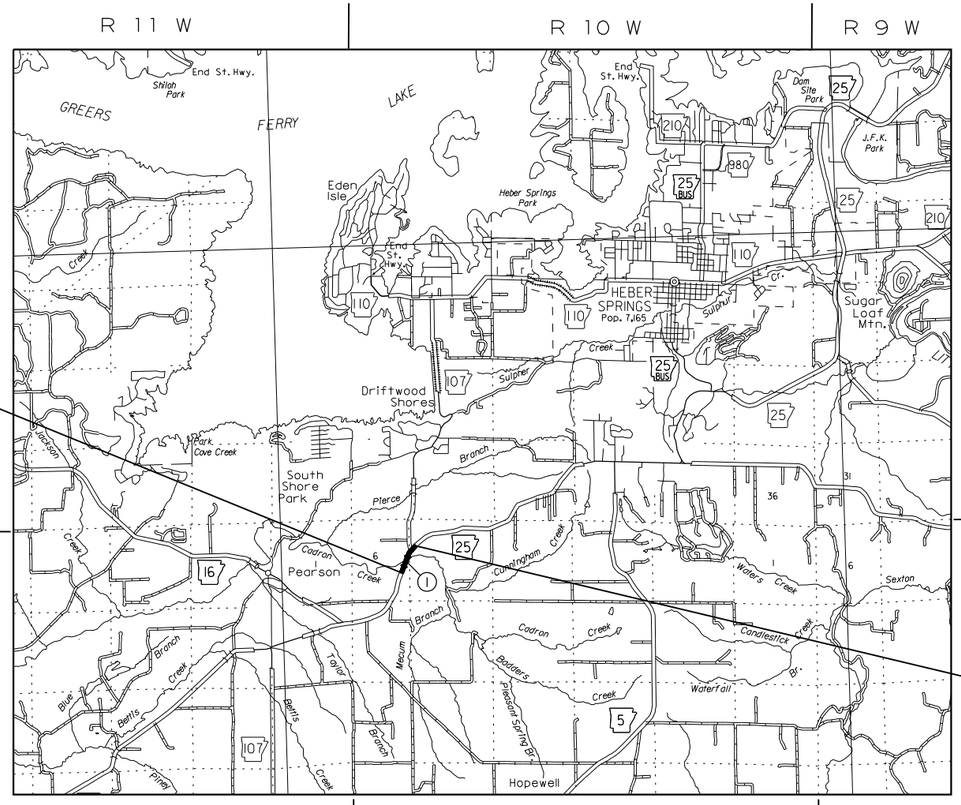
ARKANSAS HIGHWAY DISTRICT 5

· DESIGN TRAFFIC DATA ·

DESIGN YEAR	2041
2021 ADT	5500
2041 ADT	7500
2041 DHV	825
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	7%
DESIGN SPEED	55 MPH

BRIDGE CONSTRUCTION DATA

(1) STA. 795+84.75 BRIDGE END
BRIDGE NO. 07515 OVER CADRON CREEK
164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT (54.58'-55'-54.58')
52'-0" CLEAR ROADWAY
15° RT. FORWARD SKEW
165'-6" BRIDGE LENGTH
STA. 797+50.25 BRIDGE END



STA. 786+80.00
BEGIN JOB 050413
L.M. 9.72

STA. 807+00.00
END JOB 050413

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 35°26'25"	N 35°26'35"	N 35°26'43"
LONGITUDE	W 92°05'56"	W 92°05'51"	W 92°05'44"
STATION	786+80.00	796+90.00	807+00.00

GROSS LENGTH OF PROJECT	2020.00 FEET OR	0.383 MILES
NET LENGTH OF ROADWAY	1854.50 FEET OR	0.352 MILES
NET LENGTH OF BRIDGES	165.50 FEET OR	0.031 MILES
NET LENGTH OF PROJECT	2020.00 FEET OR	0.383 MILES

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY

DIGITALLY SIGNED 05/28/2021

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				6	ARK.			
				JOB NO.		050413	2	92
				(2)	INDEX OF SHEETS AND STANDARD DRAWINGS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 06/22/2021

INDEX OF SHEETS

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
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	05-11-21
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
GR-6	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
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
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
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
R-130X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-24-64

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8-04-21				6	ARK.			
				JOB NO.		050413	3	92

(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273___	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273___	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273___	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273___	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273___	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273___	SUPPLEMENT - 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
400-7_____	TRACKLESS TACK
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
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
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 050413___	BIDDING REQUIREMENTS AND CONDITIONS
JOB 050413___	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 050413___	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 050413___	CARGO PREFERENCE ACT REQUIREMENTS
JOB 050413___	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 050413___	CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB 050413___	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 050413___	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 050413___	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 050413___	DRILLED SHAFT FOUNDATIONS
JOB 050413___	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 050413___	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 050413___	MANDATORY ELECTRONIC CONTRACT
JOB 050413___	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 050413___	NESTING SITES OF MIGRATORY BIRDS
JOB 050413___	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 050413___	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 050413___	PARTNERING REQUIREMENTS
JOB 050413___	PLASTIC PIPE
JOB 050413___	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 050413___	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 050413___	SECTION 404 NATIONWIDE 23 PERMIT REQUIREMENTS
JOB 050413___	SHORING FOR CULVERTS
JOB 050413___	SOIL STABILIZATION
JOB 050413___	SPECIAL CLEARING REQUIREMENTS
JOB 050413___	STORM WATER POLLUTION PREVENTION PLAN
JOB 050413___	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 050413___	TEMPORARY RETAINING WALLS
JOB 050413___	UTILITY ADJUSTMENTS
JOB 050413___	VALUE ENGINEERING
JOB 050413___	VEGETATED BUFFER ZONE
JOB 050413___	WARM MIX ASPHALT
JOB 050413___	WATER POLLUTION CONTROL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 08/04/2021

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.

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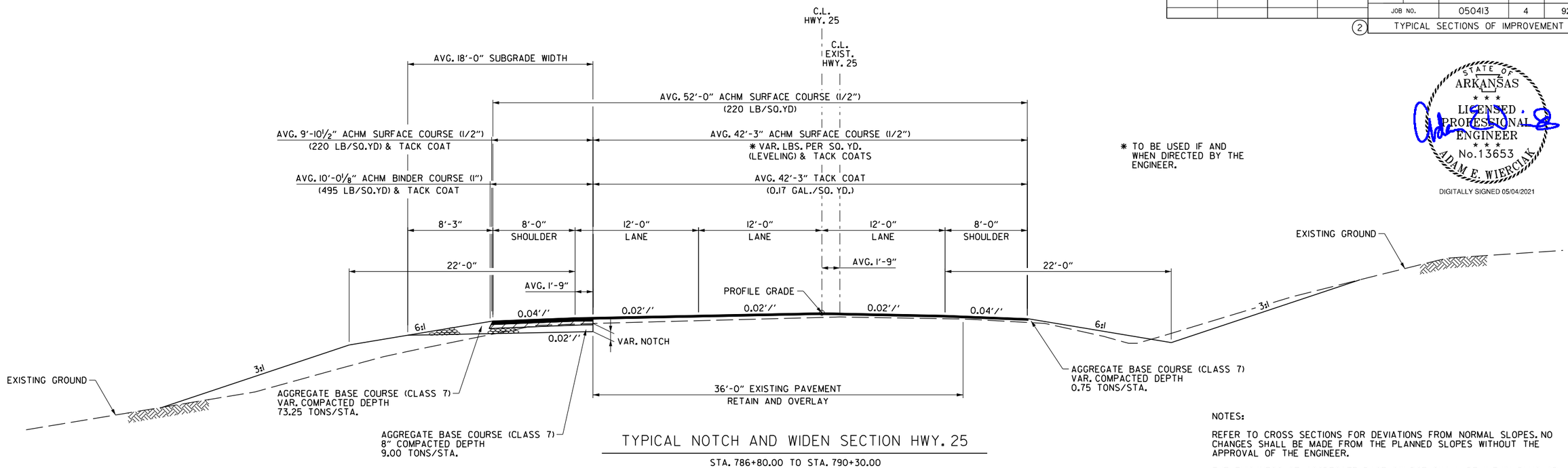
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



TYPICAL NOTCH AND WIDEN SECTION HWY. 25

STA. 786+80.00 TO STA. 790+30.00

* TO BE USED IF AND WHEN DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

NOTES:

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

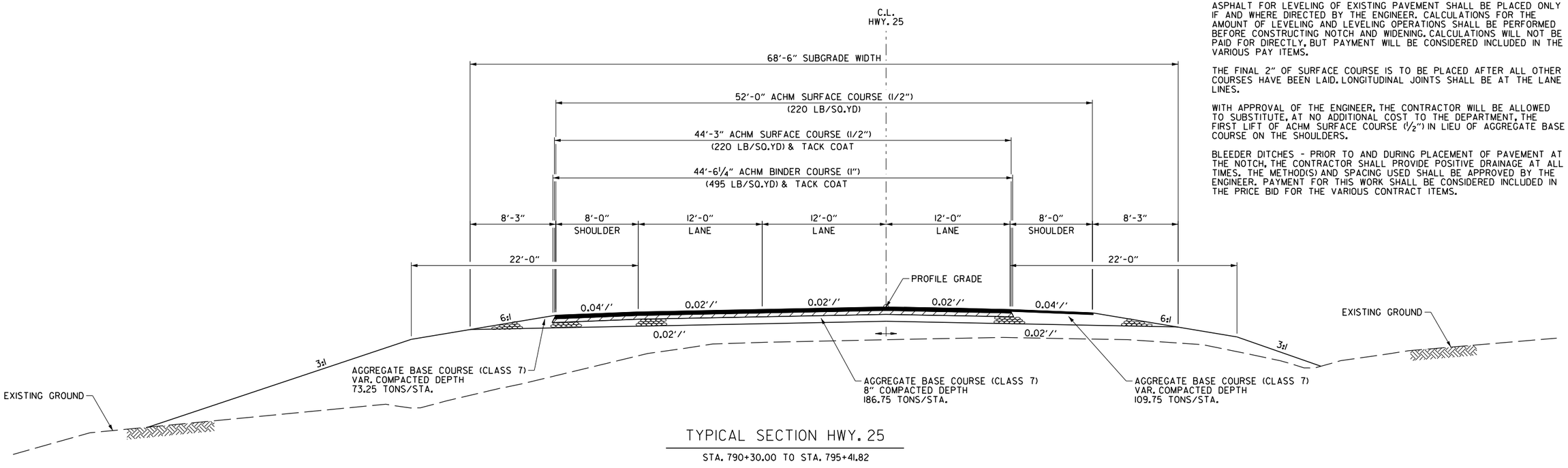
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



TYPICAL SECTION HWY. 25

STA. 790+30.00 TO STA. 795+41.82

NOTE: SEE BRIDGE PLANS FOR STA. 795+41.82 TO STA. 797+89.97

TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
				JOB NO.		050413	5	92

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
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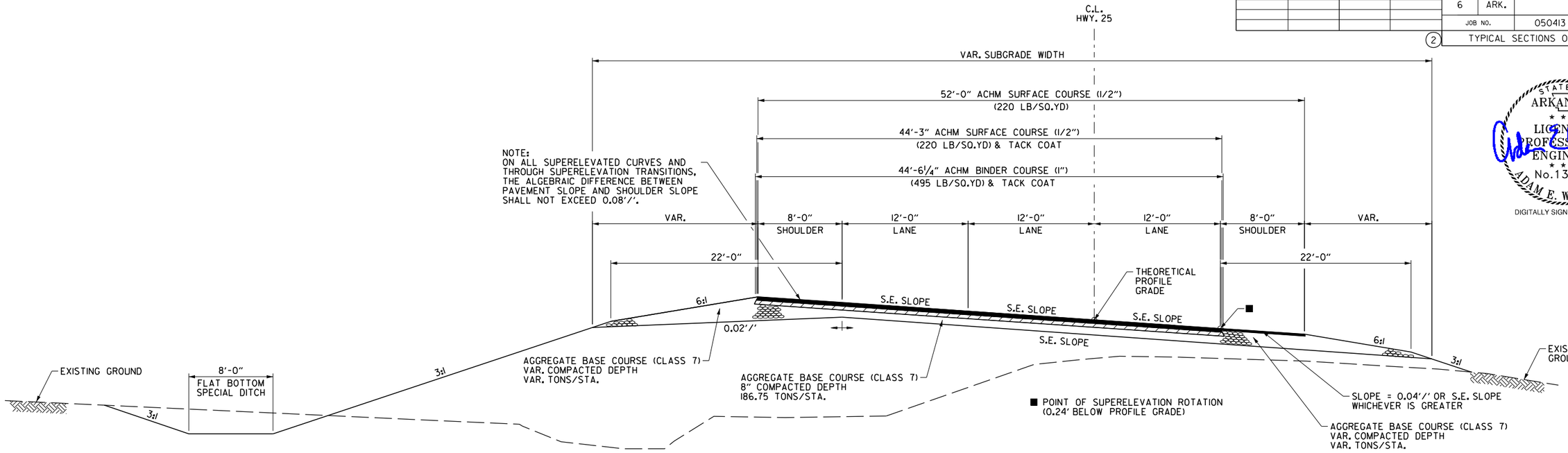
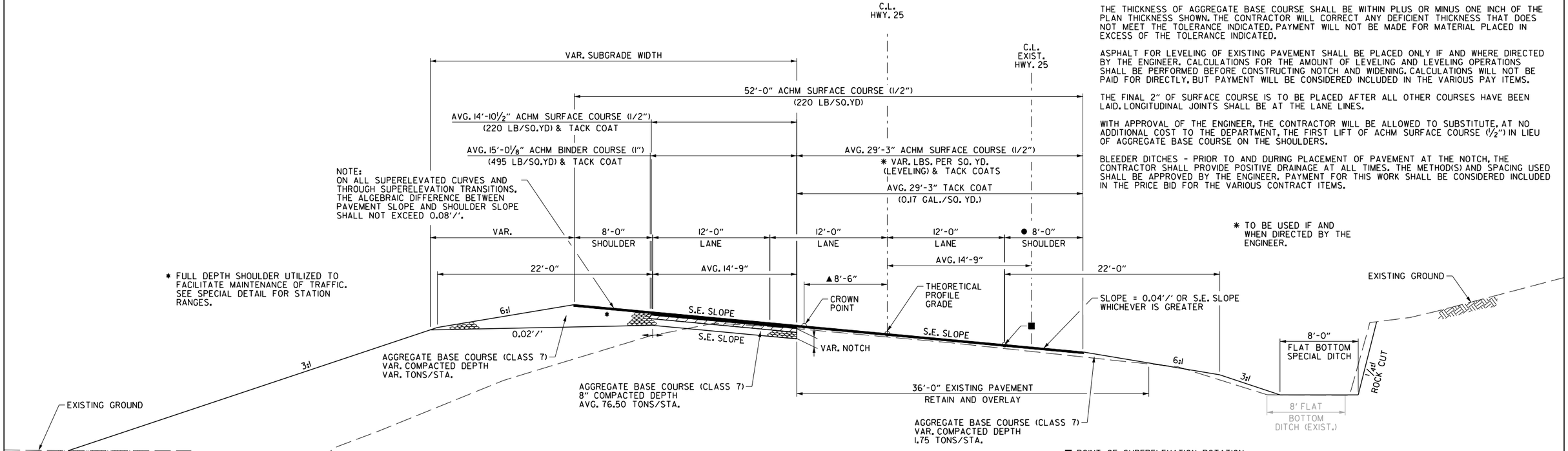


TYPICAL SUPERELEVATED SECTION HWY. 25

STA. 797+89.97 TO STA. 800+85.00



TYPICAL SUPERELEVATED NOTCH AND WIDEN SECTION HWY. 25

STA. 800+85.00 TO STA. 806+89.76

▲ FROM STA. 806+05.76 TO STA. 806+89.76, THE CROWN POINT SHIFTS TO 8'-6" TO MATCH THE EXISTING CROWN POINT, WHICH IS TRANSITIONING FROM SOUTHBOUND PASSING LANES TO NORTHBOUND PASSING LANES.

■ POINT OF SUPERELEVATION ROTATION (0.24' BELOW PROFILE GRADE)

● TRANSITION FROM
8' AT STA. 805+00.00 TO
6' AT STA. 806+10.00
6' FROM STA. 806+10.00 TO 806+89.76

* TO BE USED IF AND WHEN DIRECTED BY THE ENGINEER.

NOTES:

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

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

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

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

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

TYPICAL SECTIONS OF IMPROVEMENT

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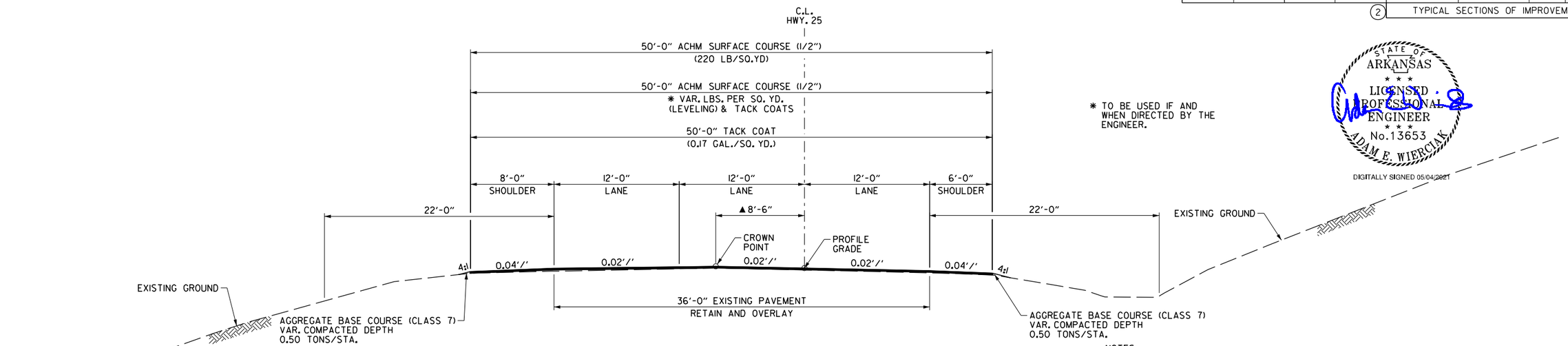
				JOB NO.		050413	6	92

(2) TYPICAL SECTIONS OF IMPROVEMENT



▲ THE CROWN POINT SHIFTS TO 8'-6" TO MATCH THE EXISTING CROWN POINT, WHICH IS TRANSITIONING FROM SOUTHBOUND PASSING LANES TO NORTHBOUND PASSING LANES.

TYPICAL OVERLAY SECTION HWY. 25

STA. 806+89.76 TO STA. 807+00.00

* TO BE USED IF AND WHEN DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

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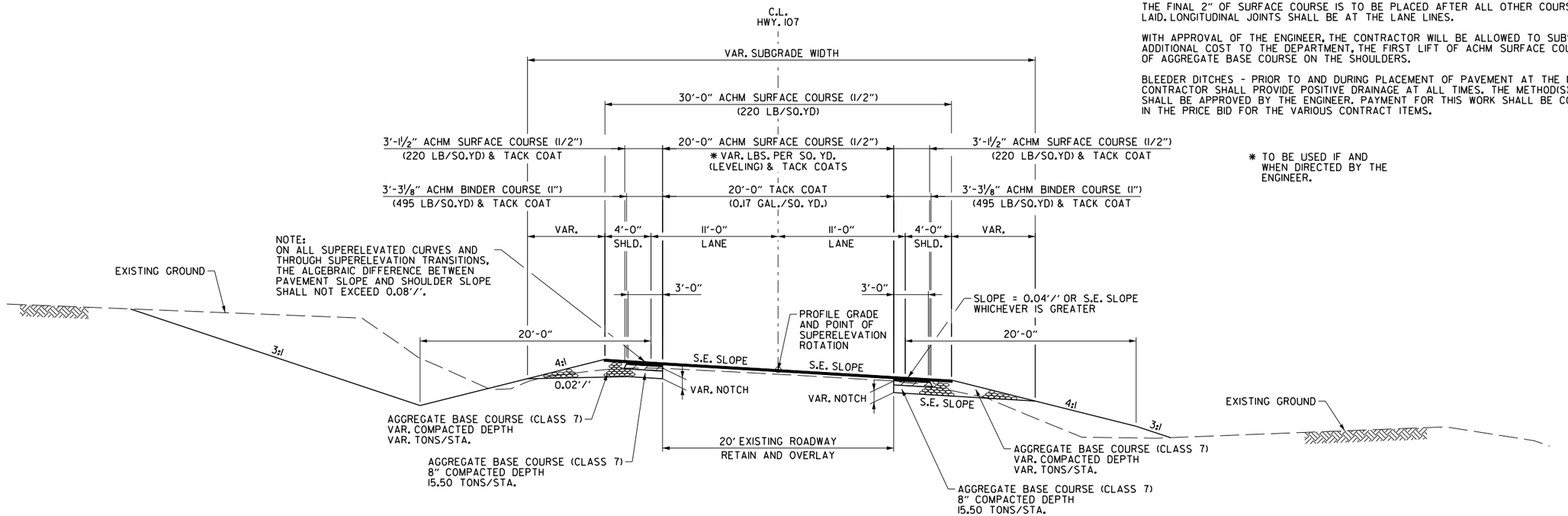
WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



TYPICAL SUPERELEVATED NOTCH AND WIDEN SECTION HWY. 107

STA. 10+24.00 TO STA. 13+25.00

* TO BE USED IF AND WHEN DIRECTED BY THE ENGINEER.

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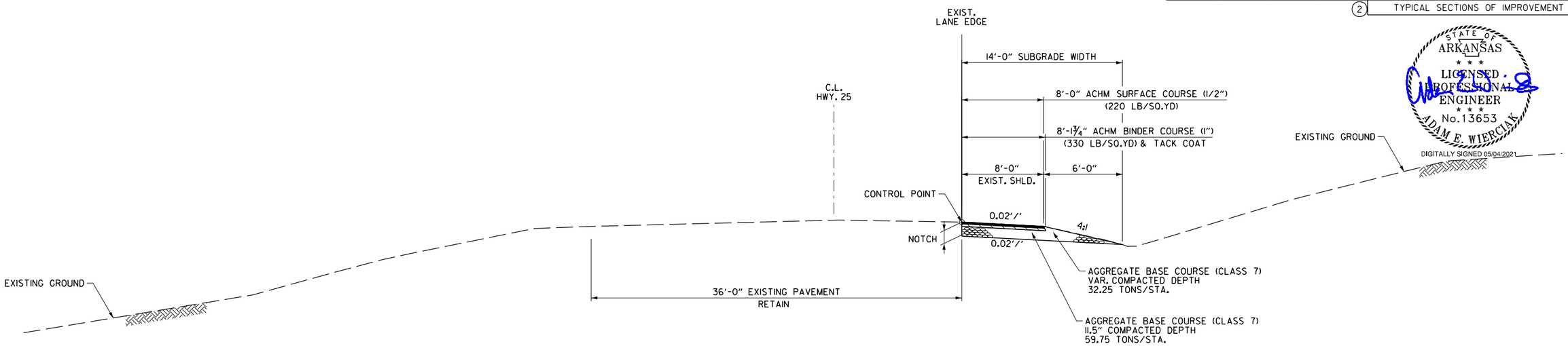
				6	ARK.			
				JOB NO.		050413	7	92

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021



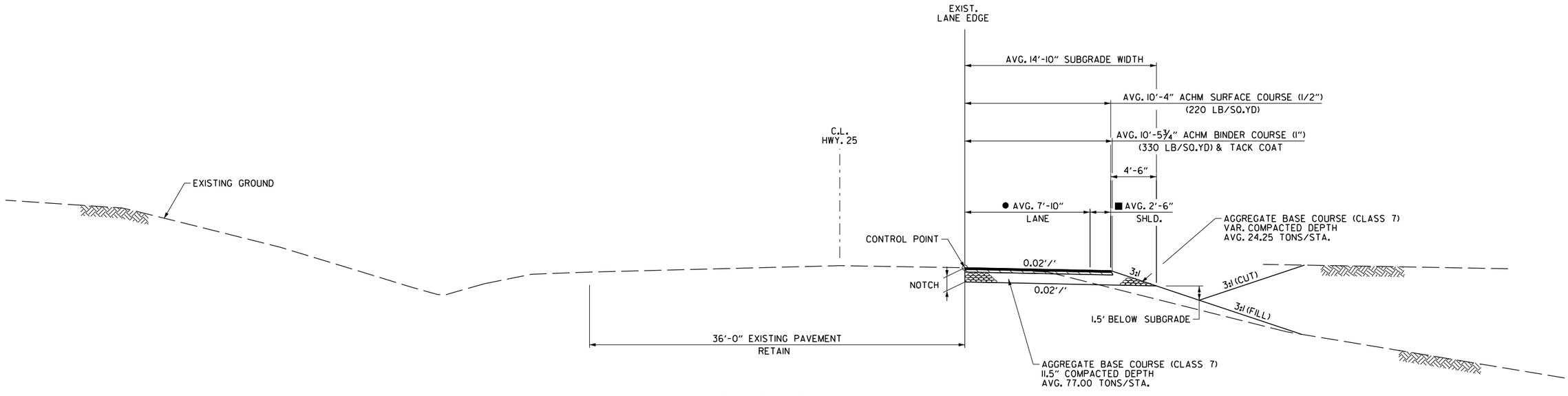
STAGE I TEMP. HWY. 25 NOTCH

STA. 783+88.00 TO STA. 787+48.00

NOTES:

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

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



STAGE I TEMP. HWY. 25 NOTCH AND WIDEN SECTION

STA. 787+48.00 TO STA. 796+33.00

● TRANSITION FROM
6' AT STA. 787+48.00 TO
12' AT STA. 790+48.00
12' FROM STA. 790+48.00 TO STA.791+18.00
12' AT STA. 791+18.00 TO
1' AT STA. 796+33.00

■ TRANSITION FROM
2' AT STA. 793+78.00 TO
5.5' AT STA. 794+00.00
5.5' FROM STA. 794+00.00 TO STA. 794+20.00
5.5' AT STA. 794+20.00 TO
4' AT STA. 794+40.00
4' FROM STA. 794+40.00 TO STA. 795+50.00
4' AT STA. 795+50 TO
2' AT STA. 796+00
2' FROM STA. 796+00 TO STA. 796+33.00

TYPICAL SECTIONS OF IMPROVEMENT

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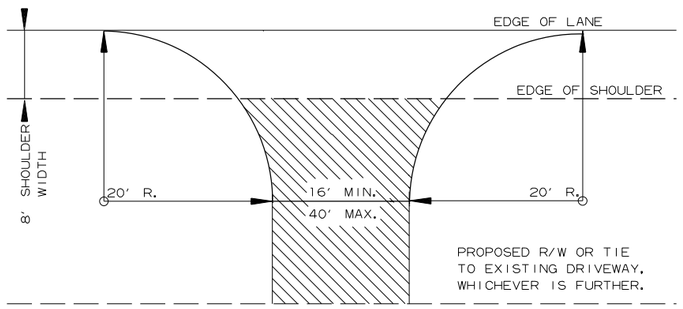
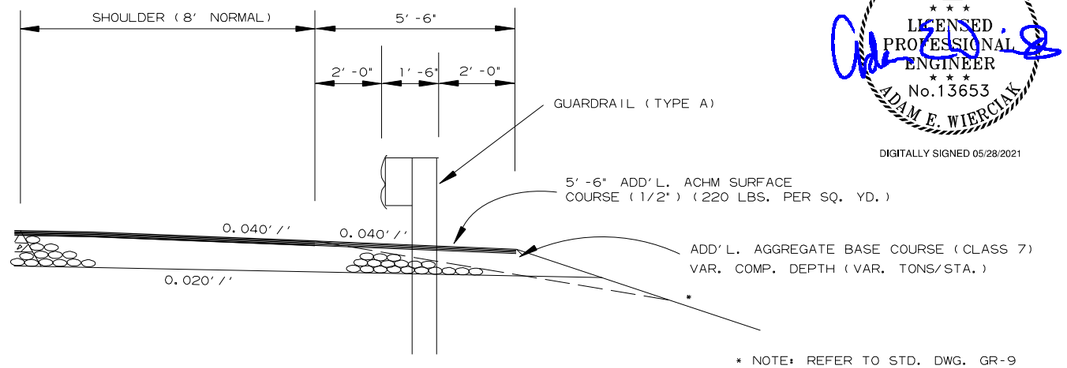
				JOB NO.		050413	8	92
				(2)		SPECIAL DETAILS		



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

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (HWY. 25)



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

WIDENING FOR GUARDRAIL

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LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
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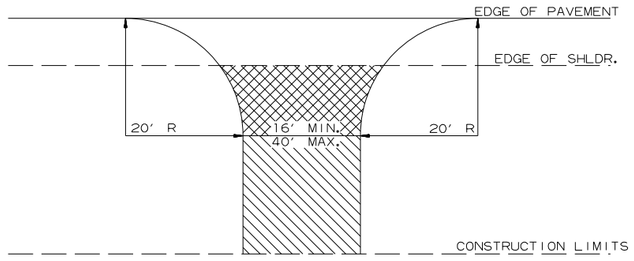


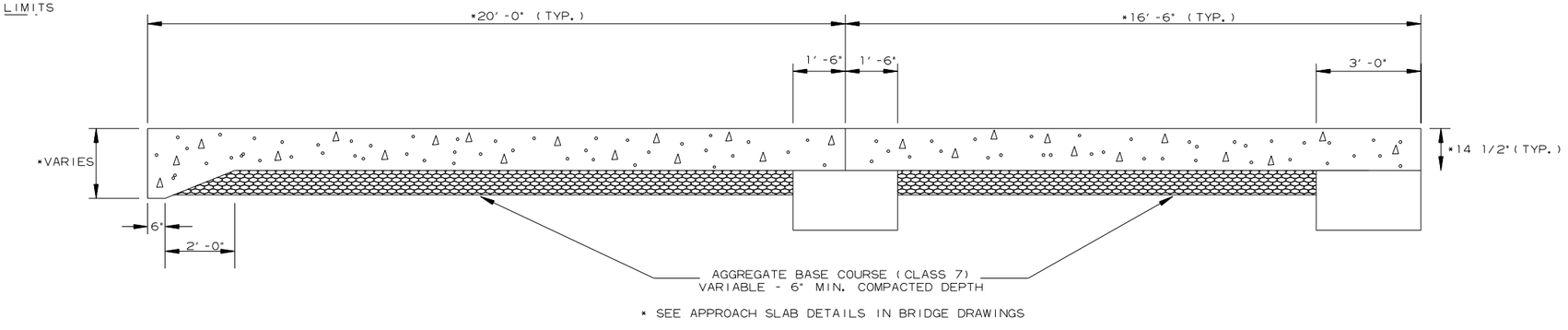
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

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 (HWY. 107)

DETAIL FOR TRANSITIONS



* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB

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				JOB NO.		050413	9	92
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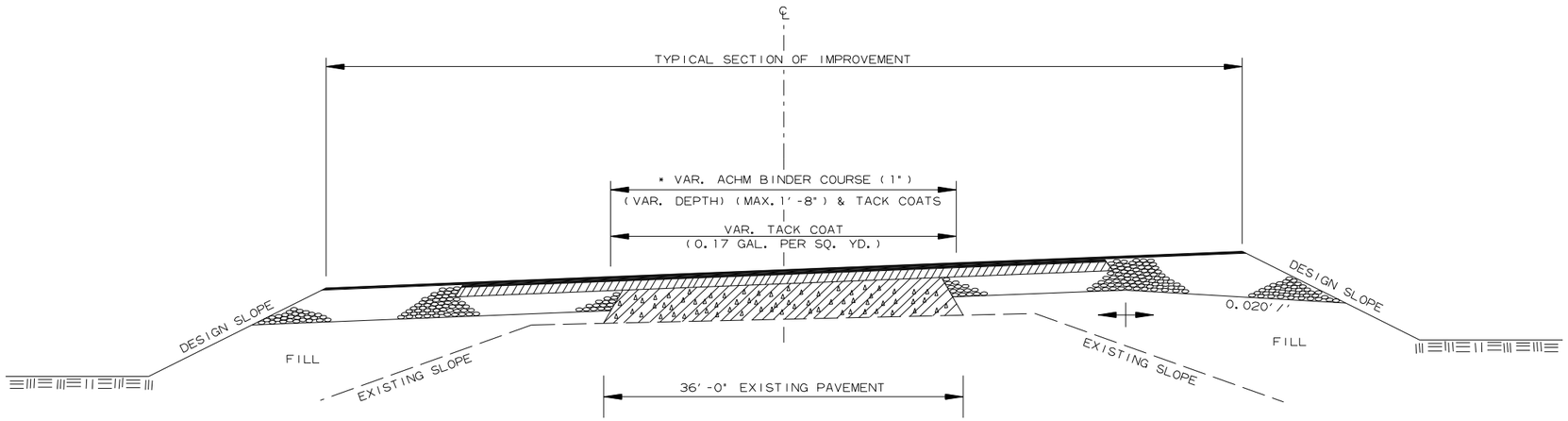


* 8" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (1")

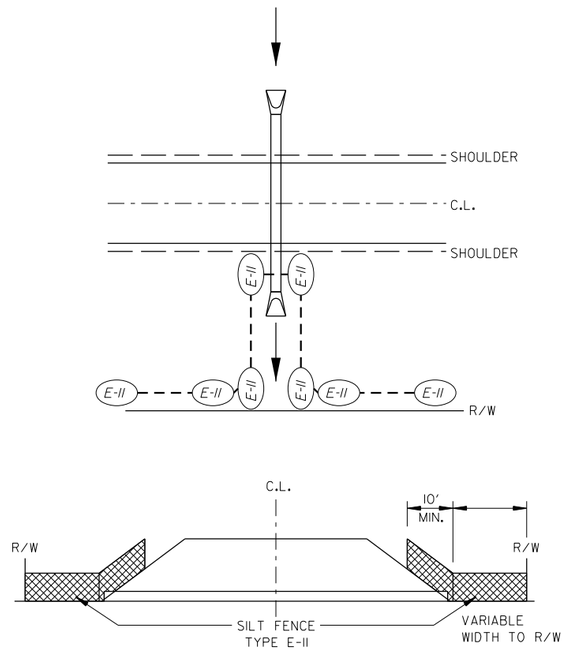
METHOD OF RAISING GRADE

NOTES:

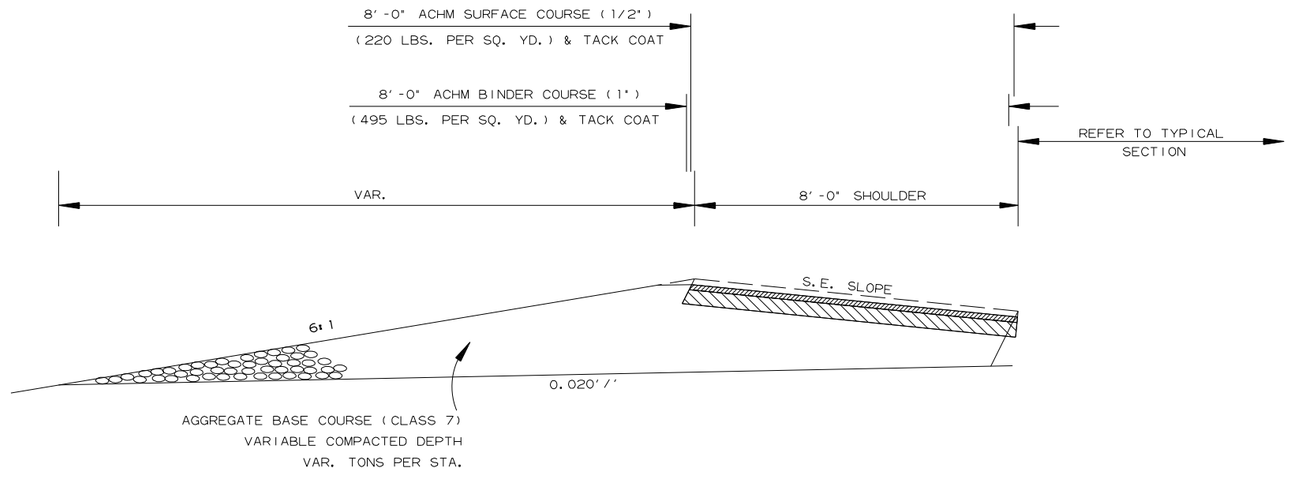
(1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

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

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



DETAILS OF SILT FENCE AT CROSS DRAINS



FULL DEPTH SHOULDER FOR MAINTENANCE OF TRAFFIC

STATIONS: 800+85.00-803+50.34

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

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				JOB NO.		050413	10	92
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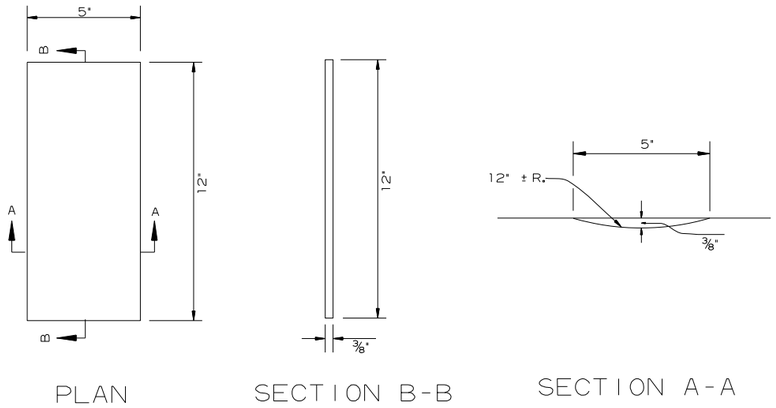
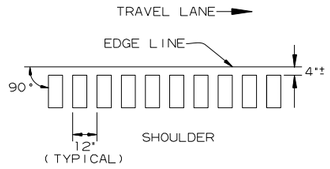
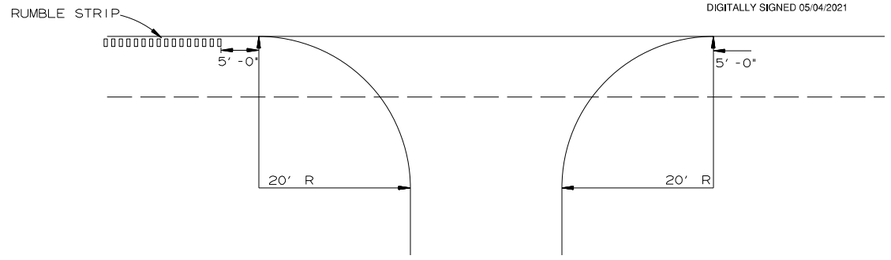


PLAN SECTION B-B SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS

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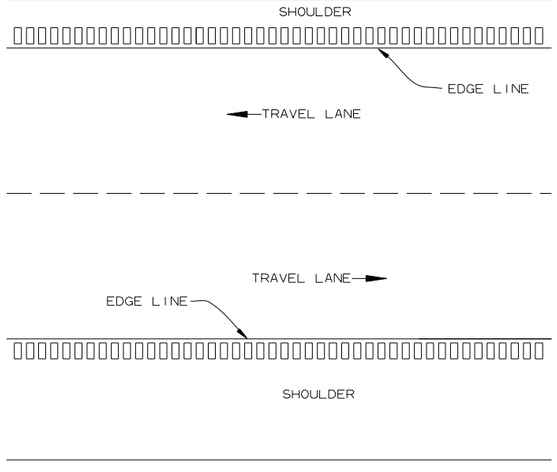
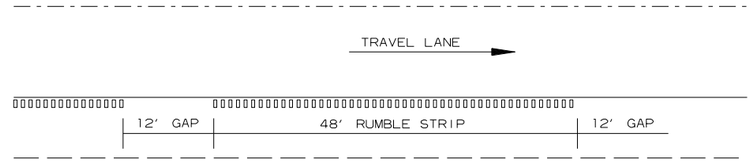


PLAN VIEW

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.



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

SPECIAL DETAILS

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.		050413	11	92

(1) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
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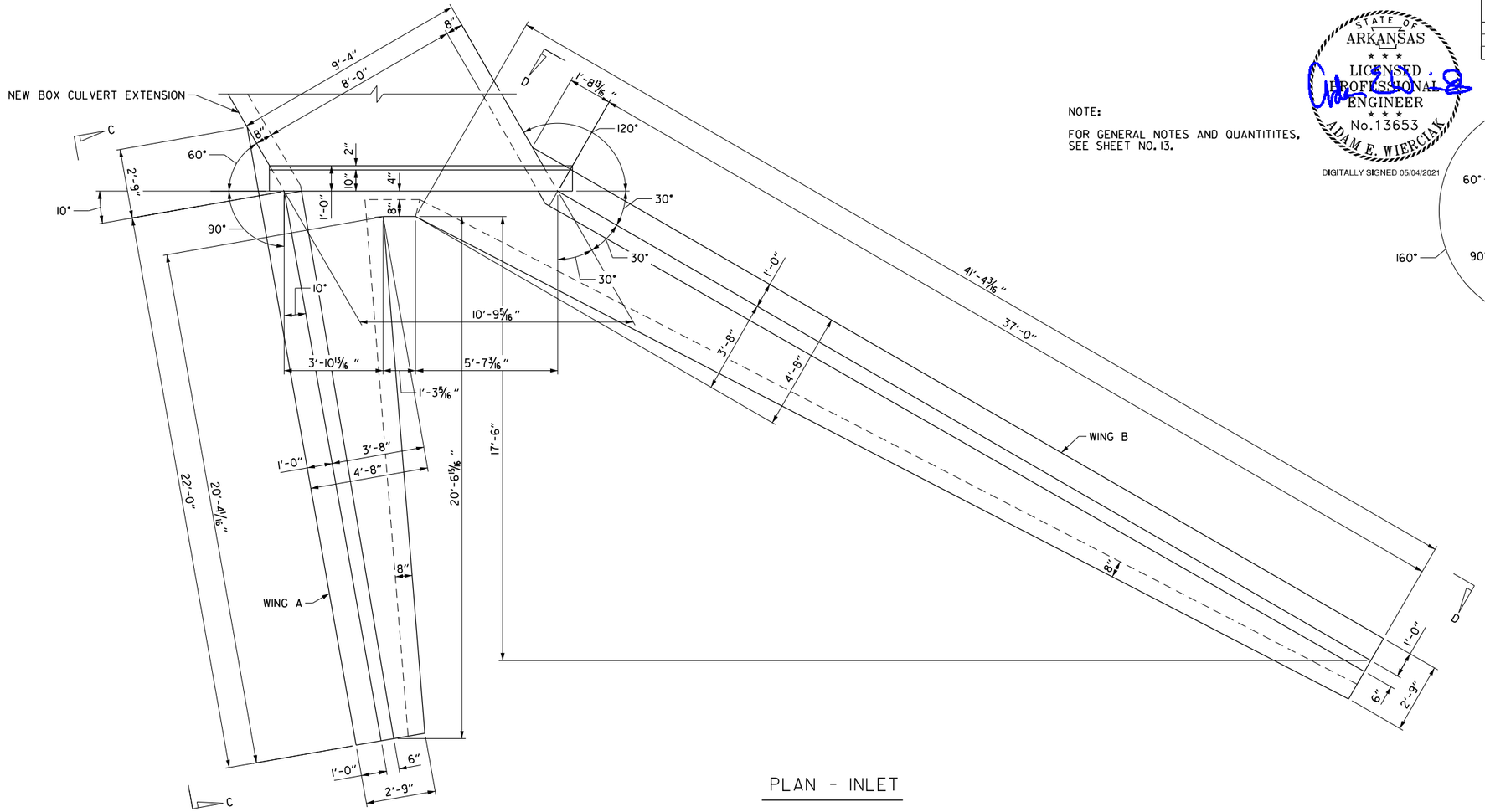
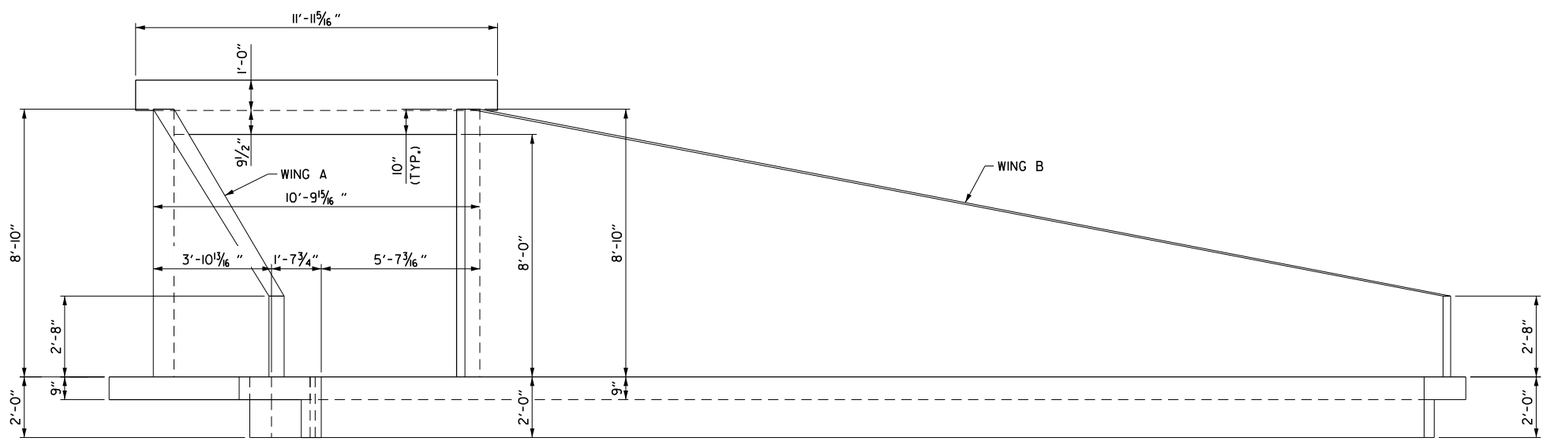
NOTE:

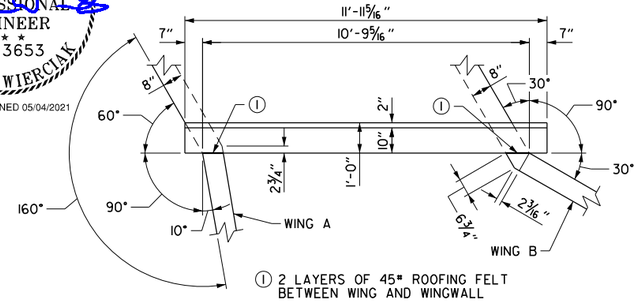
FOR GENERAL NOTES AND QUANTITITES, SEE SHEET NO. 13.



PLAN - INLET



ELEVATION - INLET

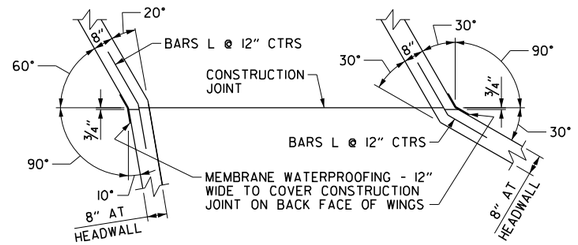


(1) 2 LAYERS OF 45# ROOFING FELT BETWEEN WING AND WINGWALL

DETAILS AT TOP OF WINGS - INLET

NOTE:

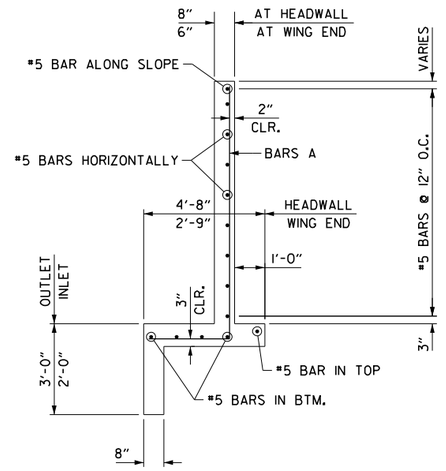
PAYMENT FOR MEMBRANE WATERPROOFING AND ROOFING FELT TO BE INCLUDED IN THE PRICE BID FOR CLASS S CONCRETE.



SECTION L-L

SECTION M-M

SECTIONS THRU CONSTRUCTION JOINTS



SECTION X-X

SPECIAL DETAILS

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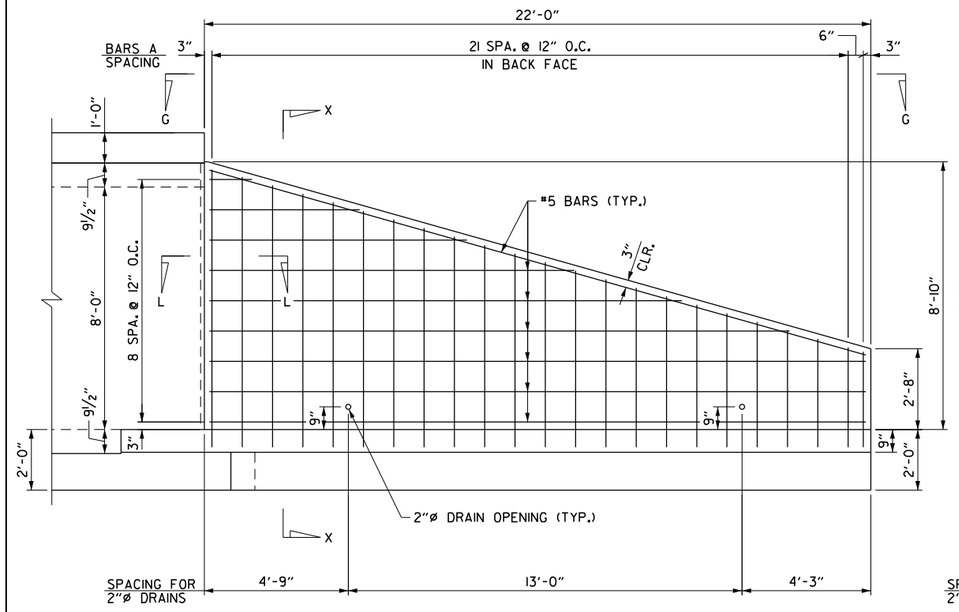
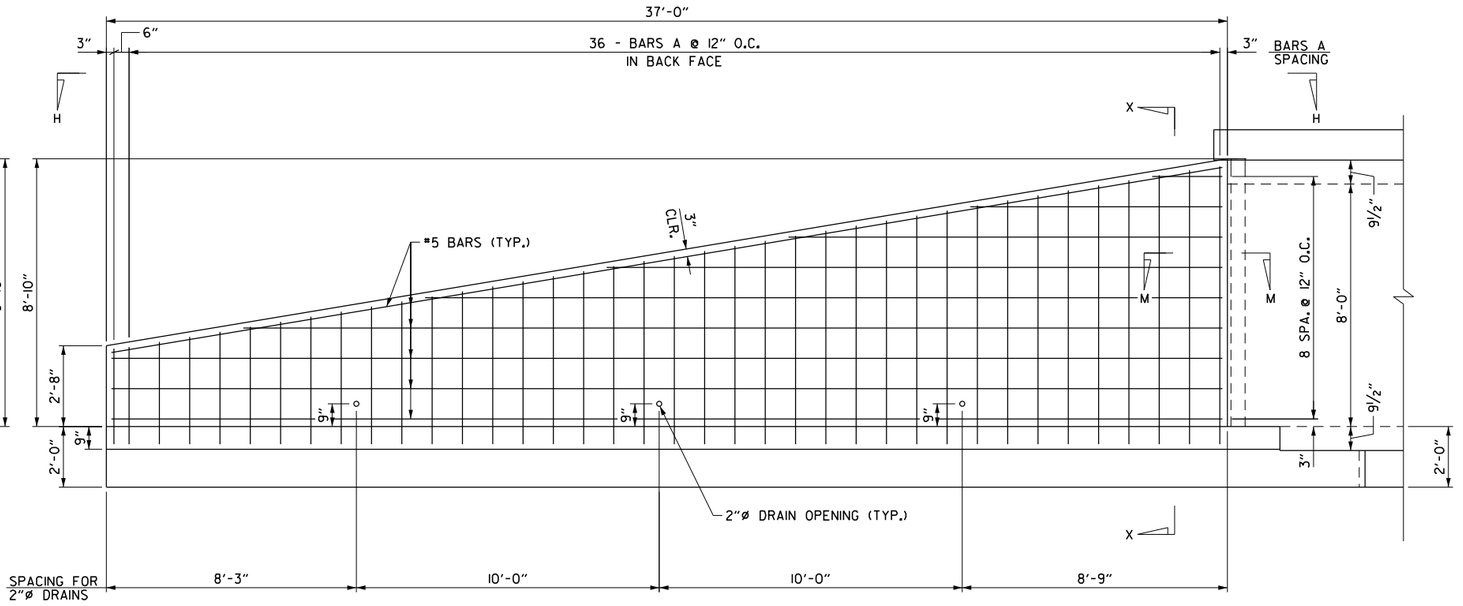
NOTE:

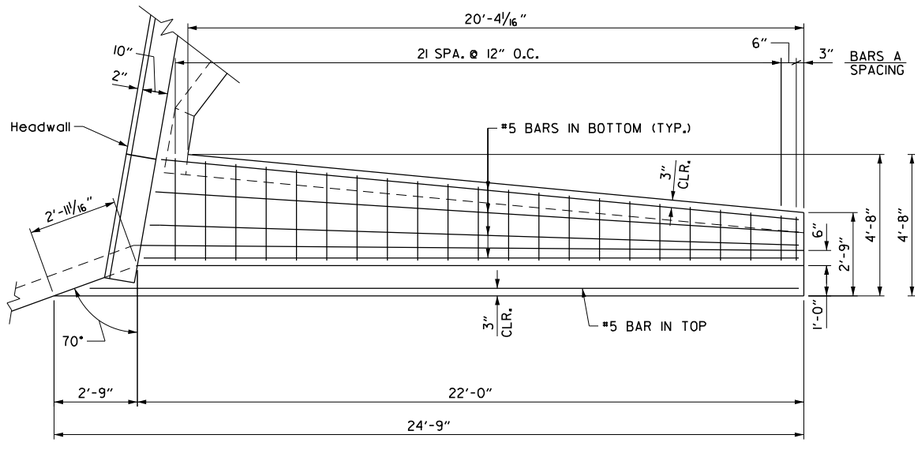
FOR SECTION X-X, SEE SHEET NO. 11.

FOR SECTIONS L-L AND M-M, SEE SHEET NO. 11.

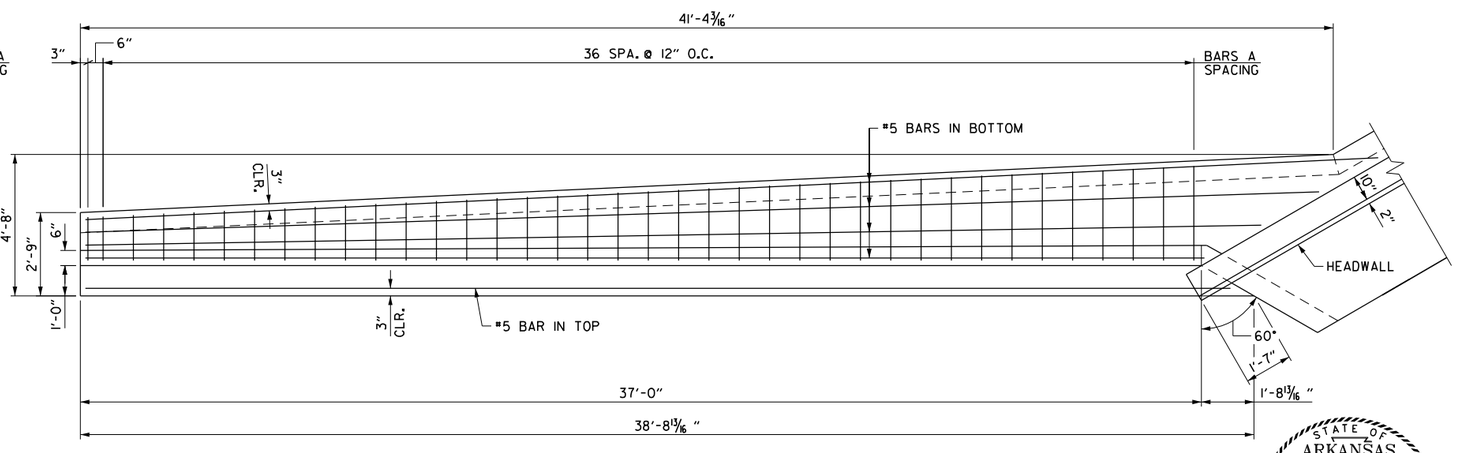




VIEW C-C - REAR ELEVATION OF WINGWALL 1 (INLET)



VIEW D-D - REAR ELEVATION OF WINGWALL 2 (INLET)



VIEW G-G - PLAN VIEW OF WINGWALL 1 (INLET)

VIEW H-H - PLAN VIEW OF WINGWALL 2 (INLET)

STATE OF ARKANSAS
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SPECIAL DETAILS

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				6	ARK.			
				JOB NO.		050413	13	92
				(1)	SPECIAL DETAILS			

ESTIMATED QUANTITIES		
	CONCRETE (CUBIC YARDS)	REINFORCEMENT (POUNDS)
INLET	17.73	1,338
OUTLET	15.26	1,257

DESIGN DATA	
CONCRETE (CLASS S)	fc = 3.5 Ksi
REINFORCING STEEL	fy = 60 Ksi

STATE OF ARKANSAS
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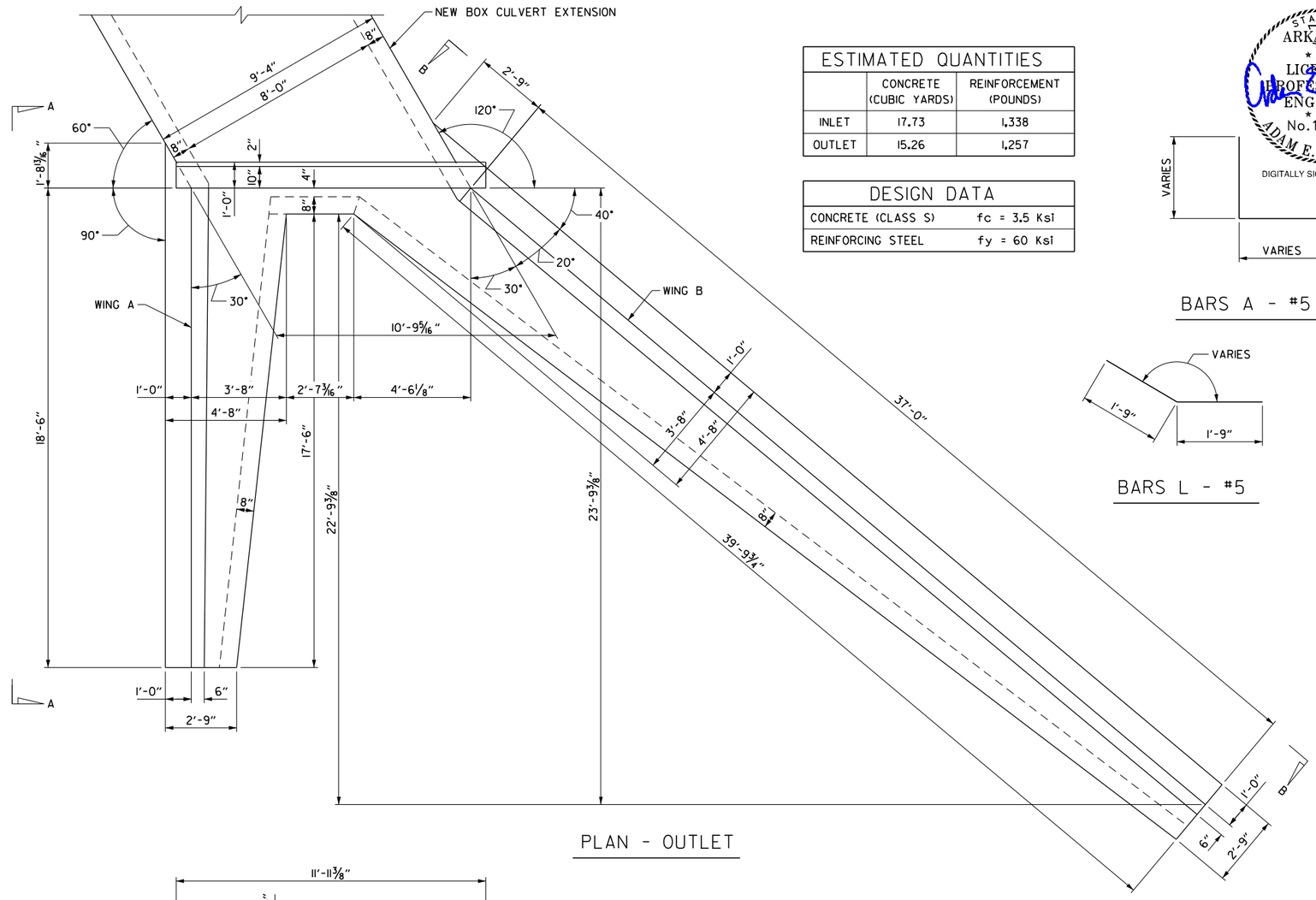
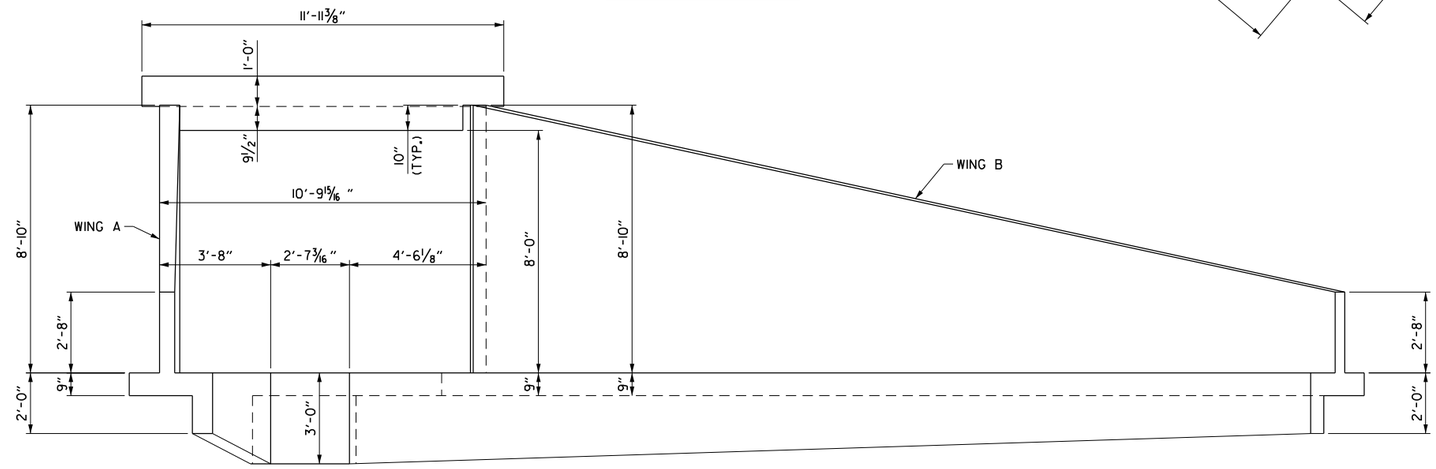


PLAN - OUTLET



ELEVATION - OUTLET

BARS A - #5

BARS L - #5

GENERAL NOTES:

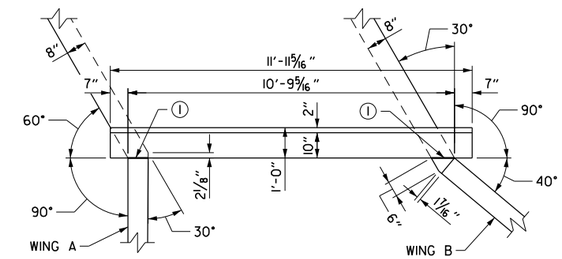
ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

ALL CONCRETE SHALL BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS SHALL HAVE ¾" CHAMFERS.

ALL REINFORCING STEEL SHALL BE GRADE 60 CONFORMING TO AASHTO M 31 OR M 322, TYPE A, WITH MILL TEST REPORTS.

FOR BOX CULVERT DETAILS, SEE STANDARD DWG. NO. R-130X-0.

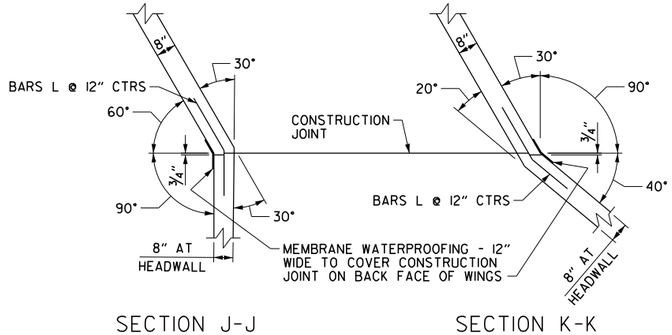
(1) 2 LAYERS OF 45# ROOFING FELT BETWEEN WING AND WINGWALL



DETAILS AT TOP OF WINGS - OUTLET

NOTE:

PAYMENT FOR MEMBRANE WATERPROOFING AND ROOFING FELT TO BE INCLUDED IN THE PRICE BID FOR CLASS S CONCRETE.



SECTION J-J

SECTION K-K

SECTIONS THRU CONSTRUCTION JOINTS

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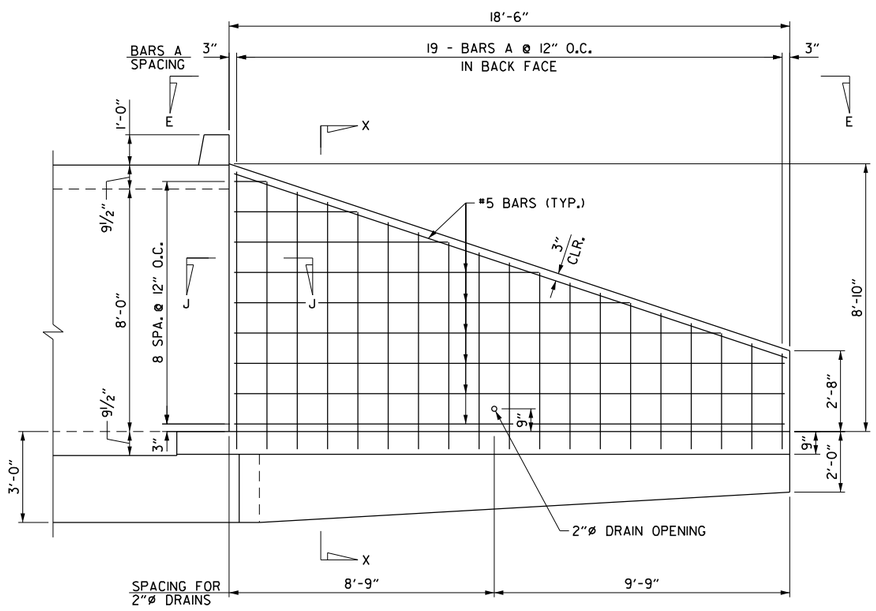
				6	ARK.			
				JOB NO.		050413	14	92
				(1)	SPECIAL DETAILS			

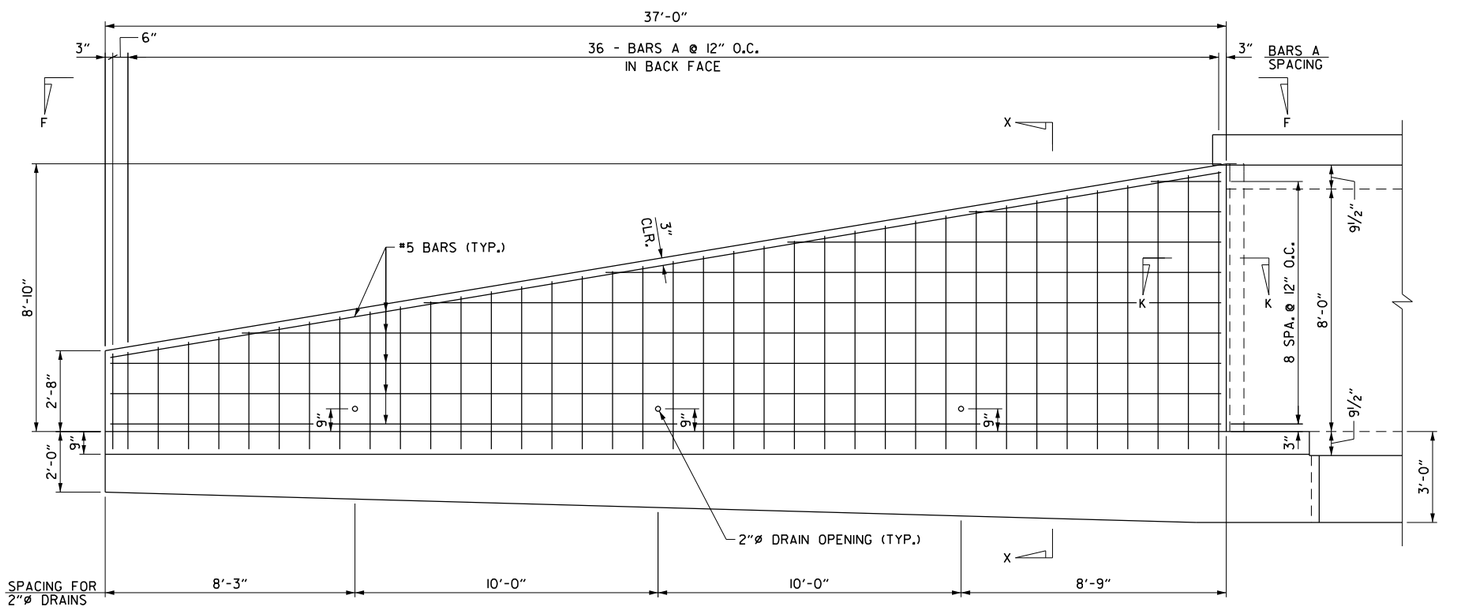
NOTES:

FOR SECTION X-X, SEE SHEET NO. 11.

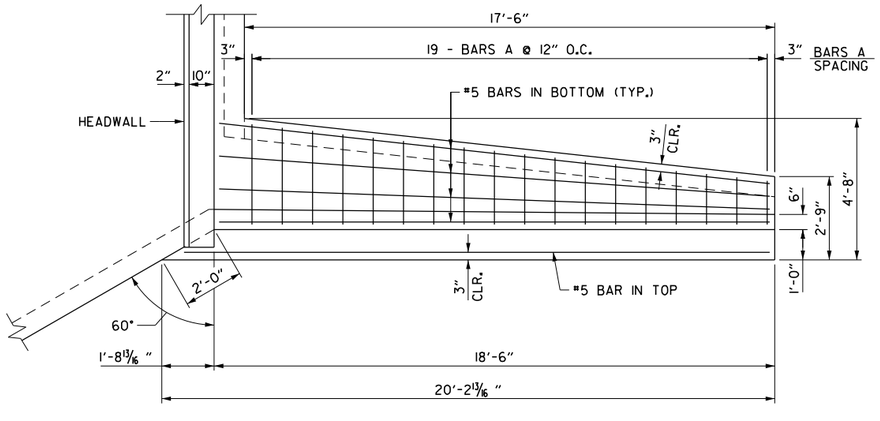
FOR SECTIONS J-J AND K-K, SEE SHEET NO. 13.



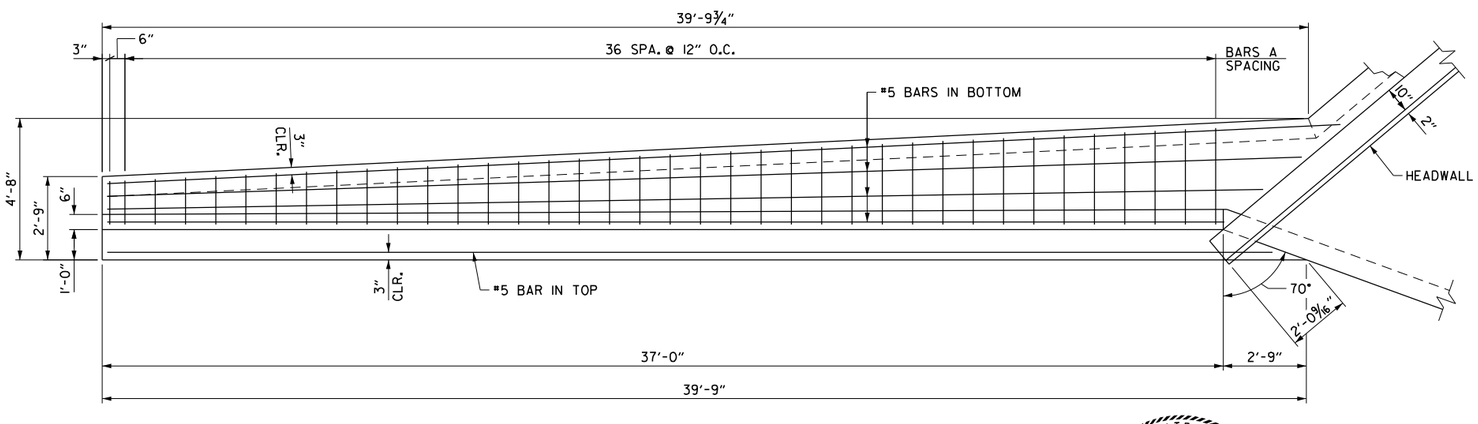
VIEW A-A - REAR ELEVATION OF WING A (OUTLET)



VIEW B-B - REAR ELEVATION OF WING B (OUTLET)



VIEW E-E - PLAN VIEW OF WING A (OUTLET)



VIEW F-F - PLAN VIEW OF WING B (OUTLET)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

SPECIAL 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.		050413	15	92

(2) TEMPORARY EROSION CONTROL DETAILS

SILT FENCE	(E-11)	LIN. FT.
STA. 785+75 TO 786+80	RT.	152
STA. 785+75 TO 796+35	LT.	1225
STA. 795+60 TO 796+25	RT.	76
STA. 795+95 TO 796+70	RT.	110

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 793+90	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 787+35	LT.	1
STA. 795+85	RT.	1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

N

SPECIAL FLOOD HAZARD AREA
50' STREAM BUFFER
CADRON CREEK
PROP. R/W
EXIST. R/W
C.L. HWY. 25
785+00
790+00
795+00
+35
+75
+80
+90
+60
+25
+85
+95
+70
E-11
E-6
E-5
STA. 786+80.00
BEGIN JOB 050413
L.M. 9.72

REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

aewierciak 4/27/2021 9:20:36 AM
WORKSPACE: AHTD
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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.		050413	16	92
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 25

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 798+85	RT.	1

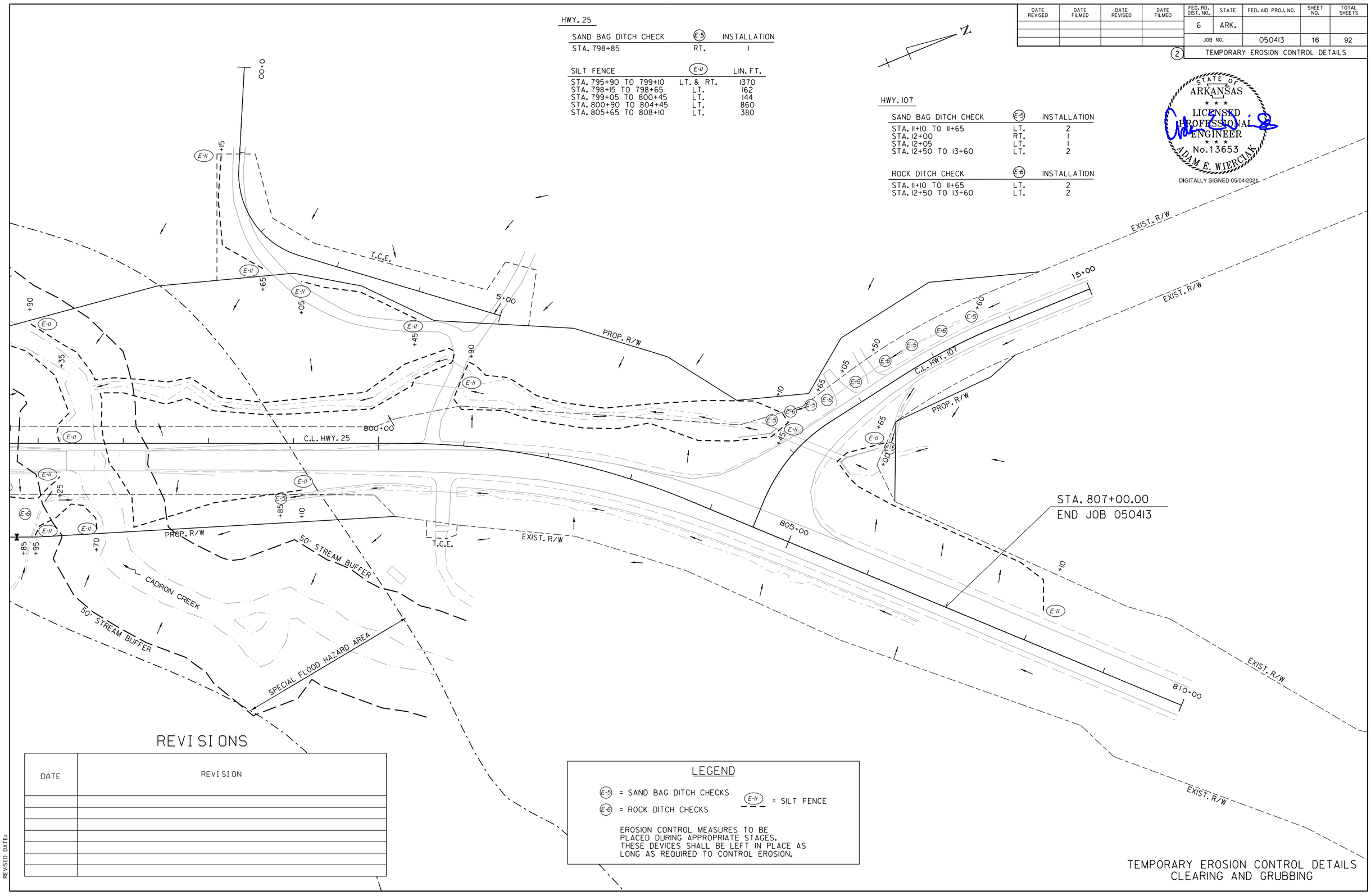
SILT FENCE	(E-11)	LIN. FT.
STA. 795+90 TO 799+10	LT. & RT.	1370
STA. 798+15 TO 798+65	LT.	162
STA. 799+05 TO 800+45	LT.	144
STA. 800+90 TO 804+45	LT.	860
STA. 805+65 TO 808+10	LT.	380

HWY. 107

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 11+10 TO 11+65	LT.	2
STA. 12+00	RT.	1
STA. 12+05	LT.	1
STA. 12+50 TO 13+60	LT.	2

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 11+10 TO 11+65	LT.	2
STA. 12+50 TO 13+60	LT.	2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021



REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

dewierciak 4/27/2021 9:20:37 AM
WORKSPACE1, AHTD
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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.		050413	17	92

(2) TEMPORARY EROSION CONTROL DETAILS

SILT FENCE	(E-11)	LIN. FT.
STA. 785+75 TO 786+80	RT.	RETAIN
STA. 785+75 TO 796+35	LT.	RETAIN
STA. 795+60 TO 796+25	RT.	RETAIN
STA. 795+95 TO 796+70	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 787+45 TO 793+45	RT.	13
STA. 793+90	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 787+35	LT.	RETAIN
STA. 787+70 TO 794+15	RT.	14
STA. 795+85	RT.	RETAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

N

SPECIAL FLOOD HAZARD AREA
50' STREAM BUFFER
CADRON CREEK
PROP. R/W
EXIST. R/W
785+00
790+00
795+00
C.L. HWY. 25
STA. 786+80.00
BEGIN JOB 050413
L.M. 9.72

REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
STAGE I

dewierciak 4/21/2021 9:20:37 AM
WORKSPACE: AHTD
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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.		050413	18	92
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 25

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 798+85	RT.	RETAIN

SILT FENCE	(E-11)	LIN. FT.
STA. 795+90 TO 799+10	LT. & RT.	RETAIN
STA. 798+15 TO 798+65	LT.	RETAIN
STA. 799+05 TO 800+45	LT.	RETAIN
STA. 800+90 TO 804+45	LT.	RETAIN
STA. 805+65 TO 808+10	LT.	RETAIN

HWY. 107

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 11+10 TO 11+65	LT.	RETAIN
STA. 12+00	RT.	RETAIN
STA. 12+05	LT.	RETAIN
STA. 12+50 TO 13+60	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 11+10 TO 11+65	LT.	RETAIN
STA. 12+50 TO 13+60	LT.	RETAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

N

T.C.E.
PROP. R/W
EXIST. R/W
C.L. HWY. 107
C.L. HWY. 25
50' STREAM BUFFER
CADRON CREEK
SPECIAL FLOOD HAZARD AREA
800+00
805+00
810+00
15+00
5+00
STA. 807+00.00
END JOB 050413

REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
STAGE I

dewler.clak 4/27/2021 9:20:38 AM
WORKSPACE: AHTD
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REVISED DATE:

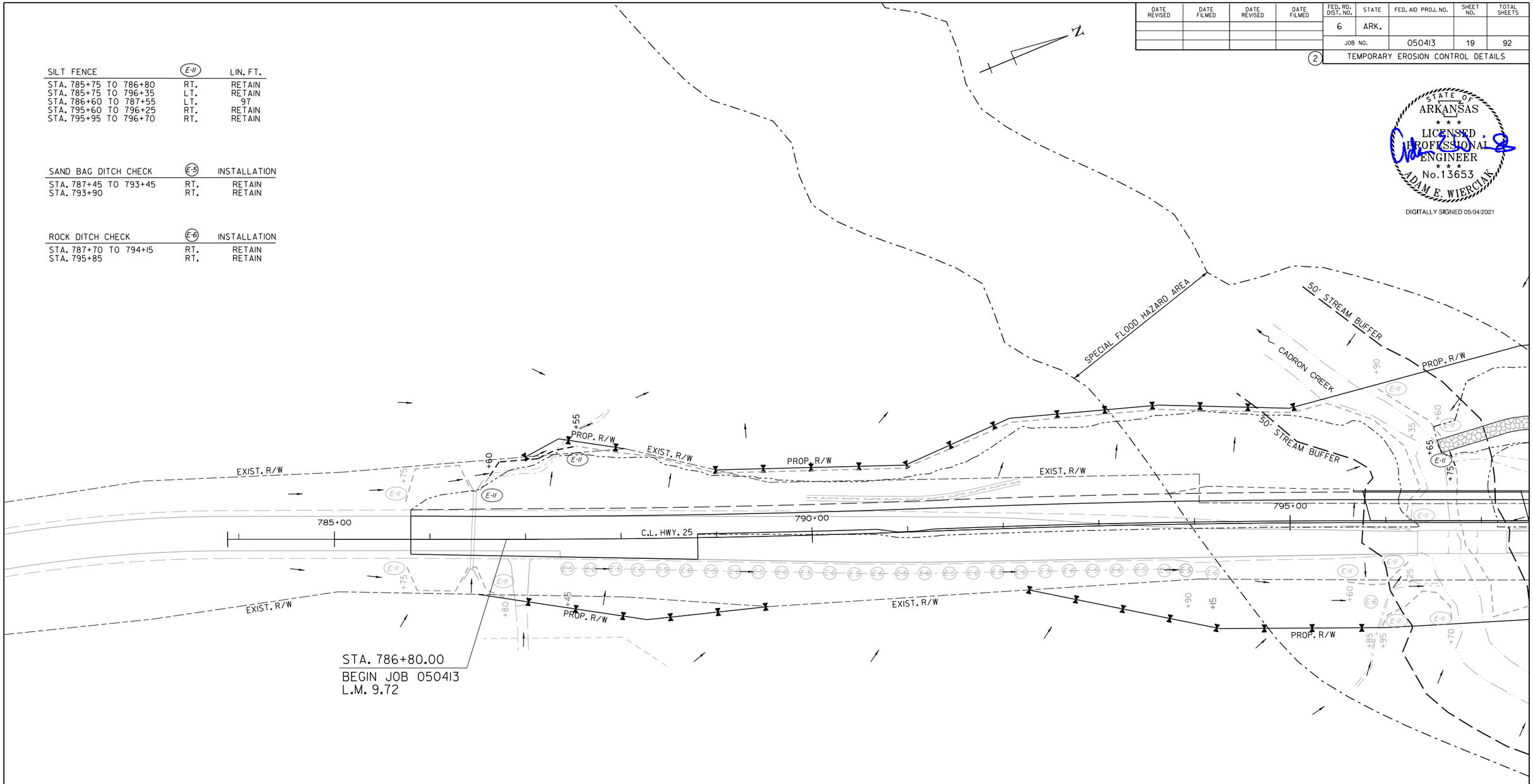
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	19	92
				(2)	TEMPORARY EROSION CONTROL DETAILS			

SILT FENCE	(E-11)	LIN. FT.
STA. 785+75 TO 786+80	RT.	RETAIN
STA. 785+75 TO 796+35	LT.	RETAIN
STA. 786+60 TO 787+55	LT.	97
STA. 795+60 TO 796+25	RT.	RETAIN
STA. 795+95 TO 796+70	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 787+45 TO 793+45	RT.	RETAIN
STA. 793+90	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 787+70 TO 794+15	RT.	RETAIN
STA. 795+85	RT.	RETAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021



REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

aewierciak 4/27/2021 9:20:38 AM
WORKSPACE: AHTD
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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.		050413	20	92
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 25

SILT FENCE	(E-11)	LIN. FT.
STA. 795+90 TO 796+60	LT.	RETAIN
STA. 796+65 TO 796+75	LT.	16
STA. 796+75 TO 799+10	LT. & RT.	RETAIN
STA. 798+15 TO 798+65	LT.	RETAIN
STA. 799+05 TO 800+45	LT.	RETAIN
STA. 800+90 TO 804+45	LT.	RETAIN
STA. 805+65 TO 808+10	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 798+85	RT.	RETAIN

HWY. 107

SILT FENCE	(E-11)	LIN. FT.
STA. 11+95 TO 12+35	RT.	45

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 11+10 TO 11+60	LT.	2
STA. 12+00	LT.	1
STA. 12+00	RT.	RETAIN
STA. 12+50 TO 13+60	LT.	3
STA. 12+40	RT.	1
STA. 12+15	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 11+10 TO 11+60	LT.	2
STA. 13+25	LT.	1
STA. 12+80 TO 13+60	RT.	2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

T.C.E.
PROP. R/W
EXIST. R/W
C.L. HWY. 25
C.L. HWY. 107
800+00
805+00
810+00
15+00
STA. 807+00.00
END JOB 050413
50' STREAM BUFFER
CADRON CREEK
SPECIAL FLOOD HAZARD AREA

REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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WORKSPACE: AHTD
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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.		050413	21	92
				(2)	TEMPORARY EROSION CONTROL DETAILS			

SILT FENCE	(E-11)	LIN. FT.
STA. 785+75 TO 786+80	RT.	RETAIN
STA. 785+75 TO 796+35	LT.	RETAIN
STA. 795+95 TO 796+70	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 787+40 TO 796+15	RT.	36

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 787+15	RT.	1
STA. 796+40	RT.	1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

N

SPECIAL FLOOD HAZARD AREA
50' STREAM BUFFER
CADRON CREEK
PROP. R/W
EXIST. R/W
C.L. HWY. 25
785+00
790+00
795+00
STA. 786+80.00
BEGIN JOB 050413
L.M. 9.72

REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

aewierciak 4/21/2021 9:20:39 AM
WORKSPACE: AHTD
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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.		050413	22	92
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 25

SILT FENCE	(E-11)	LIN. FT.
STA. 795+90 TO 796+60	LT.	RETAIN
STA. 796+65 TO 799+10	LT. & RT.	RETAIN
STA. 798+15 TO 798+65	LT.	RETAIN
STA. 799+05 TO 800+45	LT.	RETAIN
STA. 800+90 TO 804+45	LT.	RETAIN
STA. 805+65 TO 808+10	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 799+00 TO 800+25	RT.	6
STA. 803+20 TO 806+95	RT.	16

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 800+05	RT.	1
STA. 807+20	RT	1

HWY. 107

SILT FENCE	(E-11)	LIN. FT.
STA. 11+95 TO 12+35	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 11+10 TO 11+60	LT.	RETAIN
STA. 12+00	LT.	RETAIN
STA. 12+00	RT.	RETAIN
STA. 12+50 TO 13+60	LT.	RETAIN
STA. 12+40 TO 13+15	RT.	3

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 11+10 TO 11+60	LT.	RETAIN
STA. 13+25	LT.	RETAIN
STA. 13+60	RT.	1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

STA. 807+00.00
END JOB 050413

REVISIONS

DATE	REVISION

LEGEND

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

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

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

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WORKSPACE: AHTD
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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.		050413	23	92
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE 1 CONSTRUCTION SEQUENCE NOTES:

1) MAINTAIN HWY. 25 TRAFFIC ON EXISTING ALIGNMENT.
2) INSTALL ADVANCE WARNING SIGNS AND CHANNELIZING DEVICES.
3) CONSTRUCT TEMPORARY WIDENING OF HWY. 25 AS SHOWN.

- STAGE 1 TRAFFIC
- STAGE 1 TRAFFIC DRUM
- STAGE 1 VERTICAL PANEL
- STAGE 1 PAVING
- STAGE 1 PAVING UNDER TRAFFIC
- STAGE 1 GRADING

N

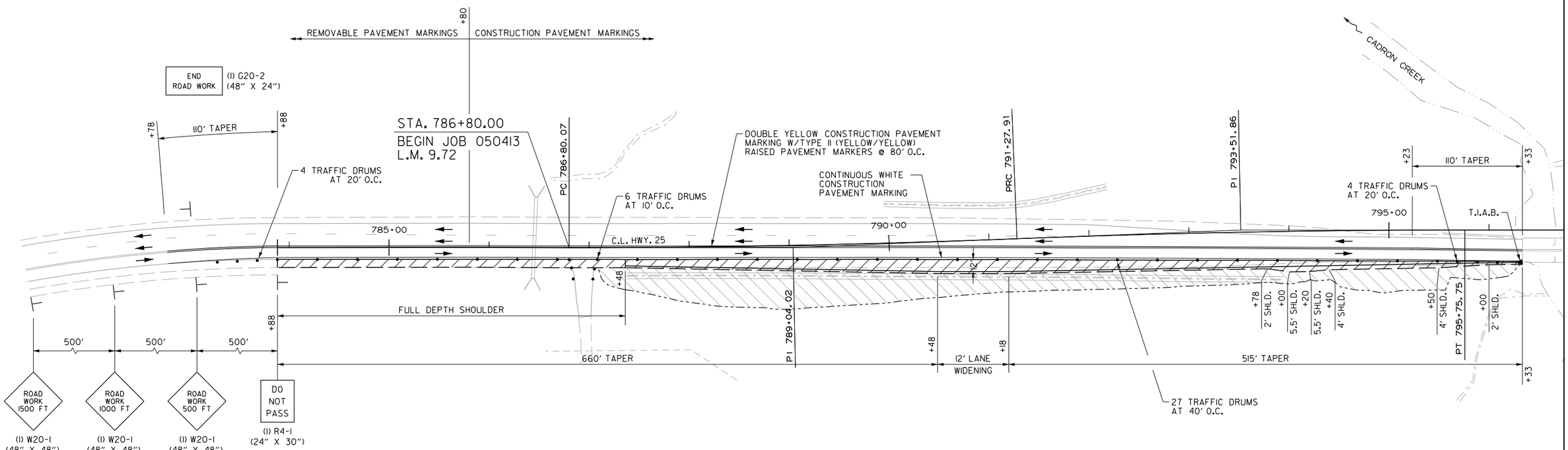
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 2106 LIN. FT.
WHITE SOLID LINE = 1053 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 13 EACH

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

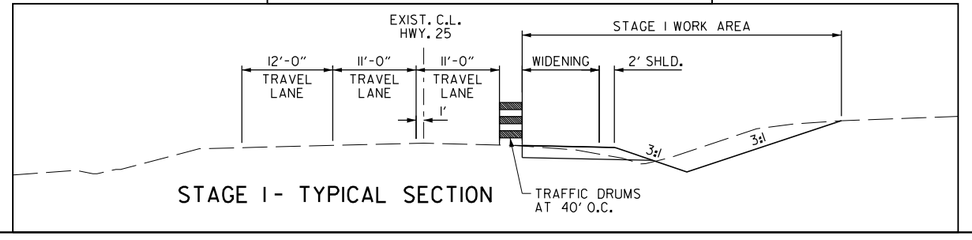
DOUBLE YELLOW CENTERLINE = 604 LIN. FT.
WHITE SOLID LINE = 302 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 4 EACH



BUMP (4) W8-1 (30" X 30")

RIGHT SHOULDER CLOSED (4) W21-5a (36" X 36")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



STAGE I - TYPICAL SECTION

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

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WORKSPACE: AHTD
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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.		050413	24	92
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

- STAGE 1 TRAFFIC
- STAGE 1 TRAFFIC DRUM
- STAGE 1 VERTICAL PANEL
- STAGE 1 PAVING
- STAGE 1 PAVING UNDER TRAFFIC
- STAGE 1 GRADING

N

(1) W20-1 (48" X 48") ROAD WORK 1500 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 500 FT
(1) R4-1 (24" X 30") DO NOT PASS
500'
500'
500'
15+00
END ROAD WORK (1) G20-2 (48" X 24")

PI 13+19.96
PT 13+82.29
C.L. HWY. 107
PC 12+57.28
PI 10+96.83
PT 11+56.02
PC 10+33.72
PI 802+03.33
805+00
C.L. HWY. 25
810+00
800+00
PT 803+74.76
PC 800+27.32
CADRON CREEK

(1) R4-1 (24" X 30") DO NOT PASS
(1) W20-1 (48" X 48") ROAD WORK 500 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 1500 FT
500'
500'
500'

STA. 807+00.00
END JOB 050413

END ROAD WORK (1) G20-2 (48" X 24")

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

aewiercIak 4/27/2021 9:20:40 AM
WORKSPACE: AHTD
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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.		050413	25	92
				(2)		MAINTENANCE OF TRAFFIC DETAILS		

STAGE 2 CONSTRUCTION SEQUENCE NOTES:

1) RETAIN ADVANCE WARNING SIGNS AND INSTALL CHANNELIZING DEVICES AND CONSTRUCTION STRIPING AS SHOWN.

2) SHIFT HWY. 25 TRAFFIC TO TEMPORARY WIDENING CONSTRUCTED IN STAGE 1.

3) CONSTRUCT HWY. 25 AND HWY. 107 AS SHOWN.

4) CONSTRUCT DRAINAGE STRUCTURES AS SHOWN.

- STAGE 2 TRAFFIC
- STAGE 2 TRAFFIC DRUM
- STAGE 2 VERTICAL PANEL
- STAGE 2 PAVING
- STAGE 2 PAVING UNDER TRAFFIC
- STAGE 2 GRADING

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

CONSTRUCTION PAVEMENT MARKINGS

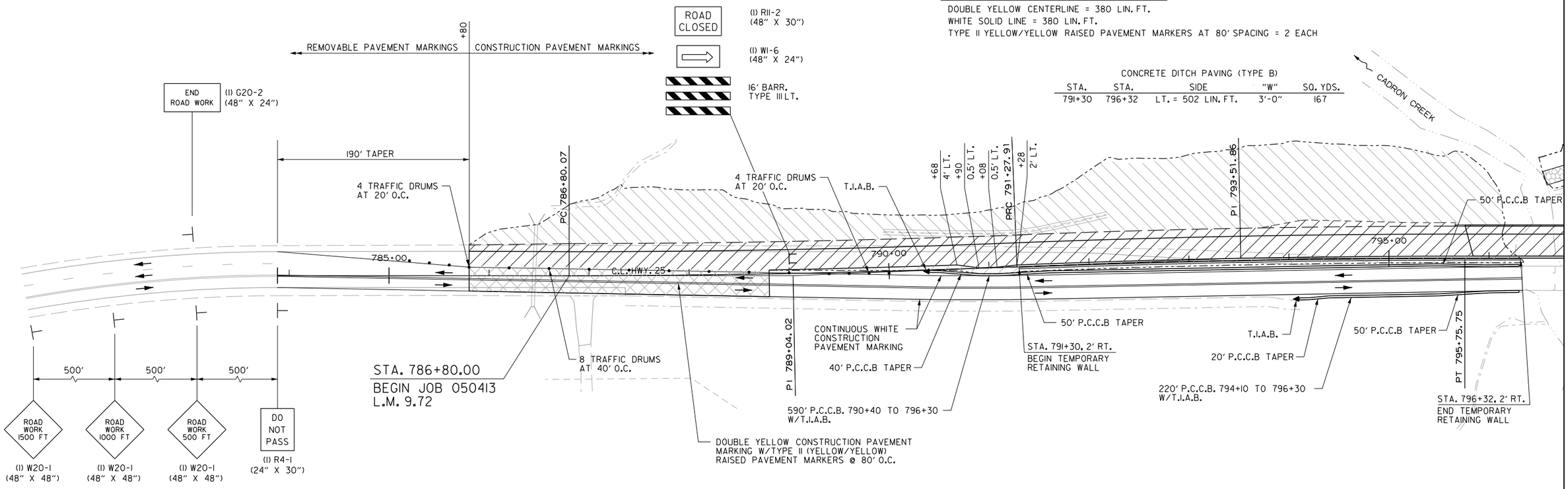
DOUBLE YELLOW CENTERLINE = 2100 LIN. FT.
WHITE SOLID LINE = 2100 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 13 EACH

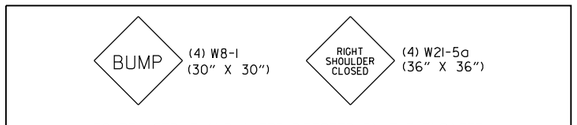
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

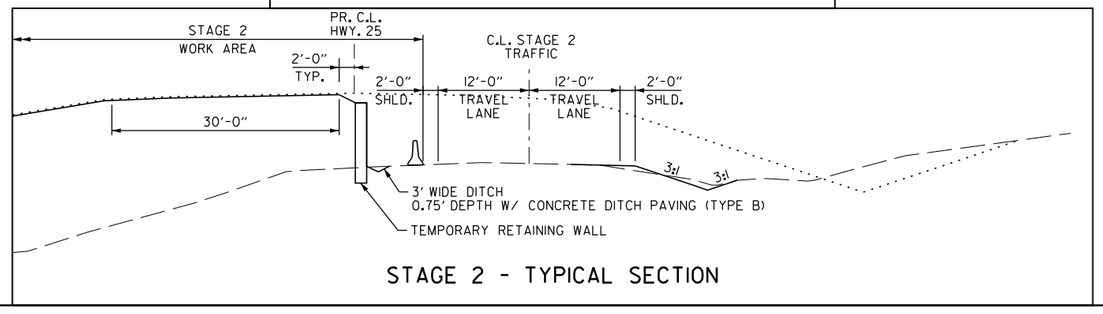
DOUBLE YELLOW CENTERLINE = 380 LIN. FT.
WHITE SOLID LINE = 380 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 2 EACH

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
791+30	796+32	LT. = 502 LIN. FT.	3'-0"	167







STAGE 2 - TYPICAL SECTION

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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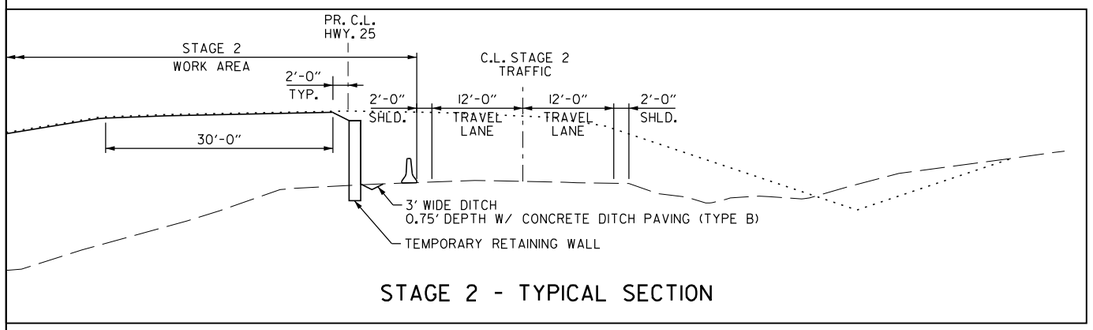
REVISED DATE:

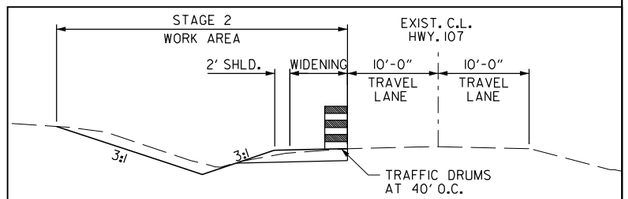
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	26	92
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE 2 TRAFFIC
STAGE 2 TRAFFIC DRUM
STAGE 2 VERTICAL PANEL
STAGE 2 PAVING
STAGE 2 PAVING UNDER TRAFFIC
STAGE 2 GRADING

N



STAGE 2 - TYPICAL SECTION



STAGE 2 - TYPICAL SECTION - HWY. 107

(1) W20-1 (48" X 48") ROAD WORK 1500 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 500 FT
(1) R4-1 (24" X 30") DO NOT PASS
500'
500'
500'
15+00
END ROAD WORK (1) G20-2 (48" X 24")

7 TRAFFIC DRUMS AT 40' O.C.
6 TRAFFIC DRUMS AT 10' O.C.
6 TRAFFIC DRUMS AT 10' O.C.
20 TRAFFIC DRUMS AT 20' O.C.
4 TRAFFIC DRUMS AT 20' O.C.
3 TRAFFIC DRUMS AT 40' O.C.
4 TRAFFIC DRUMS AT 20' O.C.
6 TRAFFIC DRUMS AT 40' O.C.
4 TRAFFIC DRUMS AT 20' O.C.
4 TRAFFIC DRUMS AT 20' O.C.

PI 13+19.96
PT 13+82.29
PC 12+57.28
C.L. HWY. 107
PI 10+96.83
PT 11+56.02
PC 10+33.72
PI 802+09.33
PT 803+74.76
PT 2+53.72
PC 1+20.19
PI 1+99.01
0+00
5+00
805+00
810+00
C.L. HWY. 25
+00
+60
660' TAPER

+07 2' LT.
+27 0.5' LT.
+54 0.5' LT.
+76 4' LT.

STA. 800+70, 1.5' RT.
END TEMPORARY RETAINING WALL
STA. 797+17, 1.5' RT.
BEGIN TEMPORARY RETAINING WALL
800+00
PC 800+27.32
T.I.A.B.
20' P.C.C.B TAPER
150' P.C.C.B TAPER
380' P.C.C.B. 797+30 TO 801+10 W/T.I.A.B.
CONTINUOUS WHITE CONSTRUCTION PAVEMENT MARKING
DOUBLE YELLOW CONSTRUCTION PAVEMENT MARKING W/TYPE II (YELLOW/YELLOW) RAISED PAVEMENT MARKERS @ 80' O.C.
CADRON CREEK

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYPE III RT.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
797+17	800+70	LT. = 353 LIN. FT.	3'-0"	118

STA. 807+00.00
END JOB 050413

(1) R4-1 (24" X 30") DO NOT PASS
(1) W20-1 (48" X 48") ROAD WORK 500 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 1500 FT
500' 500' 500'
4 TRAFFIC DRUMS AT 20' O.C.
6 TRAFFIC DRUMS AT 40' O.C.
CONSTRUCTION PAVEMENT MARKINGS
REMOVABLE PVMT. MARKINGS
END ROAD WORK (1) G20-2 (48" X 24")

CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 2940 LIN. FT.
WHITE SOLID LINE = 2140 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 18 EACH

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 120 LIN. FT.
WHITE SOLID LINE = 60 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 1 EACH

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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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.		050413	27	92
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE 3 CONSTRUCTION SEQUENCE NOTES:

1) SHIFT HWY. 25 TRAFFIC TO STAGE 3 ALIGNMENT.
2) RETAIN ADVANCE WARNING SIGNS AND INSTALL CHANNELIZING DEVICES AND CONSTRUCTION STRIPING AS SHOWN.
3) CONSTRUCT HWY. 25 AND HWY. 107 AS SHOWN.
4) CONSTRUCT DRAINAGE STRUCTURES AS SHOWN.
5) PLACE FINAL LIFT OF SURFACE COURSE, PERMANENT STRIPING, AND GUARDRAIL.

- STAGE 3 TRAFFIC
- STAGE 3 TRAFFIC DRUM
- STAGE 3 VERTICAL PANEL
- STAGE 3 PAVING
- STAGE 3 PAVING UNDER TRAFFIC
- STAGE 3 GRADING

N

STATE OF ARKANSAS
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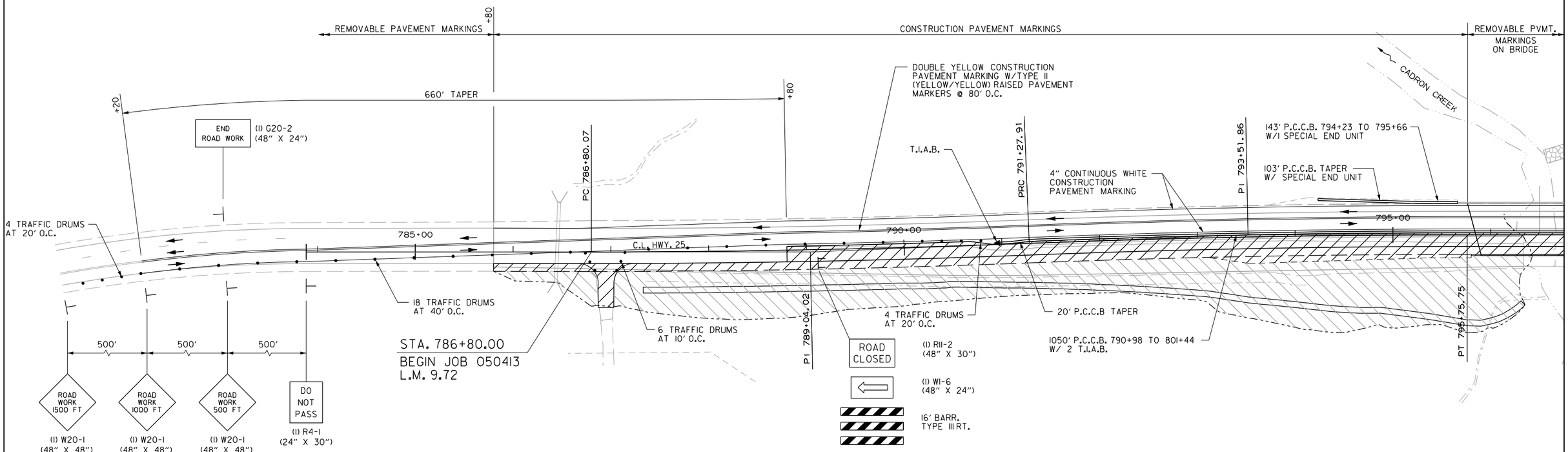
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

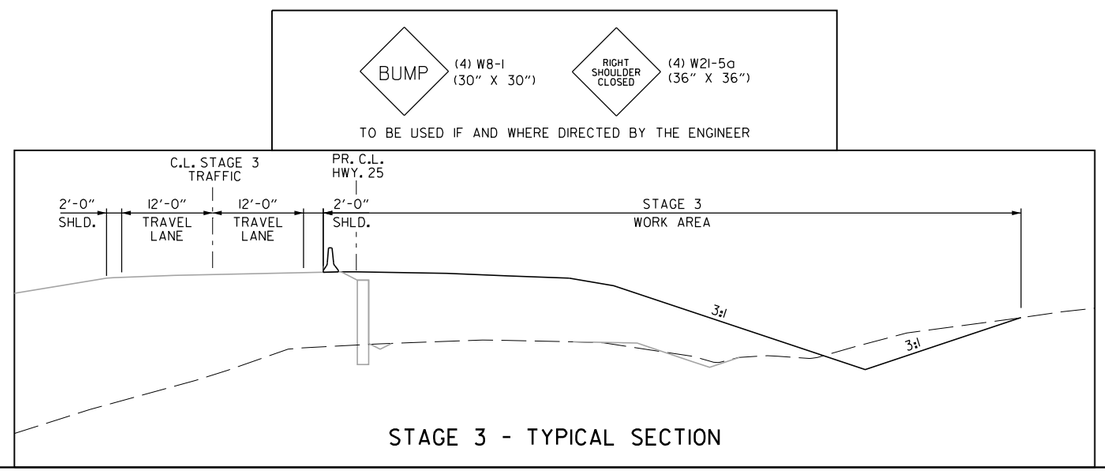
CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 2000 LIN. FT.
WHITE SOLID LINE = 2000 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 13 EACH

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 860 LIN. FT.
WHITE SOLID LINE = 500 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 5 EACH





STAGE 3 - TYPICAL SECTION

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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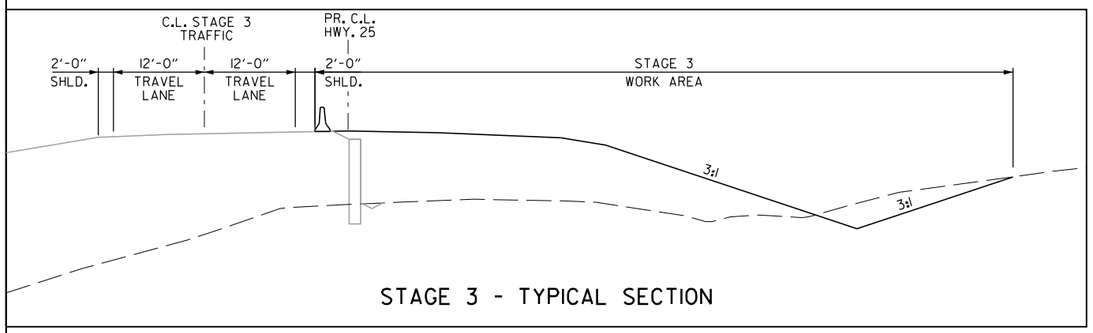
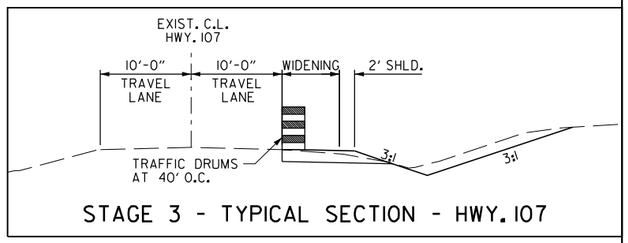
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	28	92
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE 3 TRAFFIC
STAGE 3 TRAFFIC DRUM
STAGE 3 VERTICAL PANEL
STAGE 3 PAVING
STAGE 3 PAVING UNDER TRAFFIC
STAGE 3 GRADING

N



STAGE 3 - TYPICAL SECTION



STAGE 3 - TYPICAL SECTION - HWY. 107

CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 2878 LIN. FT.
WHITE SOLID LINE = 2878 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 18 EACH

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 350 LIN. FT.
WHITE SOLID LINE = 270 LIN. FT.
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 2 EACH

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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ADAM E. WIERCIAK
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MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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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.		050413	29	92
				(2)	PERMANENT PAVEMENT MARKING DETAILS			

6" YELLOW THERMOPLASTIC PAVEMENT MARKING = 7136 LIN. FT.
6" WHITE THERMOPLASTIC PAVEMENT MARKING = 6496 LIN. FT.
8" YELLOW THERMOPLASTIC PAVEMENT MARKING = 178 LIN. FT.
8" WHITE THERMOPLASTIC PAVEMENT MARKING = 294 LIN. FT.
12" WHITE THERMOPLASTIC PAVEMENT MARKING = 34 LIN. FT.
TYPE II WHITE/RED RAISED PAVEMENT MARKERS AT 80' SPACING = 20 EACH
TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING = 45 EACH
THERMOPLASTIC ARROW = 1 EACH
THERMOPLASTIC WORD = 1 EACH
THERMOPLASTIC YIELD LINE = 40 LIN. FT.

STATE OF ARKANSAS
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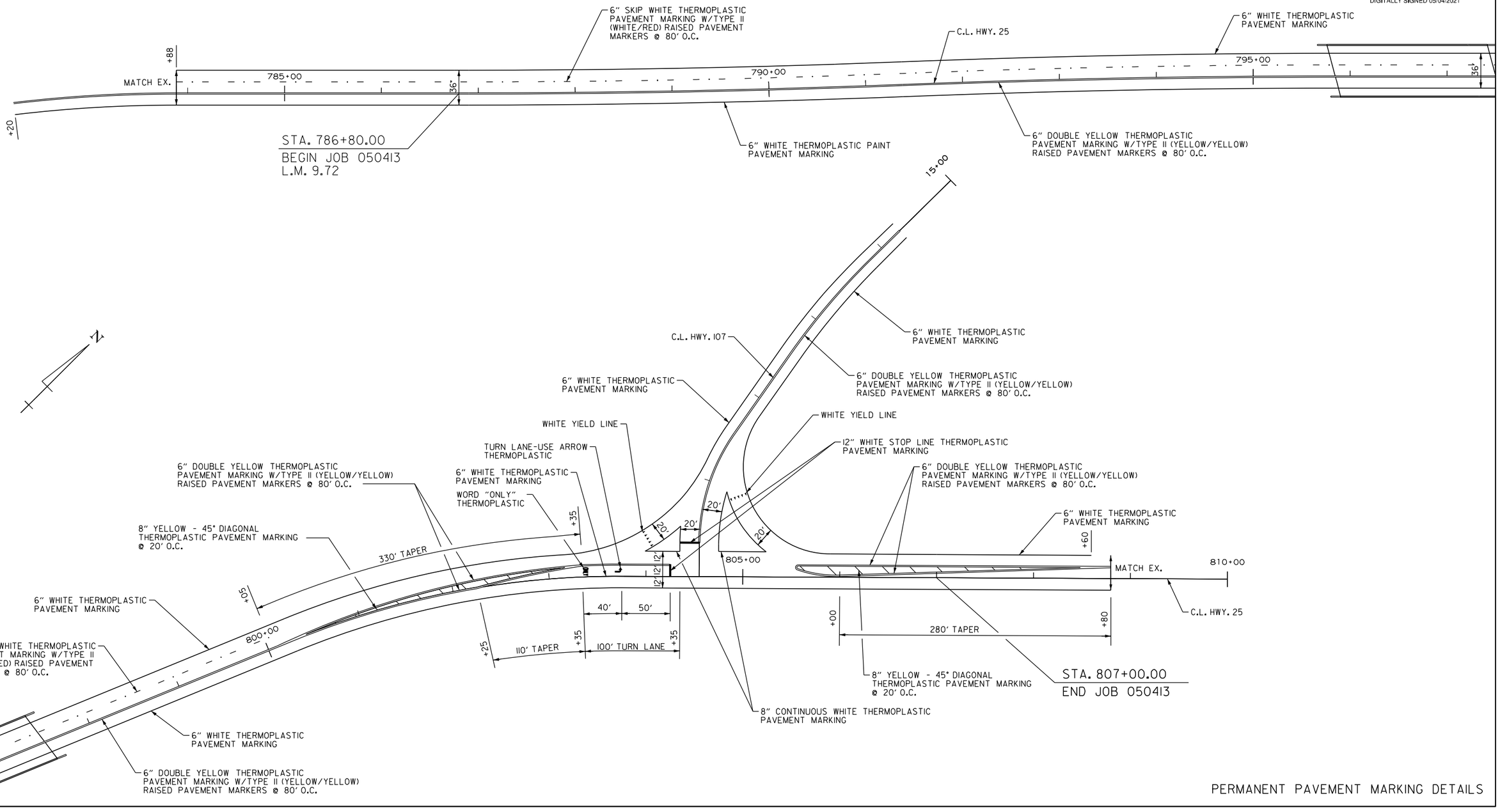

PERMANENT PAVEMENT MARKING DETAILS

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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.		050413	30	92
				(2)	SOIL BORING LOG			

STATE OF ARKANSAS
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SOIL BORING LOG

BORING NO.	APPROX. STATION	SAMPLE	WATER	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY			
B-S1	795+90	0.5-1.5	12	20	15	5	38	SM-SC	A-4
B-S1	795+90	4.5-5.5	14	19	16	3	37	SM	A-4
B-S1	795+90	6.5-7.5	11	-	-	-	19	SM	A-2-4
B-S2	797+55	2.5-3.5	8	-	-	-	10	GM-GP	A-1-a
B-S2	797+55	4.5-5.5	15	NON-PLASTIC			17	SM	A-2-4
B-S3	796+80	0.5-1.5	12	NON-PLASTIC			8	SM-SP	A-1-b
B-S3	796+80	4.5-5.5	20	NON-PLASTIC			9	SM-SP	A-3

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT 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.

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.		050413	31	92
				(2)		QUANTITIES		

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							
									TYPE II (WHITE/RED)	TYPE II (YELLOW/YELLOW)	6" WHITE	6" YELLOW	8" WHITE	8" YELLOW	12" WHITE	YIELD LINE	WORDS	ARROWS
	LIN. FT. - EACH				LIN. FT.				EACH		LIN. FT.						EACH	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	4065	2428			6493													
CONSTRUCTION PAVEMENT MARKINGS	3159	9280	9756			22195												
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		3150	3825				6975											
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	906	940	1980					3826										
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				20					20									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	17	34	38	45						134								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")				6496							6496							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")				7136								7136						
THERMOPLASTIC PAVEMENT MARKING WHITE (8")				294									294					
THERMOPLASTIC PAVEMENT MARKING YELLOW (8")				178										178				
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				34											34			
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)				40												40		
THERMOPLASTIC PAVEMENT MARKING (WORDS)				1													1	
THERMOPLASTIC PAVEMENT MARKING (ARROWS)				1														1
TOTALS:					**6493**	**22195**	**6975**	**3826**	**20**	**134**	**6496**	**7136**	**294**	**178**	**34**	**40**	**1**	**1**

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

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
										RIGHT	LEFT				
			LIN. FT. - EACH				NO.	SQ. FT.	EACH			LIN. FT.		EACH	EACH
W20-1	ROAD WORK 1500 FT.	48"x48"	3	3	3	3	3	48.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	3	48.0							
W20-1	ROAD WORK 500 FT.	48"x48"	3	3	3	3	3	48.0							
W20-1	ROAD WORK AHEAD	48"x48"													
G20-2	END ROAD WORK	48"x24"	3	3	3	3	3	24.0							
R11-2	ROAD CLOSED	48"x30"		2	2	2	2	20.0							
OM-3L	OBJECT MARKER	12"x36"													
W1-6	LARGE ARROW	48"x24"		2	2	2	2	16.0							
* R4-1	DO NOT PASS	24"x30"	3	3	3	3	3	15.0							
* W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	4	36.0							
M4-8	DETOUR	30"x15"													
M4-8a	END DETOUR	24"x18"													
W16-8P	ADVANCE STREET NAME (1-LINE PLAQUE)	VARIESx8"													
M5-1L	ADVANCE TURN ARROW	21"x15"													
M5-1R	ADVANCE TURN ARROW	21"x15"													
M6-1L	DIRECTIONAL ARROW	21"x15"													
M6-1R	DIRECTIONAL ARROW	21"x15"													
M6-3	DIRECTIONAL ARROW	21"x15"													
* W8-1	BUMP	30"x30"	4	4	4	4	4	25.0							
	TRAFFIC DRUMS		41	80	84	84			84						
	TYPE III BARRICADE-RT. (16')			1	1	1				16					
	TYPE III BARRICADE-LT. (16')			1	1	1					16				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1190	223	1413						1413			
	RELOCATING PRECAST CONCRETE BARRIER				1190	1190							1190		
	TEMPORARY IMPACT ATTENUATION BARRIER			3	3	6								6	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			3	3	6									6
TOTALS:								**280.0**	**84**	**16**	**16**	**1413**	**1190**	**6**	**6**

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

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

NOTE: THE QUANTITY OF TRAFFIC DRUMS PROVIDED IN THE CONTRACT IS FOR THE FULL LENGTH OF THE PROJECT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 05/28/2021

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.		050413	32	92
				(2)		QUANTITIES		

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
786+80	788+05	HWY. 25	2	2
791+50	792+30	HWY. 25	1	1
794+00	807+00	HWY. 25	13	13
TOTALS:			**16**	**16**

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
787+00	788+05	HWY. 25 LT.	105
787+03	789+52	HWY. 25 RT.	270
789+00	795+04	HWY. 25 LT.	818
792+25	795+75	HWY. 25 RT.	363
TOTAL:			**1556**

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
800+70	HWY. 25 LT. - 36" SIDE DRAIN	2
800+80	HWY. 25 RT. - 24" SIDE DRAIN	1
11+85	HWY. 107 LT. - 24" SIDE DRAIN	1
12+27	HWY. 107 LT. - 24" SIDE DRAIN	1
TOTAL:		**5**

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

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	MAILBOXES	GUARDRAIL	CONCRETE DITCH PAVING
			EACH	LIN. FT.	SQ. YD.
787+09		HWY. 25 RT.	1		
787+37	793+93	HWY. 25 RT.			437
789+95	792+20	HWY. 25 LT.			150
795+18	796+27	HWY. 25 RT.		109	
795+53	796+26	HWY. 25 LT.		73	
797+33	798+81	HWY. 25 RT.		148	
797+34	798+07	HWY. 25 LT.		73	
798+84	800+62	HWY. 25 RT.			145
801+00		HWY. 25 LT.	2		
800+96	807+00				738
12+45		HWY. 107 LT.	1		
12+46	12+62	HWY. 107 RT.			11
TOTALS:			**4**	**403**	**1481**

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.

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	*SOIL STABILIZATION
				CU. YD.		TON
	ENTIRE	PROJECT	STAGE 1 - HWY. 25	969	101	
	ENTIRE	PROJECT	STAGE 2 - HWY. 25	10412	34124	
	ENTIRE	PROJECT	STAGE 3 - HWY. 25	2516	10373	
	ENTIRE	PROJECT	STAGE 2 - HWY. 107	559	636	
	ENTIRE	PROJECT	STAGE 3 - HWY. 107	144	534	
	ENTIRE	PROJECT	DRIVEWAYS	23	3158	
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE			100
			DIRECTED BY THE ENGINEER			
	TOTALS:			**14623**	**48926**	**100**

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
785+80.00	786+80.00	HWY. 25	36.00	400.00
807+00.00	808+00.00	HWY. 25	36.00	400.00
13+25.00	14+25.00	HWY. 107	20.00	222.22
TOTAL:				**1022.22**

NOTE: AVERAGE MILLING DEPTH 1".

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	ASPHALT CONCRETE	TACK COAT
	TON	GAL.
* ENTIRE PROJECT	10	19
TOTALS:	10	19

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

BASIS OF ESTIMATE:
ASPHALT CONCRETE= 25 TONS PER MILE
TACK COAT = 50 GAL. PER MILE

ACHM PATCHING OF EXISTING ROADWAY

LOCATION	TON
* ENTIRE PROJECT	100
TOTAL:	100

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

SELECTED PIPE BEDDING

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 05/28/2021

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL 1)	APPROACH GUTTER (TYPE SPECIAL 2)	APPROACH SLABS (TYPE SPECIAL 1)	APPROACH SLABS (TYPE SPECIAL 2)	APPROACH SLABS (TYPE SPECIAL 3)	APPROACH SLABS (TYPE SPECIAL 4)	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	POUND	TON
795+39.77	795+78.32	HWY. 25 LT.		13.72					788	
795+41.82	795+84.75	HWY. 25			56.66	30.92			9926	45.25
795+53.58	795+90.10	HWY. 25 RT.	14.49						824	
797+41.68	797+78.18	HWY. 25 LT.	14.49						824	
797+50.25	797+89.97	HWY. 25					60.11	27.47	9925	45.25
797+53.47	797+92.11	HWY. 25 RT.		13.72					788	
TOTALS:			**28.98**	**27.44**	**56.66**	**30.92**	**60.11**	**27.47**	**23075**	**90.50**

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	"B"	CONC. DITCH PAVING (TYPE A)	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	M. GAL.
787+33.00	796+35.00	HWY. 25 RT.	908.00	6.00			605.33	403.56	5.08
799+03.00	799+85.00	HWY. 25 RT.	82.00	10.00	4.00	91.11		36.44	0.46
799+85.00	800+51.00	HWY. 25 RT.	66.00	14.00	8.00	102.67		29.33	0.37
800+25.00	800+36.00	HWY. 25 LT.	44.00	6.00			29.33	19.56	0.25
803+15.00	806+08.00	HWY. 25 RT.	290.00	14.00	8.00	451.11		128.89	1.62
806+08.00	807+00.00	HWY. 25 RT.	92.00	6.00			61.33	40.89	0.52
11+98.00	12+04.00	HWY. 107 LT.	6.00	10.00	4.00	6.67		2.67	0.03
12+15.00	12+70.00	HWY. 107 LT.	25.00	8.00	2.00	22.22		11.11	0.14
12+46.00	13+25.00	HWY. 107 RT.	79.00	6.00			52.67	35.11	0.44
12+70.00	13+18.00	HWY. 107 LT.	48.00	6.00			32.00	21.33	0.27
791+30.00	796+32.00	STAGE 2 - HWY. 25 LT.	502.00	3.00			167.33		
797+17.00	800+70.00	STAGE 2 - HWY. 25 LT.	353.00	3.00			117.67		
TOTALS:						**673.78**	**1065.66**	**728.89**	**9.18**

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

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.		050413	33	92
				(2)		QUANTITIES		

STRUCTURES

STATION	DESCRIPTION	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.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
11+19	HWY. 107 - EXTEND 8'x6' R.C. BOX CULVERT 13' LT. AND 4' RT.	8	8	17	56.71	5814	21	31	0.39	RCB-1, RBC-2, RCB-3, SPECIAL DETAILS, R-130X-0
TOTALS:					**56.71**	**5814**	**21**	**31**	**0.39**	

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

STATE OF ARKANSAS
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DIGITALLY SIGNED 05/28/2021

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			500	4
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**500**	**4**

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
793+61.96	795+80.11	HWY. 25 RT.	150	1	1
794+23.05	795+66.20	HWY. 25 LT.	75	1	1
797+51.68	799+69.83	HWY. 25 LT.	150	1	1
797+65.61	799+08.76	HWY. 25 RT.	75	1	1
TOTALS:			**450**	**4**	**4**

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-1)
			LIN. FT.
787+00	788+05	HWY. 25 LT.	105
787+03	789+52	HWY. 25 RT.	249
789+00	795+05	HWY. 25 LT.	605
792+25	795+75	HWY. 25 RT.	350
TOTAL:			**1309**

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	FILTER SOCKS (18") (E-3)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING										176	90	4479			180
ENTIRE	PROJECT	STAGE 1						0.47	0.47	9.3		286	210				27
ENTIRE	PROJECT	STAGE 2						3.90	3.90	79.6		176	75	158			19
ENTIRE	PROJECT	STAGE 3	7.48	14.95	7.48	762.6	7.48	2.16	2.16	44.1		1342	75				56
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.											1000	440	300	200	100	100	147
TOTALS:			**7.48**	**14.95**	**7.48**	**762.6**	**7.48**	**6.53**	**6.53**	**133.3**	**1000**	**2420**	**750**	**4837**	**100**	**100**	**439**

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.....15 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.

RETAINING WALL

STATION	STATION	LOCATION	TEMPORARY RETAINING WALL	SELECT GRANULAR BACKFILL
			SQ. FT.	CU. YD.
791+30.00	796+00.00	TEMP. RETAINING WALL NO. 1	4760	1392
797+47.00	800+70.00	TEMP. RETAINING WALL NO. 2	3033	846
TOTALS:			**7793**	**2238**

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
		EACH
HWY. 25 STA. 787+09 RT.	1	1
HWY. 25 STA. 801+00 LT.	2	2
HWY. 107 STA. 12+45 LT.	1	1
TOTALS:	**4**	**4**

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
785+80	786+62	HWY. 25 RT.	82
787+28	795+80	HWY. 25 RT.	852
797+66	800+45	HWY. 25 RT.	279
801+14	808+00	HWY. 25 RT.	686
785+80	795+66	HWY. 25 LT.	986
797+52	800+93	HWY. 25 LT.	341
801+58	804+00	HWY. 25 LT.	242
805+90	808+00	HWY. 25 LT.	210
10+00	14+25	HWY. 107 RT.	425
10+45	11+52	HWY. 107 LT.	107
12+60	14+25	HWY. 107 LT.	165
TOTAL:			**4375**

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

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
796+56	800+59	RELOCATED CHANNEL LT.	320	639
801+78	803+48	RELOCATED CHANNEL LT.	148	296
TOTALS:			**468**	**935**

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

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.		050413	34	92
				(2)	QUANTITIES			

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS			STANDARD DRAWINGS
							24"	72"	42"X29"	
			FEET	SQ. YD.	TON	TON	LIN. FT.			
786+95	RT.	HWY. 25	16	79.84	8.78	32.60				
800+80	RT.	HWY. 25	16	144.80	15.93	59.13	48			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
801+25	LT.	HWY. 25	16	320.61	35.27	130.92		266		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
801+25	LT.	HWY. 25	16	673.41	74.07	274.98			90	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
11+85	LT.	HWY. 107	16	37.01	4.07	36.62	70			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
12+27	LT.	HWY. 107	16	37.01	4.07	56.77	82			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
* TEMPORARY DRIVES - ENTIRE PROJECT						150.00				
TOTALS:				**1292.68**	**142.19**	**741.02**	**200**	**266**	**90**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% 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.

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
795+90	HWY. 25 SE CORNER OF BRIDGE NO. 07515	1
11+19	HWY. 107 R.C. BOX CULVERT RT.	1
TOTAL:		**2**

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

STATE OF ARKANSAS
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No. 13653
ADAM E. WIERCIAK

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BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						TOTAL GALLONS	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)				AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
785+80.00	786+80.00	HWY. 25 TRANSITION	100.00						51.00	566.67	96.33	96.33									51.00	566.67	220.00	62.33	62.33
786+80.00	790+30.00	HWY. 25 - NOTCH AND WIDEN	350.00	83.00	290.50	62.15	2416.94	120.85				120.85	10.01	389.28	495.00	96.35	9.88	384.22	220.00	42.26	52.00	2022.22	220.00	222.44	264.70
790+30.00	795+41.82	HWY. 25	511.82	369.75	1892.45	88.77	5048.25	252.41				252.41	44.52	2531.80	495.00	626.62	44.25	2516.45	220.00	276.81	52.00	2957.18	220.00	325.29	602.10
797+89.97	800+85.00	HWY. 25	295.03	369.75	1090.87	88.77	2909.98	145.50				145.50	44.52	1459.42	495.00	361.21	44.25	1450.56	220.00	159.56	52.00	1704.62	220.00	187.51	347.07
800+85.00	801+32.32	HWY. 25 - NOTCH AND WIDEN	47.32	151.50	71.69	75.15	395.12	19.76				19.76	23.01	120.98	495.00	29.94	22.88	120.30	220.00	13.23	52.00	273.40	220.00	30.07	43.30
801+32.32	802+69.76	HWY. 25 - NOTCH AND WIDEN	137.44	151.50	208.22	75.15	1147.62	57.38				57.38	23.01	351.39	495.00	86.97	22.88	349.40	220.00	38.43	52.00	794.10	220.00	87.35	125.78
802+69.76	803+50.34	HWY. 25 - NOTCH AND WIDEN	80.58	151.50	122.08	75.15	672.84	33.64				33.64	23.01	206.02	495.00	50.99	22.88	204.85	220.00	22.53	52.00	465.57	220.00	51.21	73.74
803+50.34	806+89.76	HWY. 25 - NOTCH AND WIDEN	339.42	188.00	638.11	59.15	2230.74	111.54				111.54	15.01	566.08	495.00	140.10	14.88	561.17	220.00	61.73	52.00	1961.09	220.00	215.72	277.45
806+89.76	807+00.00	HWY. 25 - OVERLAY	10.24	1.00	0.10				50.00	56.89	9.67	9.67									50.00	56.89	220.00	6.26	6.26
807+00.00	808+00.00	HWY. 25 TRANSITION	100.00						50.00	555.56	94.45	94.45									50.00	555.56	220.00	61.11	61.11
10+24.00	11+84.18	HWY. 107 TURNOUT - NOTCH AND WIDEN	160.18	VAR.	318.49	VAR.	1377.99	68.90				68.90	VAR.	189.81	495.00	46.98	VAR.	181.89	220.00	20.01	VAR.	1387.87	220.00	152.67	172.63
11+84.18	13+25.00	HWY. 107 - NOTCH AND WIDEN	140.82	149.25	210.17	32.79	513.05	25.65				25.65	6.52	102.02	495.00	25.25	2.25	35.21	220.00	3.87	30.00	469.40	220.00	51.63	55.50
13+25.00	14+25.00	HWY. 107 TRANSITION	100.00						29.00	322.22	54.78	54.78									29.00	322.22	220.00	35.44	35.44
ADDITIONAL FOR LEVELING																									
786+80.00	789+15.00	HWY. 25 - NOTCH AND WIDEN	235.00						42.25	1103.19	187.54	187.54					42.25	1103.19	VAR.	249.29					249.29
801+40.00	806+89.76	HWY. 25 - NOTCH AND WIDEN	549.76						29.25	1786.72	303.74	303.74					29.25	1786.72	VAR.	762.72					762.72
806+89.76	807+00.00	HWY. 25 - NOTCH AND WIDEN	10.24						50.00	56.89	9.67	9.67					50.00	56.89	VAR.	1.07					1.07
10+24.00	10+45.00	HWY. 107 - NOTCH AND WIDEN	21.00						145.69	339.94	57.79	57.79					145.69	339.94	VAR.	94.01					94.01
12+60.00	13+25.00	HWY. 107 - NOTCH AND WIDEN	65.00						20.00	144.44	24.55	24.55					20.00	144.44	VAR.	20.44					20.44
ADDITIONAL FOR METHOD OF RAISING GRADE																									
789+15.00	790+30.00	HWY. 25 - NOTCH AND WIDEN	115.00						42.25	539.86	91.78	91.78	42.25	539.86	VAR.	338.64	42.25	539.86	220.00	59.38					59.38
800+85.00	801+40.00	HWY. 25 - NOTCH AND WIDEN	55.00						29.25	178.75	30.39	30.39	29.25	178.75	VAR.	115.30	29.25	178.75	220.00	19.66					19.66
10+45.00	12+60.00	HWY. 107 - NOTCH AND WIDEN	215.00						39.61	946.24	160.86	160.86	39.61	946.24	VAR.	637.12	39.61	946.24	220.00	104.09					104.09
ADDITIONAL FOR SUPERELEVATION																									
797+89.97	800+85.00	HWY. 25	295.03	117.25	345.92																				
800+85.00	801+32.32	HWY. 25 - NOTCH AND WIDEN	47.32	133.50	63.17																				
801+32.32	802+69.76	HWY. 25 - NOTCH AND WIDEN	137.44	141.50	194.48																				
802+69.76	803+50.34	HWY. 25 - NOTCH AND WIDEN	80.58	128.00	103.14																				
803+50.34	806+89.76	HWY. 25 - NOTCH AND WIDEN	339.42	56.50	191.77																				
ADDITIONAL FOR GUARDRAIL																									
793+61.96	795+80.11	HWY. 25 RT.	218.15	VAR.	124.93																VAR.	147.70	220.00	16.25	16.25
794+23.05	795+66.20	HWY. 25 LT.	143.15	VAR.	83.23																VAR.	98.40	220.00	10.82	10.82
797+51.68	799+69.83	HWY. 25 LT.	218.15	VAR.	120.94																VAR.	142.99	220.00	15.73	15.73
797+65.61	799+08.76	HWY. 25 RT.	143.15	VAR.	83.93																VAR.	99.22	220.00	10.91	10.91
ADDITIONAL FOR TEMPORARY WIDENING																									
783+88.00	787+48.00	HWY. 25 RT.	360.00	92.00	331.20	8.15	326.00	16.30				16.30	8.15	326.00	330.00	53.79					8.00	320.00	220.00	35.20	35.20
787+48.00	796+33.00	HWY. 25 RT.	885.00	101.25	896.06	10.48	1030.53	51.53				51.53	10.48	1030.53	330.00	170.04					10.33	1015.78	220.00	111.74	111.74
TOTALS:					**7381.45**		**18069.06**	**903.46**		**6597.37**	**1121.55**	**2025.01**		**8938.18**		**2779.30**		**10900.08**		**1949.09**		**15360.88**		**1689.68**	**3638.77**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER"
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

dewlerclok 5/28/2021 9:31:52 AM
WORKSPACE: AHTD
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\r050413_QTY.dgn
REVISED DATE:

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.		050413	35	92
				(1) 07515		QUANTITIES		63807

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 050413

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	SS & 802	SP, SS & 802	SS & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 807	SS & 808	812	816	816	SP JOB 050413	SP JOB 050413	SP JOB 050413	SP JOB 050413
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _)	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	PRESTRESSED CONCRETE GIRDERS (TYPE II)	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP12X53) (1)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	DRILLED SHAFT (48" DIA.)	PERMANENT STEEL CASING (54" DIA.)	CROSSHOLE SONIC LOGGING (48" DIA.)	CORING DRILLED SHAFT (2)
			UNIT	LUMP SUM	CU. YD.	CU. YD.	LIN. FT.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	CU. IN.	EACH	SQ. YD.	CU. YD.	LIN. FT.	LIN. FT.	EACH	LIN. FT.
07515	HIGHWAY 25 OVER CADRON CREEK	END BENT NO. 1			23.86				2,322	477	200	80				929	491				
		INTERMEDIATE BENT NO. 2			46.65				12,630				520	5,616.0				66	36	3	33
		INTERMEDIATE BENT NO. 3			45.64				12,298				520	5,616.0				66	36	3	33
		END BENT NO. 4			24.35				2,380	479	224	80				705	378				
		164'-2" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE II				344.80	1,300.0	1,119.7		81,434					1						
		SITE NO. 1 (EXISTING BR. NO. 00865)		1																	
		TOTALS FOR JOB NO. 050413			140.50	344.80	1,300.0	1,119.7	29,630	82,390	424	160	1,040	11,232.0	1	1,634	869	132	72	6	66

(1) These steel piles shall be Grade 50 and are required to have special pile tips which will not be paid for directly, but will be considered subsidiary to the Item "STEEL PILING (HP12X53)".

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

CSMyile 5/28/2021 9:16:00 AM
WORKSPACE: ARDOT Bridge (2019)
L:\207\701\608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_SOQ1_OT.dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
Digitally Signed 05/28/2021
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
CADRON CREEK
STR. & APPRS. (S)
CLEBURNE COUNTY
ROUTE 25 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: JULY 2020 FILENAME: b050413_q1.dgn
CHECKED BY: DRG DATE: AUG. 2020 SCALE: No Scale
DESIGNED BY: JJB DATE: JULY 2020
BRIDGE NO. 07515 DRAWING NO. 63807

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	16	STATION
201	GRUBBING	16	STATION
202	REMOVAL AND DISPOSAL OF FENCE	1556	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	5	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING	1481	SQ. YD.
202	REMOVAL AND DISPOSAL OF GUARDRAIL	403	LIN. FT.
202	REMOVAL AND DISPOSAL OF MAILBOXES	4	EACH
SS & 210	UNCLASSIFIED EXCAVATION	14623	CU. YD.
SP	SELECT GRANULAR BACKFILL	2238	CU. YD.
210	COMPACTED EMBANKMENT	48926	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	8213	TON
SS & 401	TACK COAT	2044	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	2654	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	125	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	3573	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	208	TON
412	COLD MILLING ASPHALT PAVEMENT	1022	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	10	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
504	APPROACH SLABS	175.16	CU. YD.
504	APPROACH GUTTERS	56.42	CU. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	280	SQ. FT.
SS & 604	BARRICADES	32	LIN. FT.
SS & 604	TRAFFIC DRUMS	84	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1413	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	1190	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	22195	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	3826	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	6975	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	6493	LIN. FT.
SS & 605	CONCRETE DITCH PAVING (TYPE A)	674	SQ. YD.
SS & 605	CONCRETE DITCH PAVING (TYPE B)	1066	SQ. YD.
SP, SS, & 606	24" SIDE DRAIN	200	LIN. FT.
SS & 606	72" SIDE DRAIN	266	LIN. FT.
SS & 606	42" X 29" SIDE DRAIN	90	LIN. FT.
606	SELECTED PIPE BEDDING	100	CU. YD.
SS & 611	4" PIPE UNDERDRAINS	500	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	4	EACH
SS & 617	GUARDRAIL (TYPE A)	450	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	4	EACH
619	WIRE FENCE (TYPE D-1)	1309	LIN. FT.
620	LIME	15	TON
620	SEEDING	7.48	ACRE
SS & 620	MULCH COVER	14.01	ACRE
620	WATER	905.5	M. GAL.
621	TEMPORARY SEEDING	6.53	ACRE
621	SILT FENCE	4837	LIN. FT.
621	SAND BAG DITCH CHECKS	2420	BAG
621	SEDIMENT BASIN	100	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	100	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	439	CU. YD.
621	ROCK DITCH CHECKS	750	CU. YD.
SS & 621	FILTER SOCK (18")	1000	LIN. FT.
623	SECOND SEEDING APPLICATION	7.48	ACRE
624	SOLID SODDING	760	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	4	EACH
637	MAILBOX SUPPORTS (SINGLE)	4	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	4375	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	6496	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	294	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	34	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	7136	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (8")	178	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	40	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	1	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	1	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	154	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	6	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	6	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	21	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	56.71	CU. YD.
SP	TEMPORARY RETAINING WALL	7793	SQ. FT.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	28889	POUND
816	FILTER BLANKET	935	SQ. YD.
816	DUMPED RIPRAP	468	CU. YD.
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
SS & 802	CLASS S CONCRETE-BRIDGE	140.50	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	344.80	CU. YD.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE II)	1300.0	LIN. FT.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	1119.7	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	29630	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	82390	POUND
SS & 805	STEEL PILING (HP 12X53)	424	LIN. FT.
SP	CORING DRILLED SHAFT	66	LIN. FT.
SP	DRILLED SHAFT (48" DIAMETER)	132	LIN. FT.
SP	PERMANENT STEEL CASING (54" DIAMETER)	72	LIN. FT.
SS & 805	PREBORING	160	LIN. FT.
SP	CROSSHOLE SONIC LOGGING (48" DIAMETER)	6	EACH
SP, SS, & 807	STRUCTURAL STEEL N BEAM SPANS (A709, GR. 50W)	1040	POUND
SS & 808	ELASTOMERIC BEARINGS	11232.0	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)	1	EACH
816	FILTER BLANKET	1634	SQ. YD.
816	DUMPED RIPRAP	869	CU. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
8-04-21	ADDED "CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS" SPECIAL PROVISION; REVISED UNIT FOR CLEARING ITEM TO "STATION".	3, 36

STATE OF ARKANSAS
* * *
LICENSED PROFESSIONAL ENGINEER
* * *
No. 13653
WILLIAM E. WIERCIAK

DIGITALLY SIGNED 08/04/2021

SUMMARY OF QUANTITIES AND REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-04-21				6	ARK.	050413	36	92

JOB NO.

(2) SUMMARY OF QUANTITIES AND REVISIONS

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.		050413	37	92
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 05/04/2021

Date: 3/11/2019
Coordinate System: ARKANSAS STATE PLANE – NORTH ZONE BASED ON GPS CONTROL, 120005 – 120022 & 120023 – 120023A PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	402655.0798	1282862.3491	723.27	CTL	ARDOT STD. MON. STAMPED PN:1
2	403235.0928	1283161.1914	689.50	CTL	ARDOT STD. MON. STAMPED PN:2
3	403800.1121	1283396.7871	653.18	CTL	ARDOT STD. MON. STAMPED PN:3
4	404538.6762	1283700.5808	680.08	CTL	ARDOT STD. MON. STAMPED PN:4
5	405070.6361	1284334.8235	717.44	CTL	ARDOT STD. MON. STAMPED PN:5
100	399856.6276	1279725.4291	763.79	GPS	ARDOT GPS #120005
101	400137.2102	1281086.0885	775.93	GPS	ARDOT GPS #120022
102	405854.2360	1286937.7112	818.83	GPS	ARDOT GPS #120023
103	405858.2369	1288601.8182	838.72	GPS	ARDOT GPS #120023A
900	402928.0716	1283042.8293	704.49	TBM	STD. ARDOT CAP
901	403841.9753	1283410.0354	653.44	TBM	CHISELED SQUARE
902	404700.4140	1283747.2706	678.34	TBM	STD. ARDOT CAP

*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 0.999912476 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 s050413gi.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 – 0301–NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 120005 – 120022 & 120023 – 120023A
CONVERGENCE ANGLE: 00–03–24.2985 LEFT AT PN:3 LT:N 35 26 33.3571 LG:W 092 05 51.0893
GRID AZIMUTH = ASTRONOMICAL AZIMUTH – CONVERGENCE ANGLE.

ALIGNMENT NAME: HWY. 25

POINT	STATION	TYPE	NORTHING	EASTING
8000	783+88.34	POB	402705.0896	1282915.4678
8001	786+80.07	PC	402974.2889	1283027.3923
8002	791+27.91	PRC	403390.8057	1283192.3580
8003	795+75.75	PT	403807.3225	1283356.3238
8004	800+27.32	PC	404224.0188	1283530.3468
8005	803+74.76	PT	404510.3356	1283723.3671
8006	810+00.00	POE	404950.5138	1284167.7035

ALIGNMENT NAME: HWY. 107

POINT	STATION	TYPE	NORTHING	EASTING
8007	10+00.00	POB	404566.7406	1283780.5665
8008	10+33.72	PC	404590.6897	1283756.3254
8009	11+56.02	PT	404697.6735	1283701.5528
8010	12+57.28	PC	404797.4266	1283684.1506
8011	13+82.29	PT	404921.8479	1283673.3363
8012	15+00.00	POE	405039.5503	1283674.3951

ALIGNMENT NAME: 801+25 WESTERN ACCESS

POINT	STATION	TYPE	NORTHING	EASTING
8013	0+00.00	POB	404223.2968	1283051.3346
8014	1+20.19	PC	404171.1427	1283160.1195
8015	2+53.72	PT	404197.9590	1283281.0244
8016	5+00.00	POE	404388.6178	1283436.9195

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WORKSPACE: AHTD
L:\2017\17017608 - 050413 Cadron Creek Str-Apprs\Drawings\r050413_SC_01.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.		050413	38	92
				(2)	SURVEY CONTROL DETAILS			

100 50 0 100

Scale: 1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

C.L. HWY. 25
PI = 789+04.02
Δ = 2°14'21" LT.
D = 0°30'00"
T = 223.95'
L = 447.84'
PC = 786+80.07
PRC = 791+27.91
e = NO SUPER

C.L. HWY. 25
PI = 793+51.86
Δ = 2°14'21" RT.
D = 0°30'00"
T = 223.95'
L = 447.84'
PRC = 791+27.91
PT = 795+75.75
e = NO SUPER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

PN:1
PD:ARDOT STD. MON. STAMPED PN:1

8000 — 785+00 — N 22°40'00" E 291.73' — PC 786+80.07 — 8001 — N 22°40'00" E 223.95' — 790+00 — N 20°25'39" E 223.95' — PRC 791+27.91 — 8002 — N 20°25'39" E 223.95' — PI 793+51.86 — N 22°40'00" E 223.95' — 795+00 — 8003 — C.L. HWY. 25 — N 22°40'00" E 451.57'

POB 783+88.34

PI 789+04.02

SURVEY BASELINE N 27°5'33" E 652.47'

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

SURVEY BASELINE N 22°38'05" E 612.17'

SURVEY BASELINE

PT 795+75.75

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

PN:901
PD:CHISELED SQUARE

SURVEY BASELINE N 22°21'32" E 798.60'

STA. 786+80.00
BEGIN JOB 050413
L.M. 9.72

8012 — 15.00 — N 0°25'05" E 117.71'

PI 13+19.96

N 0°25'05" E 62.68'

8011 — N 9°53'45" W 62.68' — C.L. HWY. 107 — PT 13+82.29

8010 — N 9°53'45" W 101.26' — PC 12+57.28

8009

PN:902
PD:STD. ARDOT CAP

PI 10+96.83

N 9°53'45" W 63.11'

PT 11+58.02

N 44°45'00" W 63.11'

PC 10+33.72

8008

C.L. HWY. 107
PI = 13+19.96
Δ = 10°18'50" RT.
D = 8°15'00"
T = 62.68'
L = 125.01'
PC = 12+57.28
PT = 13+82.29
e = MATCH EXISTING (0.060'/')

100 50 0 100

Scale: 1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

8013 — 0+00 — S 64°16'58" E 120.19' — PC 1+20.19 — 8014 — PT 2+53.72 — 5+00 — N 39°16'18" E 246.28' — 8016

S 64°16'58" E 78.82'

8015

PI 1+99.01

N 39°16'18" E 78.82'

C.L. DR. 801+25 WESTERN ACCESS
PI = 1+99.01
Δ = 76°26'44" LT.
D = 57°15'00"
T = 78.82'
L = 133.53'
PC = 1+20.19
PT = 2+53.72
e = NO SUPER

C.L. HWY. 107
PI = 10+96.83
Δ = 34°51'15" RT.
D = 28°30'00"
T = 63.11'
L = 122.30'
PC = 10+33.72
PT = 11+56.02
e = MATCH EXISTING (0.036'/')

STA. 801+25.77, 156.57' LT. C.L. HWY. 25 =
STA. 5+00.00 C.L. DR. 801+25 WESTERN ACCESS

PI 802+03.33

N 45°15'00" E 176.01'

N 22°40'00" E 176.01'

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

8005 — 805+00 — 8007 — N 45°15'00" E 625.24' — 810+00 — 8006

N 44°45'00" W 33.72'

SURVEY BASELINE

C.L. HWY. 25

SURVEY BASELINE N 50°00'44" E 827.80'

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

800+00 — 8004 — N 22°40'00" E 451.57'

SURVEY BASELINE N 22°21'32" E 798.60'

PC 800+27.32

PT 803+74.76

C.L. HWY. 25
PI = 802+03.33
Δ = 22°35'00" RT.
D = 6°30'00"
T = 176.01'
L = 347.44'
PC = 800+27.32
PT = 803+74.76
e = 0.100'/'
Ls = 420'

STA. 804+54.88 C.L. HWY. 25 =
STA. 10+00.00 C.L. HWY. 107
Δ 90°00'00"

STA. 807+00.00
END JOB 050413

SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\r050413_SC_02.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.		050413	39	92
				(2)	PLAN & PROFILE - HIGHWAY 25			

FENCING

STA.	STA.	SIDE	TYPE	UNIT
787+00	788+05	HWY. 25 - LT.	D-1	105 LIN. FT.
787+03	789+52	HWY. 25 - RT.	D-1	249 LIN. FT.
789+00	795+75	HWY. 25 - LT.	D-1	605 LIN. FT.
792+25	795+75	HWY. 25 - RT.	D-1	350 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	UNIT
787+00	788+05	LT.	105 LIN. FT.
787+03	789+52	RT.	270 LIN. FT.
789+00	795+75	LT.	818 LIN. FT.
792+25	795+75	RT.	363 LIN. FT.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
787+33	796+35	RT. = 908 LIN. FT.	6'-0"	605

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/28/2021

STA. 786+45 IN PLACE
3' X 3' X 82' R.C. BOX CULVERT
RETAIN

C.L. HWY. 25
PI = 789+04.02
Δ = 2°14'21" LT.
D = 0°30'00"
T = 223.95'
L = 447.84'
PC = 786+80.07
PRC = 791+27.91
e = NO SUPER

100' TRANSITION TO MATCH EXISTING

STA. 786+80.00
BEGIN JOB 050413
L.M. 9.72

STA. 786+95 CONSTRUCT APPROACH ON RT. = 76 CU. YDS. FILL

C.L. HWY. 25
PI = 793+51.86
Δ = 2°14'21" RT.
D = 0°30'00"
T = 223.95'
L = 447.84'
PRC = 791+27.91
PT = 795+75.75
e = NO SUPER

BEGIN BRIDGE STA. 795+84.75

END BRIDGE STA. 797+50.25

DUMPED RIPRAP (18" THICKNESS) STA. 796+56 TO STA. 799+00

BRIDGE NO. 00865 IN PLACE 90' X 26'
BRIDGE CONSISTING OF A CONCRETE SUPERSTRUCTURE SUPPORTED BY A STEEL SUBSTRUCTURE. REMOVE AS EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

C.L. HWY. 25 STATIONING	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
STA. 793+61.96 TO STA. 795+80.11 RT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 794+23.05 TO STA. 795+66.20 LT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 797+51.68 TO STA. 799+69.83 LT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 797+65.61 TO STA. 799+08.76 RT.	= 75 LIN. FT.	1 EACH	1 EACH

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	UNIT
795+18	796+27	RT.	109 LIN. FT.
795+53	796+26	LT.	73 LIN. FT.
797+34	798+07	RT.	73 LIN. FT.
797+33	798+81	LT.	148 LIN. FT.

HWY. 25

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL POINTS

STA. 797+12.32 BEGIN SUPERELEVATION
STA. 801+32.32 MAX. SUPERELEVATION (0.100'/')
STA. 802+69.76 MAX. SUPERELEVATION (0.100'/')
STA. 806+89.76 END SUPERELEVATION

STA. 786+80.00
BEGIN JOB 050413
ELEV. 705.69

PVI 786+80.00 ELEV. 705.69
-4.11%
100' VERTICAL TRANSITION TO MATCH EXISTING
PVC 787+90.00 ELEV. 701.17
PVI 789+00.00 ELEV. 696.65
VC=220.00'
K=117.02
e=-0.52'
PVC 791+00.00 ELEV. 684.67
-5.99%
+00.00 RT. 686.88
PVT 790+10.00 ELEV. 690.06
PROFILE GRADE
EXISTING GROUND
7.60% RT. DITCH GRADE

CADRON CREEK AT STA. 796+20 TO STA. 797+25 IS CLASSIFIED AS A PERENNIAL STREAM. THE TOP OF CHANNEL ELEVATION IS 644 FT. MSL. REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

VC=1100.00'
K=115.18
e=13.13'
BEGIN BRIDGE STA. 795+84.75
END BRIDGE STA. 797+50.25
3.56%
050 DESIGN H.W. ELEV. = 651.8
PVI 796+50.00 ELEV. 651.73
-3.00%
2.25% LT. DITCH GRADE 8' FLAT BOTTOM
+75.00 RT. 643.19
+28.00 RT. 641.60
+53.50 LT. 642.46
5.14% LT. DITCH GRADE 8' FLAT BOTTOM
+56.00 LT. 637.44

720 710 700 690 680 670 660 650 640 630

785+00 786+00 787+00 788+00 789+00 790+00 791+00 792+00 793+00 794+00 795+00 796+00 797+00 798+00 799+00

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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.		050413	40	92
				(2)	PLAN & PROFILE - HIGHWAY 25			

STA. 800+70 IN PLACE
36" X 64' CM PIPE CULVERT AND
36" X 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 801+25 INSTALL
DBL. 72" X 133' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
2 CU. YDS. CUT
2,807 CU. YDS. FILL

DUMPED RIPRAP
(18" THICKNESS)
STA. 801+78 TO
STA. 803+48

DUMPED RIPRAP
(18" THICKNESS)
STA. 799+00 TO
STA. 800+59

CONCRETE DITCH PAVING (TYPE A)

STA.	STA.	SIDE	"B"	"W"	SQ. YDS.
799+03	799+85	RT. = 82 LIN. FT.	4'-0" AVG.	10'-0" AVG.	91
799+85	800+51	RT. = 66 LIN. FT.	8'-0"	14'-0"	103
803+15	806+08	RT. = 290 LIN. FT.	8'-0"	14'-0"	451

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
800+25	800+36	LT. = 44 LIN. FT.	6'-0"	29
806+08	807+00	RT. = 92 LIN. FT.	6'-0"	61

STA. 800+80 IN PLACE
24" X 32' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
143 CU. YDS. FILL

C.L. HWY. 25

PI	= 802+03.33
Δ	= 22°35'00" RT.
D	= 6°30'00"
T	= 176.01'
L	= 347.44'
PC	= 800+27.32
PT	= 803+74.76
e	= 0.100'/'
Ls	= 420'

STA. 804+54.88 C.L. HWY. 25 =
STA. 10+00.00 C.L. HWY. 107
∠ 90°00'00"

STA. 807+00.00
END JOB 050413

STATE OF ARKANSAS
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No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

HWY. 25

STA. 797+12.32 BEGIN SUPERELEVATION
STA. 801+32.32 MAX. SUPERELEVATION (0.100'/')
STA. 802+69.76 MAX. SUPERELEVATION (0.100'/')
STA. 806+89.76 END SUPERELEVATION

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

VC=1100.00'
K=115.18
e=13.13'

VC=300.00'
K=245.90
e=0.46'

PVT 802+00.00
ELEV. 671.31

PVC 802+35.00
ELEV. 672.56

PVI 803+85.00
ELEV. 677.90

PVT 805+35.00
ELEV. 685.07

PVI 807+00.00
ELEV. 692.96

3.56%

4.78%

PROFILE GRADE

EXISTING GROUND

12.24% RT. DITCH GRADE

2.25% LT. DT. 8' FLAT BOTTOM

4.17% LT. DITCH GRADE 8' FLAT BOTTOM

+85.00 RT. 656.24

+03.00 RT. 646.20

+00.00 LT. 648.00

+50.00 LT. 662.60

100' VERTICAL TRANSITION TO MATCH EXISTING

710 700 690 680 670 660 650 640 630 620

799+00 800+00 801+00 802+00 803+00 804+00 805+00 806+00 807+00 808+00 809+00 810+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	41	92
				(2)	PLAN & PROFILE - HIGHWAY 107			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

N

C.L. HWY. 107
PI = 10+96.83
Δ = 34°51'15" RT.
D = 28°30'00"
T = 63.11'
L = 122.30'
PC = 10+33.72
PT = 11+56.02
e = MATCH EXISTING (0.036'/')

STA. 11+85 IN PLACE
24" X 25' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 35' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
3 CU. YDS. CUT
53 CU. YDS. FILL

STA. 12+27 IN PLACE
24" X 25' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 41' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
18 CU. YDS. CUT
79 CU. YDS. FILL

C.L. HWY. 107
PI = 13+19.96
Δ = 10°18'50" RT.
D = 8°15'00"
T = 62.68'
L = 125.01'
PC = 12+57.28
PT = 13+82.29
e = MATCH EXISTING (0.060'/')

STA. 11+19 IN PLACE
8' X 8' X 90' R.C. BOX CULVERT.
30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
REMOVE HDWLS. & EXTEND 13' LT. & 4' RT.
TO A COMPLETED LENGTH OF 107'
Q25 = 687 CFS DA=255 AC.

STA. 10+00.00 C.L. HWY. 107 =
STA. 804+54.88 C.L. HWY. 25
∠ 90°00'00"

CONCRETE DITCH PAVING (TYPE A)

STA.	STA.	SIDE	"B"	"W"	SQ. YDS.
11+98	12+04	LT. = 6 LIN. FT.	4'-0"	10'-0"	7
12+45	12+70	LT. = 25 LIN. FT.	2'-0" AVG.	8'-0" AVG.	22

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
12+46	13+25	RT. = 79 LIN. FT.	6'-0"	53
12+70	13+18	LT. = 48 LIN. FT.	6'-0"	32

HWY. 107

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

C.L. HWY. 107 STA. 10+24.00 = STA. 804+54.88, 24.00' LT.
C.L. HWY. 25 ELEV. 683.14
PVC 11+35.00 ELEV. 684.25
VC=180.00'
K=29.17
e=1.39'
PVI 12+25.00 ELEV. 685.15
PVT 13+15.00 ELEV. 691.60
PVI 13+25.00 ELEV. 692.32
+25.00 100' VERTICAL TRANSITION TO MATCH EXISTING +25.00
PROFILE GRADE
EXISTING GROUND
1.00%
7.1%

PR. F.L. = 667.97 LT.
EX. F.L. = 668.12 LT.
EX. F.L. = 669.17 RT.
PR. F.L. = 669.22 RT.

730 720 710 700 690 680 670 660 650 640

10+00 11+00 12+00 13+00 14+00 15+00

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WORKSPACE: AHTD
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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.		050413	42	92

(2) PLAN & PROFILE - DR. 801+25 WESTERN ACCESS

DR. 801+25 WESTERN ACCESS
INSTALL DBL. 42" X 29" X 45'
ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
8 CU. YDS. CUT
767 CU. YDS. FILL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 05/04/2021

STA. 801+25.77, 156.57' LT. C.L. HWY. 25 =
STA. 5+00.00 C.L. DR. 801+25 WESTERN ACCESS

STA. 804+54.88 C.L. HWY. 25 =
STA. 10+00.00 C.L. HWY. 107
Δ 90°00'00"

C.L. DR. 801+25 WESTERN ACCESS
PI = 1+99.01
Δ = 76°26'44" LT.
D = 57°15'00"
T = 78.82'
L = 133.53'
PC = 1+20.19
PT = 2+53.72
e = NO SUPER

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

PVI 1+10.00 ELEV. 679.26
-7.62%
PVI 1+50.00 ELEV. 676.21
-3.20%
PVI 2+00.00 ELEV. 674.61
0.20%
PVI 2+45.00 ELEV. 674.70
-3.10%
PVI 3+00.00 ELEV. 673.00
-6.70%
PVI 3+50.00 ELEV. 669.65
-3.20%
PVI 4+25.00 ELEV. 667.25
1.40%
STA. 4+92.60 C.L. DR. 801+25 WESTERN ACCESS
STA. 801+19.07, 158.02' LT. C.L. HWY. 25 =
ELEV. 668.20

PROFILE GRADE
DRIVEWAY HWY. 25. STA. 801+25 LT.
EXISTING GROUND

720 710 700 690 680 670 660 650 640 630
0+00 1+00 2+00 3+00 4+00 5+00

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WORKSPACE: AHTD
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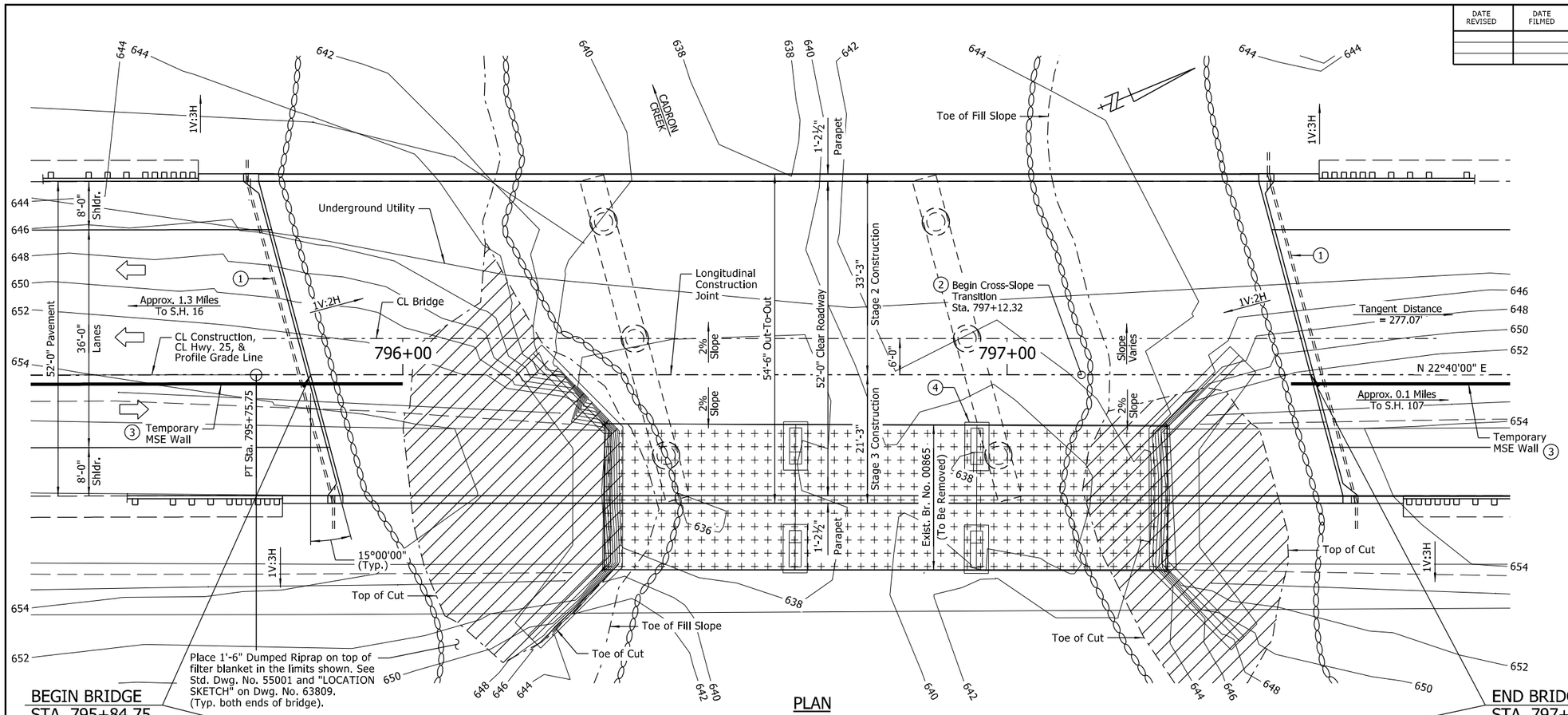
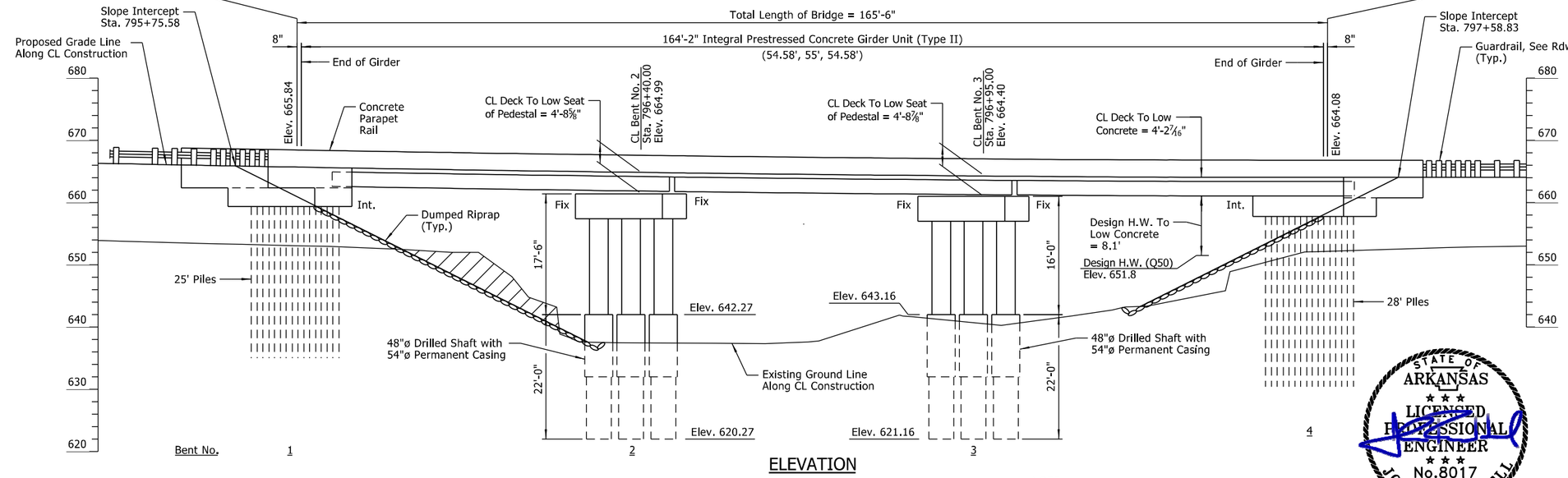
REVISED DATE:

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.		050413	43	92
				(1) 07515		LAYOUT		63808



PLAN



ELEVATION

NOTES:
Use Type 1 and Type 2 Special Approach Slabs at Begin Bridge. Use Type 3 and Type 4 Special Approach Slabs at End Bridge. See Dwg. Nos. 63837-63839.

Use Type 1 and Type 2 Special Approach Gutters at each end of bridge, see Dwg. No. 63836.

For "LOCATION SKETCH" & "SOIL BORING ELEVATION", see Dwg. No. 63809.

For "GENERAL NOTES", "BORING LEGEND", & "N-VALUES", see Dwg. No. 63810.

The Contractor shall excavate the existing embankments as shown in "LOCATION SKETCH" on Dwg. No. 63809.

HORIZONTAL CURVE DATA

CL Highway 25
PI = 793+51.86
Δ = 02°14'21" Rt.
D = 00°30'00"
T = 223.95'
L = 447.84'
e = N/A
R = 11459.16'

HORIZONTAL CURVE DATA

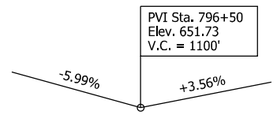
CL Highway 25
PI = 802+03.33
Δ = 22°31'00" Rt.
D = 06°30'00"
T = 176.01'
L = 347.44'
e = 0.100
R = 881.47'

(1) Install 4" Pipe Underdrain with Outlet Protectors at both bridge ends in accordance with Section 611 and Std. Dwg. PU-1. For additional details, see Dwg. No. 63826. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "UNCLASSIFIED EXCAVATION". (Typ. at each end bent)

(2) See "CROSS-SLOPE TRANSITION SKETCH" on Dwg. No. 63810.

(3) For details of Temporary MSE Walls, see Dwg. Nos. 63812-63814.

(4) Remove portion of existing footing during Stage 3 Construction to facilitate drilled shaft construction.



VERTICAL CURVE DATA

Highway 25
(Profile Grade Along CL Construction)

FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

796+00

797+00

NOTE:
Stations shown are along CL Construction. Elevations shown are actual top of deck elevations at CL Construction. Any vertical dimension referenced to CL Deck is based on actual top of deck elevation at CL Construction.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 1 OF 3
LAYOUT OF BRIDGE
HIGHWAY 25 OVER CADRON CREEK
CADRON CREEK STR. & APPRS. (S)
CLEBURNE COUNTY
ROUTE 25 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: FEB. 2020 FILENAME: b050413_L1.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: 1" = 10'-0"
DESIGNED BY: DRG DATE: FEB. 2020
BRIDGE NO. 07515 DRAWING NO. 63808

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WORKSPACE: ARDOT Bridge (2019)
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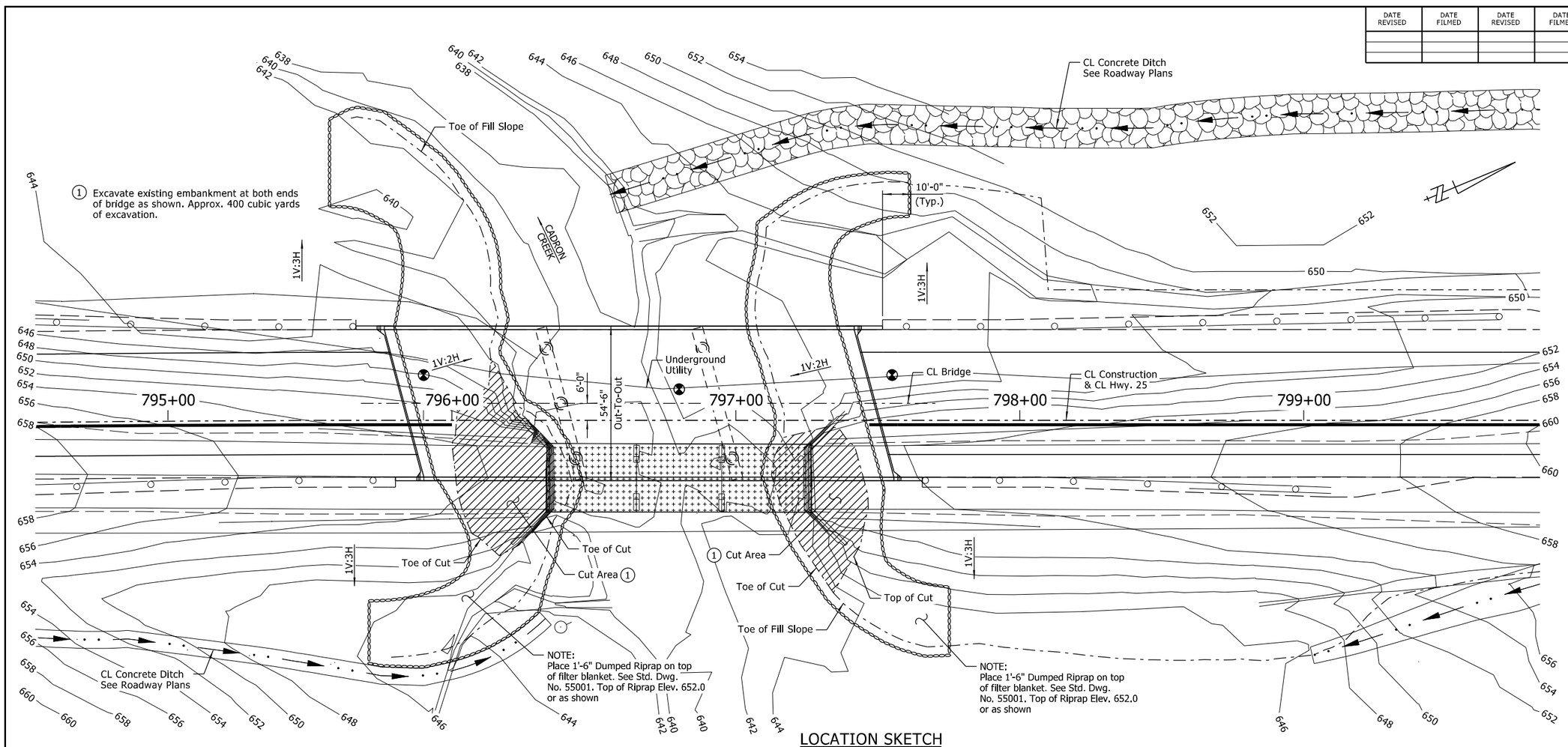
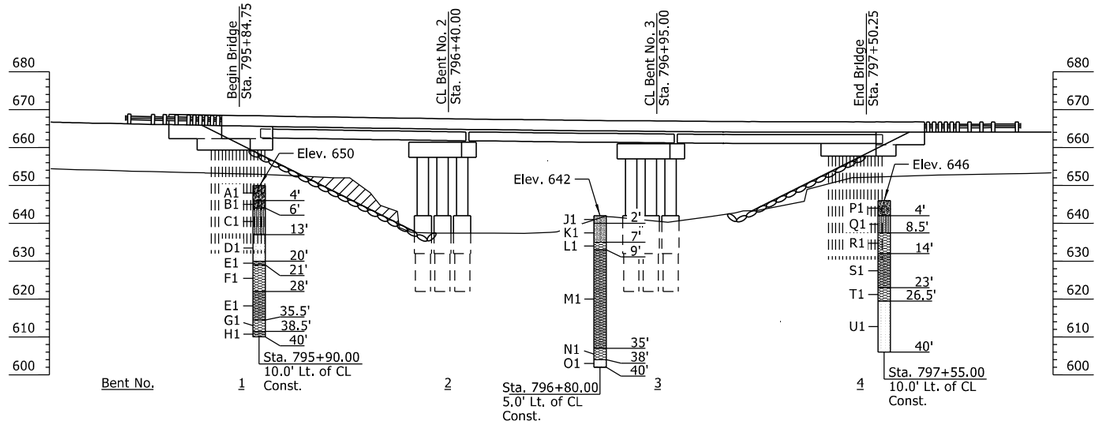
REVISED DATE:

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.		050413	44	92
(1) 07515		LAYOUT		63809



LOCATION SKETCH



SOIL BORING ELEVATION

NOTE:
For "GENERAL NOTES", "BORING LEGEND" & "N-VALUES", See Dwg. No. 63810.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 2 OF 3
LAYOUT OF BRIDGE
HIGHWAY 25 OVER CADRON CREEK
CADRON CREEK STR. & APPRS. (S)
CLEBURNE COUNTY
ROUTE 25 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: FEB. 2020 FILENAME: b050413_L2.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: 1" = 20'-0"
DESIGNED BY: DRG DATE: FEB. 2020
BRIDGE NO. 07515 DRAWING NO. 63809

JMEdwards 5/4/2021 11:29:32 AM
WORKSPACE: ARDOT Bridge (2019)
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REVISED DATE:

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.		050413	45	92
				(1) 07515		LAYOUT		63810

GENERAL NOTES

BENCHMARK: 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 in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 1 S_{D1}= 0.11g Site Class = B

SEISMIC OPERATIONAL CLASSIFICATION: Essential

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50 or 50W)	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 piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 97 tons per pile and into the material designated as sandstone on the boring legend. Piling shall be driven after embankment to bottom of cap is in place. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piling at Bents 1 and 4. Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

PILE CASINGS: Pile casings are required for piling within temporary MSE walls at End Bent 1 and End Bent 4. See "PLAN" on Dwg. Nos. 63815 & 63818, for the location of proposed casing. Casings shall be installed prior to or during embankment construction and shall exend from bottom of temporary MSE wall to bottom of cap. Pile casing material shall be of sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casings shall have a diameter 6" greater than the diagonal of the pile. Piles shall be driven through the open casings after embankment to bottom cap is in place. After driving is complete, the pile casings shall be filled with sand or pea gravel. This work and material will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

DRILLED SHAFTS: Drilled shafts at Bent Nos. 2 and 3 shall be constructed in accordance with Special Provision Job. No. 050413 "DRILLED SHAFT FOUNDATIONS". Drilled shafts shall be socketed into material designated as sandstone on the boring legend and to the minimum rock penetrations and tip elevations shown in the plans. No adjustment to plan tip elevations shall be made without prior approval from the Engineer.

NONDESTRUCTIVE TESTING: Crosshole Sonic Logging shall be performed on each shaft of Bent Nos. 2 and 3 and shall be in accordance with Special Provision Job No. 050413 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS".

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 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rails in accordance with Section 803.

EXISTING BRIDGE: Existing Bridge No. 00865 (Log Mile 9.91) is 90.0' in length, 26.0' wide (24.0' clear roadway) and consists of reinforced concrete deck girder/steel w-beam spans (3 spans total) supported by reinforced concrete columns on reinforced concrete spread footings at the intermediate bents and reinforced concrete vertical wall abutments. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After Stage 2 construction is complete and open to traffic, the Contractor shall remove existing Bridge No. 00865 in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

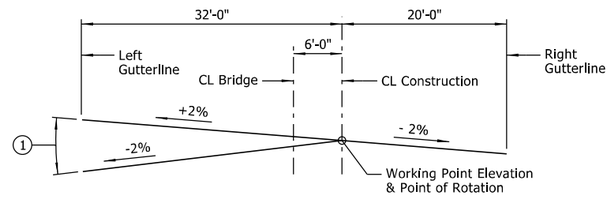
DETAIL DRAWINGS:	DRAWING NO.
End Bents	63815-63820
Intermediate Bents	63821-63823
Elastomeric Bearings	63824
164'-2" Integral Prestressed Concrete Girder Unit	63825-63835
Type Special Approach Gutters	63836
Type Special Approach Slabs	63837-63839
Dumped Riprap	55001
Steel H-Piling	55020

BORING LEGEND

A1 - Firm brown and reddish brown fine sandy clay w/sandstone fragments (fill)
B1 - Soft brown fine sandy clay w/a few sandstone fragments
C1 - Loose brown silty fine sand w/trace sandstone fragments
D1 - Moderately hard gray weathered fine-grained sandstone w/very close healed horizontal fractures
E1 - Moderately hard gray fine-grained graywacke sandstone
F1 - Moderately hard dark gray shale, carbonaceous, flat bedded
G1 - Moderately hard dark gray shale, carbonaceous, flat bedded w/occasional arenaceous seams
H1 - Moderately hard to hard gray fine-grained graywacke sandstone
J1 - Loose brown fine sand, slightly silty w/ shale and sandstone fragments and occasional organics
K1 - Very loose to loose brown, gray and tan fine sand, slightly clayey
L1 - Moderately hard to hard gray highly weathered shale
M1 - Moderately hard gray fine-grained graywacke sandstone w/very close shale seams and layers and numerous pyrite crystals
N1 - Moderately hard to hard dark gray shale, flat bedded, carbonaceous
O1 - Hard gray fine-grained sandstone w/very close argillaceous partings and seams
P1 - Loose brown fine sand, slightly silty w/numerous sandstone fragments and crushed stone (fill)
Q1 - Medium dense tan, brown and reddish tan silty fine sand w/sandstone fragments
R1 - Moderately hard gray w/tan weathered shale, flat bedded
S1 - Moderately hard gray fine-grained graywacke sandstone w/interbedded shale seams and layers
T1 - Moderatley hard dark gray shale, flat bedded w/very close sandstone partings, seams and inclusions
U1 - Moderately hard to hard gray fine-grained sandstone w/pyrite crystals and inclusions and very close argillaceous laminations, seams and inclusions

N-VALUES

Sta. 795+90.00 10.0' Lt. of CL Construction	Sta. 796+80.00 5.0' Lt. of CL Construction	Sta. 797+55.00 10.0' Lt. of CL Construction
0.5-1.5, N=8	0.5-1.5, N=9	0.5-1.5, N=8
2.5-3.5, N=4	2.5-3.5, N=4	2.5-3.5, N=49
4.5-5.5, N=5	4.5-5.5, N=16	4.5-5.5, N=25
6.5-7.5, N=7	6.5-7.5, N=50/6"	6,5-7.5, N=37
9.0-10.0, N=2		9.0-10.0, N=50/4"
12.0-13.0, N=25/0"		13.0-14.0, N=25/0"



STATION 797+12.32 TO 797+96.32 (REVERSE CROWN)

(Looking Ahead)

CROSS-SLOPE TRANSITION SKETCH

(1) Cross slope left of CL Construction varies from 2% down from Profile Grade (Sta. 797+12.32) to 2% up from Profile Grade (Sta. 797+96.32).

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(2) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	50	7,161	650.4	651.8
BASE	100	8,929	651.4	653.1
EXTREME	500	13,785	653.9	656.3
OVERTOPPING	>500	N/A	N/A	N/A

(2) Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 654.0

Proposed Low Bridge Chord Elev. = 659.87 (Sta. 797+52.10)
Existing Low Bridge Chord Elev. = 650.57 (survey shot)

Drainage Area = 10.7 square miles
Historical High Water Elev. = 656.1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

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BRIDGE ENGINEER

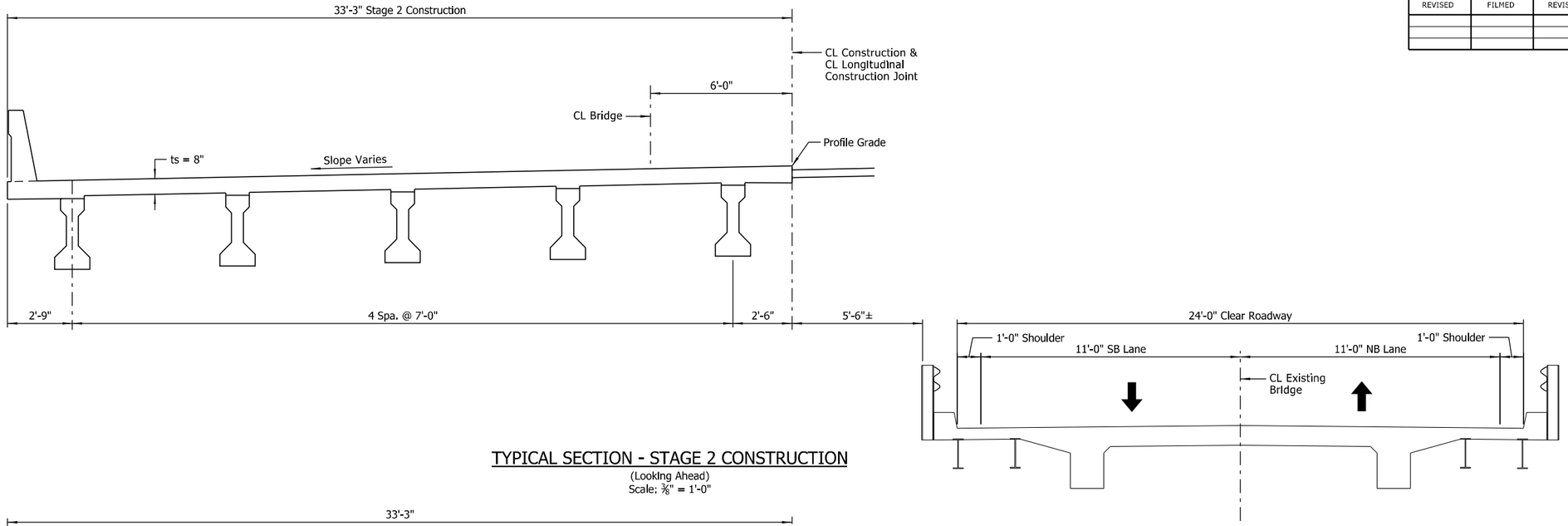
SHEET 3 OF 3
LAYOUT OF BRIDGE
HIGHWAY 25 OVER CADRON CREEK
CADRON CREEK STR. & APPRS. (S)
CLEBURNE COUNTY
ROUTE 25 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: FEB. 2020 FILENAME: b050413_L3.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: NONE
DESIGNED BY: DRG DATE: FEB. 2020
BRIDGE NO. 07515 DRAWING NO. 63810

JMEdwards 5/4/2021 11:29:33 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\701608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S03_L0.dgn
REVISED DATE:

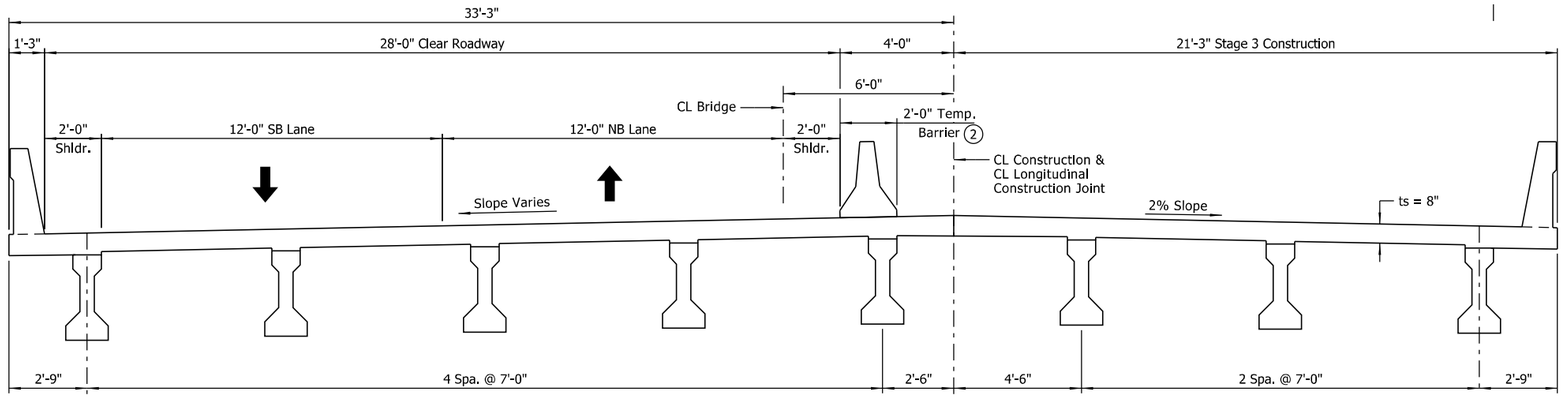
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	46	92
① 07515		LAYOUT		63811



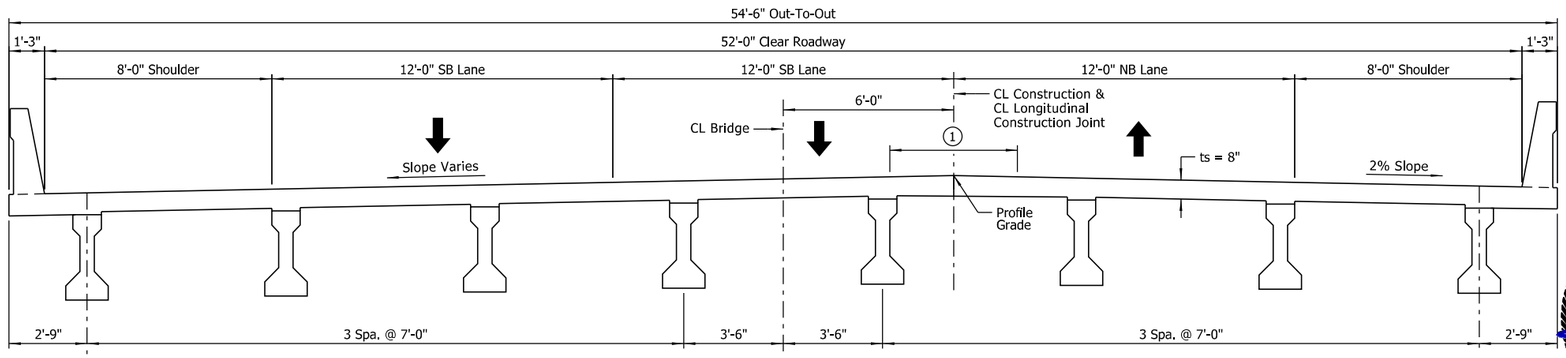
TYPICAL SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
Scale: ⅜" = 1'-0"



TYPICAL SECTION - STAGE 3 CONSTRUCTION

(Looking Ahead)
Scale: ⅜" = 1'-0"



TYPICAL SECTION - FINAL CONDITION

(Looking Ahead)
Scale: ⅜" = 1'-0"

(1) Rounding is eliminated due to longitudinal construction joint located at Profile Grade.

(2) Temporary Construction Barrier, connect to new bridge deck. See Std. Dwg. TC-4 for additional information.

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DETAILS OF STAGED CONSTRUCTION
HIGHWAY 25 OVER CADRON CREEK
CADRON CREEK STR. & APPRS. (S)
CLEBURNE COUNTY

ROUTE 25 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2020 FILENAME: b050413_S1.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: MAR. 2020

BRIDGE NO. 07515 DRAWING NO. 63811

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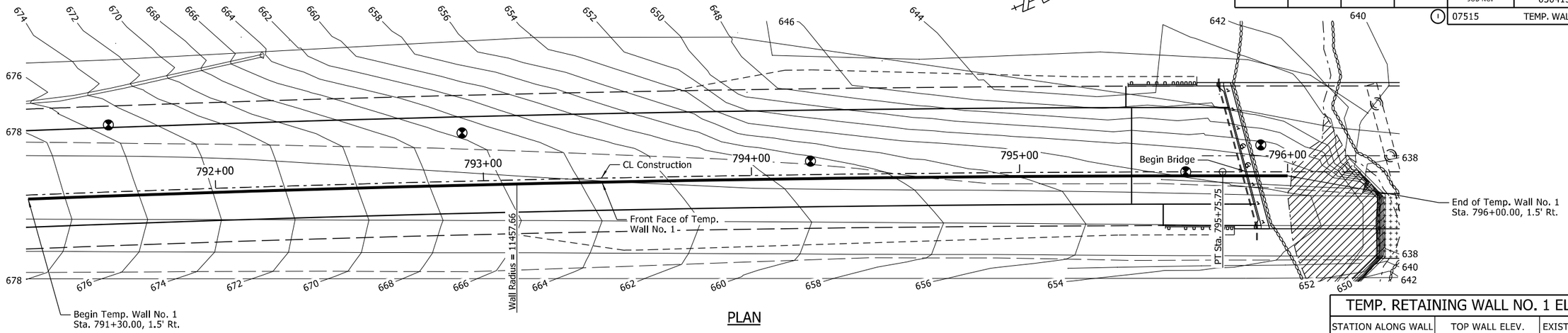
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S104_SC.dgn
REVISED DATE:

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.		050413	47	92
① 07515		TEMP. WALLS		63812



PLAN

HORIZONTAL CURVE DATA

CL Highway 25
PI = 793+51.86
Δ = 02°14'21" Rt.
D = 00°30'00"
T = 223.95'
L = 447.84'
R = 11459.16'

TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

Temporay Retaining Wall (Square Foot)	Select Granular Backfill (Cubic Yard)
4760	1392

NOTE:
Temporary Retaining Walls are required to prevent Stage 2 Construction embankment material from interfering with temporary roadside drainage and traffic during Stage 2 Construction. See SP Job 050413 "TEMPORARY RETAINING WALLS" for additional information and requirements.

① Top of Temporary Retaining Wall to be constructed at bottom of proposed pavement section (1'-4½" thick).

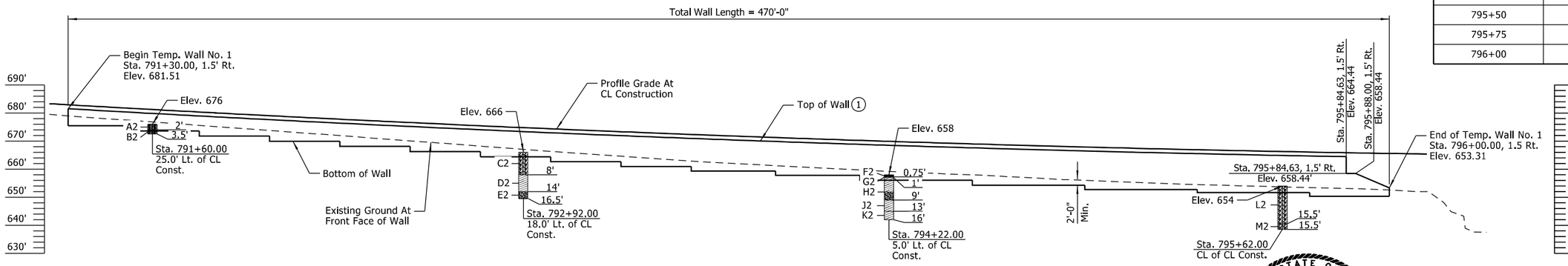
NOTES:
Portions of the Temporary Retaining Wall in the horizontal curve shall be constructed on an arc concentric to C.L. Construction.

Offset dimensions for temporary retaining wall are measured from CL Construction to front face of wall.

For "BORING LEGEND" and "N-VALUES", see Dwg. No. 63814.

TEMP. RETAINING WALL NO. 1 ELEVATIONS

STATION ALONG WALL	TOP WALL ELEV.	EXIST. GROUND ELEV.
791+30	681.51	679.00
791+50	680.38	677.55
791+75	679.02	675.74
792+00	677.71	673.93
792+25	676.46	672.07
792+50	675.26	670.21
792+75	674.11	668.36
793+00	673.02	666.50
793+25	671.99	664.77
793+50	671.01	663.04
793+75	670.08	661.69
794+00	669.20	660.36
794+25	668.39	659.17
794+50	667.62	658.13
794+75	666.91	657.03
795+00	666.25	655.94
795+25	665.65	654.96
795+50	665.10	654.23
795+75	664.61	653.59
796+00	653.31	652.78



ELEVATION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

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SHEET 1 OF 3
DETAILS OF TEMPORARY RETAINING WALLS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RAK DATE: JULY 2020 FILENAME: b050413_r1.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: 1" = 20'-0"
DESIGNED BY: RAK DATE: JULY 2020

BRIDGE NO. 07515 DRAWING NO. 63812

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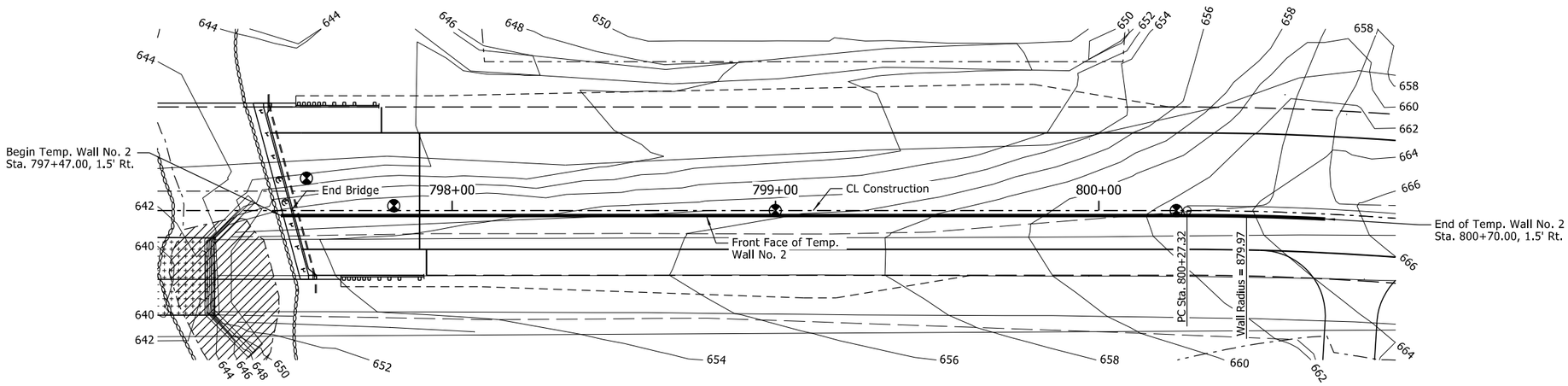
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 05043 Cadron Creek Str-Appr\s\Drawings\b050413_S05_TMSE.dgn
REVISED DATE:

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.		050413	48	92
① 07515		TEMP. WALLS		63813



PLAN

NOTE:
Temporary Retaining Walls are required to prevent Stage 2 Construction embankment material from interfering with temporary roadside drainage and traffic during Stage 2 Construction. See SP Job 050413 "TEMPORARY RETAINING WALLS" for additional information and requirements.

TEMP. RETAINING WALL NO. 2 ELEVATIONS

STATION ALONG WALL	TOP WALL ELEV.	EXIST. GROUND ELEV.
797+47	656.79	652.09
797+50	656.79	652.19
797+75	662.62	652.89
798+00	662.62	653.36
798+25	662.73	653.75
798+50	662.90	654.29
798+75	663.12	654.92
799+00	663.39	655.51
799+25	663.72	655.95
799+50	664.10	657.59
799+75	664.54	659.39
800+00	665.03	660.90
800+25	665.58	662.58
800+50	666.18	664.09
800+70	666.70	665.04

HORIZONTAL CURVE DATA

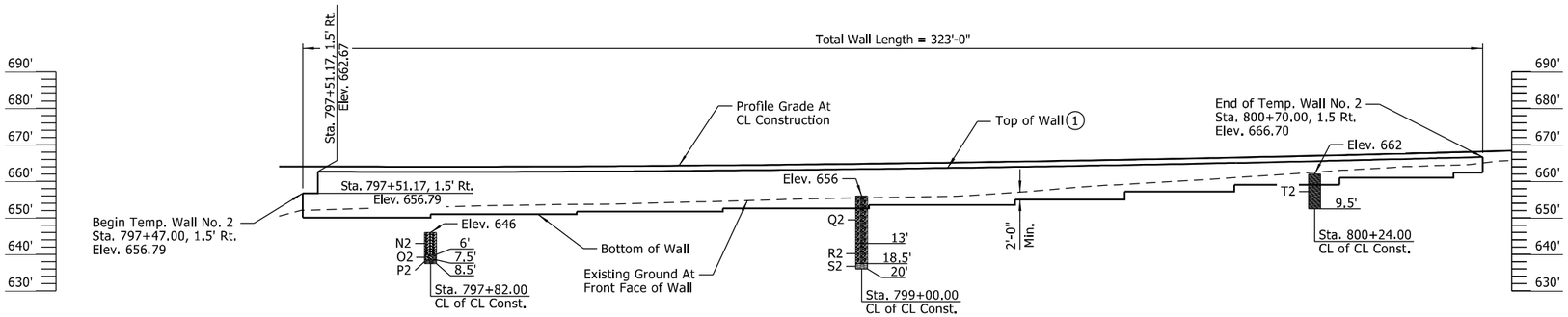
CL Highway 25
PI = 802+03.33
Δ = 22°35'00" Rt.
D = 06°30'00"
T = 176.00'
L = 347.44'
R = 881.47'

NOTES:
Portions of the Temporary Retaining Wall in the horizontal curve shall be constructed on an arc concentric to C.L. Construction.

Offset dimensions for temporary retaining wall are measured from CL Construction to front face of wall.

For "BORING LEGEND" and "N-VALUES", see Dwg. No. 63814.

① Top of Temporary Retaining Wall to be constructed at bottom of proposed pavement section (1'-4½" thick).



ELEVATION

TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

Temporay Retaining Wall (Square Foot)	Select Granular Backfill (Cubic Yard)
3033	846

STATE OF ARKANSAS
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SHEET 2 OF 3
DETAILS OF TEMPORARY RETAINING WALLS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RAK DATE: JULY 2020 FILENAME: b050413_r2.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: 1" = 20'-0"
DESIGNED BY: RAK DATE: JULY 2020
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REVISED DATE:

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.		050413	49	92
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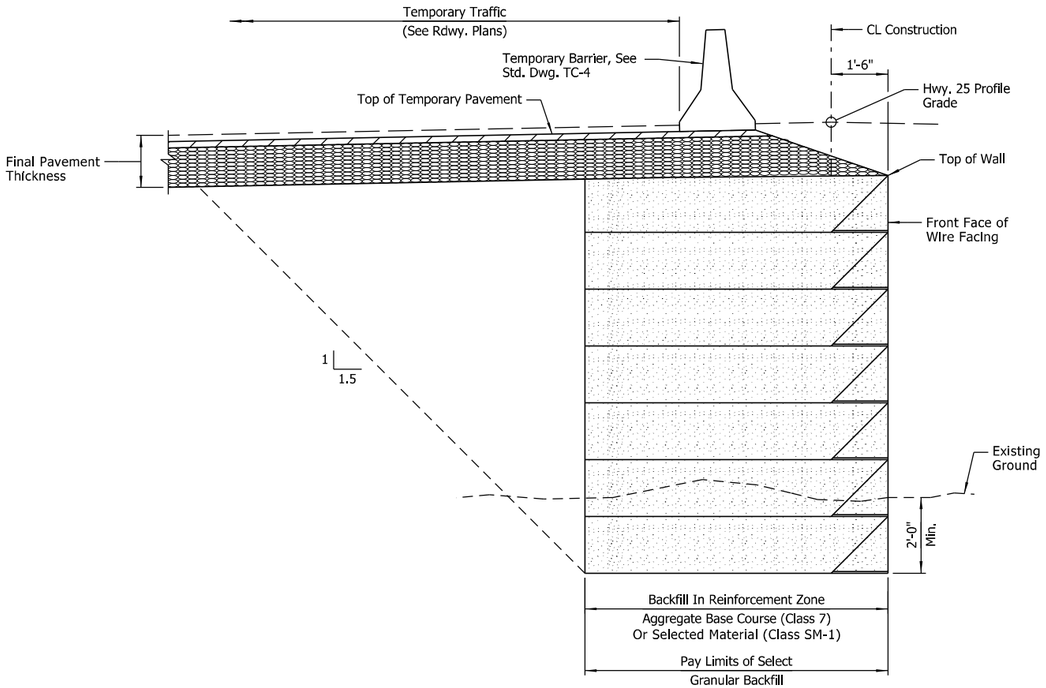
NOTE:
See SP Job 050413 "TEMPORARY RETAINING WALLS"
for additional information and requirements.



TEMPORARY RETAINING WALL TYPICAL SECTION

(Showing Stage 2 Construction)
No Scale

BORING LEGEND

A2 - Dense brown fine sand w/reddish tan fine sandy clay pockets, and sandstone fragments, very dry (fill)
B2 - Very stiff reddish tan fine sandy clay w/weathered fine-grained sandstone seams and fragments (completely weathered sandstone)
C2 - Dense dark gray fine sand w/numerous sandstone fragments (fill)
D2 - Very stiff reddish tan and gray fine sandy clay w/trace sandstone fragments (completely weathered sandstone)
E2 - Weathered sandstone
F2 - Asphalt cement concrete
G2 - Crushed stone base
H2 - Very stiff reddish tan and brown fine sandy clay w/trace organics, dry (fill)
J2 - Stiff brown and reddish tan fine sandy clay
K2 - Stiff gray and reddish tan fine sandy clay
L2 - Dense brown fine sand w/reddish tan fine sandy pockets and seams and sandstone fragments (fill)
M2 - Very stiff gray, reddish brown and reddish tan mottled fine sandy clay w/occasional sandstone fragments
N2 - Medium dense brown fine sand w/sandstone fragments (fill)
O2 - Dense brown sandy fine to coarse gravel
P2 - Moderately hard bluish gray arenaceous shale
Q2 - Medium dense reddish tan and brown silty fine sand w/numerous sandstone fragments(fill)
R2 - Dense brown w/gray silty fine sand, completely weathered sandstone fragments (completely weathered sandstone)
S2 - Moderately hard dark gray arenaceous shale, carbonaceous, flat bedded
T2 - Dense reddish yellow and gray clayey fine sand w/sandstone fragments, dry (fill)

N-VALUES

Sta. 791+60.00 25.0' Lt. of CL Construction	Sta. 792+92.00 18.0' Lt. of CL Construction	Sta. 794+22.00 5.0' Lt. of CL Construction	Sta. 795+62.00 CL of CL Construction	Sta. 797+82.00 CL of CL Construction	Sta. 799+00.00 CL of CL Construction	Sta. 800+24.00 CL of CL Construction
0.5-1.5, N=50/5" 2.5-3.5, N=50/3"	0.5-1.5, N=38 2.5-3.5, N=33 4.5-5.5, N=17 6.5-7.5, N=9 9.0-10.0, N=25 14.0-15.0, N=50/3"	2.5-3.5, N=26 4.5-5.5, N=11 6.5-7.5, N=17 9.0-10.0, N=17 14.0-15.0, N=18 15.5-16.0, N=50/1"	0.5-1.5, N=35 2.5-3.5, N=13 4.5-5.5, N=13 6.5-7.5, N=15 9.0-10.0, N=11 14.0-15.0, N=50/6"	0.5-1.5, N=12 2.5-3.5, N=23 4.5-5.5, N=21 6.5-7.5, N=44 8.25-8.5, N=50/1"	0.5-1.5, N=28 2.5-3.5, N=16 4.5-5.5, N=6 6.5-7.5, N=13 9.0-10.0, N=14 14.0-15.0, N=43 19.0-20.0, N=50/4"	0.5-1.5, N=33 2.5-3.5, N=38 4.5-5.5, N=50/5" 6.5-7.5, N=27 9.0-9.5, N=50/2"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

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SHEET 3 OF 3
DETAILS OF TEMPORARY RETAINING WALLS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: AUG. 2020 FILENAME: b050413_r3.dgn
CHECKED BY: DRG DATE: AUG. 2020 SCALE: No Scale
DESIGNED BY: CSW DATE: AUG. 2020
BRIDGE NO. 07515 DRAWING NO. 63814

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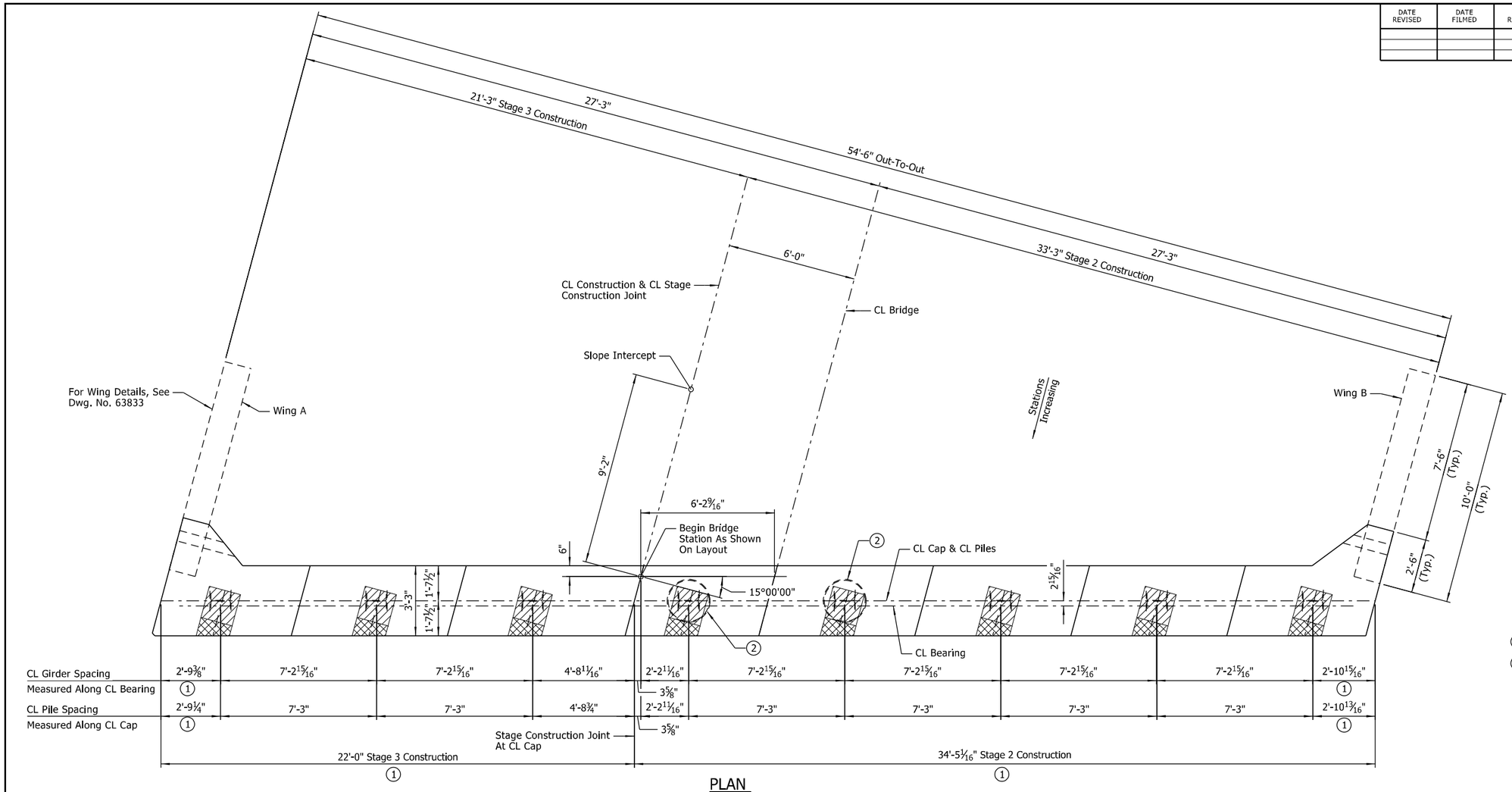
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_SI07_TMSE.dgn
REVISED DATE:

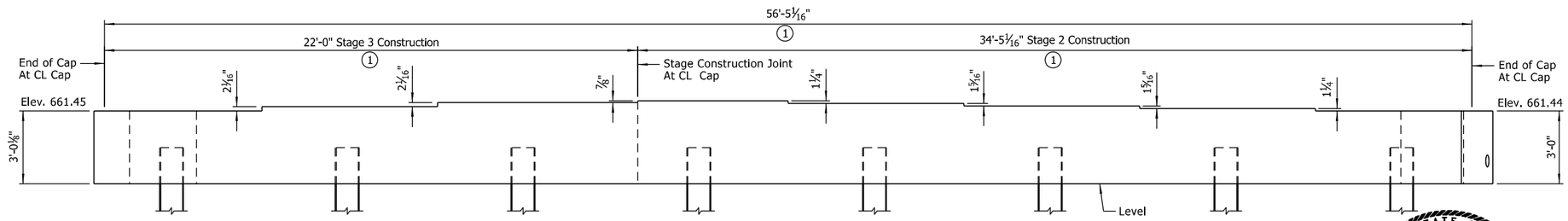
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	50	92
① 07515		END BENTS		63815



PLAN

Scale: ⅜" = 1'-0"



ELEVATION

(Looking Back)
Scale: ⅜" = 1'-0"

① Measured To Intersection of CL Cap and Edge of Cap

② Pile Casing Required For Piles Within Limits of Reinforced Zone of Temporary MSE Wall, see Layout for additional information.

NOTE:
For reinforcing details, see Dwg. No. 63816.

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SHEET 1 OF 3
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_a1.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020
BRIDGE NO. 07515 DRAWING NO. 63815

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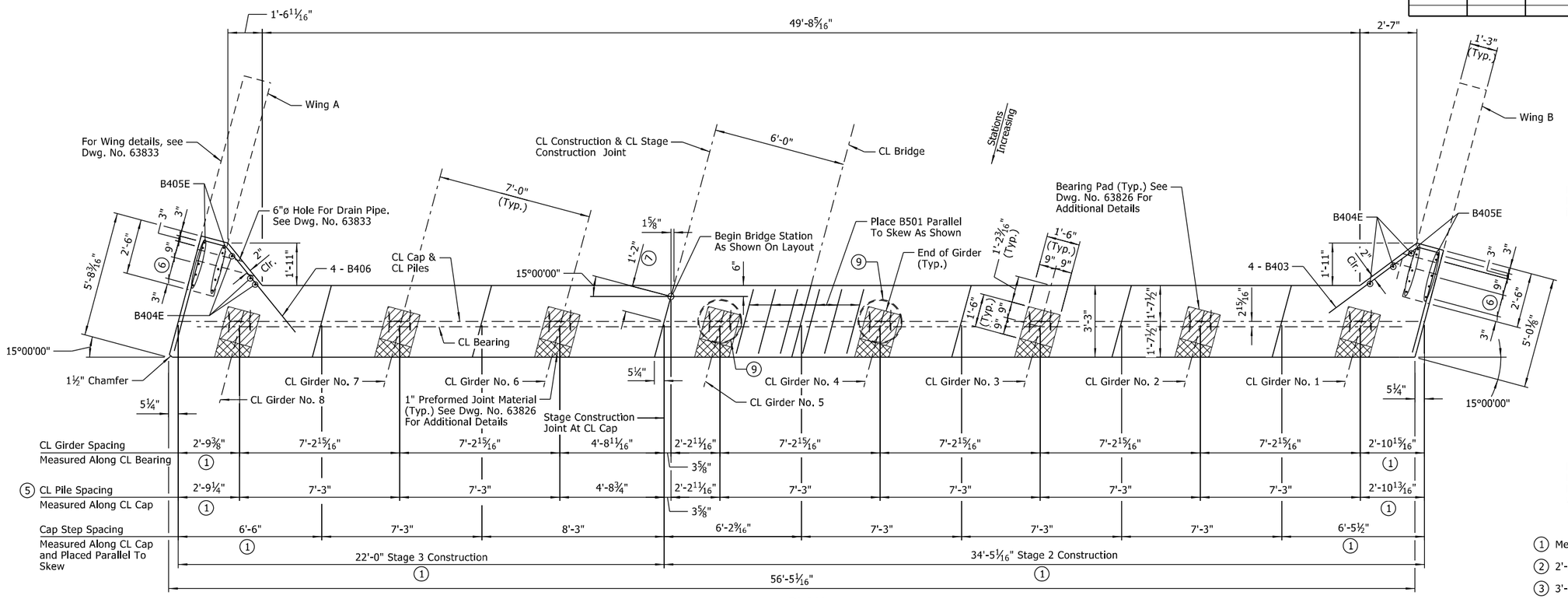
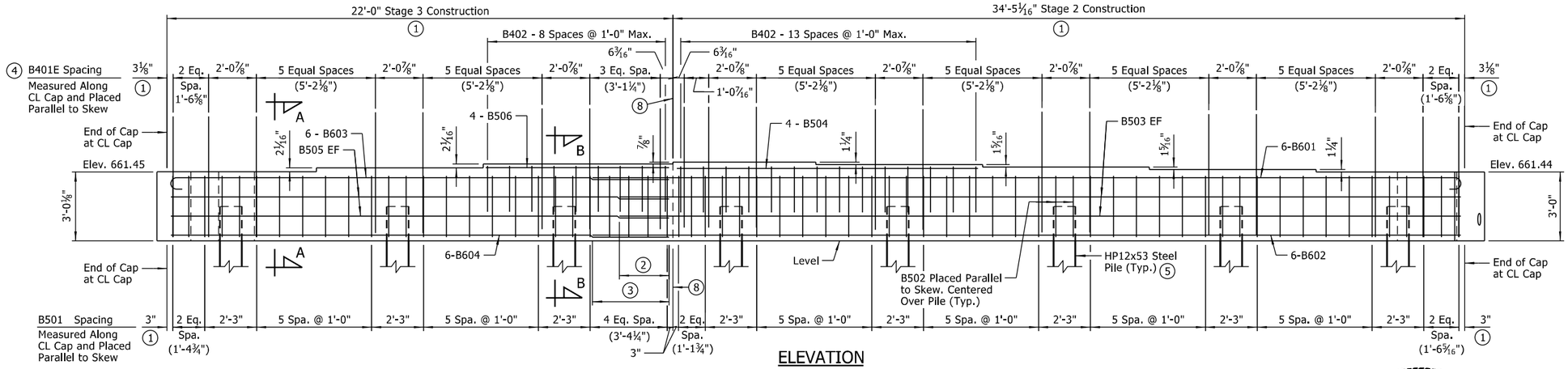
REVISED DATE:

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.		050413	51	92
				(1) 07515		END BENTS		63816



PLAN

Scale: ⅜" = 1'-0"



ELEVATION

(Looking Back)
Scale: ⅜" = 1'-0"

NOTE:
B404E & B405E bars shall have a 2'-9" embedment into the end bent cap.

LEGEND

EF = Each Face

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 63817.

(1) Measured to Intersection of CL Cap and Edge of Cap

(2) 2'-2" Min. Lap (Typ. #5 Bars)

(3) 3'-4" Min. Lap (Typ. #6 Bars)

(4) Top of B401E bars shall maintain 2" clear to bottom of paving bracket in end diaphragm.

(5) Piles shall be oriented as shown.

(6) 2 Spa. @ 6"

(7) Measured to CL Cap

(8) Stage Construction Joint at CL Cap

(9) Pile Casing Required For Piles Within Limits of Reinforced Zone of Temporary MSE Wall, see Layout for additional information.

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_a2.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63816

JMEdwards 5/4/2021 11:29:40 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017608 - 050413 Codron Creek Str-Appr\Drawings\b050413_S202_AB.dgn
REVISED DATE:

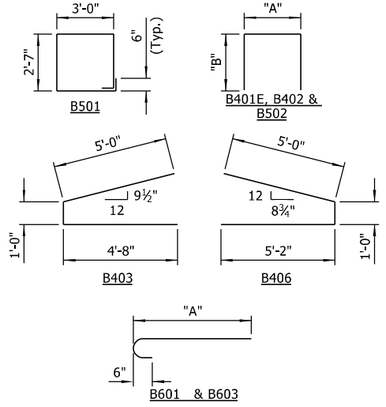
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	52	92
				(1) 07515		END BENTS		63817

BAR LIST

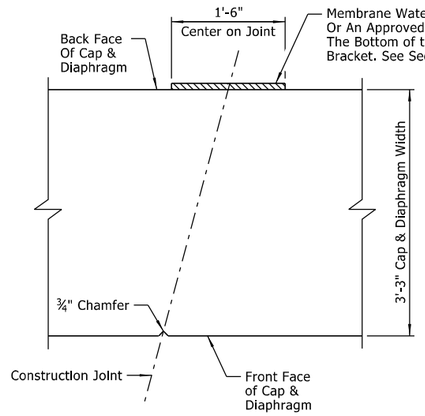
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	48	11'-6"	3'-0"	4'-4"	2"
B402	23	6'-10"	3'-0"	2'-0"	2"
B403	4	10'-6"			2"
B404E	6	5'-3"			Str.
B405E	20	6'-6"			Str.
B406	4	11'-0"			2"
B501	50	11'-8"			2½"
B502	16	7'-11½"	3'-0"	2'-7"	2½"
B503	4	36'-7"			Str.
B504	4	13'-1"			Str.
B505	4	21'-8"			Str.
B506	4	7'-11"			Str.
B601	6	38'-5"	37'-9"		4½"
B602	6	37'-9"			Str.
B603	6	22'-4"	21'-8"		4½"
B604	6	21'-8"			Str.

NOTE:
Bar designations ending in "E" indicate epoxy coated bars.

BAR BENDING DIAGRAMS



NOTE:
Dimensions of bars are out-to-out.



CONSTRUCTION JOINT DETAIL

No Scale

NOTE:
Payment for this work and materials shall be considered subsidiary to other pay items.

LEGEND

U.N.O. = Unless Noted Otherwise

GENERAL NOTES

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 shall be chamfered ¾" unless noted otherwise.

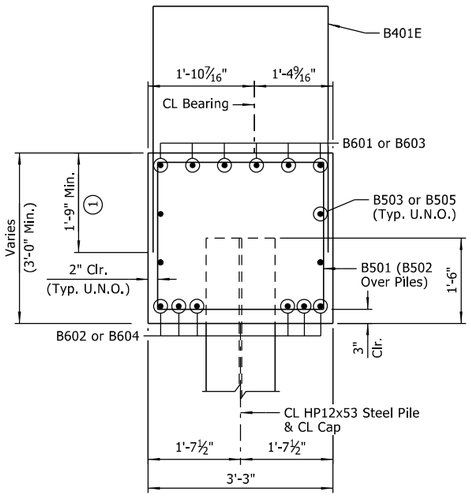
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

All steel piling shall be Grade 50 and shall conform to Std. Dwg. No. 55020.

Granular backfill and pipe underdrain required behind cap. See Dwg. No. 63826 for details.

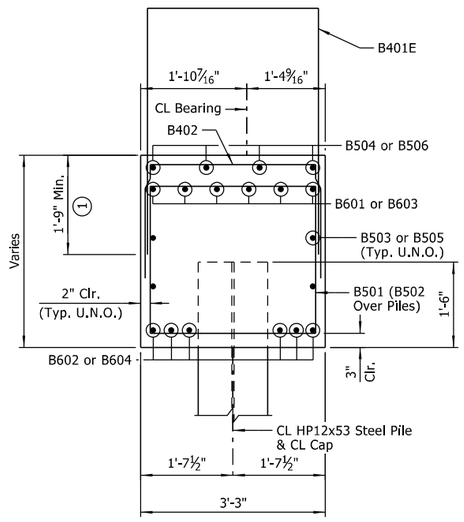
For additional information, see Layout.

(1) B401E bars shall be embedded in the cap so that the top of bars maintain 2" clr. to bottom of paving bracket in end diaphragm.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
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SHEET 3 OF 3
DETAILS OF END BENT NO. 1

ROUTE SEC.

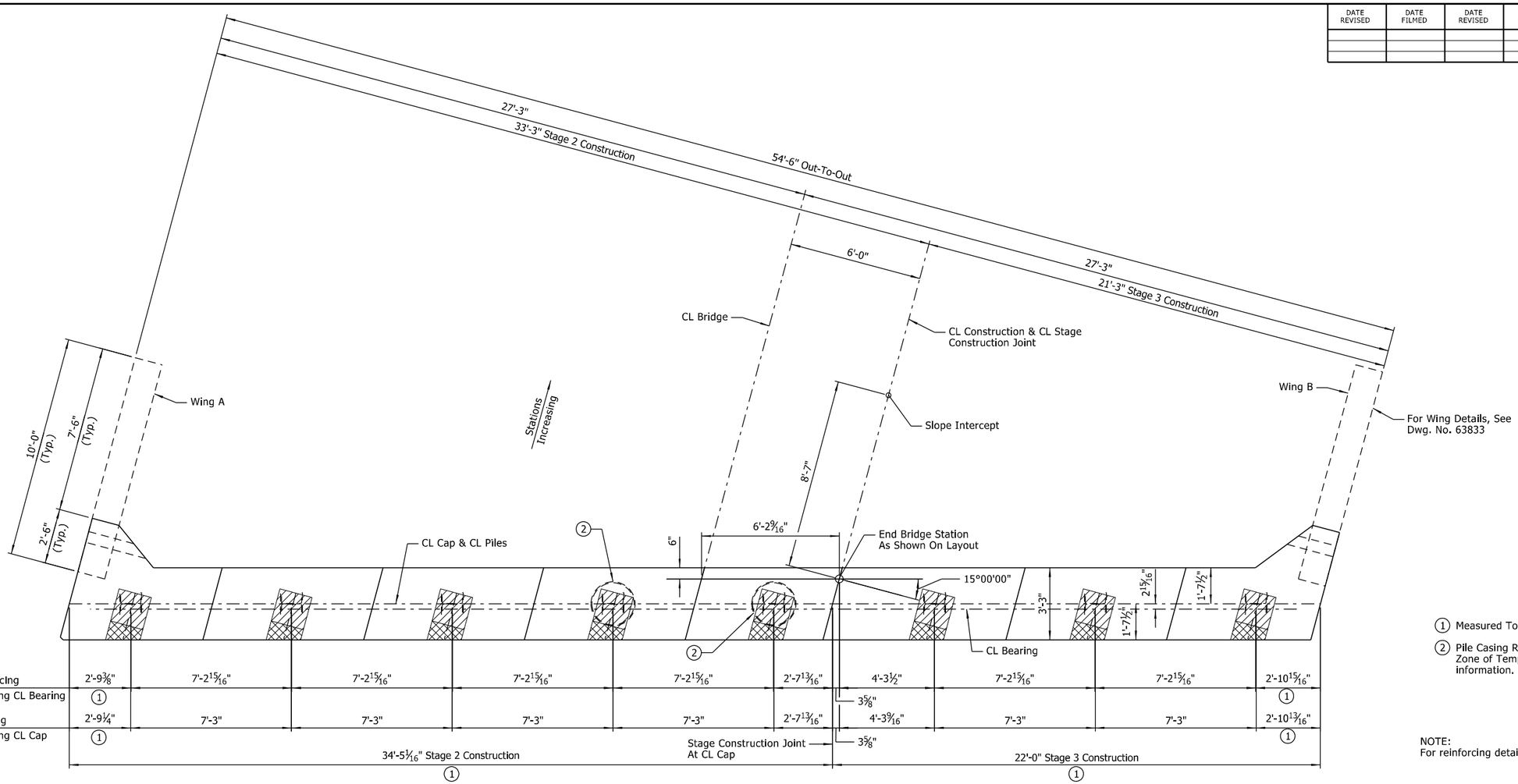
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_a3.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020
BRIDGE NO. 07515 DRAWING NO. 63817

JMEdwards 5/4/2021 11:29:43 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cadron Creek Str-Appr's\Drawings\b050413_S203_AB.dgn
REVISED DATE:

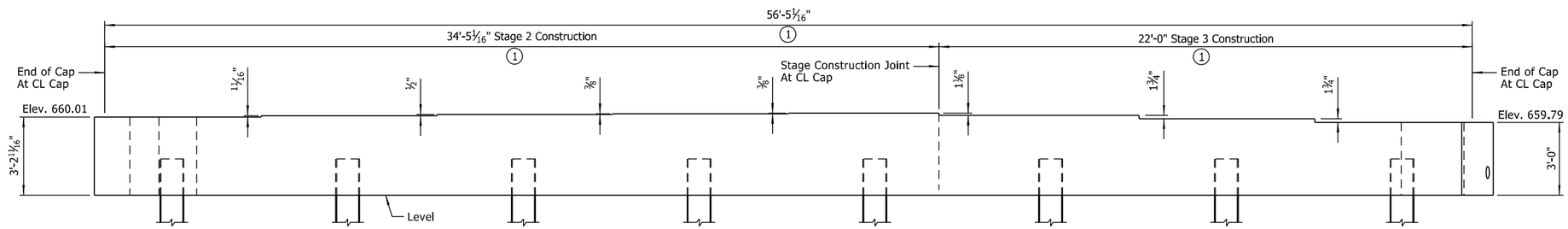
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	53	92
① 07515		END BENTS		63818



PLAN

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



ELEVATION

(Looking Ahead)
Scale: 3/8" = 1'-0"

① Measured To Intersection of CL Cap and Edge of Cap

② Pile Casing Required For Piles Within Limits of Reinforced Zone of Temporary MSE Wall, see Layout for additional information.

NOTE:
For reinforcing details, see Dwg. No. 63819.

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SHEET 1 OF 3
DETAILS OF END BENT NO. 4
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_a4.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020
BRIDGE NO. 07515 DRAWING NO. 63818

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WORKSPACE: ARDOT Bridge (2019)
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REVISED DATE:

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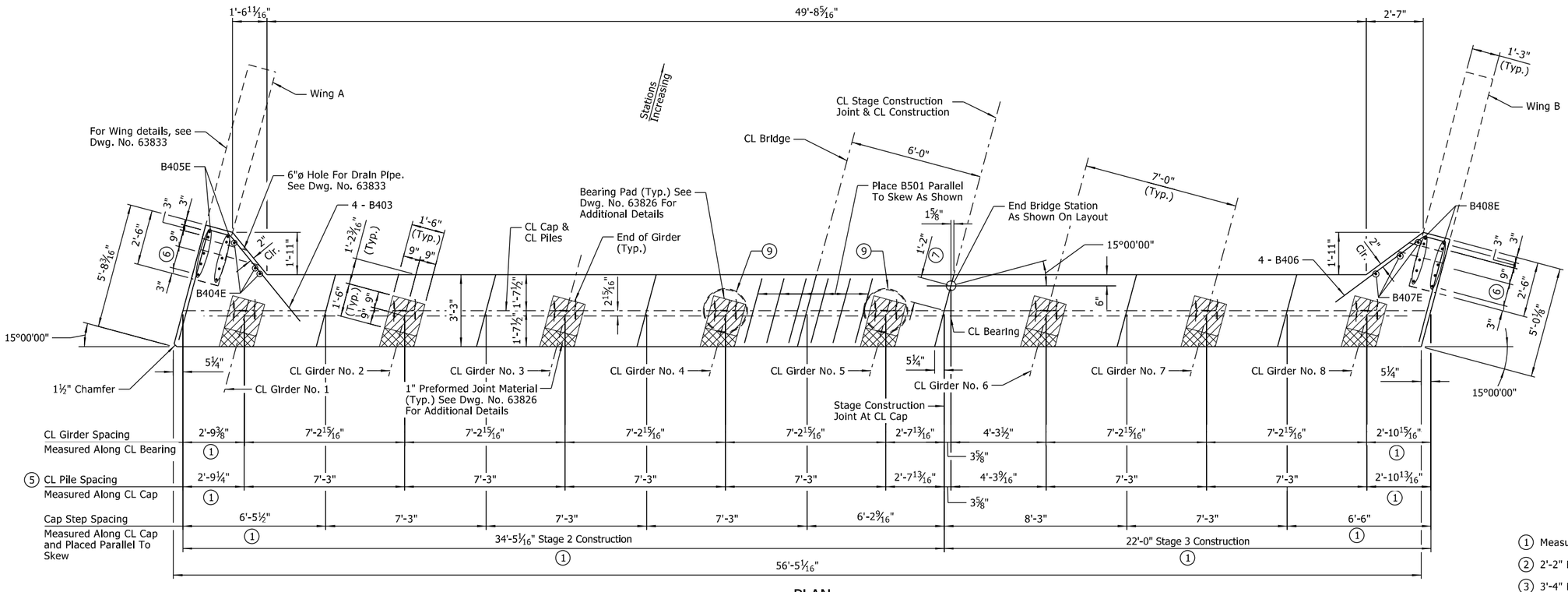
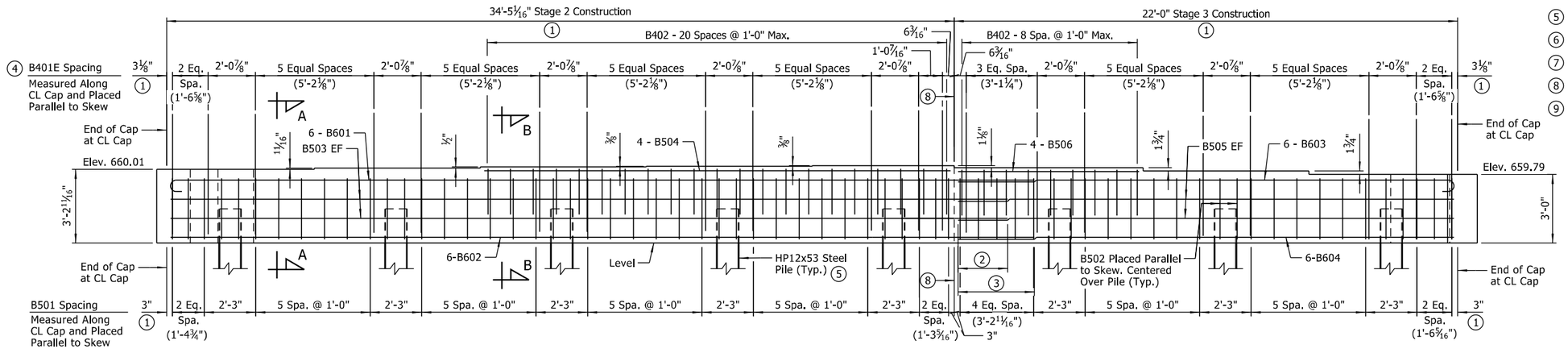
				6	ARK.			
				JOB NO.		050413	54	92
				(1) 07515		END BENTS		63819



PLAN

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



ELEVATION

(Looking Ahead)
Scale: 3/8" = 1'-0"

NOTE:
B404E, B405E, B407E, & B408E bars shall be embedded into the end bent cap to maintain 3" clr. from bottom of cap.

LEGEND

EF = Each Face

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 63820.

(1) Measured To Intersection Of CL Cap And Edge Of Cap

(2) 2'-2" Min. Lap (Typ. #5 Bars)

(3) 3'-4" Min. Lap (Typ. #6 Bars)

(4) Top of B401E bars shall maintain 2" clear to bottom of paving bracket in end diaphragm.

(5) Piles shall be oriented as shown.

(6) 2 Spa. @ 6"

(7) Measured to CL Cap

(8) Stage Construction Joint At CL Cap

(9) Pile Casing Required For Piles Within Limits of Reinforced Zone of Temporary MSE Wall, see Layout for additional information.

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SHEET 2 OF 3
DETAILS OF END BENT NO. 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_a5.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63819

JMEdwards 5/4/2021 11:29:47 AM
WORKSPACE: ARDOT Bridge (209)
L:\20\7\07\0608 - 05043 Cadron Creek Str-Apprs\Drawings\b050413_5205_AB.dgn
REVISED DATE:

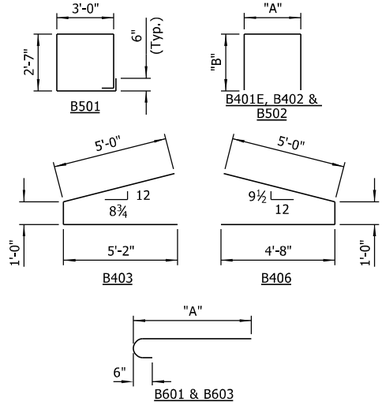
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	55	92
				(1) 07515		END BENTS		63820

BAR LIST

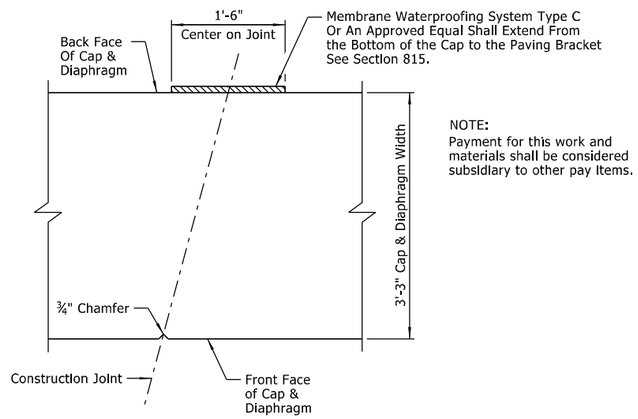
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	48	11'-6"	3'-0"	4'-4"	2"
B402	30	6'-10"	3'-0"	2'-0"	2"
B403	4	11'-0"			2"
B404E	3	5'-5½"			Str.
B405E	10	6'-8½"			Str.
B406	4	10'-6"			2"
B407E	3	5'-2½"			Str.
B408E	10	6'-5½"			Str.
B501	50	11'-8"			2½"
B502	16	7'-11½"	3'-0"	2'-7"	2½"
B503	4	36'-7"			Str.
B504	4	20'-4"			Str.
B505	4	21'-8"			Str.
B506	4	7'-11"			Str.
B601	6	38'-5"	37'-9"		4½"
B602	6	37'-9"			Str.
B603	6	22'-4"	21'-8"		4½"
B604	6	21'-8"			Str.

NOTE:
Bar designations ending in "E" indicate epoxy coated bars.

BAR BENDING DIAGRAMS



NOTE:
Dimensions of bars are out-to-out.



CONSTRUCTION JOINT DETAIL

No Scale

NOTE:
Payment for this work and materials shall be considered subsidiary to other pay items.

LEGEND

U.N.O. = Unless Noted Otherwise

GENERAL NOTES

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 shall be chamfered ¾" unless noted otherwise.

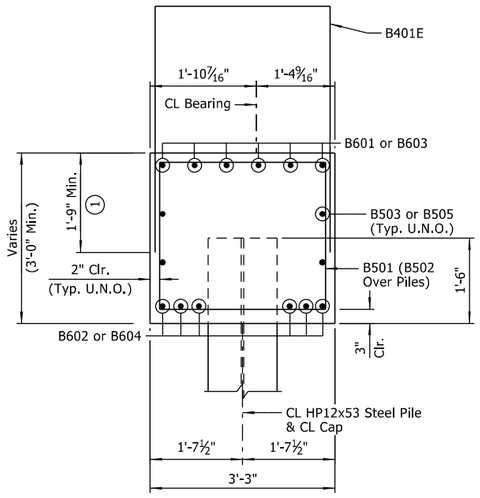
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

All steel piling shall be Grade 50 and shall conform to Std. Dwg. No. 55020.

Granular backfill and pipe underdrain required behind cap. See Dwg. No. 63826 for details.

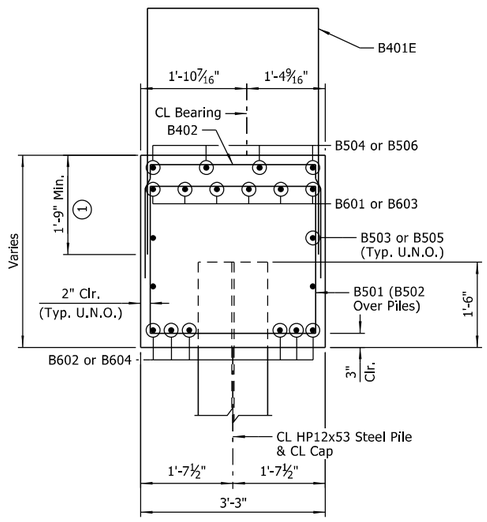
For additional information, see Layout.

(1) B401E bars shall be embedded in the cap so that the top of bars maintain 2" clr. to bottom of paving bracket in end diaphragm.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

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BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENT NO. 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_a6.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63820

JMEdwards 5/4/2021 11:29:51 AM
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REVISED DATE:

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.		050413	56	92
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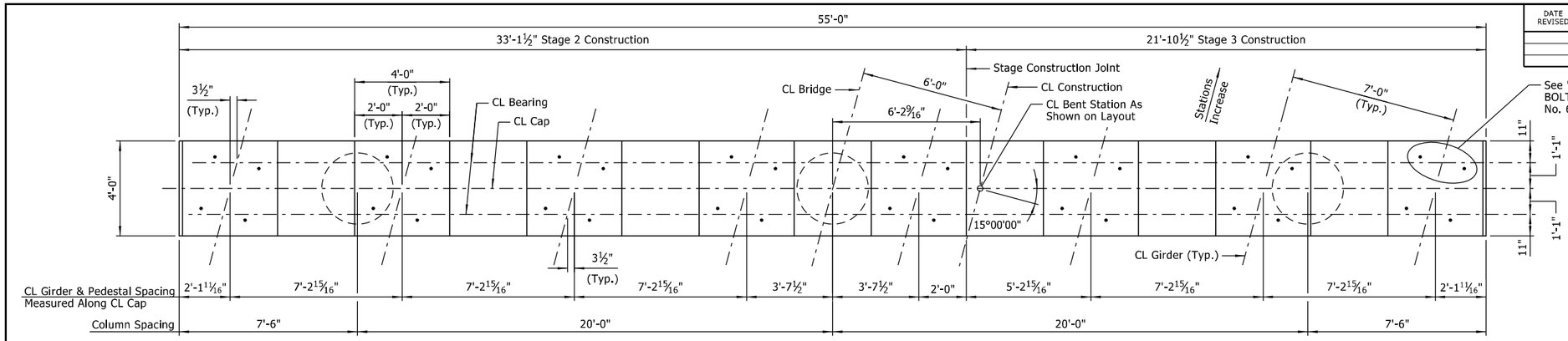
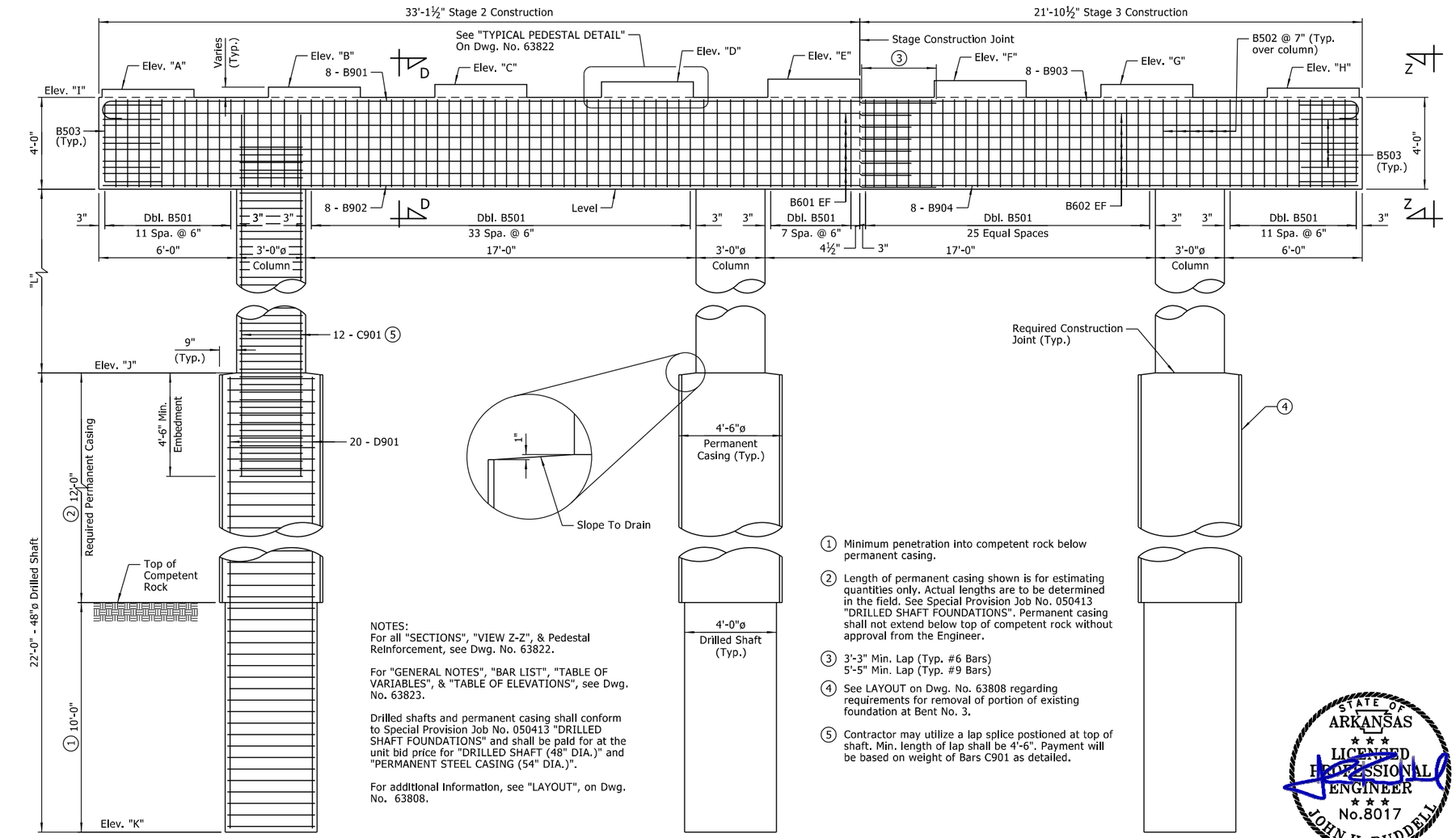


PLAN
Scale: ⅜" = 1'-0"



NOTES:
For all "SECTIONS", "VIEW Z-Z", & Pedestal Reinforcement, see Dwg. No. 63822.

For "GENERAL NOTES", "BAR LIST", "TABLE OF VARIABLES", & "TABLE OF ELEVATIONS", see Dwg. No. 63823.

Drilled shafts and permanent casing shall conform to Special Provision Job No. 050413 "DRILLED SHAFT FOUNDATIONS" and shall be paid for at the unit bid price for "DRILLED SHAFT (48" DIA.)" and "PERMANENT STEEL CASING (54" DIA.)".

For additional information, see "LAYOUT", on Dwg. No. 63808.

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

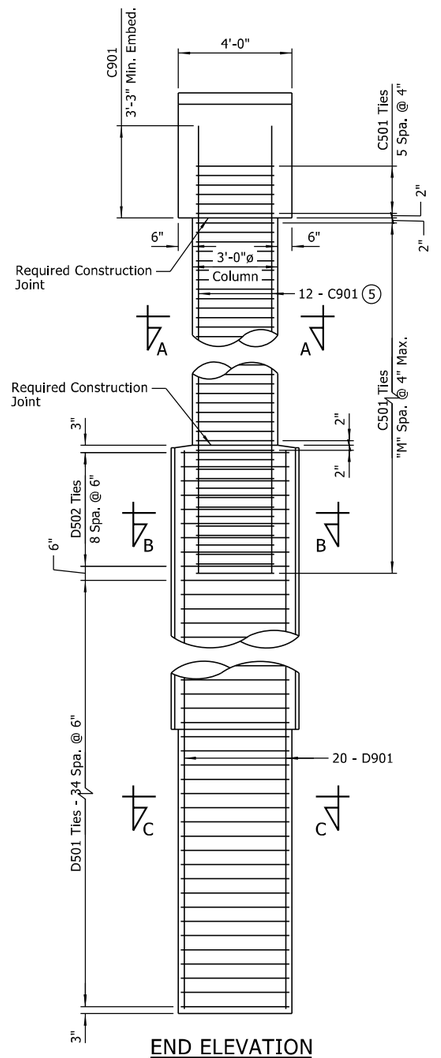
(2) Length of permanent casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job No. 050413 "DRILLED SHAFT FOUNDATIONS". Permanent casing shall not extend below top of competent rock without approval from the Engineer.

(3) 3'-3" Min. Lap (Typ. #6 Bars)
5'-5" Min. Lap (Typ. #9 Bars)

(4) See LAYOUT on Dwg. No. 63808 regarding requirements for removal of portion of existing foundation at Bent No. 3.

(5) Contractor may utilize a lap splice postioned at top of shaft. Min. length of lap shall be 4'-6". Payment will be based on weight of Bars C901 as detailed.

ELEVATION - BENT NOS. 2 & 3
(Looking Ahead)
Scale: ⅜" = 1'-0"



END ELEVATION
Scale: ⅜" = 1'-0"

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: MAY 2020 FILENAME: b050413_S7.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: JJB DATE: MAY 2020
BRIDGE NO. 07515 DRAWING NO. 63821

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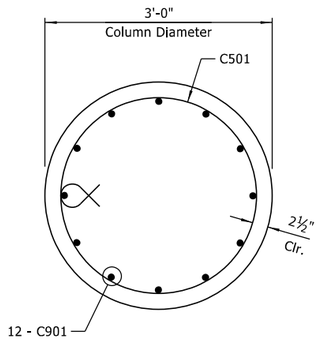
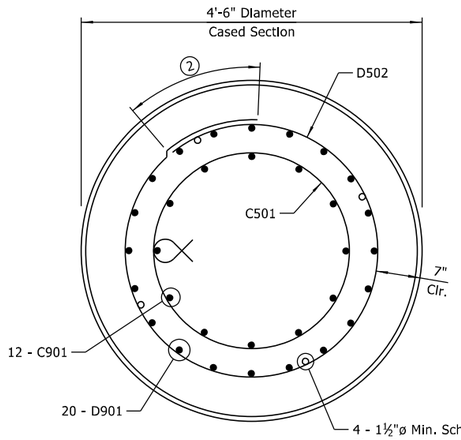
WORKSPACE: ARDOT Bridge (2019)
L:\2017\170608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S207_BE.dgn
REVISED DATE:

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.		050413	57	92
				(1) 07515		INT. BENTS		63822

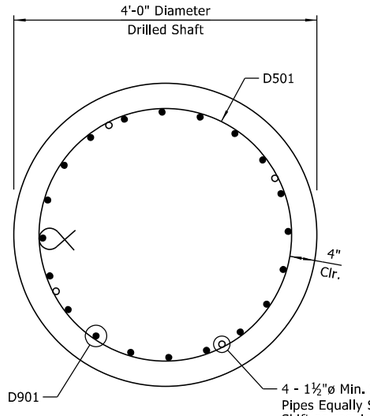


SECTION A-A
Scale: 1" = 1'-0"



4 - 1½"ø Min. Schedule 40 Steel Pipes Equally Spaced (Approx.). Shift as required to center pipes between adjacent bars. See Special Provision Job No. 050413 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS"

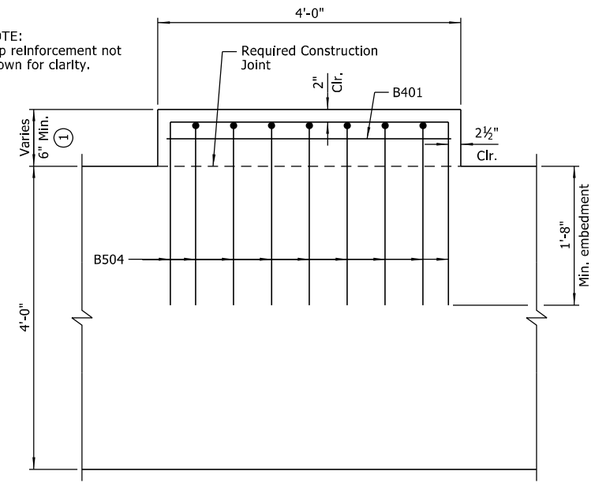
SECTION B-B
Scale: 1" = 1'-0"



4 - 1½"ø Min. Schedule 40 Steel Pipes Equally Spaced (Approx.). Shift as required to center pipes between adjacent bars. See Special Provision Job No. 050413 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS"

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

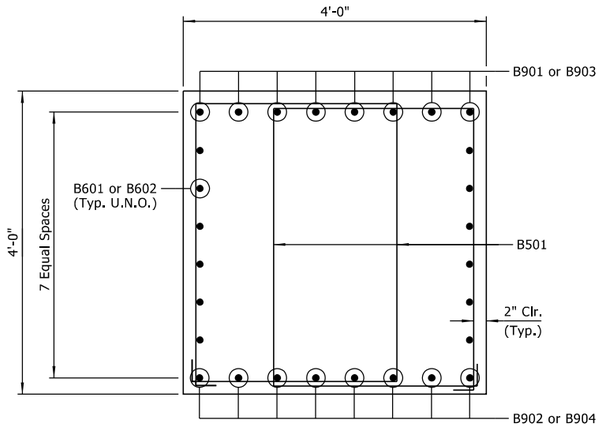
NOTE:
Cap reinforcement not shown for clarity.



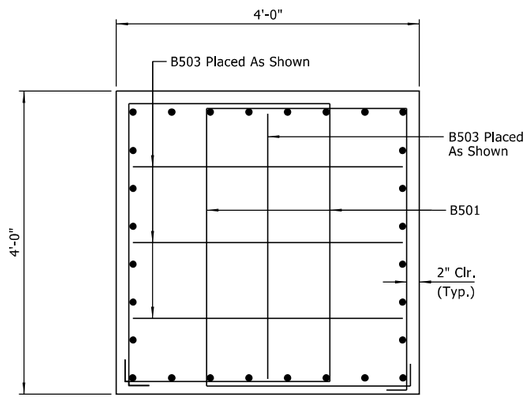
TYPICAL PEDESTAL DETAIL
Scale: 1" = 1'-0"

(1) See Dwg. No. 63823 for "TABLE OF ELEVATIONS".

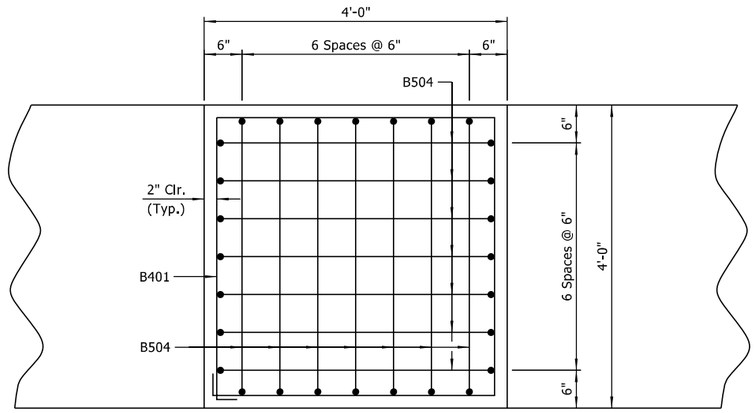
(2) Lap splices shall be rotated 90° for each stirrup so that adjacent stirrups do have do not have adjacent lap splices at the same location.



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



VIEW Z-Z
(Typ. both ends of cap)
Scale: 1" = 1'-0"



PLAN OF PEDESTAL
Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
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BRIDGE ENGINEER

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

DRAWN BY: JJB DATE: MAY 2020 FILENAME: b050413_S8.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: JJB DATE: MAY 2020

BRIDGE NO. 07515 DRAWING NO. 63822

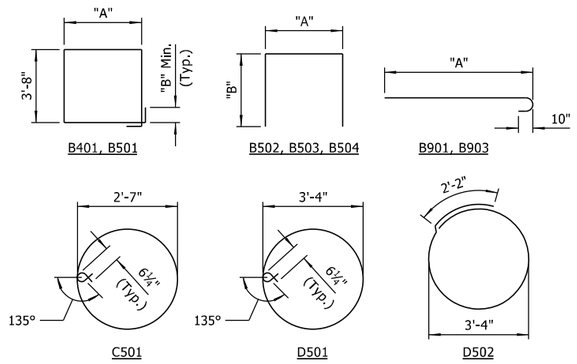
JMEdwards 5/4/2021 11:29:53 AM
WORKSPACE: ARDOT Bridge (2019)
L:\20\7\07\07608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S208_BE.dgn
REVISED DATE:

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.		050413	58	92
				(1) 07515		INT. BENTS		63823

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
COMMON BARS	B401	8	15'-0"	3'-8"	4½"	2"
	B501	184	13'-2"	2'-8"	6"	2½"
	B502	15	10'-10"	3'-8"	3'-8"	2½"
	B503	8	8'-3"	3'-6"	2'-6"	2½"
	B504	112	8'-5"	3'-7"	2'-6"	2½"
	B601	12	36'-5"			Str.
	B602	12	21'-7"			Str.
	B901	8	39'-10"	38'-7"		9"
	B902	8	38'-7"			Str.
	B903	8	22'-10"	22'-7"		9"
	B904	8	21'-7"			Str.
	(1) D501	105	11'-10"			38¾"
	(1) D502	27	12'-6"			3¾"
	(1) D901	60	21'-6"			Str.
BENT 2	C501	183	9'-6"			3¾"
	C901	36	21'-3"			Str.
BENT 3	C501	168	9'-6"			3¾"
	C901	36	19'-9"			Str.

BAR BENDING DIAGRAMS

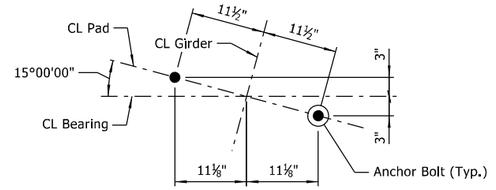


NOTES:
Dimensions of bars are out-to-out.

Common bars shown are for one bent.

(1) Non-pay item. Subsidiary to the pay item "DRILLED SHAFT (48" DIA.)".

NOTE:
For details of elastomeric bearings and anchor bolts, see Dwg. No. 63824.



TYPICAL ANCHOR BOLT LAYOUT

No Scale

GENERAL NOTES

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 shall be chamfered ¾" unless noted otherwise.

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.

For additional information, see Layout.

TABLE OF VARIABLES

BENT NO.	"L"	"M"
2	13'-6"	54
3	12'-0"	49

TABLE OF ELEVATIONS

ELEV.	BENT NO. 2	BENT NO. 3
A	660.27	659.66
B	660.39	659.78
C	660.50	659.90
D	660.62	660.03
E	660.73	660.15
F	660.67	660.10
G	660.51	659.94
H	660.34	659.79
I	659.77	659.16
J	642.27	643.16
K	620.27	621.16

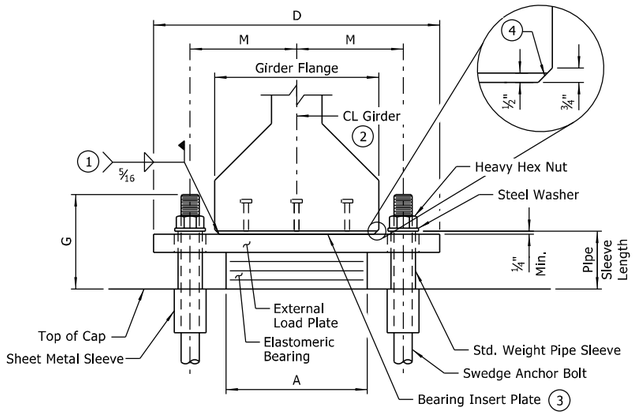
Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

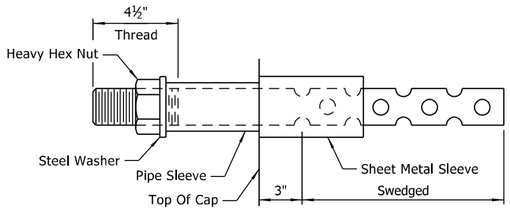
DRAWN BY: JJB DATE: MAY 2020 FILENAME: b050413_S9.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: JJB DATE: MAY 2020
BRIDGE NO. 07515 DRAWING NO. 63823

JMEdwards 5/4/2021 11:29:54 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S209_BE.dgn
REVISED DATE:

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.		050413	59	92
				(1) 07515		ELASTOMERIC BEARINGS		63824



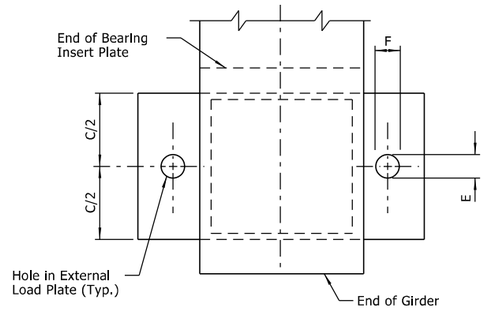
FRONT VIEW



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 the girder, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. 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 A653, 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 BEAM SPANS (A709, GR. 50W)".



PLAN VIEW

Prior to erection of the girders, the Contractor shall verify the orientation of the bearings with respect to T_a and T_b.

GENERAL NOTES

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

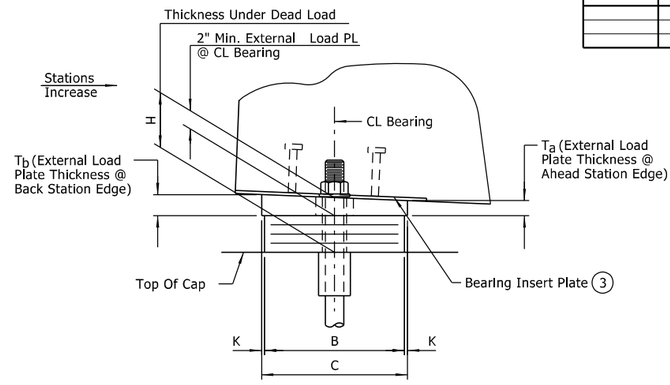
External load plates shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates 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.

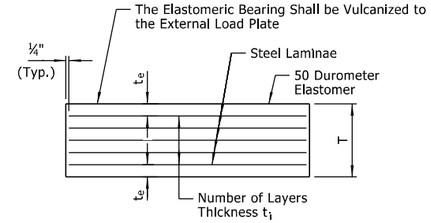
Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M 270, GR. 50W)". External load plates will not be measured or paid for separately but will be considered incidental to the unit price bid for "ELASTOMERIC BEARINGS".

Bearings 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.



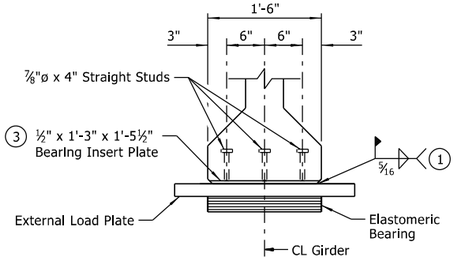
SIDE VIEW

NOTE:
The grade and direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in "TABLE OF FABRICATOR VARIABLES".

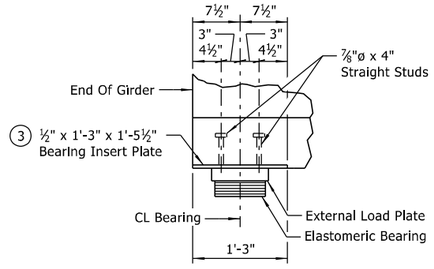


t_e = Thickness of Elastomer Cover on Top and Bottom of Pad
t_i = Thickness of Elastomer Between Steel Laminae
N = Number of Elastomer Layers of Thickness t_i

ELASTOMERIC BEARING



FRONT VIEW



SIDE VIEW

BEARING INSERT PLATE & STUD DETAIL

(1) Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the bearing insert plate will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) Centerline elastomeric pad shall be aligned with centerline girder.

(3) Bearing insert plate (A709, Gr. 50W) & studs shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE II)". Studs shall conform to Subsection 807.08.

(4) Bevel Bearing Insert Plate to conform to girder chamfer.

TABLE OF FABRICATOR VARIABLES

Location		Bearing Type	No. Of Bearings Each Bent	(5)	Elastomeric Pad								External Load Plate									Anchor Bolt				
Bent No.	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 (Dia. x L)	Grade	Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
2 Bk.	All	Fixed	8	105	7 7/16"	4 11/16"	18"	8"	3	½"	¼"	4 @ 12 Ga.	2 7/16"	9"	28½"	2¼"	2¼"	-	½"	11½"	2.24	2.38	1½" x 27"	55	1½" x 4 15/16"	3" x 18"	3"
2 Ah.	All	Fixed	8	105	7⅛"	4⅜"	18"	8"	3	½"	¼"	4 @ 12 Ga.	2 7/16"	9"	28½"	2¼"	2¼"	-	½"	11½"	1.95	2.05	1½" x 27"	55	1½" x 4⅜"	3" x 18"	3"
3 Bk.	All	Fixed	8	105	7 9/16"	4 9/16"	18"	8"	3	½"	¼"	4 @ 12 Ga.	2 7/16"	9"	28½"	2¼"	2¼"	-	½"	11½"	2.14	2.24	1½" x 27"	55	1½" x 4 13/16"	3" x 18"	3"
3 Ah.	1-4	Fixed	4	105	7⅛"	4⅜"	18"	8"	3	½"	¼"	4 @ 12 Ga.	2 7/16"	9"	28½"	2¼"	2¼"	-	½"	11½"	2.00	2.00	1½" x 27"	55	1½" x 4⅜"	3" x 18"	3"
3 Ah.	5-8	Fixed	4	105	7⅛"	4⅜"	18"	8"	3	½"	¼"	4 @ 12 Ga.	2 7/16"	9"	28½"	2¼"	2¼"	-	½"	11½"	1.97	2.03	1½" x 27"	55	1½" x 4⅜"	3" x 18"	3"

(5) Maximum Design Load (Kips) = LRFD Service 1 Limit State

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: JUN. 2020 FILENAME: b050413_e1.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: No Scale
DESIGNED BY: CSW DATE: JUN. 2020

BRIDGE NO. 07515 DRAWING NO. 63824

JMEdwards 5/4/2021 11:29:55 AM
WORKSPACE: ARDOT Bridge (2019)
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REVISED DATE:

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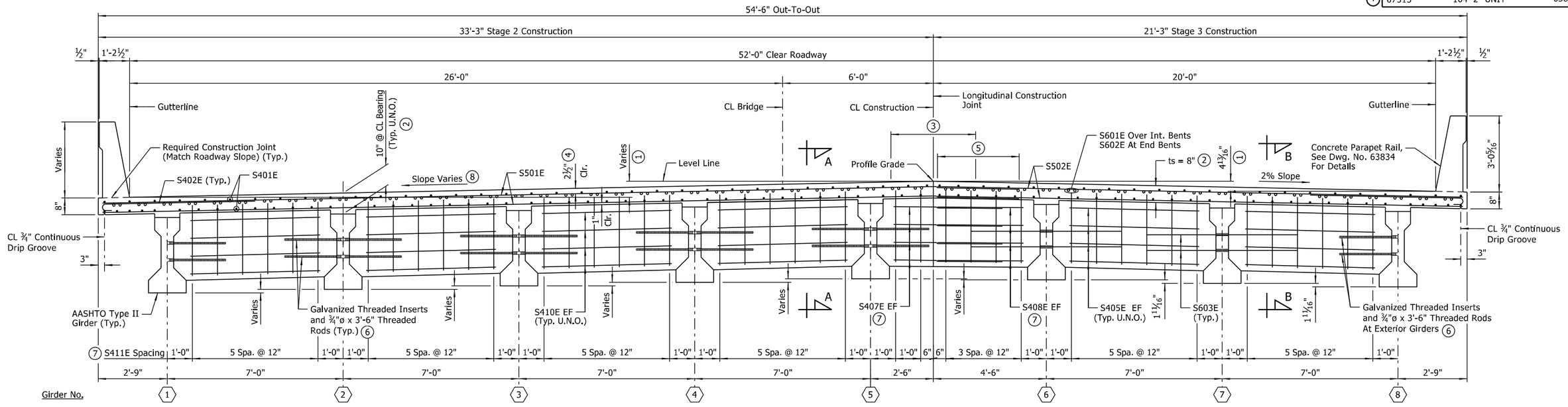
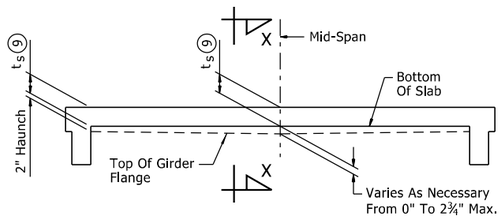
				JOB NO.		050413	60	92
				(1) 07515		104'-2" UNIT		63825



STAGE 2 CONSTRUCTION
(Showing Partial Depth Intermediate Diaphragms)

STAGE 3 CONSTRUCTION
(Showing Partial Depth End Diaphragms)

TYPICAL ROADWAY SECTION
Scale: ½" = 1'-0"



GIRDER ELEVATION
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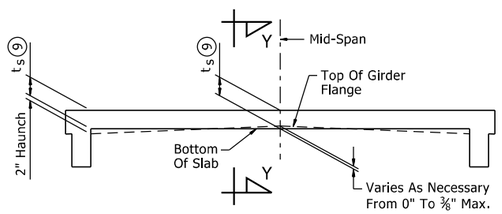

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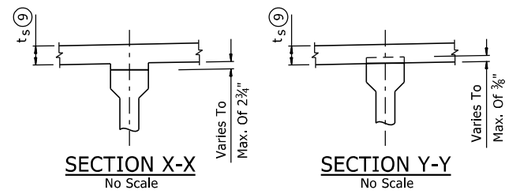


SECTION X-X
No Scale

SECTION Y-Y
No Scale

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

SLAB REINFORCING:

Transverse: Stage 2:
S501E @ 6" O.C. Top and Bottom
S402E @ 6" O.C. in Top of Overhang (Bundled with #5 bars)

Stage 3:
S502E @ 6" O.C. Top and Bottom
S402E @ 6" O.C. in Top of Overhang (Bundled with #5 bars)

Longitudinal: Stage 2 & Stage 3:
S401E in Top and Bottom As Shown
S601E As Shown Over Int. Bents, see "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 63828
S602E As Shown At End Bents, see "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 63828

t_s = slab thickness as shown on superstructure details. See "TYPICAL ROADWAY SECTION".

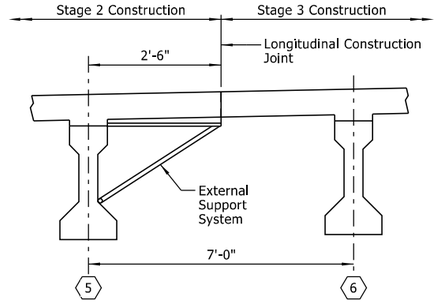
(9) Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

"GIRDER ELEVATION" sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than ⅜" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

NOTES:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06. Placement of slab bolsters or hi-chairs with full-length lower runners directly on removable deck forms will not be allowed.

For "SECTION A-A" & "SECTION B-B", see Dwg. No. 63827.



NOTE:
Stage 2 external supports at Girder 5 shall remain in place until after completion of the Stage 3 deck pour. See Subsection 802.15 for additional information regarding the removal of the support system.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT
(Looking Ahead)
No Scale

(1) Profile Grade to Gutterline

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

(3) Rounding is eliminated due to longitudinal construction joint located at Profile Grade.

(4) Tolerance: Minus = ¼"
Plus = to the amount of slab thickening used to meet slab thickness tolerance.
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(5) 2'-7" min. lap for #4 bars
3'-3" min. lap for #5 bars

(6) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾"ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE II)".

(7) Bars used in both the partial depth intermediate diaphragms and partial depth end diaphragms

(8) See "CROSS-SLOPE TRANSITION SKETCH" on Dwg. No. 63810.

LEGEND
EF = Each Face
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 1 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b050413_s1.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63825

JMEdwards 5/4/2021 11:29:57 AM
WORKSPACE: ARDOT Bridge (2019)
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REVISED DATE:

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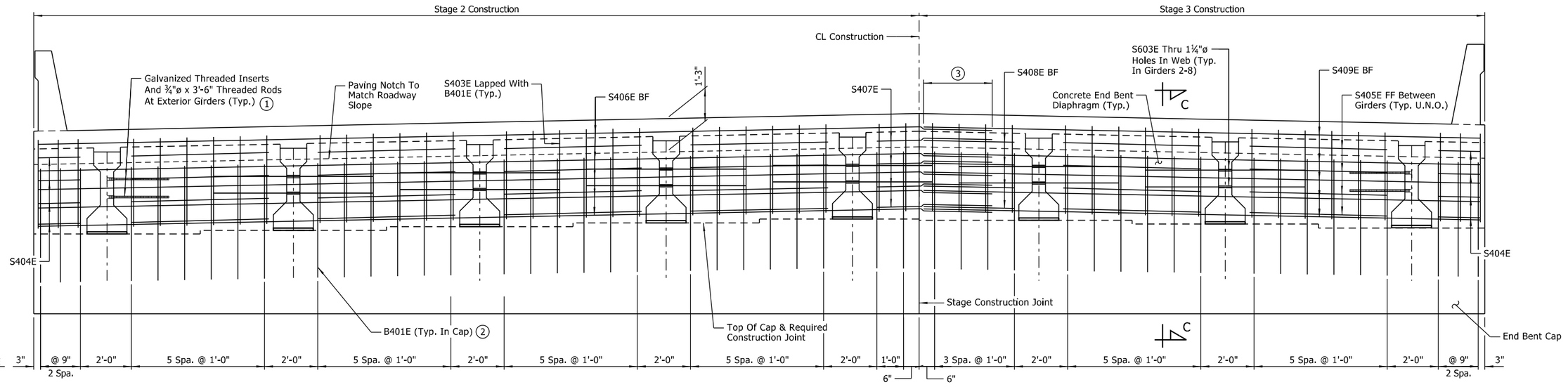
				6	ARK.			
				JOB NO.		050413	61	92
				(1) 07515		164'-2" UNIT		63826

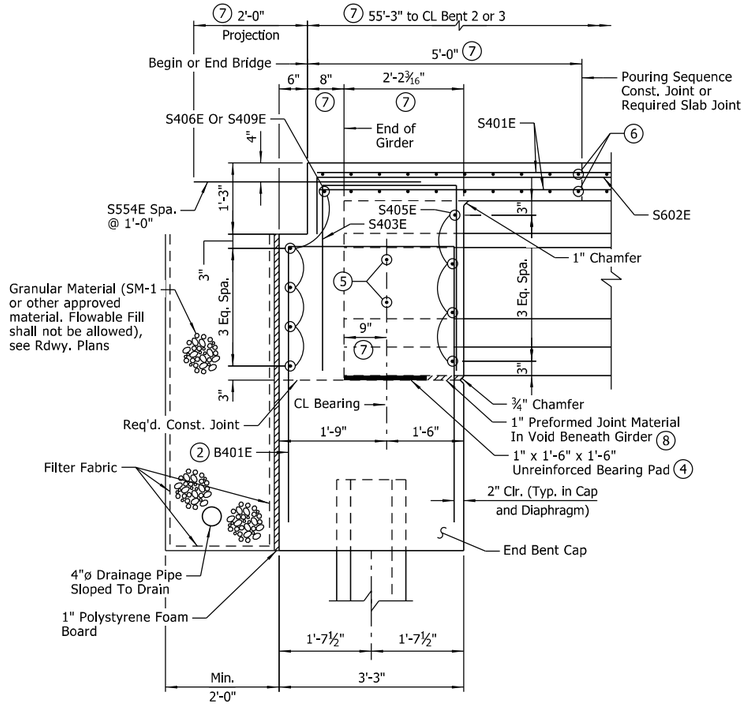
NOTE:
Deck reinforcing omitted for clarity.



TYPICAL SECTION AT END BENT DIAPHRAGMS

(Looking Ahead At Bent 4)
Scale: ½" = 1'-0"

NOTE:
Diaphragm at Bent 1 similar.



SECTION C-C

(Looking Normal To Bent)
Scale: ¾" = 1'-0"

NOTES:
Limits of the concrete End Bent Diaphragm shall match plan dimension of End Bent Cap.

Preformed Joint Material will not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE".

For additional details of pipe underdrain, see Std. Dwg. PU-1 and Section 611. Pipe underdrains will not be measured or paid for separately, but shall be considered subsidiary to the unit price bid for "UNCLASSIFIED EXCAVATION".

1" Polystyrene Foam Board, Filter Fabric and Granular Material shall not be paid for directly, but shall be considered subsidiary to the various bid items.

(1) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾"ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GRIDERS (TYPE II)".

(2) See End Bent Details on Dwg. Nos. 63815 - 63820 for additional details.

(3) 2'-7" min. lap (Typ. #4 bars)

(4) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE".

(5) S603E thru 1¼"ø holes in web or ¾"ø threaded inserts at exterior girders.

(6) #5 bars, See "REINFORCING PLAN & SLAB POURING SEQUENCE on Dwg. No. 63828 for bar designations. (Typ. U.N.O.)

(7) Measured along CL Girder

(8) 1" Preformed Joint Material shall be AASHTO M 153, Type 1 per Subsection 501.02(h)(1)

LEGEND

U.N.O. = Unless Noted Otherwise
FF = Front Face
BF = Back Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 2 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUN. 2020 FILENAME: b050413_s2.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: AS SHOWN
DESIGNED BY: JJB DATE: JUN. 2020

BRIDGE NO. 07515 DRAWING NO. 63826

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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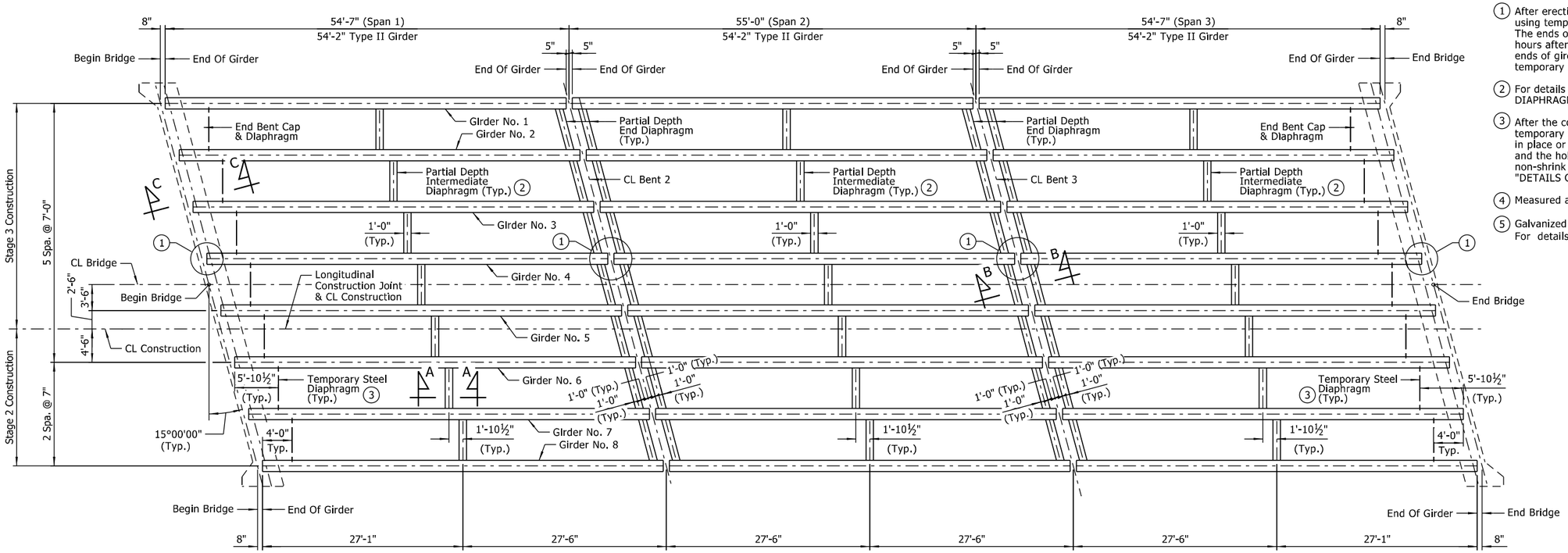
				(1) 07515		164'-2" UNIT		63827



FRAMING PLAN

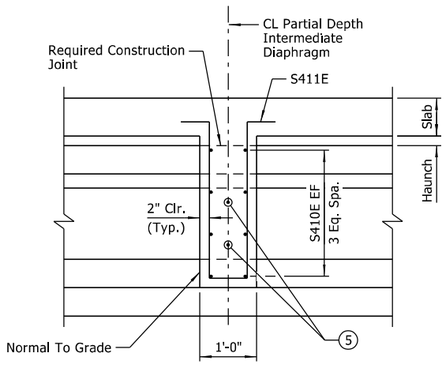
Scale: ⅛" = 1'-0"

NOTE:
For "SECTION C-C", see Dwg. No. 63826.

1. After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps. The ends of girders at intermediate bents shall remain blocked until 72 hours after all partial depth concrete diaphragms are poured. The ends of girders at end bents shall remain blocked until after the temporary steel diaphragms are in place.
2. For details of alternate steel diaphragm, see "DETAILS OF STEEL DIAPHRAGM".
3. After the concrete deck construction and curing are complete, the temporary steel diaphragm and connecting elements may remain in place or be removed and become the property of the Contractor and the holes in the girder webs filled with a QPL approved non-shrink epoxy grout. For additional diaphragm details, see "DETAILS OF STEEL DIAPHRAGM".
4. Measured along CL Girder
5. Galvanized threaded inserts and ¾" Dia. x 3'-6" threaded rods. For details, see "TYPICAL ROADWAY SECTION" on Dwg. No. 63825

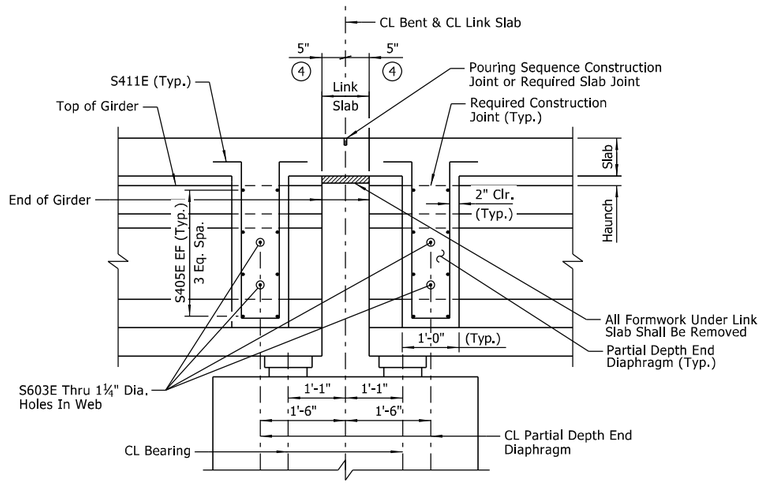
LEGEND

EF = Each Face



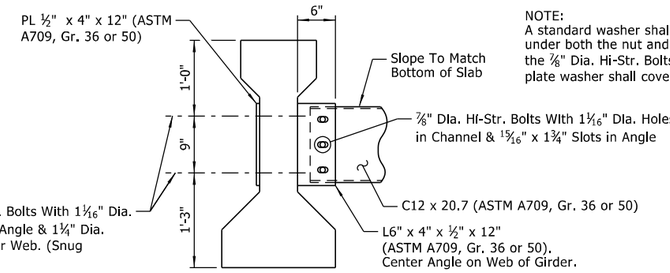
SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

(Looking Normal To CL Bent)
Scale: ¾" = 1'-0"



NOTE:
A standard washer shall be supplied under both the nut and the head of the ⅞" Dia. Hi-Str. Bolts. An additional plate washer shall cover the angle slots.

DETAILS OF STEEL DIAPHRAGM

No Scale

Steel Diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". The Temporary Steel Diaphragm and components will not be paid for directly, but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE II)".

Permanent Steel Diaphragms may be used in lieu of concrete diaphragms at locations noted as "Partial Depth Intermediate Diaphragm". Payment will be based on concrete diaphragms.

All components of Steel Diaphragms (Permanent and Temporary) shall be galvanized in accordance with AASHTO M 111.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 3 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2020 FILENAME: b050413_s3.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63827

JMEdwards 5/4/2021 11:29:59 AM
WORKSPACE: ARDOT Bridge (2019)
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REVISED DATE:

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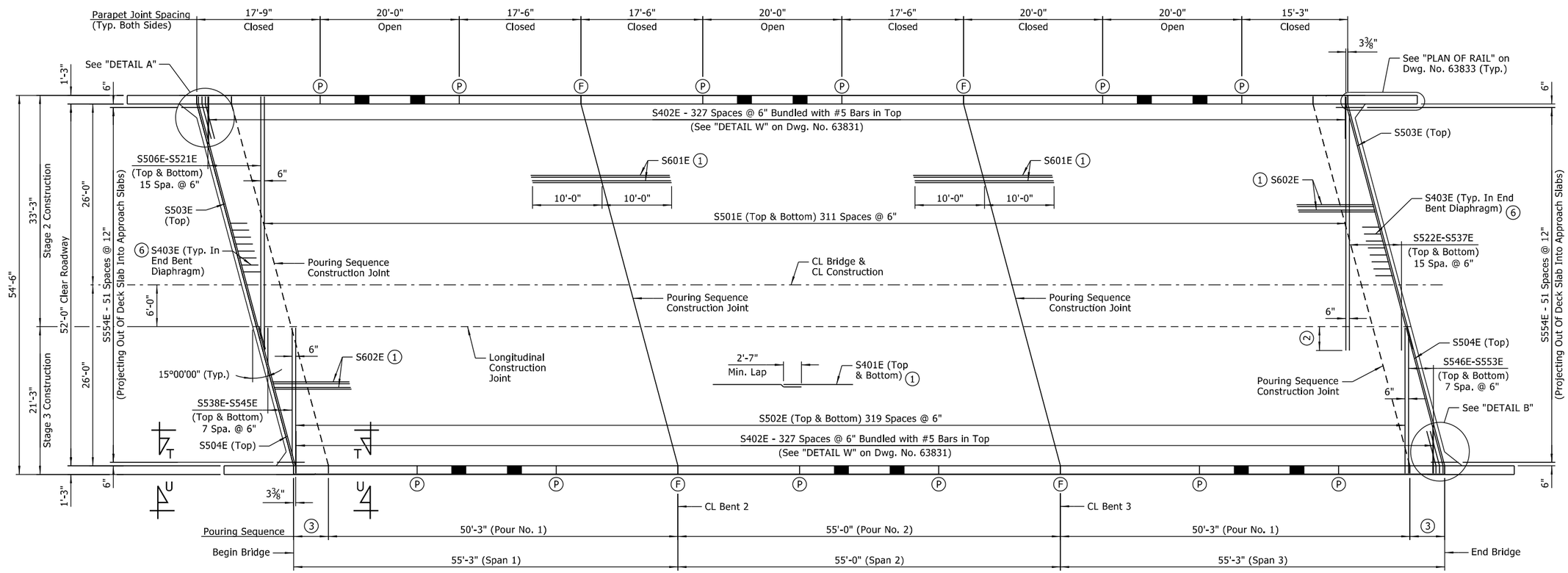


REINFORCING PLAN & SLAB POURING SEQUENCE

Scale: ⅛" = 1'-0"

(1) Placed as shown in "TYPICAL ROADWAY" on Dwg. No. 63825 .

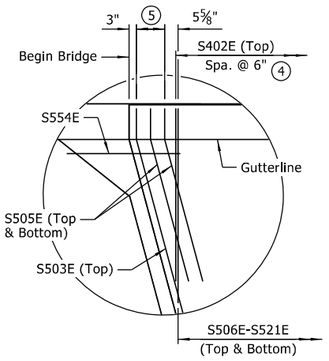
(2) 3'-5" bar projection

(3) 5'-0" (Pour No. 3)

(4) Bundled with #5 bars in top

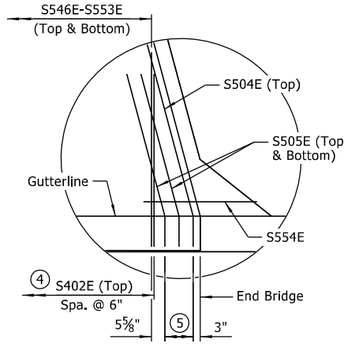
(5) 2 Spa. @ 6"

(6) See Dwg. No. 63826 for additional details of reinforcing steel in concrete end bent diaphragms.



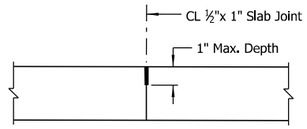
DETAIL A

Scale: ⅜" = 1'-0"



DETAIL B

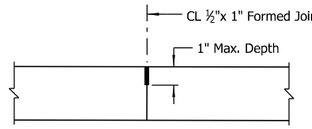
Scale: ⅜" = 1'-0"



SLAB JOINT DETAIL

No Scale

Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet except at end bent diaphragms. 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.



LONGITUDINAL CONSTRUCTION JOINT

No Scale

NOTE:
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.

NOTES:
Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 63834.

Rails and wings are included in span construction and are included in span quantities.

Required slab joints and pouring sequence construction joints shall align with parapet open joints at the gutterline, unless noted otherwise.

For "ALTERNATE SLAB POURING SEQUENCE" & "SLAB POURING SEQUENCE NOTES", see Dwg. No. 63831.

For "GENERAL NOTES - SUPERSTRUCTURE", see Dwg. No. 63835.

For bar lists and bar bending diagrams, see Dwg. No. 63832.

For "SECTION T-T" and "VIEW U-U", see Dwg. No. 63833.

(P) Partial-Depth Parapet Joint at this location

(F) Full-Depth Parapet Joint at this location

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 4 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

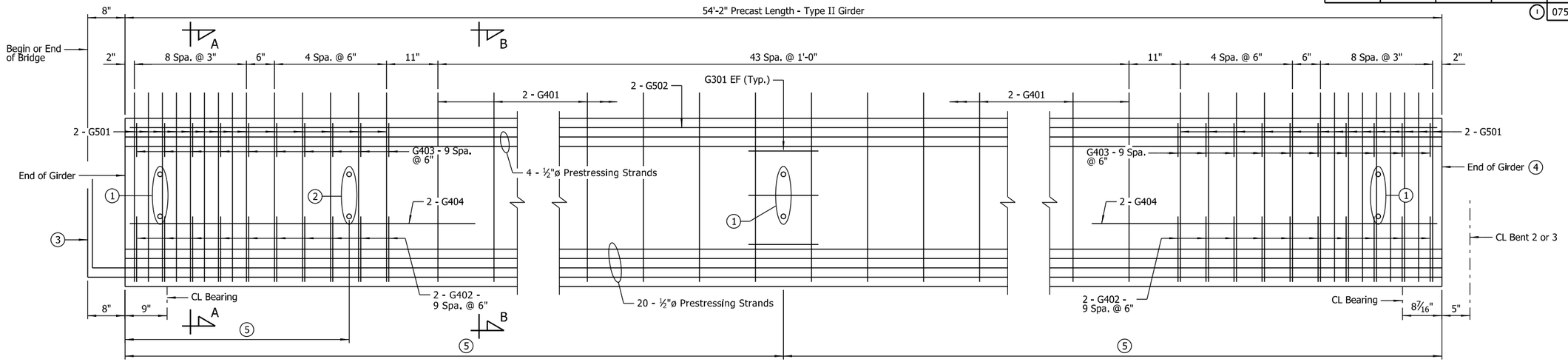
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b050413_s4.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63828

JMEdwards 5/4/2021 11:30:00 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S304_SB.dgn
REVISED DATE:

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.		050413	64	92
				(1) 07515		164'-2" UNIT		63829



TYPICAL GIRDER ELEVATION (TYPE II) - 54'-2"

(Span 1 Shown, Spans 2 & 3 Similar)
Scale: 1" = 1'-0"

(1) Connection for End Bent or Partial Depth Diaphragm: ¾"ø threaded inserts at interior face of exterior girders or 1¼"ø holes at Interior girders. See Dwg. No. 63830 for spacing and Dwg. Nos. 63825 & 63826 for additional details.

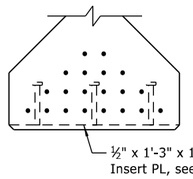
(2) Connection for Temporary Steel Diaphragm: 1¼"ø holes in web. See Dwg. No. 63830 for additional details.

(3) Prestressing Strands bent up into end bent diaphragm. See "END OF GIRDER VIEW AT END BENT".

(4) End of Girder at Intermediate Bent to receive an epoxy coating. See "END OF GIRDER VIEW AT INTERMEDIATE BENT".

(5) See Dwg. No. 63830 for spacing of connections for temporary steel diaphragm and partial depth diaphragms.

At intermediate bents only, saw cut or grind all strands flush with the end of the girder. The ends of the girders and the cut-off strands shall be coated with a 1/16" min. thick coating of a QPL approved epoxy resin.

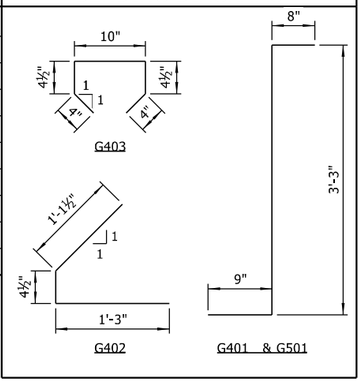


END OF GIRDER VIEW AT INTERMEDIATE BENT

No Scale

BAR LIST - PER GIRDER			
MARK	NO. REQ'D	LENGTH	P.D.
G301	6	3'-9"	Str.
G401	88	4'-6"	2"
G402	40	2'-8"	2"
G403	20	2'-1"	2"
G404	4	6'-2"	Str.
G501	56	4'-5"	2½"
G502	2	53'-10"	Str.

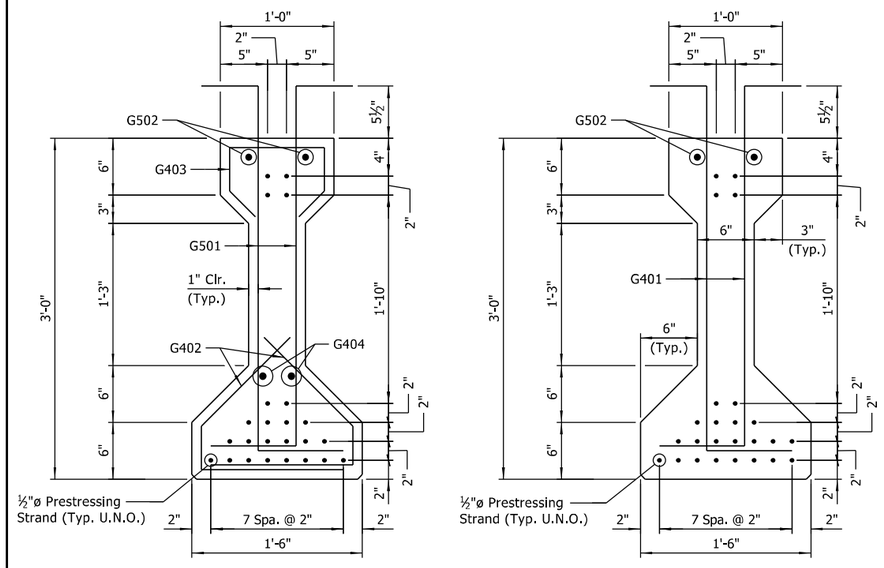
BENDING DIAGRAMS



NOTES:
All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE II)".

At the Contractor's option, the two G402 bars may be furnished as one bar.

At the Contractor's option, ⅜" diameter strands pulled to 2,000 lbs. may be substituted for bars G502.



SECTION A-A

Scale: 1½" = 1'-0"

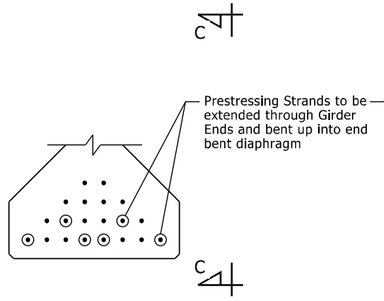
SECTION B-B

Scale: 1½" = 1'-0"

NOTES:
Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but will be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE II)".

Prestressing strands shall be bonded along the entire length of the girder.

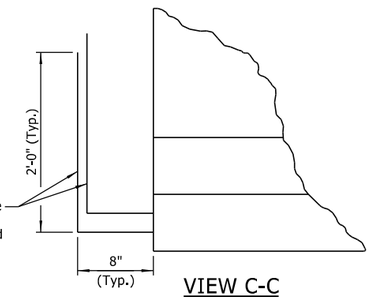


END OF GIRDER VIEW AT END BENT

No Scale

At end bents only, saw and shop bend 6 bottom prestressing strands from the end of the girder into end bent diaphragms as shown.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands shall not be changed. Saw cut or grind remaining strands to within 1" of the end of the girder.



VIEW C-C

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
No.8017
Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 5 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

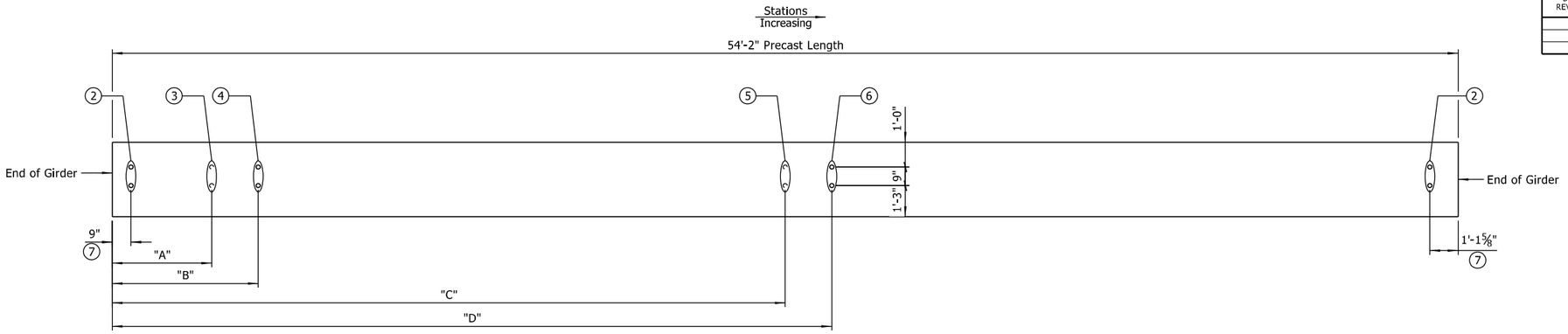
DRAWN BY: HEW DATE: APR. 2020 FILENAME: b050413_s5.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63829

JMEdwards 5/4/2021 11:30:01 AM
WORKSPACE: ARDOT Bridge (2019)
L:\20TN\170\1608 - 05043 Codron Creek Str-Appr's\Drawings\b050413_S305_BB.dgn
REVISED DATE:

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.		050413	65	92
(1) 07515		164'-2" UNIT		63830

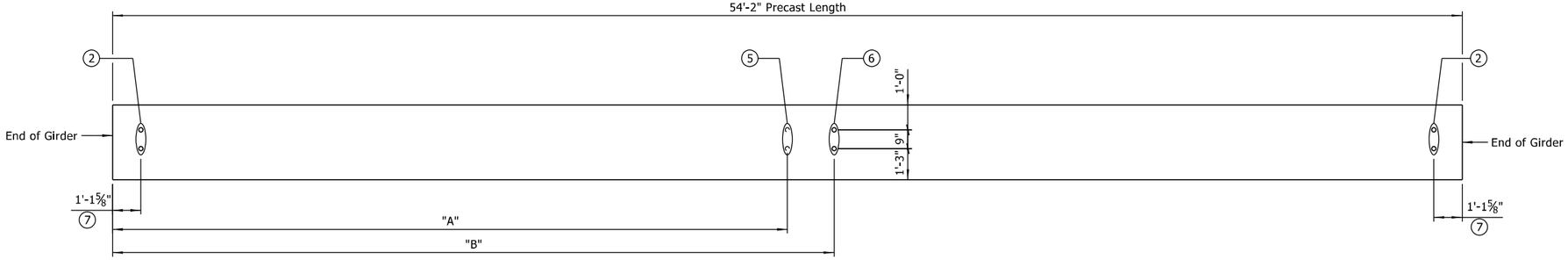


SPAN NO. 1

Scale: ⅜" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 1				
GIRDER NO.	"A"	"B"	"C"	"D"
1	(1)	5'-10½"	(1)	28'-11½"
2-7	4'-0"	5'-10½"	27'-1"	28'-11½"
8	4'-0"	(1)	27'-1"	(1)

NOTE:
All measurements are along CL Girder.

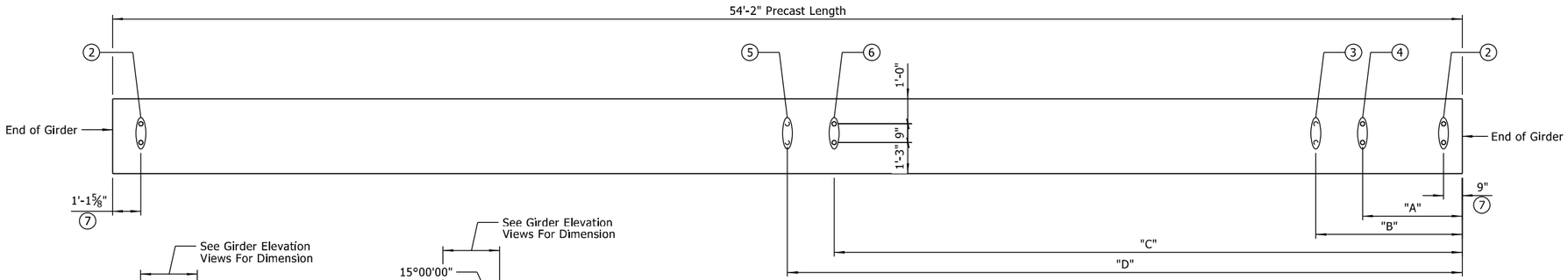


SPAN NO. 2

Scale: ⅜" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 2		
GIRDER NO.	"A"	"B"
1	(1)	28'-11½"
2-7	27'-1"	28'-11½"
8	27'-1"	(1)

NOTE:
All measurements are along CL Girder.

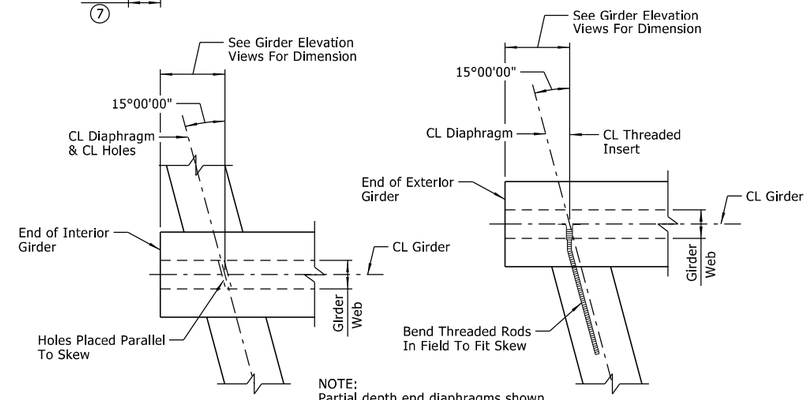


SPAN NO. 3

Scale: ⅜" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 3				
GIRDER NO.	"A"	"B"	"C"	"D"
1	4'-0"	(1)	25'-2½"	(1)
2-7	4'-0"	5'-10½"	25'-2½"	27'-1"
8	(1)	5'-10½"	(1)	27'-1"

NOTE:
All measurements are along CL Girder.



NOTE:
Partial depth end diaphragms shown.
End bent diaphragms similar.

DETAIL A

(Plan View of Interior Girder End)
No Scale

DETAIL B

(Plan View OF Exterior Girder End)
No Scale

(1) This dimension is not applicable due to an exterior girder only having a diaphragm attached on one side at each location.

(2) Interior Girders: ¼"ø hole through web (Oriented parallel to skew)
Exterior Girders: ¾"ø Galavanized Threaded Inserts (Orlented normal to girder and bent to accomodate skew). Inserts placed in near side of web for Girder No. 1. Inserts placed in far side of web for Girder No. 8.

(3) Connection for Temporary Steel Diaphragm: 1¼"ø holes in web in far side

(4) Connection for Temporary Steel Diaphragm: 1¼"ø holes in web in near side

(5) ¾" Galvanized Threaded Inserts placed in far side of web

(6) ¾" Galvanized Threaded Inserts placed in near side of web

(7) Dimension measured from end of girder to intersection of CL Diaphragm & CL Girder, See "DETAIL A" & "DETAIL B".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 6 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

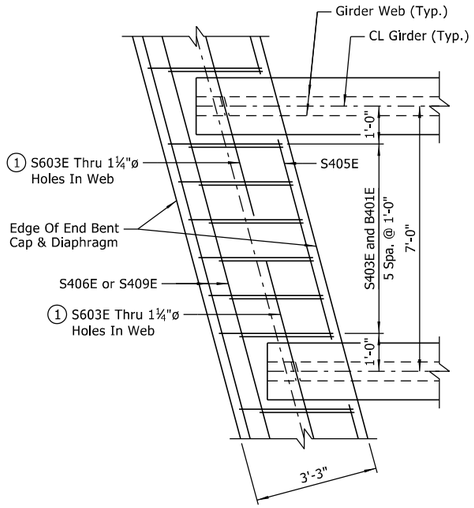
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAY 2020 FILENAME: b050413_s6.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAY 2020

BRIDGE NO. 07515 DRAWING NO. 63830

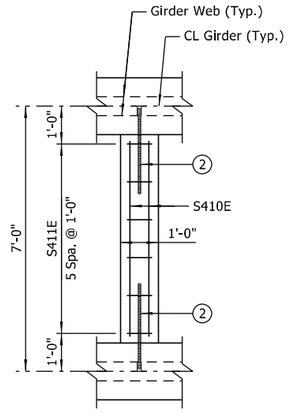
JMEdwards 5/4/2021 11:30:02 AM
WORKSPACE: ARDOT Bridge (2019)
L:\20ITN\07I608 - 050413 Codron Creek Str-Appr's\Drawings\b050413_S306_BB.dgn
REVISED DATE:

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.		050413	66	92
				(1) 07515		164'-2" UNIT		63831



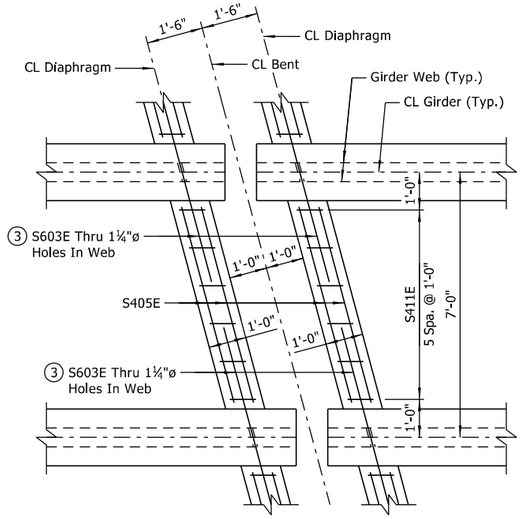
PLAN - END BENT DIAPHRAGM

Scale: ½" = 1'-0"



PLAN - PARTIAL DEPTH INTERMEDIATE DIAPHRAGM

Scale: ½" = 1'-0"



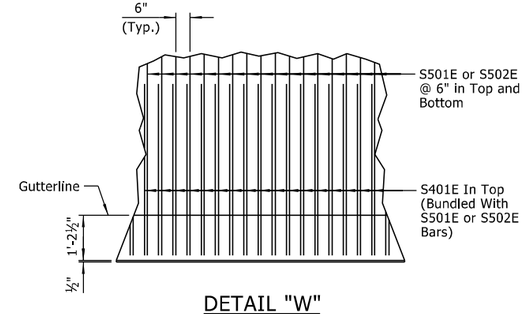
PLAN - PARTIAL DEPTH END DIAPHRAGM

Scale: ½" = 1'-0"

(1) Galvanized threaded inserts and ¾"ø x 3'-6" threaded rods shall be used at exterior girders. For details, see end bent diaphragm details on Dwg. No. 63826.

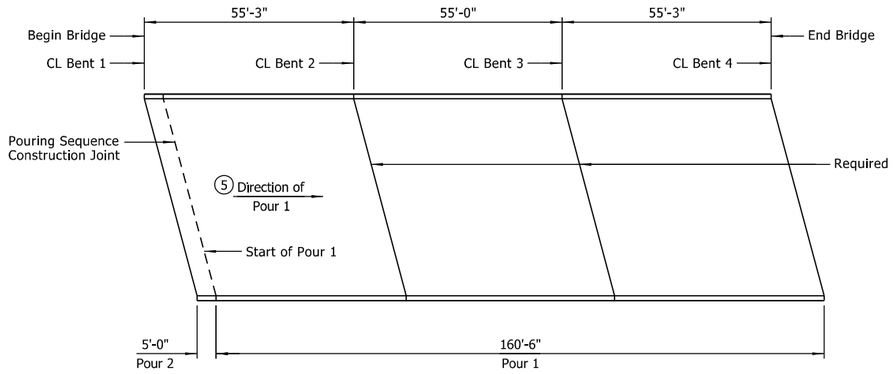
(2) Galvanized threaded inserts and ¾"ø x 3'-6" threaded rods. For details, see "TYPICAL ROADWAY SECTION" on Dwg. No. 63825.

(3) Galvanized threaded inserts and ¾"ø x 3'-6" threaded rods shall be used at exterior girders. For details, see "TYPICAL ROADWAY SECTION" on Dwg. No. 63825.



DETAIL "W"

No Scale



(5) Direction of pour shall be from near Bent 1 progressing to Bent 4. If stay-in-place forms are used and Installed In a manner that requires pouring of the slab in the opposite direction, this Alternate Pouring Sequence shall be modified accordingly to where Closure Pour (2) Is at Bent 4 and Pour (1) progresses from near Bent 4 to Bent 1.

ALTERNATE SLAB POURING SEQUENCE

No Scale

SLAB POURING SEQUENCE NOTES:
Pours with the same number may be placed simultaneously or separately. All pour(s) 1 must be placed before pour(s) 2 can be placed. Where applicable, all Pours (2) must be placed before Pours (3) can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 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.

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Deviations from the pouring sequence(s) shown on this sheet or on Dwg. No. 63828 are not permitted..

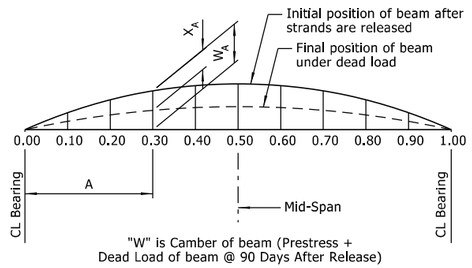
Concrete diaphragms at end bents shall be poured monolithically with the slab.

All partial depth diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured.

SPAN PT.	INCHES	
	W_A	X_A
0.00	0.000	0.000
0.10	0.489	0.158
0.20	0.857	0.320
0.30	1.109	0.449
0.40	1.257	0.532
0.50	1.305	0.560

Table symmetric about mid-span

(4) Note:
Camber and Deflection Values shown are based on a concrete beam strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 63835.



"W" is Camber of beam (Prestress + Dead Load of beam @ 90 Days After Release)

"X" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

(4) CAMBER & DEFLECTIONS (INCHES) - 54'-2" BEAM

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021

BRIDGE ENGINEER

SHEET 7 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b050413_s7.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63831

JMEdwards 5/4/2021 11:30:03 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cedron Creek Str-Apprs\Drawings\b050413_S307_MD (Misc Dtls).dgn
REVISED DATE:

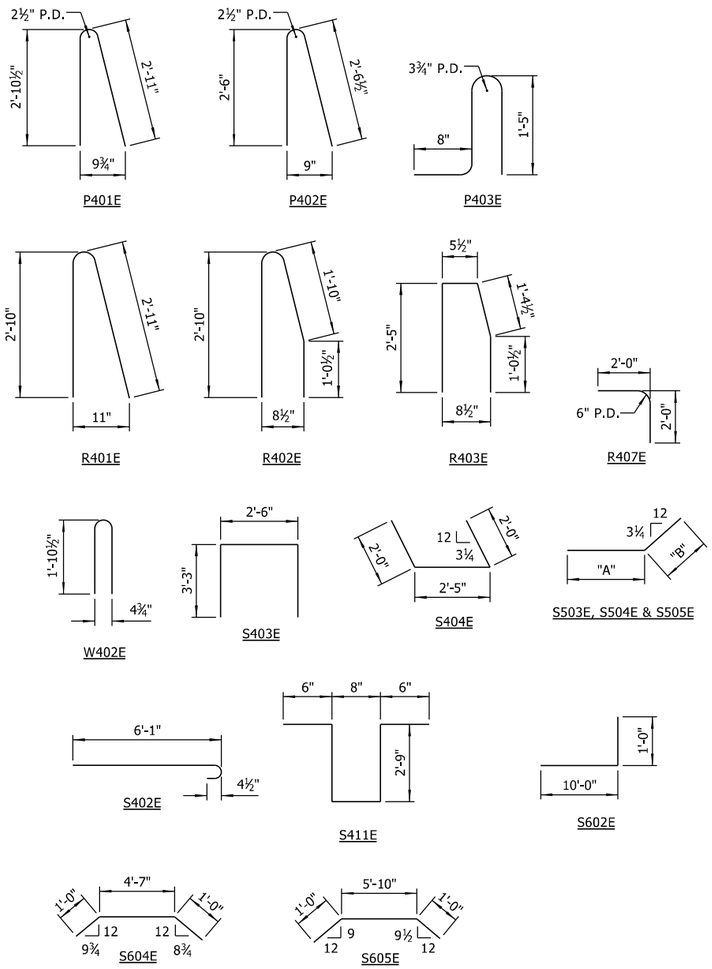
BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
S401E	645	35'-2"			Str.
S402E	656	6'-7"			3"
S403E	96	8'-10"			2"
S404E	16	6'-3"			2"
S405E	240	5'-5"			Str.
S406E	10	37'-0"			Str.
S407E	64	4'-5"			Str.
S408E	64	3'-7"			Str.
S409E	10	21'-8"			Str.
S410E	144	5'-2"			Str.
S411E	294	6'-10"			2"
S501E	624	36'-6"			Str.
S502E	640	20'-11"			Str.
S503E	2	37'-8"	36'-7"	1'-1"	3¾"
S504E	2	21'-8"	20'-7"	1'-1"	3¾"
S505E	8	6'-4"	5'-3"	1'-1"	3¾"
S506E To S521E	2 Ea.	6'-10" To 34'-10"			Str.
S522E To S537E	2 Ea.	34'-0" To 6'-0"			Str.
S538E To S545E	2 Ea.	5'-4" To 18'-5"			Str.
S546E To S553E	2 Ea.	19'-10" To 6'-10"			Str.
S554E	104	4'-0"			Str.
S601E	216	20'-0"			Str.
S602E	216	10'-10"			4½"
S603E	72	6'-0"			Str.
S604E	8	6'-7"			4½"
S605E	8	7'-10"			4½"
P401E	616	5'-11"			2½"
P402E	48	5'-2"			2½"
P403E	616	3'-7"			3", 3¾"
P404E	48	5'-8"			Str.
P405E	16	14'-11"			Str.
P406E	48	17'-2"			Str.
P407E	16	17'-5"			Str.
P408E	64	19'-8"			Str.

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
R401E	60	5'-11"			3¾"
R402E	16	5'-10"			3¾"
R403E	4	5'-2"			2"
R404E	8	9'-4"			Str.
R405E	24	9'-8"			Str.
R406E	16	4'-0"			Str.
R407E	8	3'-11"			6"
R408E	32	5'-8"			Str.
W401E	90	3'-7"			Str.
W402E	80	3'-11"			3¾"
W403E	30	3'-5"			Str.
W701E	48	12'-2"			Str.

BAR BENDING DIAGRAMS



NOTE:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

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.		050413	67	92
(1) 07515		164'-2" UNIT		63832

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 8 OF 11
DETAILS OF 164'-2" INTEGRAL
PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

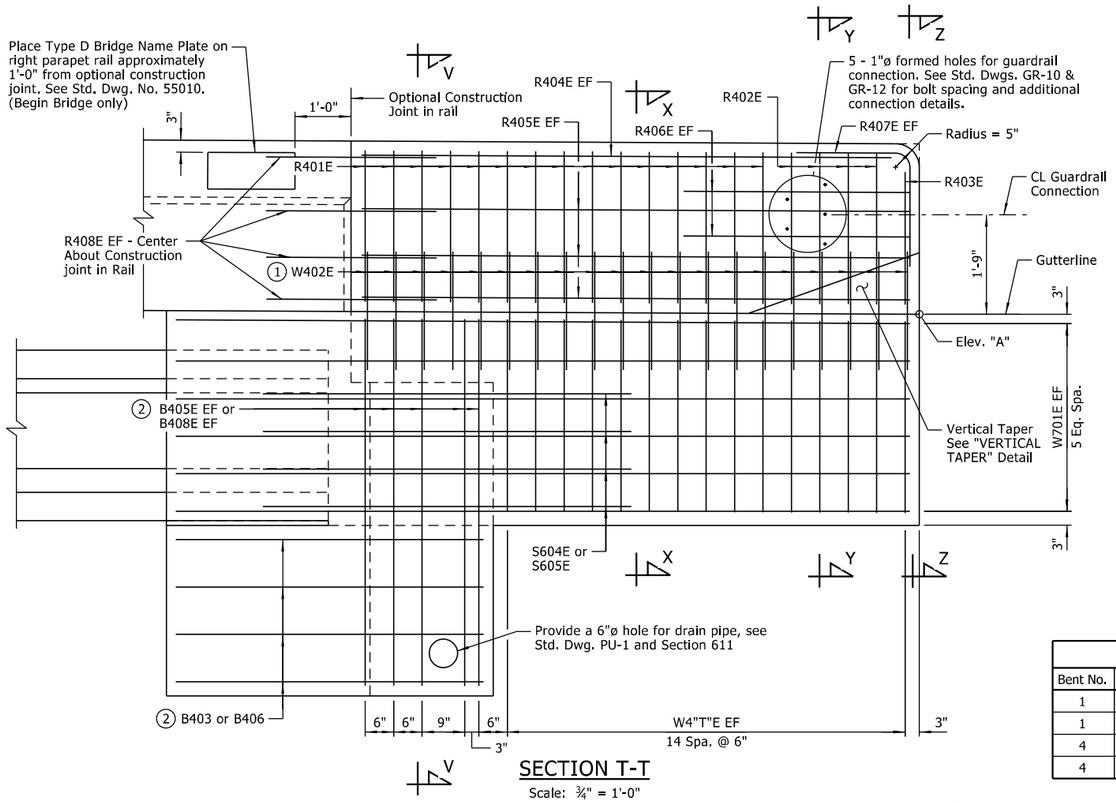
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b050413_s8.dgn
CHECKED BY: DRG DATE: JULY 2020 SCALE: No Scale
DESIGNED BY: JJB DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63832

JMEdwards 5/4/2021 11:30:05 AM
WORKSPACE: ARDOT Bridge (209)
L:\20\7\07\608 - 05043 Cadron Creek Str-Apprs\Drawings\b050413_S308.SD (Bar List).dgn
REVISED DATE:

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.		050413	68	92
				(1) 07515		LAYOUT		63833



SECTION T-T

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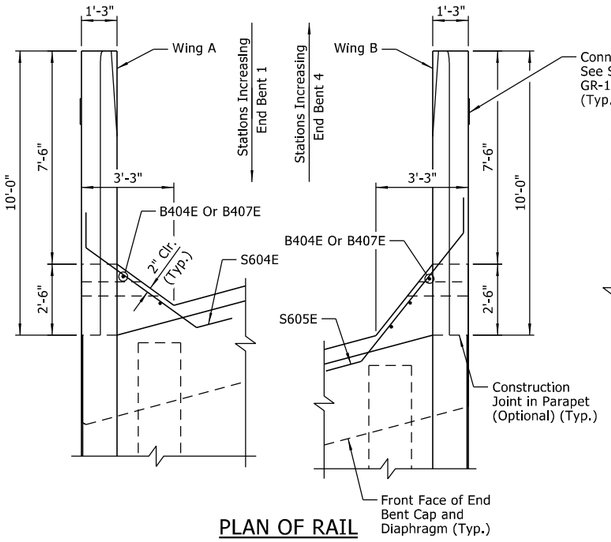
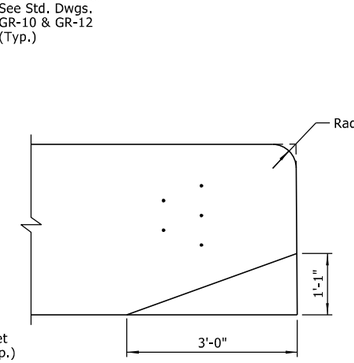


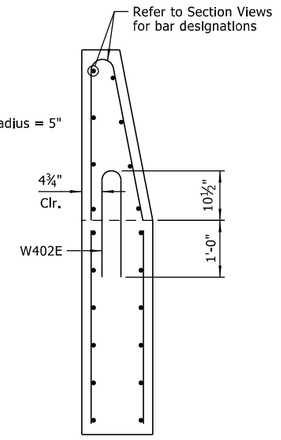
PLAN OF RAIL

Scale: ⅜" = 1'-0"



VERTICAL TAPER

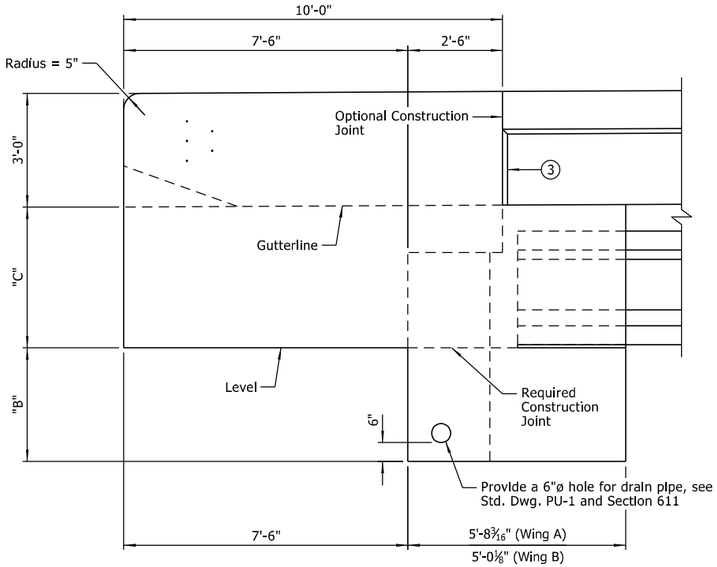
Scale: ¾" = 1'-0"



DETAIL A

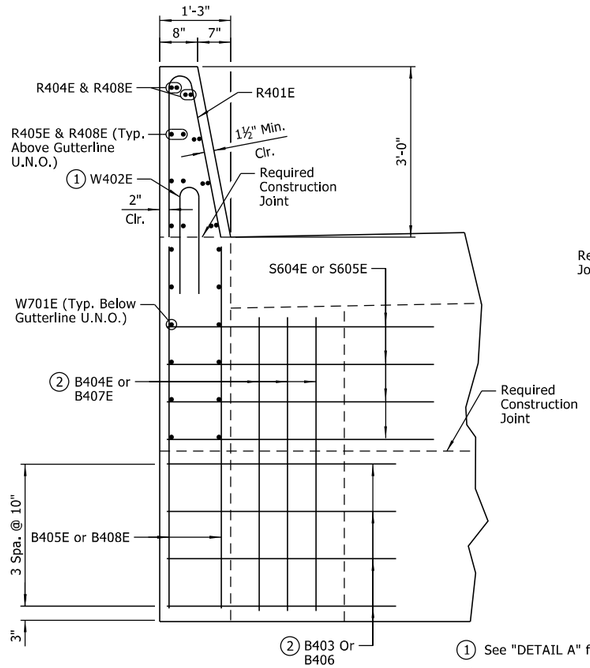
Scale: ¾" = 1'-0"

TABLE OF VARIABLES					
Bent No.	Location	Elev. "A"	"B"	"C"	"T"
1	Wing A	665.52	3'-0⅛"	4'-0 13/16"	01
1	Wing B	665.54	3'-0"	4'-1 3/16"	01
4	Wing A	664.03	3'-2⅝"	4'-0¼"	01
4	Wing B	663.64	3'-0"	3'-10 3/16"	03



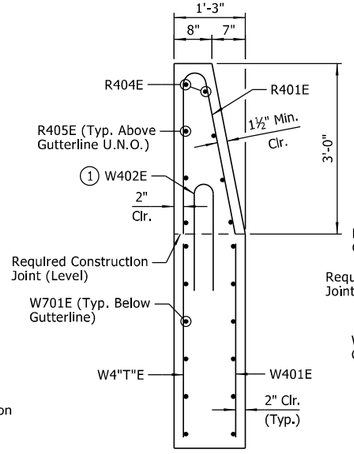
VIEW U-U

Scale: ½" = 1'-0"



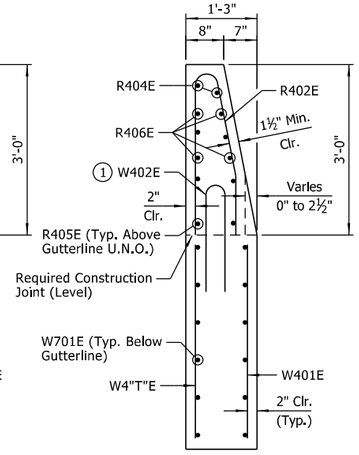
SECTION V-V

Scale: ¾" = 1'-0"



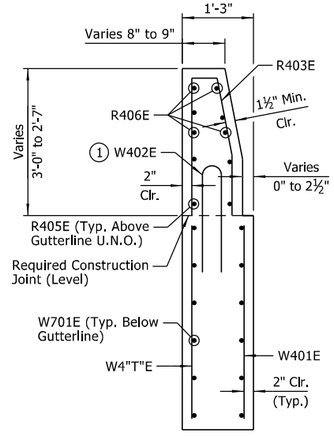
SECTION X-X

Scale: ¾" = 1'-0"



SECTION Y-Y

Scale: ¾" = 1'-0"



SECTION Z-Z

Scale: ¾" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise
EF = Each Face

(1) See "DETAIL A" for placement of Bars W402E

(2) See end bent details on Dwg. Nos. 63815-63820 for reinforcing and additional details

(3) Vertical chamfer not required if optional construction joint is used

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 9 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

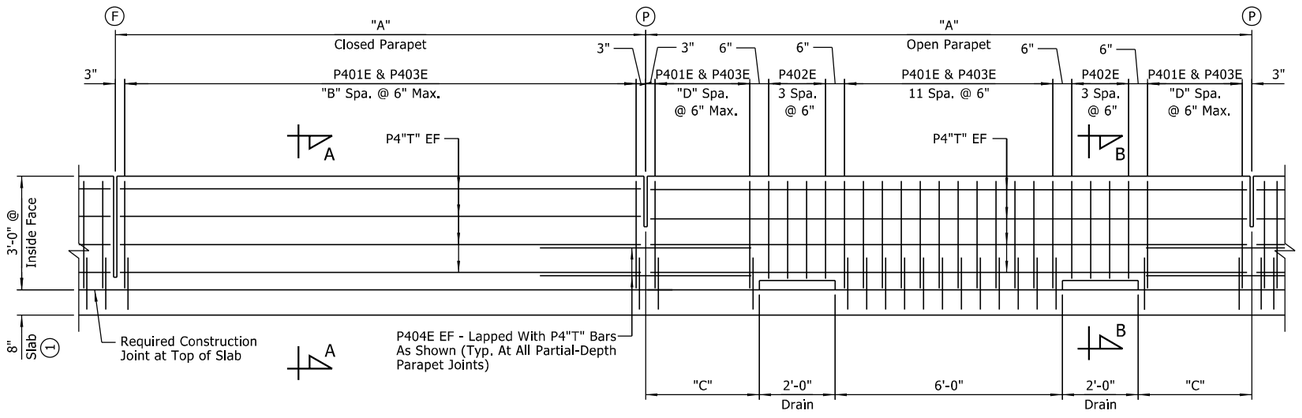
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b050413_s9.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2020

BRIDGE NO. 07515 DRAWING NO. 63833

JMEdwards 5/4/2021 11:30:06 AM
WORKSPACE: ARDOT Bridge (2019)
L:\20T\T01T608 - 050413 Codron Creek Str-Appr's\Drawings\b050413_S309_MD (Wingsl.dgn
REVISED DATE:

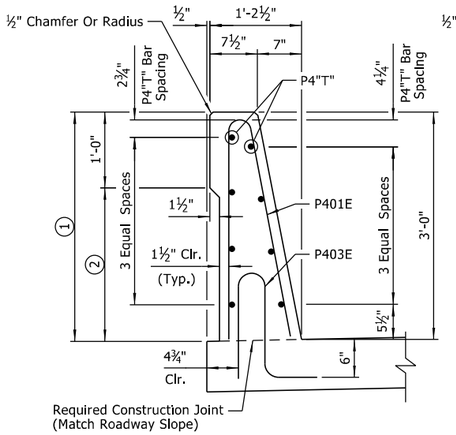
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	69	92
				(1) 07515		164'-2" UNIT		63834



(1) Measured at Edge of Deck

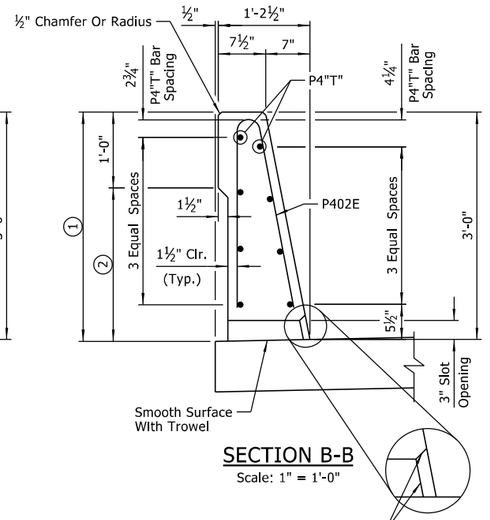
DETAILS OF PARAPET RAIL

Scale: ½" = 1'-0"



SECTION A-A

Scale: 1" = 1'-0"



SECTION B-B

Scale: 1" = 1'-0"

(1) 3'-0⁵⁄₁₆" within 2% cross-slope. Height varies within cross-slope transition. For details of cross-slope transition, see "CROSS-SLOPE TRANSITION SKETCH" on Dwg. No. 63810.

(2) 2'-0⁵⁄₁₆" within 2% cross-slope. Height varies within cross-slope transition. For details of cross-slope transition, see "CROSS-SLOPE TRANSITION SKETCH" on Dwg. No. 63810.

TABLE OF PARAPET VARIABLES				
PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET	
"A"	"T"	"B"	"C"	"D"
15'-3"	05E	30	-	-
17'-6"	06E	34	-	-
17'-9"	07E	35	-	-
20'-0"	08E	39	5'-0"	9

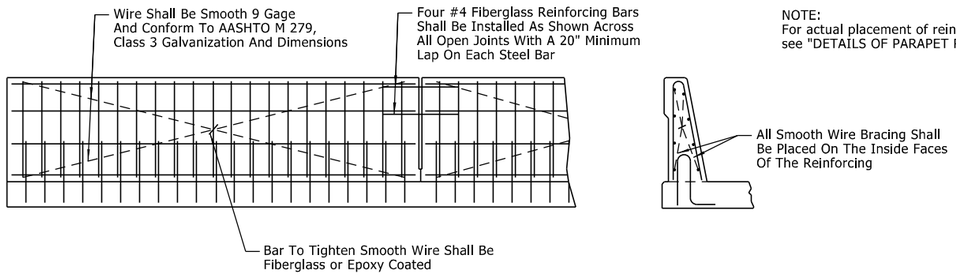
LEGEND

EF = Each Face

(F) CL Full-Depth Parapet Joint (¼"-1" max.) Stop 6" from Top of Slab.

(P) CL Partial-Depth Parapet Joint (¼"-1" max.) Stop 1'-4" from Top of Slab.

NOTE:
For locations of open and closed parapet panels and full-depth and partial-depth parapet joints, see "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 63828.



NOTE:
For actual placement of reinforcing steel, see "DETAILS OF PARAPET RAIL".

NOTE:
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

NOTE:
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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 10 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b050413_s10.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2020
BRIDGE NO. 07515 DRAWING NO. 63834

JMEdwards 5/4/2021 11:30:07 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\170\7608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S310.MD (Parapet).dgn
REVISED DATE:

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.		050413	70	92
(1) 07515		164'-2" UNIT		63835

GENERAL NOTES - SUPERSTRUCTURE

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be ½" low relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M 203.

Distances from the forms and spacing of the prestressing steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the shop drawings.

All girders shall be Type II as noted on the details and shall be the standard prestressing sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28-day compressive strength f'c = 8,000 psi. The initial tensile force applied to each ½" dia. strand shall be 31,000 lbs. except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The contractor shall submit the method and sequence for release of strands to the engineer for approval prior to casting of the girders.

Holes and inserts shall be cast into the girders. Field drilling of holes shall not be permitted.

The tops of the girders shall be rough floated at approximately the time of set. The tops of girders shall be scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface with an amplitude of ¼" to produce an adequate surface for bonding the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to col lapse of the girder. The contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

Girder lengths shown on the design plans are net lengths measured horizontally along the girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep, and shrinkage.

Reinforcing steel shall be AASHTO M 31 or M 322, Type A (Fy = 60,000 psi) with mill test reports.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the girder. The ends of girders at intermediate bents shall be coated with 1/16" min. thick coating of a QPL approved epoxy resin.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22.

Drawings show general features of design only. Shop drawings shall be made in accordance with specifications, submitted, and approved before fabrication is begun.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M 31 or M 322, Type A (Fy = 60,000 psi) 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)".

CONCRETE:

All concrete in slab, parapet and diaphragms 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. All partial depth end diaphragms and partial depth intermediate diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Removable forms shall be used when pouring diaphragms. The slab and diaphragms shall not be poured prior to 90 days following release of the prestressed girder strands.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of the item "CLASS S(AE) CONCRETE - BRIDGE". See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete slab (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment in the strike-off to account for future dead load deflection due to parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the engineer.

STRUCTURAL STEEL:

All structural steel shall be ASTM A709, Gr. 50W unless noted otherwise, and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN BEAM SPANS (A709, Gr. 50W)". Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) unless noted otherwise. All structural steel completely embedded in concrete may be ASTM A709 Gr. 36, Gr. 50 or Gr. 50W unless noted otherwise. See Dwg. No. 63824 for cleaning requirements of external load plates on elastomeric bearings.

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 approved shop drawings. Shapes and materials shown in the plans will be the basis of payment, and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the engineer for approval; 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.

SPECIAL CAMBER NOTES:

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-Day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection which shall not be less than 90 days from release

C. Profile of each girder under its own weight in final position

Following receipt of the above data, the Engineer will evaluate the dead load and, if necessary, will provide an updated deflection diagram to the contractor.

JMEdwards 5/4/2021 11:30:08 AM
WORKSPACE: ARDOT Bridge (2019)
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REVISED DATE:

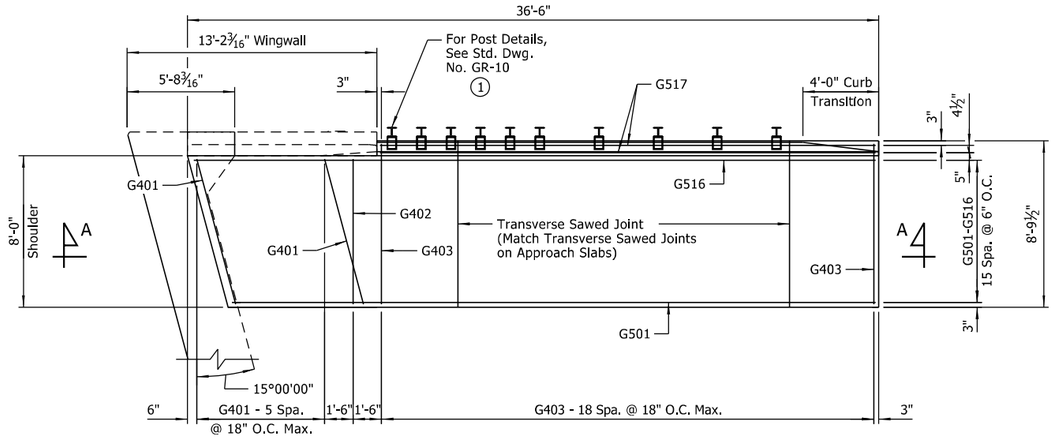
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 11 OF 11
DETAILS OF 164'-2" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

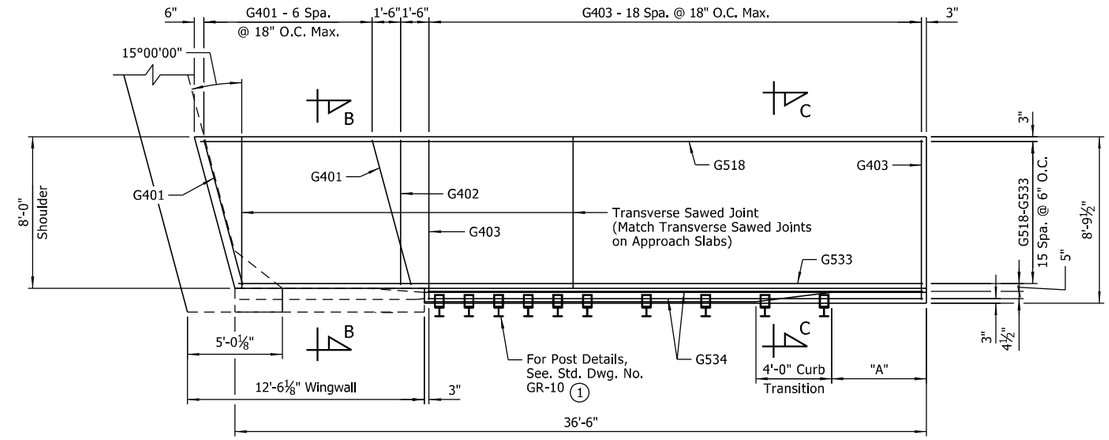
DRAWN BY: HEW DATE: JULY 2020 FILENAME: b050413_s11.dgn
CHECKED BY: JHR DATE: JULY 2020 SCALE: No Scale
DESIGNED BY: DRG DATE: JULY 2020
BRIDGE NO. 07515 DRAWING NO. 63835

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.		050413	71	92
				(1) 07515		APPROACH GUTTERS		63836



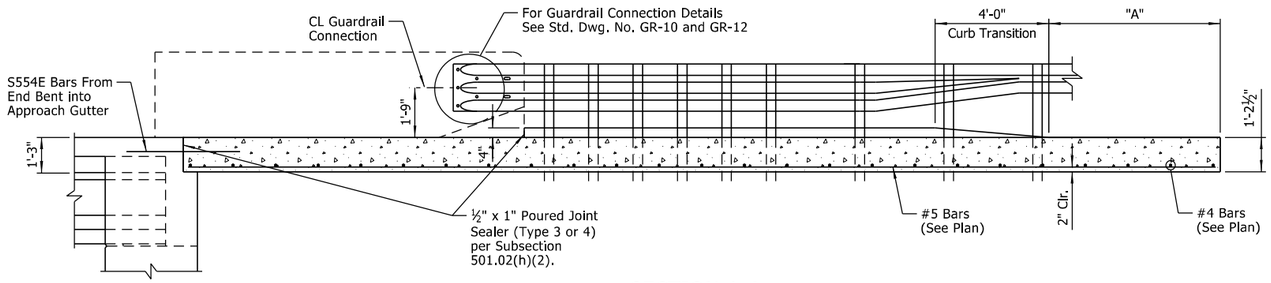
PLAN - TYPE 1 SPECIAL APPROACH GUTTER

(Shown For End Bridge, Begin Bridge Similar)
Scale: ¼" = 1'-0"



PLAN - TYPE 2 SPECIAL APPROACH GUTTER

(Shown For End Bridge, Begin Bridge Similar)
Scale: ¼" = 1'-0"



SECTION A-A

No Scale

(1) See Bridge Layouts for locations of guardrails.

QUANTITIES
(FOR INFORMATION ONLY)

TYPE	Concrete	Reinforcing Steel (Gr. 60)
Type 1 Special	14.49 Cu. Yds.	824 lb.
Type 2 Special	13.72 Cu. Yds.	788 lb.

NOTE:
Quantities Shown are for One Type Special Approach Gutter. Two Type Special Approach Gutters are Required.

BAR LIST - TYPE 1 SPECIAL APPROACH GUTTER

MARK	NO. REQ'D.	LENGTH	P.D.
G401	6	7'-11"	Str.
G402	1	7'-8"	Str.
G403	19	8'-5"	Str.
G501 To G516	1 Ea.	36'-0" To 34'-0"	Str.
G517	2	26'-2"	Str.

NOTES:
Bars shown are for Stage 2 Construction at End Bridge. Bars for Stage 1 Construction at Begin Bridge are similar.

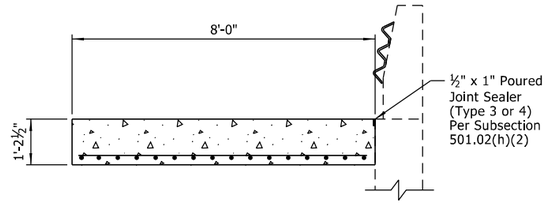
BAR LIST - TYPE 2 SPECIAL APPROACH GUTTER

MARK	NO. REQ'D.	LENGTH	P.D.
G401	7	7'-11"	Str.
G402	1	7'-8"	Str.
G403	19	8'-5"	Str.
G518 To G533	1 Ea.	38'-2" To 36'-2"	Str.
G517	2	26'-2"	Str.

NOTES:
Bars shown are for Stage 1 Construction at End Bridge. Bars for Stage 2 Construction at Begin Bridge are similar.

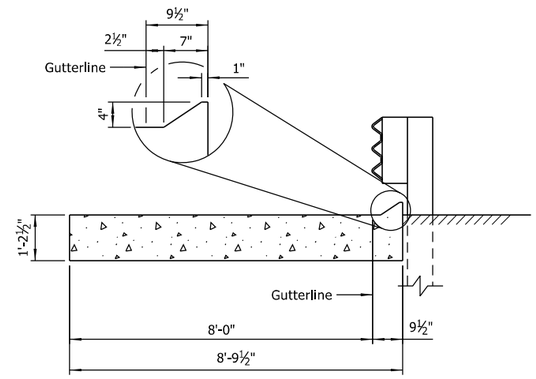
TABLE OF VARIABLES

LOCATION	"A"
End Bent No. 1	0'-0"
End Bent No. 4	5'-0"



SECTION B-B

No Scale



SECTION C-C

(Reinforcing Not Shown)
No Scale

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.

Approch Gutters will be measured and paid for in accordance with Section 504.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to CL bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to CL bridge.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH GUTTERS

ROUTE SEC.

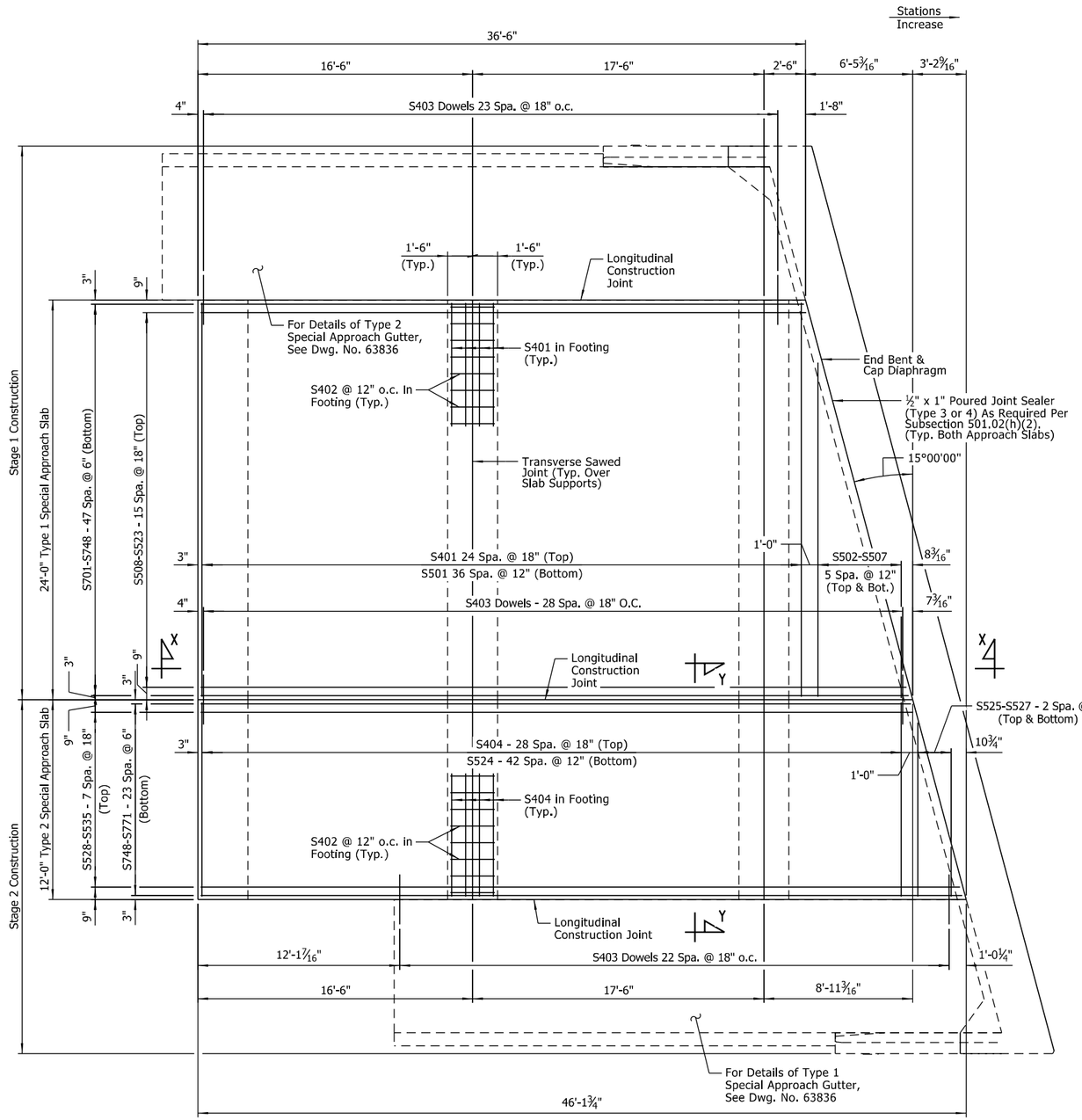
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b050413_ag1.dgn
CHECKED BY: JJB DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020
BRIDGE NO. 07515 DRAWING NO. 63836

JMEdwards 5/4/2021 11:30:09 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 05043 Codron Creek Str-Appr\Drawings\b050413_SE01_AG.dgn
REVISED DATE:

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.		050413	72	92
(1) 07515		APPROACH SLABS		63837



PLAN - TYPE 1 & 2 SPECIAL APPROACH SLABS

(Shown for Begin Bridge)
Scale: ¼" = 1'-0"

NOTES:
For Details of Slab Supports, See Dwg. No. 63839.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", See Dwg. No. 63839.

BAR LIST - TYPE 1 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin. Dia.
S401	37	23'-8"	Str.
S402	72	2'-8"	Str.
S403	53	3'-0"	Str.
S501	37	23'-8"	Str.
S502 To S507	2 Ea.	20'-1" To 2'-3"	Str.
S508 To S523	1 Ea.	42'-5" To 36'-4"	Str.
S701 To S748	1 Ea.	42'-6" To 36'-3"	Str.

BAR LIST - TYPE 2 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin. Dia.
S402	36	2'-8"	Str.
S403	23	3'-0"	Str.
S404	41	11'-8"	Str.
S524	43	11'-8"	Str.
S525 To S527	2 Ea.	10'-6" To 3'-0"	Str.
S528 To S535	1 Ea.	42'-10" To 45'-8"	Str.
S749 To S771	1 Ea.	42'-8" To 45'-9"	Str.

QUANTITIES
(FOR INFORMATION ONLY)

TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 1 Special	56.66 Cu. Yds.	6,393 lb.
Type 2 Special	30.92 Cu. Yds.	3,533 lb.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF TYPE SPECIAL APPROACH SLABS
ROUTE SEC.

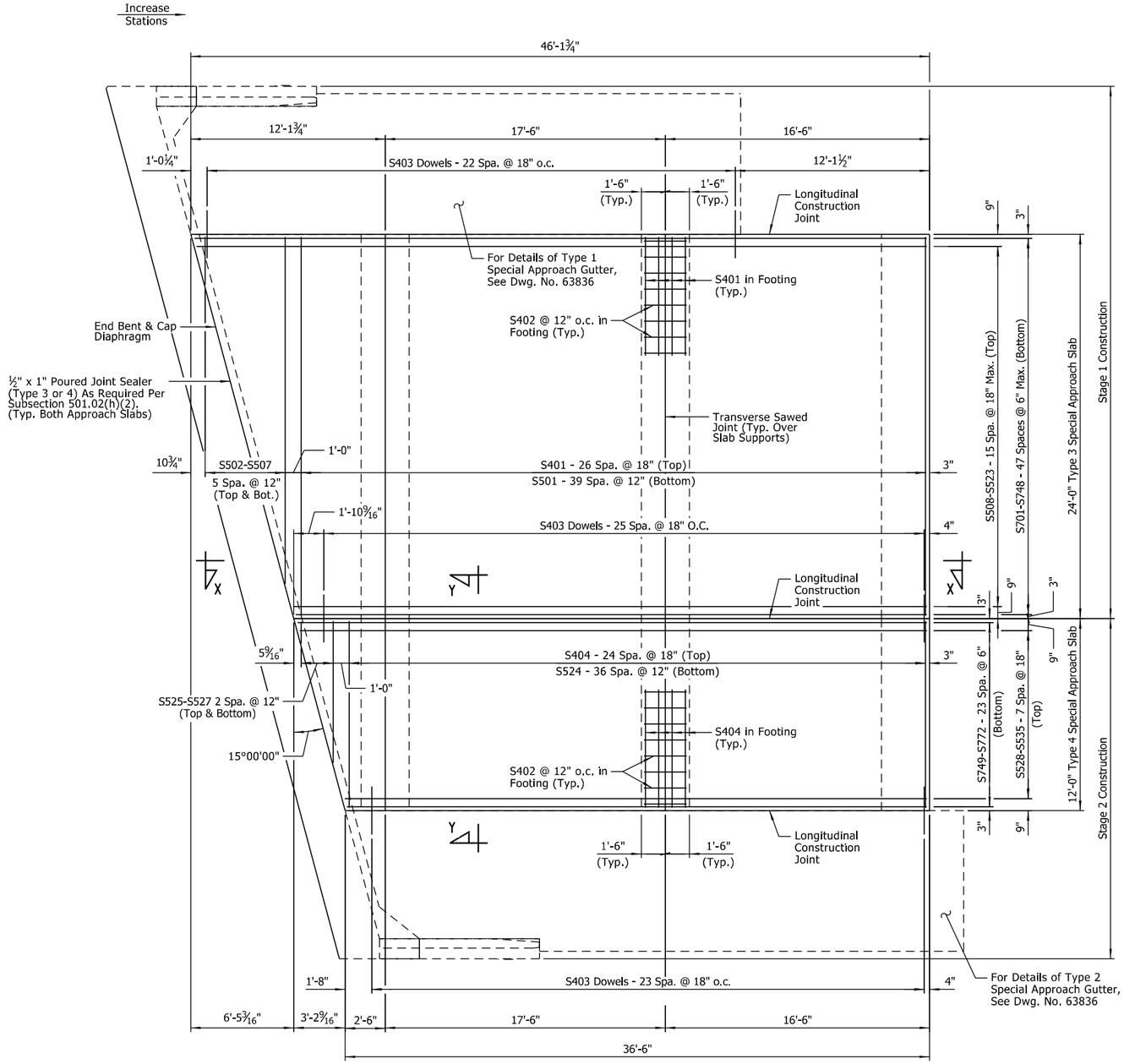
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2020 FILENAME: b050413_as1.dgn
CHECKED BY: JJB DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

BRIDGE NO. 07515 DRAWING NO. 63837

JMEdwards 5/4/2021 11:30:10 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S602_AS.dgn
REVISED DATE:

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.		050413	73	92
				(1) 07515		APPROACH SLABS		63838



PLAN - TYPE 3 & 4 SPECIAL APPROACH SLABS
(End Bridge Shown)
Scale: ¼" = 1'-0"

BAR LIST - TYPE 3 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin. Dia.
S401	39	23'-8"	Str.
S402	72	2'-8"	Str.
S403	49	3'-0"	Str.
S501	40	23'-8"	Str.
S502 To S507	2 Ea.	21'-8" To 3'-0"	Str.
S508 To S523	1 Ea.	45'-7" To 39'-7"	Str.
S701 To S748	1 Ea.	45'-9" To 39'-5"	Str.

BAR LIST - TYPE 4 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin. Dia.
S402	36	2'-8"	Str.
S403	24	3'-0"	Str.
S404	37	11'-8"	Str.
S524	37	11'-8"	Str.
S525 To S527	2 Ea.	8'-10" To 1'-4"	Str.
S528 To S535	1 Ea.	39'-2" To 36'-4"	Str.
S749 To S772	1 Ea.	39'-4" To 36'-3"	Str.

QUANTITIES
(FOR INFORMATION ONLY)

TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 3 Special	60.11 Cu. Yds.	6,873 lb.
Type 4 Special	27.47 Cu. Yds.	3,052 lb.

NOTES:
For Details of Slab Supports, See Dwg. No. 63839.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", See Dwg. No. 63839.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF TYPE SPECIAL APPROACH SLABS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2020 FILENAME: b050413_as2.dgn
CHECKED BY: JJB DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020
BRIDGE NO. 07515 DRAWING NO. 63838

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WORKSPACE: ARDOT Bridge (2019)
L:\2017\170T608 - 050413 Cadron Creek Str-Apprs\Drawings\b050413_S603_AS.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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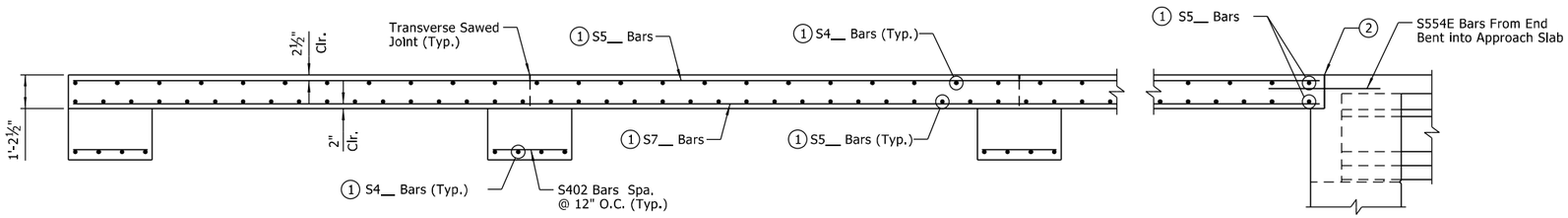
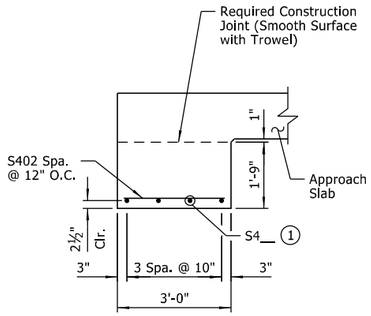
				JOB NO.		050413	74	92
				(1) 07515		APPROACH SLABS		63839



SECTION X-X

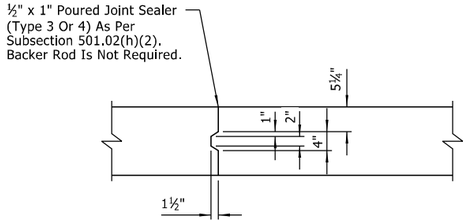
Scale: ⅜" = 1'-0"

NOTE:
Bar Positions and Clearances From the Forms Shall be Maintained by Means of Stays, Ties, Hangers or Other Approved Devices Sufficient in Size and Number to Prevent Displacement During Construction, Per Subsection 804.06.



DETAILS OF SUPPORT AT END OF SLAB

Scale: ½" = 1'-0"



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

Scale: ¾" = 1'-0"

GENERAL NOTES

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 M31 or M322, Type A, with mill test reports.

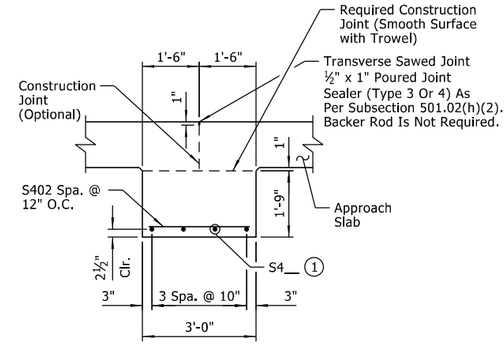
Approach Slabs will be measured and paid for in accordance with Section 504.

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 CL bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to CL bridge.

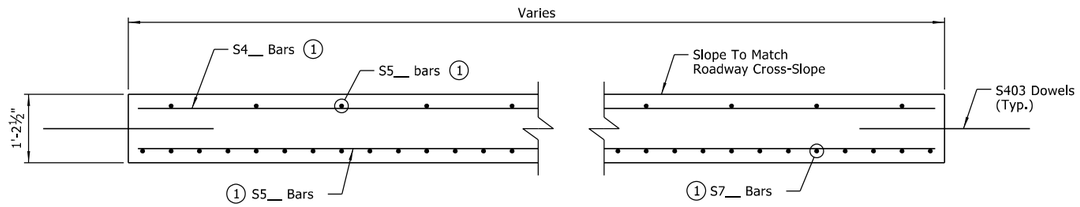
(1) See Approach Slab Plans for bar marks.

(2) ½" x 1" Poured Joint Sealer (Type 3 or 4) as per Subsection 501.02(h)(2).



DETAILS OF INTERIOR SUPPORT OF SLAB

Scale: ½" = 1'-0"



SECTION Y-Y

Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

Digitally Signed 05/04/2021
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF TYPE SPECIAL APPROACH SLABS
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAY 2020 FILENAME: b050413_as3.dgn
CHECKED BY: JJB DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAY 2020
BRIDGE NO. 07515 DRAWING NO. 63839

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REVISED DATE:

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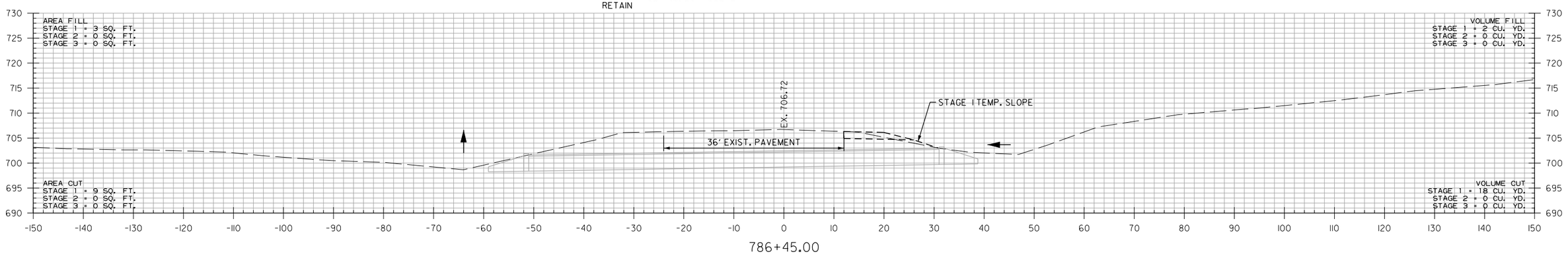
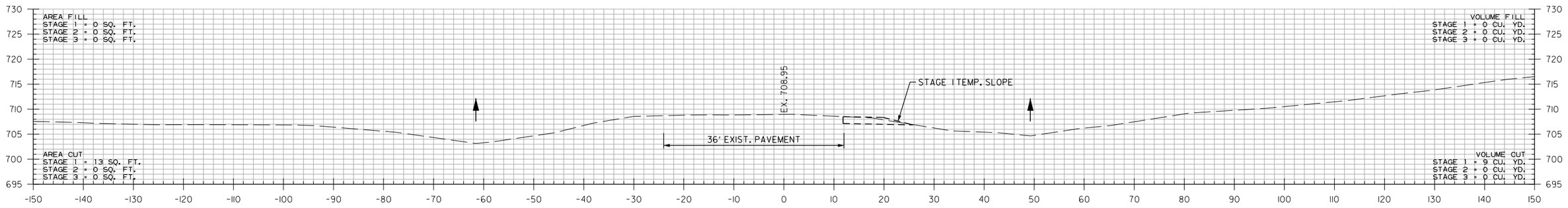
				6	ARK.			
				JOB NO.		050413	75	92
				(2)		CROSS SECTIONS		

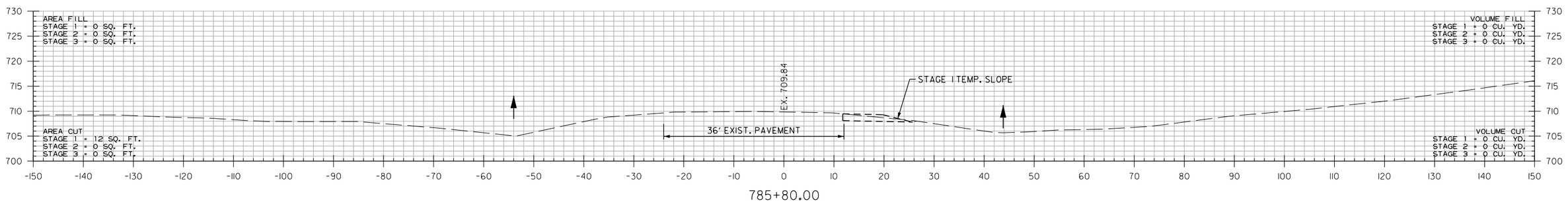
STA. 786+45 IN PLACE
3' X 3' X 82' R.C. BOX CULVERT
RETAIN



786+45.00



786+00.00



785+80.00

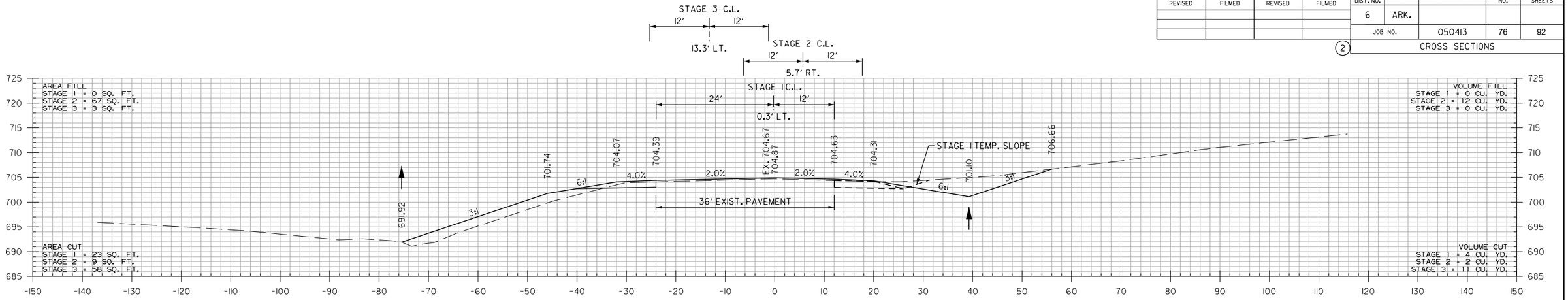
STA. 785+80.00 BEGIN 100' TRANSITION

HWY. 25
STA. 785+80 TO STA. 786+45

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.		050413	76	92

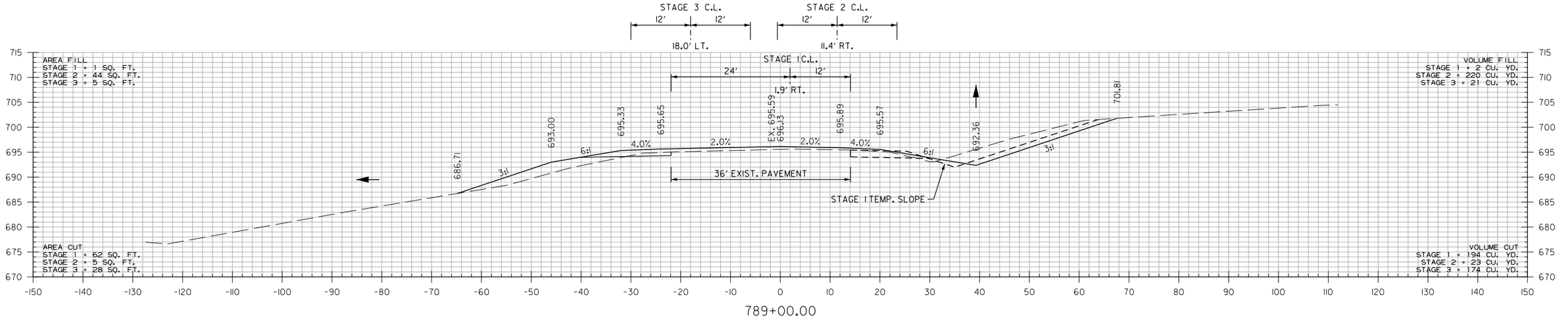
(2) CROSS SECTIONS



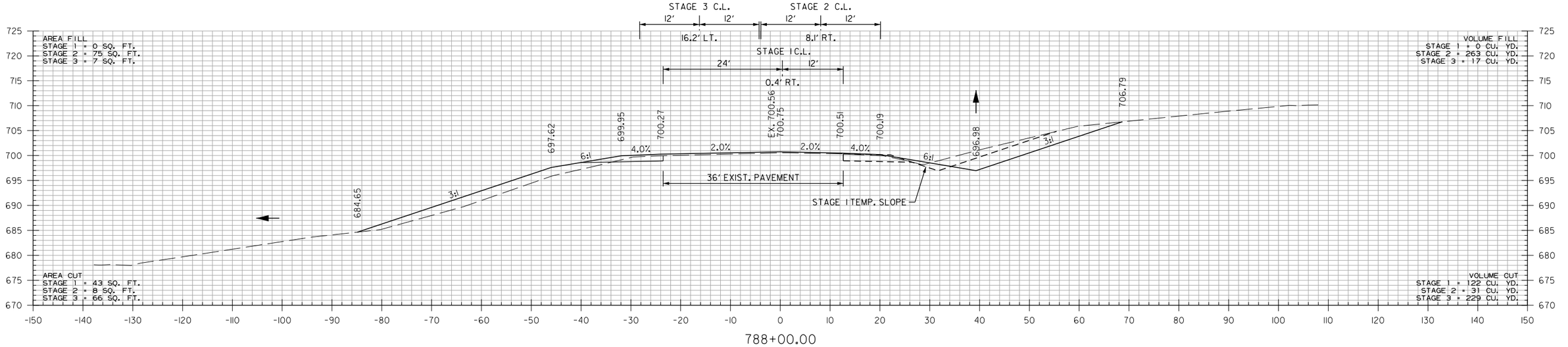
STA. 786+80.00 BEGIN JOB 050413

HWY. 25
STA. 786+80 TO STA. 787+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	77	92
				(2)	CROSS SECTIONS			



789+00.00



788+00.00

HWY. 25
STA. 788+00 TO STA. 789+00

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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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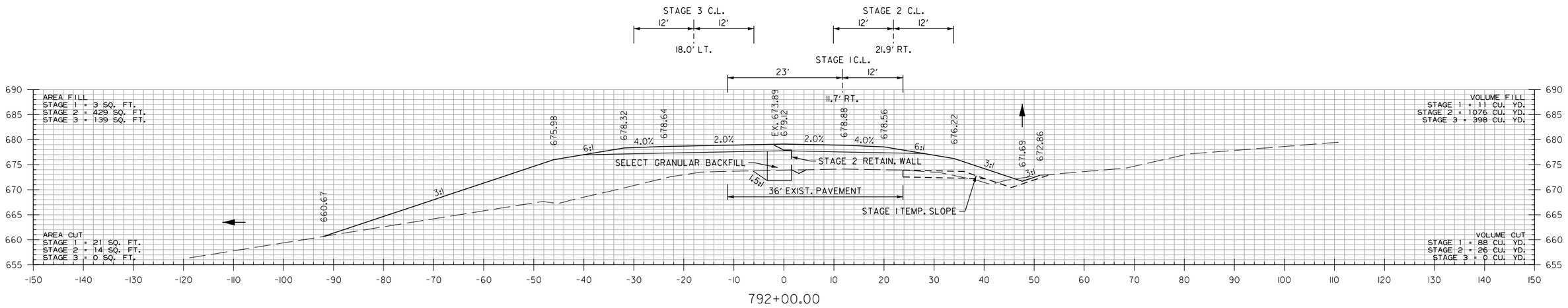

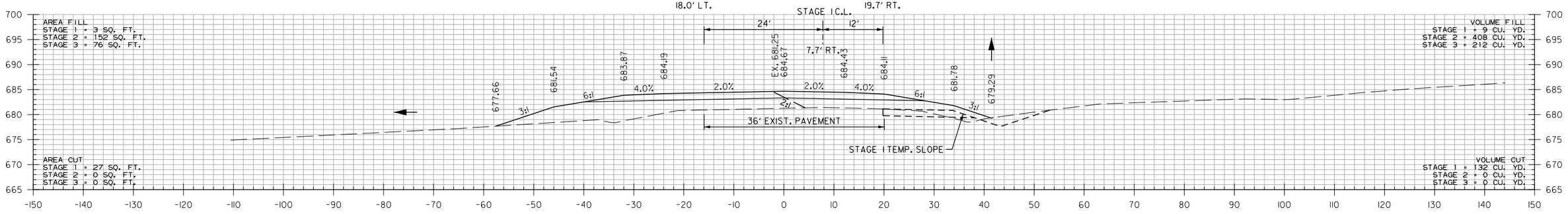

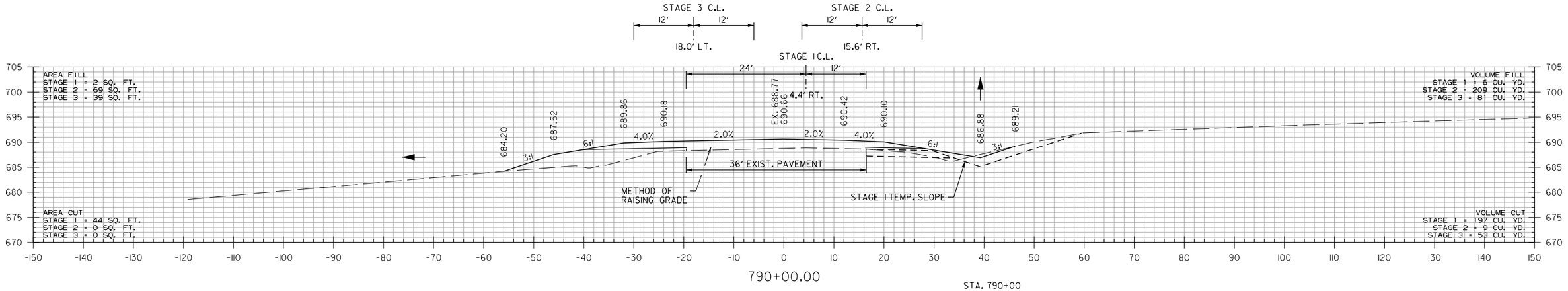

STA. 790+00
BEGIN SP. DT. RT. -7.60%
ELEV. 686.88

HWY. 25
STA. 790+00 TO STA. 792+00

aewierciak 4/23/2021 10:55:52 AM
WORKSPACE: AHTD
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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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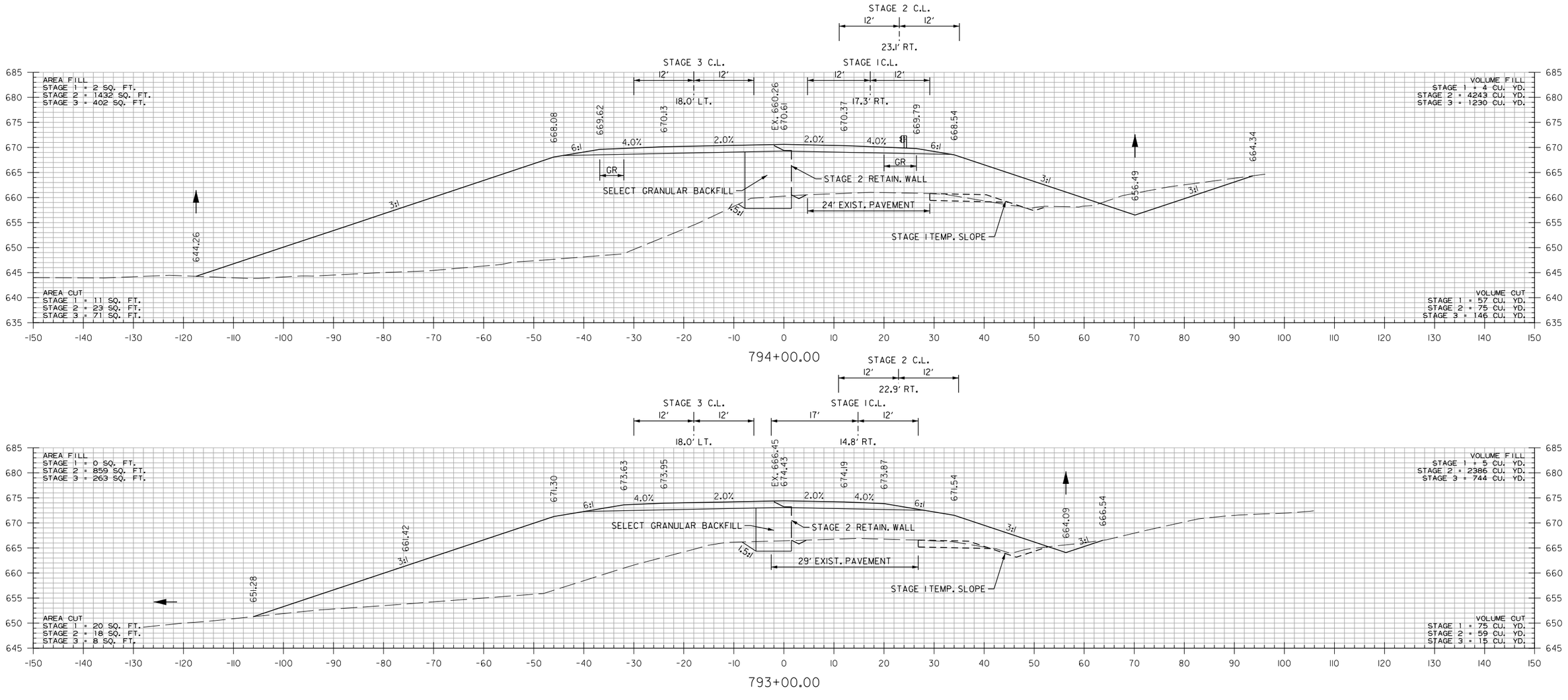
				(2)	CROSS SECTIONS			



HWY. 25
STA. 793+00 TO STA. 794+00

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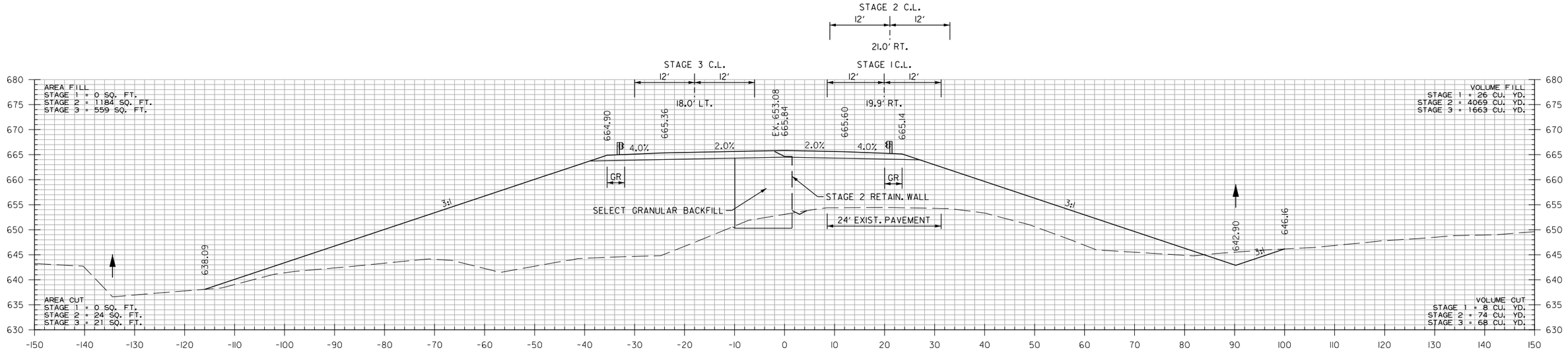
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

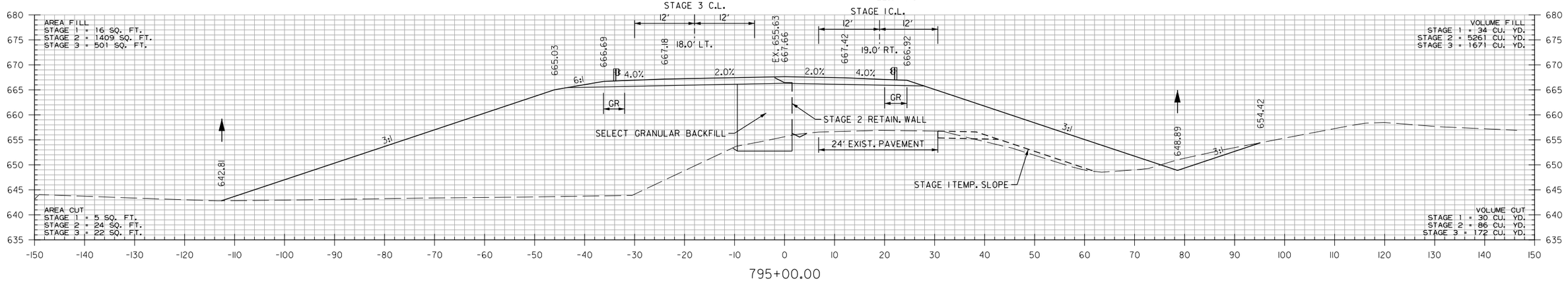
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	80	92
(2)	CROSS SECTIONS			



795+84.75

STA. 795+84.75 BEGIN BRIDGE

STA. 795+75
END SP. DT. RT. -7.60%
BEGIN SP. DT. RT. -3.00%
ELEV. 643.19



795+00.00

HWY. 25
STA. 795+00 TO STA. 795+85

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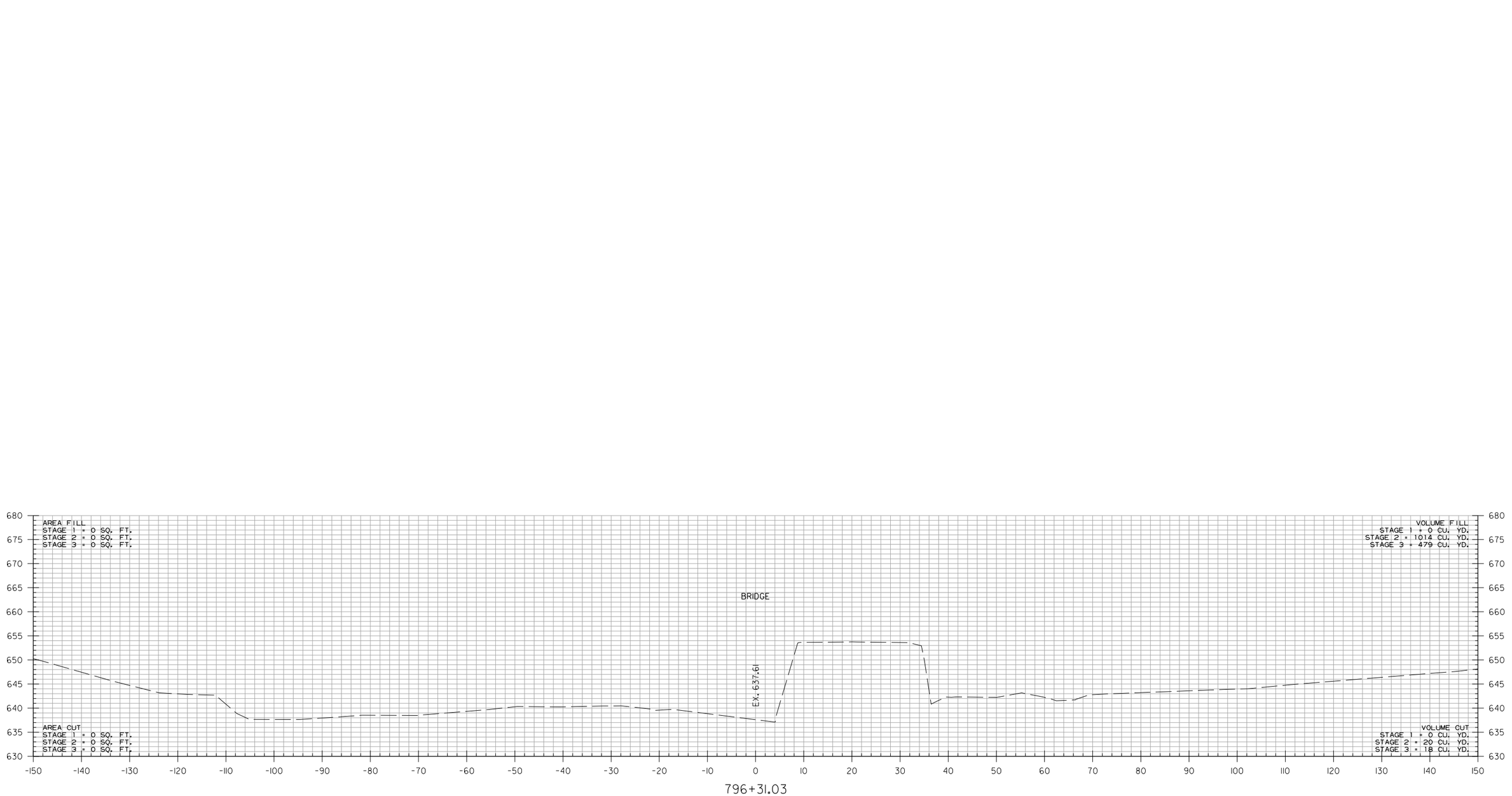
REVISED DATE:

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.		050413	81	92

(2) CROSS SECTIONS



796+31.03

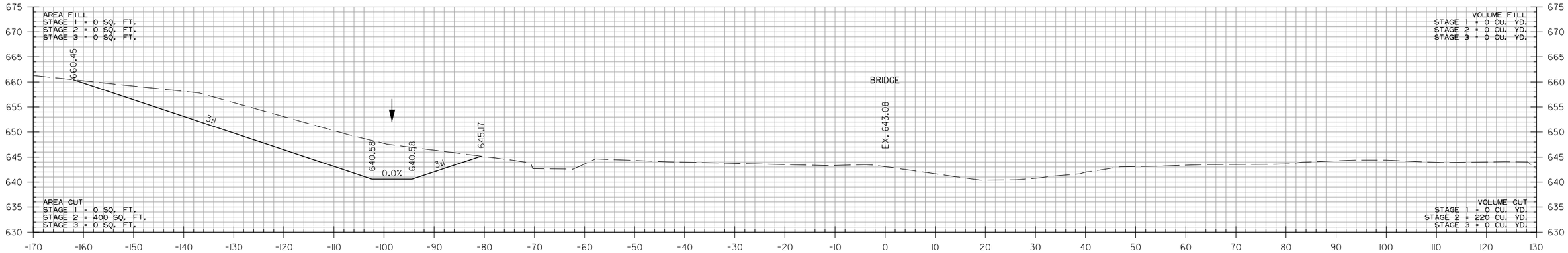
STA. 796+31.03 END TOE OF SLOPE AT ELEVATION 637.61'

STA. 796+28
END SP. DT. RT. -3.00%
ELEV. 641.60

HWY. 25
STA. 796+31 TO STA. 796+31

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

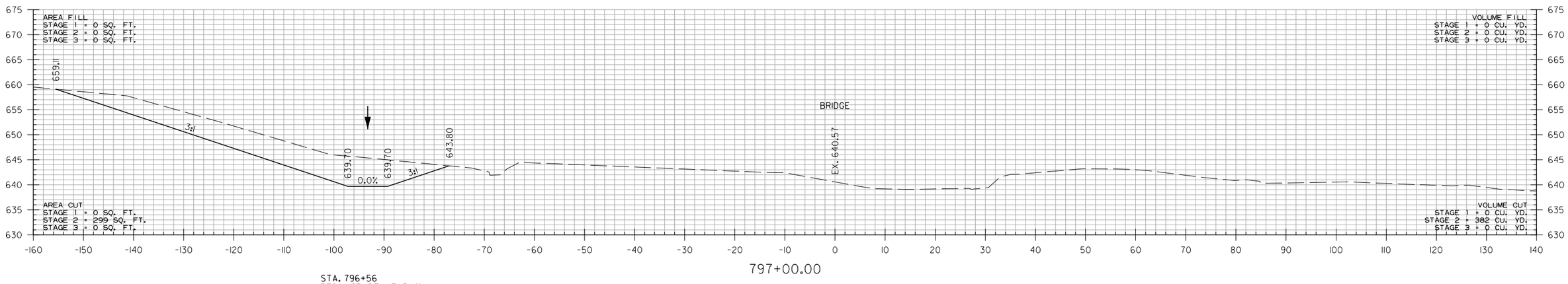
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	82	92
(2)	CROSS SECTIONS			



797+17.01

STA. 797+17.01 BEGIN TOE OF SLOPE AT ELEVATION 643.08'

STA. 797+12.32 BEGIN SUPERELEVATION



797+00.00

STA. 796+56
BEGIN SP. DT. LT. 5.14%
8' FLAT BOTTOM
ELEV. 637.44

HWY. 25
STA. 797+00 TO STA. 797+17

aewlerclark 4/23/2021 10:55:53 AM
WORKSPACE: AHTD
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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.			
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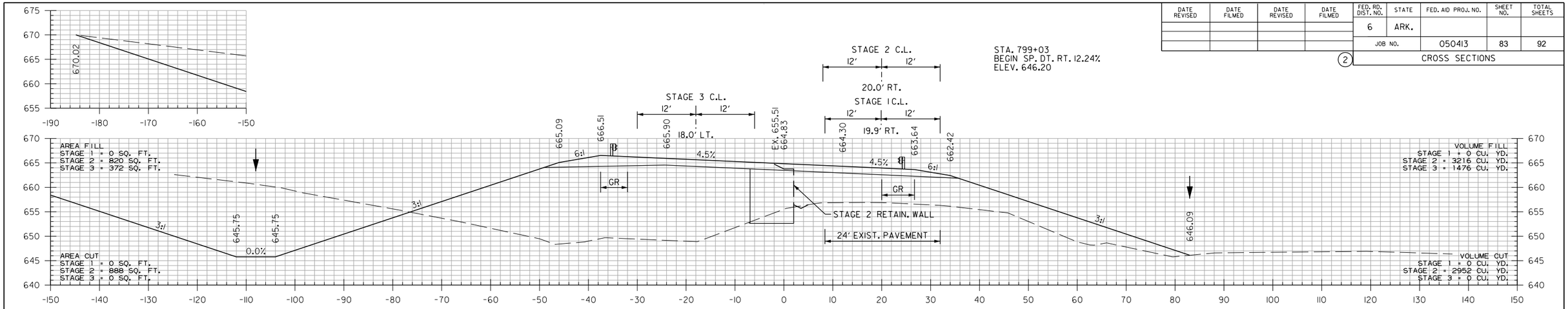

HWY. 25
STA. 797+50 TO STA. 799+00

dewlerclark
WORKSPACE: AHTD
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4/23/2021 10:55:53 AM
REVISED DATE:

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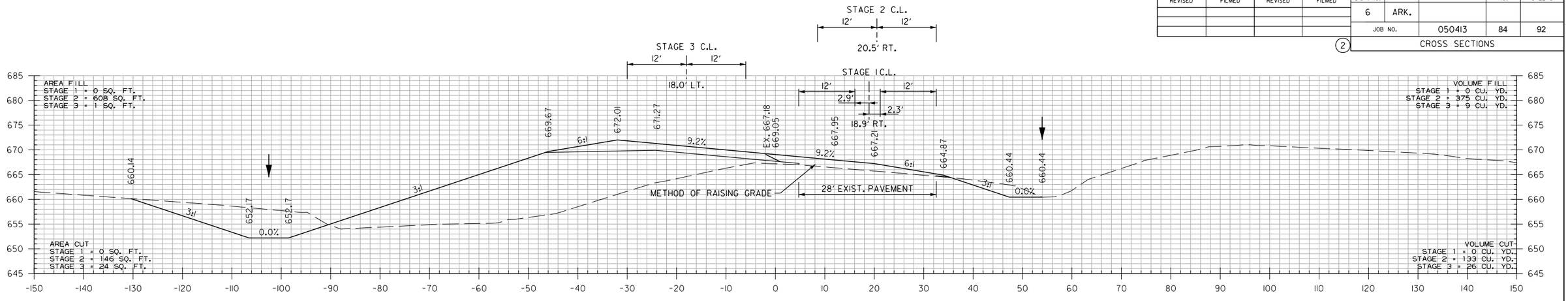
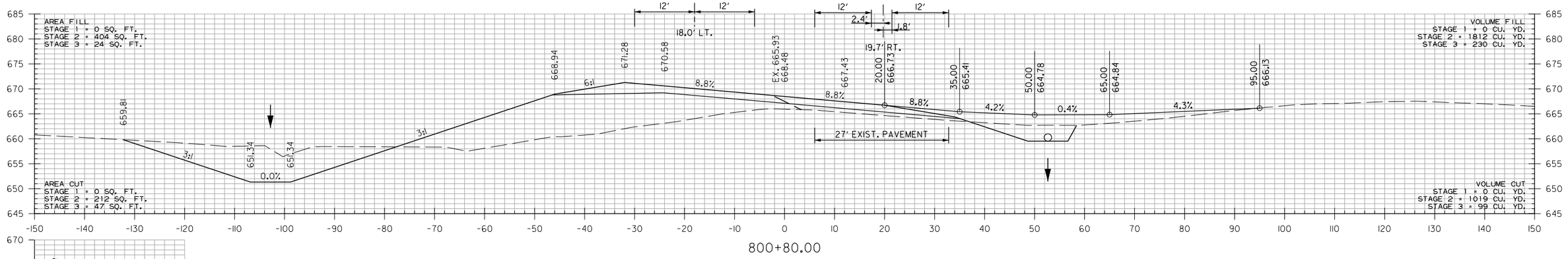
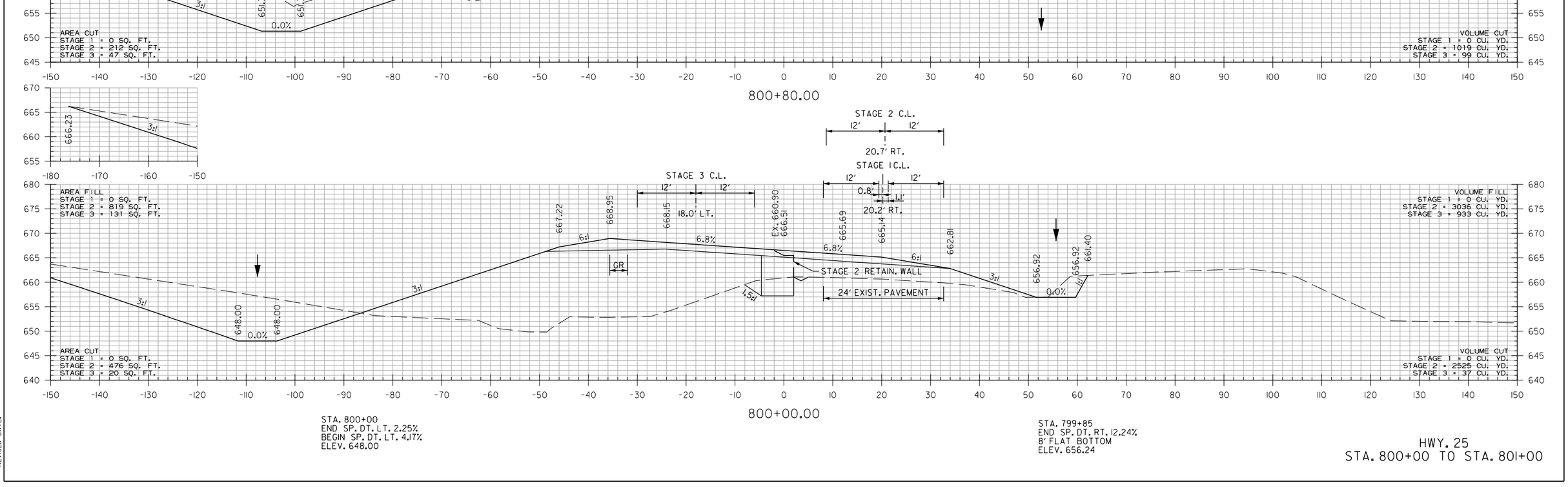
				6	ARK.			
				JOB NO.		050413	84	92
				(2)		CROSS SECTIONS		



STA. 800+80 IN PLACE
24″ X 32′ CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24″ X 48′ PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
143 CU. YDS. FILL



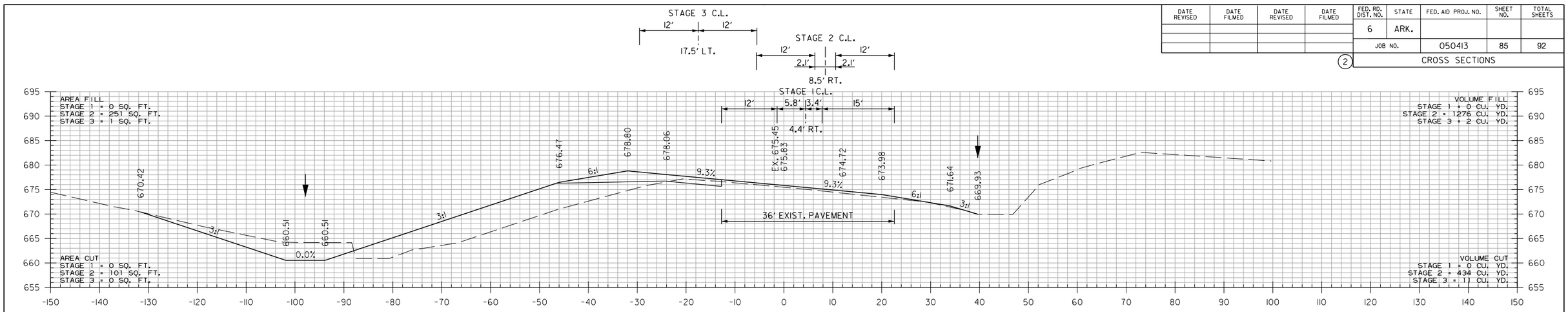


STA. 800+00
END SP. DT. LT. 2.25%
BEGIN SP. DT. LT. 4.17%
ELEV. 648.00

STA. 799+85
END SP. DT. RT. 12.24%
8′ FLAT BOTTOM
ELEV. 656.24

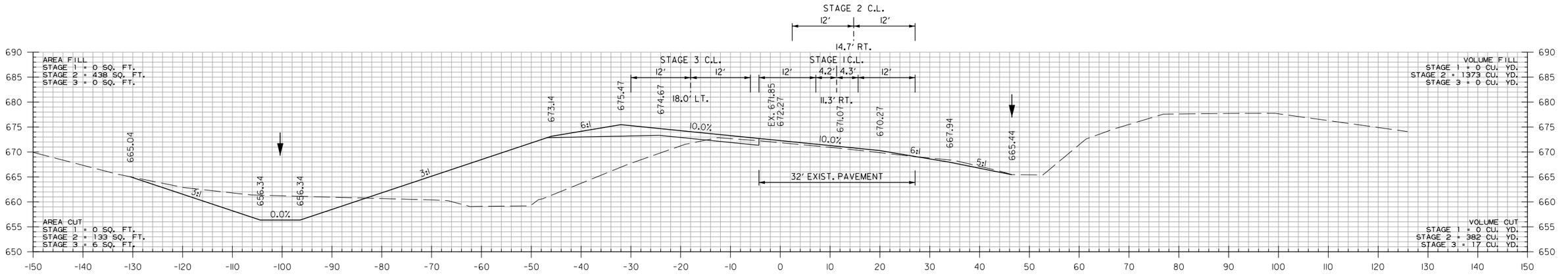
HWY. 25
STA. 800+00 TO STA. 801+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	85	92
				(2)		CROSS SECTIONS		



803+00.00

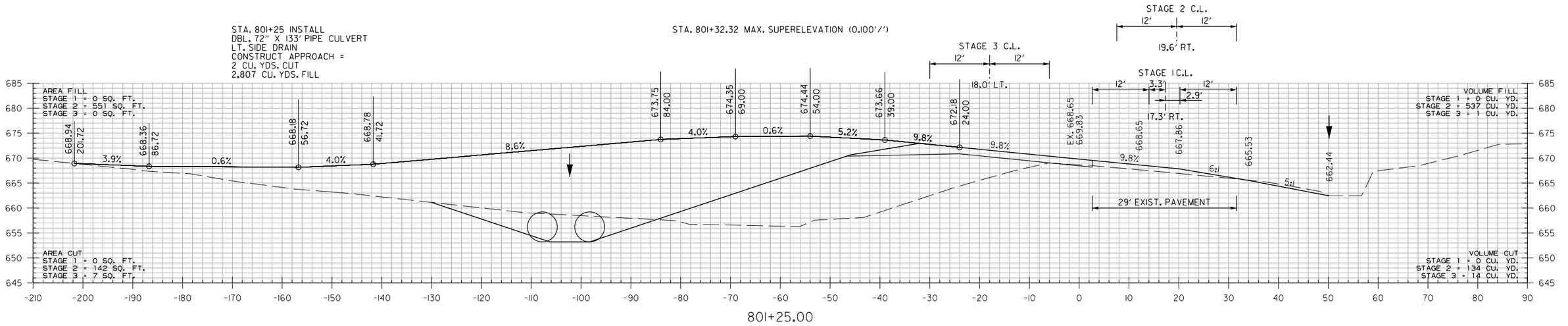
STA. 802+69.76 MAX. SUPERELEVATION (0.100'/')



802+00.00

STA. 801+25 INSTALL
DBL. 72" X 133' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
2 CU. YDS. CUT
2,807 CU. YDS. FILL

STA. 801+32.32 MAX. SUPERELEVATION (0.100'/')



801+25.00

HWY. 25
STA. 801+25 TO STA. 803+00

aewierciak 4/23/2021 10:55:54 AM
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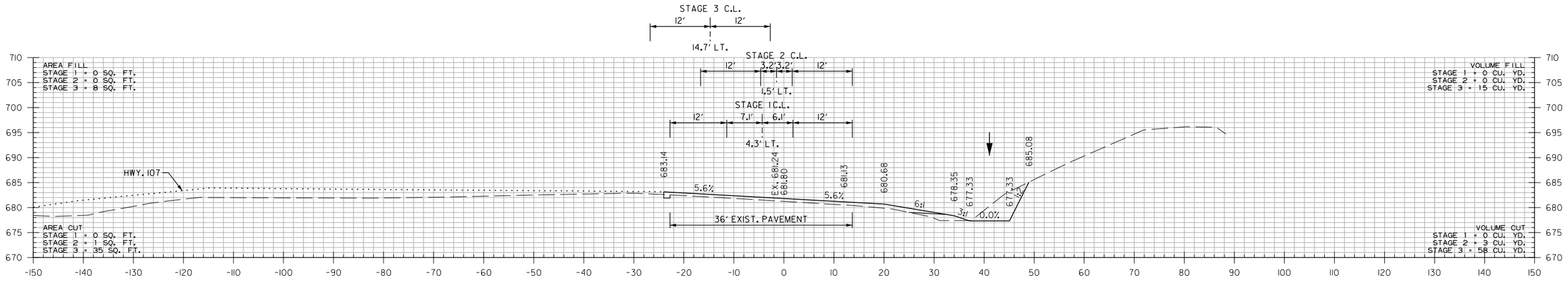
REVISED DATE:

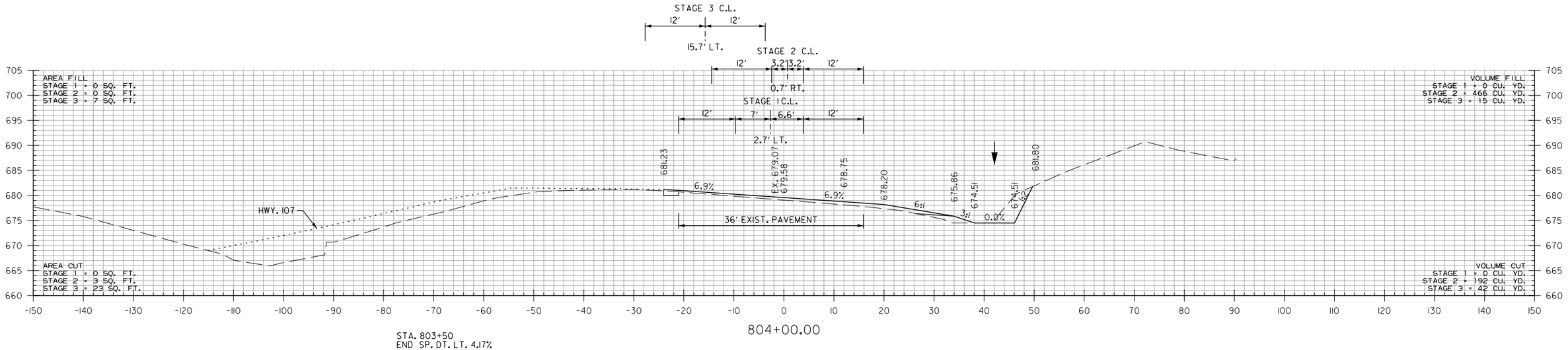
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	86	92

(2) CROSS SECTIONS



804+54.88



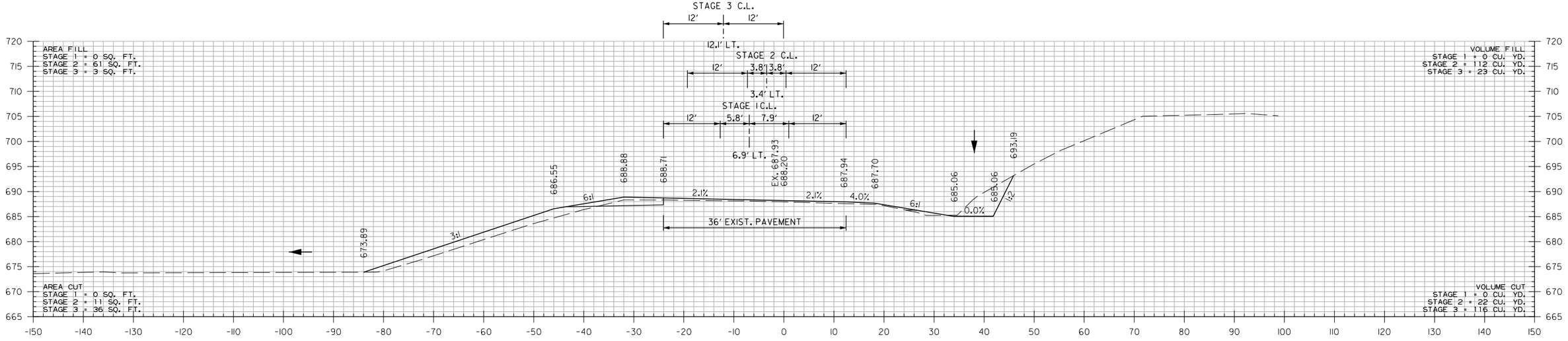
804+00.00

STA. 803+50
END SP. DT. LT. 4.17%
8′ FLAT BOTTOM
ELEV. 662.60

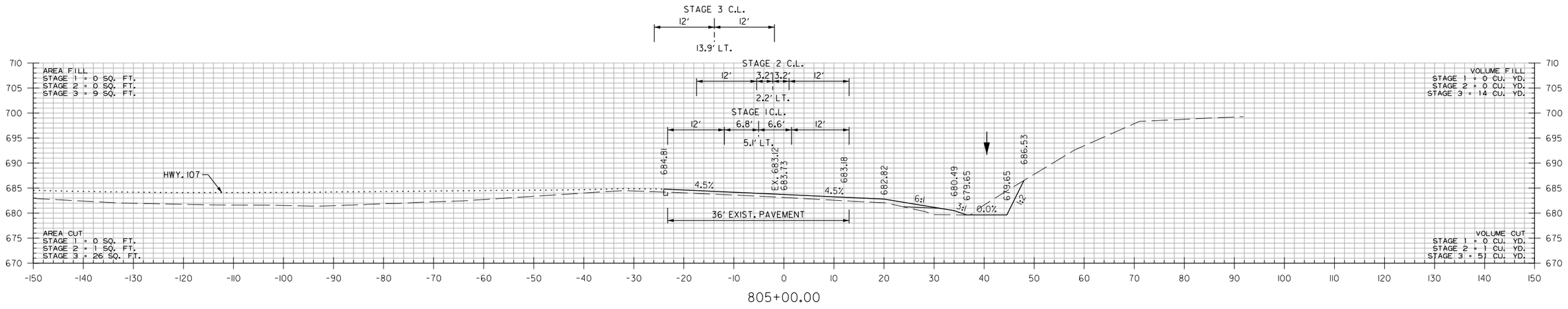
HWY. 25
STA. 804+00 TO STA. 804+55

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.		050413	87	92
				(2)	CROSS SECTIONS			

STA. 806+89.76 END SUPERELEVATION



806+00.00



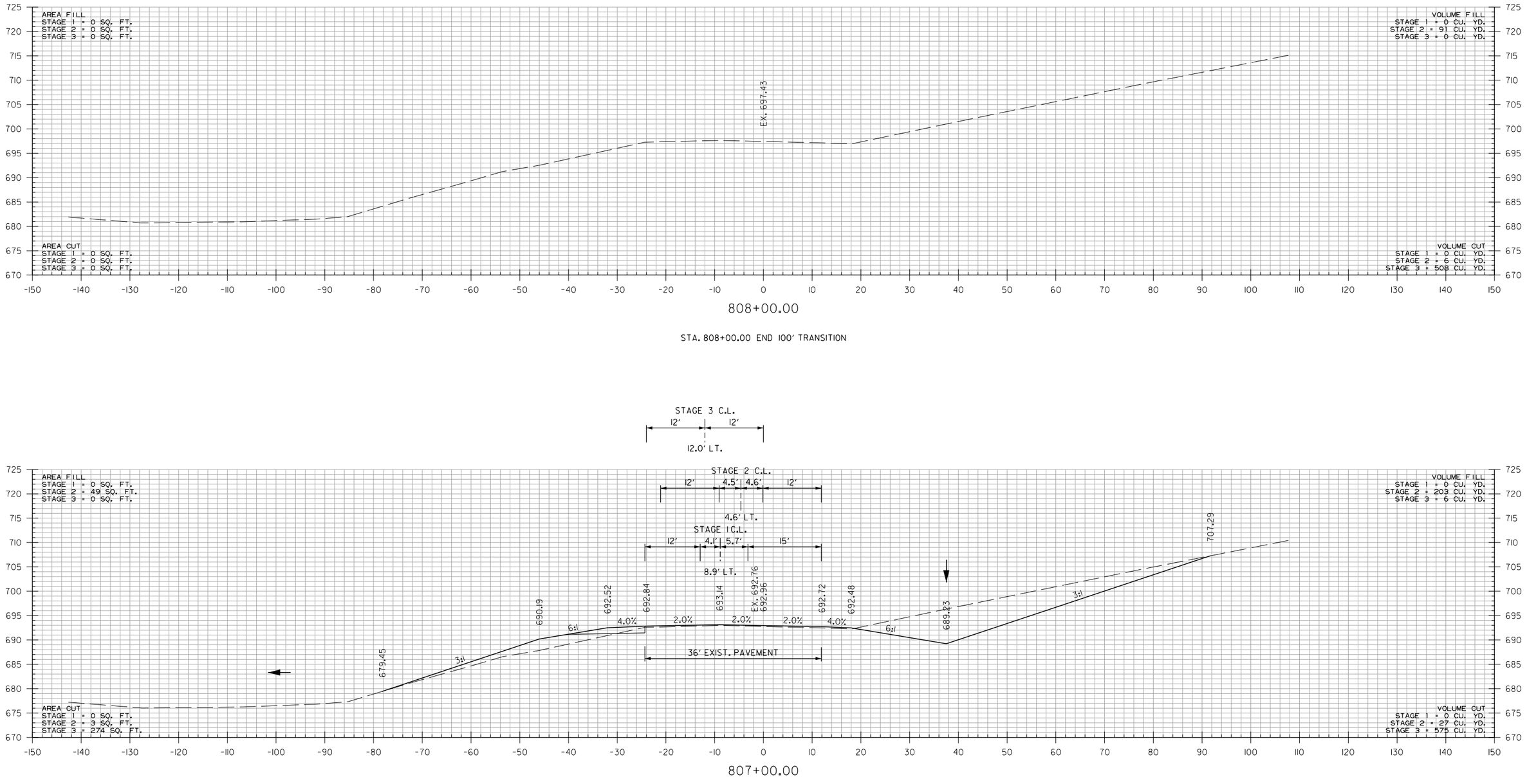
805+00.00

HWY. 25
STA. 805+00 TO STA. 806+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

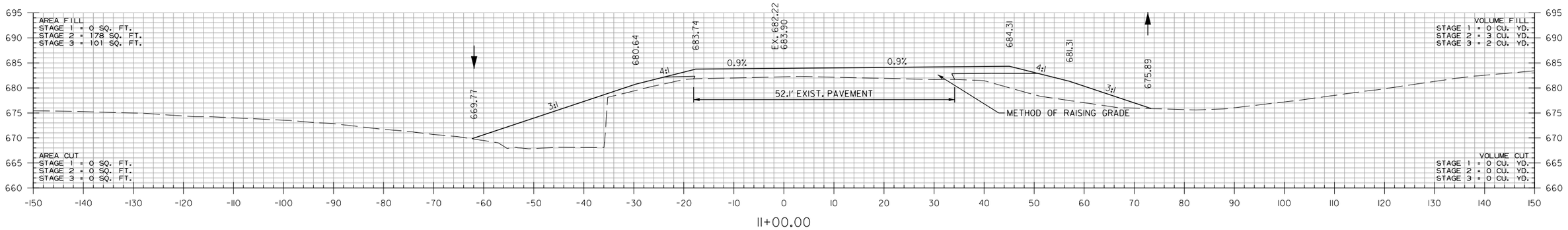
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	88	92

(2) CROSS SECTIONS



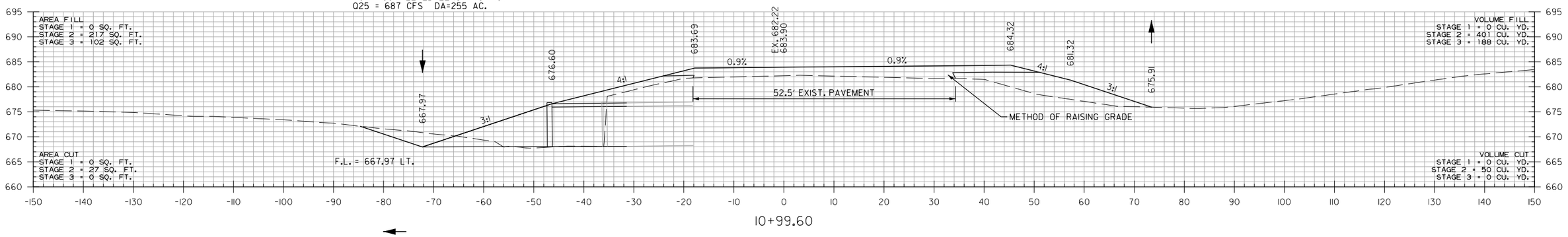
HWY. 25
STA. 807+00 TO STA. 808+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050413	89	92
				(2)		CROSS SECTIONS		



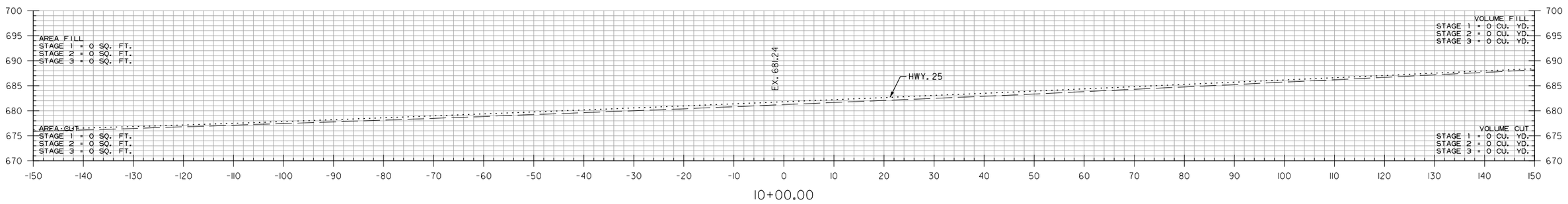
11+00.00

STA. 11+19 IN PLACE
8' X 8' X 90' R.C. BOX CULVERT.
30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
REMOVE HDWLS. & EXTEND 13' LT. & 4' RT.
TO A COMPLETED LENGTH OF 107'
Q25 = 687 CFS DA=255 AC.



10+99.60

STA. 10+24.00 BEGIN HWY. 107



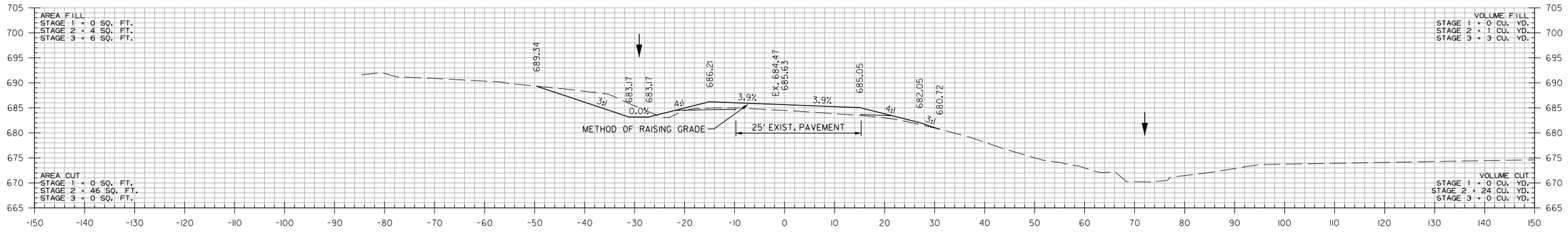
10+00.00

HWY. 107
STA. 10+00 TO STA. 11+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

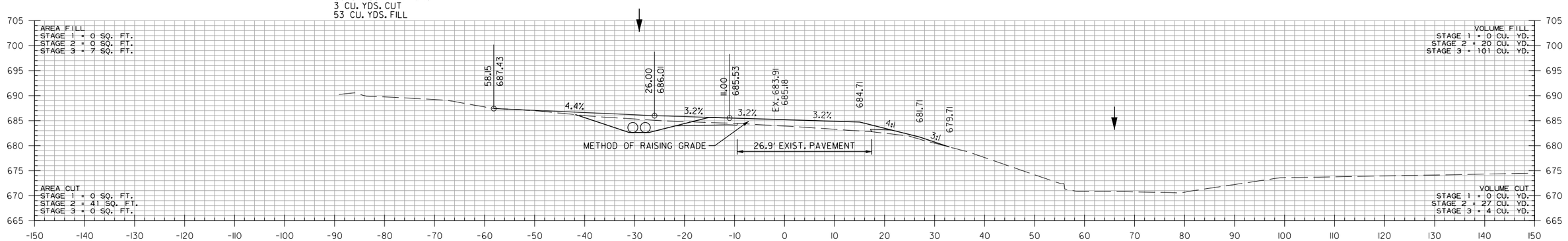
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	90	92

(2) CROSS SECTIONS

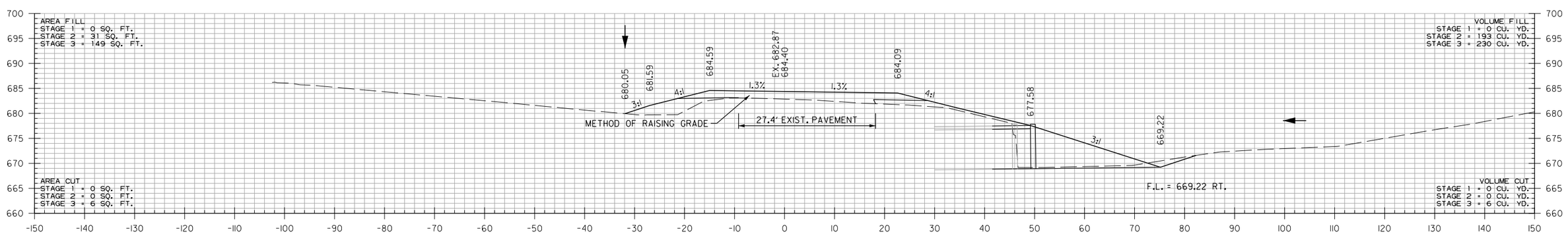


12+00.00

STA. 11+85 IN PLACE
24" X 25' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 35' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
3 CU. YDS. CUT
53 CU. YDS. FILL



11+85.00



11+46.69

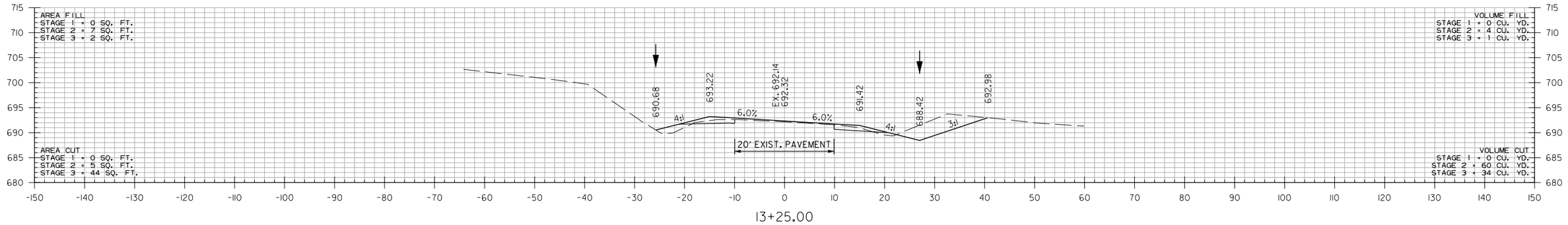
HWY. 107
STA. 11+47 TO STA. 12+00

aewierciak 4/23/2021 10:55:55 AM
WORKSPACE: AHTD
L:\2017\17017608 - 050413 Cadron Creek Str-Apprs\Drawings\r050413_CX_HWY 107.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

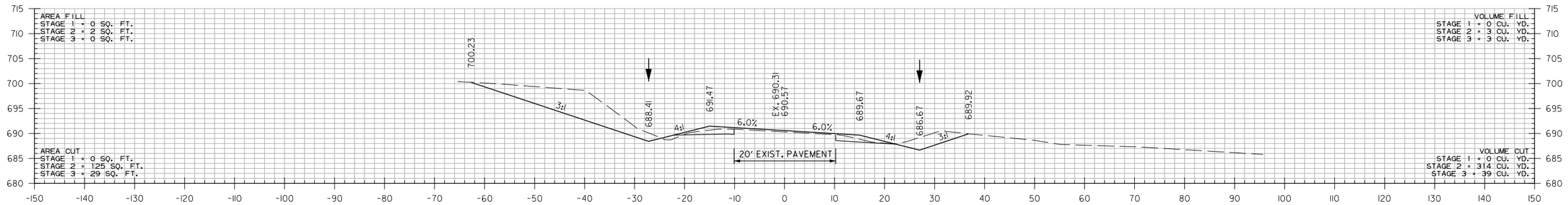
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	91	92

(2) CROSS SECTIONS



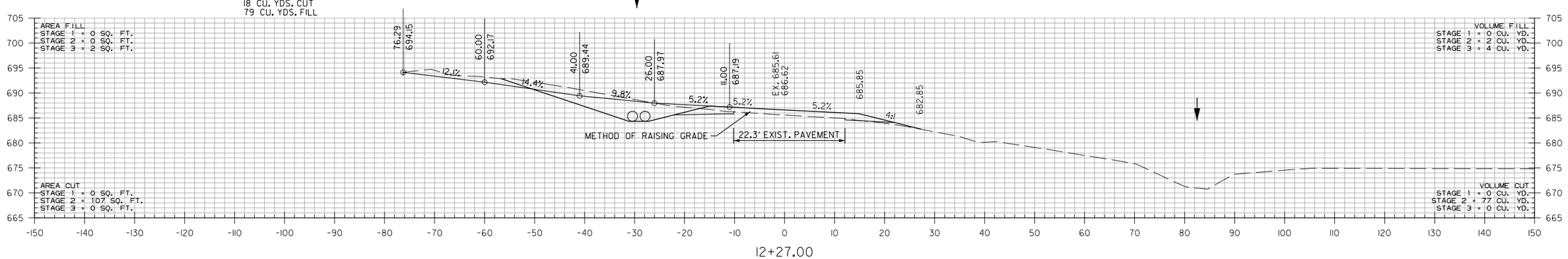
13+25.00

STA. 13+25.00 END HWY. 107



13+00.00

STA. 12+27 IN PLACE
24" X 25' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 41' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
18 CU. YDS. CUT
79 CU. YDS. FILL

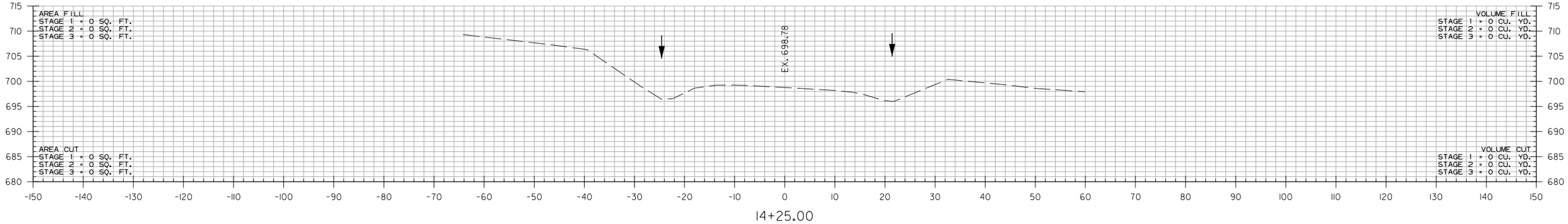


12+27.00

HWY. 107
STA. 12+27 TO STA. 13+25

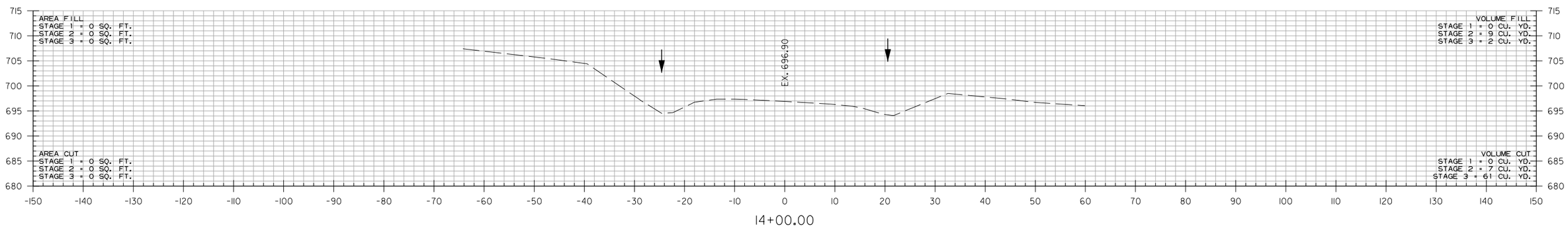
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050413	92	92
(2)	CROSS SECTIONS			



14+25.00

STA. 14+25.00 END 100' TRANSITION

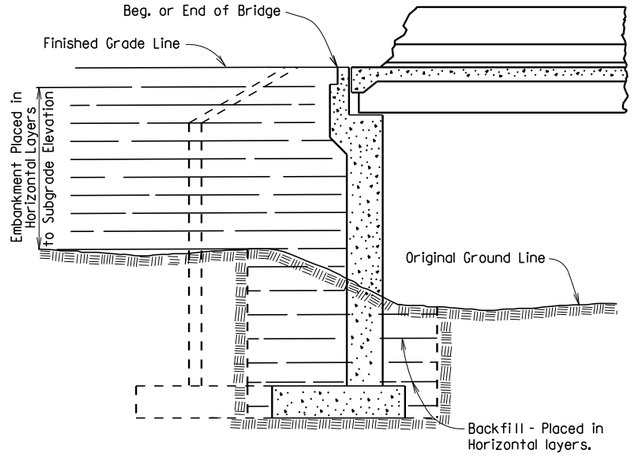


14+00.00

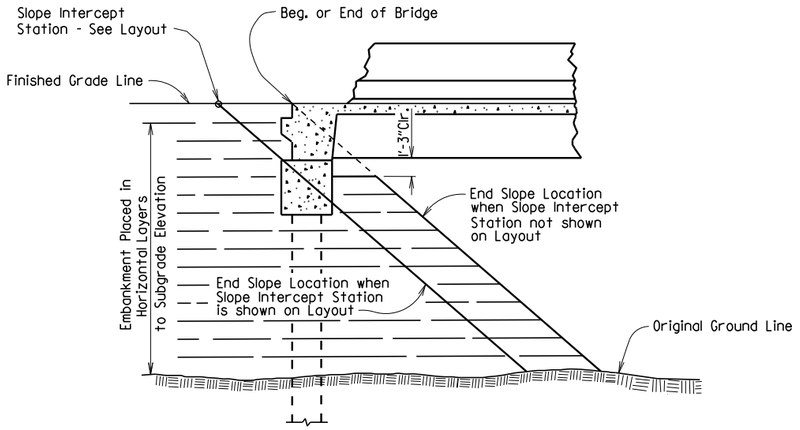
HWY. 107
STA. 14+00 TO STA. 14+25

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.				

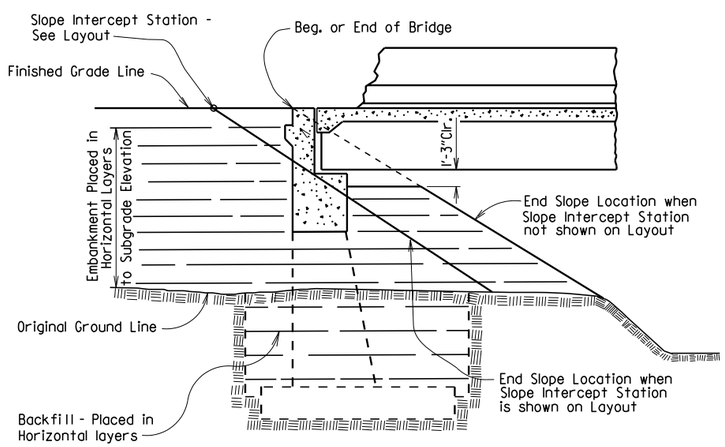
1 EMBANKMENT & BACKFILL 55000



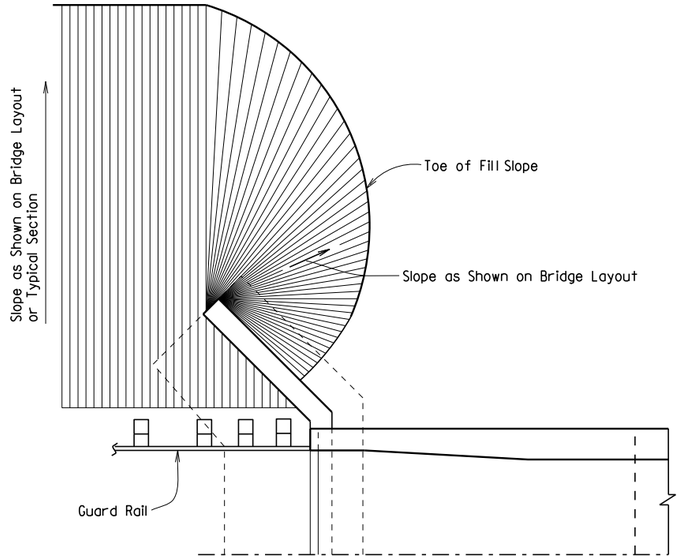
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



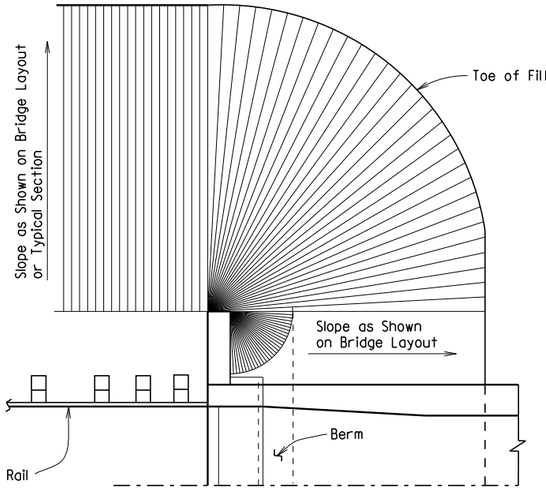
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



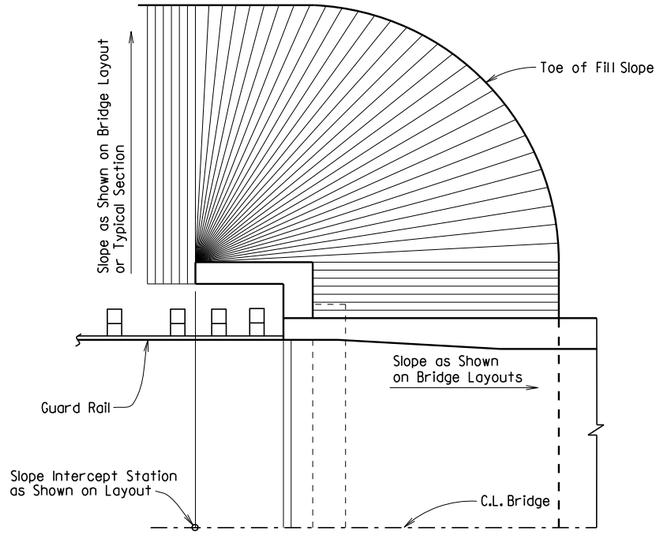
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



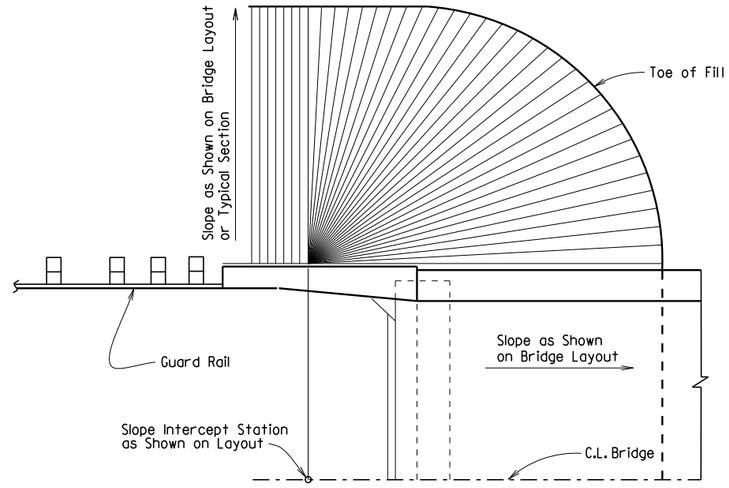
VERTICAL WALL ABUTMENTS



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

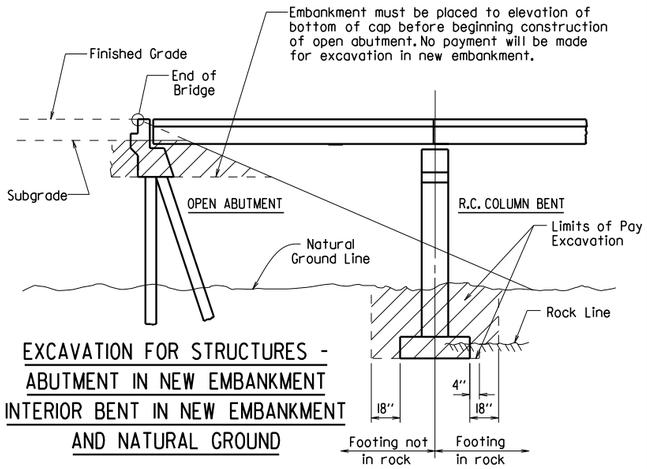
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

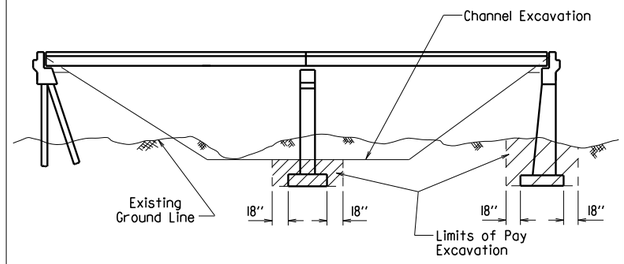
DRAWING NO. 55000

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.				

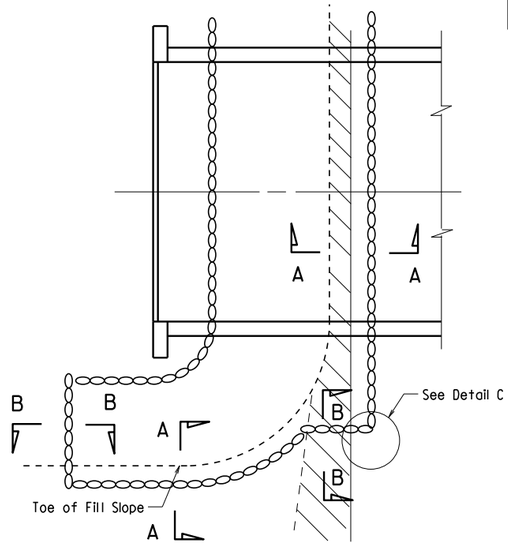
1 RIPRAP & EXCAV. 55001



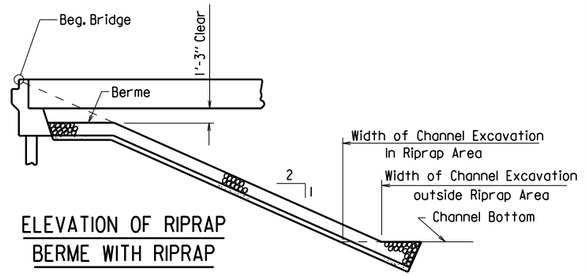
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



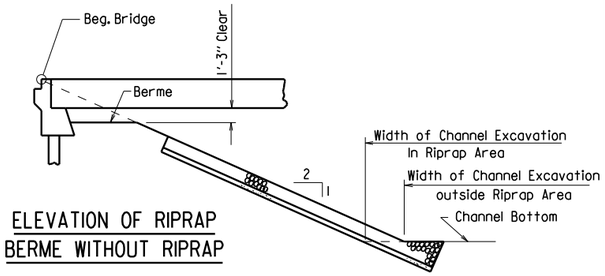
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



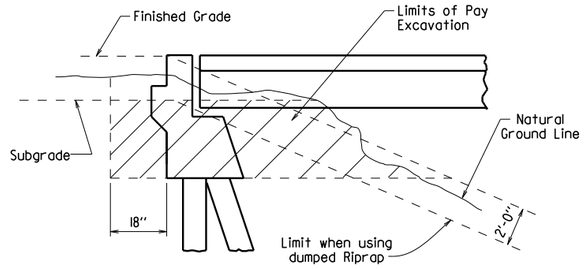
PLAN OF DUMPED RIPRAP



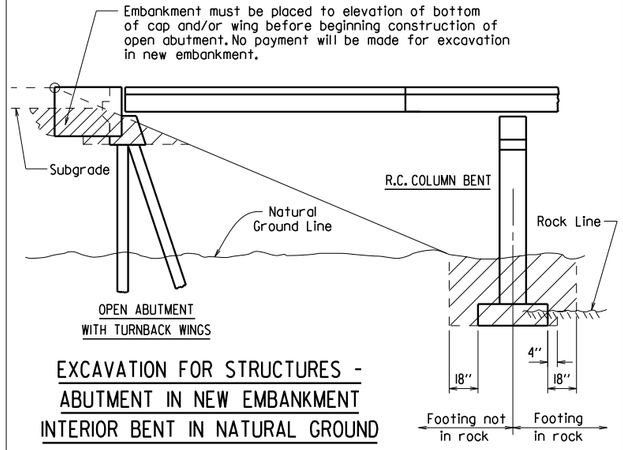
ELEVATION OF RIPRAP BERME WITH RIPRAP



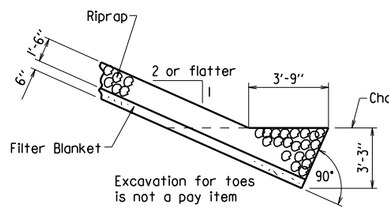
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



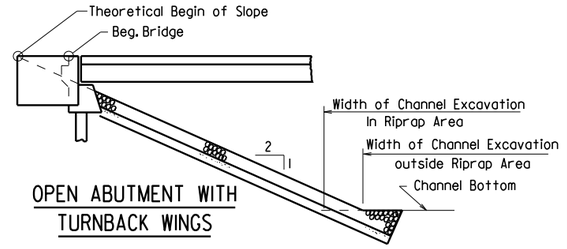
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



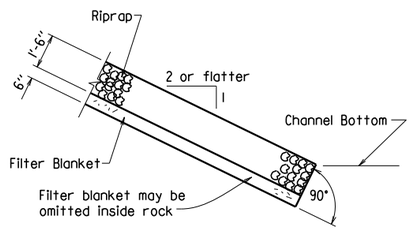
SECTION A-A

(Toe Excavation in Soil)

SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



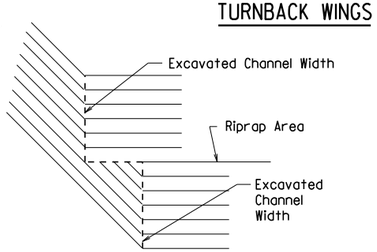
SECTION A-A

(Toe Excavation in Rock)

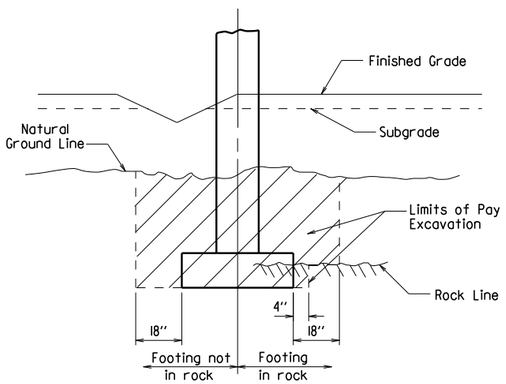
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

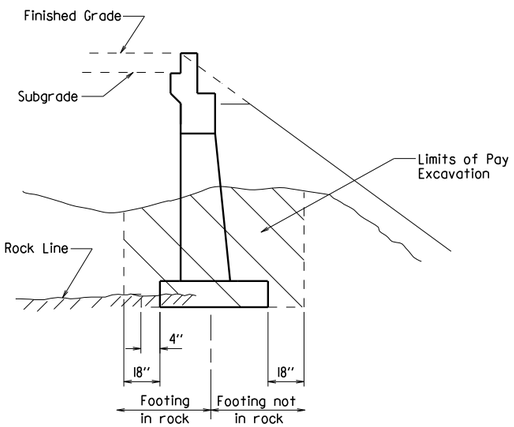
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



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.

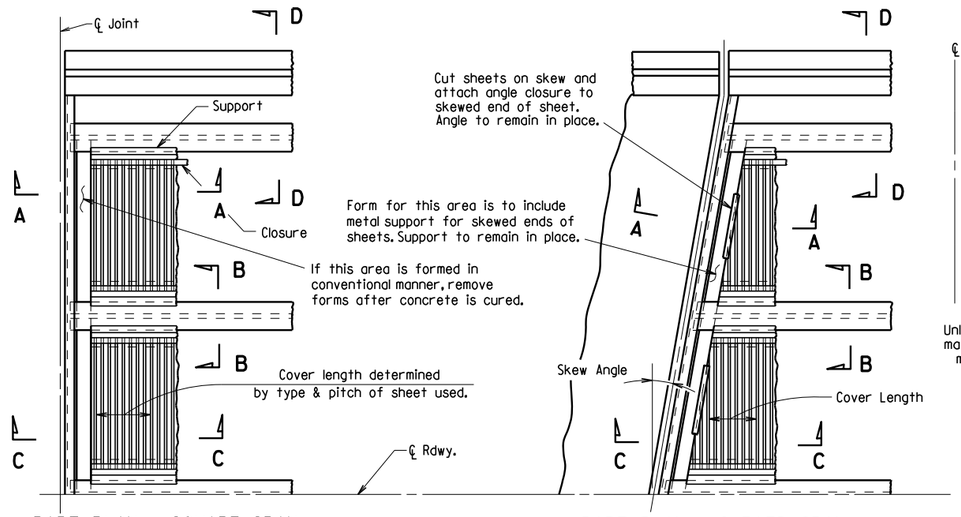
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b5500l.dgn

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	

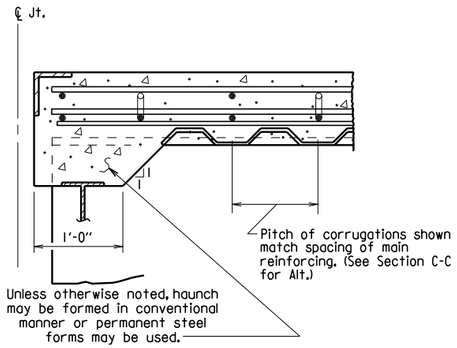


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

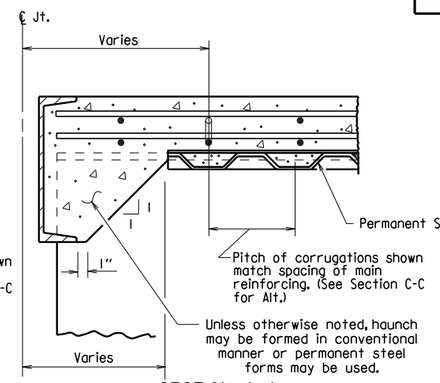
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



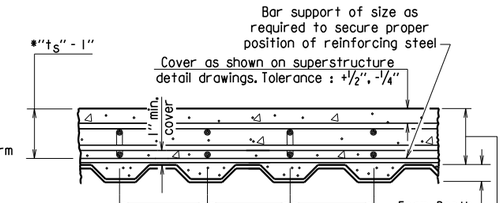
SECTION A-A

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



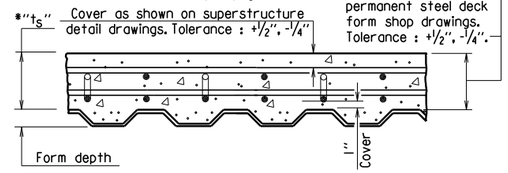
SECTION A-A

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



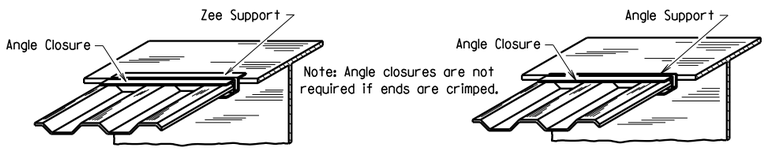
SECTION C-C

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.

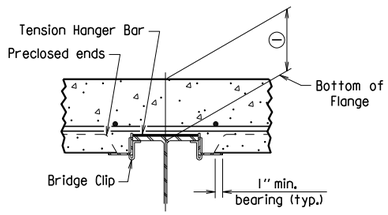
SECTION B-B

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.)

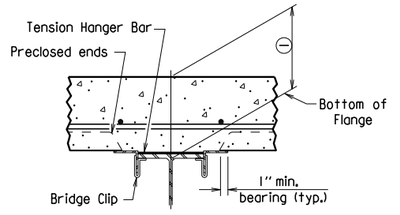
SECTION B-B

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



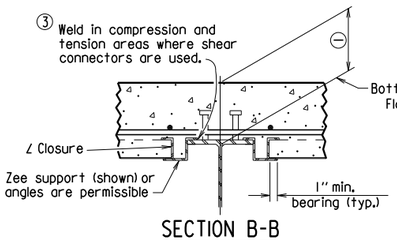
SECTION B-B

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



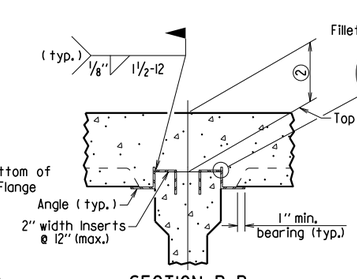
SECTION B-B

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



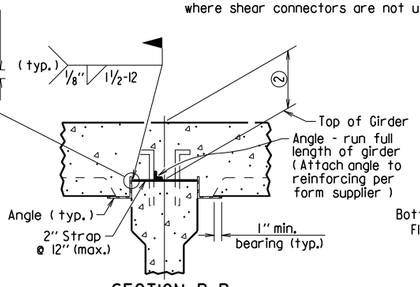
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



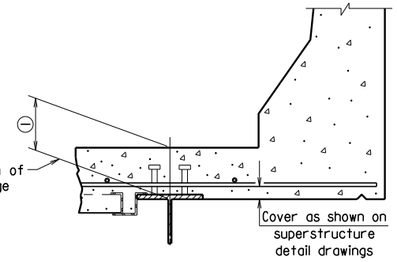
SECTION B-B (FOR CONCRETE GIRDERS)

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
12-1-14		1-15-19		6	ARK.			
1-14-15		3-24-2020		JOB NO.				
1-17-17		5-11-2021						

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	

21½"

LINE 1
LINE 2
LINE 3

ARKANSAS HIGHWAY COMMISSION
ROBERT S. MOORE, JR. - CHAIR
DALTON A. "ALEC" FARMER, JR. - VICE CHAIR
PHILIP TALDO
KEITH GIBSON
MARIE HOLDER
DIRECTOR - LORIE H. TUDOR
DEPUTY DIRECTOR/CHIEF OPERATING OFFICER - RANDY ORT
DEPUTY DIRECTOR/CHIEF ENGINEER - REX VINES

CONTRACTOR
COMPANY NAME
YEAR

XXXXX

2½" Center of Cast Lug 2½" 2½"

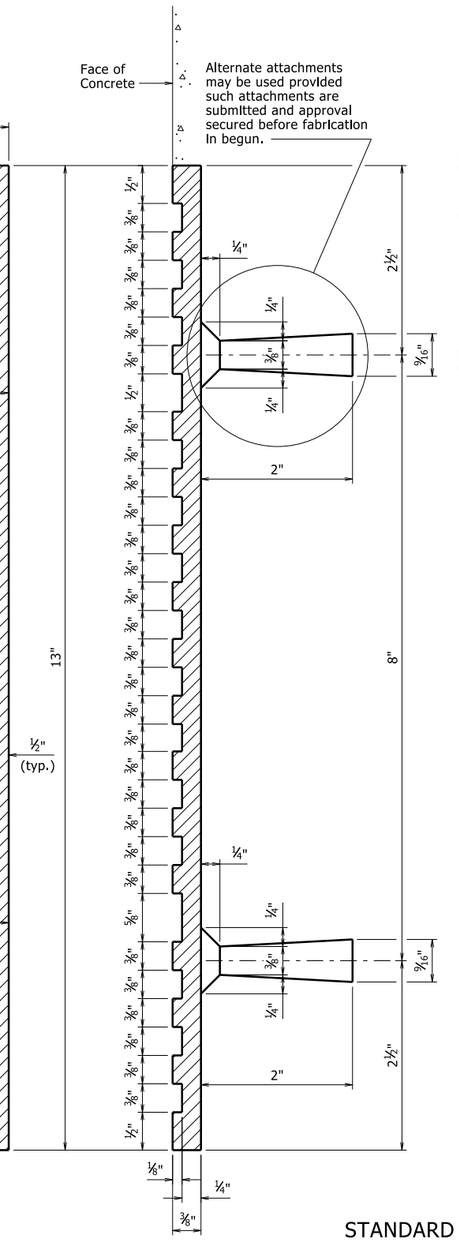
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20 HL-93

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.

6 Revised Deputy Director/ Chief Engineer
5-11-2021 CGP Checked By: CRE

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: 5/11/2021

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

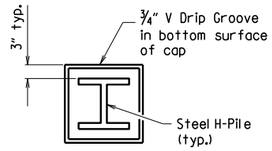
GENERAL NOTES FOR STEEL H-PILES:

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

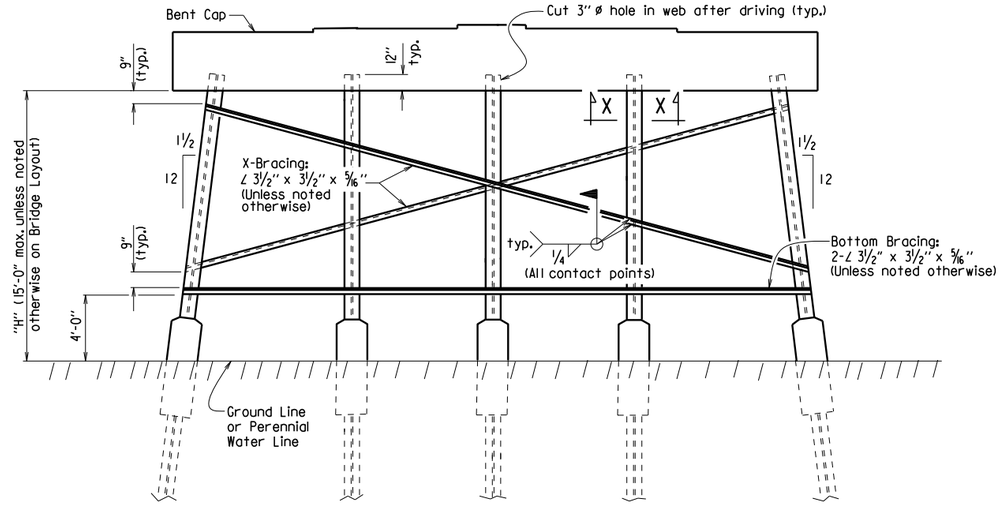
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

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.

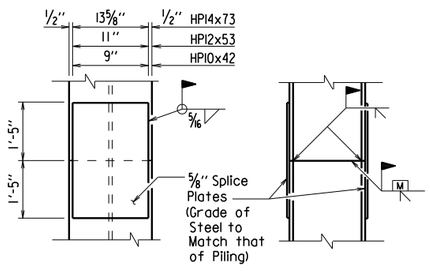
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

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)



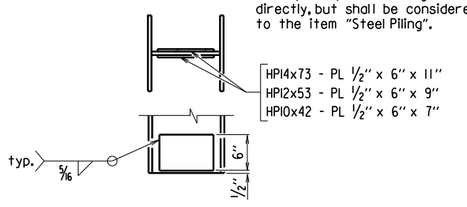
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

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:

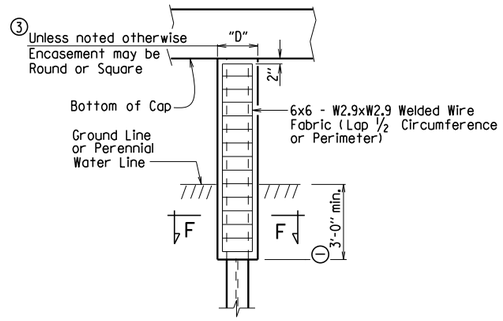
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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.

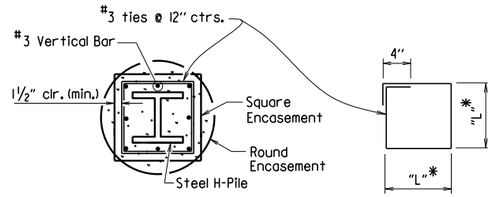
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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)

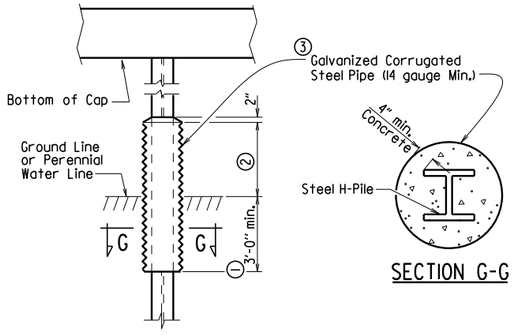


SECTION F-F

*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

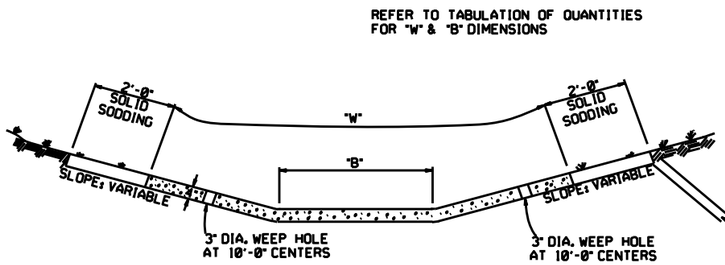
STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

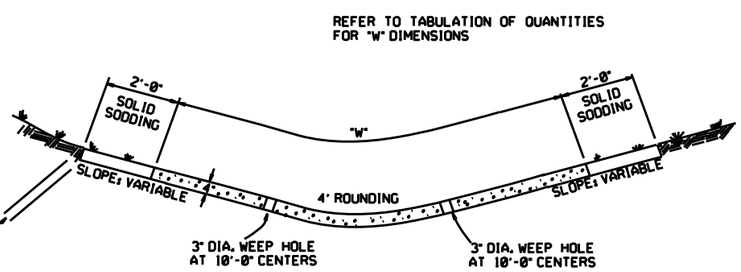
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55020



TYPE A

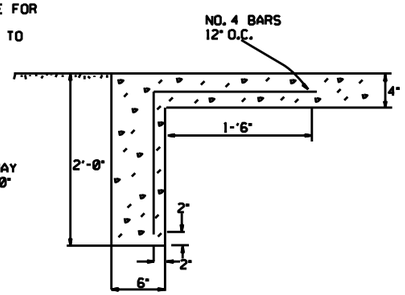
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



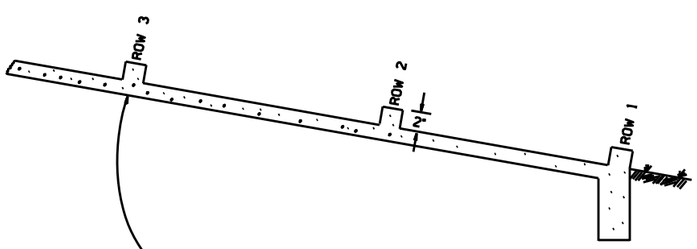
TYPE B

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

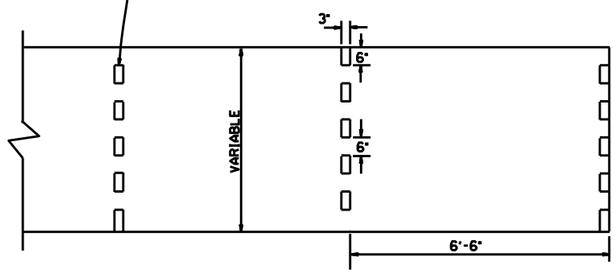


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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.

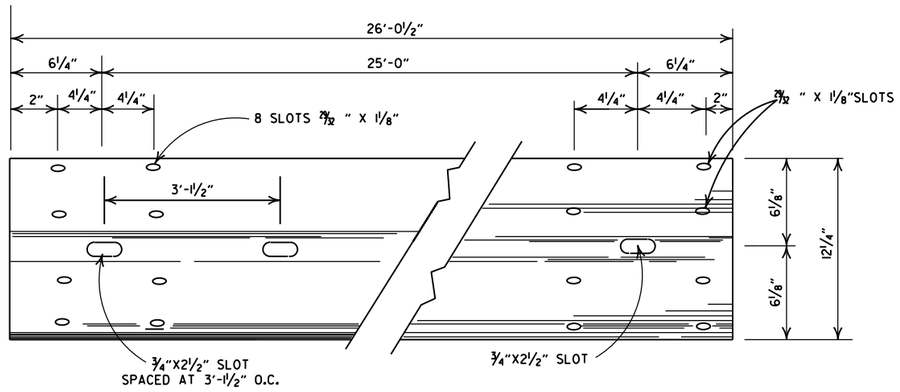
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

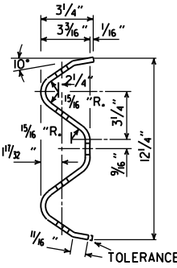
DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	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

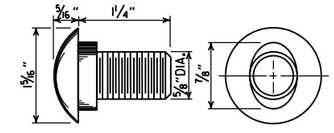
STANDARD DRAWING CDP-1



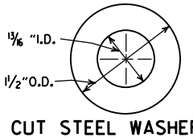


DETAILS OF W-BEAM GUARDRAIL

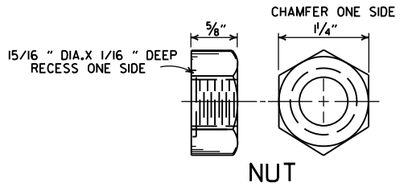
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



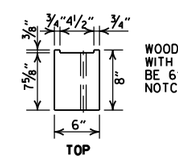
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



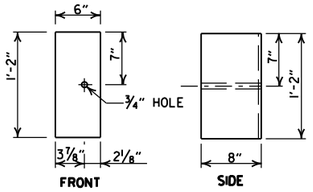
CUT STEEL WASHER



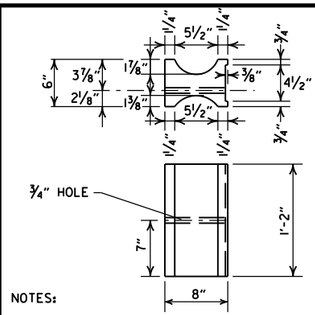
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"xl'-2" WITH NO NOTCH REQUIRED.



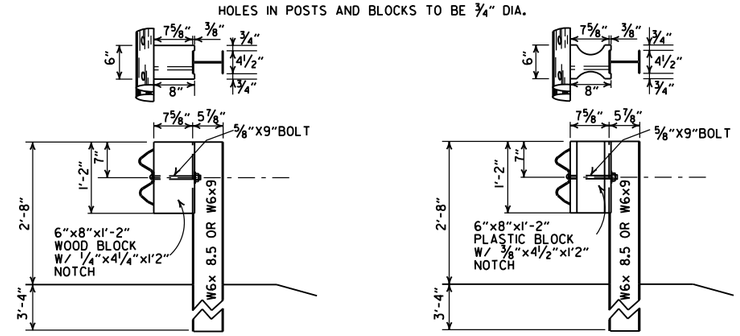
WOOD BLOCKOUT (W-BEAM)



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.

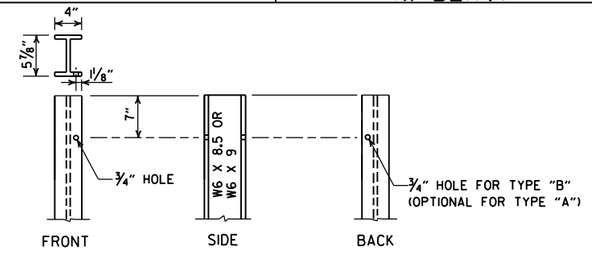
PLASTIC BLOCKOUT (W-BEAM)



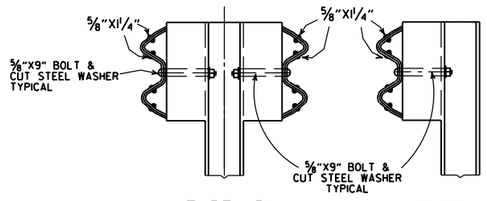
WOOD BLOCKOUT CONNECTIONS

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)

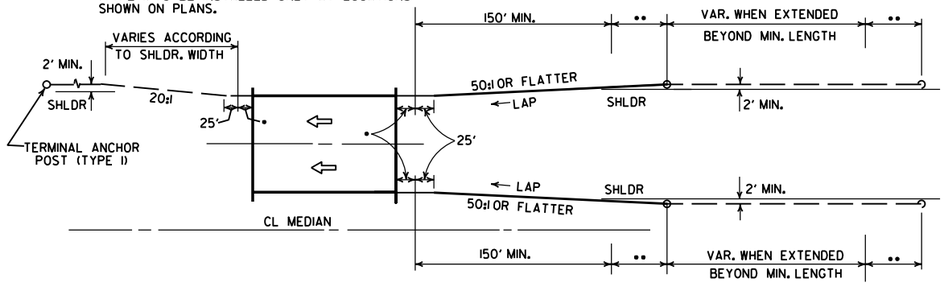
DATE	REVISION	FILMED
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
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

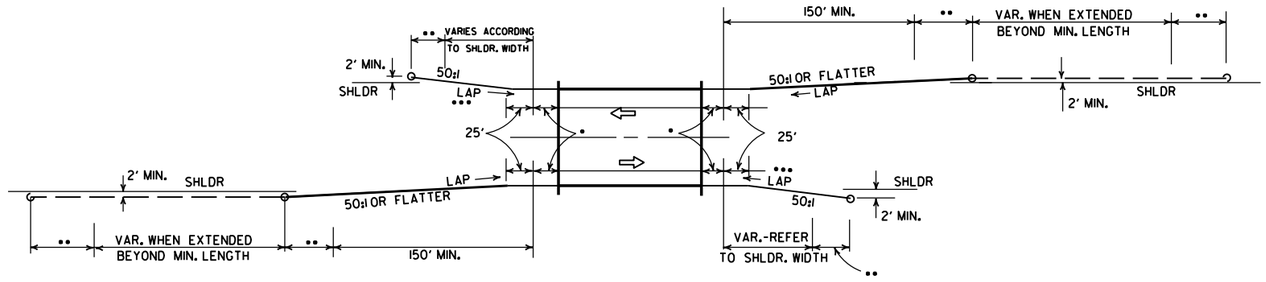
STANDARD DRAWING GR-6

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

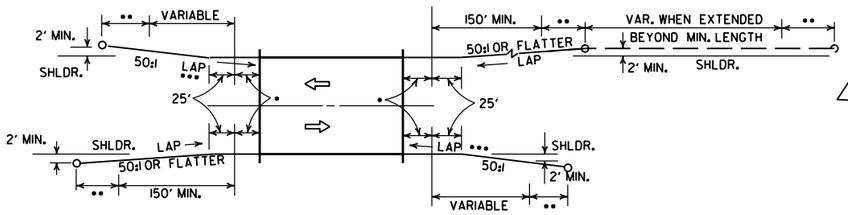
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

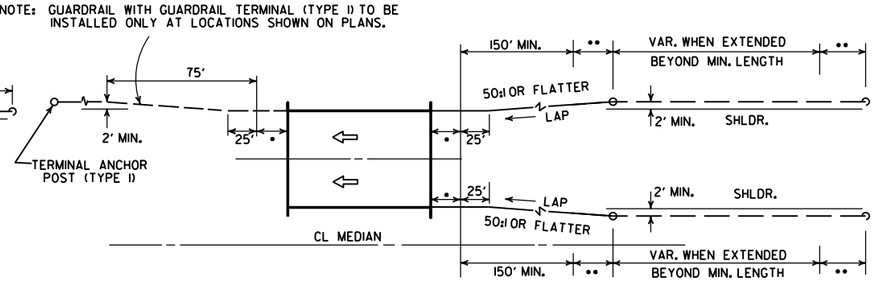
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

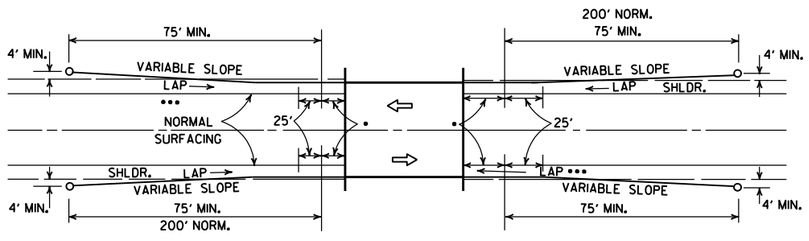
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



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

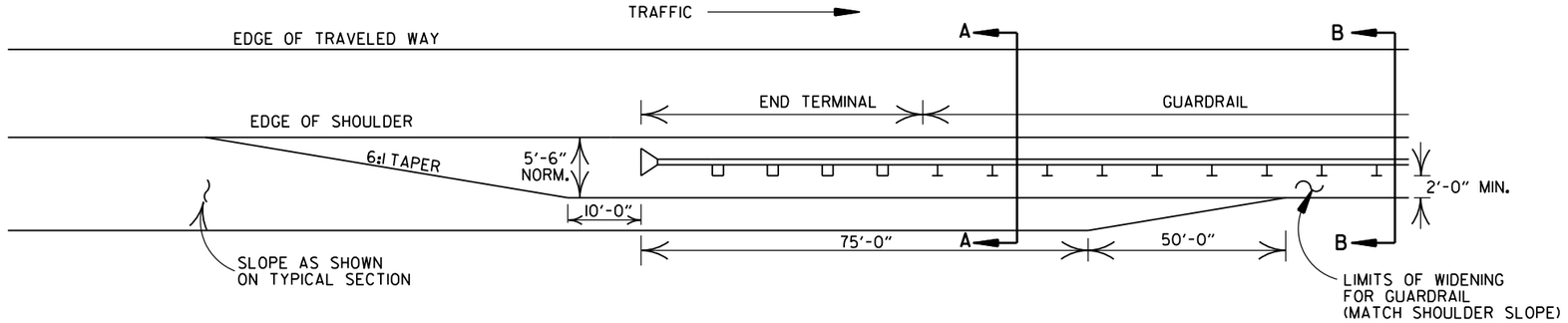
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

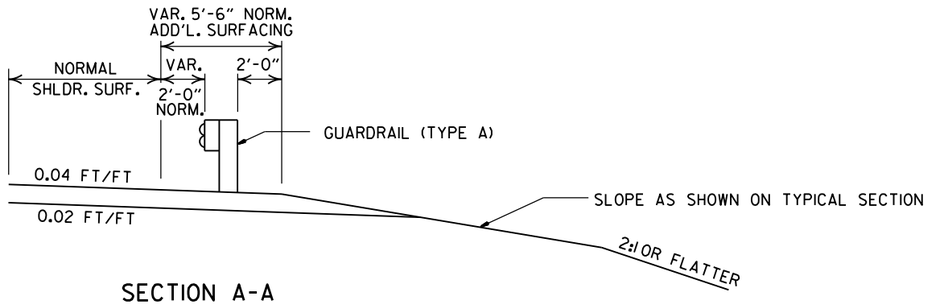
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

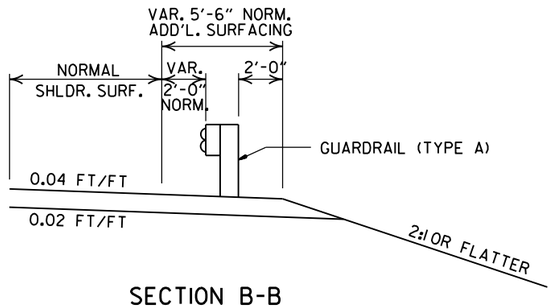
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



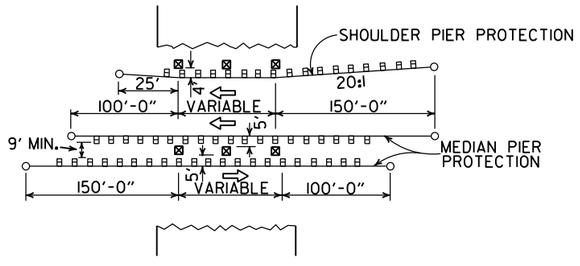


SECTION A-A



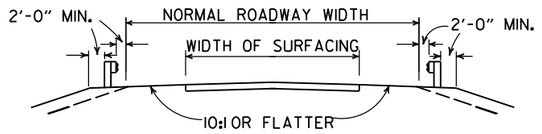
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

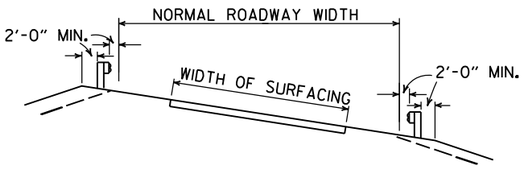


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

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



SECTION ON TANGENT



SECTION ON CURVE

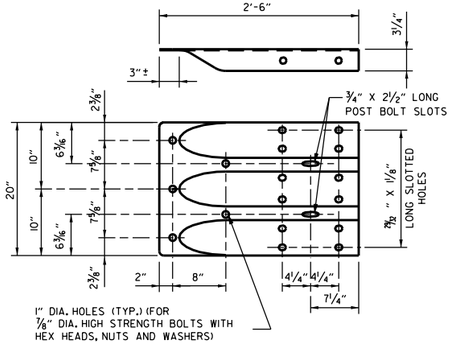
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

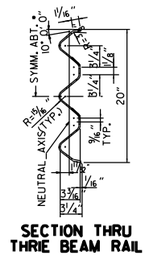
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

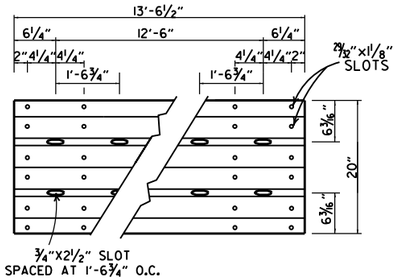
STANDARD DRAWING GR-9



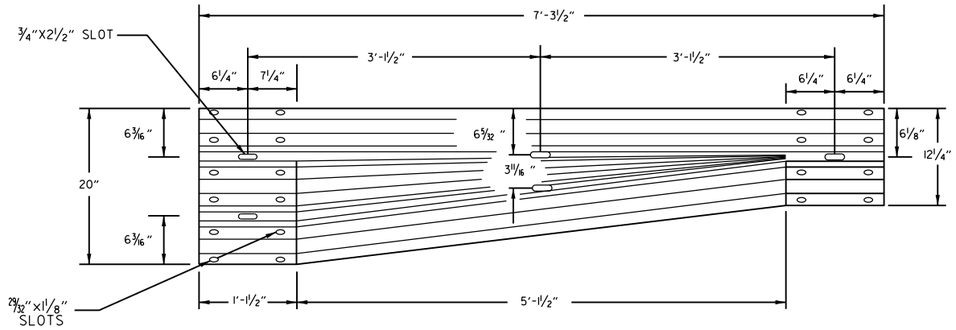
SPECIAL END SHOE



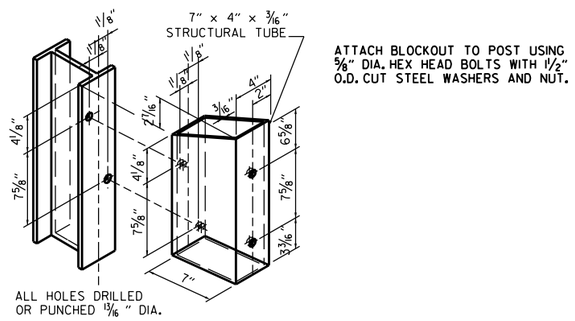
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

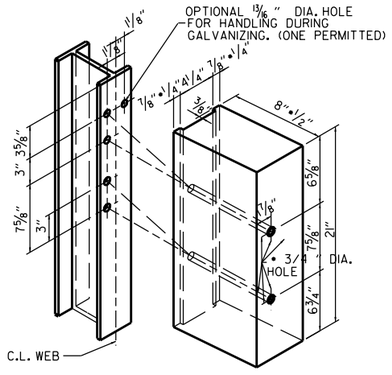


TRANSITION SECTION



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

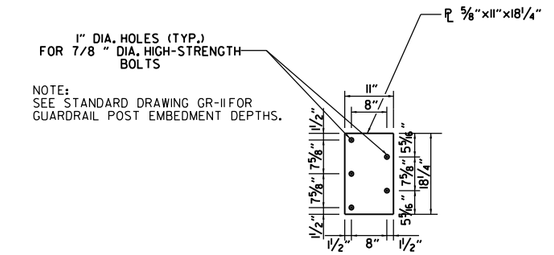
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

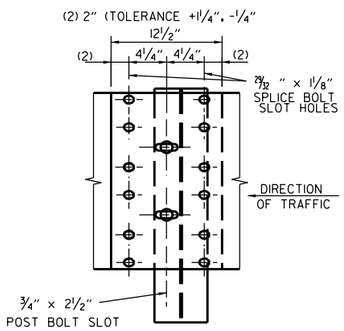
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



NOTE:
SEE STANDARD DRAWING GR-11 FOR GUARDRAIL POST EMBEDMENT DEPTHS.

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.

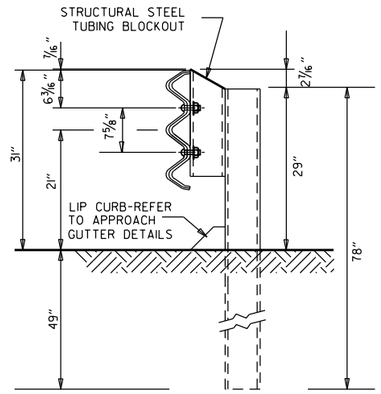
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

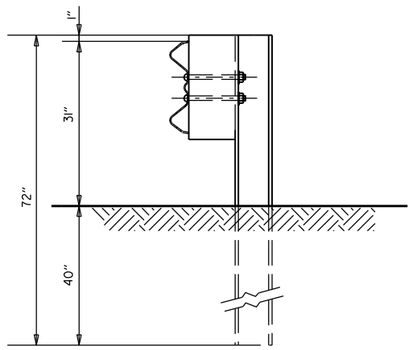
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

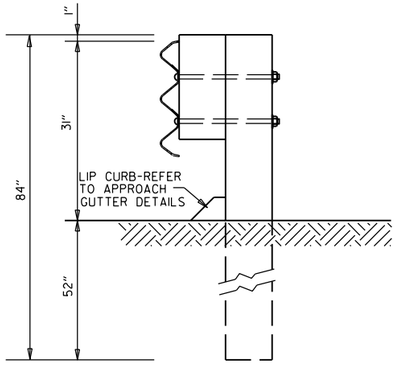
STANDARD DRAWING GR-10



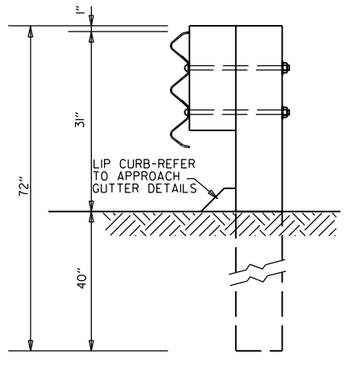
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



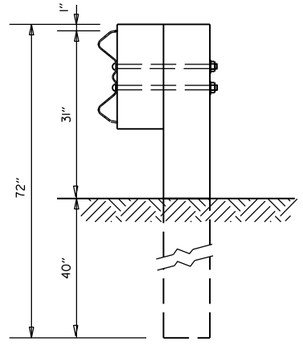
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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.

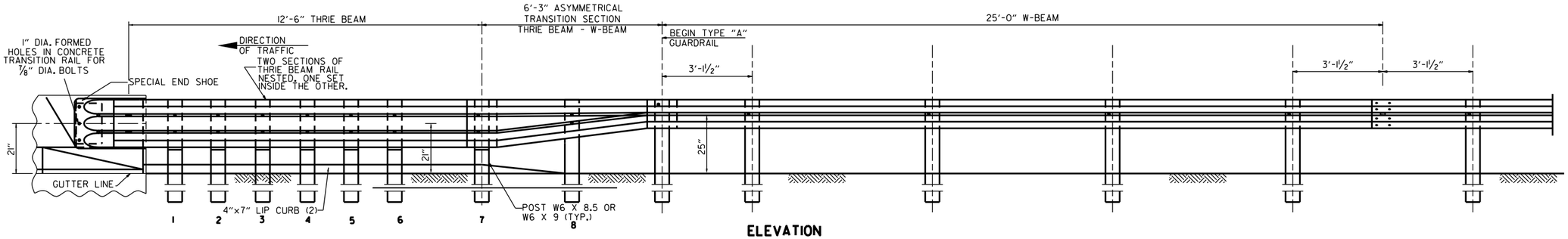
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

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	

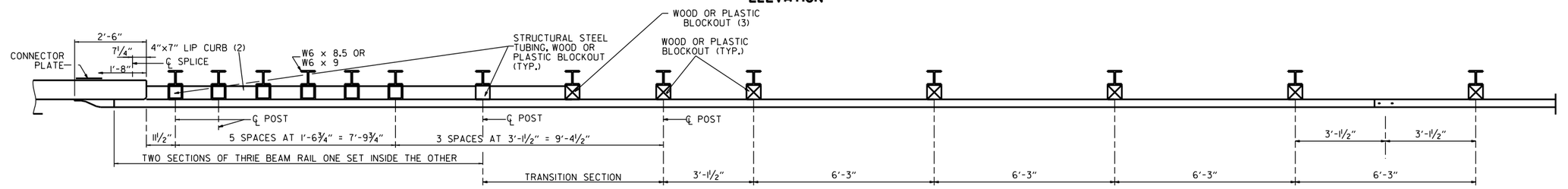
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

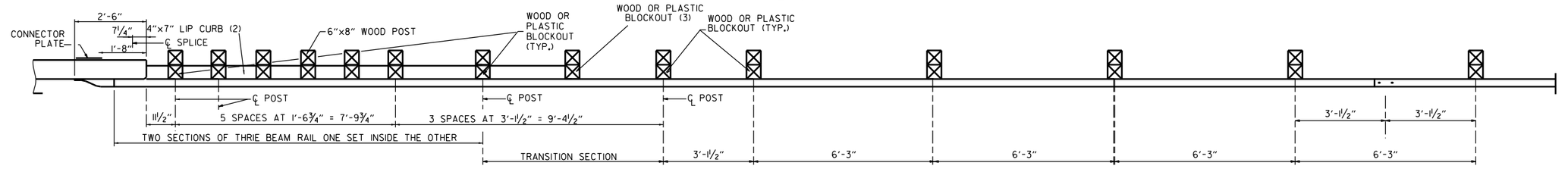
STANDARD DRAWING GR-11



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.

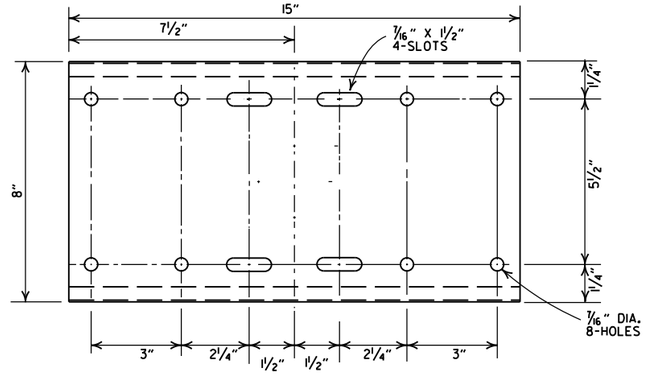
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

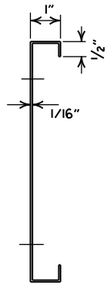
ARKANSAS STATE HIGHWAY COMMISSION

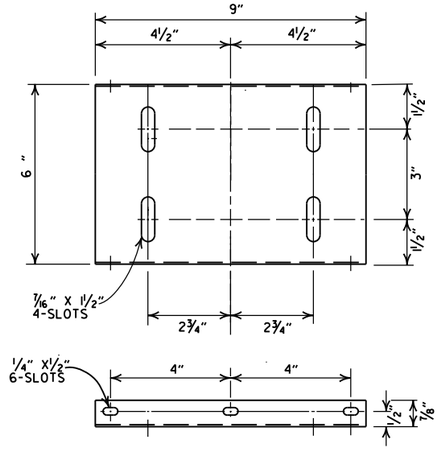
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

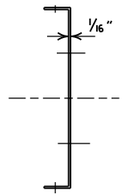


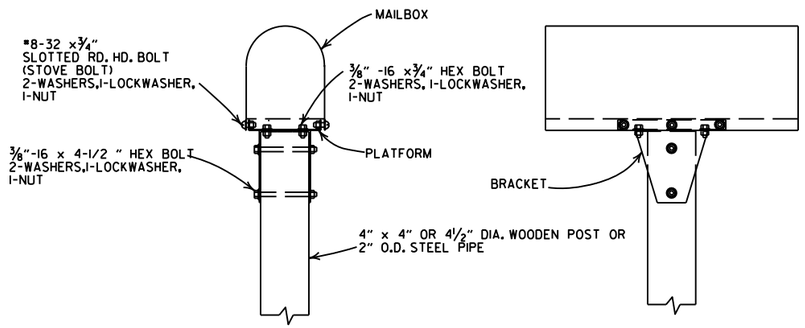
SHELF



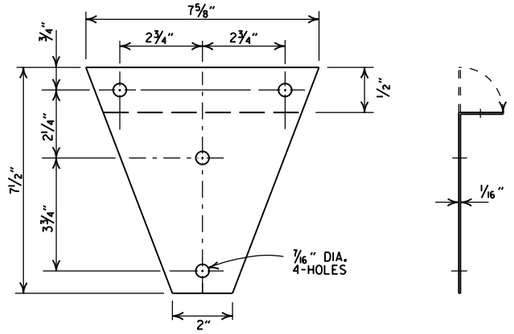


PLATFORM





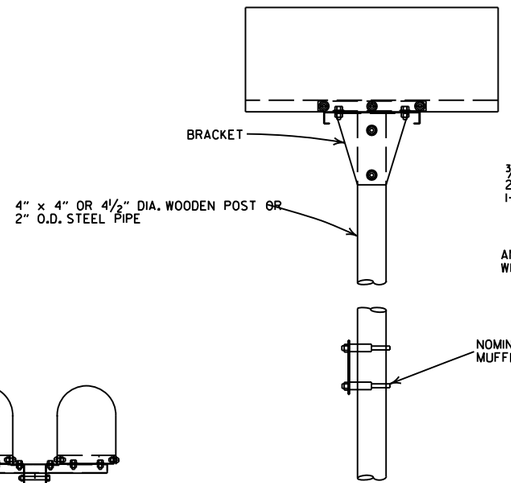
SINGLE INSTALLATION



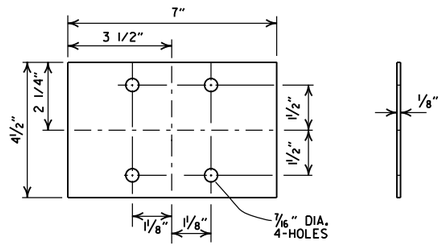
BRACKET

GENERAL NOTES

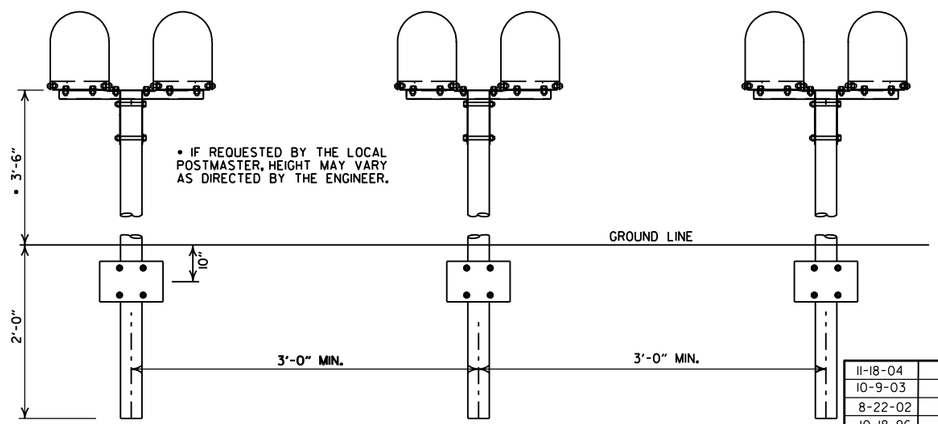
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED 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.



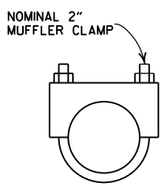
DOUBLE INSTALLATION



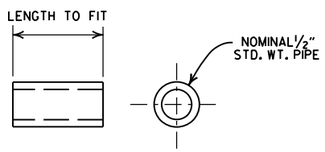
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



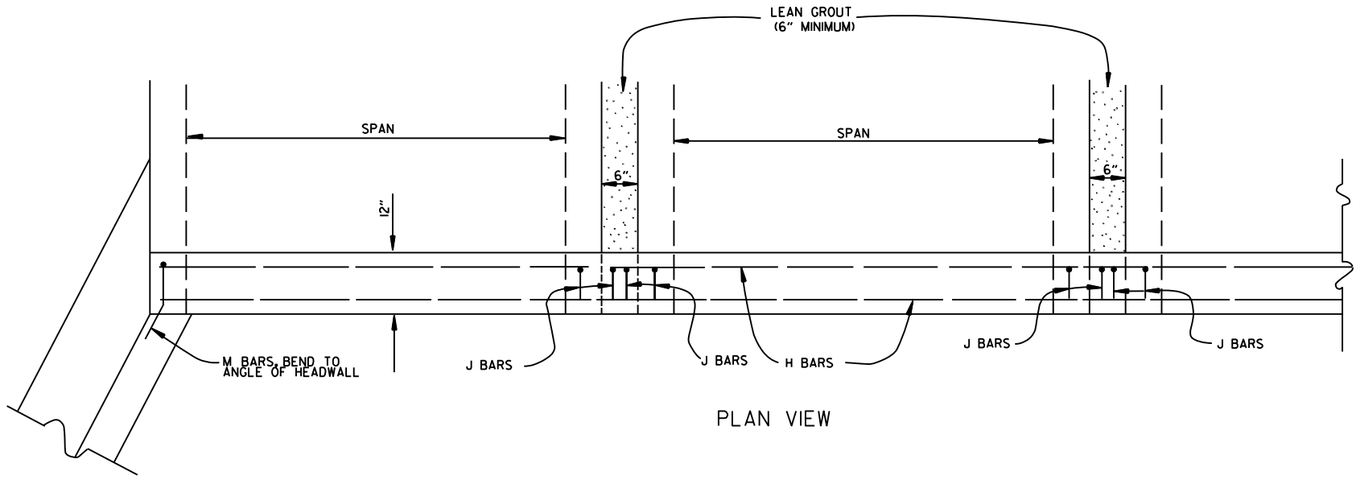
SPACER

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

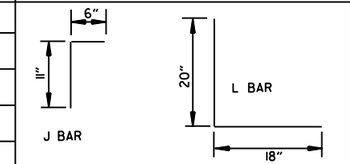
STANDARD DRAWING MB-1



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.

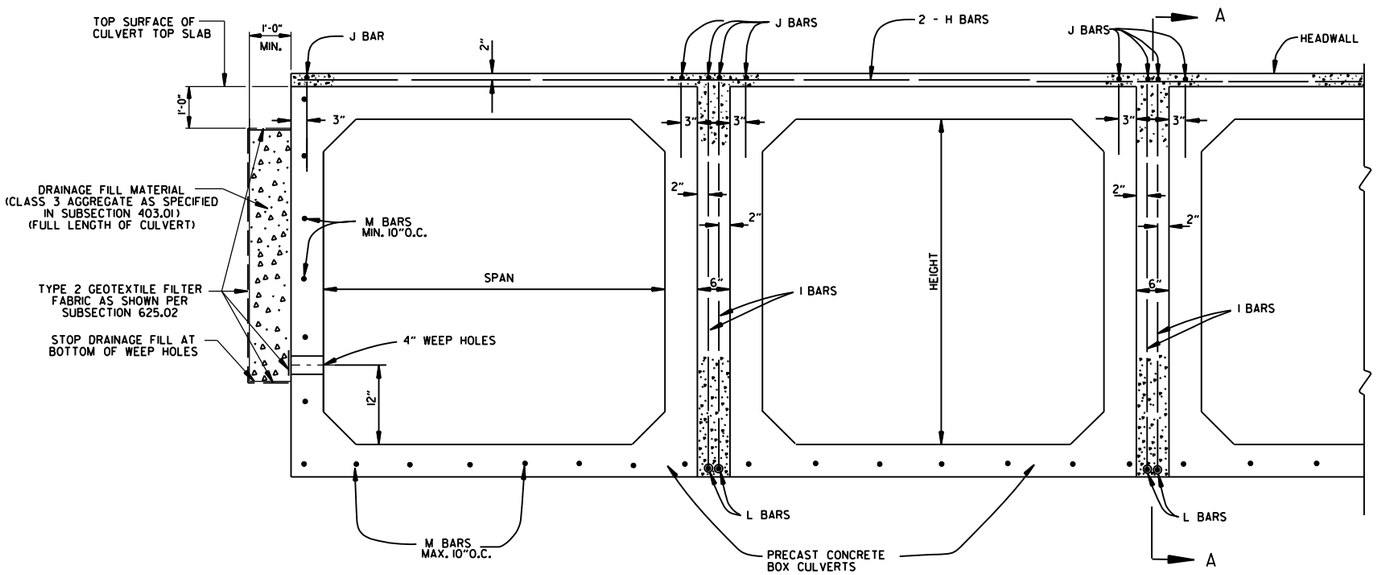
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

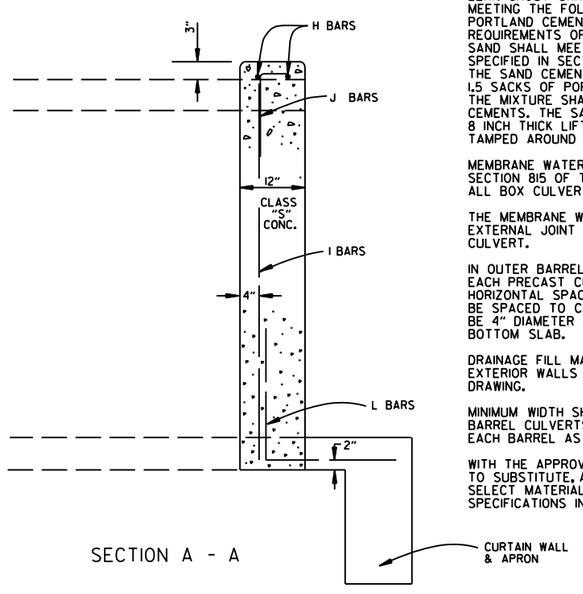
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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.

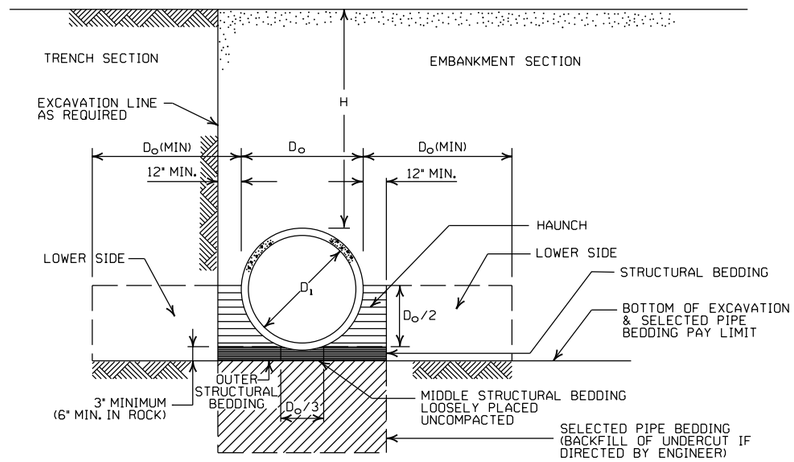
- LEGEND -

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

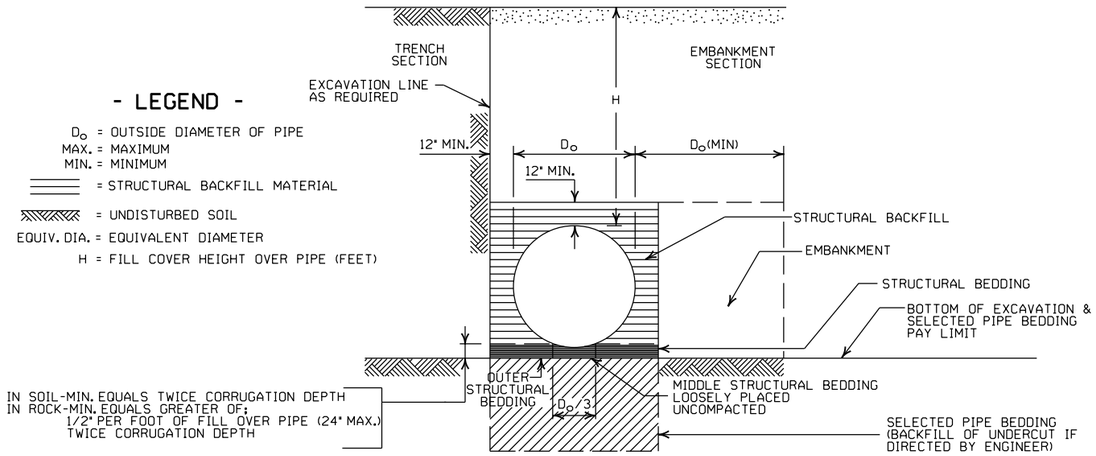
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	
				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"

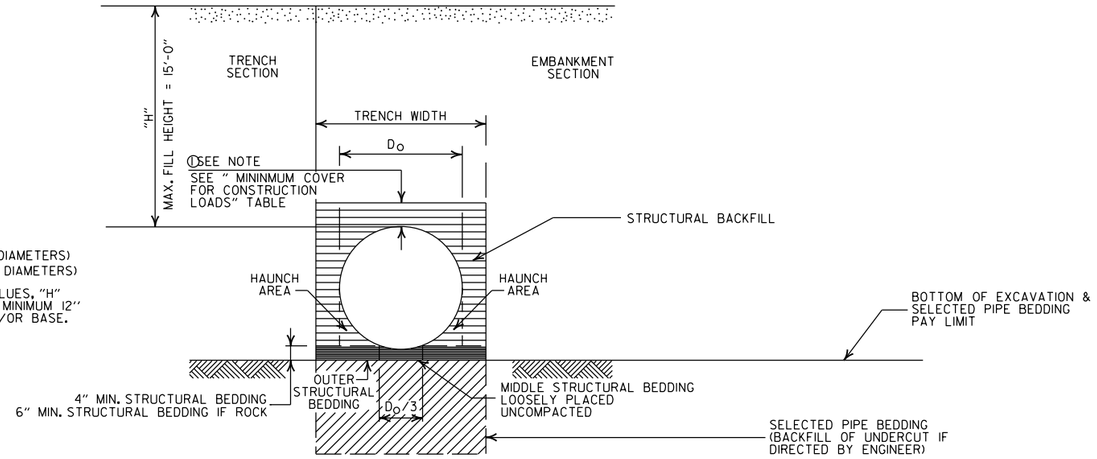
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

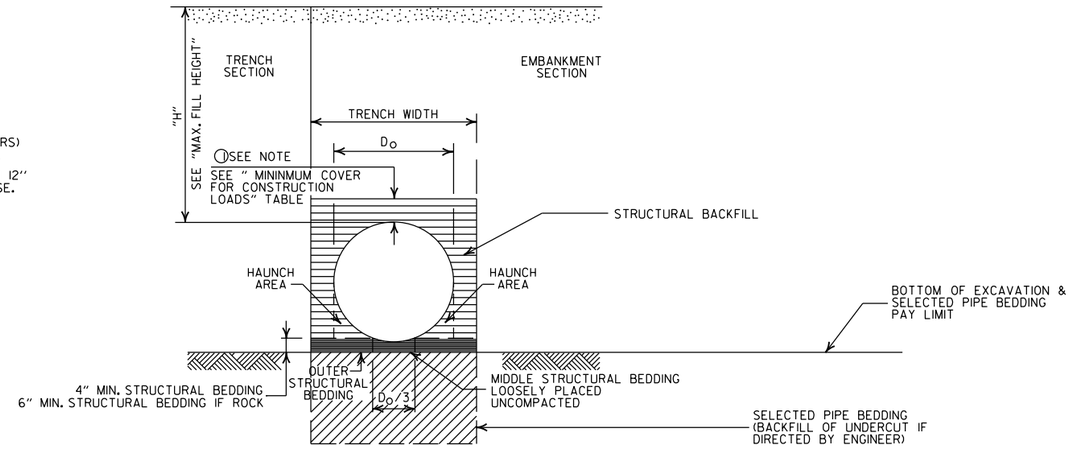
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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"

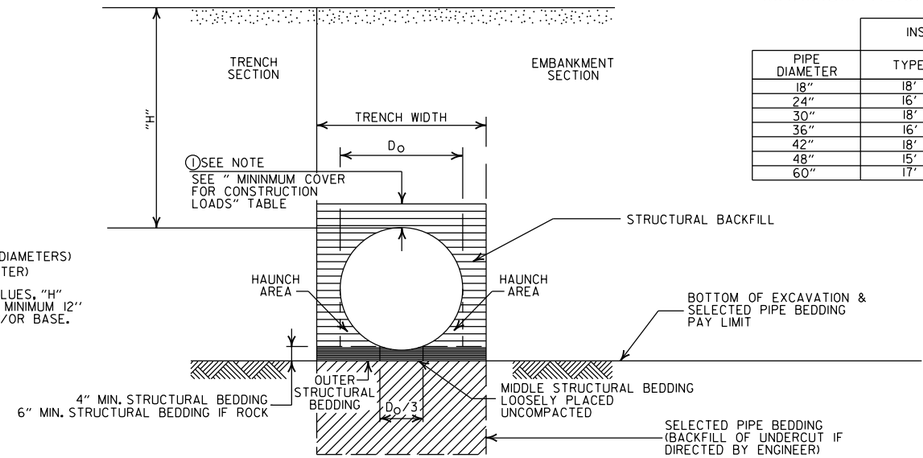
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

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

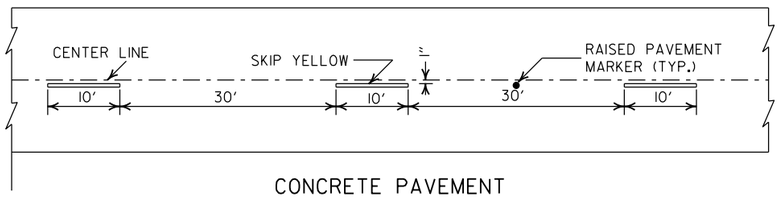
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

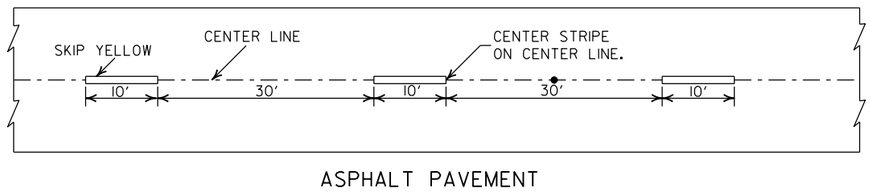
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

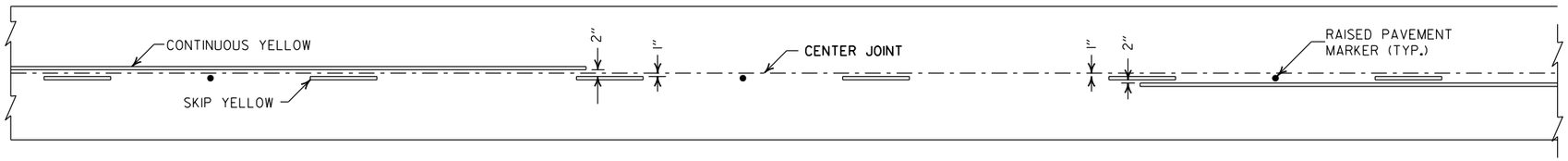


CONCRETE PAVEMENT

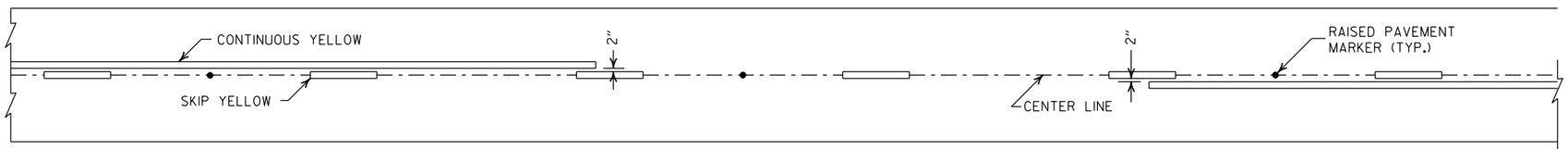


ASPHALT PAVEMENT

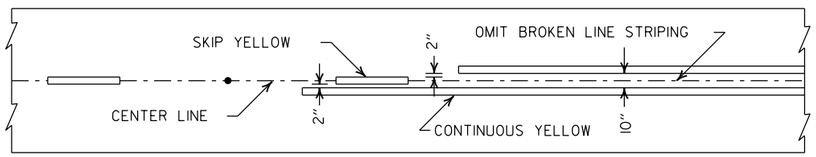
BROKEN LINE STRIPING



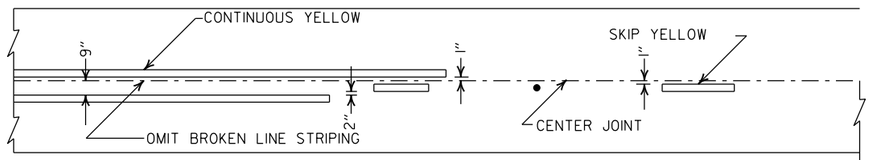
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

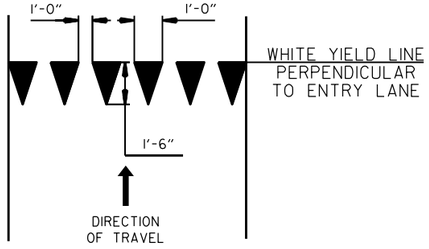


ASPHALT PAVEMENT

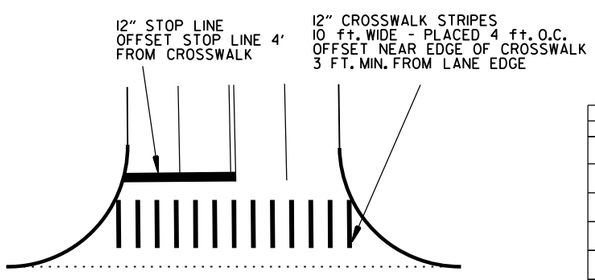


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

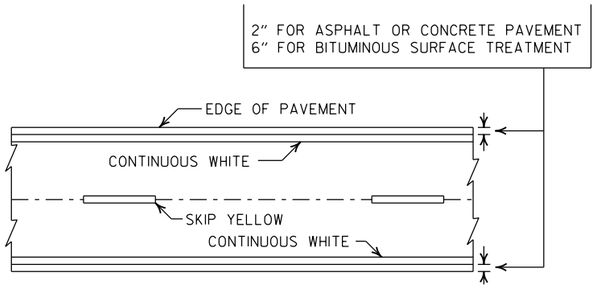


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

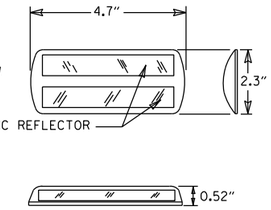
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



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

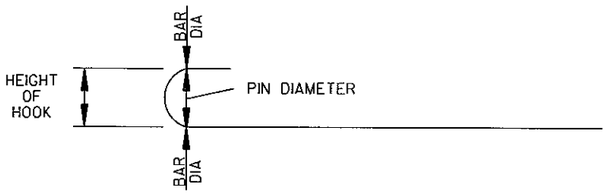
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

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

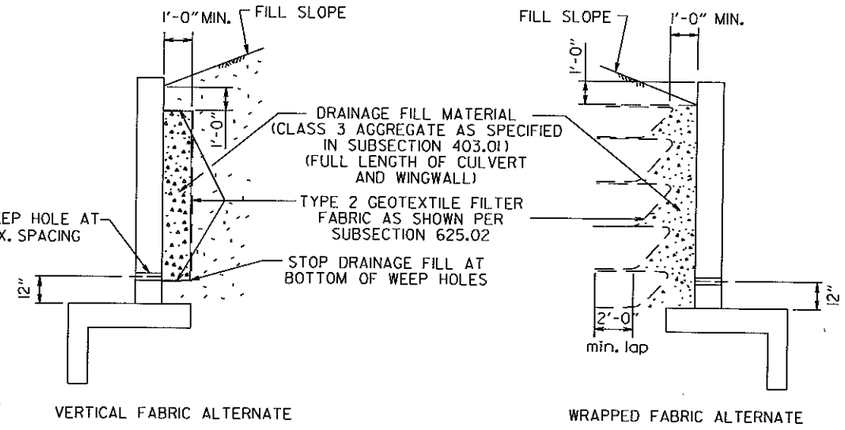
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

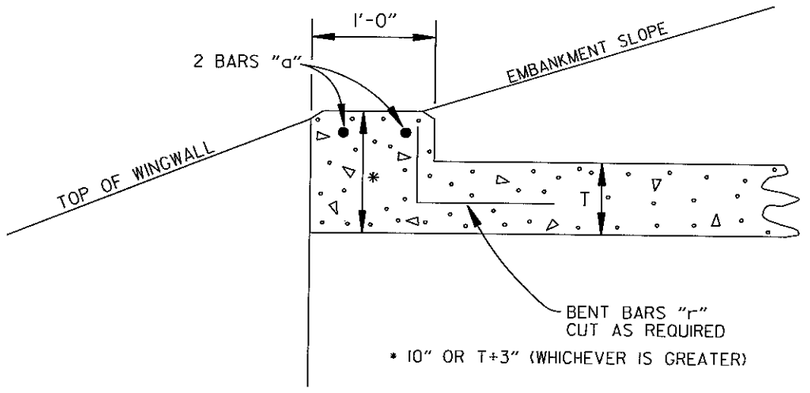
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

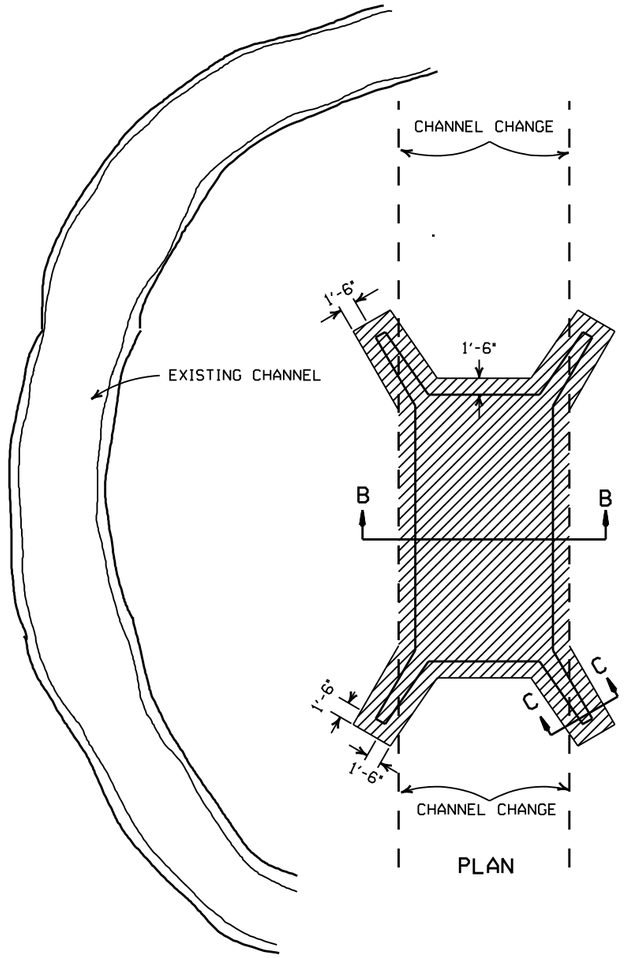
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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	

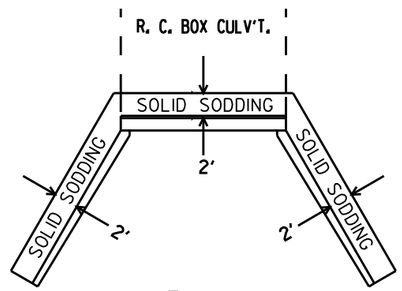
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



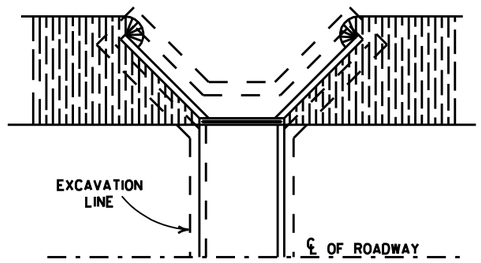
PLAN



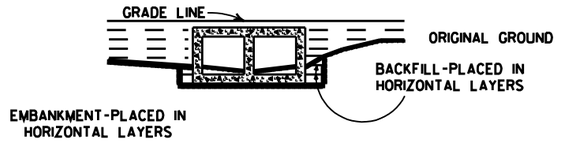
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

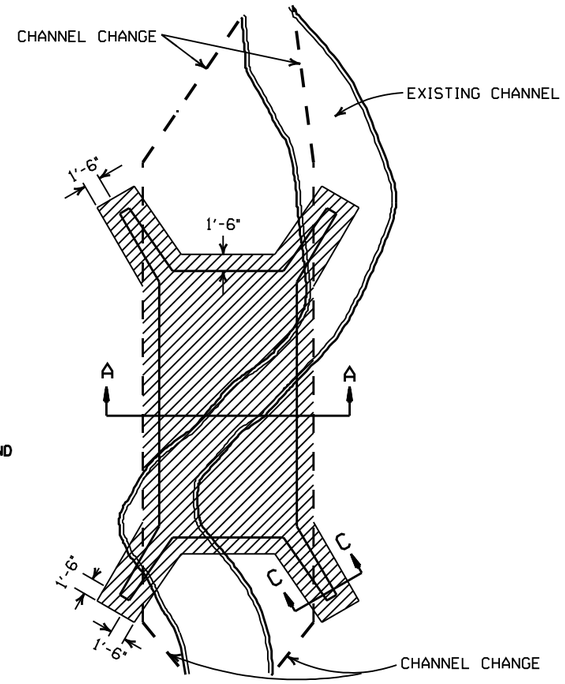


PLAN

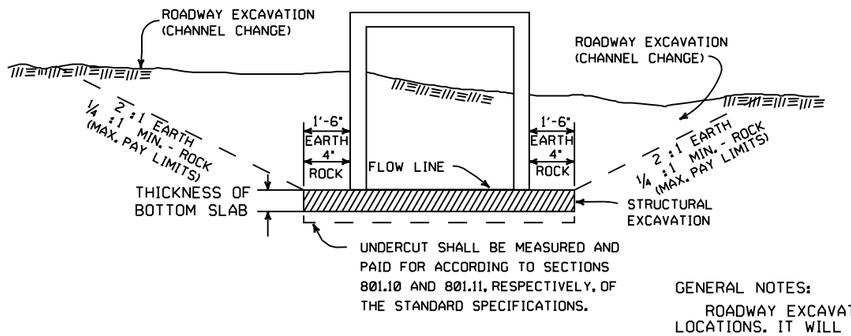


LONGITUDINAL SECTION

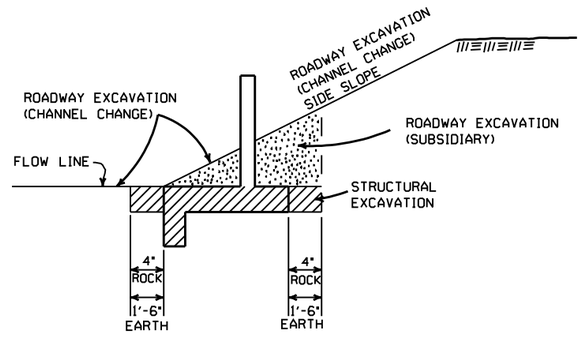
BACKFILL DETAILS FOR BOX CULVERT



PLAN

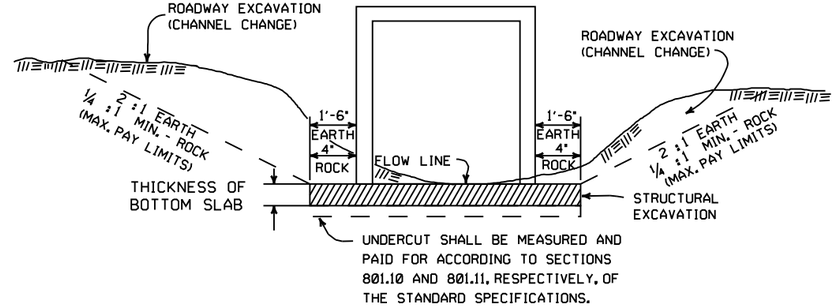


SECTION B-B



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.

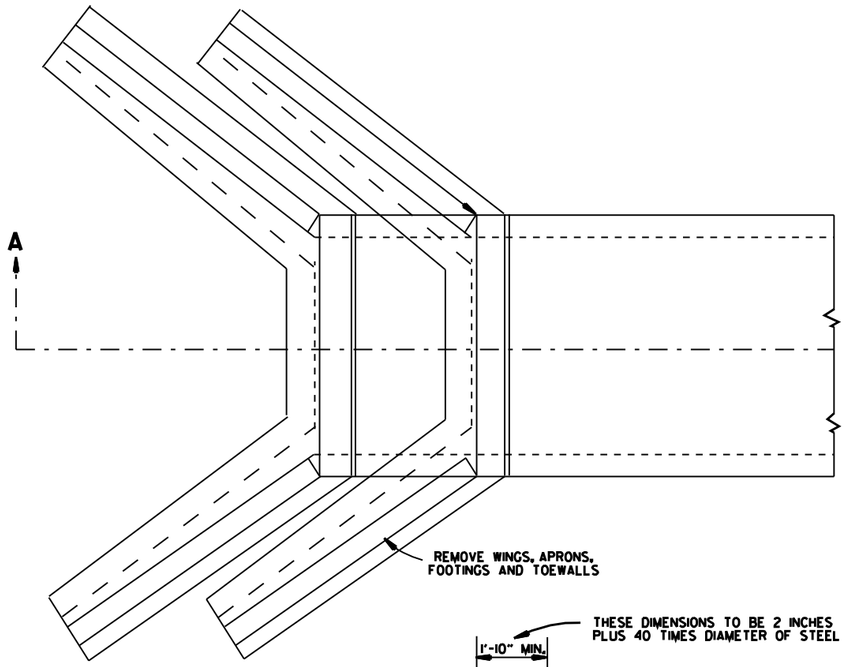
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

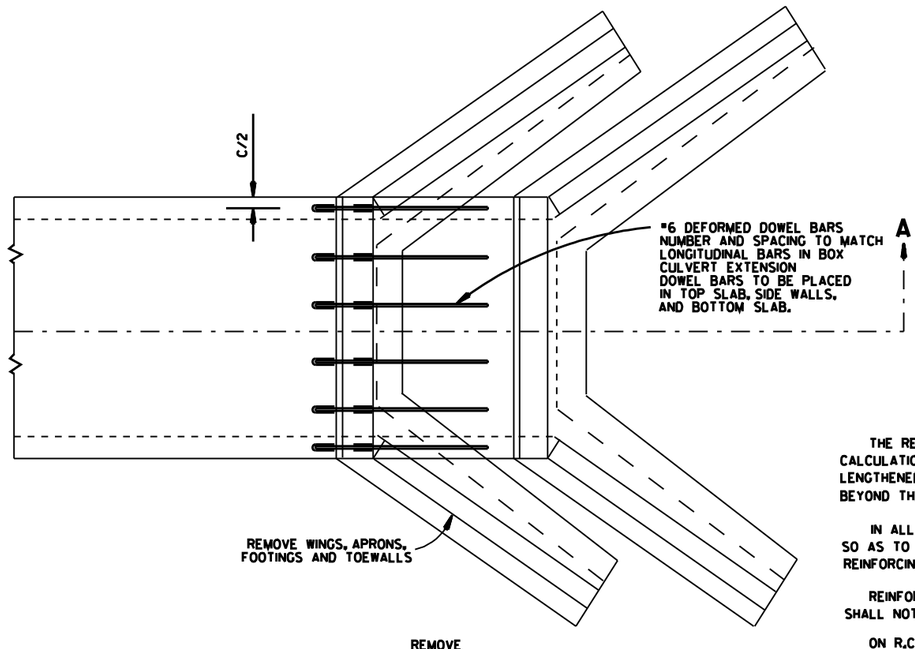
STANDARD DRAWING RCB-2



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

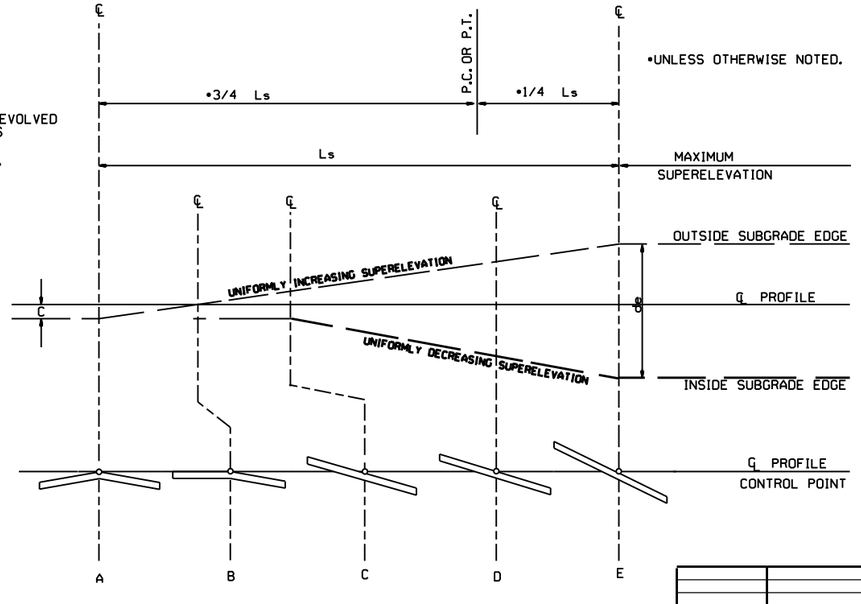
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED 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%

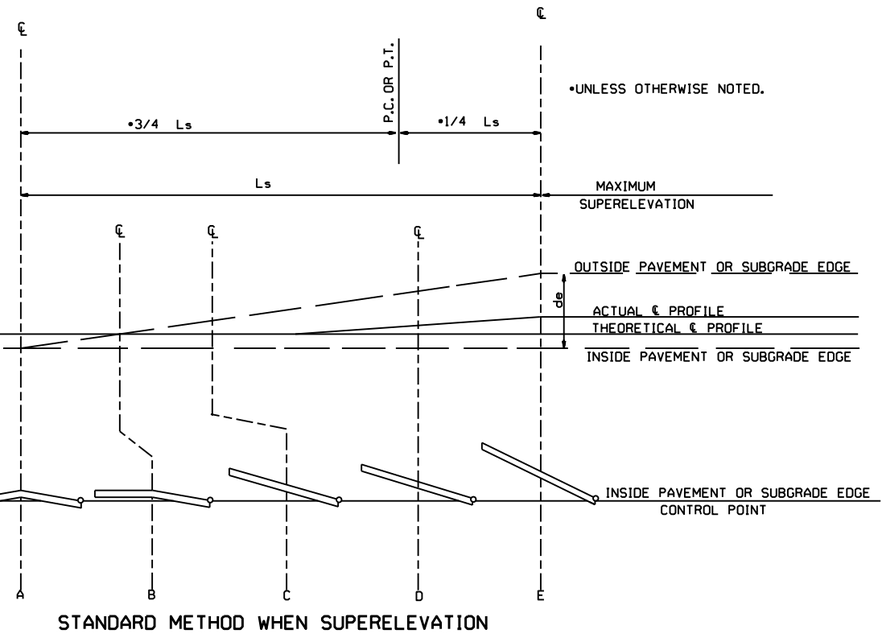
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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

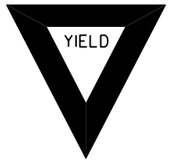
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

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"

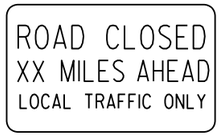
R5-1

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"

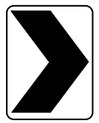
W1-4

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"

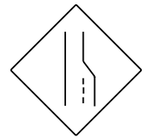
W3-1

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.

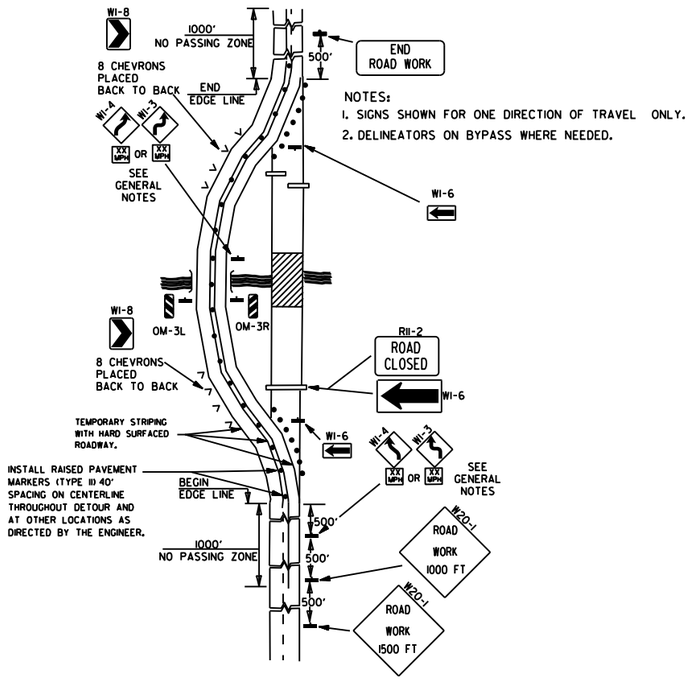
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

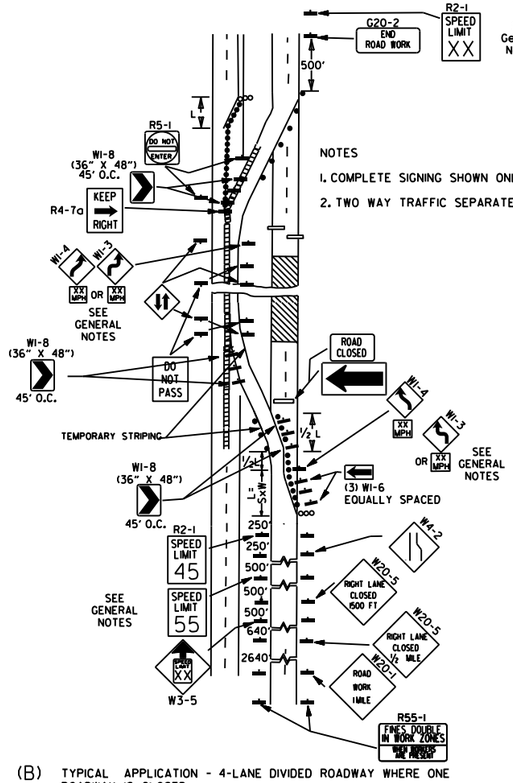
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



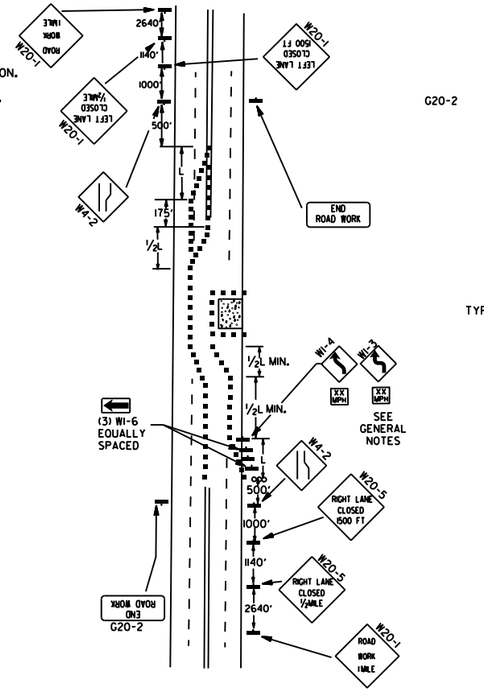
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

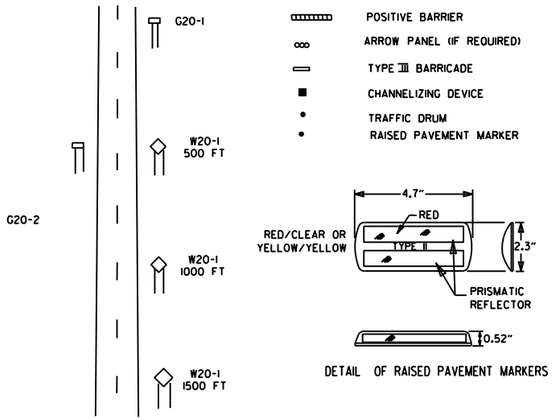


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

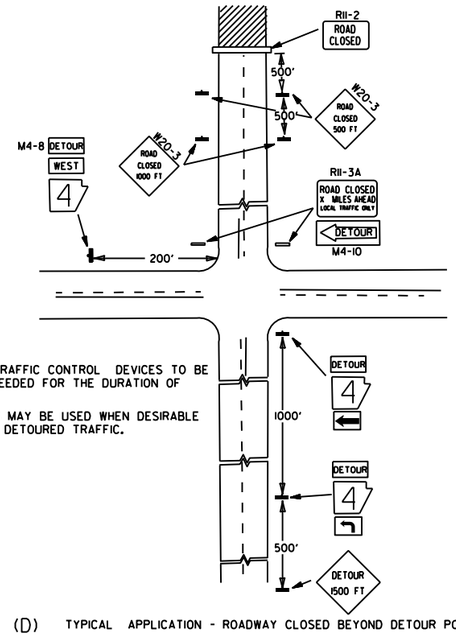
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

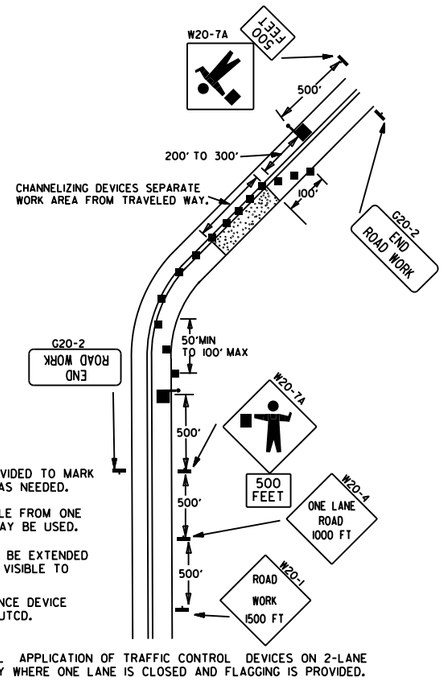
GENERAL NOTES:

1. 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 WI-3 OR WI-4 CURVE WARNING SIGNS. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
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).



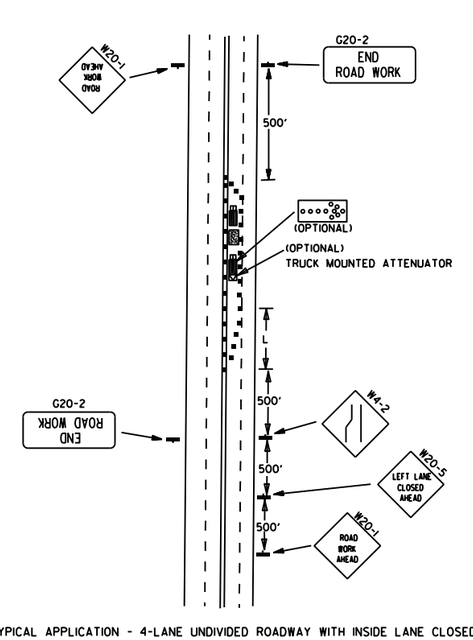
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



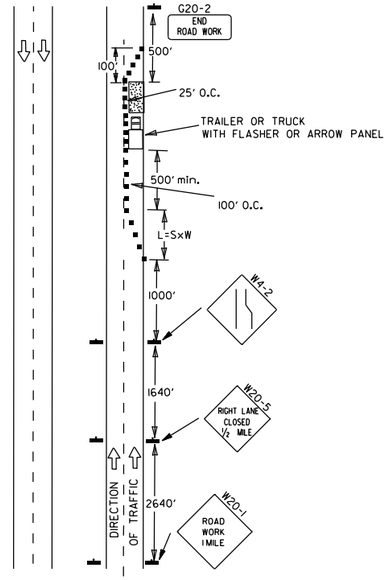
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
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	

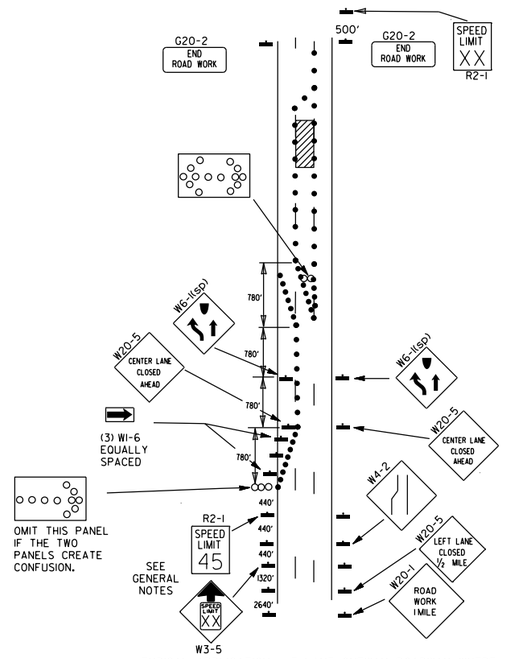
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

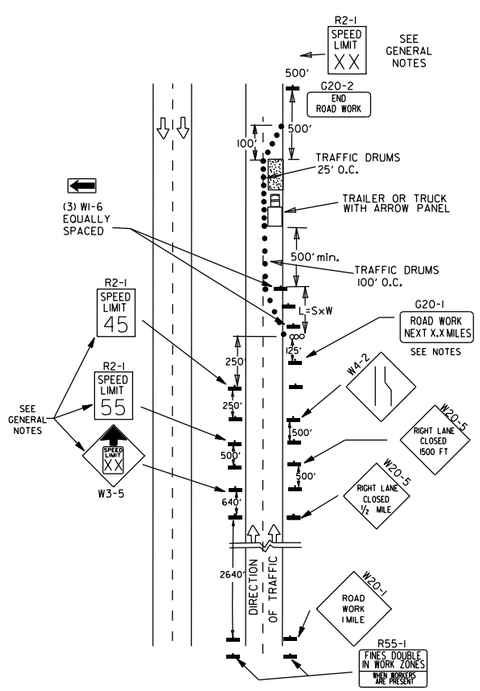
STANDARD DRAWING TC-2



(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)

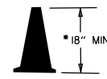
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

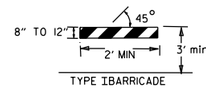
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
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

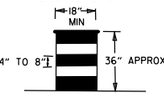


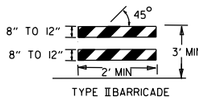
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

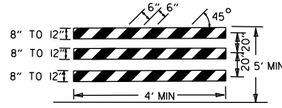
CONES



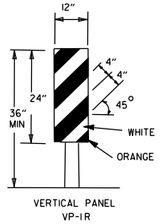
PLASTIC DRUM



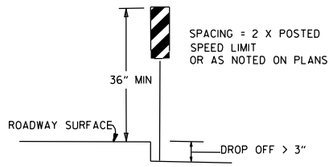




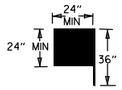
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



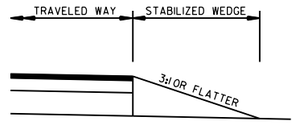
VERTICAL PANEL PLACEMENT



FLAG

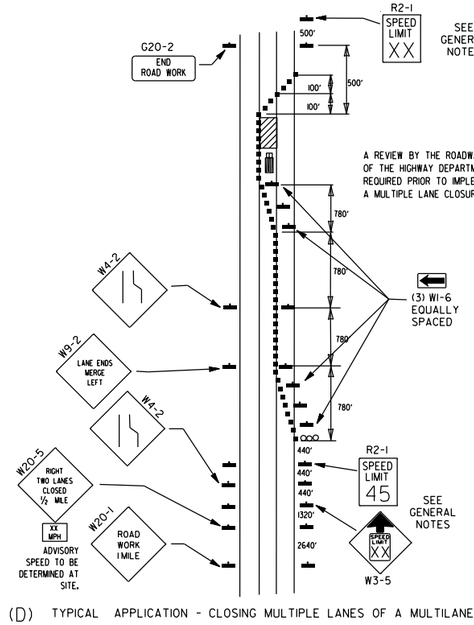


FLAG SHALL BE OF GOOD GRADE RED MATERIAL



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

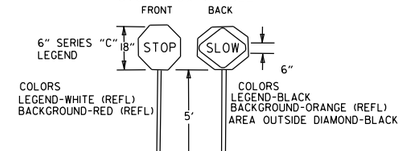
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	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

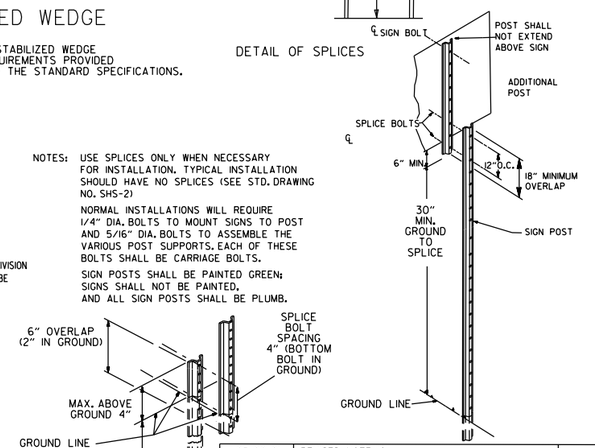
INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

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
05-20-21	REVISED NOTE 10	
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 7	
10-1-98	ADDED NOTE 6	
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	

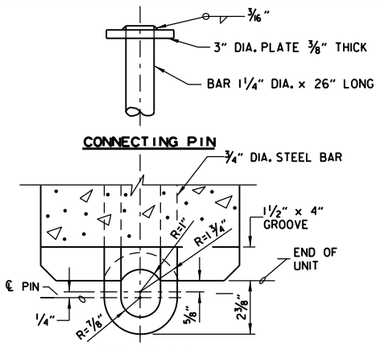
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

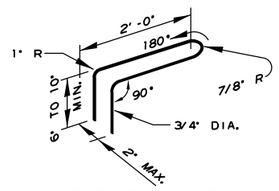
REINFORCING BAR TABLE PER BARRIER UNIT

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"

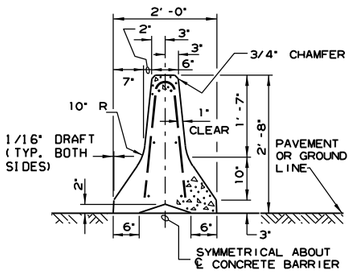


SECTION E-E

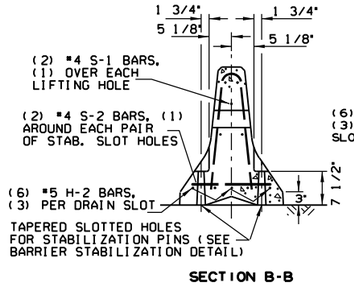
CONNECTION DETAILS



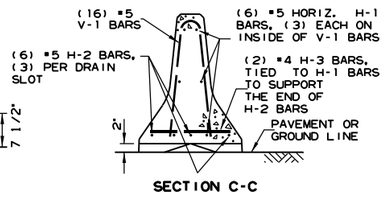
CONNECTION LOOP



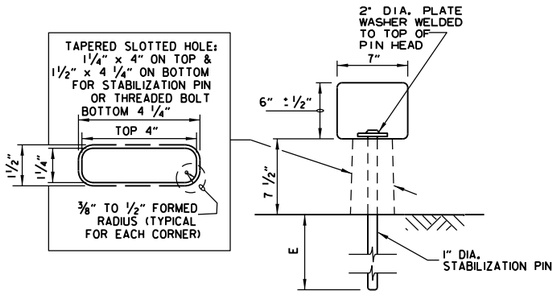
SECTION A-A



SECTION B-B



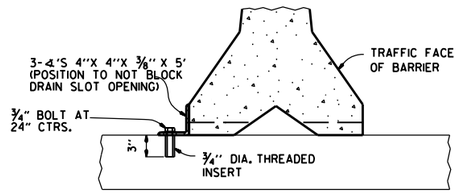
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

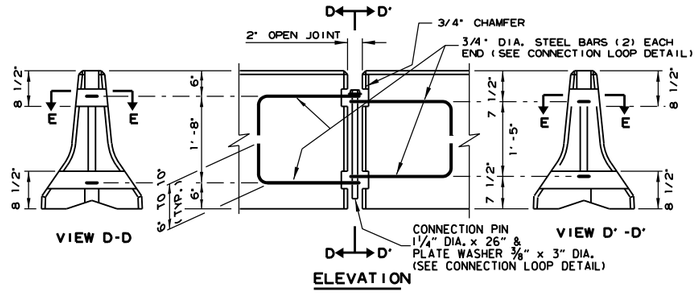
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



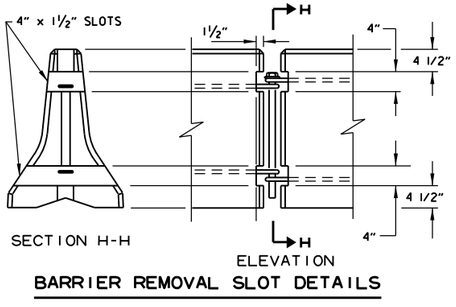
NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL

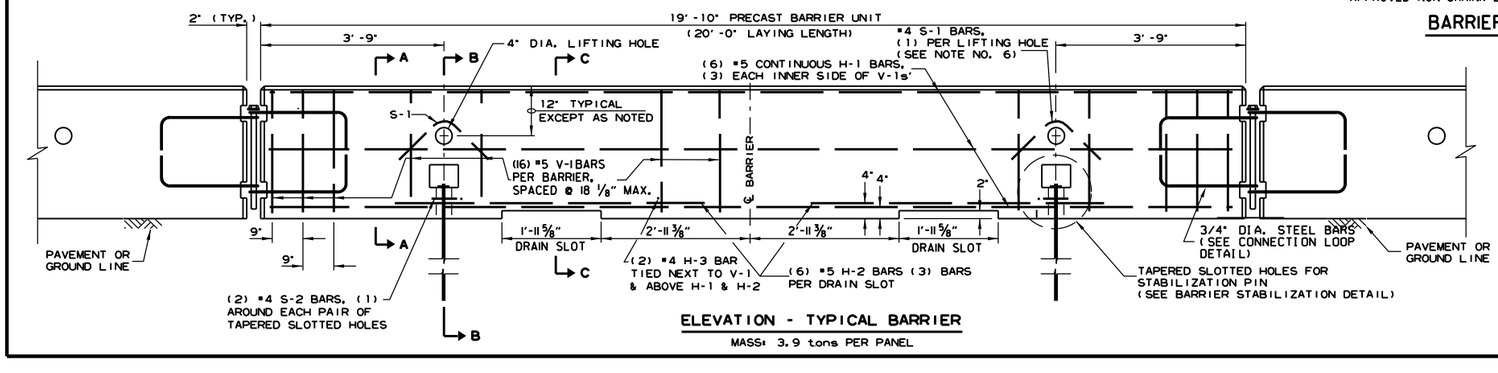
BRIDGE DECKS



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.

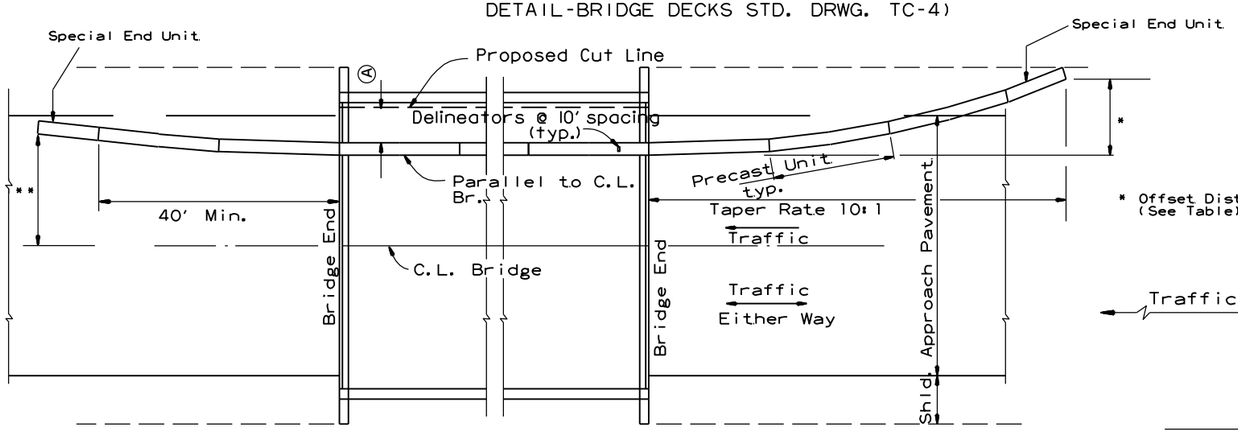
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED 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

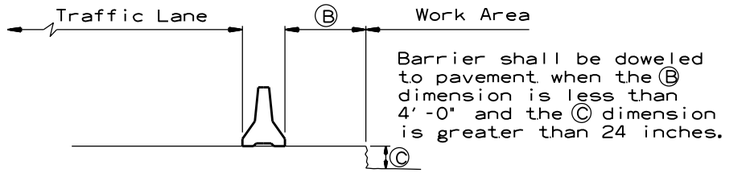
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

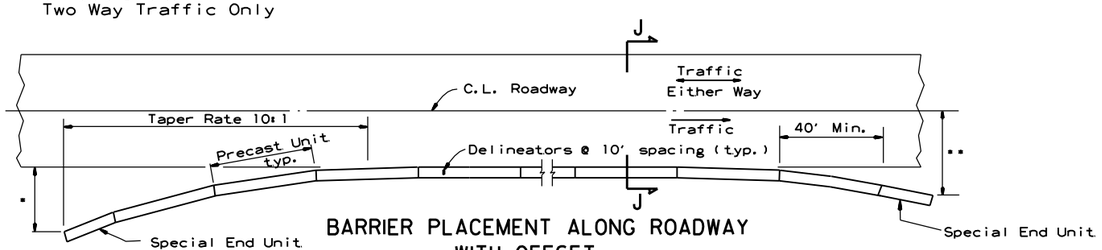


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

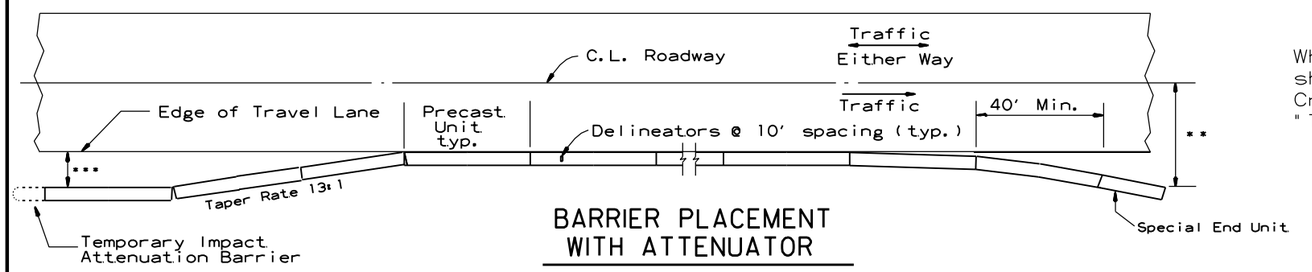
* Offset Distance (See Table)

** 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.

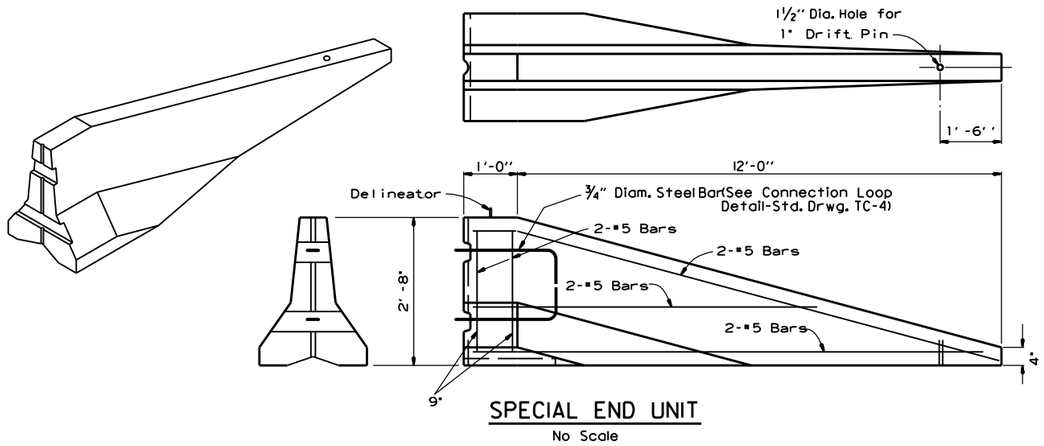


BARRIER PLACEMENT WITH ATTENUATOR

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	

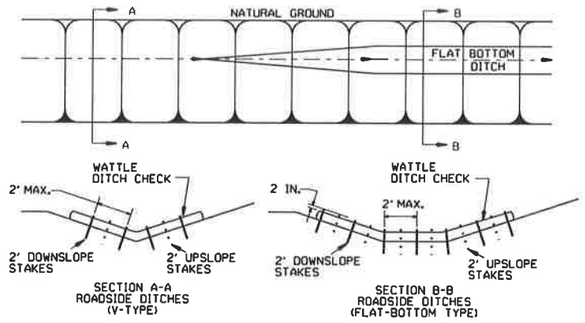
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

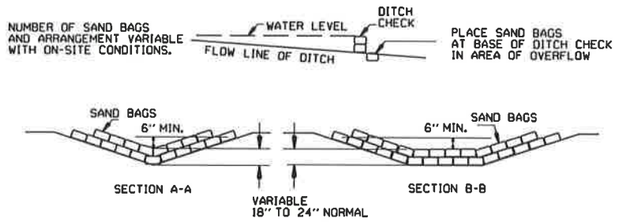
STANDARD DRAWING TC-5

GENERAL NOTES

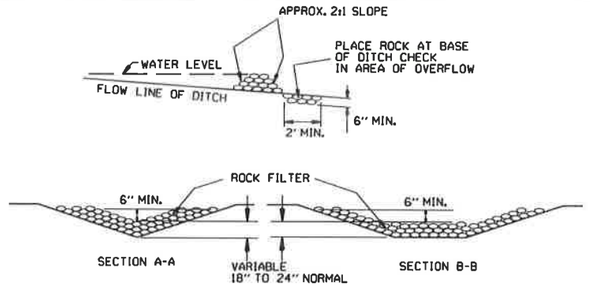
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

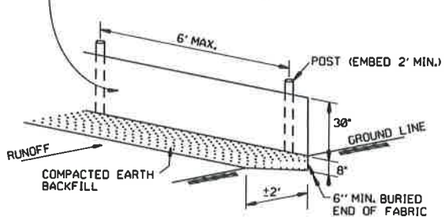


ROCK DITCH CHECK (E-6)

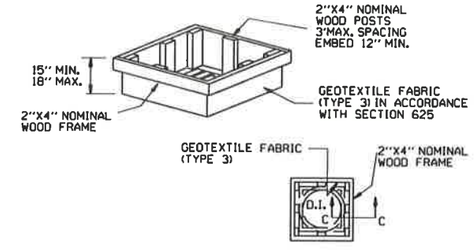
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

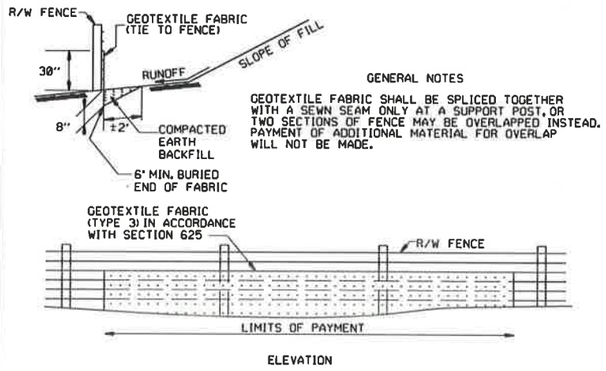
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



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.

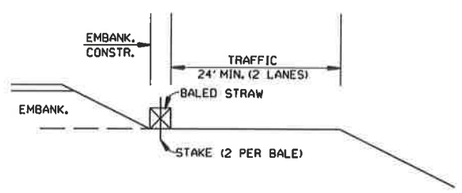
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

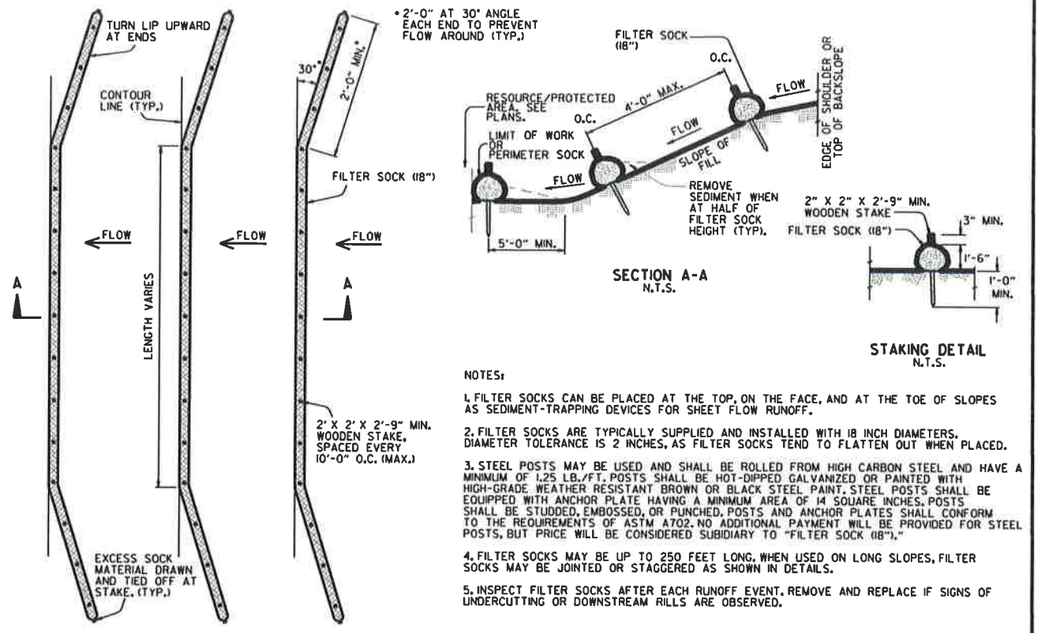
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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.

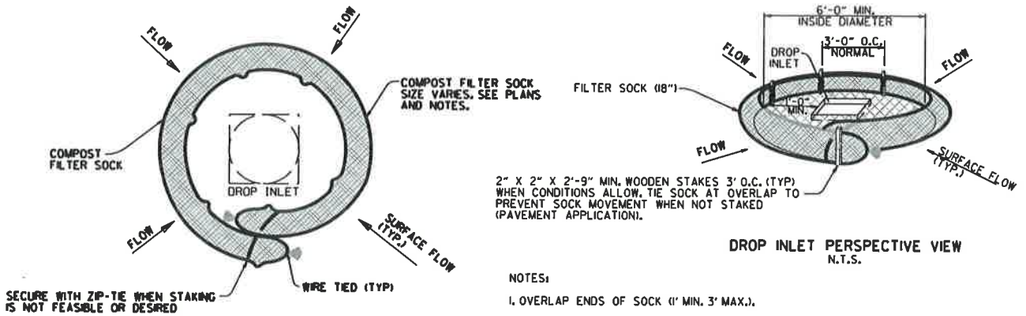
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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.

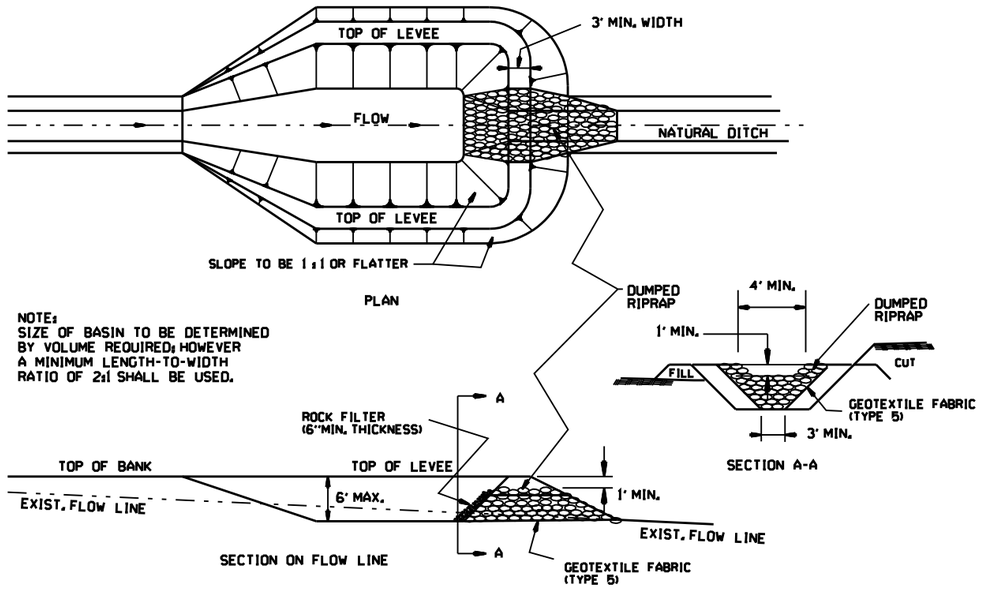
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

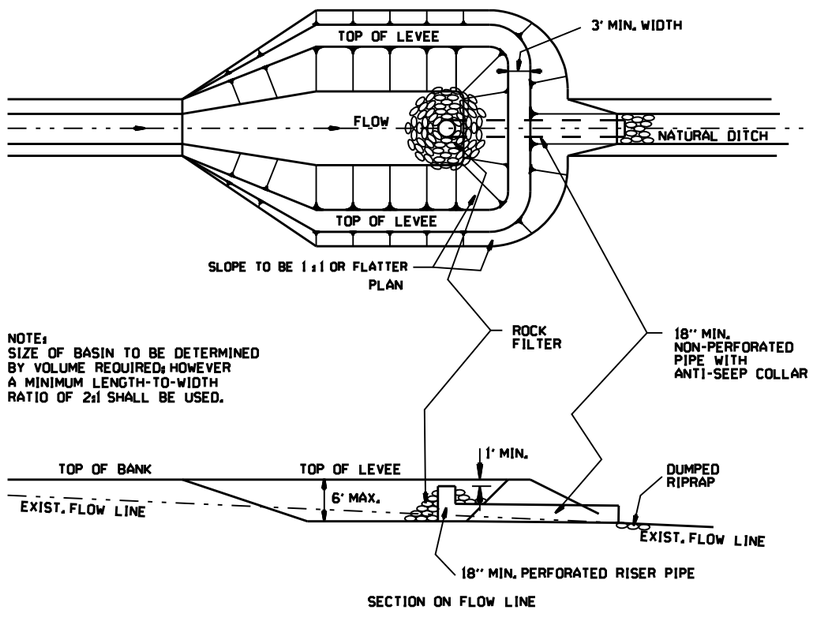
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

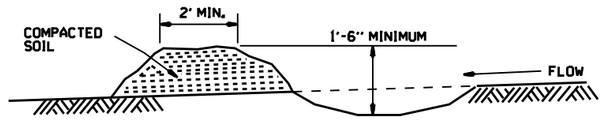
STANDARD DRAWING TEC-1



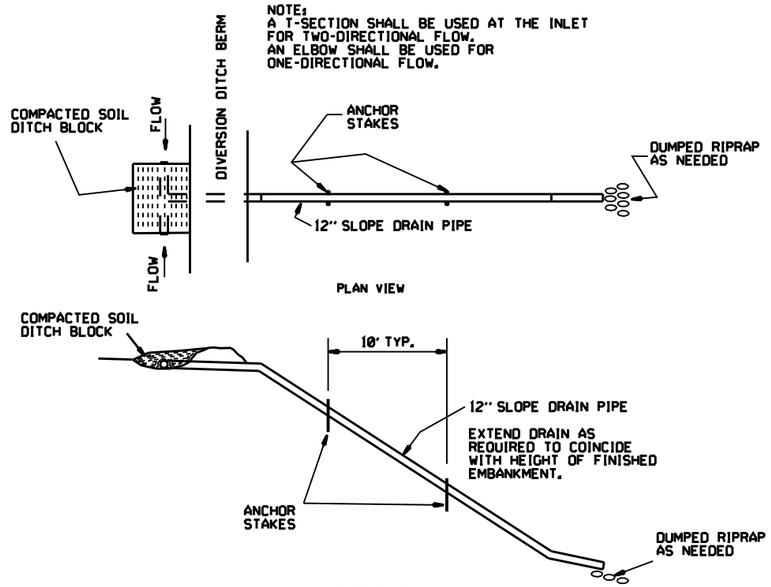
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



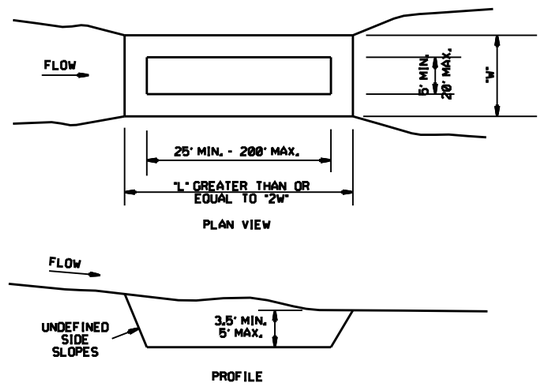
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

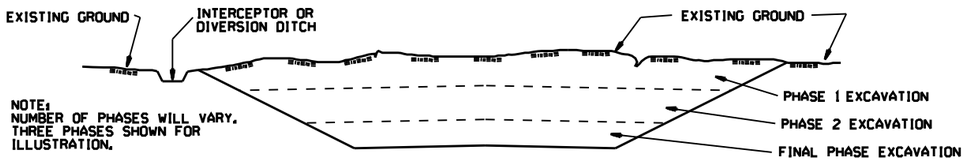
STANDARD DRAWING TEC-2

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



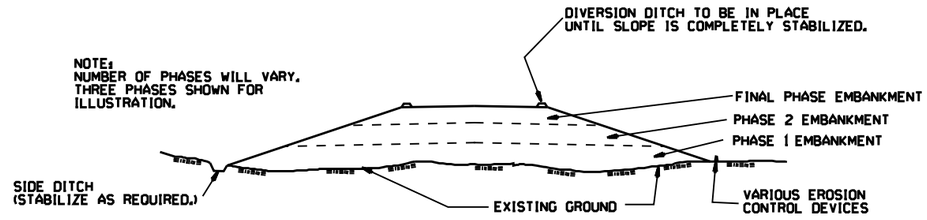
GENERAL NOTE

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

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 30° SKEWED ENDS.

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'a' bars STRAIGHT In Top and Bottom Slabs of Barrel.			'm' bars STRAIGHT In Top and Bottom Slab of Barrel- (Four of each Length)			'b' bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel- Alternate with 'a' bars.				'b1' bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel-one end hooked. (Four of each Length) Alternate with 'a' bars.					'j' bars STRAIGHT Longitudinal in Top Slab of Barrel.			'd' bars STRAIGHT Longitudinal in Sidewalls.			'e' bars STRAIGHT Longitudinal in Bottom Slab of Barrel.			'f' bars STRAIGHT Verticals in Sidewalls.			'k1' bars STRAIGHT In Bottom of Headwall.		'k2' bars STRAIGHT In Top of Headwall and Apron (2 Each)		
																LENGTH		X																			
D	S	H	Size	Spacing	No. Reqd	Length	Size	Spacing	No. Reqd	Length	X	Size	Spacing	No. Reqd	MAX.	MIN.	MAX.	MIN.	Size	Spacing	No. Reqd	Length	Size	Spacing	No. Reqd	Length	Size	Spacing	No. Reqd	Length	Size	Spacing	No. Reqd	Length	Size	No. Reqd	Length	Size	No. Reqd	Length
0'-0" TO 5'-0" MAXIMUM	4 @ 4'	2'			108	4'-9"			108	5'-10"	4'-8"			8	4'-5"	—	3'-10"	—			4	4'-5"			4	2'-11"			120	2'-11"			6	5'-6"		8	6'-8"
		3'			108	5'-9"			108	5'-10"	"			4	"	—	"	—			4	"			4	"			120	3'-11"			6	"		8	"
		4'			108	6'-3"			108	5'-10"	"			4	"	—	"	—			4	"			4	"			120	4'-11"			6	"		8	"
		5'			108	6'-9"			108	5'-10"	"			4	"	—	"	—			4	"			4	"			120	5'-11"			6	"		8	"
		6'			108	7'-3"			108	6'-0"	4'-10"			8	4'-8"	2'-8"	4'-0"	2'-3"			6				8				120	6'-11"			6	6'-8"		8	6'-10"
	5 @ 5'	3'			108	5'-9"			106	6'-10"	5'-8"			8	5'-5"	3'-6"	4'-8"	2'-11"			6				6				120	4'-8"			6	6'-8"		8	7'-0"
		4'			108	5'-9"			106	6'-10"	"			8	"	"	"	"			7				8				120	5'-0"			6	"		8	"
		5'			108	5'-9"			106	6'-10"	"			8	5'-3"	3'-8"	4'-5"	2'-7"			7				8				120	5'-6"			6	6'-10"		8	7'-3"
		6'			108	6'-3"			106	7'-0"	5'-10"			8	5'-10"	3'-10"	4'-11"	2'-10"			7				8				120	6'-0"			6	6'-10"		8	7'-6"
		7'			108	6'-9"			106	7'-3"	6'-0"			8	6'-3"	4'-2"	5'-3"	3'-1"			7				8				120	6'-6"			6	7'-3"		8	7'-9"
	6 @ 6'	3'			114	6'-3"			114	6'-8"	6'-6"			8	5'-11"	3'-11"	5'-0"	3'-3"			7				6				120	4'-11"			6	6'-8"		8	7'-10"
		4'			114	6'-9"			114	7'-3"	"			8	"	"	"	"			8				8				120	5'-6"			6	"		8	"
		5'			114	6'-9"			114	7'-8"	"			8	5'-9"	3'-5"	5'-0"	3'-6"			8				8				120	6'-0"			6	7'-3"		8	8'-2"
		6'			114	7'-3"			114	8'-2"	6'-11"			8	6'-2"	4'-3"	5'-3"	3'-8"			8				8				120	6'-6"			6	7'-10"		8	8'-6"
		7'			114	7'-9"			114	8'-7"	7'-5"			8	6'-5"	4'-6"	5'-6"	3'-11"			8				8				120	7'-0"			6	8'-3"		8	9'-0"
	7 @ 7'	4'			122	7'-3"			122	8'-10"	7'-8"			9	6'-8"	4'-6"	6'-11"	3'-9"			8				8				120	5'-2"			6	8'-3"		8	10'-2"
		5'			122	8'-3"			122	9'-1"	7'-10"			9	7'-3"	4'-10"	7'-6"	4'-1"			9				9				120	6'-2"			6	9'-0"		8	10'-10"
		6'			122	8'-9"			122	9'-6"	8'-2"			9	7'-10"	5'-2"	7'-11"	4'-4"			9				9				120	7'-2"			6	9'-9"		8	11'-6"
		7'			122	9'-3"			122	9'-11"	8'-6"			9	8'-5"	5'-6"	8'-4"	4'-6"			9				9				120	8'-1"			6	10'-5"		8	12'-2"
		8'			122	9'-9"			122	10'-3"	8'-10"			9	8'-11"	5'-10"	8'-11"	4'-8"			9				9				120	8'-9"			6	10'-11"		8	12'-10"
		9'			122	10'-3"			122	10'-7"	9'-2"			9	9'-4"	6'-2"	9'-4"	4'-11"			9				9				120	9'-4"			6	11'-4"		8	13'-3"
		10'			122	10'-9"			122	11'-0"	9'-6"			9	9'-10"	6'-6"	9'-10"	5'-2"			9				9				120	9'-10"			6	11'-9"		8	13'-7"
	8 @ 8'	5'			112	8'-9"			112	9'-10"	8'-8"			10	8'-5"	5'-5"	8'-6"	4'-6"			10				10				120	5'-6"			6	10'-1"		8	11'-3"
		6'			112	8'-11"			112	10'-0"	8'-10"			10	8'-7"	5'-6"	8'-8"	4'-7"			10				10				120	6'-4"			6	10'-4"		8	11'-6"
		7'			112	9'-1"			112	10'-3"	9'-0"			10	8'-9"	5'-7"	8'-10"	4'-8"			10				10				120	7'-4"			6	10'-7"		8	11'-9"
		8'			112	9'-3"			112	10'-5"	9'-2"			10	8'-11"	5'-8"	9'-0"	4'-9"			10				10				120	8'-2"			6	10'-10"		8	12'-0"
		9'			112	9'-5"			112	10'-6"	9'-3"			10	9'-1"	5'-9"	9'-2"	4'-10"			10				10				120	8'-10"			6	11'-1"		8	12'-3"
		10'			112	9'-6"			110	10'-6"	9'-4"			10	9'-4"	5'-10"	9'-5"	4'-11"			10				10				120	9'-5"			6	11'-4"		8	12'-5"
	9 @ 9'	5'			122	9'-11"			120	11'-0"	9'-10"			12	9'-8"	5'-6"	9'-7"	4'-8"			12				12				120	6'-5"			6	11'-5"		8	12'-7"
		6'			122	10'-0"			120	11'-1"	9'-11"			12	9'-10"	5'-7"	9'-9"	4'-9"			12				12				120	7'-5"			6	11'-7"		8	12'-9"
		7'			122	10'-0"			120	11'-1"	9'-11"			12	10'-0"	5'-8"	9'-11"	4'-10"			12				12				120	8'-5"			6	11'-8"		8	12'-11"
		8'			122	10'-1"			120	11'-2"	10'-0"			12	10'-2"	5'-9"	10'-1"	4'-11"			12				12				120	9'-5"			6	11'-10"		8	13'-0"
		9'			122	10'-3"			120	11'-3"	10'-1"			12	10'-3"	5'-10"	10'-2"	5'-0"			12				12				120	10'-5"			6	12'-0"		8	13'-2"
		10'			122	10'-5"			120	11'-4"	10'-3"			12	10'-4"	5'-11"	10'-3"	5'-1"			12				12				120	11'-5"			6	12'-2"		8	13'-4"
		11'			122	10'-7"			120	11'-5"	10'-4"			12	10'-5"	6'-0"	10'-4"	5'-2"			12				12				120	12'-5"			6	12'-3"		8	13'-5"
		12'			122	10'-9"			120	11'-6"	10'-5"			12	10'-7"	6'-1"	10'-5"	5'-3"			12				12				120	13'-5"			6	12'-5"		8	13'-7"
	10 @ 10'	6'			110	10'-11"			110	12'-2"	10'-10"			13	10'-8"	5'-10"	10'-8"	5'-0"			13				10				120	6'-4"			6	11'-5"		8	12'-7"
		7'			110	11'-0"			110	12'-3"	10'-11"			13	10'-9"	5'-11"	10'-9"	5'-1"			13				10				120	7'-5"			6	11'-7"		8	12'-9"
		8'			110	11'-1"			110	12'-3"	"			13	"	"	"	"			13				10				120	8'-6"			6	11'-8"		8	12'-10"
		9'			110	11'-2"			110	12'-4"	11'-0"			13	10'-10"	6'-0"	10'-10"	5'-2"			13				10				120	9'-6"			6	11'-10"		8	13'-0"
		10'			110	11'-3"			110	12'-4"	"			13	10'-11"	6'-1"	10'-11"	5'-3"			13				10				120	10'-6"			6	12'-0"		8	13'-2"
		11'			110	11'-4"			110	12'-5"	11'-1"			13	11'-0"	6'-2"	11'-0"	5'-4"			13				10				120	11'-6"			6	12'-2"		8	13'-4"
		12'			110	11'-5"			108	12'-6"	11'-2"			13	11'-1"	6'-3"	11'-1"	5'-5"			13				10				120	12'-6"			6	12'-4"		8	13'-6"
	11 @ 11'	6'			118	12'-1"			118	13'-4"	12'-0"			14	11'-3"	6'-4"	11'-3"	5'-6"			14				12				120	7'-9"			6	14'-0"		8	15'-2"
		7'			118	12'-1"			118	13'-5"	"			14	"	"	"	"			14				12				120	8'-7"			6	"		8	"
		8'			118	12'-1"			118	13'-6"	"			14	11'-4"	6'-5"	11'-4"	5'-7"			14				12				120	10'-1"			6	14'-2"		8	15'-4"
		9'			118	12'-2"			118	13'-7"	"			14	11'-5"	6'-6"	11'-5"	5'-8"			14				12				120	11'-7"			6	14'-3"		8	15'-6"
		10'			118	12'-3"			116	13'-10"	12'-8"			14	11'-6"	6'-7"	11'-6"	5'-9"			14				12				120	13'-1"			6	14'-5"		8	15'-8"
		11'			118	12'-3"			116	14'-0"	12'-9"			14	11'-7"	6'-8"	11'-7"	5'-10"			14				12				120	14'-7"			6	14'-6"		8	15'-10"
		12'			118	12'-3"			116	14'-2"	12'-10"			14	11'-8"	6'-9"	11'-8"	5'-11"			14				12				120	16'-1"			6	14'-7"		8	16'-0"
	12 @ 12'	6'			106	13'-0"			106	14'-5"	13'-0"			15	11'-9"	6'-10"	11'-9"	6'-0"			15				12				132	7'-9"			6	15'-1"		8	16'-3"
		7'			106	13'-1"			106	14'-6"	"			15	"	"	"	"			15				12				120	8'-9"			6	"		8	"
		8'			106	13'-1"			106	14'-7"	"			15	11'-10"	6'-11"	11'-10"	6'-1"			15				12				144	9'-9"			6	15'-4"		8	16'-6"
		9'			108	13'-3"			106	14'-8"	13'-2"			15	11'-11"	7'-0"	11'-11"	6'-2"			15				12				120	10'-9"			6	15'-7"		8	16'-9"
		10'			108	13'-5"			106	14'-9"	13'-4"			15	12'-0"	7'-1"	12'-0"	6'-3"			15				12				132	11'-9"			6	15'-8"		8	16'-10"
		11'			108	13'-7"			106	14'-10"	13'-5"			15	12'-1"	7'-2"	12'-1"	6'-4"			15				12				144	12'-9"			6	15'-11"		8	17'-0"
		12'			106	13'-9"			106	15'-0"	13'-6"			15	12'-2"	7'-3"	12'-2"	6'-5"			15				12				120	13'-9"			6	16'-1"		8	17'-2"

* These bars are in the skewed portion of barrel only. The length of 'a' bars and overall length X of 'b' bars vary by 1'-11" for 13" spacing, 1'-9" for 12" spacing and 1'-7" for 11" spacing.

Designed by:- W.C.H. 1-23-63. Checked by:- R.H.S. 5-8-63
Drawn by:- W.C.H. 2-24-64. Checked by:-
Quantities by:- W.C.H. 4-2-64. Checked by:-

BAR SIZE	PIN DIAM.	K	ADD FOR HOOKS
#6	3"	5"	1'-2"
#7	3 5/8"	5 3/8"	1'-4"
#6	3"	5"	0'-7"
#7	3 5/8"	5 3/8"	0'-8"

BENDING DIAGRAMS FOR BARS 'b' & 'b1'

'b' bars: 2 HOOKS — K1, Pin diam, X

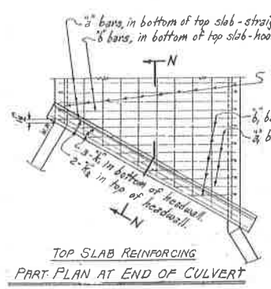
'b1' bars: 1 HOOK — K1, Pin diam., X

NOTE:- Dimensions are to centers of bars. ('b' and 'b1')

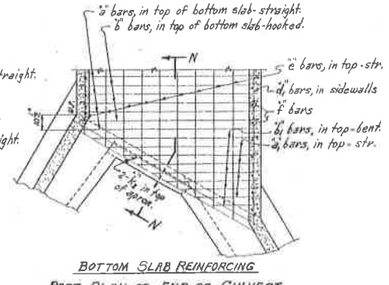
DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	No. REQD	LENGTH	X
4'	#6	12"c	12	2'-6"	1'-3"
5'	#6	12"c	16	2'-7"	1'-3 5/8"
6'	#6	12"c	18	2'-8"	1'-4"
7'	#6	12"c	20	2'-9"	1'-4 3/8"
8'	#6	12"c	22	2'-10"	1'-5 3/8"
9'	#6	12"c	26	3'-0"	1'-6"
10'	#6	12"c	28	3'-1"	1'-6 3/8"
11'	#6	12"c	30	3'-2"	1'-7"
12'	#6	12"c	32	3'-3"	1'-7 3/8"

Dowel bars 'k' in Two Headwalls.

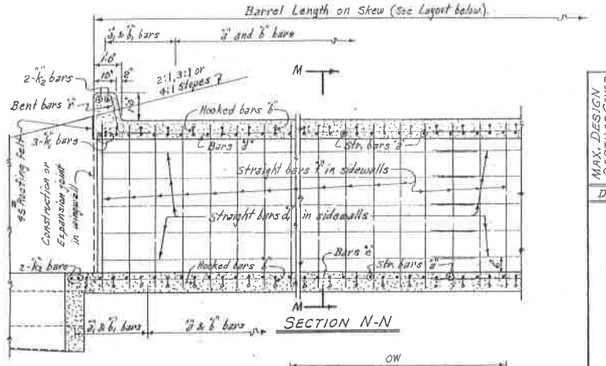


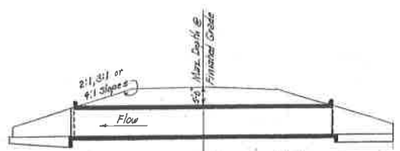
TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT

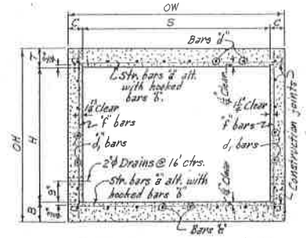


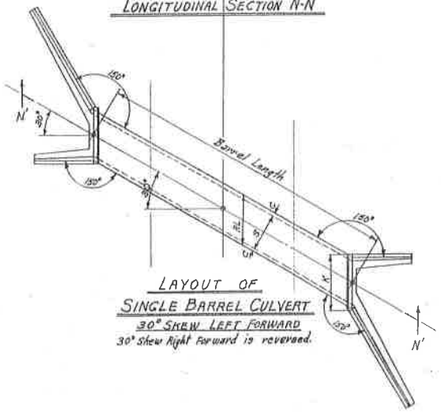
BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

Note:- For Details of Standard Wings and bar lists, see Drawing No. W-X.302-1 or W-X.302-2; W-X.303-1 or W-X.303-2, and W-X.304-1 or W-X.304-2. Also W-X.30.









LAYOUT OF
SINGLE BARREL CULVERT
30° SKEW LEFT FORWARD
30° Skew Right Forward is reversed.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs
UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/s"
Reinforcing Steel 20,000 #/s"

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X.302-1 or W-X.302-2, W-X.303-1 or W-X.303-2, and W-X.304-1 or W-X.304-2. Also W-X.30.

GENERAL NOTES

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters min.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS									* QUANTITIES REINFORCING STEEL		
	CLEAR SPANS	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALLS	CLASS S CONC. PER LIN. FT. OF BARREL	TOTAL # OF LENGTH OF BARREL	PER LIN. FT. OF BARREL	ADDITIONAL PER LAP
D	S	H	A	OW	T	C	B	OH	RL	K	CU.YD.	LB.	LB.	LB
5'-0"	4 @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	5'-9⅛"	6'-11⅛"	0.282	3 622	4.193	17.95
		3'	12	5'-0"		6"		4'-1½"	"	"	0.319	2784	4.414	19.62
		4'	16	5'-0"		6"		5'-1½"	"	"	0.354	2996	4.683	21.23
		5'	20	5'-0"		6"		6'-1½"	"	"	0.394	3107	4.950	22.34
		6'	24	5'-2"		7"		7'-1½"	5'-11⅝"	7'-1⅝"	0.479	3235	5.296	24.63
	5 @ 5'	3'	15	6'-0"	7½"	6"	7"	4'-2½"	6'-11⅝"	8'-1"	0.380	3541	5.555	22.19
		4'	20	6'-0"		6"		5'-2½"	"	"	0.417	3703	5.823	23.86
		5'	25	6'-0"		6"		6'-2½"	"	"	0.458	3865	6.090	25.53
		6'	30	6'-2"		7"		7'-2½"	7'-1⅝"	8'-3⅜"	0.535	4091	6.493	27.20
		7'	35	6'-3"		7½"		8'-2½"	7'-2⅝"	8'-4½"	0.608	4283	6.763	28.87
	6 @ 6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"	8'-1"	9'-2⅛"	0.646	4221	66.29	26.74
		4'	24	7'-0"		6"		5'-3½"	"	"	0.683	9383	68.96	26.43
		5'	30	7'-0"		6"		6'-3½"	"	"	0.520	4595	71.64	28.10
		6'	36	7'-2"		7"		7'-3½"	8'-1⅜"	9'-5⅝"	0.602	4772	75.31	29.77
		7'	42	7'-3"		7½"		8'-3½"	8'-1⅝"	9'-6⅛"	0.671	4966	78.98	31.44
		8'	48	7'-6"		8"		9'-3½"	8'-1⅝"	9'-7⅝"	0.796	5570	88.92	33.11
	7 @ 7'	4'	28	8'-0"	8½"	6"	7½"	5'-5"	9'-2⅝"	10'-4⅜"	0.568	5196	81.32	29.01
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	5307	84.00	30.68
		6'	42	8'-2"		7"		7'-5"	9'-1⅝"	10'-3"	0.688	5558	87.76	32.35
		7'	49	8'-3"		7½"		8'-5"	9'-2⅝"	10'-3⅝"	0.757	5755	90.98	34.02
		8'	56	8'-6"		8"		9'-5"	9'-2⅝"	10'-3⅝"	0.832	6100	96.65	35.69
		9'	63	8'-8"		9"		10'-5"	9'-3½"	10'-4⅝"	0.946	6649	105.59	37.36
	8 @ 8'	4'	32	9'-0"	9"	6"	7½"	5'-7½"	10'-3⅝"	11'-6⅝"	0.676	6118	95.24	33.32
		5'	40	9'-2"		7"		6'-7½"	10'-3⅝"	11'-6⅝"	0.759	6357	99.12	34.99
		6'	48	9'-3"		7"		7'-7½"	"	"	0.797	6518	101.79	36.66
		7'	56	9'-3"		7½"		8'-7½"	10'-3⅝"	11'-6⅝"	0.867	6720	105.05	38.33
		8'	64	9'-6"		8"		9'-7½"	10'-3⅝"	11'-11⅛"	0.942	7070	110.81	40.00
		9'	72	9'-6"		9"		10'-7½"	10'-4⅛"	12'-1⅝"	1.057	7627	119.92	41.67
		10'	80	9'-8"		10"		11'-7½"	11'-2"	12'-3⅜"	1.184	8093	126.67	43.34
	9 @ 9'	5'	50	11'-3"	9½"	7"	8½"	6'-9½"	12'-10⅞"	14'-0⅜"	0.857	8359	130.69	40.13
		6'	60	11'-3"		7½"		7'-9½"	12'-11⅝"	14'-1⅝"	1.026	8567	133.99	41.80
		7'	70	11'-3"		7½"		8'-9½"	"	"	1.071	8723	136.66	43.47
		8'	80	11'-6"		8"		9'-9½"	13'-1⅝"	14'-3"	1.149	9110	142.55	45.14
		9'	90	11'-6"		9"		10'-9½"	13'-3⅛"	14'-5⅝"	1.243	9639	151.32	46.81
		10'	100	11'-8"		10"		11'-9½"	13'-5⅛"	14'-7⅝"	1.331	10,019	158.89	48.98
		11'	110	11'-10"		11"		12'-9½"	13'-8"	14'-10⅜"	1.532	10,547	166.71	50.15
		12'	120	12'-0"		12"		13'-9½"	13'-10⅛"	15'-0⅝"	1.635	11,278	178.67	51.82
	10 @ 10'	6'	66	12'-8"	10"	8"	9"	7'-10½"	14'-2⅝"	15'-6⅜"	1.153	9888	155.16	46.12
		7'	77	12'-8"		8"		8'-10½"	"	"	1.202	10,099	159.83	47.79
		8'	88	12'-8"		8"		9'-10½"	"	"	1.252	10,364	163.06	49.46
		9'	99	12'-10"		9"		10'-10½"	14'-5⅝"	15'-7"	1.368	10,952	172.60	51.13
		10'	110	12'-8"		10"		11'-10½"	14'-7⅝"	15'-9⅜"	1.497	11,393	179.70	52.80
		11'	121	12'-6"		11"		12'-10½"	14'-9⅝"	15'-11⅝"	1.639	11,927	187.67	54.47
		12'	132	13'-0"		12"		13'-10½"	15'-0⅛"	16'-2"	1.732	12,563	198.79	56.14
	11 @ 11'	6'	72	13'-4"	10"	8"	9"	8'-0"	15'-4⅝"	16'-8⅜"	1.286	11,081	172.20	48.69
		7'	84	13'-4"		8"		9'-0"	"	"	1.333	11,293	175.87	50.36
		8'	96	13'-4"		8"		10'-0"	"	"	1.383	11,561	180.15	52.03
		9'	108	13'-6"	11½"	9"	10½"	11'-0"	15'-7⅛"	16'-9"	1.500	12,162	189.85	53.70
		10'	120	13'-8"		10"		12'-0"	15'-9⅝"	16'-10⅝"	1.630	12,625	197.67	55.37
		11'	132	13'-10"		11"		13'-0"	15'-11⅝"	17'-1⅛"	1.772	13,113	205.16	57.04
		12'	144	14'-0"		12"		14'-0"	16'-1⅝"	17'-3⅜"	1.926	13,795	217.95	58.71

* For remainder of quantities see Std. Wing Drawings listed at left. Total steel quantities listed above include one lap of longitudinal bars.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

4',5',6',7',8',9',10',11' & 12' SPANS — 2:1, 3:1 OR 4:1 SLOPES
SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING No. R-130X-0