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.		030497	1	130
				(2)	MILL & BODCAU CREEKS STRS. & APPRS. (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

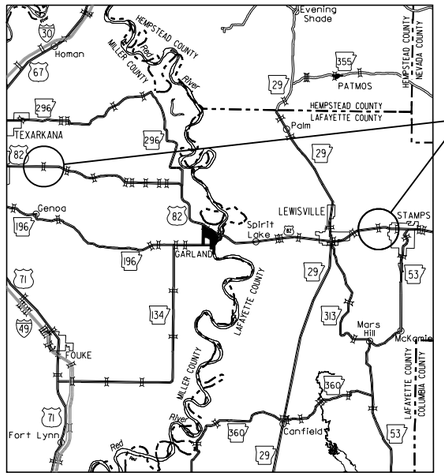
MILL & BODCAU CREEKS STRS. & APPRS. (S)

MILLER & LAFAYETTE COUNTIES

ROUTE 82 SECTIONS 1 & 2

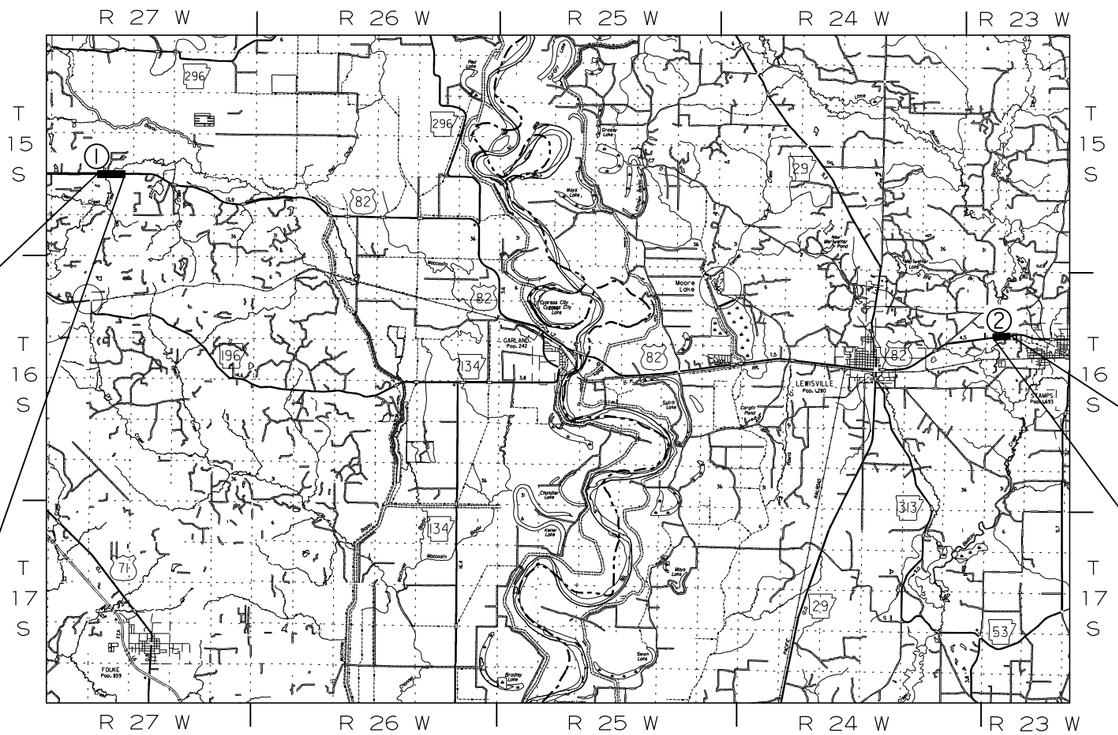
JOB 030497

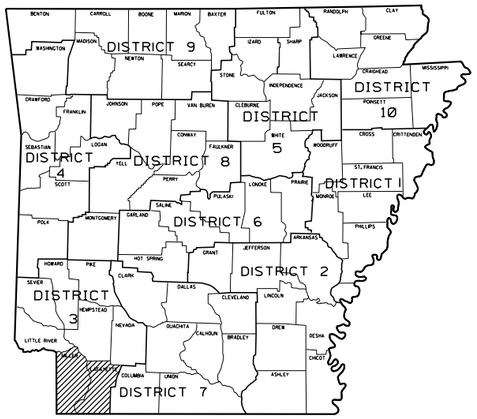
FEDERAL AID PROJECT NHPP-0046(50)



VICINITY MAP

NOT TO SCALE





ARKANSAS HIGHWAY DISTRICT 3

BRIDGE CONSTRUCTION DATA

(1) STA. 110+71.66 BRIDGE END
BRIDGE NO. 07483 OVER MILL CREEK
141'-4" COMP. INTEGRAL PRESTRESSED
CONCRETE GIRDER UNIT (44.67'-52'-44.67')
75'-0" CLEAR ROADWAY
15°00'00" LT. FWD. SKEW
142'-8" BRIDGE LENGTH
STA. 112+14.33 BRIDGE END

(2) STA. 210+79.06 BRIDGE END
BRIDGE NO. 07484 OVER BODCAU CREEK
179'-4" COMP. INTEGRAL PRESTRESSED
CONCRETE GIRDER UNIT (59.33'-60'-60')
179'-4" COMP. INTEGRAL PRESTRESSED
CONCRETE GIRDER UNIT (60'-60'-59.33')
75'-0" CLEAR ROADWAY
20°00'00" RT. FWD. SKEW
360'-4" BRIDGE LENGTH
STA. 214+39.39 BRIDGE END

· DESIGN TRAFFIC DATA ·

DESIGN YEAR	2040
2020 ADT	4,900
2040 ADT	5,500
2040 DHV	605
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	18%
DESIGN SPEED	60 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
	SITE 1		
LATITUDE	N 33°25'44"	N 33°25'44"	N 33°25'44"
LONGITUDE	W 93°54'12"	W 93°54'01"	W 93°53'50"
STATION	102+00.00	111+46.73	120+93.46
	SITE 2		
LATITUDE	N 33°22'00"	N 33°22'01"	N 33°22'02"
LONGITUDE	W 93°31'34"	W 93°31'21"	W 93°31'09"
STATION	202+00.00	212+59.23	223+18.45

GROSS LENGTH OF PROJECT	4,011.91 FEET	OR 0.760 MILES
NET LENGTH OF ROADWAY	3,508.91 FEET	OR 0.665 MILES
NET LENGTH OF BRIDGES	503.00 FEET	OR 0.095 MILES
NET LENGTH OF PROJECT	4,011.91 FEET	OR 0.760 MILES

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

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

DIGITALLY SIGNED 6/12/20

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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.		030497	2	130
				(2)	INDEX OF SHEETS AND STANDARD DRAWINGS			

INDEX OF SHEETS

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

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
55009	STANDARD DETAILS FOR NEOPRENE STRIP SEAL JOINTS	02-11-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	03-24-20
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16
55021	STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	03-24-16

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
GR-6	GUARD RAIL DETAILS	11-07-19
GR-7	GUARD RAIL DETAILS	11-07-19
GR-8	GUARD RAIL DETAILS	11-07-19
GR-9	GUARD RAIL DETAILS	11-07-19
GR-10	GUARD RAIL DETAILS	11-07-19
GR-11	GUARD RAIL DETAILS	11-07-19
GR-12	GUARD RAIL DETAILS	05-14-20
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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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
8/20/2020				6	ARK.			
				JOB NO.		030497	3	130
				(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 - TRAINING PROGRAM - JOB 030497
FHWA-1273__ SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__ SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____ CONTRACTOR'S LICENSE
100-4_____ DEPARTMENT NAME CHANGE
102-2_____ ISSUANCE OF PROPOSALS
108-1_____ LIQUIDATED DAMAGES
108-2_____ WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____ PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____ UNCLASSIFIED EXCAVATION
303-1_____ AGGREGATE BASE COURSE
306-1_____ QUALITY CONTROL AND ACCEPTANCE
400-1_____ TACK COATS
400-4_____ DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____ PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____ LIQUID ANTI-STRIP ADDITIVE
404-3_____ DESIGN OF ASPHALT MIXTURES
410-1_____ CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____ DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
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 030497__ BIDDING REQUIREMENTS AND CONDITIONS
JOB 030497__ BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 030497__ BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 030497__ CARGO PREFERENCE ACT REQUIREMENTS
JOB 030497__ CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 030497__ CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 030497__ CULVERT CLEAN OUT
JOB 030497__ DELAY IN RIGHT OF WAY OCCUPANCY
JOB 030497__ DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 030497__ DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 030497__ ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 030497__ EXCAVATION AND EMBANKMENT
JOB 030497__ EXTENSION FOR PIPE CULVERTS
JOB 030497__ FLEXIBLE BEGINNING OF WORK
JOB 030497__ GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 030497__ MANDATORY ELECTRONIC CONTRACT
JOB 030497__ MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 030497__ NESTING SITES OF MIGRATORY BIRDS
JOB 030497__ PARTNERING REQUIREMENTS
JOB 030497__ PIPE CULVERTS
JOB 030497__ PLASTIC PIPE
JOB 030497__ PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 030497__ SECTION 404 NATIONWIDE 23 PERMIT REQUIREMENTS
JOB 030497__ SHORING
JOB 030497__ SHORING FOR CULVERTS
JOB 030497__ SOIL STABILIZATION
JOB 030497__ STORM WATER POLLUTION PREVENTION PLAN
JOB 030497__ SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 030497__ UTILITY ADJUSTMENTS
JOB 030497__ VALUE ENGINEERING
JOB 030497__ VEGETATED BUFFER ZONE
JOB 030497__ WARM MIX ASPHALT
JOB 030497__ WELLHEAD PROTECTION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 8/20/20

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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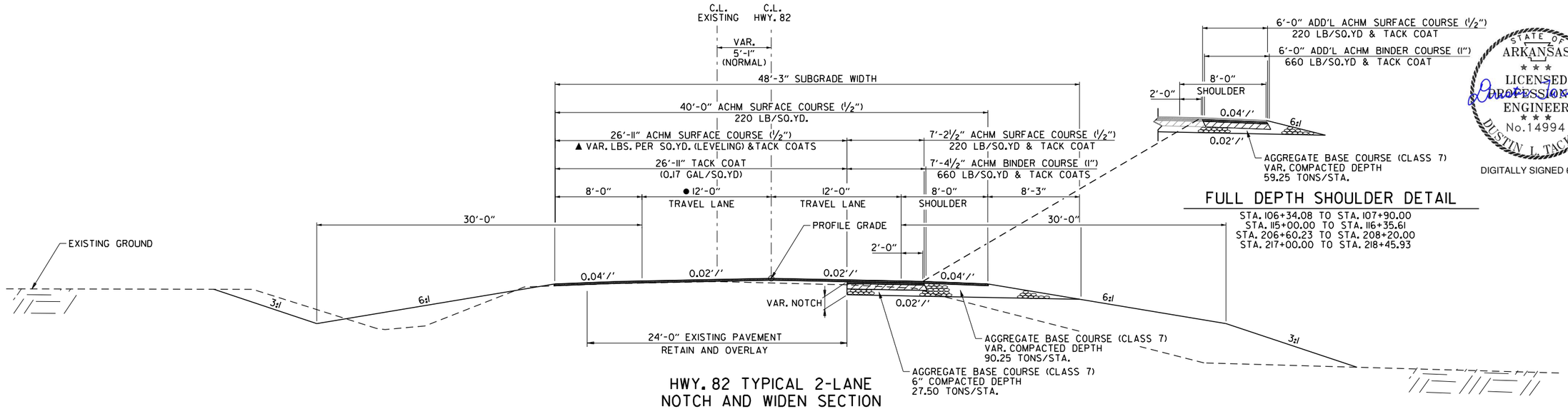
				6	ARK.			
				JOB NO.		030497	4	130
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



HWY. 82 TYPICAL 2-LANE NOTCH AND WIDEN SECTION

STA. 102+00.00 TO STA. 107+90.00
STA. 115+00.00 TO STA. 120+93.46
STA. 202+00.00 TO STA. 208+20.00
STA. 217+00.00 TO STA. 223+18.45

NOTE:
DIMENSIONS SHOWN REPRESENT AVERAGE WIDTHS. ACTUAL DIMENSIONS VARY WITHIN THE NOTCH AND WIDEN STATION RANGE.

▲ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

● TRANSITION LANE FROM 19'-6" AT STA. 102+00 TO 12'-0" AT STA 104+25

FULL DEPTH SHOULDER DETAIL

STA. 106+34.08 TO STA. 107+90.00
STA. 115+00.00 TO STA. 116+35.61
STA. 206+60.23 TO STA. 208+20.00
STA. 217+00.00 TO STA. 218+45.93

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

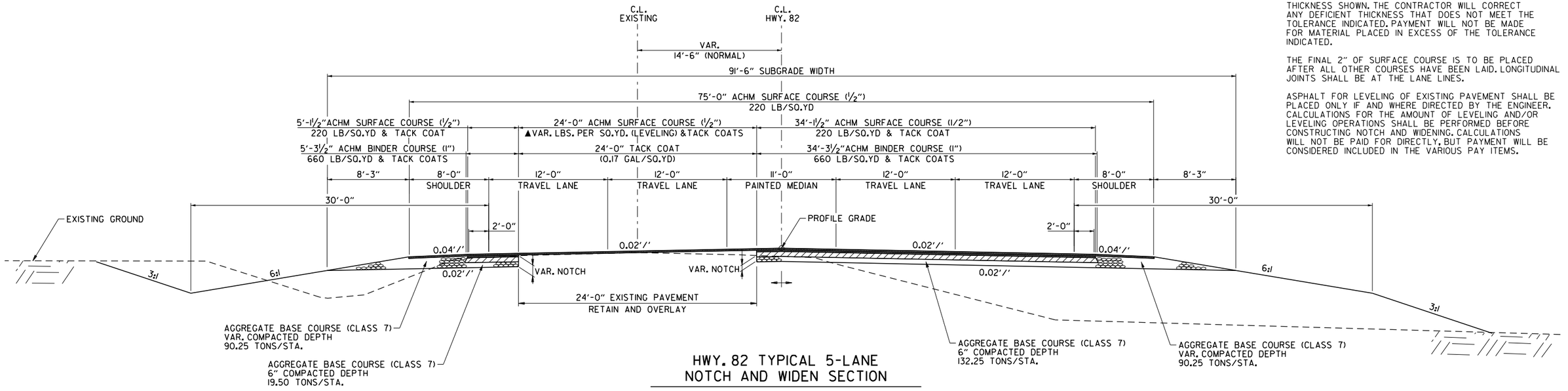
NOTES:

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.

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.

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



HWY. 82 TYPICAL 5-LANE NOTCH AND WIDEN SECTION

STA. 107+90.00 TO STA. 110+27.26
STA. 112+58.74 TO STA. 115+00.00
STA. 208+20.00 TO STA. 210+31.82
STA. 214+86.62 TO STA. 217+00.00

NOTES:
DIMENSIONS SHOWN REPRESENT AVERAGE WIDTHS. ACTUAL DIMENSIONS VARY WITHIN THE NOTCH AND WIDEN STATION RANGE.

SEE BRIDGE LAYOUTS FOR DETAILS ON APPROACH SLABS AND BRIDGE STRUCTURES FROM STA. 110+27.26 TO STA. 112+58.74 AND FROM STA. 210+31.82 TO STA. 214+86.62

▲ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTIONS OF IMPROVEMENT

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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.		030497	5	130

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

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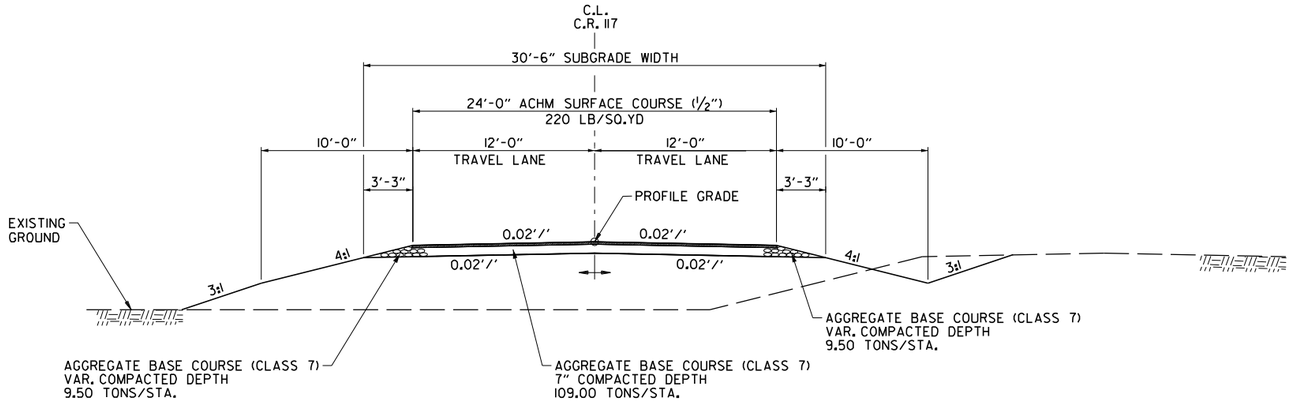
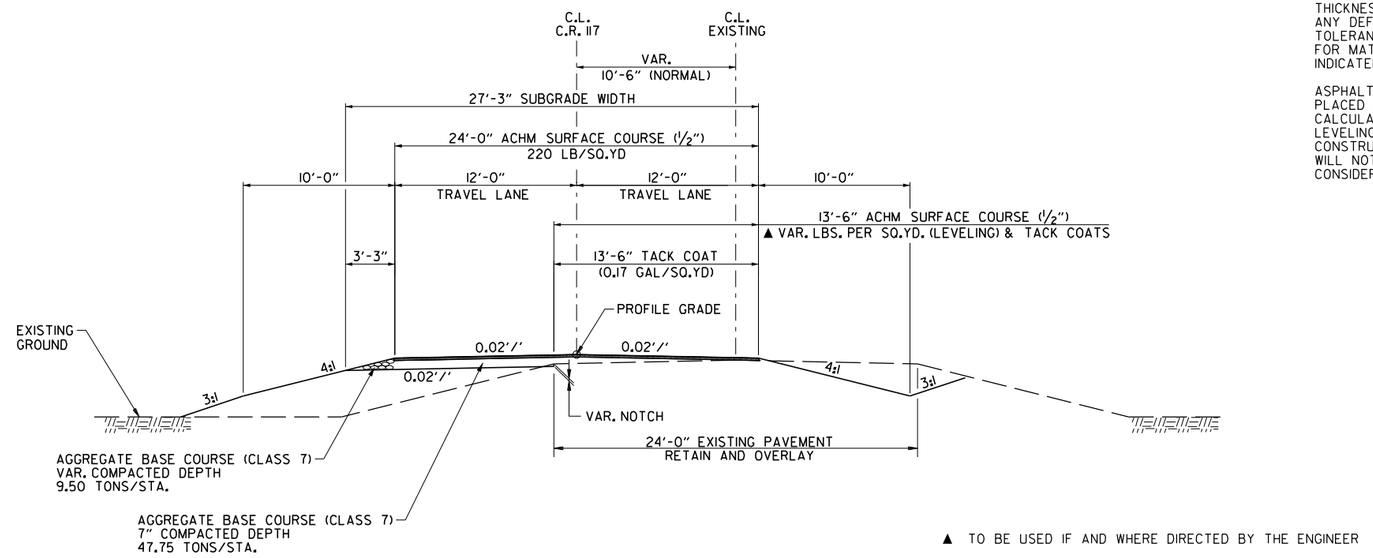


C.R. 117 TYPICAL SECTION

STA. 10+29.58 TO STA. 12+57.46



C.R. 117 TYPICAL NOTCH AND WIDEN SECTION

STA. 12+57.46 TO STA. 13+15.00

NOTE:
DIMENSIONS SHOWN REPRESENT AVERAGE WIDTHS. ACTUAL DIMENSIONS VARY WITHIN THE NOTCH AND WIDEN STATION RANGE.

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/OR 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.

▲ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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REVISED DATE:

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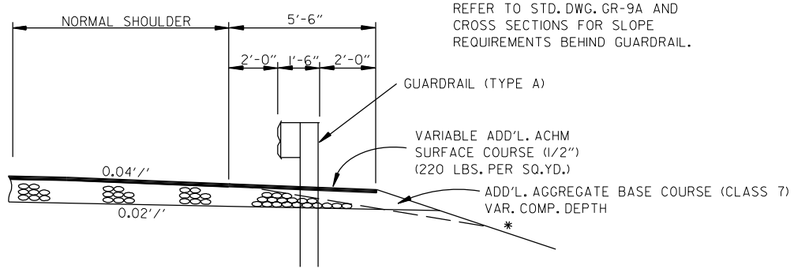
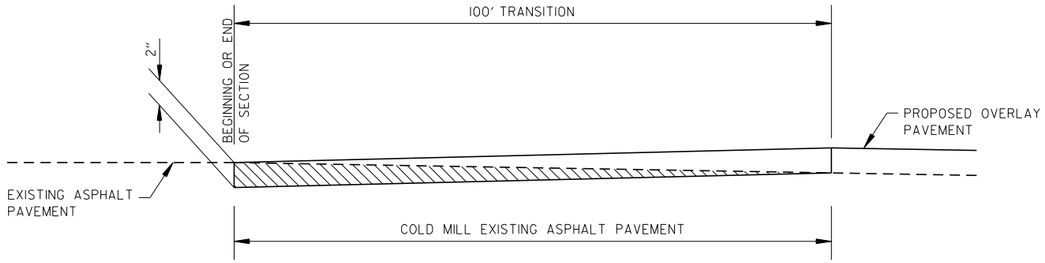
				6	ARK.			
				JOB NO.		030497	6	130
				(2)	SPECIAL DETAILS			



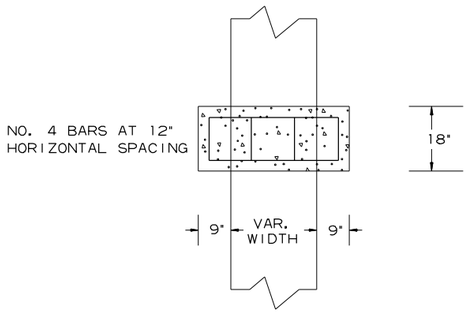
*NOTE:
REFER TO STD. DWG. GR-9A AND CROSS SECTIONS FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.

WIDENING FOR GUARDRAIL AT PROPOSED SHOULDER EDGE



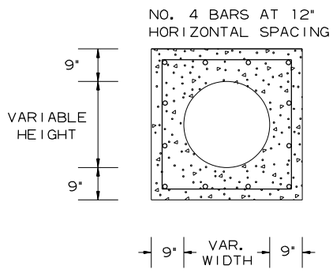
DETAIL FOR TRANSITIONS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN J. TACKETT
DIGITALLY SIGNED 6/12/20

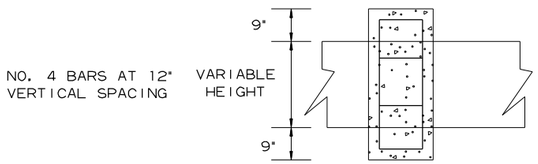


TOP VIEW

MIN. 3" COVER

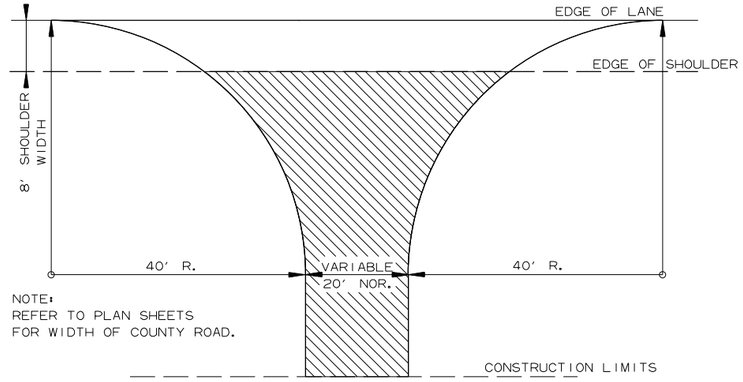


FRONT VIEW



SIDE VIEW

SINGLE PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL

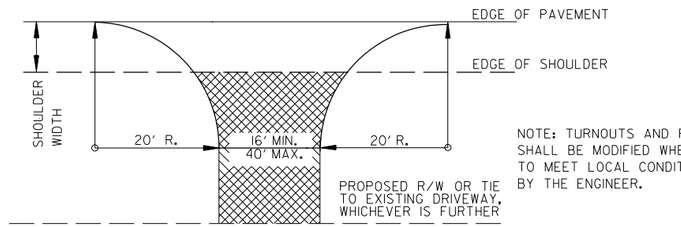


NOTE:
REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

NOTE: TURNOUTS 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

DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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 (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT DRIVE EXISTS: OR 6" CONCRETE IF CONCRETE DRIVE EXISTS

DETAIL FOR DRIVEWAY TURNOUTS

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WORKSPACE: AHTD
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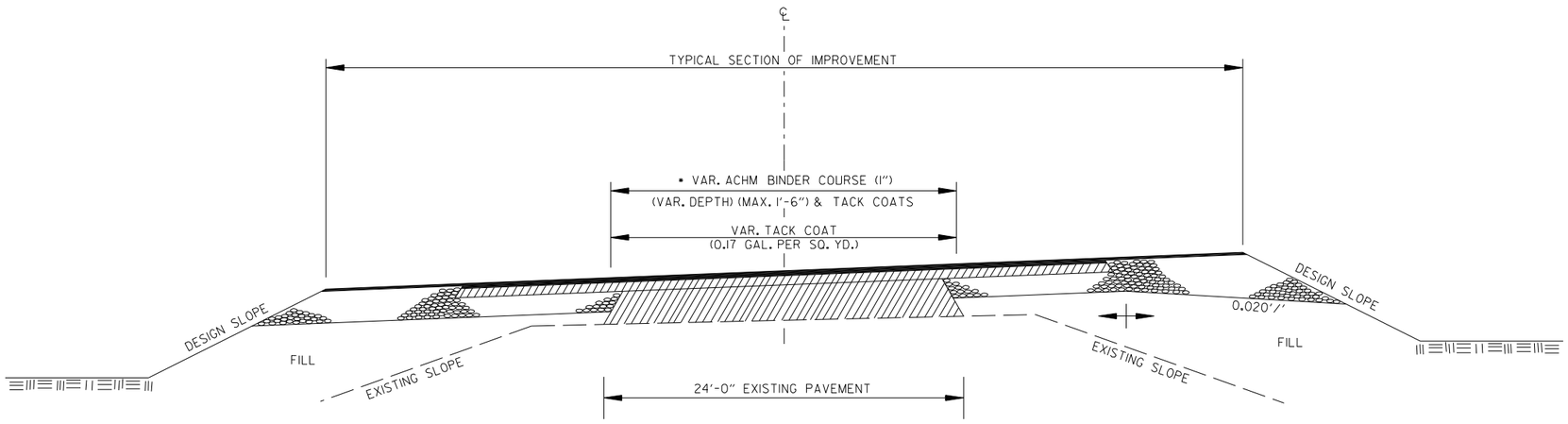
REVISED DATE:

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.		030497	7	130
				(2)	SPECIAL DETAILS			



• 6" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (I")

METHOD OF RAISING GRADE

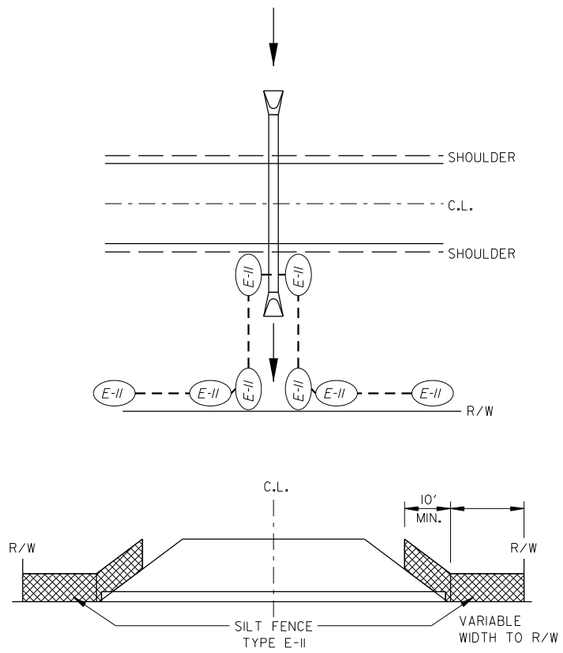
NOTES:

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

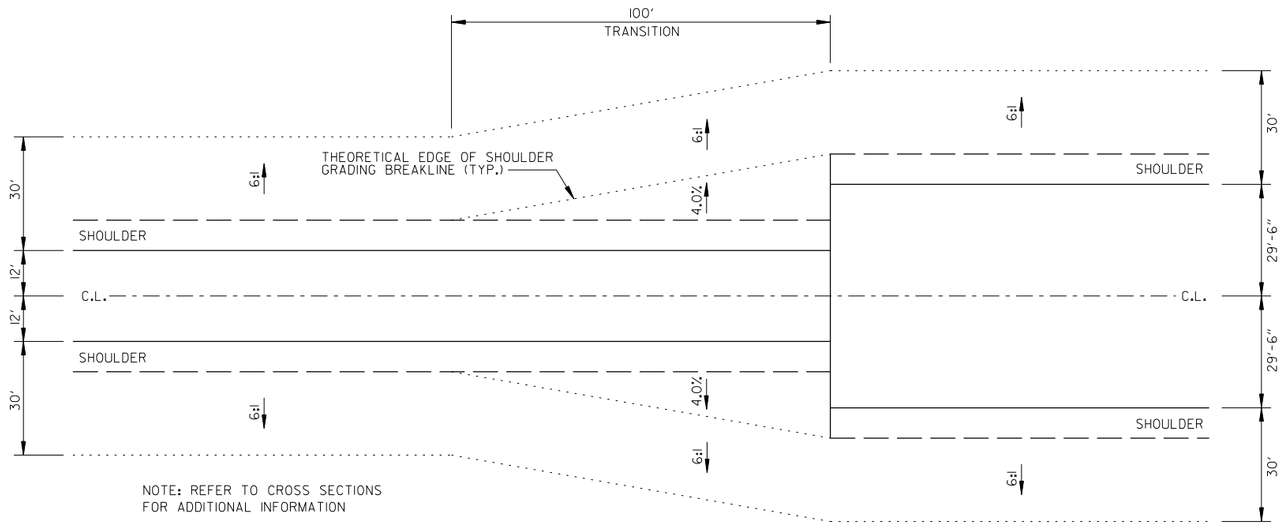
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN J. TACKETT
DIGITALLY SIGNED 6/12/20



DETAILS OF SILT FENCE AT CROSS DRAINS



NOTE: REFER TO CROSS SECTIONS FOR ADDITIONAL INFORMATION

GRADING TRANSITION DETAIL

SPECIAL DETAILS

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REVISED DATE:

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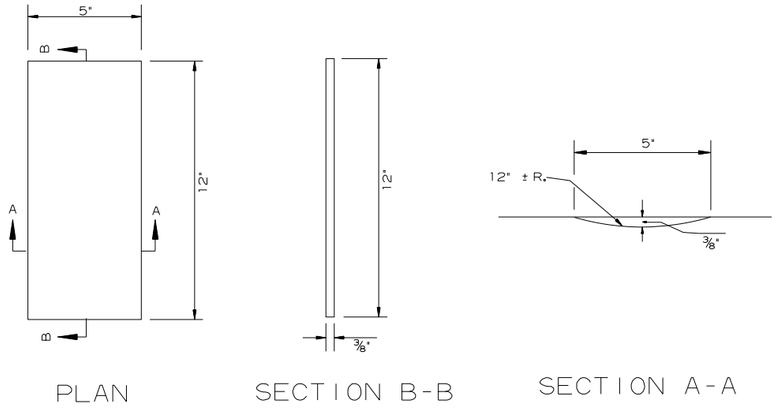
				6	ARK.			
				JOB NO.		030497	8	130

(2) SPECIAL DETAILS

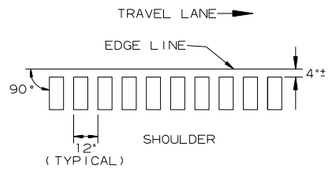


PLAN SECTION B-B SECTION A-A

DETAILS OF RUMBLE STRIPS

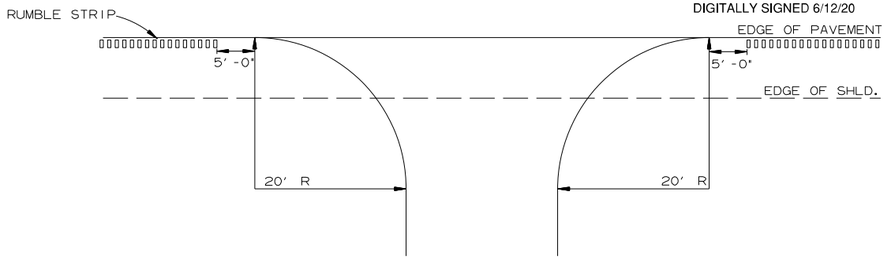
NOTE:

RUMBLE STRIPS LOCATED WITHIN THE FUTURE 5-LANE SECTION SHALL BE PLACED AT THE INTERIM 2-LANE EDGE LINE AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.



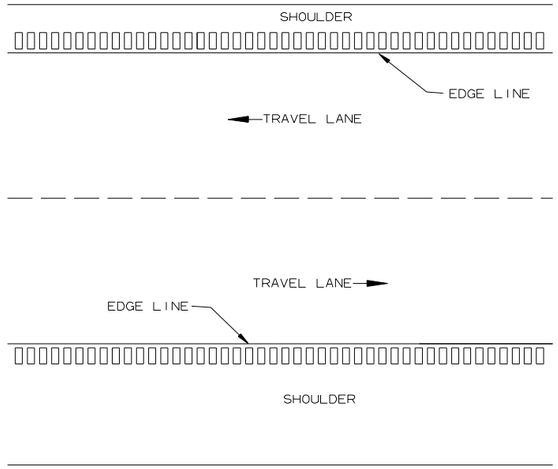
LOCATION PLAN OF RUMBLE STRIPS

LEFT OR RIGHT SHOULDER



DETAIL FOR RUMBLE STRIP GAP

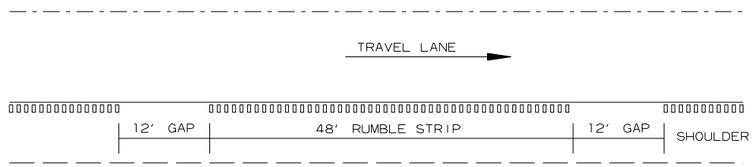
AT DRIVEWAY TURNOUTS



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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

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WORKSPACE: AHTD
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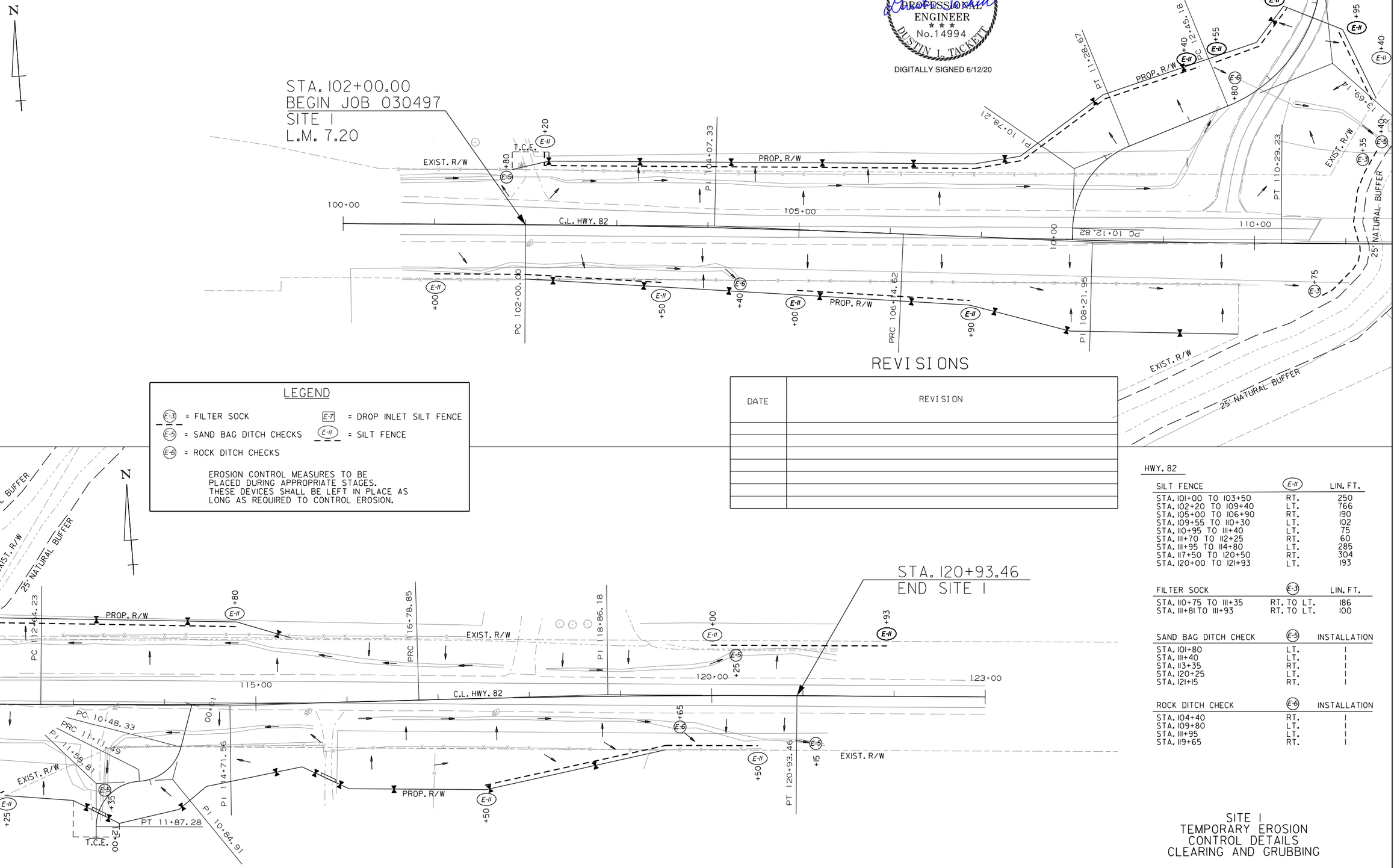
REVISED DATE:

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.		030497	9	130

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN J. TACKETT
DIGITALLY SIGNED 6/12/20



LEGEND

- (E-3) = FILTER SOCK
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE	REVISION

HWY. 82

SILT FENCE (E-11)		LIN. FT.
STA. 101+00 TO 103+50	RT.	250
STA. 102+20 TO 109+40	LT.	766
STA. 105+00 TO 106+90	RT.	190
STA. 109+55 TO 110+30	LT.	102
STA. 110+95 TO 111+40	LT.	75
STA. 111+70 TO 112+25	RT.	60
STA. 111+95 TO 114+80	LT.	285
STA. 117+50 TO 120+50	RT.	304
STA. 120+00 TO 121+93	LT.	193

FILTER SOCK (E-3)		LIN. FT.
STA. 110+75 TO 111+35	RT. TO LT.	186
STA. 111+81 TO 111+93	RT. TO LT.	100

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 101+80	LT.	1
STA. 111+40	LT.	1
STA. 113+35	RT.	1
STA. 120+25	LT.	1
STA. 121+15	RT.	1

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 104+40	RT.	1
STA. 109+80	LT.	1
STA. 111+95	LT.	1
STA. 119+65	RT.	1

STA. 120+93.46
END SITE 1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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WORKSPACE: AHTD
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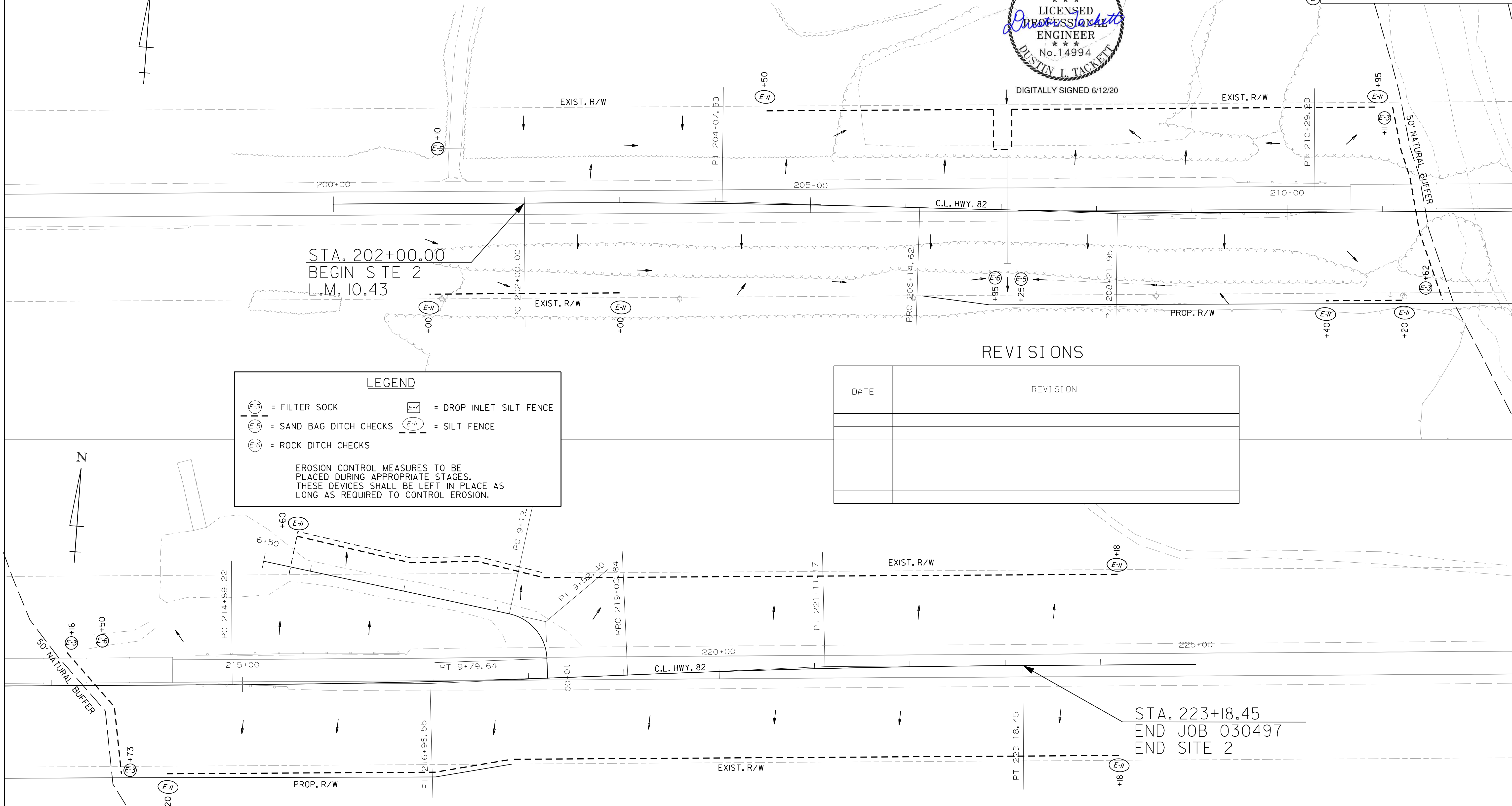
REVISED DATE:

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.		030497	10	130

② TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14994 DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20



HWY. 82

SILT FENCE	E-11	LIN. FT.
STA. 201+00 TO 203+00	RT.	200
STA. 204+50 TO 210+95	LT.	733
STA. 210+40 TO 211+20	RT.	80
STA. 214+20 TO 224+18	RT.	999
STA. 215+60 TO 224+18	LT.	866

FILTER SOCK	E-3	LIN. FT.
STA. 211+11 TO 211+62	LT. TO RT.	210
STA. 213+16 TO 213+73	LT. TO RT.	146

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 201+10	LT.	1
STA. 207+25	RT.	1

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 206+95	RT.	1
STA. 213+50	LT.	1

SITE 2
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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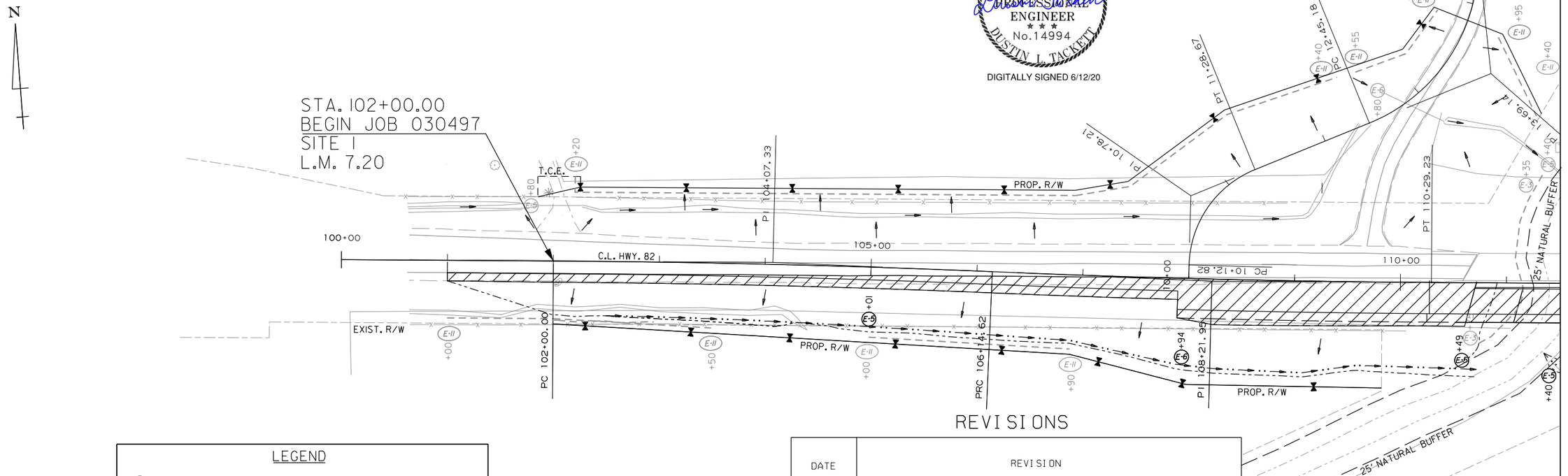
REVISED DATE:

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.		030497	11	130

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20



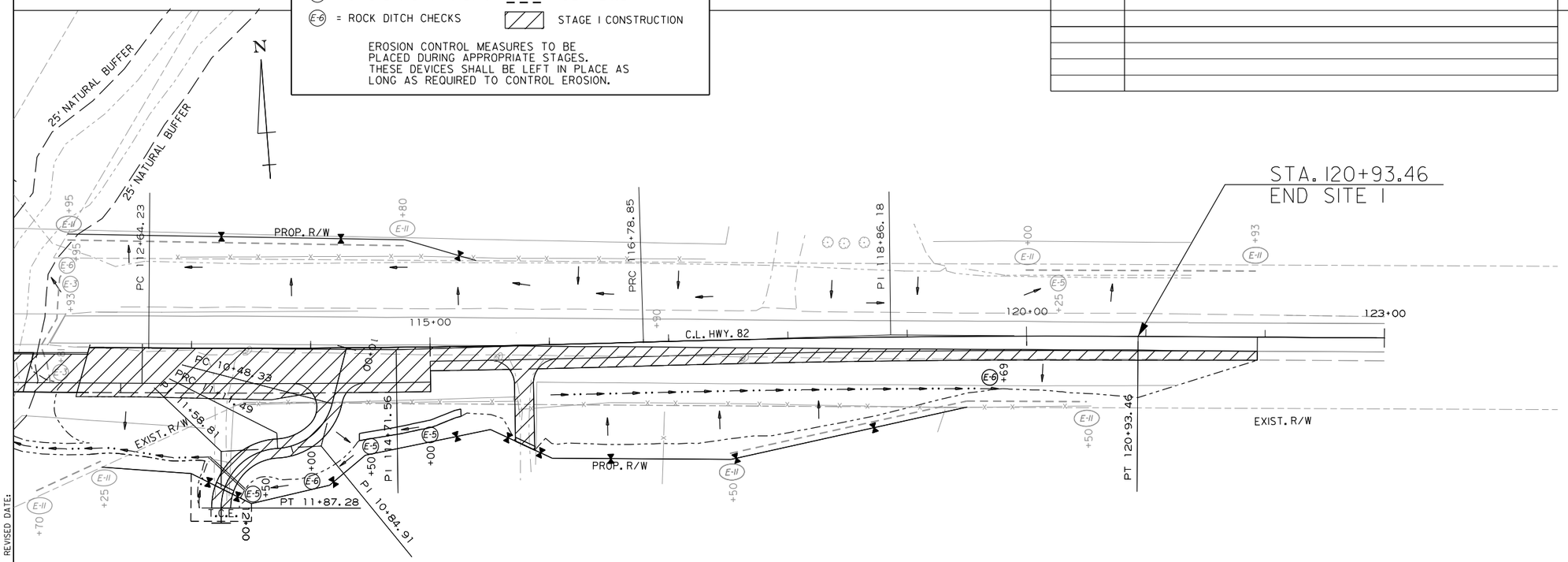
REVISIONS

DATE	REVISION

LEGEND

- E-3 = FILTER SOCK
- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- STAGE I CONSTRUCTION

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



HWY. 82

SILT FENCE	E-11	LIN. FT.
STA. 101+00 TO 103+50	RT.	RETAINED
STA. 102+20 TO 109+40	LT.	RETAINED
STA. 105+00 TO 106+90	RT.	RETAINED
STA. 109+55 TO 110+30	LT.	RETAINED
STA. 110+95 TO 111+40	LT.	RETAINED
STA. 111+70 TO 112+25	RT.	RETAINED
STA. 111+95 TO 114+80	LT.	RETAINED
STA. 117+50 TO 120+50	RT.	RETAINED
STA. 120+00 TO 121+93	LT.	RETAINED

FILTER SOCK	E-3	LIN. FT.
STA. 110+75 TO 111+35	RT. TO LT.	RETAINED
STA. 111+81 TO 111+93	RT. TO LT.	RETAINED

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 101+80	LT.	RETAINED
STA. 105+01	RT.	I
STA. 110+49	RT.	I
STA. 111+40	LT.	RETAINED
STA. 111+40	RT.	I
STA. 113+50	RT.	I
STA. 114+50	RT.	I
STA. 115+00	RT.	I
STA. 120+25	LT.	RETAINED

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 107+94	RT.	I
STA. 109+80	LT.	RETAINED
STA. 111+95	LT.	RETAINED
STA. 114+00	RT.	I
STA. 119+69	RT.	I

SITE 1
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

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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.		030497	12	130

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

N

STA. 202+00.00
BEGIN SITE 2
L.M. 10.43

EXIST. R/W
PI 204+07.33
200+00
205+00
C.L. HWY. 82
PC 202+00.00
PRC 206+14.62
PI 208+21.95
PT 210+29.23
210+00
50' NATURAL BUFFER
EXIST. R/W
PROP. R/W

LEGEND

E-3 = FILTER SOCK
E-5 = SAND BAG DITCH CHECKS
E-6 = ROCK DITCH CHECKS
E-7 = DROP INLET SILT FENCE
E-11 = SILT FENCE
STAGE I CONSTRUCTION

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

REVISIONS

DATE	REVISION

N

BOAT RAMP
PARKING
T.C.E.
6+50
PC 9+13.
PI 9+52.40
PC 214+89.22
PRC 219+03.84
PI 221+11.17
EXIST. R/W
50' NATURAL BUFFER
215+00
PT 9+79.64
220+00
C.L. HWY. 82
PI 216+96.55
STA. 223+18.45
END JOB 030497
END SITE 2
225+00
PT 223+18.45
EXIST. R/W
PROP. R/W

HWY. 82

SILT FENCE	E-11	LIN. FT.
STA. 201+00 TO 203+00	RT.	RETAINED
STA. 204+50 TO 210+95	LT.	RETAINED
STA. 210+40 TO 211+20	RT.	RETAINED
STA. 214+20 TO 224+18	RT.	RETAINED
STA. 215+60 TO 224+18	LT.	RETAINED

FILTER SOCK	E-3	LIN. FT.
STA. 207+00 TO 207+20	RT.	20
STA. 211+11 TO 211+62	LT. TO RT.	RETAINED
STA. 213+16 TO 213+73	LT. TO RT.	RETAINED

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 201+10	LT.	RETAINED

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 213+50	LT.	RETAINED

SITE 2
TEMPORARY EROSION
CONTROL DETAILS
STAGE I

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

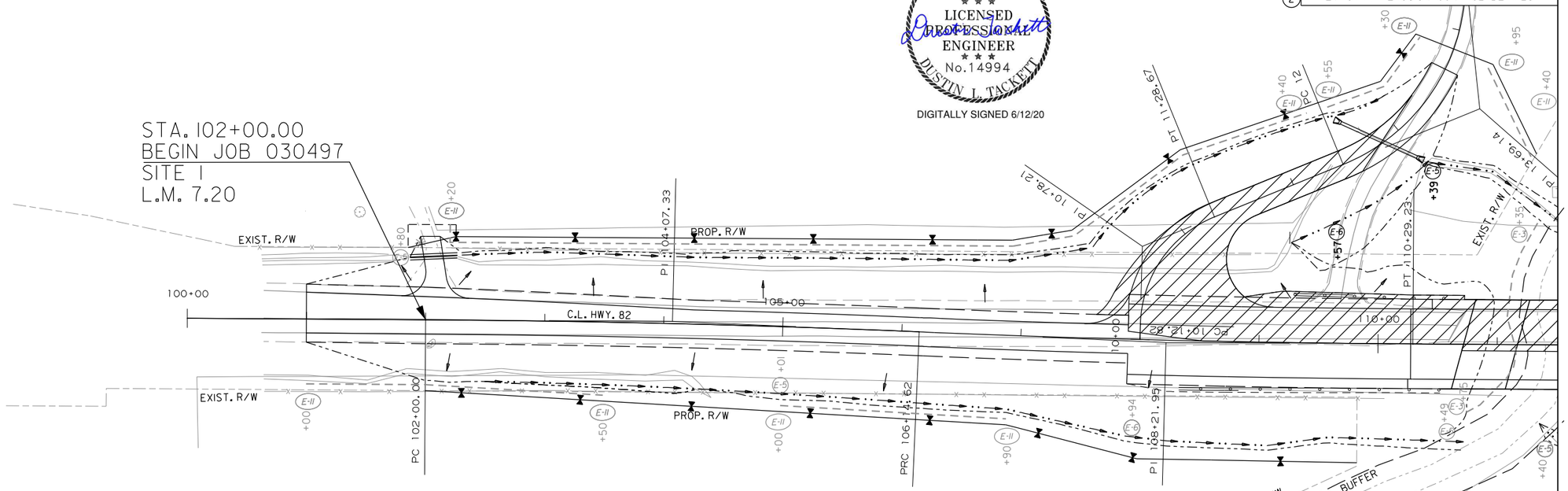
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	13	130

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

N

STA. 102+00.00
BEGIN JOB 030497
SITE 1
L.M. 7.20



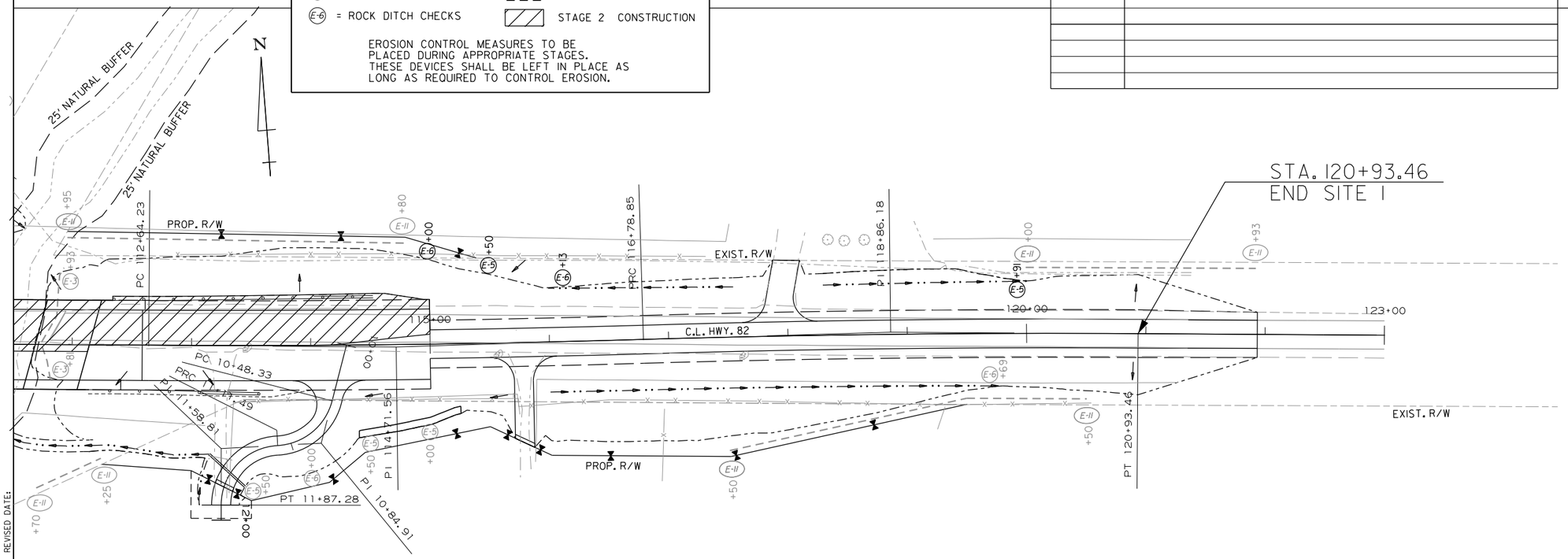
LEGEND

- E-3 = FILTER SOCK
- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- STAGE 2 CONSTRUCTION

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

REVISIONS

DATE	REVISION



HWY. 82

SILT FENCE (E-11)		LIN. FT.
STA. 101+00 TO 103+50	RT.	RETAINED
STA. 102+20 TO 109+40	LT.	RETAINED
STA. 105+00 TO 106+90	RT.	RETAINED
STA. 109+55 TO 110+30	LT.	RETAINED
STA. 110+95 TO 111+40	LT.	RETAINED
STA. 111+70 TO 112+25	RT.	RETAINED
STA. 111+95 TO 114+80	LT.	RETAINED
STA. 117+50 TO 120+50	RT.	RETAINED
STA. 120+00 TO 121+93	LT.	RETAINED

FILTER SOCK (E-3)		LIN. FT.
STA. 110+75 TO 111+35	RT. TO LT.	RETAINED
STA. 111+81 TO 111+93	RT. TO LT.	RETAINED

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 101+80	LT.	RETAINED
STA. 105+01	RT.	RETAINED
STA. 110+49	LT.	RETAINED
STA. 110+39	RT.	I
STA. 111+40	RT.	RETAINED
STA. 113+50	RT.	RETAINED
STA. 114+50	RT.	RETAINED
STA. 115+00	RT.	RETAINED
STA. 115+50	LT.	I
STA. 119+91	LT.	I

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 107+94	RT.	RETAINED
STA. 109+57	LT.	I
STA. 114+00	RT.	RETAINED
STA. 115+00	LT.	I
STA. 116+13	LT.	I
STA. 119+69	RT.	RETAINED

SITE 1
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.		030497	14	130

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

N

EXIST. R/W

PI 204+07.33

200+00

205+00

C.L. HWY. 82

STA. 202+00.00
BEGIN SITE 2
L.M. 10.43

PC 202+00.00

PRC 206+14.62

PI 208+21.95

PT 210+29.23

210+00

50' NATURAL BUFFER

EXIST. R/W

PROP. R/W

EXIST. R/W

LEGEND

- E-3 = FILTER SOCK
- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- STAGE 2 CONSTRUCTION

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

REVISIONS

DATE	REVISION

N

6+50

T.C.E.

PC 9+13.4

PI 9+52.40

PRC 219+03.84

PI 221+11.17

EXIST. R/W

50' NATURAL BUFFER

EXIST. R/W

PC 214+89.22

215+00

PT 9+79.64

220+00

225+00

C.L. HWY. 82

PI 216+96.55

PT 223+18.45

STA. 223+18.45
END JOB 030497
END SITE 2

PROP. R/W

EXIST. R/W

HWY. 82

SILT FENCE (E-11)		LIN. FT.
STA. 201+00 TO 203+00	RT.	RETAINED
STA. 204+50 TO 210+95	LT.	RETAINED
STA. 210+40 TO 211+20	RT.	RETAINED
STA. 214+20 TO 224+18	RT.	RETAINED
STA. 215+60 TO 224+18	LT.	RETAINED

FILTER SOCK (E-3)		LIN. FT.
STA. 207+00 TO 207+20	RT.	RETAINED
STA. 211+11 TO 211+62	LT. TO RT.	RETAINED
STA. 213+16 TO 213+73	LT. TO RT.	RETAINED

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 201+10	LT.	RETAINED
STA. 205+90	LT.	I
STA. 206+90	LT.	I
STA. 207+65	LT.	I
STA. 213+66	LT.	I
STA. 216+20	LT.	I
STA. 217+03	LT.	I

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 205+40	LT.	I
STA. 206+40	LT.	I
STA. 207+15	LT.	I
STA. 215+36	LT.	I

SITE 2
TEMPORARY EROSION
CONTROL DETAILS
STAGE 2

DLTackett 6/12/2020 10:06:54 PM
WORKSPACE: AHTD
L:\2017\170756O - Mill and Bodcau Creek\Drawings\R030497_EC_STG2_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.		030497	15	130

(2) MAINTENANCE OF TRAFFIC DETAILS

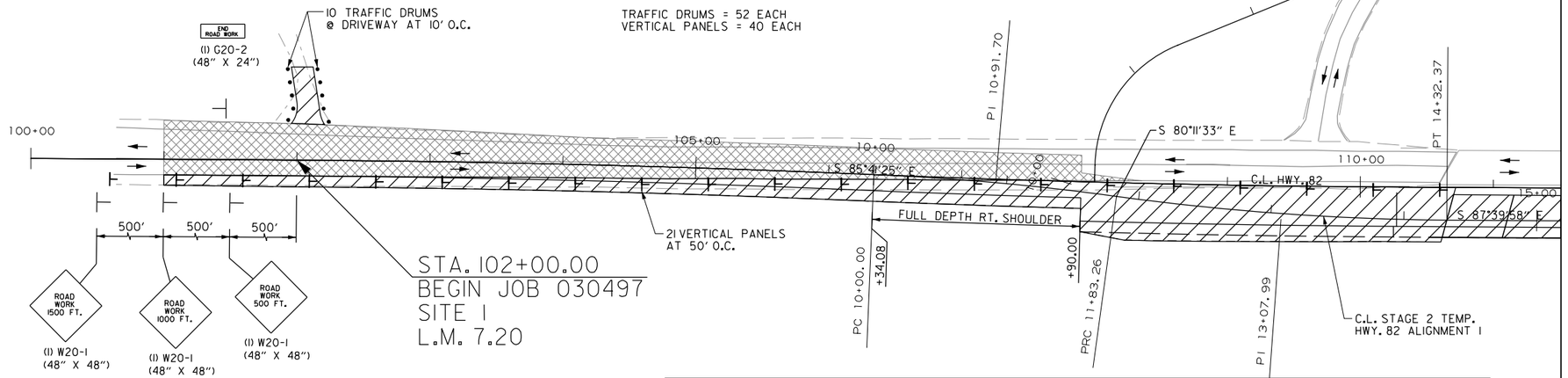
STAGE I
CONSTRUCTION SEQUENCE NOTES

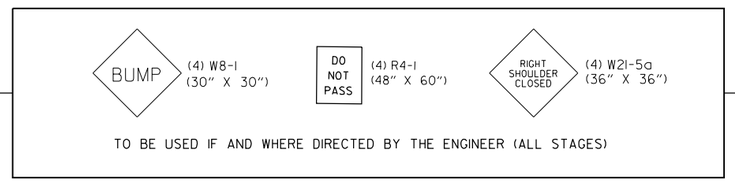
1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 82 STRUCTURE AND APPROACHES AS SHOWN WITH FULL DEPTH SHOULDER LOCATIONS AS NOTED.
4. PLACE CONSTRUCTION PAVEMENT MARKINGS SHOWN FOR STAGE 2 TRAFFIC CONFIGURATION PRIOR TO SWITCHING TRAFFIC.

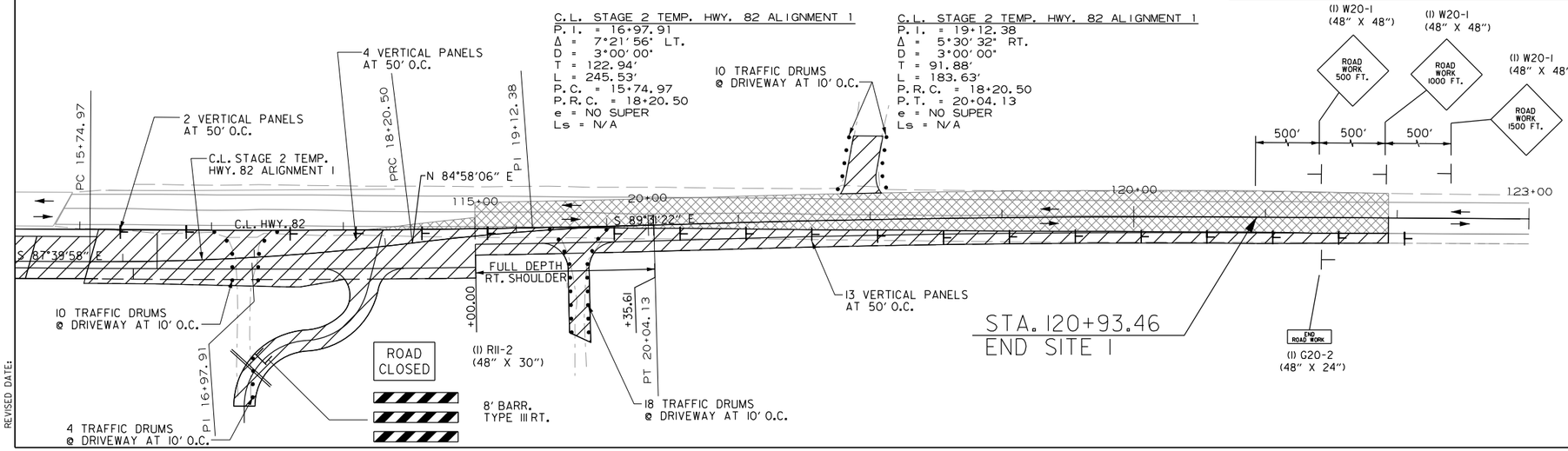
C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 1
P.I. = 10+91.70
Δ = 5°29'52" RT.
D = 3°00'00"
T = 91.70'
L = 183.26'
P.C. = 10+00.00
P.R.C. = 11+83.26
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 1
P.I. = 13+07.99
Δ = 7°28'25" LT.
D = 3°00'00"
T = 124.73'
L = 249.11'
P.R.C. = 11+83.26
P.T. = 14+32.37
e = NO SUPER
Ls = N/A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20







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.		030497	16	130

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE I CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. JACK AND BORE R.C. PIPE CULVERT AT STA. 207+00.
4. CONSTRUCT HWY. 82 STRUCTURE AND APPROACHES AS SHOWN WITH FULL DEPTH SHOULDER LOCATIONS AS NOTED.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS SHOWN FOR STAGE 2 TRAFFIC CONFIGURATION PRIOR TO SWITCHING TRAFFIC.

N

1" = 100'

VERTICAL PANELS = 40 EACH

STA. 202+00.00
BEGIN SITE 2
L.M. 10.43

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

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 20+91.91
Δ = 5°30'.37" RT.
D = 3°00'00"
T = 91.91'
L = 183.67'
P.C. = 20+00.00
P.R.C. = 21+83.67
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 23+06.43
Δ = 7°21'.19" LT.
D = 3°00'00"
T = 122.76'
L = 245.18'
P.R.C. = 21+83.67
P.T. = 24+28.85
e = NO SUPER
Ls = N/A

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200+00 | 205+00 | 210+00

N 86°21'28" E

PI 20+91.91

S 88°07'55" E

PT 24+28.85

C.L. HWY. 82

25+00

N 84°30'46" E

20 VERTICAL PANELS AT 50' O.C.

FULL DEPTH RT. SHOULDER

PC 20+00.00
+60.23

+20

PRC 21+83.67

PI 23+06.43

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2

500' | 500' | 500'

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) W20-1 (48" X 48")

- STAGE I CONSTRUCTION
- STAGE I OVERLAY OR METHOD OF CHANGING GRADE UNDER TRAFFIC
- STAGE I TRAFFIC
- TRAFFIC DRUMS
- VERTICAL PANELS

8'-0" SHOULDER | 12'-0" TRAVEL LANE | 12'-0" TRAVEL LANE | STAGE I WORK AREA

32' EXISTING PAVEMENT RETAIN AND OVERLAY

STAGE I VERTICAL PANELS 50' O.C. (NORMAL)

STAGE I TYPICAL SECTION

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 29+02.13
Δ = 7°52'15" LT.
D = 3°30'00"
T = 112.62'
L = 224.88'
P.C. = 27+89.51
P.R.C. = 30+14.39
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 31+01.44
Δ = 6°05'14" RT.
D = 3°30'00"
T = 87.05'
L = 173.93'
P.R.C. = 30+14.39
P.T. = 31+88.32
e = NO SUPER
Ls = N/A

N

1" = 100'

(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'

6+50

PC 27+89.51

PRC 30+14.39

PI 31+01.44

215+00 | 220+00 | 225+00

30+00

31+88

N 82°43'45" E

C.L. HWY. 82

N 84°30'46" E

N 76°38'31" E

FULL DEPTH RT. SHOULDER

00+

+45.93

PT 31+88.32

20 VERTICAL PANELS AT 50' O.C.

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2

PI 29+02.13

STA. 223+18.45
END JOB 030497
END SITE 2

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

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.		030497	17	130

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. SHIFT TRAFFIC TO TEMPORARY ALIGNMENT.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 82 AND C.R. 117 AS SHOWN AND REMOVE THE EXISTING BRIDGE STRUCTURE AND EXISTING APPROACHES.
4. CONSTRUCT THE FINAL 2" OF ACHM SURFACE COURSE ON HWY. 82 AND CR 117.
5. PLACE FINAL PERMANENT PAVEMENT MARKINGS.

CONSTRUCTION PAVEMENT MARKINGS
DOUBLE YELLOW CENTERLINE = 3730 LIN. FT.
WHITE SOLID LINE = 3730 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
DOUBLE YELLOW CENTERLINE = 464 LIN. FT.
WHITE SOLID LINE = 464 LIN. FT.

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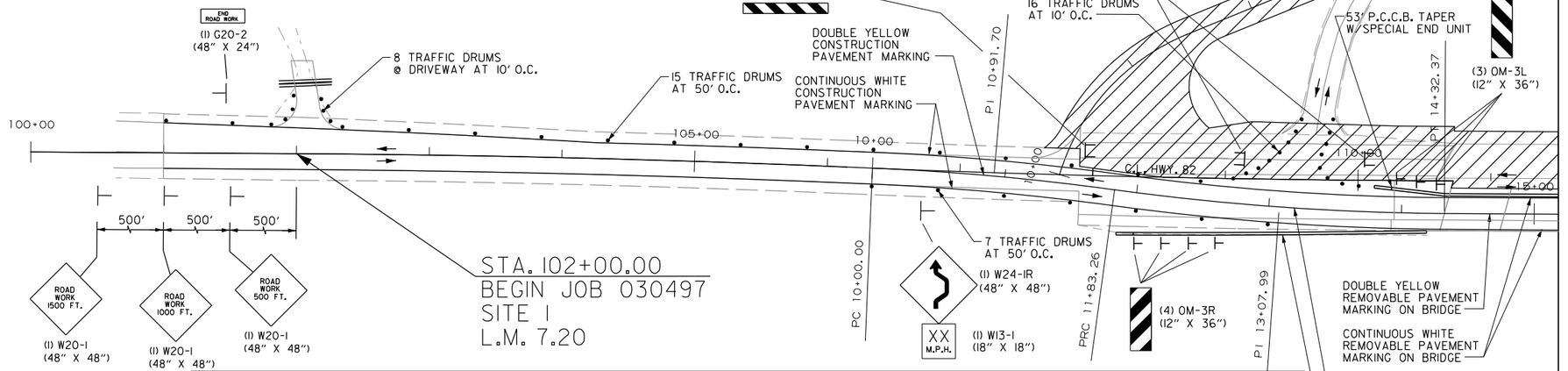
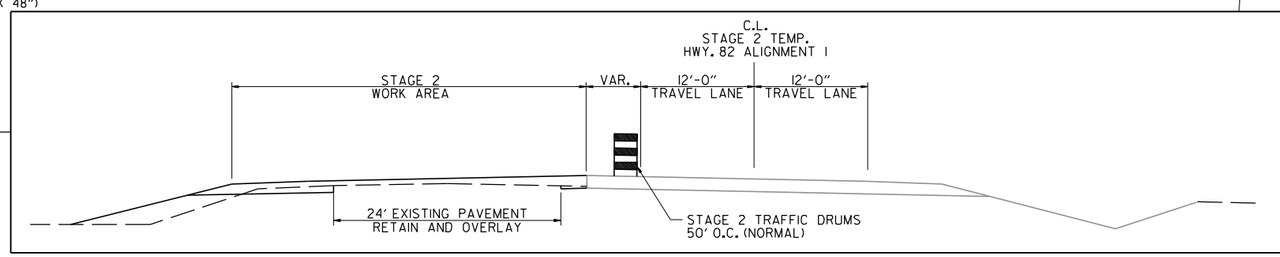
TRAFFIC DRUMS = 110 EACH
BARRICADES = 80 LIN. FT.

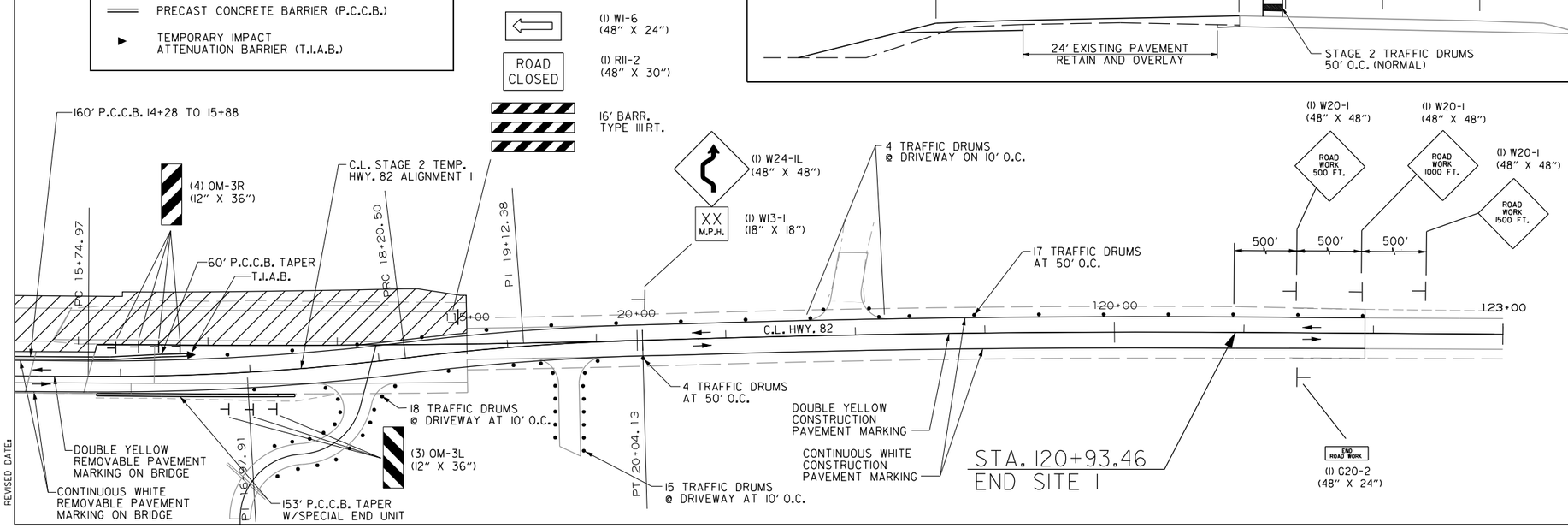
N

1" = 100'



- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TRAFFIC DRUMS
- VERTICAL PANELS
- PRECAST CONCRETE BARRIER (P.C.C.B.)
- TEMPORARY IMPACT ATTENUATION BARRIER (T.I.A.B.)





N

1" = 100'

MAINTENANCE OF TRAFFIC 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.		030497	18	130
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STAGE 2 CONSTRUCTION SEQUENCE NOTES

1. SHIFT TRAFFIC TO TEMPORARY ALIGNMENT.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 82 AS SHOWN AND REMOVE THE EXISTING BRIDGE STRUCTURE AND EXISTING APPROACHES.
4. CONSTRUCT THE FINAL 2" OF ACHM SURFACE COURSE ON HWY. 82.
5. PLACE FINAL PERMANENT PAVEMENT MARKINGS.

CONSTRUCTION PAVEMENT MARKINGS
DOUBLE YELLOW CENTERLINE = 4354 LIN. FT.
WHITE SOLID LINE = 4354 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
DOUBLE YELLOW CENTERLINE = 910 LIN. FT.
WHITE SOLID LINE = 910 LIN. FT.

TRAFFIC DRUMS = 55 EACH
BARRICADES = 32 LIN. FT.

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N
1" = 100'

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

STA. 202+00.00
BEGIN SITE 2
L.M. 10.43

19 TRAFFIC DRUMS AT 50' O.C.

200+00 | 205+00 | 20+00 | C.L. HWY. 82

(1) WI-6 (48" X 24")
(1) RII-2 (48" X 30")
16' BARR. TYPE III LT.

53' P.C.C.B. TAPER W/SPECIAL END UNIT
(3) OM-3L (12" X 36")
PT 24+28.85
210+00
25+00

500' | 500' | 500'

(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.

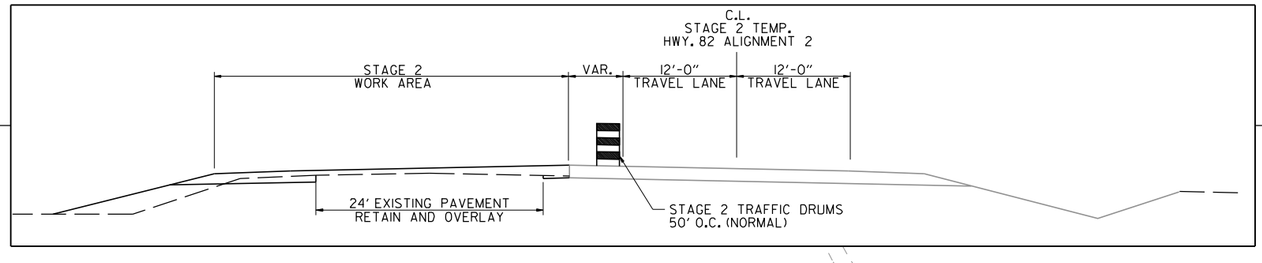
DOUBLE YELLOW CONSTRUCTION PAVEMENT MARKING
CONTINUOUS WHITE CONSTRUCTION PAVEMENT MARKING

(1) W24-1R (48" X 48")
XX M.P.H.
(1) WI3-1 (18" X 18")

PC 20+00.00
PI 20+91.91
7 TRAFFIC DRUMS AT 50' O.C.
PRC 21+83.67
PT 23+06.43
(4) OM-3R (12" X 36")

DOUBLE YELLOW REMOVABLE PAVEMENT MARKING
CONTINUOUS WHITE REMOVABLE PAVEMENT MARKING
C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
233' P.C.C.B. TAPER W/SPECIAL END UNIT

- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TRAFFIC DRUMS
- VERTICAL PANELS
- PRECAST CONCRETE BARRIER (P.C.C.B.)
- TEMPORARY IMPACT ATTENUATION BARRIER (T.I.A.B.)



380' P.C.C.B. 24+14 TO 27+94

(1) W24-1L (48" X 48")
XX M.P.H.
(1) WI3-1 (18" X 18")

6+50
(4) OM-3R (12" X 36")
PT 27+89.5
60' P.C.C.B. TAPER
T.I.A.B.
215+00
RC 30+14.38
PI 30+01.44
30+00
31+88
6 TRAFFIC DRUMS @ DRIVEWAY AT 10' O.C.
12 TRAFFIC DRUMS AT 50' O.C.
220+00
C.L. HWY. 82
225+00

(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'

6 TRAFFIC DRUMS AT 50' O.C.
DOUBLE YELLOW CONSTRUCTION PAVEMENT MARKING
CONTINUOUS WHITE CONSTRUCTION PAVEMENT MARKING
5 TRAFFIC DRUMS AT 50' O.C.
C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
DOUBLE YELLOW REMOVABLE PAVEMENT MARKING
CONTINUOUS WHITE REMOVABLE PAVEMENT MARKING
PI 29+02.13
(3) OM-3L (12" X 36")
PT 31+88.32

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

153' P.C.C.B. TAPER W/SPECIAL END UNIT

STA. 223+18.45
END JOB 030497
END SITE 2

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

N
1" = 100'

MAINTENANCE OF TRAFFIC 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.		030497	19	130

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
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N

6" YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
10+20.00	13+65.00	C.L. C.R. 117	690

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
10+12.00	13+65.00	LT. C.R. 117	381
11+78.00	13+65.00	RT. C.R. 117	400

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
101+00.00	111+00.00	C.L.	13

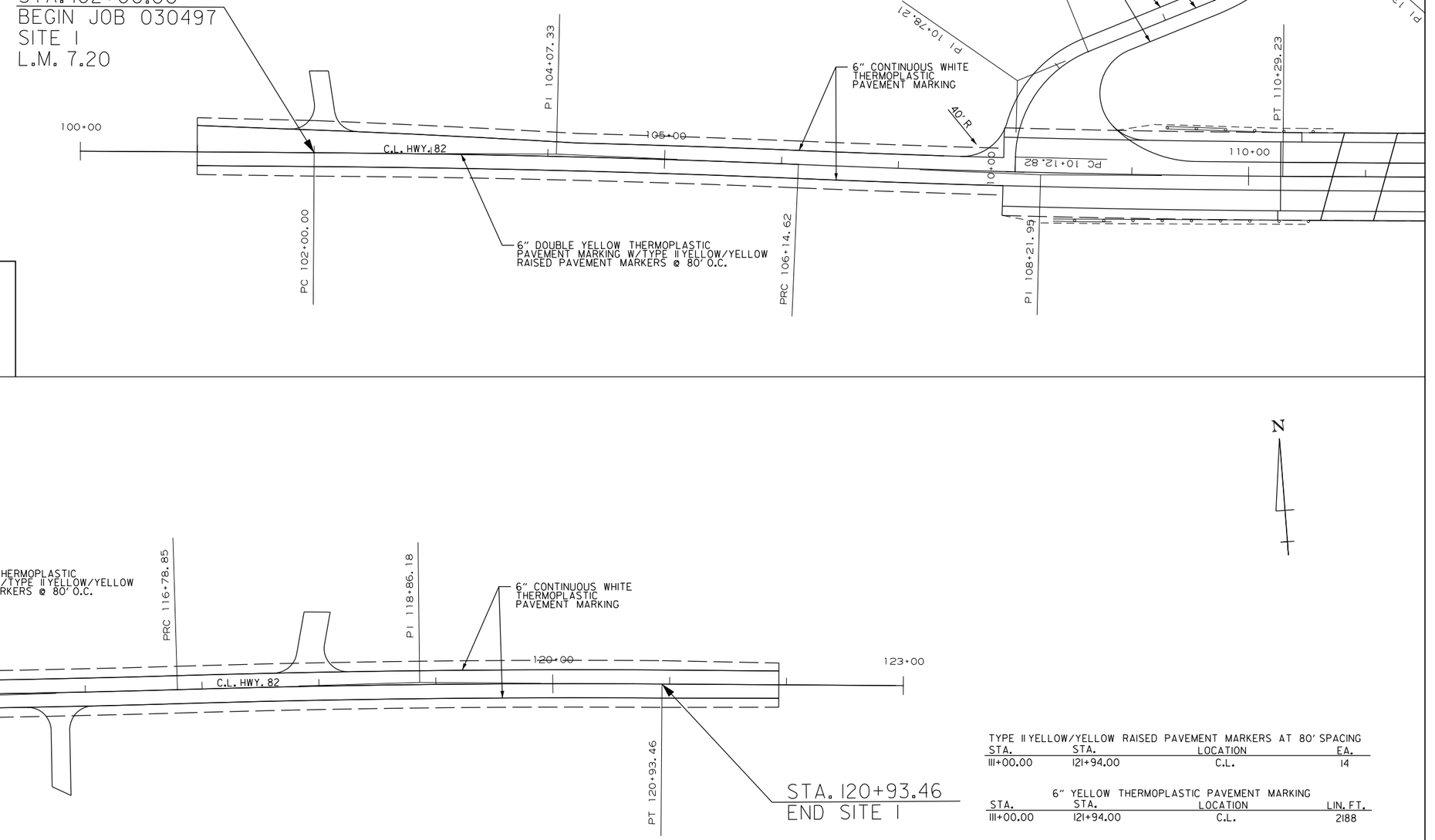
6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
101+00.00	111+00.00	C.L.	2000

6" WHITE THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
101+00.00	107+53.00	LT.	653
101+00.00	111+00.00	RT.	1000
109+54.00	111+00.00	LT.	146

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



N

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
111+00.00	121+94.00	C.L.	14

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
111+00.00	121+94.00	C.L.	2188

6" WHITE THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
111+00.00	121+94.00	LT.	1094
111+00.00	121+94.00	RT.	1094

PERMANENT PAVEMENT MARKING DETAILS

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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.		030497	20	130

(2) PERMANENT PAVEMENT MARKING DETAILS

N

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

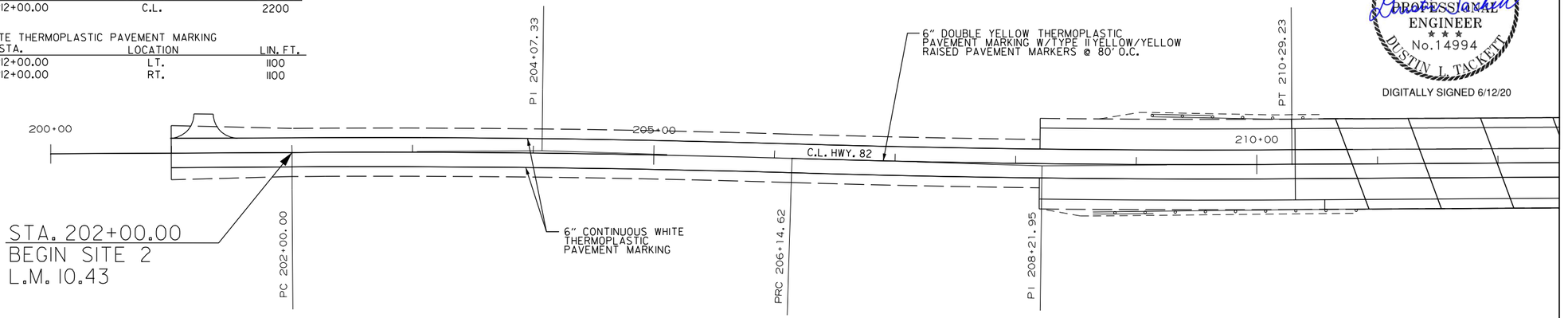
STA.	STA.	LOCATION	EA.
201+00.00	212+00.00	C.L.	14

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
201+00.00	212+00.00	C.L.	2200

6" WHITE THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
201+00.00	212+00.00	LT.	1100
201+00.00	212+00.00	RT.	1100



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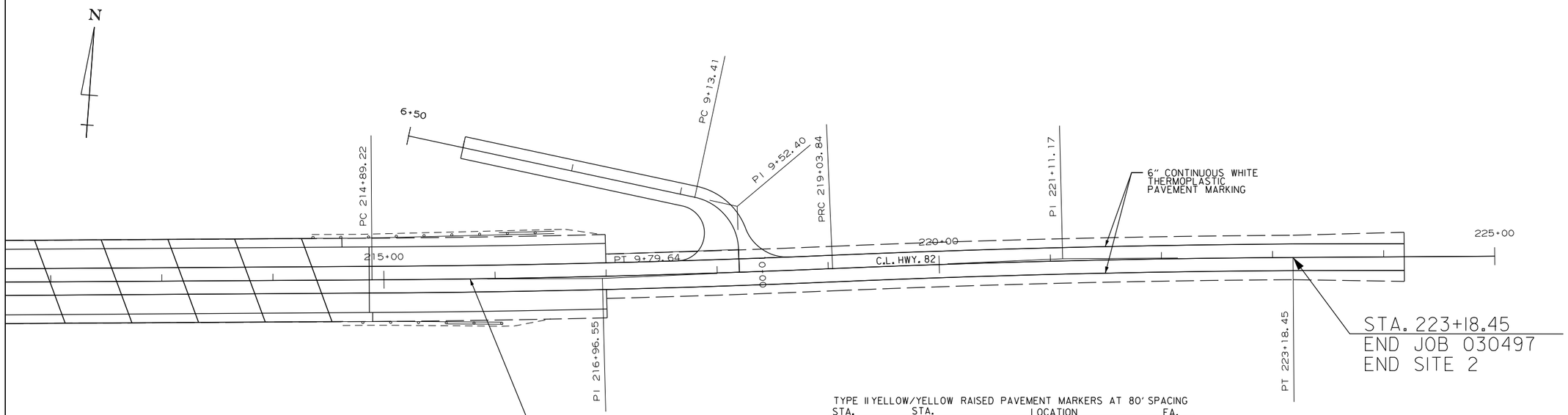
THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN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

N



TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
212+00.00	224+19.00	C.L.	16

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
212+00.00	224+19.00	C.L.	2438

6" WHITE THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
212+00.00	224+19.00	LT.	1219
212+00.00	224+19.00	RT.	1219

PERMANENT PAVEMENT MARKING DETAILS

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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.		030497	21	130
				(2)		SOIL BORING LOG		

STATE OF ARKANSAS
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No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

SOIL BORING LOG - SITE 1

BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
1	110+51.83, 6.9' LT	5		23	14	9	44	SC	A-4
1	110+51.83, 6.9' LT	18.5		----	----	----	62	ML	A-4
1	110+51.83, 6.9' LT	68.5		----	----	----	21	SM	A-2-4
2	110+66.76, 35.76' LT	8		31	14	17	71	CL	A-6
2	110+66.76, 35.76' LT	13.5		---	---	---	71	CL	A-6
2	110+66.76, 35.76' LT	28.5		---	---	---	30	SM	A-2-4
3	111+00.73, 34.93' LT.	6		----	----	----	61	ML	A-4
3	111+00.73, 34.93' LT.	23.5		----	----	----	49	SM	A-4
6	112+39.45, 23.77 LT	10		34	16	18	38	SC	A-6
6	112+39.45, 23.77 LT	13.5		----	----	----	71	ML	A-4
6	112+39.45, 23.77 LT	38.5		48	24	24		CL	A-2-7
6	112+39.45, 23.77 LT	58.5		----	----	----	43	SM	A-4
7	111+98.99, 8.49' LT	18.5		----	----	----	50	ML	A-4
7	111+98.99, 8.49' LT	33.5		----	----	----	41	SM	A-4
7	111+98.99, 8.49' LT	43.5		61	42	36	----	CH	A-2-7
9	105+60.66, 8.02' LT	1		34	14	20	51	CL	A-6
10	117+00.17, 8.69' LT	1		36	17	19	75	CL	A-6

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.

SOIL BORING LOG - SITE 2

BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
1	210+52.57, 2.93' RT	1		----	----	----	59	ML	A-4
1	210+52.57, 2.93' RT	15		32	16	16	76	CL	A-6
1	210+52.57, 2.93' RT	20		26	13	13	56	CL	A-6
1	210+52.57, 2.93' RT	23.5		----	----	----	51	ML	A-4
1	210+52.57, 2.93' RT	28.5		----	----	----	58	ML	A-4
1	210+52.57, 2.93' RT	33.5		----	----	----	100	CH	A-2-7
1	210+52.57, 2.93' RT	38.5		87	21	66	----	CH	A-2-7
1	210+52.57, 2.93' RT	68.5		----	----	----	29	SM	A-2-4
1	210+52.57, 2.93' RT	73.5		----	----	----	49	SM	A-4
2	210+50.87, 37.04' LT	10		36	18	18	84	CL	A-6
2	210+50.87, 37.04' LT	43.5		85	20	65	----	CH	A-2-7
4	211+49.22, 9.3' LT	18.5		60	20	40	----	CH	A-2-7
4	211+49.22, 9.3' LT	23.5		----	----	----	74	ML	A-4
4	211+49.22, 9.3' LT	28.5		0	0	0	----	ML	A-1-a
4	211+49.22, 9.3' LT	33.5		----	----	----	12	SP-SM	A-2-4
6	212+44.28, 10.14' LT	18.5		----	----	----	79	ML	A-4
7	213+04.94, 35.76' LT	58.5		51	15	36	----	CH	A-2-7
8	213+50.45, 35.64', LT	13.5		23	15	8	----	CL	A-2-4
8	213+50.45, 35.64', LT	28.5		----	----	----	58	ML	A-4
8	213+50.45, 35.64', LT	33.5		----	----	----	18	SM	A-2-4
9	213+87.43, 39.67' LT	38.5		26	12	14	----	CL	A-2-6
10	214+44.69, 10.12' LT	5		19	15	4	20	SC-SM	A-2-4
10	214+44.69, 10.12' LT	33.5		----	----	----	56	ML	A-4
10	214+44.69, 10.12' LT	58.5		----	----	----	39	SM	A-4
11	214+61.53, 103.55' LT	13.5		----	----	----	64	ML	A-4
11	214+61.53, 103.55' LT	33.5		30	13	17	----	CL	A-2-6
13	205+27.38, 11.63' LT	1		31	14	17	69	CL	A-6
14	219+60.81, 3.39' LT	1		27	12	15	24	SC	A-2-6

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.

SOIL BORING LOG

DLTackett 6/12/2020 10:58:58 PM
WORKSPACE: AHTD
L:\2017\17017560 - Millard Bodcau Creek\Drawings\R030497_SBL.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.		030497	22	130
				(2)		QUANTITIES		

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING 6"		REFLECTORIZED PAINT PAVEMENT MARKING 6"	
					TYPE II				
					(YELLOW/YELLOW)	WHITE	YELLOW	WHITE	YELLOW
	LIN. FT. - EACH		LIN. FT.	LIN. FT.	EACH	LIN. FT.		LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	16168		16168						
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	2748			2748					
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)		57			57				
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		8625				8625			
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		8826					8826		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")		781						781	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		690							690
TOTALS:			**16168**	**2748**	**57**	**8625**	**8826**	**781**	**690**

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

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

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	19	38
DIRECTED BY THE ENGINEER		
TOTALS:	**19**	**38**

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
										RIGHT	LEFT			
			LIN. FT. - EACH			NO.	SQ. FT.	EACH		LIN. FT.			EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	64.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	64.0							
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	64.0							
W20-1	ROAD WORK AHEAD	48"x48"	1	1	1	1	16.0							
G20-2	END ROAD WORK	48"x24"	5	5	5	5	40.0							
W13-1	SPEED LIMIT (ADVISORY)	18"x18"		4	4	4	9.0							
R11-2	ROAD CLOSED	48"x30"	1	7	7	7	70.0							
OM-3L	OBJECT MARKER	12"x36"		12	12	12	36.0							
OM-3R	OBJECT MARKER	12"x36"		16	16	16	48.0							
W1-6	LARGE ARROW	48"x24"		4	4	4	32.0							
* R4-1	DO NOT PASS	48"x60"	4	4	4	4	80.0							
* W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	36.0							
* W8-1	BUMP	30"x30"	4	4	4	4	25.0							
W24-1R	DOUBLE REVERSE CURVE RT.	48"x48"		2	2	2	32.0							
W24-1L	DOUBLE REVERSE CURVE LT.	48"x48"		2	2	2	32.0							
	VERTICAL PANELS		80		80			80						
	TRAFFIC DRUMS		52	165	165				165					
	TYPE III BARRICADE-RT. (8')		1	2	2					16				
	TYPE III BARRICADE-LT. (8')			2	2						16			
	TYPE III BARRICADE-RT. (16')			3	3					48				
	TYPE III BARRICADE-LT. (16')			2	2						32			
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1538	1538							1538		
	TEMPORARY IMPACT ATTENUATION BARRIER			2	2								2	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			2	2									2
TOTALS:							**648.0**	**80**	**165**	**64**	**48**	**1538**	**2**	**2**

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

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	30
ENGINEER	
TOTAL:	**30**

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS LIN. FT.	UNDERDRAIN OUTLET PROTECTORS EACH
* ENTIRE PROJECT TO BE USED IF AND			1000	8
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**1000**	**8**

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

CULVERT CLEAN OUT

STATION	LOCATION	EACH
207+06	HWY. 82	1
TOTAL:		**1**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9/15/2020				6	ARK.			
				JOB NO.		030497	23	130
				(2)		QUANTITIES		

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	POSTS	MAILBOXES	GUARDRAIL	CRASH CUSHION
			EACH	EACH	LIN. FT.	EACH
102+05		HWY. 82 RT.		1		
108+14	110+34	HWY. 82 RT.			220	
110+40		HWY. 82 LT.				1
112+10	113+00	HWY. 82 RT.			90	
112+19	114+39	HWY. 82 LT.			220	
113+10		HWY. 82 RT.	1			
113+20		HWY. 82 RT.	1			
113+47		HWY. 82 RT.		1		
115+56		HWY. 82 RT.		1		
117+63		HWY. 82 RT.		1		
208+22	210+42	HWY. 82 RT.			220	
209+47	210+42	HWY. 82 LT.			95	
214+51	215+46	HWY. 82 RT.			95	
214+51	216+71	HWY. 82 LT.			220	
TOTALS:			**2**	**4**	**1160**	**1**

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.

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
102+07	HWY. 82 LT. - 24" SIDE DRAIN	1
113+24	HWY. 82 RT. - 18" SIDE DRAIN	1
12+84	C.R. 117 - 24" CROSS DRAIN	1
TOTAL:		**3**

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
101+85	108+92	HWY 82 LT.	707	
102+00	110+06	HWY 82 RT.	806	
112+85	115+40	HWY 82 LT.	255	
113+36	119+50	HWY 82 RT.	614	2
TOTALS:			**2382**	**2**

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	100
DIRECTED BY THE ENGINEER	
TOTAL:	**100**

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

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
							18"	24"	
			FEET	SQ. YD.	TON	TON	LIN. FT.		
102+15	LT.	HWY. 82	16	81.54	8.97	33.30		80	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
114+30	RT.	HWY. 82	16	275.11	30.26	112.34	40		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
115+78	RT.	HWY. 82	16	117.38	12.91	47.93			
117+87	LT.	HWY. 82	22	112.88	12.42	46.09			
201+27	LT.	HWY. 82	16	20.35	2.24	8.31			
218+20	LT.	HWY. 82	20	697.28	76.70	284.72			
* ENTIRE PROJECT TEMPORARY DRIVES						100.00			
TOTALS:				**1304.54**	**143.50**	**632.69**	**40**	**80**	

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

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

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS	
			LIN.FT.	
101+00	101+75	HWY. 82 LT.	75	
101+00	107+90	HWY. 82 RT.	690	
102+41	107+48	HWY. 82 LT.	507	
107+90	110+25	HWY. 82 RT.	235	**
109+17	110+45	HWY. 82 LT.	128	**
112+41	113+80	HWY. 82 RT.	139	**
112+61	115+00	HWY. 82 LT.	239	**
114+50	115+00	HWY. 82 RT.	50	**
115+00	117+57	HWY. 82 LT.	257	
118+30	121+93	HWY. 82 LT.	363	
115+00	115+45	HWY. 82 RT.	45	
116+10	121+93	HWY. 82 RT.	583	
201+00	208+20	HWY. 82 RT.	720	
201+60	208+20	HWY. 82 LT.	660	
208+20	210+29	HWY. 82 LT.	209	**
208+20	210+56	HWY. 82 RT.	236	**
214+62	217+00	HWY. 82 LT.	238	**
214+90	217+00	HWY. 82 RT.	210	**
217+00	217+60	HWY. 82 LT.	60	
217+00	224+18	HWY. 82 RT.	718	
218+70	224+18	HWY. 82 LT.	548	
TOTAL:			**6910**	

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

** PLACE RUMBLE STRIPS AT INTERIM 2-LANE EDGE LINE AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 9/15/20

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
102+00.00	110+70.00	HWY. 82 RT.	870.00	773.33
102+26.00	107+60.00	HWY. 82 LT.	534.00	474.67
111+35.00	113+15.00	HWY. 82 RT.	180.00	160.00
116+00.00	117+60.00	HWY. 82 LT.	160.00	142.22
116+00.00	119+80.00	HWY. 82 RT.	380.00	337.78
118+25.00	120+00.00	HWY. 82 LT.	175.00	155.56
205+00.00	207+00.00	HWY. 82 LT.	200.00	177.78
207+00.00	208+05.00	HWY. 82 RT.	105.00	93.33
213+60.00	216+10.00	HWY. 82 LT.	250.00	222.22
TOTAL:				**2536.89**

NOTE: AVERAGE WIDTH = 8'-0"

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
114+40.00	115+25.00	HWY. 82 RT.	85.00	6.00	56.67	37.78	0.48
216+10.00	217+40.00	HWY. 82 LT.	130.00	6.00	86.67	57.78	0.73
TOTALS:					**143.34**	**95.56**	**1.21**

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
108+33.47	110+52.22	HWY. 82 RT.	150	1	1
109+28.56	110+72.31	HWY. 82 LT.	75	1	1
112+13.69	113+57.44	HWY. 82 RT.	75	1	1
112+33.78	114+52.53	HWY. 82 LT.	150	1	1
208+64.55	210+83.30	HWY. 82 RT.	150	1	1
209+12.25	210+56.00	HWY. 82 LT.	75	1	1
214+35.14	216+53.89	HWY. 82 LT.	150	1	1
214+62.44	216+06.19	HWY. 82 RT.	75	1	1
TOTALS:			**900**	**8**	**8**

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
101+00.00	102+00.00	HWY. 82	48.14	534.89
120+93.46	121+93.46	HWY. 82	38.94	432.67
201+00.00	202+00.00	HWY. 82	42.41	471.22
223+18.45	224+18.45	HWY. 82	42.04	467.11
13+15.00	13+65.00	C.R. 117	24.00	133.33
TOTAL:				**2039.22**

NOTE: AVERAGE MILLING DEPTH 1".

QUANTITIES

DLTackett 9/5/2020 11:00:24 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.		030497	24	130

(2) QUANTITIES

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									642.0	154	90	5103			202
ENTIRE	PROJECT	STAGE 1									20.0	132	45				9
ENTIRE	PROJECT	STAGE 2										198	105				16
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			8.03	16.06	8.03	819.1	8.03	8.03	8.03	163.8	200.0				1000	1000	1000
TOTALS:			**8.03**	**16.06**	**8.03**	**819.1**	**8.03**	**8.03**	**8.03**	**163.8**	**862.0**	**484**	**240**	**5103**	**1000**	**1000**	**1227**

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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TICKETT

DIGITALLY SIGNED 6/12/20

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL 1)	APPROACH GUTTER (TYPE SPECIAL 2)	APPROACH GUTTER (TYPE SPECIAL 3)	APPROACH GUTTER (TYPE SPECIAL 4)	APPROACH SLABS (TYPE SPECIAL 1)	APPROACH SLABS (TYPE SPECIAL 2)	APPROACH SLABS (TYPE SPECIAL 3)	APPROACH SLABS (TYPE SPECIAL 4)	APPROACH SLABS (TYPE SPECIAL 5)	APPROACH SLABS (TYPE SPECIAL 6)	APPROACH SLABS (TYPE SPECIAL 7)	APPROACH SLABS (TYPE SPECIAL 8)	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	POUND	TON
110+25.13	110+63.76	HWY. 82 RT.	14.49												824	
110+27.26	110+70.19	HWY. 82					56.66								6382	28.67
110+27.26	110+79.57	HWY. 82						95.01							11010	52.57
110+45.21	110+81.71	HWY. 82 LT.		13.72											788	
112+04.29	112+40.79	HWY. 82 RT.		13.72											788	
112+06.43	112+58.74	HWY. 82							66.73						7797	37.42
112+12.86	112+58.74	HWY. 82								84.93					9593	43.81
112+22.24	112+60.88	HWY. 82 LT.	14.49												824	
210+28.90	210+68.32	HWY. 82 LT.			14.63										836	
210+31.82	210+81.05	HWY. 82										87.57			9997	46.10
210+31.82	210+89.79	HWY. 82									75.04				8566	86.07
210+56.20	210+92.70	HWY. 82 RT.				13.59									777	
214+25.74	214+62.24	HWY. 82 LT.				13.59									777	
214+28.65	214+86.62	HWY. 82												104.71	12012	57.99
214+41.39	214+86.62	HWY. 82											57.89		6574	29.74
214+50.12	214+89.53	HWY. 82 RT.			14.63										836	
TOTALS:			**28.98**	**27.44**	**29.26**	**27.18**	**56.66**	**95.01**	**66.73**	**84.93**	**75.04**	**87.57**	**57.89**	**104.71**	**78381**	**382.37**

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-1)	* 16'-0" GATES
			LIN. FT.	EACH
102+25	110+30	HWY 82 LT.	858	
102+00	109+83	HWY 82 RT.	786	
112+80	115+40	HWY 82 LT.	261	
113+00	119+50	HWY 82 RT.	646	2
TOTALS:			**2551**	**2**

* DENOTES ALTERNATE BID ITEM.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
101+00	121+93	HWY. 82	21	21
201+00	224+18	HWY. 82	24	24
TOTALS:			**45**	**45**

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	(CLASS III) 30"	(CLASS V) 30"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	30"	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			EACH		SQ.YD.	M.GAL.	
207+00	HWY. 82 CONST. 30" R.C. PIPE CULVERT			144		2	26	0.33	PCC-1, FES-1, FES-2
207+06	HWY. 82 EXTEND 24" R.C. PIPE CULVERT	21			2		16	0.20	PCC-1, FES-1, FES-2
12+84	C.R. 117 CONST. 30" R.C. PIPE CULVERT		70			2	26	0.33	PCC-1, FES-1, FES-2
TOTALS:		**21**	**70**	**144**	**2**	**4**	**68**	**0.86**	

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

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
110+57	SW CORNER OF BRIDGE NO. 07483	1
210+88	SW CORNER OF BRIDGE NO. 07484	1
TOTAL:		**2**

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

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	(DOUBLE)
	EACH		
ENTIRE PROJECT	5	3	1
TOTALS:	**5**	**3**	**1**

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION UNDERCUT	TYPICAL	TOTAL	** COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.				TON
	ENTIRE	PROJECT	STAGE 1 - HWY 82 - SITE 1	1386	3830	5216	14028	
	ENTIRE	PROJECT	STAGE 1 - HWY 82 - SITE 2	1727	311	2038	18884	
	ENTIRE	PROJECT	STAGE 2 - HWY 82 - SITE 1	501	565	1066	4597	
	ENTIRE	PROJECT	STAGE 2 - HWY 82 - SITE 2	351	656	1007	4171	
	ENTIRE	PROJECT	ADDITIONAL BRIDGE EXCAVATION		1347	1347		
	ENTIRE	PROJECT	C.R. 117		710	710	4758	
	ENTIRE	PROJECT	DRIVEWAYS		139	139	1649	
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE					100
			DIRECTED BY THE ENGINEER					
TOTALS:				**3965**	**7558**	**11523**	**48087**	**100**

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

** INCLUDES 3,965 CU. YDS. OF COMPACTED EMBANKMENT USED FOR BACKFILL OF UNDERCUT.

DLTicket 6/12/2020 10:41:41 PM
WORKSPACE: AHTD
L:\2017\170\7560 - Mill and Bodcau Creek\Drawings\R030497_QTY_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.		030497	25	130
				(2)		QUANTITIES		

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)																
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	TOTAL PG 70-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
101+00.00	102+00.00	HWY. 82 - TRANSITION	100.00						48.14	534.89	90.93	90.93					48.14	534.83	220.00	58.83					58.83
102+00.00	106+34.08	HWY. 82 - NOTCH AND WIDEN	434.08	117.75	511.13	21.97	1059.64	52.98	26.92	1298.38	220.72	273.70	7.38	355.95	660.00	117.46	40.00	1929.24	220.00	212.22	7.21	347.75	220.00	38.25	250.47
106+34.08	107+90.00	HWY. 82 - NOTCH AND WIDEN (FULL DEPTH SHLDR.)	155.92	86.75	135.26	39.97	692.46	34.62	26.92	466.37	79.28	113.90	13.38	231.80	660.00	76.49	40.00	692.98	220.00	76.23	13.21	228.86	220.00	25.17	101.40
107+90.00	110+27.26	HWT. 82 - NOTCH AND WIDEN	237.26	332.25	788.30	118.41	3121.55	156.08	24.00	632.69	107.56	263.64	39.58	1043.42	660.00	344.33	75.00	1977.17	220.00	217.49	39.25	1034.72	220.00	113.82	331.31
112+58.74	115+00.00	HWY. 82 - NOTCH AND WIDEN	241.26	332.25	801.59	118.41	3174.18	158.71	24.00	643.36	109.37	268.08	39.58	1061.01	660.00	350.13	75.00	2010.50	220.00	221.16	39.25	1052.16	220.00	115.74	336.90
115+00.00	116+35.61	HWY. 82 - NOTCH AND WIDEN (FULL DEPTH SHLDR.)	135.61	86.75	117.64	39.97	602.26	30.11	26.92	405.62	68.96	99.07	13.38	201.61	660.00	66.53	40.00	602.71	220.00	66.30	13.21	199.05	220.00	21.90	88.20
116+35.61	120+93.46	HWY. 82 - NOTCH AND WIDEN	457.85	117.75	539.12	21.97	1117.66	55.88	26.92	1369.48	232.81	288.69	7.38	375.44	660.00	123.90	40.00	2034.89	220.00	223.84	7.21	366.79	220.00	40.35	264.19
120+93.46	121+93.46	HWY. 82 - TRANSITION	100.00						38.94	432.67	73.55	73.55					38.94	432.61	220.00	47.59					47.59
201+00.00	202+00.00	HWY. 82 - TRANSITION	100.00						42.41	471.22	80.11	80.11					42.41	471.17	220.00	51.83					51.83
202+00.00	206+60.23	HWY. 82 - NOTCH AND WIDEN	460.23	117.75	541.92	21.97	1123.47	56.17	26.92	1376.60	234.02	290.19	7.38	377.39	660.00	124.54	40.00	2045.47	220.00	225.00	7.21	368.70	220.00	40.56	265.56
206+60.23	208+20.00	HWY. 82 - NOTCH AND WIDEN (FULL DEPTH SHLDR.)	159.77	86.75	138.60	39.97	709.56	35.48	26.92	477.89	81.24	116.72	13.38	237.52	660.00	78.38	40.00	710.09	220.00	78.11	13.21	234.51	220.00	25.80	103.91
208+20.00	210+31.82	HWT. 82 - NOTCH AND WIDEN	211.82	332.25	703.77	118.41	2786.85	139.34	24.00	564.85	96.02	235.36	39.58	931.54	660.00	307.41	75.00	1765.17	220.00	194.17	39.25	923.77	220.00	101.61	295.78
214+86.62	217+00.00	HWY. 82 - NOTCH AND WIDEN	213.38	332.25	708.96	118.41	2807.37	140.37	24.00	569.01	96.73	237.10	39.58	938.40	660.00	309.67	75.00	1778.17	220.00	195.60	39.25	930.57	220.00	102.36	297.96
217+00.00	218+45.93	HWY. 82 - NOTCH AND WIDEN (FULL DEPTH SHLDR.)	145.93	86.75	126.59	39.97	648.09	32.40	26.92	436.49	74.20	106.60	13.38	216.95	660.00	71.59	40.00	648.58	220.00	71.34	13.21	214.19	220.00	23.56	94.90
218+45.93	223+18.45	HWY. 82 - NOTCH AND WIDEN	472.52	117.75	556.39	21.97	1153.47	57.67	26.92	1413.36	240.27	297.94	7.38	387.47	660.00	127.87	40.00	2100.09	220.00	231.01	7.21	378.54	220.00	41.64	272.65
223+18.45	224+18.45	HWY. 82 - TRANSITION	100.00						42.04	467.11	79.41	79.41					42.04	467.11	220.00	51.38					51.38
10+29.58	11+61.52	C.R. 117 - FULL DEPTH TURNOUT	131.94	204.78	270.19												41.50	608.39	220.00	66.92					66.92
11+61.52	12+57.46	C.R. 117 - FULL DEPTH	95.94	129.00	123.76												24.00	255.84	220.00	28.14					28.14
12+57.46	13+15.00	C.R. 117 - NOTCH AND WIDEN	57.54	47.75	27.48				13.50	86.31	14.67	14.67					24.00	153.44	220.00	16.88					16.88
13+15.00	13+65.00	C.R. 117 - TRANSITION	50.00						12.00	66.67	11.33	11.33					23.98	133.22	220.00	14.65					14.65
ADDITIONAL FOR LEVELING																									
102+00.00	107+90.00	HWY. 82	590.00			26.92	1764.76	88.24				88.24					26.92	1764.76	VAR.	327.11					327.11
107+90.00	109+00.00	HWY. 82	110.00			24.00	293.33	14.67				14.67					24.00	293.33	VAR.	125.52					125.52
114+00.00	115+00.00	HWY. 82	100.00			24.00	266.67	13.33				13.33					24.00	266.67	VAR.	134.87					134.87
115+00.00	120+93.46	HWY. 82	593.46			26.92	1775.10	88.76				88.76					26.92	1775.10	VAR.	314.90					314.90
202+00.00	208+20.00	HWY. 82	620.00			26.92	1854.49	92.72				92.72					26.92	1854.49	VAR.	353.10					353.10
208+20.00	209+00.00	HWY. 82	80.00			24.00	213.33	10.67				10.67					24.00	213.33	VAR.	93.60					93.60
216+00.00	217+00.00	HWY. 82	100.00			24.00	266.67	13.33				13.33					24.00	266.67	VAR.	116.38					116.38
217+00.00	223+18.45	HWY. 82	618.45			26.92	1849.85	92.49				92.49					26.92	1849.85	VAR.	433.33					433.33
12+57.46	13+15.00	C.R. 117	57.54			13.50	86.31	4.32				4.32					13.50	86.31	VAR.	8.30					8.30
ADDITIONAL FOR METHOD OF RAISING GRADE																									
109+00.00	110+27.26	HWY. 82 - FULL DEPTH	127.26			48.00	678.72	33.94				33.94	24.00	339.36	660.00	111.99					24.00	339.36	220.00	37.33	37.33
109+00.00	110+27.26	HWY. 82 - GRADE RAISE	127.26			24.00	339.36	16.97				16.97	24.00	339.36	VAR.	79.39									
112+58.74	114+00.00	HWY. 82 - FULL DEPTH	141.26			48.00	753.39	37.67				37.67	24.00	376.69	660.00	124.31					24.00	376.69	220.00	41.44	41.44
112+58.74	114+00.00	HWY. 82 - GRADE RAISE	141.26			24.00	376.69	18.83				18.83	24.00	376.69	VAR.	56.83									
209+00.00	210+31.82	HWY. 82 - FULL DEPTH	131.82			48.00	703.04	35.15				35.15	24.00	351.52	660.00	116.00					24.00	351.52	220.00	38.67	38.67
209+00.00	210+31.82	HWY. 82 - GRADE RAISE	131.82			24.00	351.52	17.58				17.58	24.00	351.52	VAR.	75.79									
214+86.62	216+00.00	HWY. 82 - FULL DEPTH	113.38			48.00	604.69	30.23				30.23	24.00	302.35	660.00	99.78					24.00	302.35	220.00	33.26	33.26
214+86.62	216+00.00	HWY. 82 - GRADE RAISE	113.38			24.00	302.35	15.12				15.12	24.00	302.35	VAR.	97.56									
ADDITIONAL FOR GUARDRAIL WIDENING																									
107+90.47	110+52.22	HWY. 82	261.75	VAR.	96.57												VAR.	121.70	220.00	13.39					13.39
108+85.56	110+72.31	HWY. 82	186.75	VAR.	65.17												VAR.	83.81	220.00	9.22					9.22
112+13.69	114+00.44	HWY. 82	186.75	VAR.	65.91												VAR.	82.61	220.00	9.09					9.09
112+33.78	114+95.53	HWY. 82	261.75	VAR.	94.43												VAR.	120.28	220.00	13.23					13.23
208+21.55	210+83.30	HWY. 82	261.75	VAR.	94.74												VAR.	117.43	220.00	12.92					12.92
208+69.25	210+56.00	HWY. 82	186.75	VAR.	66.63												VAR.	82.77	220.00	9.10					9.10
214+35.14	216+96.89	HWY. 82	261.75	VAR.	99.62												VAR.	123.90	220.00	13.63					13.63
214+62.44	216+49.19	HWY. 82	186.75	VAR.	82.96												VAR.	83.51	220.00	9.19					9.19
TOTALS:					**6756.73**		**31476.83**	**1573.83**		**11712.97**	**1991.18**	**3565.01**		**9098.34**		**2859.95**		**30538.19**		**4345.57**		**7649.53**		**841.46**	**5187.03**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

DLTackett 6/2/2020 08:00 PM
WORKSPACE: AHTD
L:\20TV170\7560 - Mill and Bodcau Creek\Drawings\R030497_QTY_01.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.		030497	26	130
(1) 07483, 07484		QUANTITIES		61637

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 030497

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SS & 802	SP, SS & 802	SS & 802	SS & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 805	SS & 805	SS & 805	SS & 805	SP, SS & 807
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _)	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGES	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	PRESTRESSED CONCRETE GIRDERS (TYPE II)	PRESTRESSED CONCRETE GIRDERS (TYPE III)	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP12X53)	STEEL PILING (HP14X73)	STEEL SHELL PILING (20" DIA.)	STEEL SHELL PILING (30" DIA.)	PILE ENCASEMENT	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LB.
07483	HIGHWAY 82 OVER MILL CREEK	END BENT NO. 1			55	33.56					3,350	645	639					90	
		INTERMEDIATE BENT NO. 2				58.44					5,775				558		72		565
		INTERMEDIATE BENT NO. 3				58.40					5,775				558		72		565
		END BENT NO. 4			65	33.50					3,350	645	576					90	
		141'-4" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE II					422.00	1,254.0		26.5		90,610							
		SITE NO. 1 (EXISTING BR. NO. 02549)		1															
		TOTALS FOR BRIDGE NO. 07483			120	183.90	422.00	1,254.0		26.5	18,250	91,900	1,215		1,116		144	180	1,130
07484	HIGHWAY 82 OVER BODCAU CREEK	END BENT NO. 1			36	34.67					3,512	790		666				90	
		INTERMEDIATE BENT NO. 2				68.26					7,193					639	99		850
		INTERMEDIATE BENT NO. 3				67.99					7,193					774	225		850
		INTERMEDIATE BENT NO. 4				67.48					7,193					774	234		850
		INTERMEDIATE BENT NO. 5				68.07					7,193					774	180		850
		INTERMEDIATE BENT NO. 6				68.26					7,193					639	90		850
		END BENT NO. 7			80	34.67					3,513	790		621				90	
		179'-4" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE III					501.55		1,584.0	33.1		105,255							
		179'-4" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE III					501.55		1,584.0	33.1		105,255							
		SITE NO. 2 (EXISTING BR. NO. 02122)		1															
		TOTALS FOR BRIDGE NO. 07484			116	409.40	1,003.10		3,168.0	66.2	42,990	212,090		1,287		3,600	828	180	4,250
		TOTALS FOR JOB NO. 030497			236	593.30	1,425.10	1,254.0	3,168.0	92.7	61,240	303,990	1,215	1,287	1,116	3,600	972	360	5,380

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SS & 808	SS & 809	812	816	816	SP JOB 030497
			ITEM	ELASTOMERIC BEARINGS	ARMORED JOINT WITH NEOPRENE STRIP SEAL	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	SHORING
			UNIT	CU. IN.	LIN. FT.	EACH	SQ. YD.	CU. YD.	LUMP SUM
07483	HIGHWAY 82 OVER MILL CREEK	END BENT NO. 1					420	(1) 230	
		INTERMEDIATE BENT NO. 2		6,318.0					
		INTERMEDIATE BENT NO. 3		6,318.0					
		END BENT NO. 4					484	(1) 265	1
		141'-4" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE II				1			
		SITE NO. 1 (EXISTING BR. NO. 02549)							
		TOTALS FOR BRIDGE NO. 07483		12,636.0		1	904	495	
07484	HIGHWAY 82 OVER BODCAU CREEK	END BENT NO. 1					439	242	
		INTERMEDIATE BENT NO. 2		8,687.4					
		INTERMEDIATE BENT NO. 3		8,687.4					
		INTERMEDIATE BENT NO. 4		8,687.4	82				
		INTERMEDIATE BENT NO. 5		8,687.4					
		INTERMEDIATE BENT NO. 6		8,687.4					
		END BENT NO. 7					645	348	1
		179'-4" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE III				1			
		179'-4" INTEGRAL PRESTRESSED CONC. GIRDER UNIT TYPE III							
		SITE NO. 2 (EXISTING BR. NO. 02122)							
		TOTALS FOR BRIDGE NO. 07484		43,437.0	82	1	1,084	590	
		TOTALS FOR JOB NO. 030497		56,073.0	82	2	1,988	1,085	

(1) Contractor shall stockpile and salvage existing riprap deemed acceptable for re-use on Bridge No. 07483. Cost of salvaging existing riprap shall not be paid for separately but shall be considered subsidiary to the item "DUMPED RIPRAP".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
MILLER & LAFAYETTE COUNTIES

ROUTE 82 SEC. 1 & 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b030497_ql.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: No Scale
DESIGNED BY: JJB DATE: APR. 2020

BRIDGE NO. 07483, 07484 DRAWING NO. 61637

drgoad 6/12/2020 12:42:14 PM
WORKSPACE: ARDOT Bridge
L:\2017\170175\0 - Mill and Bodcau Creek\Drawings\B030497_QT.dgn
REVISED DATE:

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		45	STATION
201	GRUBBING		45	STATION
202	REMOVAL AND DISPOSAL OF FENCE		2382	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		2	EACH
202	REMOVAL AND DISPOSAL OF POSTS		2	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		3	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL		1160	LIN. FT.
202	REMOVAL AND DISPOSAL OF MAILBOXES		4	EACH
202	REMOVAL AND DISPOSAL OF CRASH CUSHIONS		1	EACH
SS & 210	UNCLASSIFED EXCAVATION		11523	CU. YD.
SP & 210	COMPACTED EMBANKMENT		48087	CU. YD.
SP & 210	SOIL STABILIZATION		100	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		7772	TON
SS & 401	TACK COAT		3603	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		2731	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		129	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		5053	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		7	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		270	TON
412	COLD MILLING ASPHALT PAVEMENT		2039	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		19	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		100	TON
504	APPROACH SLABS		628.54	CU. YD.
504	APPROACH GUTTERS		112.86	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		648	SQ. FT.
SS & 604	BARRICADES		112	LIN. FT.
SS & 604	TRAFFIC DRUMS		165	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		1538	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		16168	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		2748	LIN. FT.
SS & 604	VERTICAL PANELS		80	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)		143	SQ. YD.
SP	CULVERT CLEAN OUT		1	EACH
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		21	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		70	LIN. FT.
SP & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		144	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		40	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		80	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		4	EACH
606	SELECTED PIPE BEDDING		30	CU. YD.
SS & 611	4" PIPE UNDERDRAINS		1000	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		8	EACH
SS & 617	GUARDRAIL (TYPE A)		900	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		8	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		8	EACH
619	WIRE FENCE (TYPE D-1)		2551	LIN. FT.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
620	LIME		16	TON
620	SEEDING		8.03	ACRE
SS & 620	MULCH COVER		16.06	ACRE
620	WATER		985.0	M. GAL.
621	TEMPORARY SEEDING		8.03	ACRE
621	SILT FENCE		5103	LIN. FT.
621	SAND BAG DITCH CHECKS		484	BAG
621	SEDIMENT BASIN		1000	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		1000	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		1227	CU. YD.
621	ROCK DITCH CHECKS		240	CU. YD.
SS & 621	FILTER SOCK (18")		862	LIN. FT.
623	SECOND SEEDING APPLICATION		8.03	ACRE
624	SOLID SODDING		164	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		2537	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		5	EACH
637	MAILBOX SUPPORTS (SINGLE)		3	EACH
637	MAILBOX SUPPORTS (DOUBLE)		1	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		6910	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")		781	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		690	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")		8625	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		8826	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		57	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER		2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		78381	POUND
	STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)		1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)		1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFED EXCAVATION FOR STRUCTURES-BRIDGE		236	CU. YD.
SS & 802	CLASS S CONCRETE-BRIDGE		593.30	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE		1425.10	CU. YD.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE II)		1254.0	LIN. FT.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE III)		3168.0	LIN. FT.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT		92.7	GAL.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		61240	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		30399	POUND
SS & 805	STEEL PILING (HP 12X53)		1215	LIN. FT.
SS & 805	STEEL PILING (HP 14X73)		1287	LIN. FT.
SS & 805	STEEL SHELL PILING (20" DIAMETER)		1116	LIN. FT.
SS & 805	STEEL SHELL PILING (30" DIAMETER)		3600	LIN. FT.
SS & 805	PREBORING		360	LIN. FT.
SS & 805	PILE ENCASEMENT		972	LIN. FT.
SP, SS & 807	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)		5380	POUND
SS & 808	ELASTOMERIC BEARINGS		56073.0	CU. IN.
SS & 809	ARMORED JOINT WITH NEOPRENE STRIP SEAL		82	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)		2	EACH
816	FILTER BLANKET		1988	SQ. YD.
816	DUMPED RIPRAP		1085	CU. YD.
SP	SHORING (SITE NO. 1)		1.00	LUMP SUM
SP	SHORING (SITE NO. 2)		1.00	LUMP SUM

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
8/20/2020	ADDED DELAY IN RIGHT OF WAY OCCUPANCY SPECIAL PROVISION	3 & 27
9/15/2020	ADDED REMOVAL AND DISPOSAL OF POSTS QUANTITY	23 & 27

DIGITALLY SIGNED 9/15/20

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14994
DISTRICT 1 - L. TACKETT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8/20/2020			
9/15/2020			

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	030497	27	130

SUMMARY OF QUANTITIES & REVISIONS

SUMMARY OF QUANTITIES & 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.		030497	28	130

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

SURVEY CONTROL COORDINATES

Project Name: s030497
Date: 3/27/2018
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL, 460002 - 460002A & 460003 - 460003A

PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1595133.6792	733961.4150	263.841	CTL	ARDOT STD. MON. STAMPED PN: 1
2	1595152.2419	733268.0699	259.978	CTL	ARDOT STD. MON. STAMPED PN: 2
3	1595166.4987	732768.9596	260.457	CTL	ARDOT STD. MON. STAMPED PN: 3
4	1595180.4327	732451.4922	259.940	CTL	ARDOT STD. MON. STAMPED PN: 4
5	1595220.7777	731688.4853	257.539	CTL	ARDOT STD. MON. STAMPED PN: 5
6	1595257.9916	730939.8771	284.643	CTL	ARDOT STD. MON. STAMPED PN: 6
100	1595551.5269	721668.7309	393.859	GPS	ARDOT GPS *460002
101	1595470.4245	723550.2393	362.982	GPS	ARDOT GPS *460002A
102	1595093.8647	735433.2061	275.840	GPS	ARDOT GPS *460003
103	1595045.7715	736637.5264	280.587	GPS	ARDOT GPS *460003A
901	1595138.7629	733603.9889	258.545	TBM	CHSQ SQUARE IN CTR OF HW
902	1595326.7368	727877.0618	307.418	TBM	CHSQ SQUARE IN CTR OF HW
999	1594955.4304	736759.1285	279.911	BM	NGS 1ST ORDER BM D 307

*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 0.999965411329 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 s030497gi.CTL
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 460002 - 460002A & 460003 - 460003A
CONVERGENCE ANGLE: 01 03 49.89 LEFT AT PN: 4 LT: N 33-25-44.44 LG: W093-54-02.87
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

ALIGNMENT NAME: HWY. 82 - SITE 1

POINT	STATION	TYPE	NORTHING	EASTING
8000	100+00.00	POB	1595199.3417	731456.6162
8001	102+00.00	PC	1595191.1967	731656.4503
8003	106+14.62	PRC	1595166.8213	732070.3261
8005	110+29.23	PT	1595142.4459	732484.2019
8006	112+64.23	PC	1595132.8755	732719.0073
8008	116+78.85	PRC	1595123.4877	733133.4939
8010	120+93.46	PT	1595114.0998	733547.9806
8011	123+00.00	POE	1595105.6885	733754.3493

ALIGNMENT NAME: C.R. 117

POINT	STATION	TYPE	NORTHING	EASTING
8012	10+00.00	POB	1595154.0716	732255.2695
8013	10+12.82	PC	1595166.8630	732256.0475
8014	11+28.67	PT	1595254.7165	732321.3973
8015	12+45.18	PC	1595294.9317	732430.7414
8017	14+57.77	PT	1595461.3774	732538.2925
8018	15+00.00	POE	1595503.5021	732535.2957

ALIGNMENT NAME: DRIVE 114+30

POINT	STATION	TYPE	NORTHING	EASTING
8019	10+00.00	POB	1595127.3228	732884.6813
8020	10+48.33	PC	1595080.9847	732870.9508
8022	11+11.49	PRC	1595045.1993	732823.9880
8024	11+87.28	PT	1594996.9801	732774.9964
8025	12+00.00	POE	1594984.2681	732774.5458

ALIGNMENT NAME: STAGE 2 TEMP. HWY 82 ALIGNMENT 1

POINT	STATION	TYPE	NORTHING	EASTING
8026	10+00.00	PC	1595165.3419	732089.7370
8028	11+83.26	PRC	1595142.8310	732271.5357
8030	14+32.37	PT	1595116.5040	732519.0784
8031	15+74.97	PC	1595110.6966	732661.5604
8033	18+20.50	PRC	1595116.4723	732906.8488
8035	20+04.13	PT	1595123.7661	733090.2614

SURVEY CONTROL DETAILS

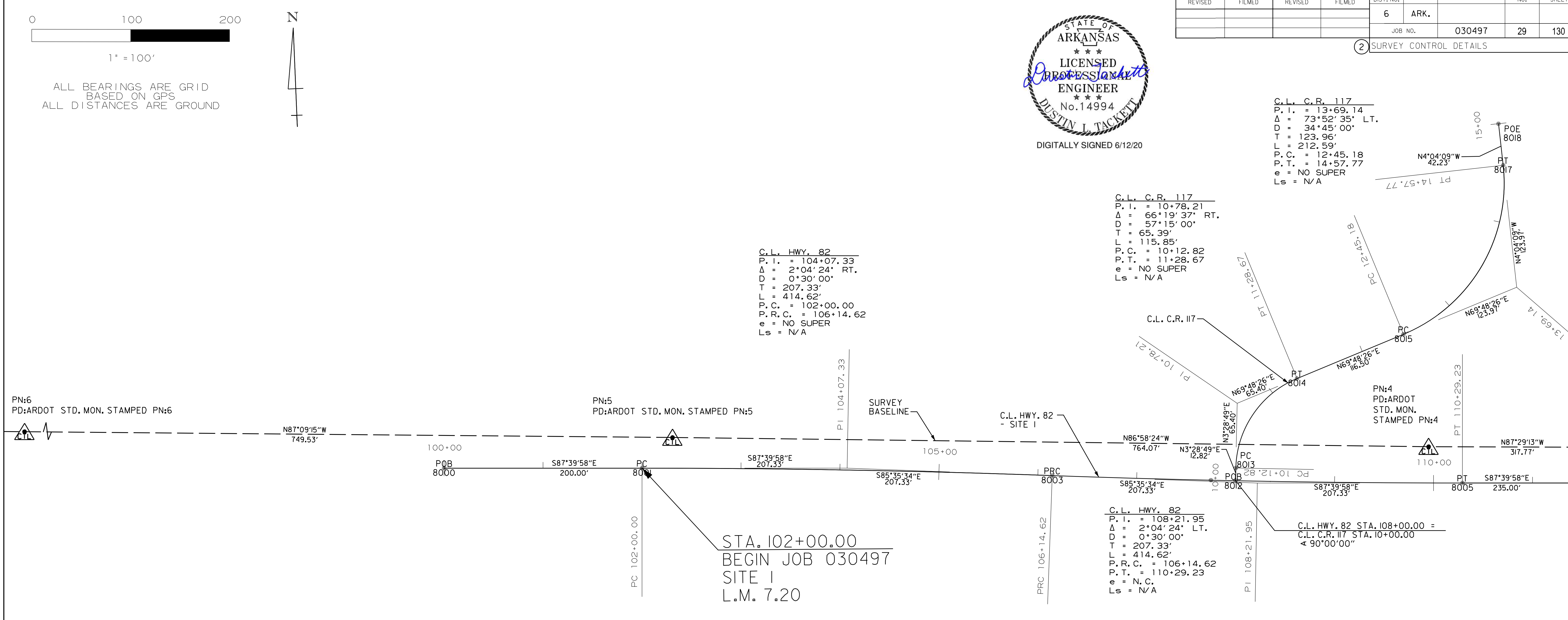
DLTackett 6/12/2020 8:52:28 AM
WORKSPACE: AHTD
L:\2017\170175\60 - Mill and Bodcau Creek\Drawings\R030497_SC_01.dgn
REVISED DATE:

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.		030497	29	130

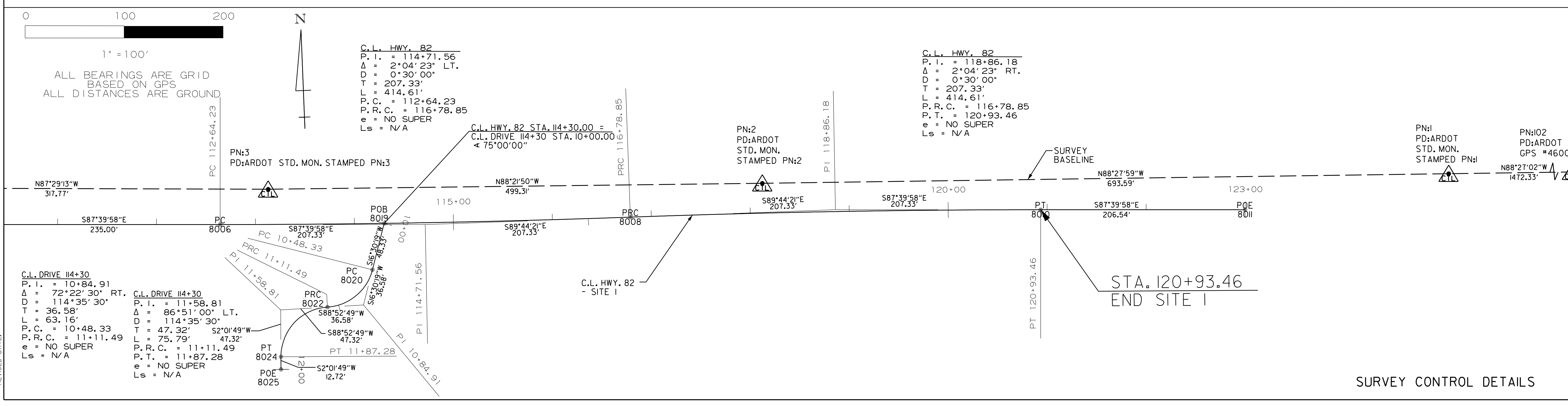
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14994 DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20



0 100 200
1" = 100'
ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND
N
PN:6
PD:ARDOT STD. MON. STAMPED PN:6
N87°09'15"W 749.53'
PN:5
PD:ARDOT STD. MON. STAMPED PN:5
100+00
POB 8000
S87°39'58"E 200.00'
PC 8001
S87°39'58"E 207.33'
PC 102+00.00
STA. 102+00.00
BEGIN JOB 030497
SITE I
L.M. 7.20
C.L. HWY. 82
P. I. = 104+07.33
Δ = 2°04'24" RT.
D = 0°30'00"
T = 207.33'
L = 414.62'
P.C. = 102+00.00
P.R.C. = 106+14.62
e = NO SUPER
Ls = N/A
PI 104+07.33
SURVEY BASELINE
S85°35'34"E 207.33'
105+00
C.L. HWY. 82 - SITE I
PRC 8003
PRC 106+14.62
C.L. C.R. 117
P. I. = 10+78.21
Δ = 66°19'37" RT.
D = 57°15'00"
T = 65.39'
L = 115.85'
P.C. = 10+12.82
P.T. = 11+28.67
e = NO SUPER
Ls = N/A
PI 10+78.21
PT 11+28.67
C.L. C.R. 117
N69°48'26"E 65.40'
N3°28'49"E 65.40'
PT 8014
N86°58'24"W 764.07'
N3°28'49"E 12.82'
PC 8013
POB 8012
PC 10+12.82
10+00
S85°35'34"E 207.33'
S87°39'58"E 207.33'
C.L. HWY. 82
P. I. = 108+21.95
Δ = 2°04'24" LT.
D = 0°30'00"
T = 207.33'
L = 414.62'
P.R.C. = 106+14.62
P.T. = 110+29.23
e = N.C.
Ls = N/A
PI 108+21.95
C.L. HWY. 82 STA. 108+00.00 =
C.L. C.R. 117 STA. 10+00.00
∢ 90°00'00"
C.L. C.R. 117
P. I. = 13+69.14
Δ = 73°52'35" LT.
D = 34°45'00"
T = 123.96'
L = 212.59'
P.C. = 12+45.18
P.T. = 14+57.77
e = NO SUPER
Ls = N/A
PC 12+45.18
N69°48'26"E 116.50'
PC 8015
N69°48'26"E 123.97'
PI 13+69.14
N4°04'09"W 123.97'
PT 14+57.77
N4°04'09"W 42.23'
PT 8017
POE 8018
15+00
PN:4
PD:ARDOT STD. MON. STAMPED PN:4
PT 110+29.23
110+00
N87°29'13"W 317.77'
PT 8005
S87°39'58"E 235.00'



0 100 200
1" = 100'
ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND
N
N87°29'13"W 317.77'
S87°39'58"E 235.00'
PC 112+64.23
PN:3
PD:ARDOT STD. MON. STAMPED PN:3
PC 8006
S87°39'58"E 207.33'
C.L. HWY. 82
P. I. = 114+71.56
Δ = 2°04'23" LT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 112+64.23
P.R.C. = 116+78.85
e = NO SUPER
Ls = N/A
C.L. HWY. 82 STA. 114+30.00 =
C.L. DRIVE 114+30 STA. 10+00.00
∢ 75°00'00"
POB 8019
10+00
S16°30'19"W 48.33'
S16°30'19"W 36.58'
PC 10+48.33
PRC 11+11.49
PI 11+58.81
PC 8020
PRC 8022
S88°52'49"W 36.58'
S88°52'49"W 47.32'
S2°01'49"W 47.32'
PT 11+87.28
PT 8024
POE 8025
S2°01'49"W 12.72'
11+00
PI 114+71.56
PI 10+84.91
C.L. DRIVE 114+30
P. I. = 10+84.91
Δ = 72°22'30" RT.
D = 114°35'30"
T = 36.58'
L = 63.16'
P.C. = 10+48.33
P.R.C. = 11+11.49
e = NO SUPER
Ls = N/A
C.L. DRIVE 114+30
P. I. = 11+58.81
Δ = 86°51'00" LT.
D = 114°35'30"
T = 47.32'
L = 75.79'
P.R.C. = 11+11.49
P.T. = 11+87.28
e = NO SUPER
Ls = N/A
115+00
N88°21'50"W 499.31'
S89°44'21"E 207.33'
PRC 116+78.85
PRC 8008
C.L. HWY. 82 - SITE I
PN:2
PD:ARDOT
STD. MON.
STAMPED PN:2
S89°44'21"E 207.33'
PI 118+86.18
S87°39'58"E 207.33'
C.L. HWY. 82
P. I. = 118+86.18
Δ = 2°04'23" RT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.R.C. = 116+78.85
P.T. = 120+93.46
e = NO SUPER
Ls = N/A
120+00
SURVEY BASELINE
N88°27'59"W 693.59'
PT 8010
S87°39'58"E 206.54'
POE 8011
123+00
PT 120+93.46
STA. 120+93.46
END SITE I
PN:1
PD:ARDOT
STD. MON.
STAMPED PN:1
PN:102
PD:ARDOT
GPS #460003
N88°27'02"W 1472.33'

DLTackett 6/12/2020 8:52:33 AM
WORKSPACE: AHTD
L:\2017\17060 Mill and Bodcau Creek\Drawings\R030497_SC_02.dgn
REVISED DATE:

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	30	130

(2) SURVEY CONTROL DETAILS

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

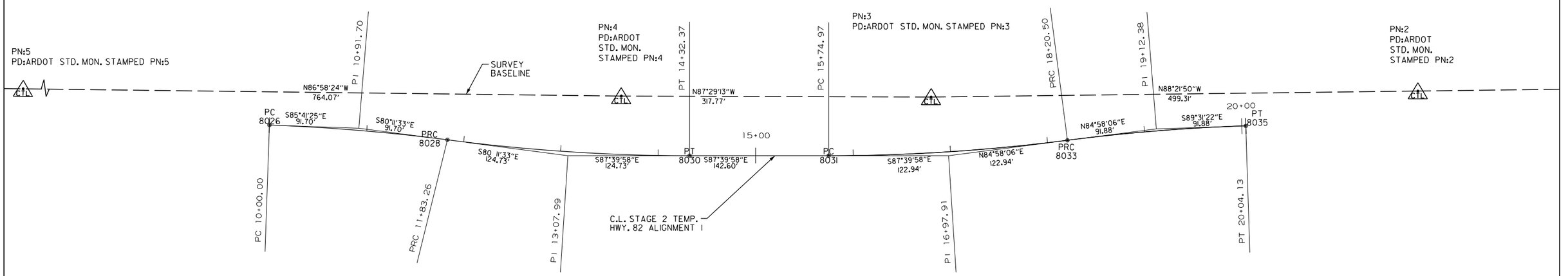
N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 1
P. I. = 10+91.70
Δ = 5°29'52" RT.
D = 3°00'00"
T = 91.70'
L = 183.26'
P. C. = 10+00.00
P. R. C. = 11+83.26
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 1
P. I. = 19+12.38
Δ = 5°30'32" RT.
D = 3°00'00"
T = 91.88'
L = 183.63'
P. R. C. = 18+20.50
P. T. = 20+04.13
e = NO SUPER
Ls = N/A



C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 1
P. I. = 13+07.99
Δ = 7°28'25" LT.
D = 3°00'00"
T = 124.73'
L = 249.11'
P. R. C. = 11+83.26
P. T. = 14+32.37
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 1
P. I. = 16+97.91
Δ = 7°21'57" RT.
D = 3°00'00"
T = 122.94'
L = 245.53'
P. C. = 15+74.97
P. R. C. = 18+20.50
e = NO SUPER
Ls = N/A

DLTackett 6/12/2020 8:52:33 AM
WORKSPACE: AHTD
L:\20\T\101\560 - Mill and Bodcau Creek\Drawings\R030497.SC.03.dgn
REVISED DATE:

TEMPORARY SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	31	130

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

SURVEY CONTROL COORDINATES

Project Name: s030343
Date: 11/2/2017
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1570650.6399	847292.7645	256.098	CTL	AR DOT STD. MONUMENT STAMPED PN: 1
2	1570714.6394	847959.0959	255.357	CTL	AR DOT STD. MONUMENT STAMPED PN: 2
3	1570786.8708	848710.7352	253.733	CTL	AR DOT STD. MONUMENT STAMPED PN: 3
4	1570859.5880	849436.5231	256.182	CTL	AR DOT STD. MONUMENT STAMPED PN: 4
5	1570808.0240	850074.8347	259.163	CTL	AR DOT STD. MONUMENT STAMPED PN: 5
6	1570521.5968	850738.5720	264.428	CTL	AR DOT STD. MONUMENT STAMPED PN: 6
7	1570307.7129	851527.4018	266.739	CTL	AR DOT STD. MONUMENT STAMPED PN: 7
8	1570239.9516	852321.1682	279.940	CTL	AR DOT STD. MONUMENT STAMPED PN: 8
9	1570155.6585	852924.7106	278.609	CTL	AR DOT STD. MONUMENT STAMPED PN: 9
10	1570062.1727	854535.6003	270.519	CTL	AR DOT STD. MONUMENT STAMPED PN: 10
11	1570070.1080	855456.5078	301.325	CTL	AR DOT STD. MONUMENT STAMPED PN: 11
12	1569989.0417	856353.9169	316.339	CTL	AR DOT STD. MONUMENT STAMPED PN: 12
13	1569970.0214	856839.8131	324.848	CTL	AR DOT STD. MONUMENT STAMPED PN: 13
14	1569934.3292	857255.9482	300.939	CTL	AR DOT STD. MONUMENT STAMPED PN: 14
15	1569942.8599	857953.6402	289.006	CTL	AR DOT STD. MONUMENT STAMPED PN: 15
16	1569896.2068	858612.5512	279.764	CTL	AR DOT STD. MONUMENT STAMPED PN: 16
17	1569831.6059	859536.1548	287.058	CTL	AR DOT STD. MONUMENT STAMPED PN: 17
18	1569788.2166	860180.1220	280.326	CTL	AR DOT STD. MONUMENT STAMPED PN: 18
19	1569740.1500	861150.3253	278.929	CTL	AR DOT STD. MONUMENT STAMPED PN: 19
20	1569659.3818	862110.5500	279.385	CTL	AR DOT STD. MONUMENT STAMPED PN: 20
21	1569438.5597	862855.1865	276.418	CTL	AR DOT STD. MONUMENT STAMPED PN: 21
22	1570597.9148	846741.3417	254.625	CTL	AR DOT STD. MONUMENT STAMPED PN: 22
23	1570490.0570	846140.8542	254.353	CTL	AR DOT STD. MONUMENT STAMPED PN: 23
100	1570216.2967	843451.3087	256.245	GPS	AR DOT GPS *370017
101	1570426.0783	845682.2770	253.887	GPS	AR DOT GPS *370017A
102	1570078.7289	853695.4966	269.213	GPS	AR DOT GPS *370015
103	1570060.0256	855872.1602	313.725	GPS	AR DOT GPS *370015A
104	1568156.5549	868252.9677	321.526	GPS	AR DOT GPS *370016
105	1568030.8123	869420.1233	318.121	GPS	AR DOT GPS *370006
974	1568984.0621	864965.0858	286.916	TBM	CHISELED SQ. IN 10' HW
983	1570153.2651	854039.4801	271.445	TBM	CHISELED SQ. IN 12' HW
985	1570395.3163	851328.6548	264.480	TBM	CHISELED SQ. IN 6' HW
994	1569212.6310	856146.3681	323.060	BM	NGS 1ST ORDER BM STAMPS RM 1
995	1566766.4234	871635.1375	274.910	BM	NGS 1ST ORDER BM T 202
996	1570463.9160	845231.5325	252.064	TBM	CHSLD. SQ. CNTR. N. HW
997	1570680.0186	847659.3331	256.396	TBM	CHSLD. SQ. NE BR. CRNR. BODCAU CREEK

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999974405 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 s030343gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: *370017-*370017A, *370015-*370015A, *370016, *370006
CONVERGENCE ANGLE: 00-50-15.21 LEFT AT LT: 33-21-63.82N LG: 093-29-47.28W
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

ALIGNMENT NAME: HWY. 82 - SITE 2

POINT	STATION	TYPE	NORTHING	EASTING
8036	200+00.00	POB	1570525.4721	846238.5374
8037	202+00.00	PC	1570544.5970	846437.6209
8039	206+14.62	PRC	1570576.7700	846850.9636
8041	210+29.23	PT	1570608.9430	847264.3064
8042	214+89.22	PC	1570652.9291	847722.1872
8044	219+03.84	PRC	1570700.0334	848134.0955
8046	223+18.45	PT	1570747.1377	848546.0039
8047	225+00.00	POE	1570764.4982	848726.7211

ALIGNMENT NAME: DRIVE 218+20

POINT	STATION	TYPE	NORTHING	EASTING
8048	6+50.00	POB	1570784.8797	847743.4063
8049	9+13.41	PC	1570752.9265	848004.8712
8051	9+79.64	PT	1570709.5115	848048.4181
8052	10+00.00	POE	1570689.3073	848050.9494

ALIGNMENT NAME: STAGE 2 TEMP. HWY. 82 ALIGNMENT 2

POINT	STATION	TYPE	NORTHING	EASTING
8053	20+00.00	PC	1570579.5770	846896.4894
8055	21+83.67	PRC	1570582.4196	847080.0716
8057	24+28.85	PT	1570590.1566	847324.9566
8058	27+89.51	PC	1570624.6445	847683.9644
8060	30+14.39	PRC	1570661.4329	847905.6396
8062	31+88.32	PT	1570692.5598	848076.6739

DLTackett 6/12/2020 8:52:34 AM
WORKSPACE: AHTD
L:\2017\170175\60 - Mill and Bodcau Creek\Drawings\R030497_SC_04.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.		030497	32	130

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

0 100 200
1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

PN:101
PD:AR DOT
GPS #370017A

GPS

N82°03'27"E
463.02'

PN:23
PD:AR DOT
STD. MONUMENT
STAMPED PN:23

CTL

200+00
POB
8036

N79°49'02"E
610.10'

N84°30'46"E
200.00'

PC
8037

PC 202+00.00

STA. 202+00.00
BEGIN SITE 2
L.M. 10.43

N84°30'46"E 207.33'

C.L. HWY. 82
P.I. = 204+07.33
Δ = 2°04'23" RT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 202+00.00
P.R.C. = 206+14.62
e = NO SUPER
Ls = N/A

PI 204+07.33

PN:22
PD:AR DOT
STD. MONUMENT
STAMPED PN:22

CTL

205+00

N86°35'09"E
207.33'

SURVEY
BASELINE

PRC
8039

PRC 206+14.62

N86°35'09"E
207.33'

C.L. HWY. 82
- SITE 2

PI 208+21.95

N84°30'46"E
207.33'

C.L. HWY. 82
P.I. = 208+21.95
Δ = 2°04'23" LT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 206+14.62
P.R.C. = 210+29.23
e = NO SUPER
Ls = N/A

N84°32'17"E
553.94'

210+00

PT
8041

PT 210+29.23

PN:1
PD:AR DOT
STD. MONUMENT
STAMPED PN:1

CTL

N84°30'49"E
669.40'

N84°30'46"E
459.99'

0 100 200
1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

C.L. DRIVE 218+20
P.I. = 9+52.40
Δ = 75°53'29" RT.
D = 114°35'30"
T = 38.99'
L = 66.23'
P.C. = 9+13.41
P.T. = 9+79.64
e = NO SUPER
Ls = N/A

PC 9+13.41

C.L. DRIVE 218+20

6+50
POB
8048

S83°01'57"E
263.41'

PN:2
PD:AR DOT STD. MONUMENT
STAMPED PN:2

CTL

PC
8049

S83°01'57"E
38.99'

PI 9+52.40

S7°08'28"E
38.99'

PRC 219+03.84

SURVEY
BASELINE

S7°08'28"E
20.36'

PT
8051

PT 9+79.64

POE
8052

PC 214+89.22

215+00

PC
8042

N84°30'49"E
669.40'

N84°30'46"E
459.99'

N84°30'46"E
207.33'

N82°26'23"E
207.33'

220+00

PRC
8044

PI 216+96.55

C.L. HWY. 82 STA. 218+20.00 =
C.L. DRIVE 218+20 STA. 10+00.00
∢ 90°00'00"

C.L. HWY. 82
P.I. = 216+96.55
Δ = 2°04'23" LT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 214+89.22
P.R.C. = 219+03.84
e = NO SUPER
Ls = N/A

PI 221+11.17

N84°30'46"E
207.33'

C.L. HWY. 82
P.I. = 221+11.17
Δ = 2°04'23" RT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 219+03.84
P.T. = 223+18.45
e = NO SUPER
Ls = N/A

N84°30'39"E
755.10'

PT
8046

PT 223+18.45

N84°30'46"E
181.55'

POE
8047

225+00

PN:3
PD:AR DOT STD. MONUMENT
STAMPED PN:3

CTL

N84°16'43"E
729.42'

PN:4
PD:AR DOT
STD. MONUMENT
STAMPED PN:4

CTL

STA. 223+18.45
END JOB 030497
END SITE 2

C.L. HWY. 82
- SITE 2

SURVEY CONTROL DETAILS

DLTackett 6/12/2020 8:52:37 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.		030497	33	130
				(2) SURVEY CONTROL DETAILS				

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

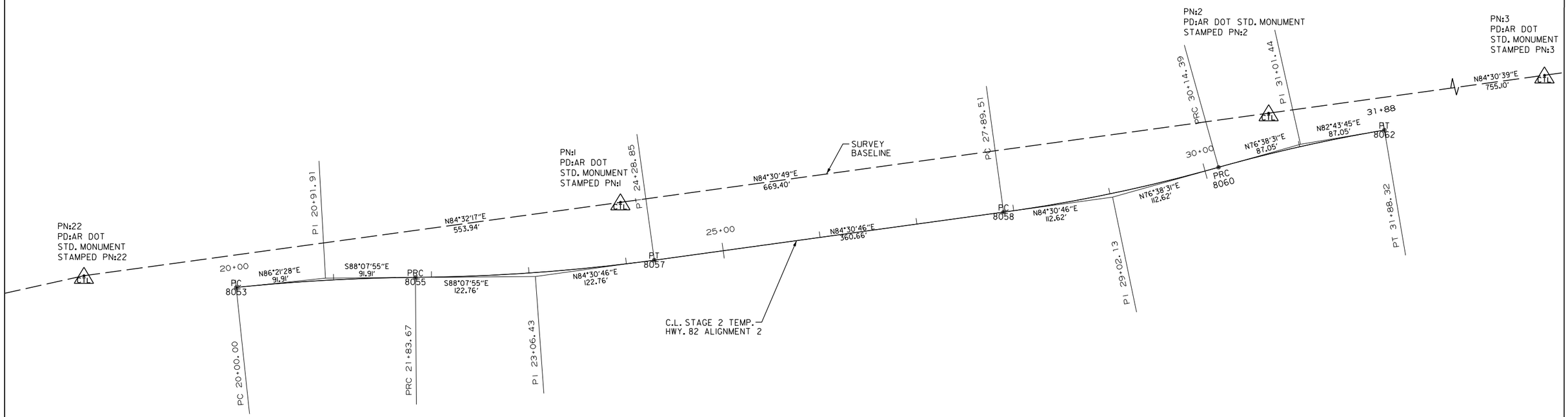
N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 20+91.91
Δ = 5°30'37" RT.
D = 3°00'00"
T = 91.91'
L = 183.67'
P.C. = 20+00.00
P.R.C. = 21+83.67
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 31+01.44
Δ = 6°05'14" RT.
D = 3°30'00"
T = 87.05'
L = 173.93'
P.R.C. = 30+14.39
P.T. = 31+88.32
e = NO SUPER
Ls = N/A



C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 23+06.43
Δ = 7°21'19" LT.
D = 3°00'00"
T = 122.76'
L = 245.18'
P.R.C. = 21+83.67
P.T. = 24+28.85
e = NO SUPER
Ls = N/A

C.L. STAGE 2 TEMP. HWY. 82 ALIGNMENT 2
P.I. = 29+02.13
Δ = 7°52'15" LT.
D = 3°30'00"
T = 112.62'
L = 224.88'
P.C. = 27+89.51
P.R.C. = 30+14.39
e = NO SUPER
Ls = N/A

TEMPORARY SURVEY CONTROL DETAILS

DLTackett 6/12/2020 8:52:38 AM
WORKSPACE: AHTD
L:\2017\1701760 - Mill and Bodcau Creek\Drawings\R030497_SC_06.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.	030497	34	130

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14994 DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20

(2) PLAN AND PROFILE - HIGHWAY 82

FENCING

STA.	STA.	SIDE	TYPE	UNIT
102+25	110+30	HWY. 82 - LT.	D-1	858 LIN. FT.
102+00	109+83	HWY. 82 - RT.	D-1	786 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	UNIT
101+85	108+92	LT.	707 LIN. FT.
102+00	110+06	RT.	806 LIN. FT.

REMOVAL AND DISPOSAL OF CRASH CUSHION

STA.	SIDE	UNIT
110+40	LT.	1 EACH

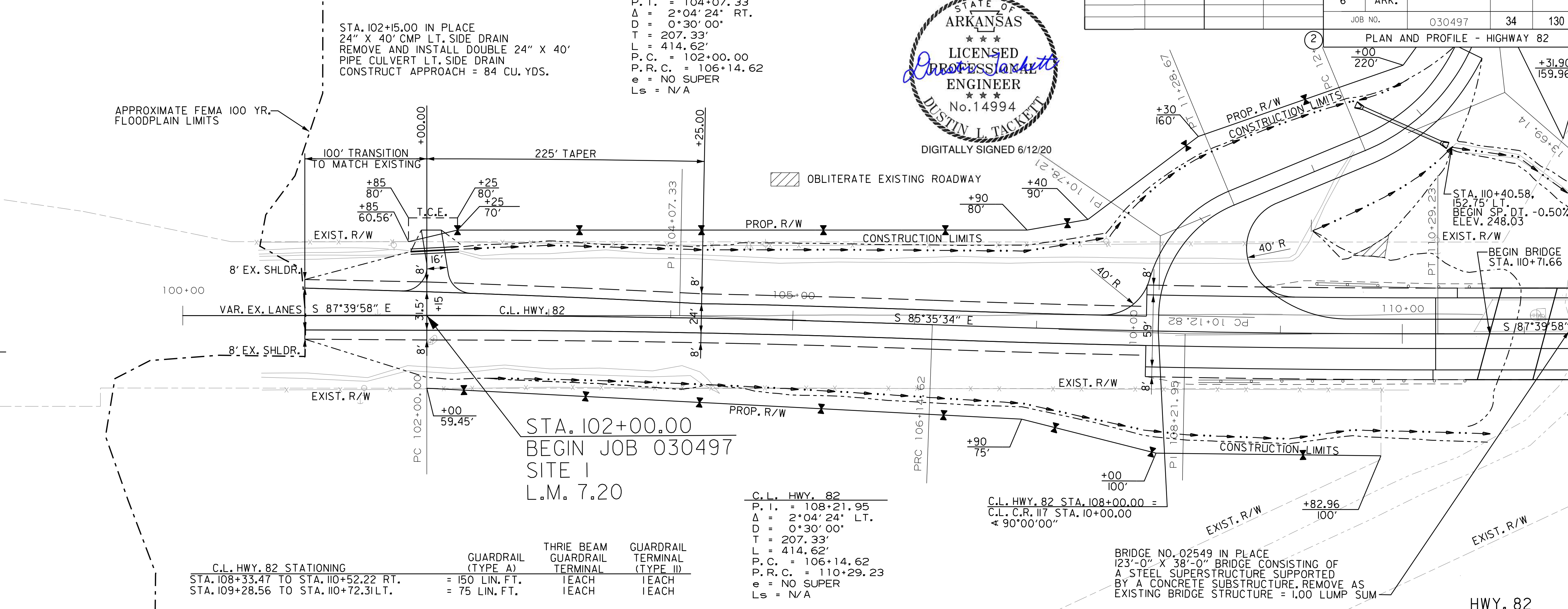
REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	UNIT
108+14	110+34	RT.	220 LIN. FT.

C.L. HWY. 82 STATIONING		GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 108+33.47 TO STA. 110+52.22 RT.	=	150 LIN. FT.	1 EACH	1 EACH
STA. 109+28.56 TO STA. 110+72.31 LT.	=	75 LIN. FT.	1 EACH	1 EACH

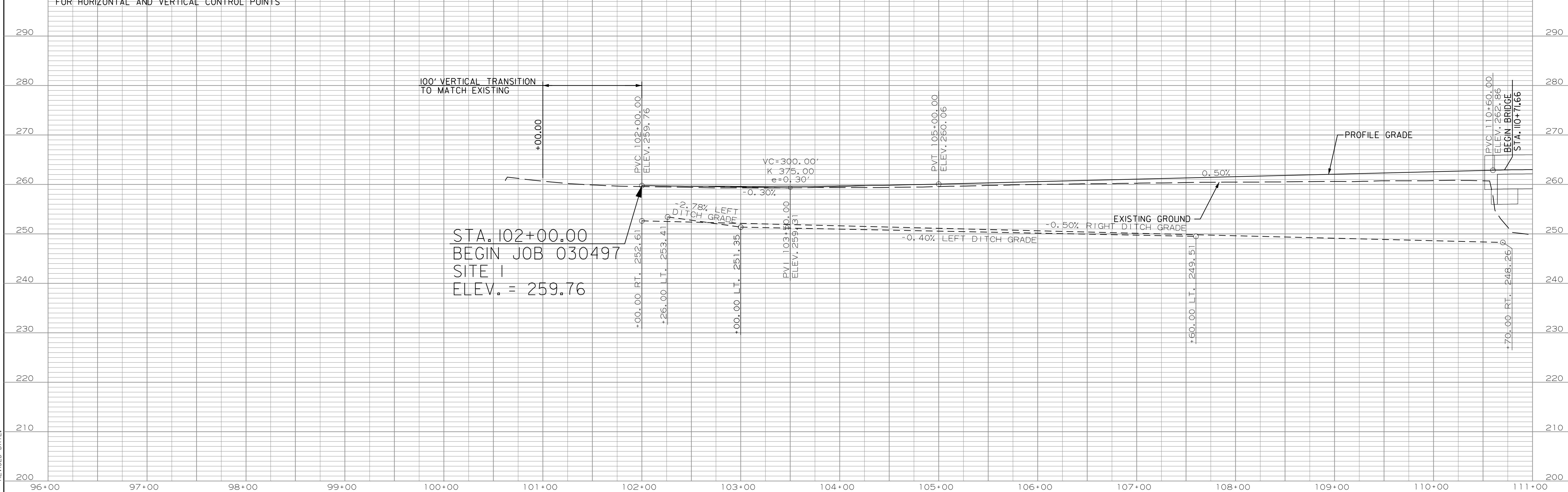
C.L. HWY. 82
P.I. = 104+07.33
Δ = 2°04′24″ RT.
D = 0°30′00″
T = 207.33′
L = 414.62′
P.C. = 102+00.00
P.R.C. = 106+14.62
e = NO SUPER
Ls = N/A

C.L. HWY. 82
P.I. = 108+21.95
Δ = 2°04′24″ LT.
D = 0°30′00″
T = 207.33′
L = 414.62′
P.C. = 106+14.62
P.R.C. = 110+29.23
e = NO SUPER
Ls = N/A



N
STA. 102+15.00 IN PLACE
24″ X 40′ CMP LT. SIDE DRAIN
REMOVE AND INSTALL DOUBLE 24″ X 40′
PIPE CULVERT LT. SIDE DRAIN
CONSTRUCT APPROACH = 84 CU. YDS.
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
100′ TRANSITION TO MATCH EXISTING
225′ TAPER
OBLITERATE EXISTING ROADWAY
T.C.E.
EXIST. R/W
PROP. R/W
CONSTRUCTION LIMITS
8′ EX. SHLDR.
VAR. EX. LANES
S 87°39′58″ E
C.L. HWY. 82
S 85°35′34″ E
S 87°39′58″ E
STA. 102+00.00
BEGIN JOB 030497
SITE 1
L.M. 7.20
STA. 110+40.58, 152.75′ LT.
BEGIN SP. DT. -0.50%
ELEV. 248.03
BEGIN BRIDGE
STA. 110+71.66
C.L. HWY. 82 STA. 108+00.00 =
C.L. C.R. 117 STA. 10+00.00
∢ 90°00′00″
BRIDGE NO. 02549 IN PLACE
123′-0″ X 38′-0″ BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM
HWY. 82

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



100′ VERTICAL TRANSITION TO MATCH EXISTING
PVC 102+00.00 ELEV. 259.76
VC=300.00′
K 375.00
e=0.30′
-0.30%
PVT 105+00.00 ELEV. 260.06
0.50%
PROFILE GRADE
EXISTING GROUND
-2.78% LEFT DITCH GRADE
-0.50% RIGHT DITCH GRADE
-0.40% LEFT DITCH GRADE
PVI 103+50.00 ELEV. 259.31
STA. 102+00.00
BEGIN JOB 030497
SITE 1
ELEV. = 259.76
PVC 110+60.00 ELEV. 262.86
BEGIN BRIDGE STA. 110+71.66

DLTackett 6/12/2020 8:52:39 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.		030497	35	130
				(2)	PLAN AND PROFILE - HIGHWAY 82			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L TACKETT
DIGITALLY SIGNED 6/12/20

+95
235'
EXIST. R/W
PROP. R/W
+31.90
159.96'
PI 13+69.14
PN:1102
PD:8-SPK 8 SPK
STA. 110+71.66 TO STA. 112+14.33
CONSTRUCT 142'-8" X 75' CLEAR ROADWAY
141'-4" COMP. INTEGRAL PRESTRESSED
CONCRETE GIRDER UNIT (44.67'-52'-44.67')
STA. 111+59, 98.00' LT.
END SP. DT. -0.50%
ELEV. 247.36
BRIDGE NO. 02549 IN PLACE
123'-0" X 38'-0" BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM
N
C.L. HWY. 82
P. I. = 114+71.56
Δ = 2°04'23" LT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P. C. = 112+64.23
P. R. C. = 116+78.85
e = NO SUPER
Ls = N/A
C.L. HWY. 82
P. I. = 118+86.18
Δ = 2°04'23" RT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P. R. C. = 116+78.85
P. T. = 120+93.46
e = NO SUPER
Ls = N/A
APPROXIMATE FEMA 100 YR.
FLOODPLAIN LIMITS
C.L. HWY. 82 STA. 114+30.00 =
C.L. DRIVE 114+30 STA. 10+00.00
∢ 75°00'00"
+80
90'
+40
71.56'
STA. 117+87.00 CONSTRUCT
APPROACH ON LT. = 34 CU. YDS.
100' TRANSITION
TO MATCH EXISTING
+95.44
95'
PC 112+64.23
PROP. R/W
EXIST. R/W
PRC 116+78.85
CONSTRUCTION LIMITS
22'
PT 118+86.18
EXIST. R/W
STA. 110+95.
145.00' LT.
SP. DT.
ELEV. 247.76
8'
120+00
123+00
8' EX. SHLDR.
S 87°39'58" E
C.L. HWY. 82
S 89°44'21" E
24' EX. LANES
S 87°39'58" E
8'
8' EX. SHLDR.
PC 10+48.33
PRC 11+58.81
S 6°30'09" W
+30
100'
END BRIDGE
STA. 112+14.33
PN:1101
EQ:8-SPK 8 SPK
S 88°52'49" W
CONSTRUCTION LIMITS
+49.23
70'
+00
95'
PROP. R/W
+50
100'
+50
59.19'
PT 120+93.46
STA. 120+93.46
END SITE 1
+25.57
100'
PROP. R/W
+00
105'
+15
115'
+50
130'
PT 11+87.28
+45
90'
EXIST. R/W
S 2°01'49" W
+00
145'
T.C.E.
+50
145'
PI 10+84.91
STA. 115+78.00 CONSTRUCT
APPROACH ON RT. = 65 CU. YDS.
STA. 114+30.00 IN PLACE
18" X 20' RCP RT. SIDE DRAIN
REMOVE AND INSTALL 18" X 40'
PIPE CULVERT RT. SIDE DRAIN
CONSTRUCT APPROACH = 842 CU. YDS.
C.L. DRIVE 114+30
P. I. = 10+84.91
Δ = 72°22'30" RT.
D = 114°35'30"
T = 36.58'
L = 63.16'
P. C. = 10+48.33
P. R. C. = 11+11.49
e = NO SUPER
Ls = N/A
C.L. DRIVE 114+30
P. I. = 11+58.81
Δ = 86°51'00" LT.
D = 114°35'30"
T = 47.32'
L = 75.79'
P. R. C. = 11+11.49
P. T. = 11+87.28
e = NO SUPER
Ls = N/A

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	UNIT
112+10	113+00	LT.	90 LIN. FT.
112+19	114+39	RT.	220 LIN. FT.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
114+40.00	115+25.00	RT. = 85 LIN. FT.	6'-0"	56.67

FENCING

STA.	STA.	SIDE	TYPE	UNIT	16' GATES
112+80	115+40	HWY. 82 - LT.	D-1	261 LIN. FT.	
113+00	119+50	HWY. 82 - RT.	D-1	646 LIN. FT.	2 EACH

C.L. HWY. 82 STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 112+13.69 TO STA. 113+57.44 RT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 112+33.78 TO STA. 114+52.53 LT.	= 150 LIN. FT.	1 EACH	1 EACH

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	UNIT	GATES
112+85	115+40	LT.	255 LIN. FT.	
113+36	119+50	RT.	614 LIN. FT.	2 EACH

HWY. 82

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

STREAM NAME	STATION	STREAM TYPE	TOP OF CHANNEL
MILL CREEK	110+30 - 112+14	PERENNIAL	250 FT.

PVI 111+50.00
ELEV. 263.31
END BRIDGE
STA. 112+14.33
PVT 112+40.00
ELEV. 262.86
PVC 112+60.00
ELEV. 262.76
PVT 114+40.00
ELEV. 262.18
VC=180.00'
K 500.00
e=0.08'
PROFILE GRADE
-0.14%
100' VERTICAL TRANSITION
TO MATCH EXISTING
PVI 120+93.46
ELEV. 261.27
+93.46
0.50%
0.50%
DESIGN H.W. (050)
ELEV. 253.7
0.50%
RIGHT
DITCH
GRADE
VC=180.00'
K 180.00
e=0.23'
EXISTING GROUND
-0.50% LEFT DITCH GRADE
-0.30%
RIGHT
DITCH
GRADE
-0.50% LEFT DITCH GRADE
+35.00 RT. 247.10
+15.00 RT. 248.00
PVI 113+50.00
ELEV. 262.31
+00.00 RT. 257.73
+00.00 LT. 256.71
+60.00 LT. 257.51
+25.00 LT. 257.42
+80.00 RT. 256.59
+00.00 LT. 256.55
STA. 120+93.46
END SITE 1
ELEV. = 261.27
290
280
270
260
250
240
230
220
210
200
111+00
112+00
113+00
114+00
115+00
116+00
117+00
118+00
119+00
120+00
121+00
122+00
123+00
124+00
125+00
126+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.		030497	36	130

(2) PLAN AND PROFILE - HIGHWAY 82

N

C.L. HWY. 82
P.I. = 204+07.33
Δ = 2°04'23" RT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 202+00.00
P.R.C = 206+14.62
e = NO SUPER
Ls = N/A

STA. 207+00 CONSTRUCT
30" X 144' R.C. PIPE CULVERT
1 25' RT. FWD. SKEW
(JACK AND BORE)
(CLASS V) TYPE 3 BEDDING WITH
FES LT. AND RT.
Q50 = 53 CFS DA = 51 ACRES
30" R.C. PIPE = 144 LIN. FT.
30" FES = 2 EA.

STA. 207+06 IN PLACE
24" X 131' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWLS. LT. AND RT. AND
EXTEND R.C. PIPE 17' RT.
1 25' RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING WITH
FES LT. AND RT.
Q50 = 53 CFS DA = 51 ACRES
24" R.C. PIPE = 211 LIN. FT.
24" FES = 2 EA.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 6/12/20

STA. 201+27.00 CONSTRUCT
APPROACH ON LT.= 3 CU. YDS.

EXIST. R/W
100' TRANSITION TO MATCH EXISTING
10' EX. SHLDR.
16'
+27'
8'
24' EX. LANES
N 84°30'46" E
24'
8'
10' EX. SHLDR.
EXIST. R/W
PI 204+07.33
200+00
205+00
CONSTRUCTION LIMITS
N 86°35'09" E
C.L. HWY. 82
PC 202+00.00
PRC 206+14.62
PI 208+21.95
PT 210+29.23
210+00
8'
59'
8'
BEGIN BRIDGE STA. 210+79.06
N 84°30'46" E
EXIST. R/W
PROP. R/W
+20
92.37'
+90
100'

STA. 202+00.00
BEGIN SITE 2
L.M. 10.43

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	UNIT
208+22	210+42	RT.	220 LIN. FT.
209+47	210+42	LT.	95 LIN. FT.

C.L. HWY. 82 STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 208+64.55 TO STA. 210+83.30 RT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 209+12.25 TO STA. 210+56.00 LT.	= 75 LIN. FT.	1 EACH	1 EACH

C.L. HWY. 82
P.I. = 208+21.95
Δ = 2°04'23" LT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.R.C. = 206+14.62
P.T. = 210+29.23
e = NO SUPER
Ls = N/A

BRIDGE NO. 02122 IN PLACE
362'-2" X 44'-0" BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

HWY. 82

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

100' VERTICAL TRANSITION TO MATCH EXISTING
+00.00
PVC 202+00.00
ELEV. 255.25
VC=300.00'
K 600.00
e= 0.19'
0.00%
PVI 203+50.00
ELEV. 255.25
PVT 205+00.00
ELEV. 256.00
PROFILE GRADE
0.50%
EXISTING GROUND
-2.52% LEFT DITCH GRADE
2.59% LEFT DITCH GRADE
+00.00 LT. 244.91
PROP. F.L. = 239.87 LT.
PROP. F.L. = 239.07 RT.
+00.00 LT. 239.87
EX. F.L. = 239.87 LT.
EX. F.L. = 239.16 RT.
PROP. F.L. = 239.07 RT.
+00.00 LT. 242.46
BEGIN BRIDGE STA. 210+79.06
PVC 211+60.00
ELEV. 259.30

STA. 202+00.00
BEGIN SITE 2
ELEV. = 255.25

290 280 270 260 250 240 230 220 210 200
197+00 198+00 199+00 200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00

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REVISED DATE:

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				6	ARK.			
				JOB NO.		030497	37	130
				(2)	PLAN AND PROFILE - HIGHWAY 82			

N

C.L. DRIVE 218+20
P.I. = 9+52.40
Δ = 75°53'29" RT.
D = 114°35'30"
T = 38.99'
L = 66.23'
P.C. = 9+13.41
P.T. = 9+79.64
e = NO SUPER
Ls = N/A

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
216+10.00	217+40.00	LT. = 130 LIN. FT.	6'-0"	86.67

STA. 218+20.00 CONSTRUCT APPROACH ON LT.= 758 CU. YDS.

C.L. HWY. 82
P.I. = 221+11.17
Δ = 2°04'23" RT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 219+03.84
P.T. = 223+18.45
e = NO SUPER
Ls = N/A

STATE OF ARKANSAS ★★★ LICENSED PROFESSIONAL ENGINEER ★★★ No.14994 DUSTIN L TACKETT
DIGITALLY SIGNED 6/12/20

BOAT RAMP
PARKING
+60 160'
6+50
T.C.E.
+80 130'
C.L. DRIVE 218+20
+50 130'
PC 9+13.41
+20 110.27'
+50 114.84'
PI 9+52.40
PRC 219+03.84
PC 214+89.22
20'
EXIST. R/W
215+00
8'
59'
8'
PT 9+79.64
+20
00
220+00
N 82°26'23" E
PI 221+11.17
EXIST. R/W
100' TRANSITION TO MATCH EXISTING
CONSTRUCTION LIMITS
10' EX. SHLDR.
225+00
N 84°30'46" E
C.L. HWY. 82
24' EX. LANES
10' EX. SHLDR.
N 84°30'46" E
END BRIDGE STA. 214+39.39
PI 216+96.55
8'
24'
8'
PT 223+18.45
CONSTRUCTION LIMITS
EXIST. R/W
PROP. R/W
EXIST. R/W
STA. 223+18.45
END JOB 030497
END SITE 2
+00.00 100'
+80.00 88.72'
C.L. HWY. 82 STA. 218+20.00 = C.L. DRIVE 218+20 STA. 10+00.00 ∢ 90°00'00"
BRIDGE NO. 02122 IN PLACE
362'-2" X 44'-0" BRIDGE CONSISTING OF A STEEL SUPERSTRUCTURE SUPPORTED BY A CONCRETE SUBSTRUCTURE. REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

C.L. HWY. 82
P.I. = 216+96.55
Δ = 2°04'23" LT.
D = 0°30'00"
T = 207.33'
L = 414.61'
P.C. = 214+89.22
P.R.C. = 219+03.84
e = NO SUPER
Ls = N/A

STA. 210+79.06 TO STA. 214+39.39
CONSTRUCT 360'-4" X 75' CLEAR ROADWAY
179'-4" COMP. INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT (59.33'-60'-60')
179'-4" COMP. INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT (60'-60'-59.33')

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	UNIT
214+51	215+46	RT.	95 LIN. FT.
214+51	216+71	LT.	220 LIN. FT.

C.L. HWY. 82 STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 214+35.14 TO STA. 216+53.89 LT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 214+62.44 TO STA. 216+06.19 RT.	= 75 LIN. FT.	1 EACH	1 EACH

HWY. 82

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

STREAM NAME	STATION	STREAM TYPE	TOP OF CHANNEL
BODCAU CREEK	210+80 - 214+40	PERENNIAL	243 FT.

290 280 270 260 250 240 230 220 210 200

PVI 212+50.00 ELEV. 259.75
END BRIDGE STA. 214+39.39
PROFILE GRADE
0.50%
-0.50%
EXISTING GROUND
PVT 213+40.00 ELEV. 259.30
0.63% LEFT DITCH GRADE
DESIGN H.W. (050) ELEV. 249.3
+60.00 LT. 241.30
+10.00 LT. 243.18
VC=180.00' K 180.00 e=-0.22'
PVC 219+50.00 ELEV. 256.25
VC=200.00' K 1000.00 e=0.05'
PVT 221+50.00 ELEV. 255.45
-0.30%
PVI 220+50.00 ELEV. 255.75
PVI 223+18.45 ELEV. 254.94
100' VERTICAL TRANSITION TO MATCH EXISTING
+18.45
STA. 223+18.45
END JOB 030497
END SITE 2
ELEV. = 254.94

212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00 226+00 227+00

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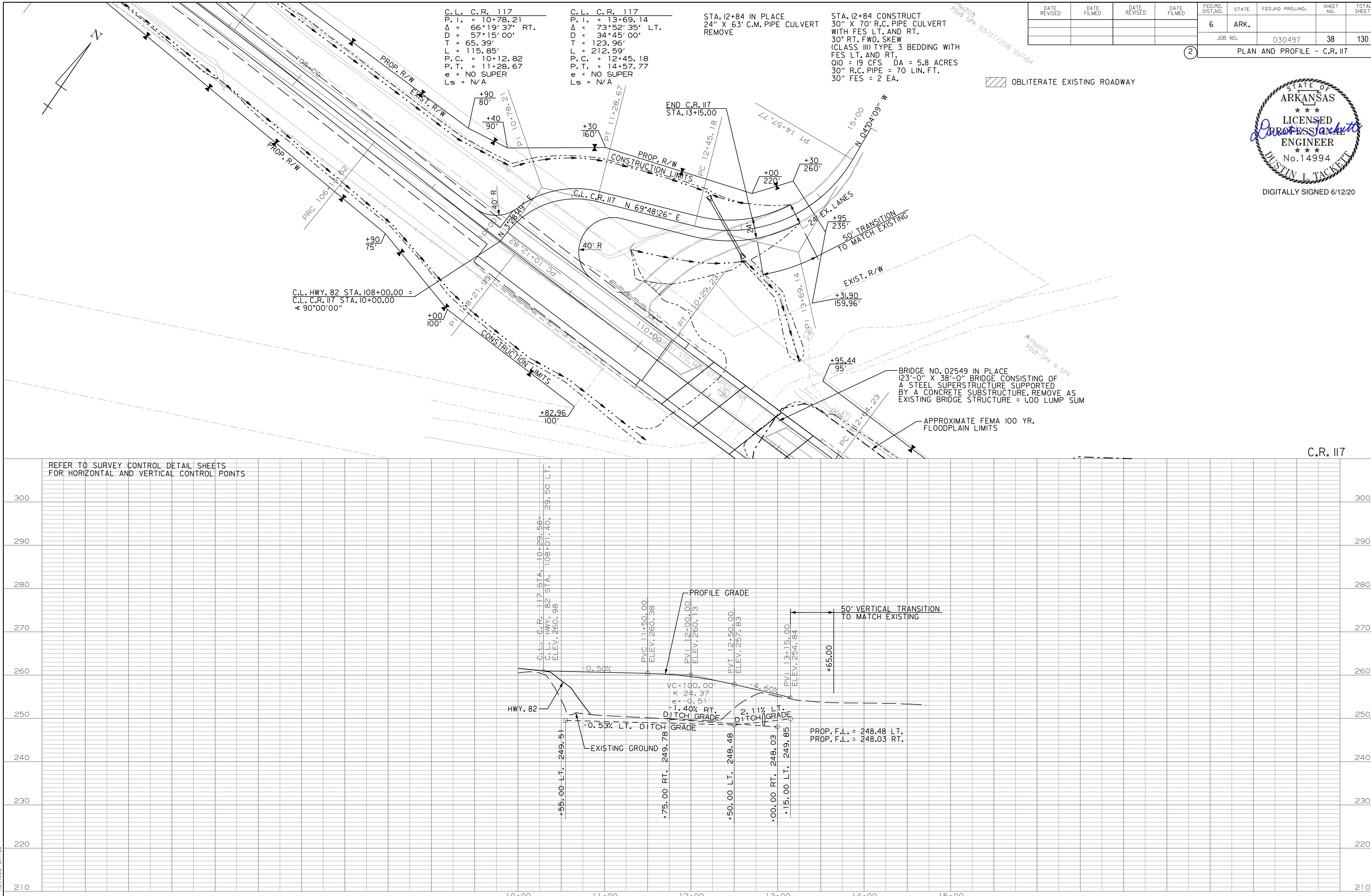
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	38	130

(2) PLAN AND PROFILE - C.R. 117

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14994 DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20



C.L. C.R. 117
P.I. = 10+78.21
Δ = 66°19'37" RT.
D = 57°15'00"
T = 65.39'
L = 115.85'
P.C. = 10+12.82
P.T. = 11+28.67
e = NO SUPER
Ls = N/A
C.L. C.R. 117
P.I. = 13+69.14
Δ = 73°52'35" LT.
D = 34°45'00"
T = 123.96'
L = 212.59'
P.C. = 12+45.18
P.T. = 14+57.77
e = NO SUPER
Ls = N/A
STA. 12+84 IN PLACE
24" X 63' C.M. PIPE CULVERT
REMOVE
STA. 12+84 CONSTRUCT
30" X 70' R.C. PIPE CULVERT
WITH FES LT. AND RT.
30° RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING WITH
FES LT. AND RT.
Q10 = 19 CFS DA = 5.8 ACRES
30" R.C. PIPE = 70 LIN. FT.
30" FES = 2 EA.
OBLITERATE EXISTING ROADWAY
END C.R. 117
STA. 13+15.00
PROP. R/W
EXIST. R/W
CONSTRUCTION LIMITS
C.L. C.R. 117 N 69°48'26" E
N 04°04'09" W
24' EX. LANES
50' TRANSITION TO MATCH EXISTING
C.L. HWY. 82 STA. 108+00.00 =
C.L. C.R. 117 STA. 10+00.00
< 90°00'00"
BRIDGE NO. 02549 IN PLACE
123'-0" X 38'-0" BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM
APPROXIMATE FEMA 100 YR.
FLOODPLAIN LIMITS
C.R. 117
REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS
C.L. C.R. 117 STA. 10+29.58=
C.L. HWY. 82 STA. 108+01.40, 29.50 LT.
ELEV. 260.98
PVC 11+50.00 ELEV. 260.38
PVI 12+00.00 ELEV. 260.13
PVT 12+50.00 ELEV. 257.83
PVI 13+15.00 ELEV. 254.84
PROFILE GRADE
50' VERTICAL TRANSITION
TO MATCH EXISTING
+65.00
-0.50%
-4.60%
VC=100.00'
K 24.37
e=-0.51'
-1.40% RT. DITCH GRADE
2.11% LT. DITCH GRADE
-0.53% LT. DITCH GRADE
HWY. 82
EXISTING GROUND
PROP. F.L. = 248.48 LT.
PROP. F.L. = 248.03 RT.
+55.00 LT. 249.51
+75.00 RT. 249.78
+50.00 LT. 248.48
+00.00 RT. 248.03
+15.00 LT. 249.85
10+00
11+00
12+00
13+00
14+00
15+00

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REVISED DATE:

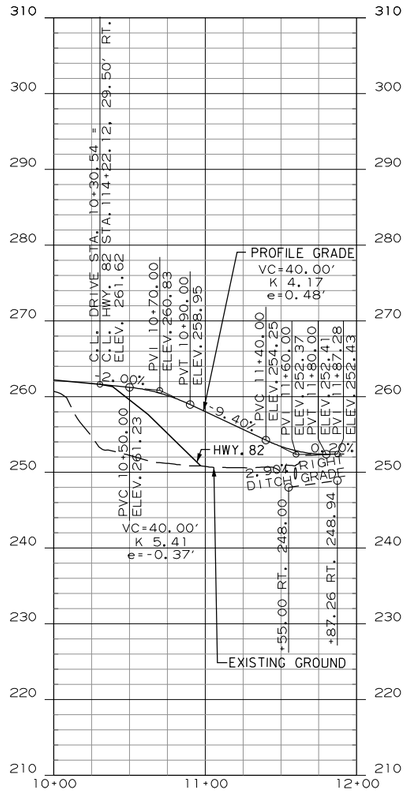
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	39	130

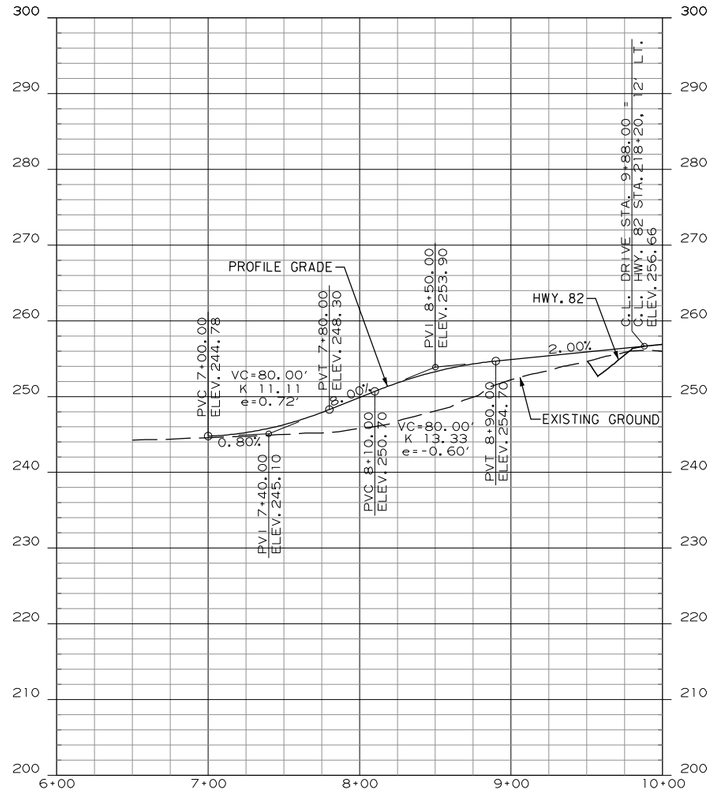
(2) DRIVEWAY PROFILES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14994
DUSTIN L. TACKETT

DIGITALLY SIGNED 6/12/20



DRIVE 114+30



DRIVE 218+20

DRIVEWAY PROFILES

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REVISED DATE:

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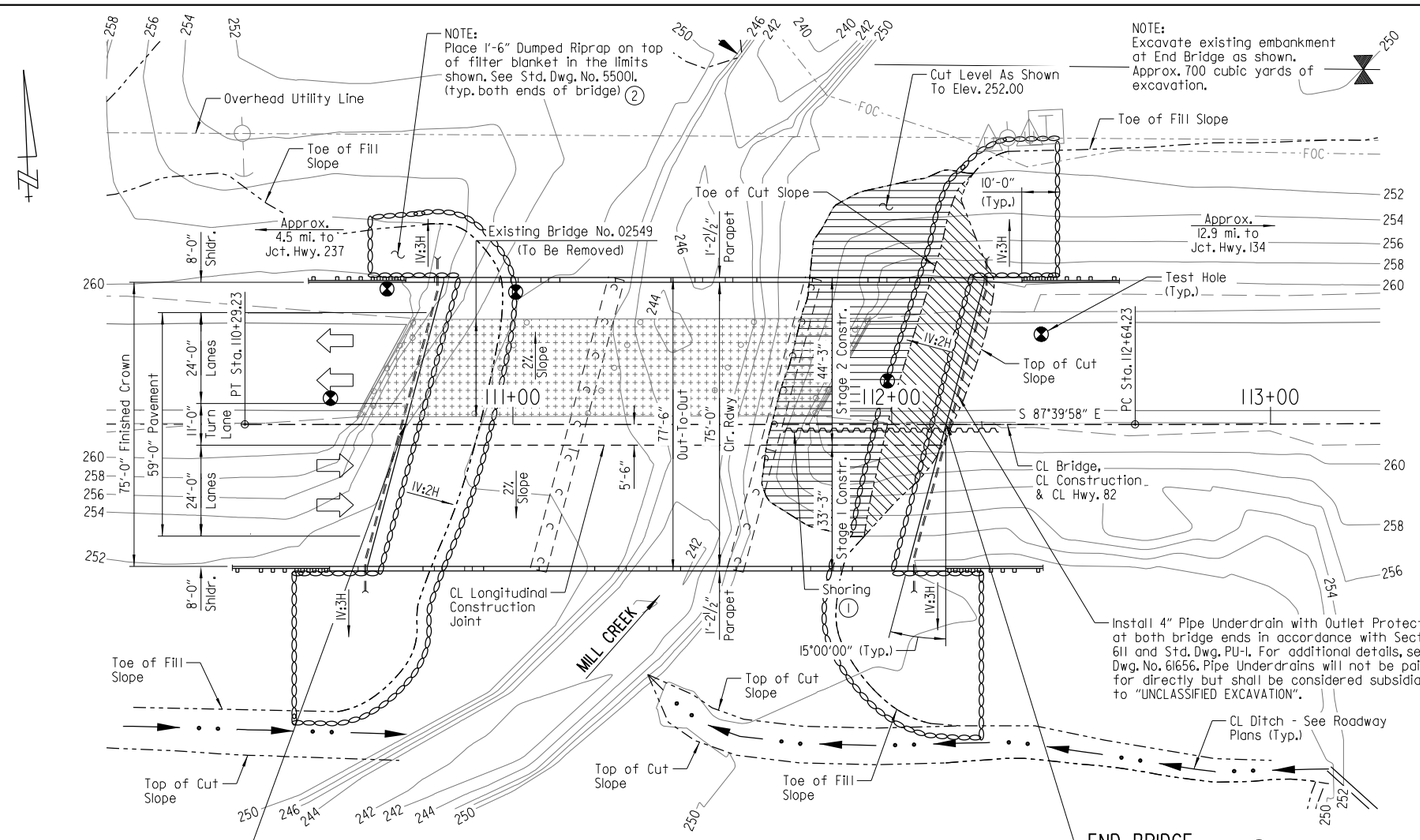
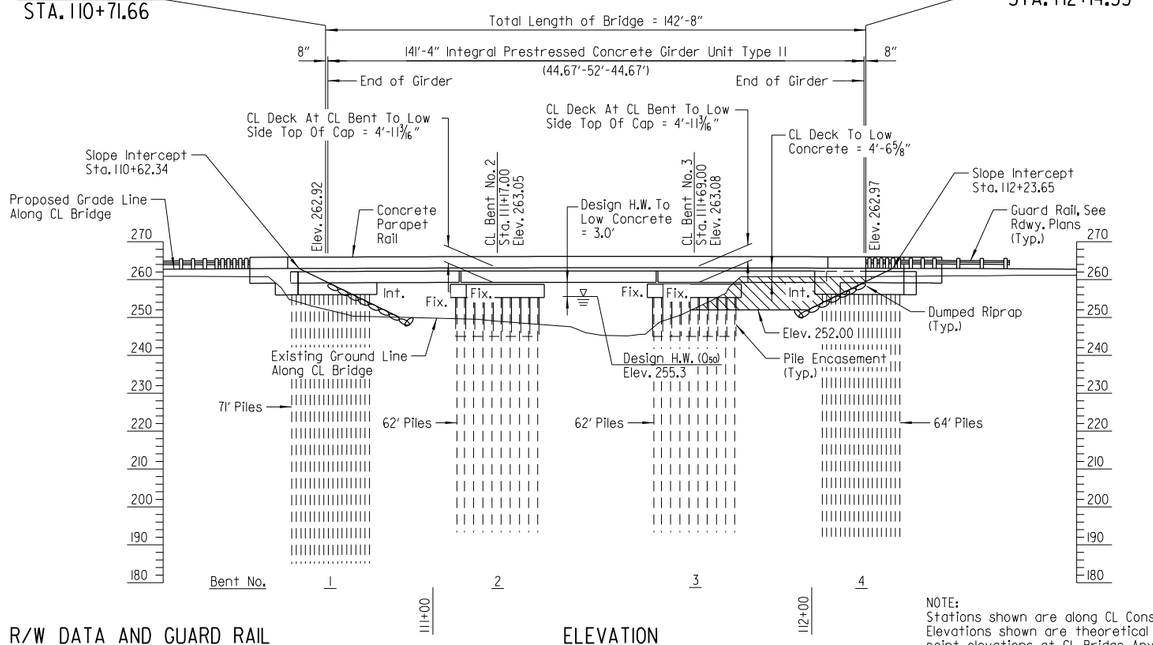
				6	ARK.			
				JOB NO.		030497	40	130
				(1) 07483		LAYOUT - SITE 1		61638





FOR R/W DATA AND GUARD RAIL DETAILS, SEE ROADWAY PLANS

NOTES:
Use Type 1 & 2 Special Approach Slabs at Begin Bridge. Use Type 3 & 4 Special Approach Slabs at End Bridge. See Dwg No. 61702-61703.

Use Type 1 & 2 Special Approach Gutters at each end of bridge. See Dwg. No. 61700.

HORIZONTAL CURVE DATA

Highway 82
PI = 108+21.95
Δ = 2°04'23" Lt.
D = 0°30'00"
T = 207.33'
L = 414.62'
e = N.C.
R = 11,459.16'

HORIZONTAL CURVE DATA

Highway 82
PI = 114+71.56
Δ = 2°04'23" Lt.
D = 0°30'00"
T = 207.33'
L = 414.62'
e = N.C.
R = 11,459.16'

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(3) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	50	4,112	254.3	255.3
BASE	100	4,886	254.8	256.0
EXTREME	500	6,885	255.9	257.5
OVERTOPPING	> 500	N/A	N/A	N/A

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

0100 backwater elevation for existing structure = 256.4

Proposed Low Bridge Chord Elev. = 258.33 (Sta. 110+64.87)
Existing Low Bridge Chord Elev. = 258.29 (survey shot)

Drainage Area = 12.2 square miles
Historical High Water Elev. = 261.46

PVI Sta. 111+50.00
Elev. 263.31
V.C. = 180'
+0.50%
-0.50%

VERTICAL CURVE DATA

Highway 82
(Theoretical Grade Along CL Construction)

(1) See Special Provision Job 030497 "SHORING".

(2) Contractor shall stockpile and salvage existing riprap for re-use. Cost of salvaging existing riprap shall not be paid for separately but shall be considered subsidiary to the item "DUMPED RIPRAP".

NOTE:
For "GENERAL NOTES" and "ELEVATION OF SOIL BORINGS", see Dwg. No. 61639.

NOTE:
The proposed bridge has been positioned to avoid interference with the existing piling. The Contractor shall verify measurements before driving any piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval.

NOTE:
Stations shown are along CL Construction. Elevations shown are theoretical working point elevations at CL Bridge. Any vertical dimension referenced to CL Deck is based on theoretical working point elevation at CL Bridge. See "ROUNDING DETAIL" on Dwg. No. 61654 for additional information.

DETAIL DRAWINGS:

	DRAWING NO.
Stage Construction	61640
End Bents	61641-61648
Intermediate Bents	61649-61652
Elastomeric Bearings	61653
141'-4" Integral Prestressed Concrete Girder Unit	61654-61665
Common Details of Prestressed Concrete Girder Units	61699
Type Special Approach Gutters	61700
Type Special Approach Slabs	61702-61703
Dumped Riprap	55001
Steel Piling	55020
Concrete Filled Steel Shell Piling	55021

EXISTING UTILITIES LEGEND

FOC = Underground Fiber Optic Cable

NOTE:
Utilities shown are based on locations at time of survey and do not reflect any potential utility relocations prior to construction.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 82 OVER MILL CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
MILLER COUNTY
ROUTE 82 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2019 FILENAME: b030497xl_l1.dgn
CHECKED BY: WMM DATE: SEP. 2019 SCALE: 1" = 20'-0"
DESIGNED BY: ABH DATE: JAN. 2019
BRIDGE NO. 07483 DRAWING NO. 61638

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WORKSPACE: ARDOT Bridge
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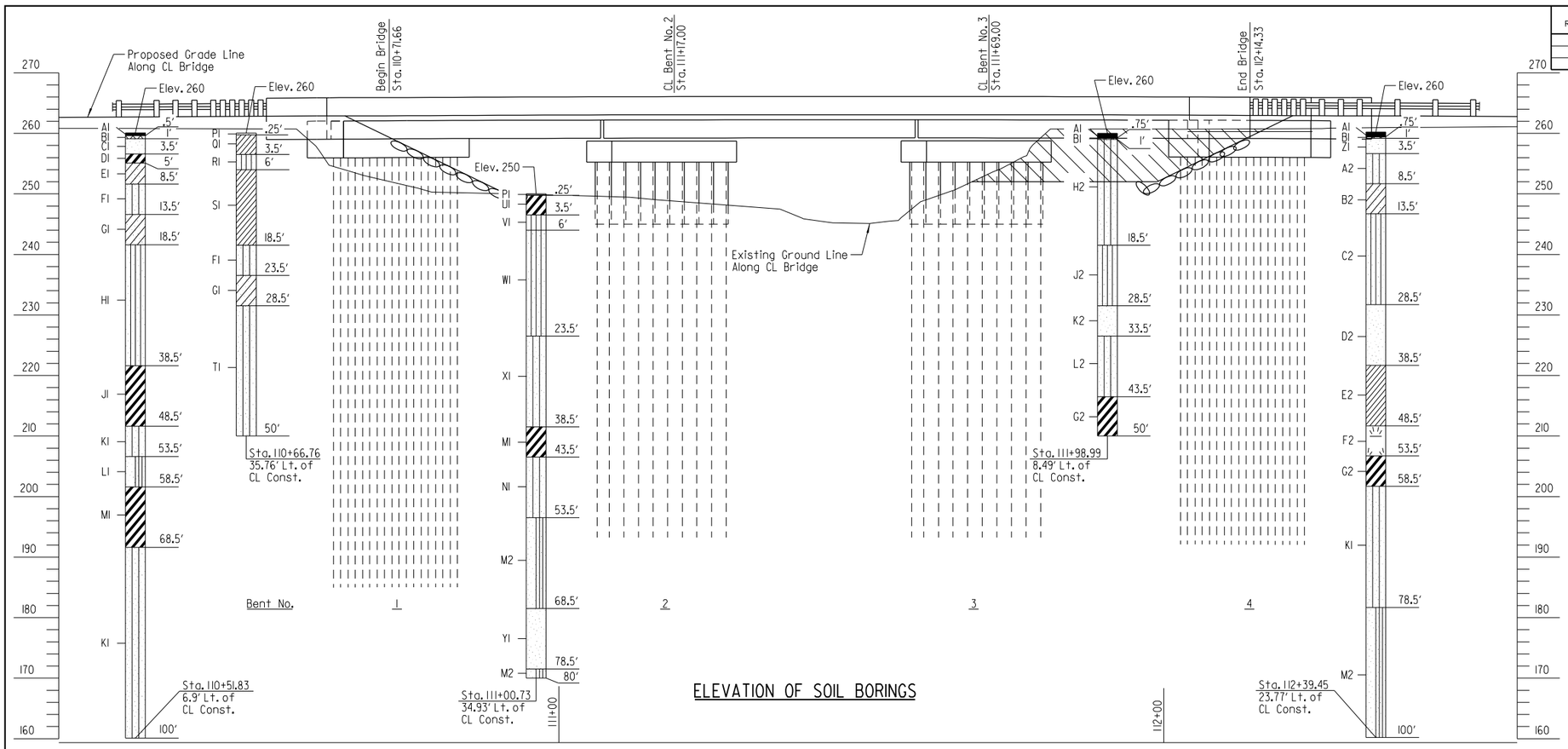
REVISED DATE:

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.		030497	41	130
				(1) 07483		LAYOUT - SITE 1		61639



ELEVATION OF SOIL BORINGS

"N" VALUES

Sta. 110+51.83
6.9' Lt. of CL
Construction

1.0-2.0, N=20
3.5-4.5, N=9
8.5-9.5, N=3
13.5-14.5, N=0
18.5-19.5, N=5
23.5-24.5, N=4
28.5-29.5, N=1
33.5-34.5, N=5
38.5-39.5, N=36
43.5-44.5, N=79/7"
48.5-49.5, N=54
53.5-54.5, N=44
58.5-59.5, N=62
68.5-69.0, N=50/6"
78.5-79.0, N=50/6"
88.5-89.0, N=50/5"
98.5-99.0, N=50/4"

Sta. 110+66.76
35.76' Lt. of CL
Construction

1.0-2.0, N=5
3.5-4.5, N=4
6.0-7.0, N=4
13.5-14.5, N=1
18.5-19.5, N=4
23.5-24.5, N=2
28.5-29.5, N=1
33.5-34.5, N=13
38.5-39.5, N=45
44.0-44.5, N=50/5"
48.5-49.5, N=47

Sta. 112+39.45
23.77' Lt. of CL
Construction

1.0-2.0, N=18
3.5-4.5, N=7
6.0-7.0, N=6
8.5-9.5, N=7
13.5-14.5, N=0
18.5-19.5, N=1
23.5-24.5, N=3
28.5-29.5, N=7
33.5-34.5, N=50/5"
38.5-39.5, N=41
43.5-44.5, N=51
48.5-49.0, N=50/6"
53.5-54.5, N=52
58.5-58.8, N=50/4"
68.5-69.0, N=50/6"
78.5-79.0, N=50/6"
88.5-89.0, N=50/6"
99.0-99.3, N=50/3"

Sta. 111+00.73
34.93' Lt. of CL
Construction

1.0-2.0, N=23
3.5-4.5, N=8
6.0-7.0, N=4
8.5-9.5, N=4
13.5-14.5, N=9
18.5-19.5, N=17
23.5-24.5, N=11
28.5-29.5, N=46
33.5-34.5, N=47
38.5-39.5, N=42
43.5-44.5, N=42
48.5-48.8, N=50/4"
53.5-53.8, N=50/4"
58.5-58.9, N=50/5"
68.5-69.0, N=50/6"
78.5-78.8, N=50/3"

Sta. 111+98.99
8.49' Lt. of CL
Construction

1.0-2.0, N=16
3.5-4.5, N=5
6.0-7.0, N=7
8.5-9.5, N=6
13.5-14.5, N=1
18.5-19.5, N=5
23.5-24.5, N=6
28.5-29.5, N=4
33.5-34.5, N=0
38.5-39.5, N=40
43.5-44.5, N=51
48.5-49.5, N=44

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 = D

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, Gr. 60)	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: Piling in Bents 1 & 4 shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum ultimate bearing capacity of 185 tons per pile and to a minimum tip elevation of 230 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities only. Actual pile lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

STEEL SHELL PILING: Piling in Bents 2 & 3 shall be 20" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 340 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer to a minimum tip elevation of 210 or lower. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the items "STEEL SHELL PILING (20" DIA.)".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend from bottom of cap to 3' below natural ground. See Std. Dwg. No. 55021 for additional information.

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".

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for HP12x53 piles shall be 22,500 foot pounds per blow and for 20" steel shell piles shall be 51,000 foot pounds per blow.

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

EXISTING BRIDGE: Existing Bridge No. 02549 (Log Mile 7.37) is 122.5' in length, 32.3' wide (26'-0" clear roadway) and consists of a concrete slab on I-beam spans (4 spans total) supported by precast concrete pile bents.

REMOVAL AND SALVAGE: After Stage 1 Construction is complete and open to traffic, existing Bridge No. 02549, including any exposed substructures from previous construction, shall be removed in accordance with Section 205. Exposed substructures from previous construction shall be removed to a depth of 2' below subgrade or final ground surface. This work shall be considered subsidiary to the item "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)". All material from the existing bridge and previous construction shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

BORING LEGEND

A1 - Asphalt
B1 - Base Material: Black and brown sand, little silt and gravel
C1 - Medium dense, brown and black SAND, trace silt and gravel
D1 - Stiff, gray and brown, sandy, FAT CLAY
E1 - Gray and brown, CLAYEY SAND
F1 - Very loose, brown, SILTY SAND
G1 - Very loose, gray, CLAYEY SAND
H1 - Medium stiff to very soft, brown and gray to gray, sandy SILT
J1 - Hard, gray to brown, FAT CLAY
K1 - Very dense, gray, SILTY SAND
L1 - Dense, gray SAND with silt
M1 - Hard, gray, sandy, FAT CLAY
N1 - Dense to very dense, gray, SILTY SAND
P1 - Topsoil: grass with brown silt
Q1 - Medium dense, brown, sandy, LEAN CLAY, trace gravel
R1 - Soft, brown, sandy SILT
S1 - Soft to very soft, brown to gray, LEAN CLAY with sand
T1 - Very loose to very dense, gray to gray and black, SILTY SAND
U1 - Very stiff, brown, sandy, FAT CLAY, trace roots and silt
V1 - Medium stiff, brown and gray SILT, trace organics, clay and sand
W1 - Soft to very stiff, brown and gray to tan and gray, sandy SILT
X1 - Medium dense to dense, gray, SILTY SAND, trace black decayed organic material
Y1 - Very dense, gray SAND
Z1 - Medium dense, gray and black SAND, little silt and gravel
A2 - Loose, orange and tan to red and orange, SILTY SAND
B2 - Loose, red, CLAYEY SAND, trace silt
C2 - Very soft, gray, sandy SILT
D2 - Loose to very dense, tan and gray SAND
E2 - Hard, gray, LEAN CLAY, trace sand
F2 - Very dense, black decayed LIGNITE
G2 - Hard, gray, silty, sandy, FAT CLAY
H2 - Medium dense to very loose, tan and orange to gray and white, SITLY SAND, trace clay
J2 - Medium stiff, gray and white, sandy SILT
K2 - Very loose, brown and gray SAND
L2 - Very loose to dense, gray, SILTY SAND, little clay
M2 - Very dense, gray SAND with Silt

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 82 OVER MILL CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
MILLER COUNTY
ROUTE 82 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: WMM DATE: SEP. 2019 SCALE: No Scale
DESIGNED BY: ABH DATE: JAN. 2019
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REVISED DATE:

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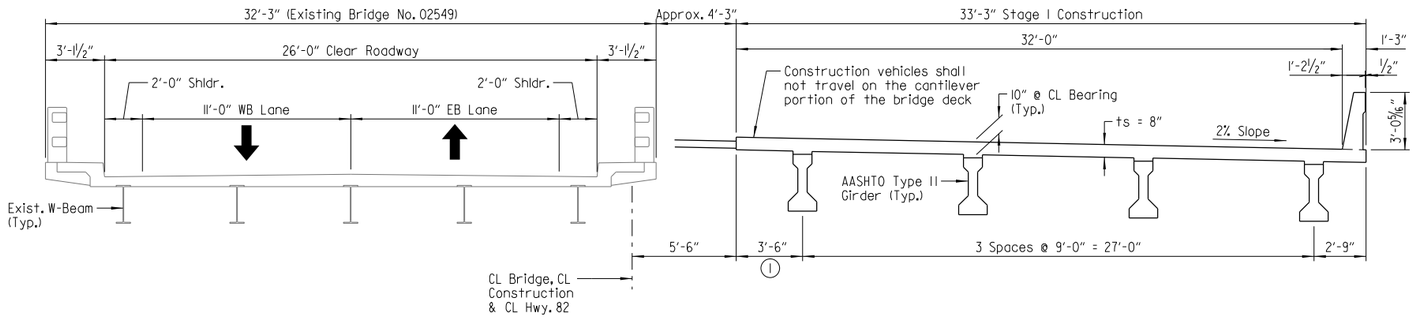
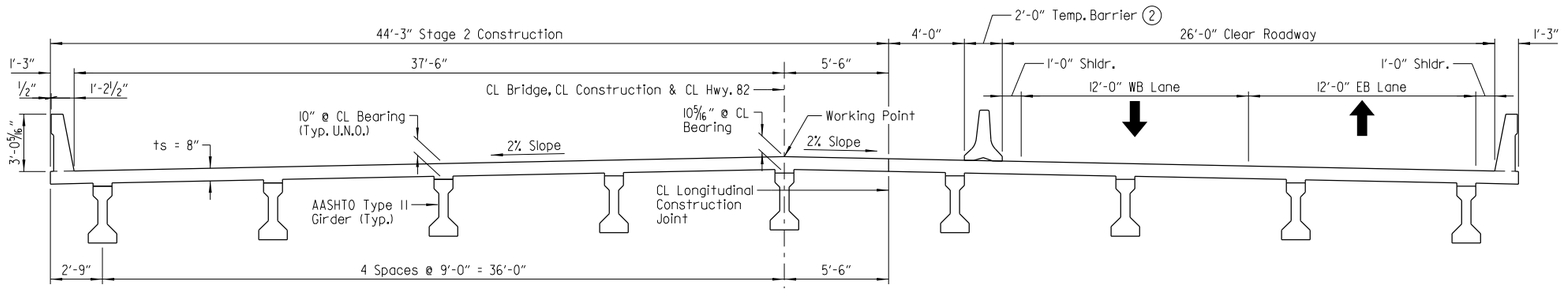
				(1) 07483		STAGE CONST. - SITE I		61640



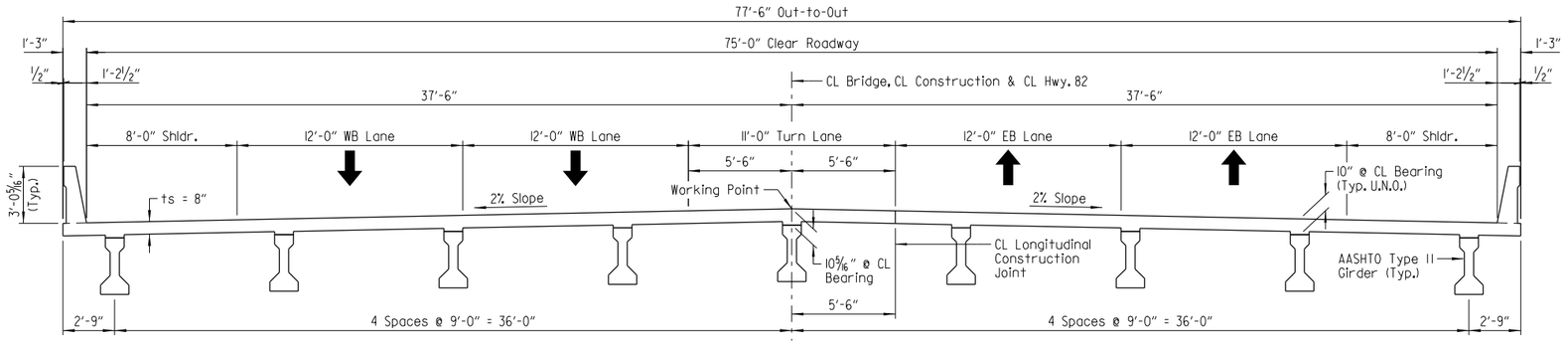
TYPICAL SECTION - STAGE I CONSTRUCTION

(Looking Ahead)
No Scale



TYPICAL SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
No Scale



TYPICAL SECTION - FINAL CONDITION

(Looking Ahead)
No Scale

NOTE:
Horizontal dimensions shown in Typical Section details are measured normal to CL Bridge unless noted otherwise.

(1) Construction vehicles shall not travel on cantilever portion of deck.

(2) Temporary Construction Barrier. Do not connect to new deck (See Std. Dwg. TC-4).

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

DETAILS OF STAGED CONSTRUCTION
HIGHWAY 82 OVER MILL CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
MILLER COUNTY

ROUTE 82 SEC. I

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: WMM DATE: SEP. 2019 SCALE: As Shown
DESIGNED BY: ABH DATE: JAN. 2019

BRIDGE NO. 07483 DRAWING NO. 61640

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

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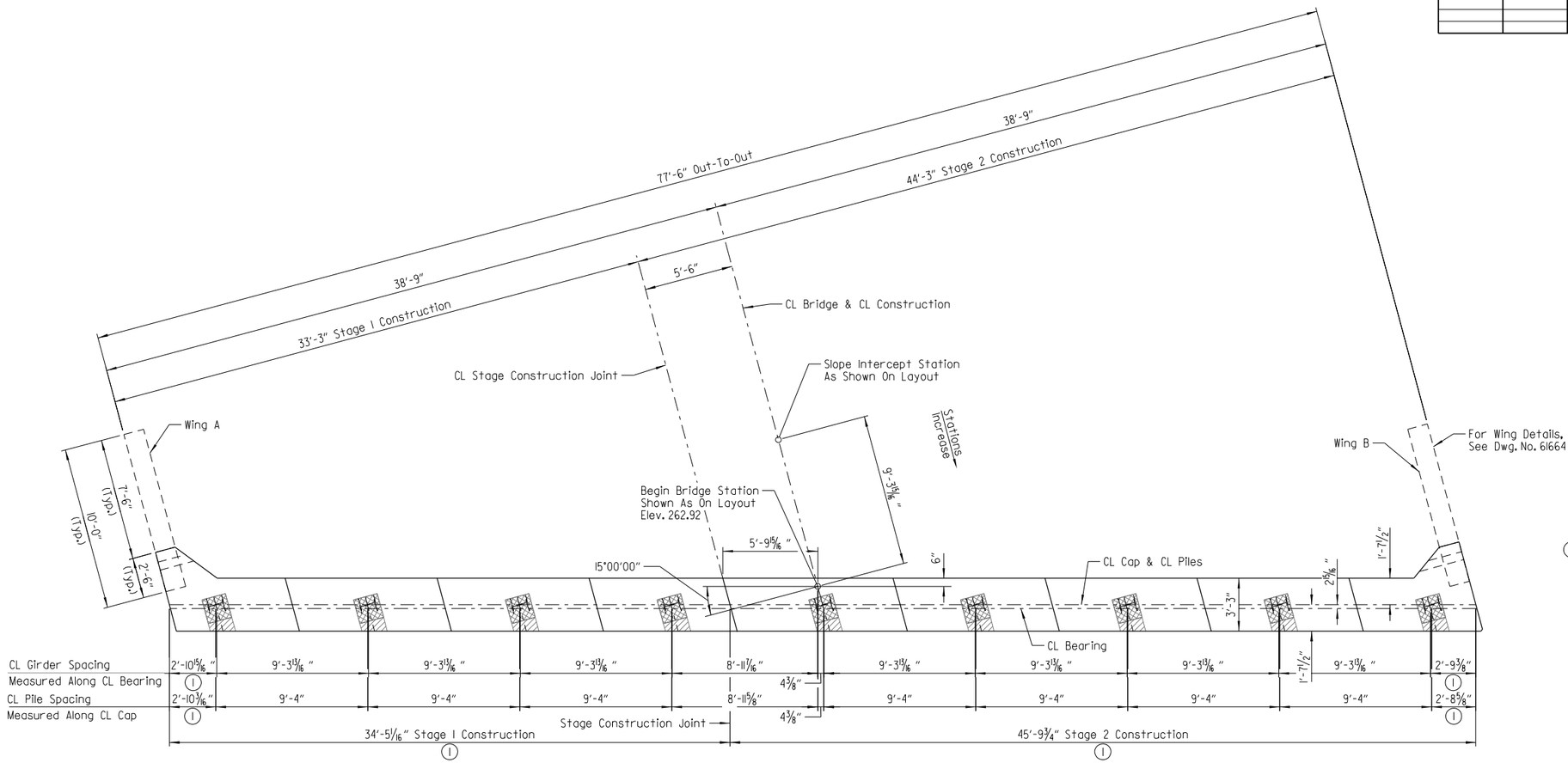
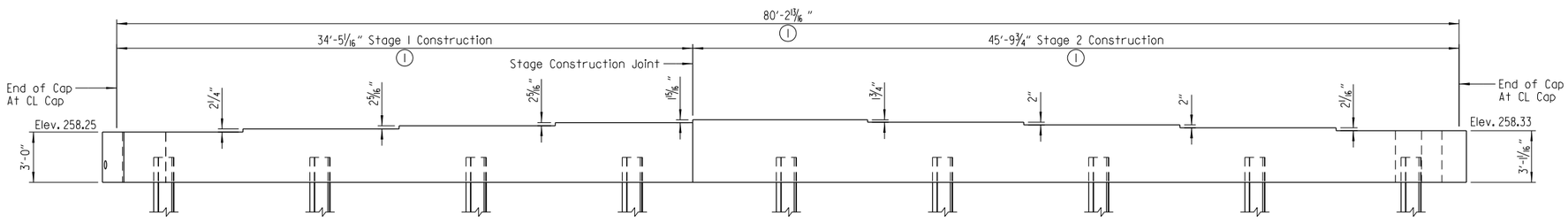
6	ARK.			
JOB NO.		030497	43	130
① 07483		END BENT		61641



PLAN - END BENT NO. 1

Scale: 1/4" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: 1/4" = 1'-0"

① Measured From Intersection Of CL Cap And Edge Of Cap

NOTE:
For reinforcing details, see Dwg. Nos. 61642 & 61643.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

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

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x1_a1.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61641

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WORKSPACE: ARDOT Bridge
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REVISED DATE:

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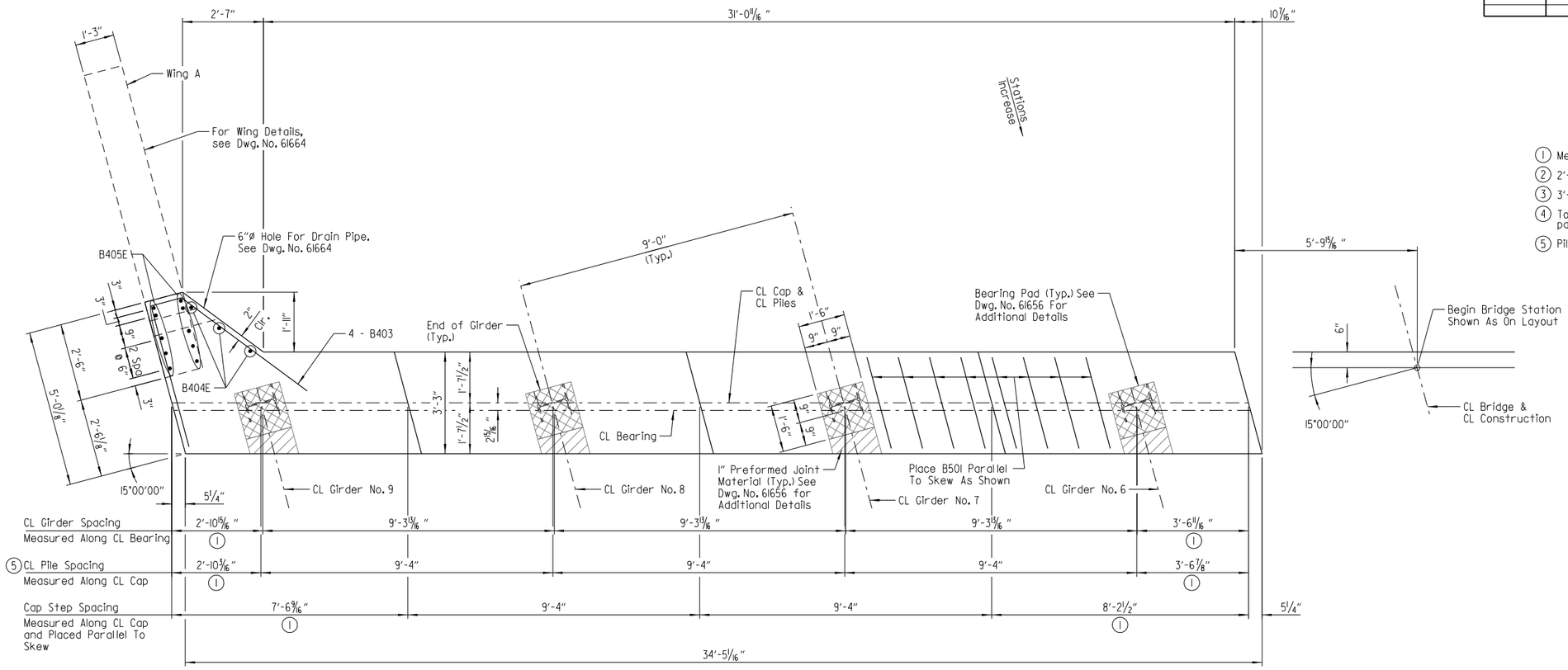
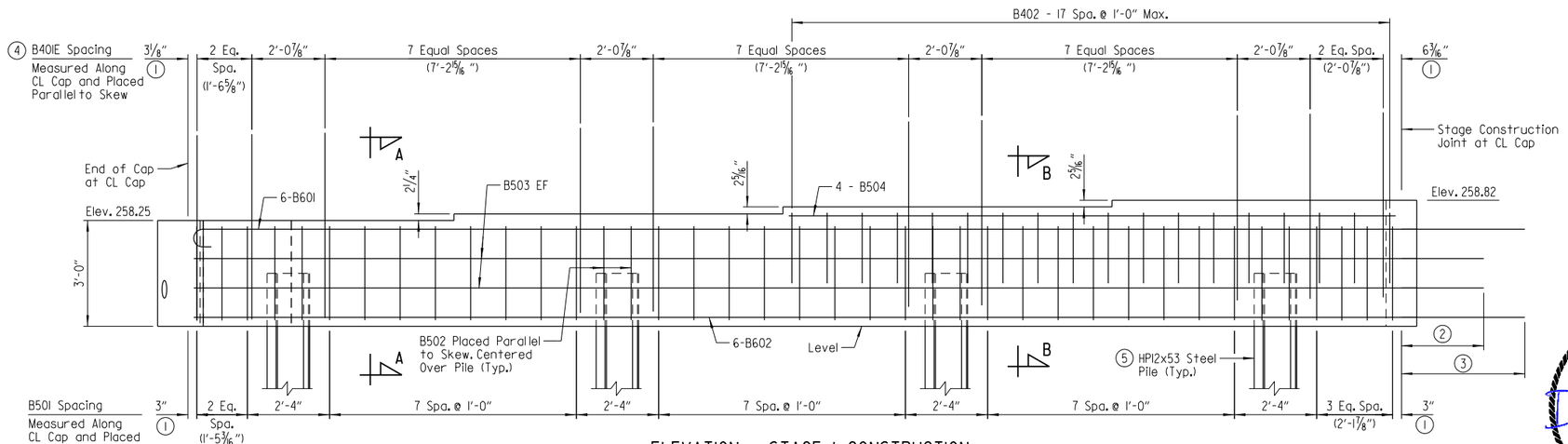
				JOB NO.		030497	44	130
				(1) 07483		END BENT		61642



PLAN - STAGE I CONSTRUCTION

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

(1) Measured From Intersection Of CL Cap And Edge Of Cap
(2) 2'-4" Min. Projection (Typ. #5 Bars)
(3) 3'-6" Min. Projection (Typ. #6 Bars)
(4) Top of B401E bars shall maintain 2" clr. of bottom of paving bracket in end diaphragm.
(5) Piles shall be oriented as shown.



ELEVATION - STAGE I CONSTRUCTION

(Looking Back)

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

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61644.

LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x1_a2.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07483 DRAWING NO. 61642

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WORKSPACE: ARDOT Bridge
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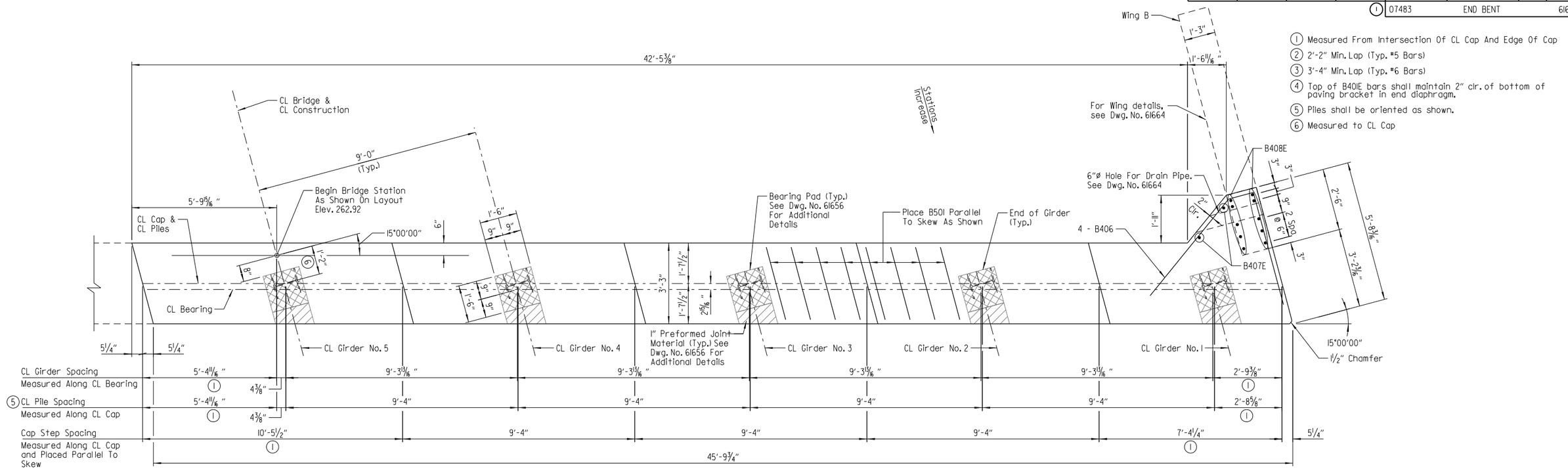
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

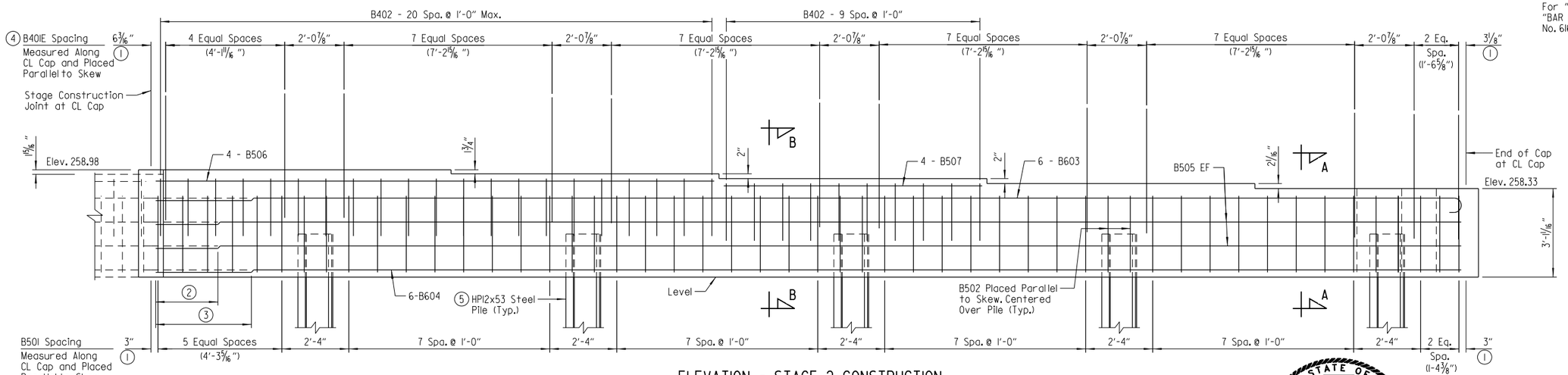
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	45	130
(1) 07483		END BENT		61643

(1) Measured From 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" clr. of bottom of paving bracket in end diaphragm.
(5) Piles shall be oriented as shown.
(6) Measured to CL Cap



PLAN - STAGE 2 CONSTRUCTION

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



ELEVATION - STAGE 2 CONSTRUCTION

(Looking Back)
Scale: 1/2" = 1'-0"

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61644.

LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x1_a3.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07483 DRAWING NO. 61643

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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.		030497	46	130
				(1) 07483		END BENT		61644

BAR LIST - END BENT 1

STAGE 1 CONSTRUCTION

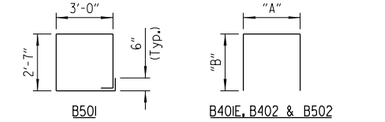
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	30	11'-6"	3'-0"	4'-4"	2"
B402	18	6'-10"	3'-0"	2'-0"	2"
B403	4	10'-3½"			2"
B404E	3	5'-2"			Str.
B405E	10	6'-5"			Str.
B501	31	11'-8"			2½"
B502	8	7'-11½"	3'-0"	2'-7"	2½"
B503	4	36'-7"			Str.
B504	4	17'-2"			Str.
B601	6	38'-5"	37'-9"		4½"
B602	6	37'-9"			Str.

STAGE 2 CONSTRUCTION

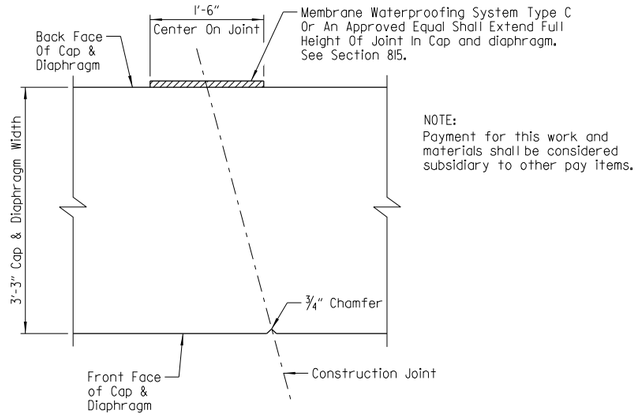
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	40	11'-6"	3'-0"	4'-4"	2"
B402	31	6'-10"	3'-0"	2'-0"	2"
B406	4	10'-7"			2"
B407E	2	5'-3"			Str.
B408E	10	6'-6"			Str.
B501	41	11'-8"			2½"
B502	10	7'-11½"	3'-0"	2'-7"	2½"
B505	4	45'-5"			Str.
B506	4	19'-5"			Str.
B507	4	9'-0"			Str.
B603	6	46'-1"	45'-5"		4½"
B604	6	45'-5"			Str.

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

BAR BENDING DIAGRAMS



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



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

CONSTRUCTION JOINT DETAIL
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.

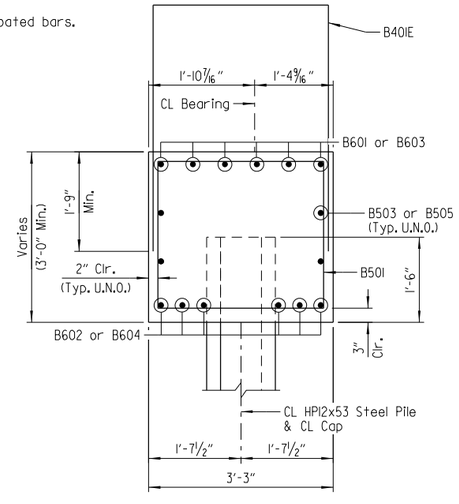
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Granular backfill and pipe underdrain required behind cap. See Dwg. No. 61656 for details.

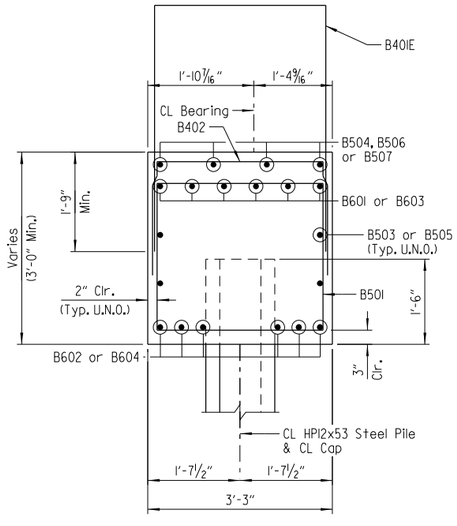
For additional information, see Layout.

LEGEND

U.N.O. = Unless Noted Otherwise



SECTION A-A
Scale: ¾" = 1'-0"



SECTION B-B
Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

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

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x1_a4.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61644

drgoad 6/12/2020 12:42:23 PM
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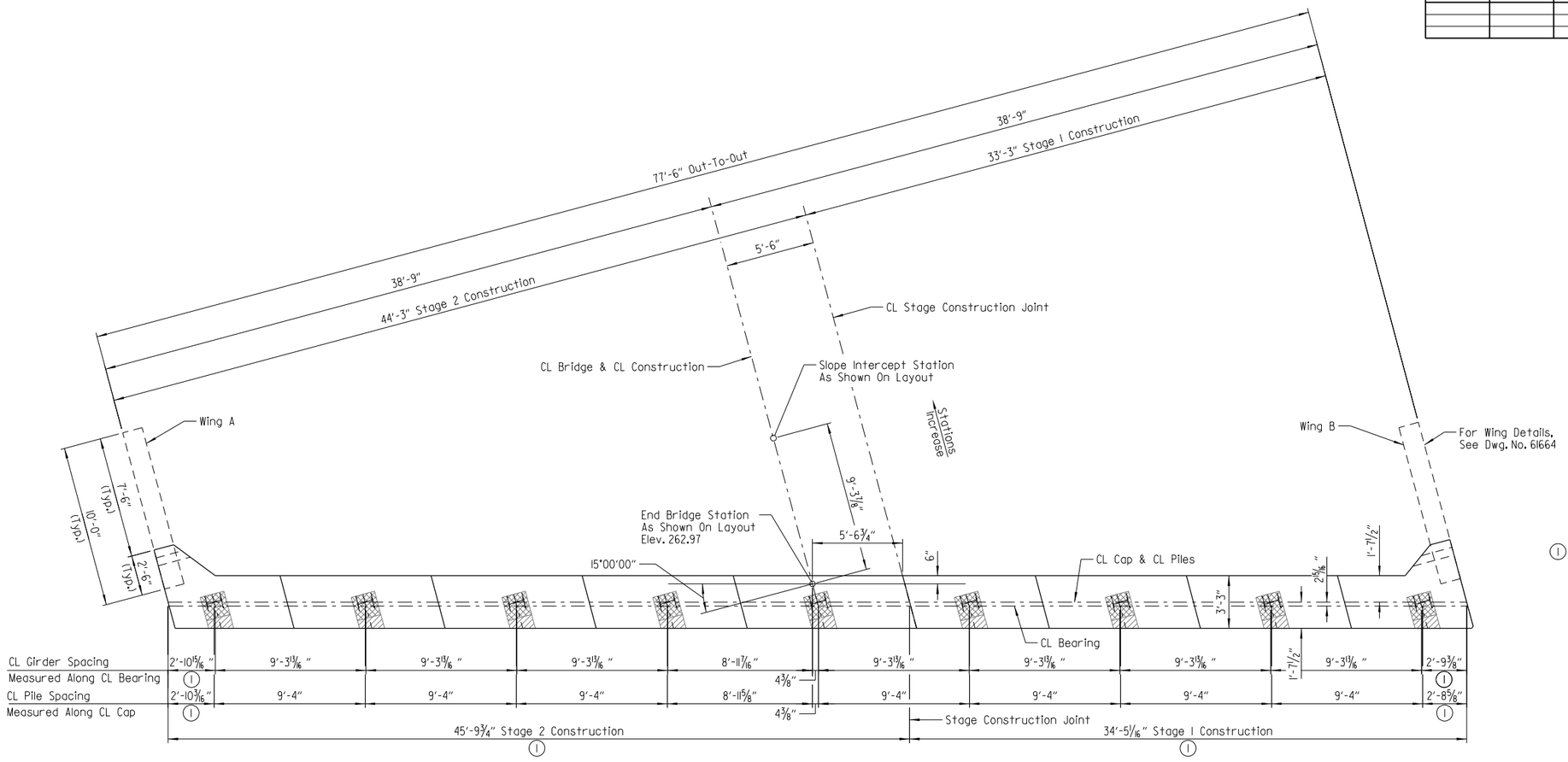
L:\2017\170\7560 - Millgand Bodcau Creek\Drawings\B030497x1_S204_AB.dgn
REVISED DATE:

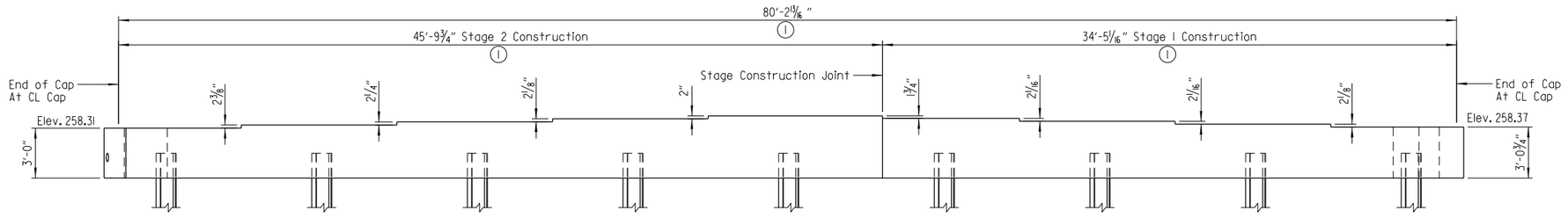
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	47	130
① 07483		END BENT		61645



PLAN - END BENT NO. 4

Scale: 1/4" = 1'-0"



ELEVATION - END BENT NO. 4

(Looking Ahead)

Scale: 1/4" = 1'-0"

① Measured From Intersection Of CL Cap And Edge Of Cap

NOTE:
For reinforcing details, see Dwg. Nos. 61646 & 61647.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT NO. 4

ROUTE SEC.

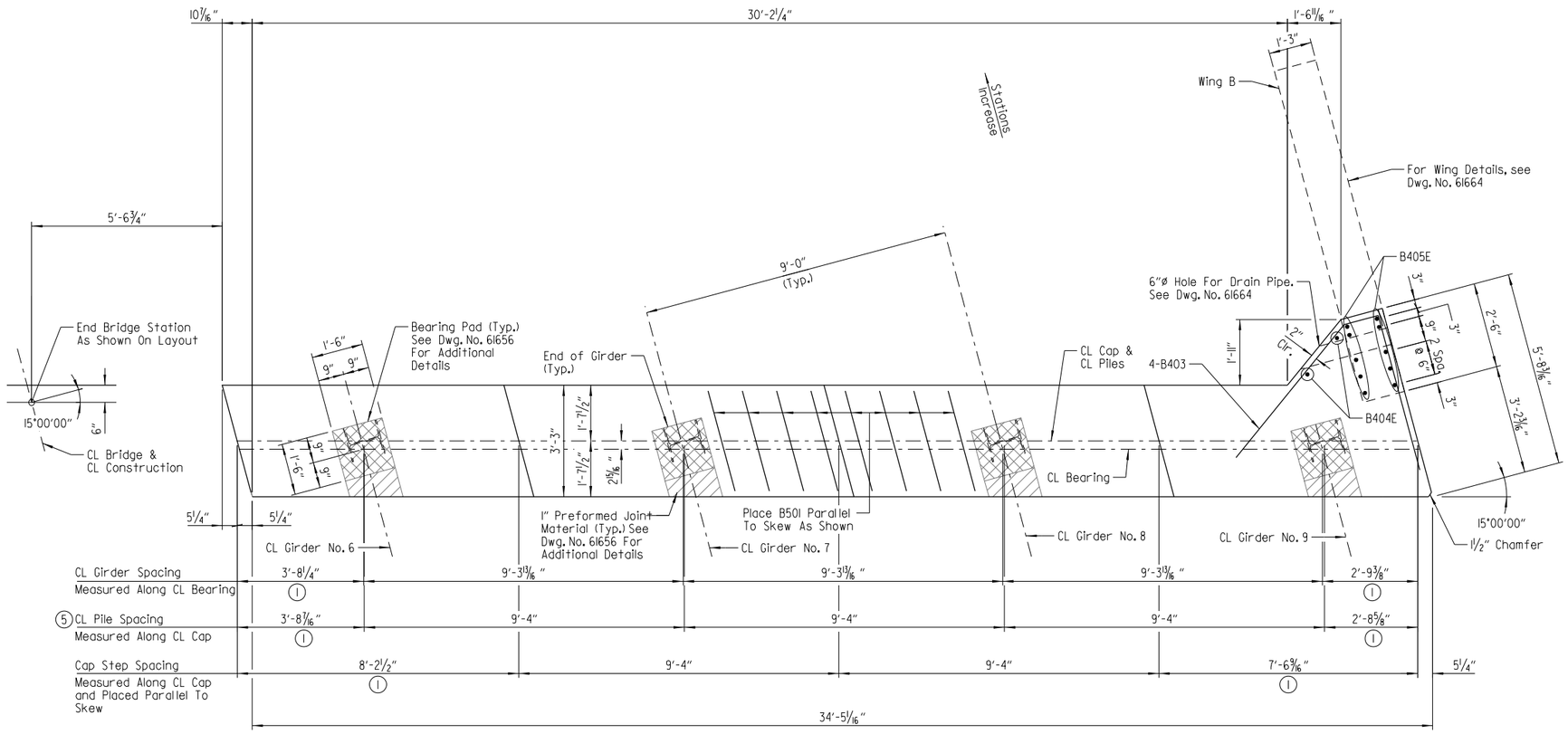
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x1_a5.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07483 DRAWING NO. 61645

drgoad 6/12/2020 12:42:24 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497x1_S205_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.		030497	48	130
				(1) 07483		END BENT		61646



PLAN - STAGE I CONSTRUCTION

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

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

(2) 2'-4" Min. Projection (Typ. #5 Bars)

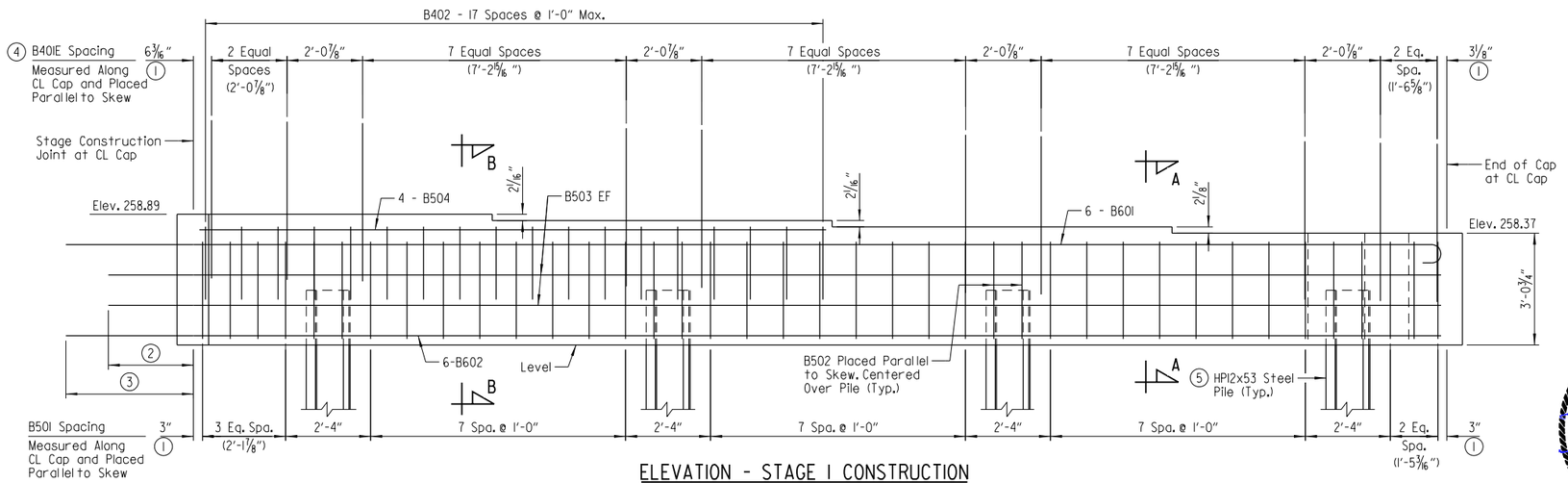
(3) 3'-6" Min. Projection (Typ. #6 Bars)

(4) Top of B401E bars shall maintain 2" Clear of bottom of paving bracket in the end bent diaphragm.

(5) Piles shall be oriented as shown.

LEGEND

EF = Each Face



ELEVATION - STAGE I CONSTRUCTION

(Looking Ahead)

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

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61648.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 2 OF 4

DETAILS OF END BENT NO. 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497xl_a6.dgn

CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown

DESIGNED BY: CSW DATE: MAR. 2020

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WORKSPACE: ARDOT Bridge
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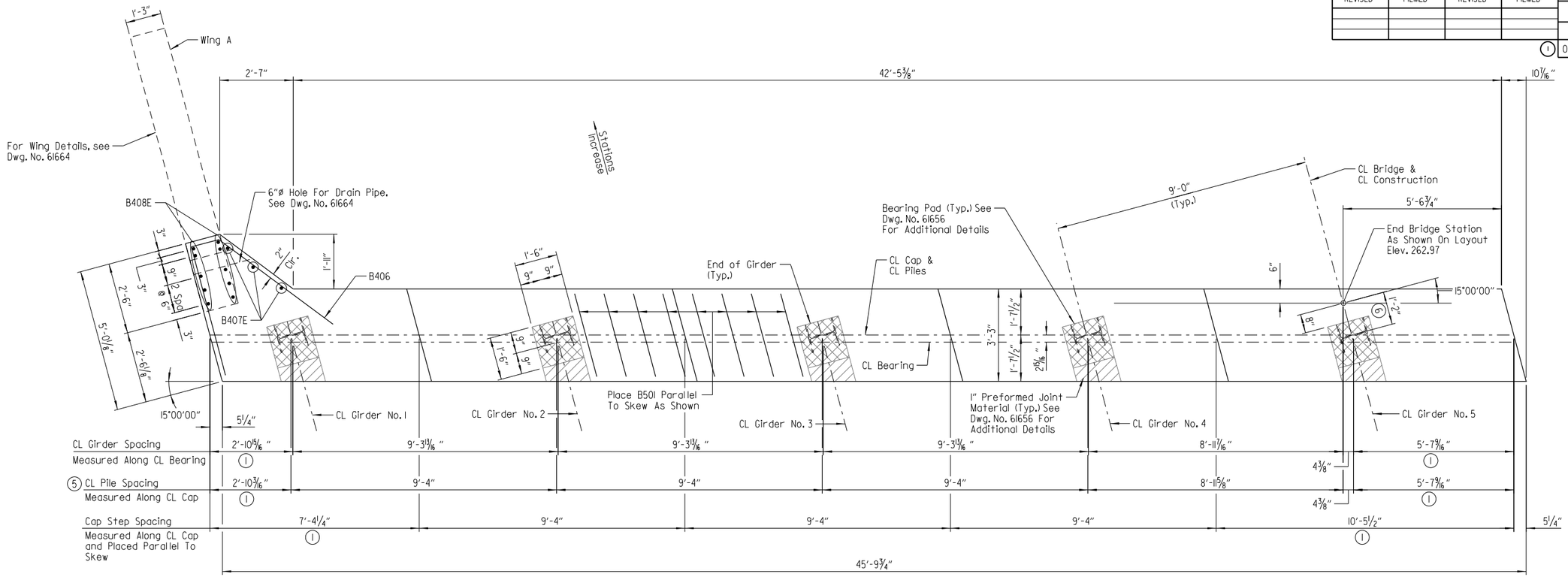
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

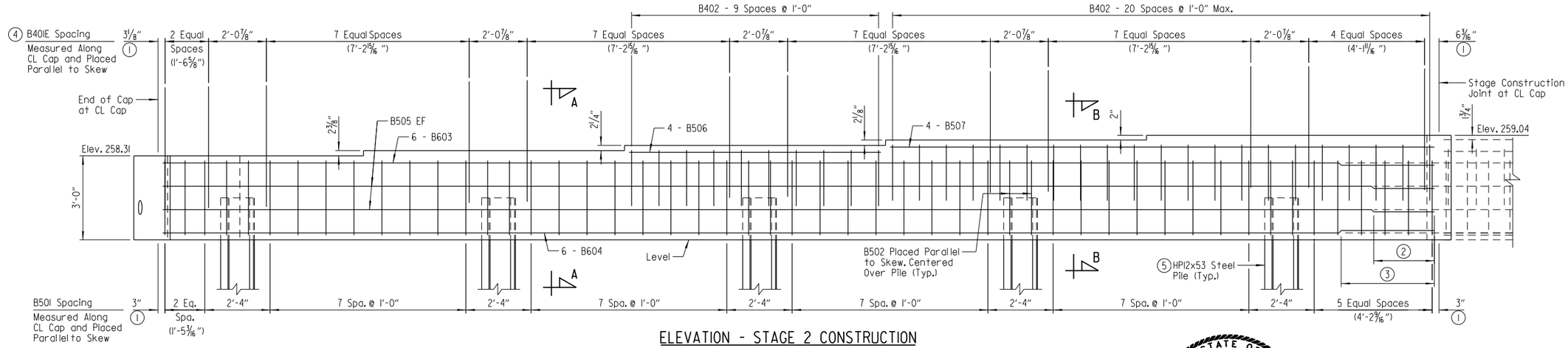
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	49	130
(1) 07483		END BENT		61647



PLAN - STAGE 2 CONSTRUCTION

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

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61648.



ELEVATION - STAGE 2 CONSTRUCTION

(Looking Ahead)
Scale: 1/2" = 1'-0"

LEGEND
EF = Each Face

(1) Measured From 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 of bottom of paving bracket in the end bent diaphragm.
(5) Piles shall be oriented as shown.
(6) Measured to CL Cap

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT NO. 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x1_a7.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61647

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WORKSPACE: ARDOT Bridge
L:\2017\170756O - Mill and Badcau Creek\Drawings\B030497x1_S207_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.		030497	50	130
				(1) 07483		END BENT		61648

BAR LIST - END BENT 4

STAGE 1 CONSTRUCTION

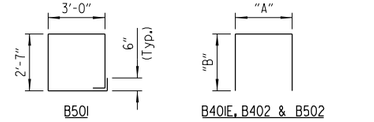
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	30	11'-6"	3'-0"	4'-4"	2"
B402	18	6'-10"	3'-0"	2'-0"	2"
B403	4	10'-7"			2"
B404E	3	5'-3"			Str.
B405E	10	6'-6"			Str.
B501	31	11'-8"			2½"
B502	8	7'-11½"	3'-0"	2'-7"	2½"
B503	4	36'-7"			Str.
B504	4	17'-2"			Str.
B601	6	38'-5"	37'-9"		4½"
B602	6	37'-9"			Str.

STAGE 2 CONSTRUCTION

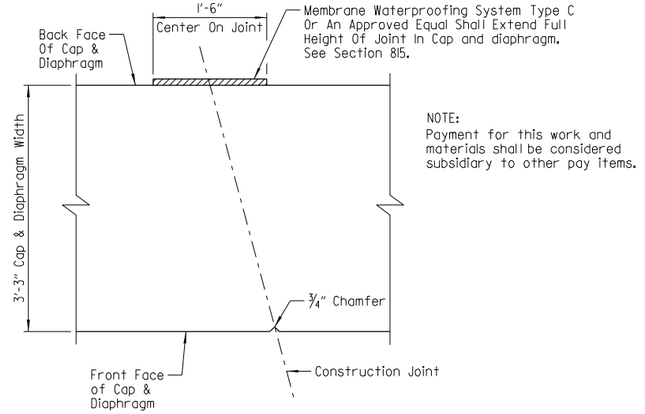
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	40	11'-6"	3'-0"	4'-4"	2"
B402	31	6'-10"	3'-0"	2'-0"	2"
B406	4	10'-3½"			2"
B407E	3	5'-2"			Str.
B408E	10	6'-5"			Str.
B501	41	11'-8"			2½"
B502	10	7'-11½"	3'-0"	2'-7"	2½"
B505	4	45'-5"			Str.
B506	4	19'-5"			Str.
B507	4	9'-0"			Str.
B603	6	46'-1"	45'-5"		4½"
B604	6	45'-5"			Str.

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

BAR BENDING DIAGRAMS



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



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

CONSTRUCTION JOINT DETAIL

No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

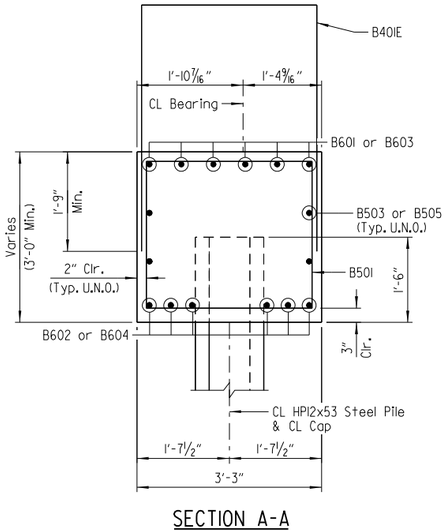
GENERAL NOTES

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.

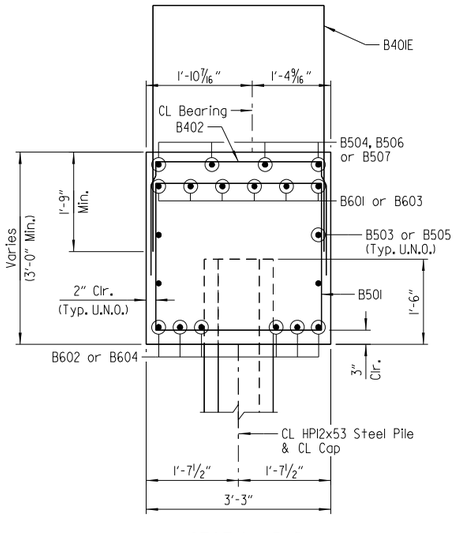
Granular backfill and pipe underdrain required behind cap. See Dwg. No. 61656 for details.

For additional information, see Layout.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

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No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENT NO. 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x1_a8.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07483 DRAWING NO. 61648

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WORKSPACE: ARDOT Bridge
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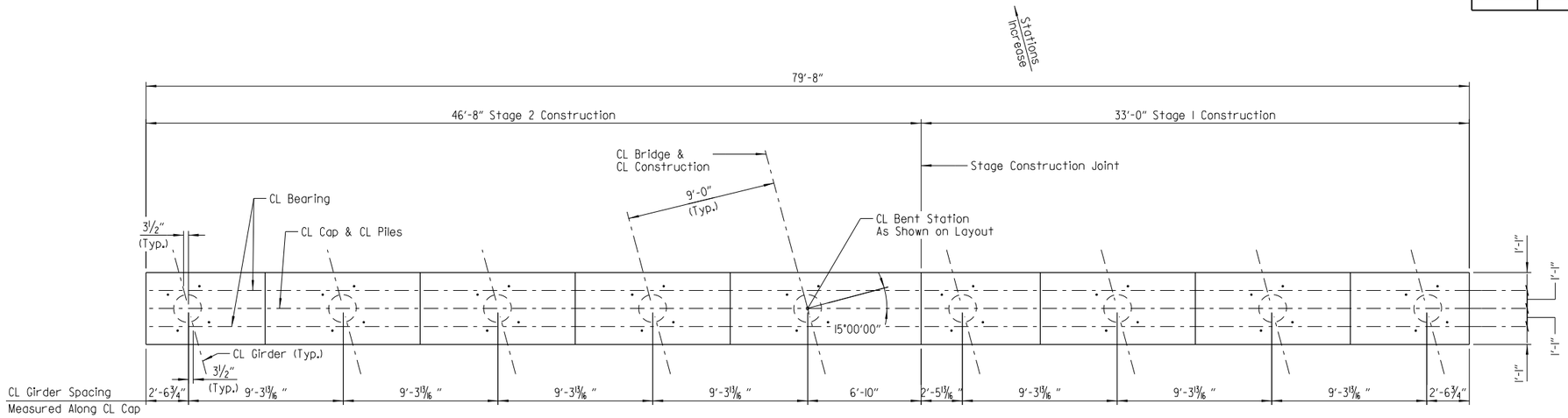
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

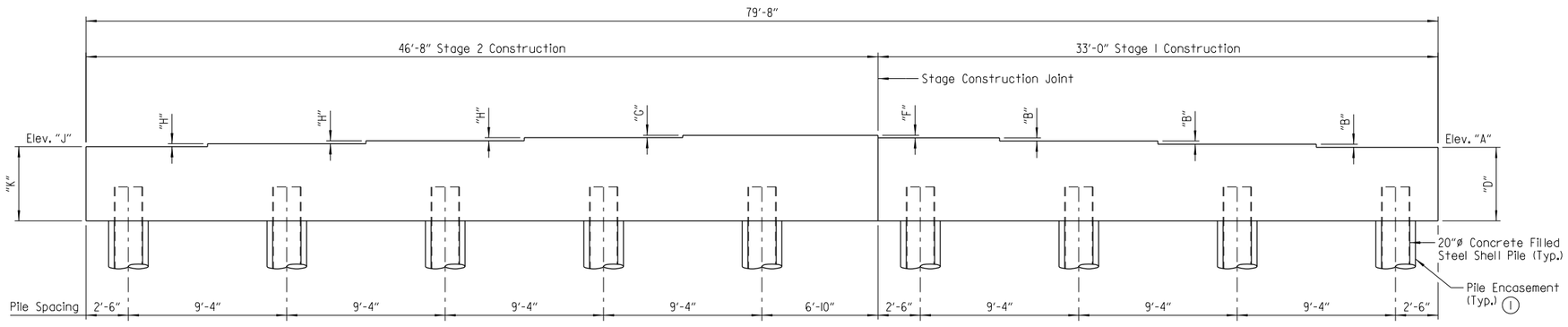
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	51	130
(1) 07483		INT. BENT		61649



PLAN - BENT NOS. 2 & 3

Scale: ¼" = 1'-0"

NOTES:
For "TABLE OF VARIABLES" and reinforcing details, see Dwg. Nos. 61650 & 61651.



(1) For details of pile encasement, see Std. Dwg. No. 55021

ELEVATION - BENT NOS. 2 & 3

(Looking Ahead)
Scale: ¼" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x1_bl.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61649

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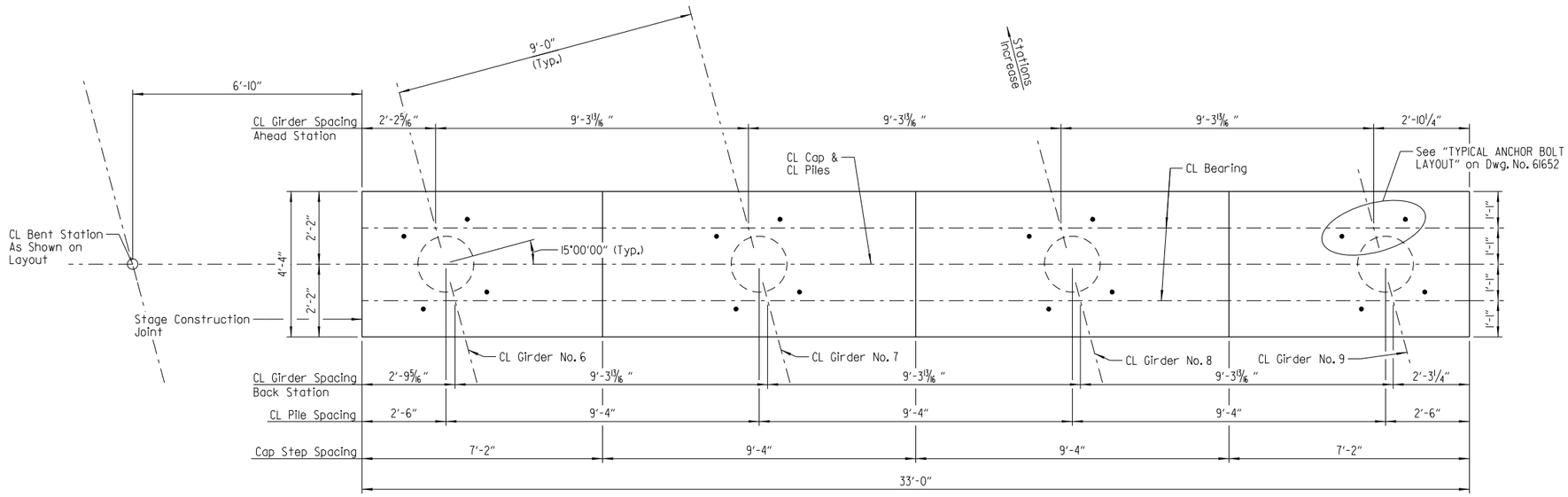
WORKSPACE: ARDOT Bridge
L:\2017\170175\60 - Mill and Badcau Creek\Drawings\B030497x1_S209_BE.dgn
REVISED DATE:

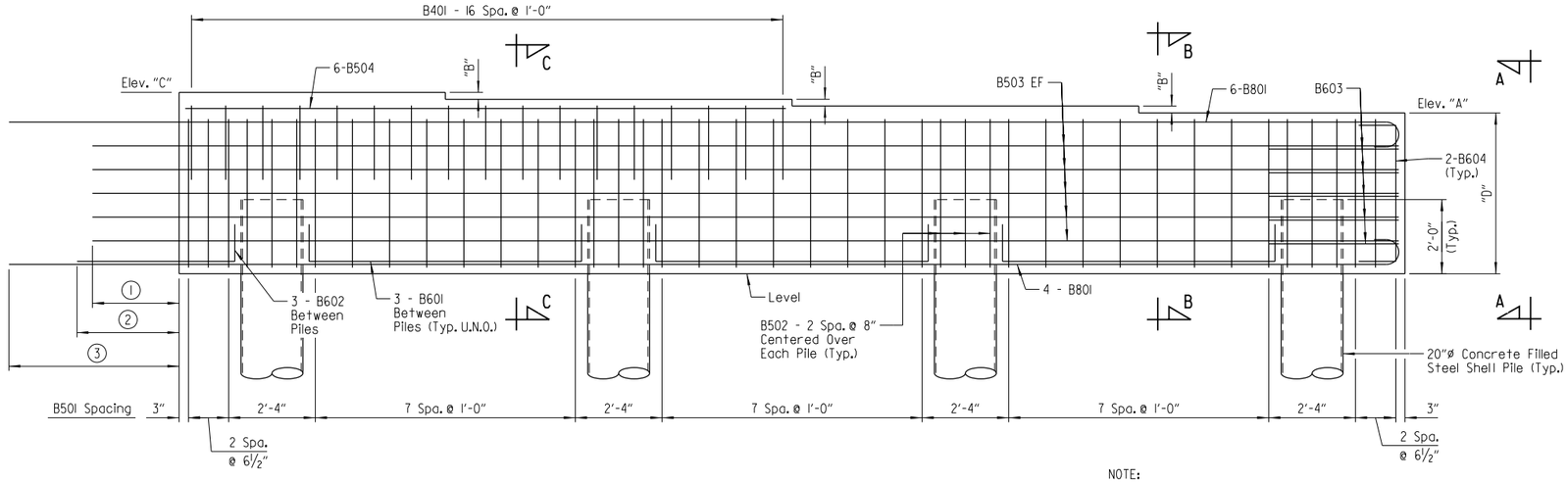
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	52	130
(1) 07483		INT. BENT		61650



PLAN - BENT NOS. 2 & 3 - STAGE I CONSTRUCTION

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



ELEVATION - BENT NOS. 2 & 3 - STAGE I CONSTRUCTION

(Looking Ahead)
Scale: 1/2" = 1'-0"

NOTE:
Pile encasement not shown for clarity.

TABLE OF VARIABLES				
BENT NO.	"A"	"B"	"C"	"D"
2	258.12	2 3/16"	258.67	4'-4"
3	258.17	2 1/8"	258.70	4'-4 1/4"

NOTES:
For "View A-A", "SECTION B-B", "SECTION C-C", bar lists and bar bending diagrams, see Dwg. No. 61652.

(1) 2'-4" Min. Projection (Typ. #5 Bars)
(2) 2'-9" Min. Projection (Typ. #6 Bars)
(3) 4'-7" Min. Projection (Typ. #8 Bars)

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497xl_b2.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61650

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WORKSPACE: ARDOT Bridge
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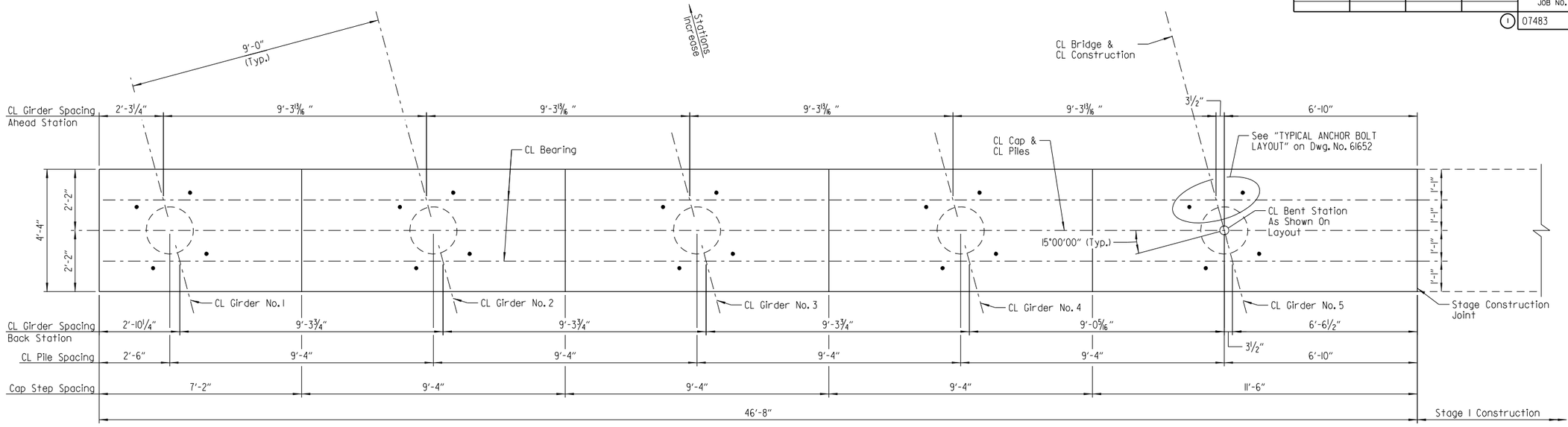
REVISED DATE:

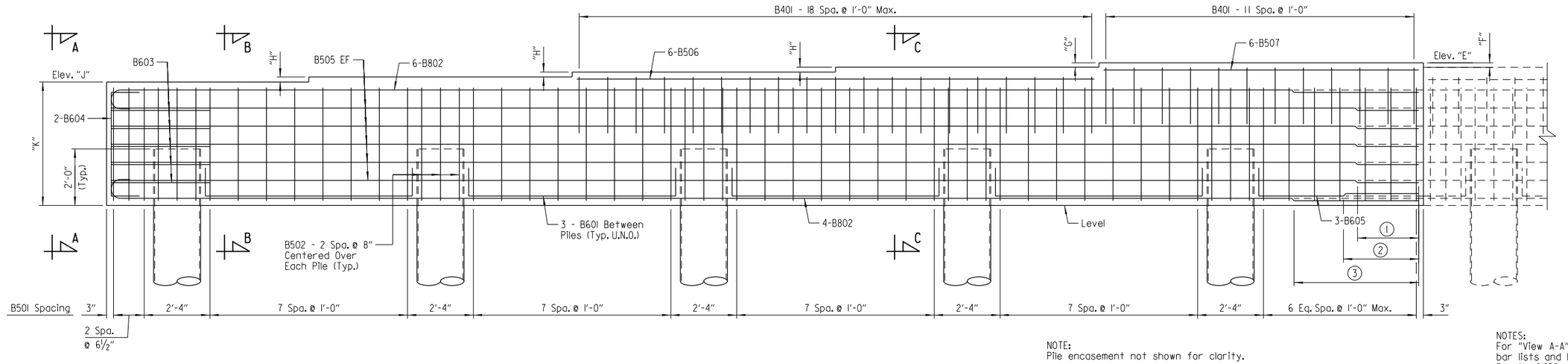
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	53	130
				(1) 07483		INT. BENT		61651



PLAN - BENT NOS. 2 & 3 - STAGE 2 CONSTRUCTION

Scale: ½" = 1'-0"

(1) 2'-2" Min. Lap (Typ. #5 Bars)
(2) 2'-7" Min. Lap (Typ. #6 Bars)
(3) 4'-5" Min. Lap (Typ. #8 Bars)



NOTE:
Pile encasement not shown for clarity.

NOTES:
For "View A-A", "SECTION B-B", "SECTION C-C", bar lists and bar bending diagrams, see Dwg. No. 61652.

ELEVATION - BENT NOS. 2 & 3 - STAGE 2 CONSTRUCTION

(Looking Ahead)
Scale: ½" = 1'-0"

TABLE OF VARIABLES						
BENT NO.	"E"	"F"	"G"	"H"	"J"	"K"
2	258.83	1⁵⁄₁₆"	1¾"	2⅛"	258.15	4'-4⅜"
3	258.85	1¹³⁄₁₆"	1⅞"	2³⁄₁₆"	258.15	4'-4"

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61651

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WORKSPACE: ARDOT Bridge
L:\2017\1701756\0 - Mill and Badcau Creek\Drawings\B030497xl_S2ll_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.		030497	54	130
(1) 07483		INT. BENT		61652

BAR LIST - BENTS 2 & 3 (PER BENT)

STAGE 1 CONSTRUCTION

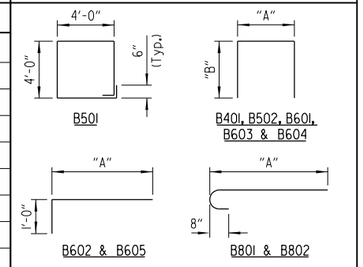
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	17	7'-10"	4'-0"	2'-0"	2"
B501	30	16'-6"			2½"
B502	12	11'-9½"	4'-0"	4'-0"	2½"
B503	10	35'-2"			Str.
B504	6	16'-2"			Str.
B601	9	9'-0½"	7'-4"	1'-0"	4½"
B602	3	5'-1½"	4'-3"		4½"
B603	5	10'-6½"	3'-10½"	3'-6"	4½"
B604	2	5'-6½"	3'-10½"	1'-0"	4½"
B801	10	38'-4"	37'-5"		6"

STAGE 2 CONSTRUCTION

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	31	7'-10"	4'-0"	2'-0"	2"
B501	42	16'-6"			2½"
B502	15	11'-9½"	4'-0"	4'-0"	2½"
B505	10	46'-4"			Str.
B506	6	18'-4"			Str.
B507	6	11'-2"			Str.
B601	12	9'-0½"	7'-4"	1'-0"	4½"
B603	5	10'-6½"	3'-10½"	3'-6"	4½"
B604	2	5'-6½"	3'-10½"	1'-0"	4½"
B605	3	6'-6½"	5'-8"		4½"
B802	10	47'-3"	46'-4"		6"

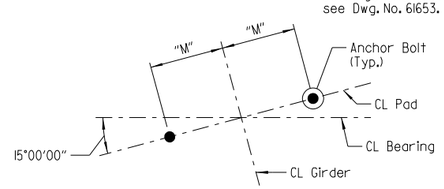
NOTE:
Number of bars is for a single bent.

BAR BENDING DIAGRAMS



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

NOTE:
For details of elastomeric bearings and anchor bolts, see Dwg. No. 61653.



TYPICAL ANCHOR BOLT LAYOUT
No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

GENERAL NOTES

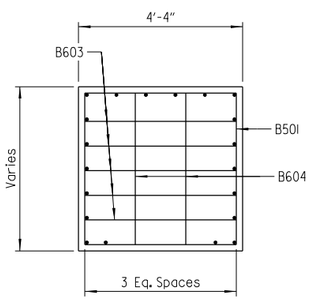
Concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

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.

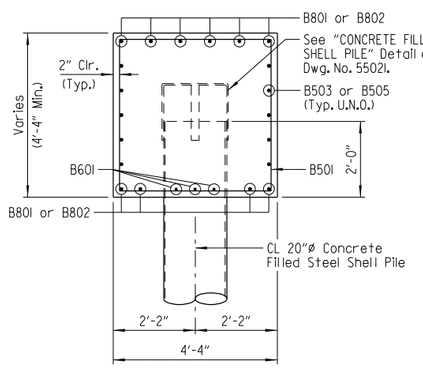
Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Piles at Bent Nos. 2 & 3 shall be 20"ø concrete filled steel shell piles.

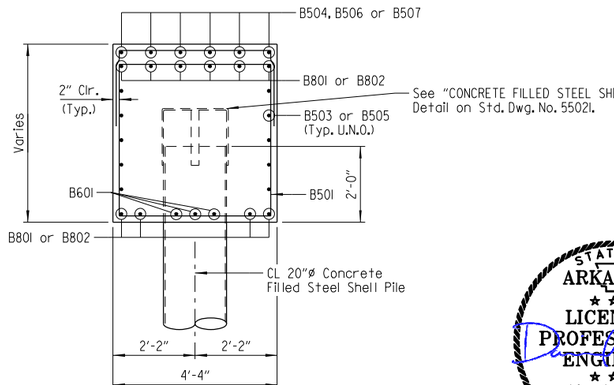
For additional information, see Layout.



VIEW A-A
Scale: ½" = 1'-0"



SECTION B-B
Scale: ½" = 1'-0"



SECTION C-C
Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF INTERMEDIATE BENTS

ROUTE SEC.

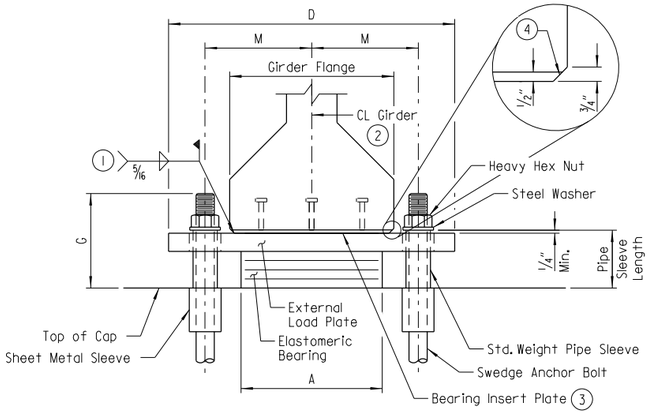
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x1_b4.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

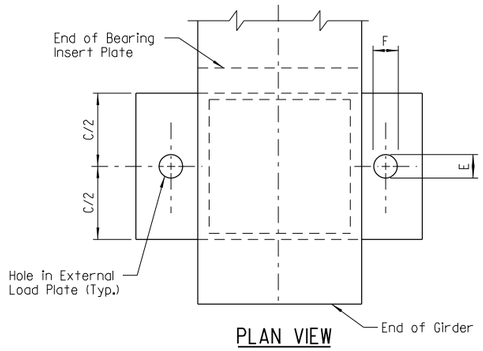
BRIDGE NO. 07483 DRAWING NO. 61652

drgoad 6/12/2020 12:42:26 PM
WORKSPACE: ARDOT Bridge
L:\20ITN170175\60 - Mill and Bodcau Creek\Drawings\B030497x1_S2I2_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.		030497	55	130
				(1) 07483		ELASTOMERIC BEARINGS		61653

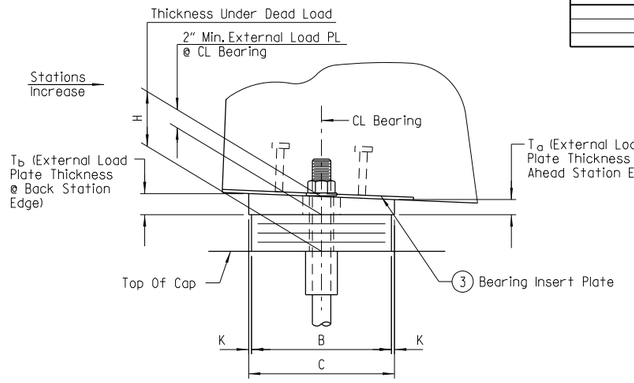


FRONT VIEW



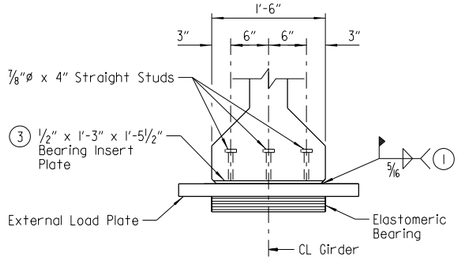
PLAN VIEW

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

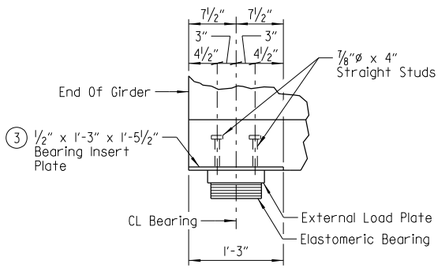


SIDE VIEW

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

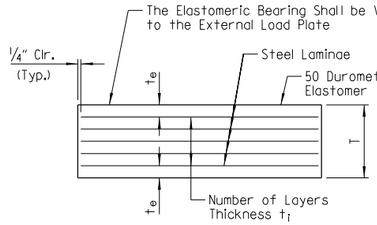


FRONT VIEW



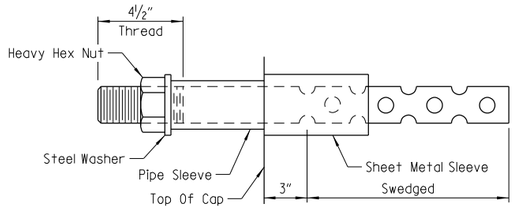
SIDE VIEW

BEARING INSERT PLATE & STUD DETAIL



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



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)".

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.

(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) Maximum Design Load (Kips)	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.	1-6	Fixed	6	113	7 1/8"	4 3/8"	18"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	28 1/2"	2 1/4"	2 1/4"	-	1/2"	11 1/2"	2.01	1.99	1 1/2" x 26"	55	1 1/2" x 4 5/8"	3" x 12"	3"
2 Bk.	7-9	Fixed	3	113	7 1/8"	4 3/8"	18"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	28 1/2"	2 1/4"	2 1/4"	-	1/2"	11 1/2"	2.02	1.98	1 1/2" x 26"	55	1 1/2" x 4 5/8"	3" x 12"	3"
2 Ah.	All	Fixed	9	123	7 1/8"	4 3/8"	18"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	28 1/2"	2 1/4"	2 1/4"	-	1/2"	11 1/2"	2.00	2.00	1 1/2" x 26"	55	1 1/2" x 4 5/8"	3" x 12"	3"
3 Bk.	All	Fixed	9	123	7 1/8"	4 3/8"	18"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	28 1/2"	2 1/4"	2 1/4"	-	1/2"	11 1/2"	2.00	2.00	1 1/2" x 26"	55	1 1/2" x 4 5/8"	3" x 12"	3"
3 Ah.	All	Fixed	9	113	7 1/8"	4 3/8"	18"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	28 1/2"	2 1/4"	2 1/4"	-	1/2"	11 1/2"	1.99	2.01	1 1/2" x 26"	55	1 1/2" x 4 5/8"	3" x 12"	3"

(5) Maximum Design Load = LRFD Service I Limit State

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

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

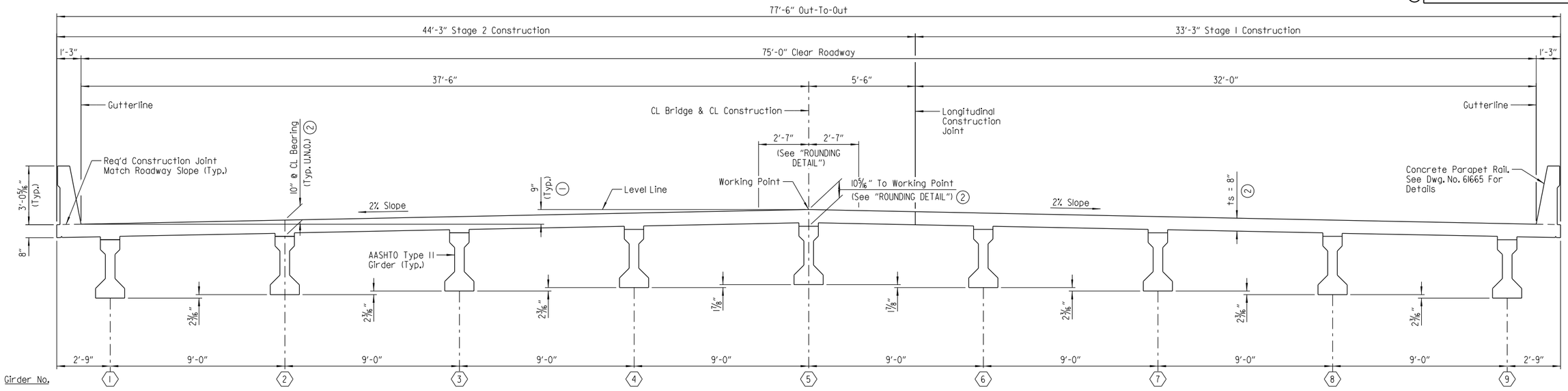
DRAWN BY: HEW DATE: FEB. 2020 FILENAME: b020589_el.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: FEB. 2020

BRIDGE NO. 07483 DRAWING NO. 61653

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.		030497	56	130
				(1) 07483		141'-4" UNIT		61654

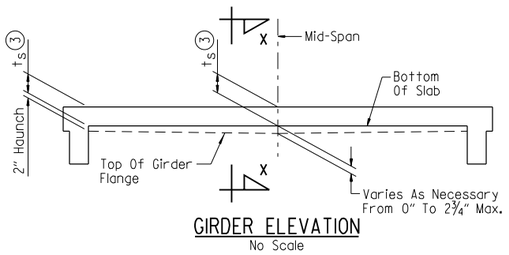
(1) Working Point to Gutterline

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"



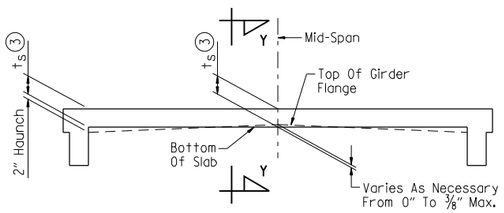
TYPICAL ROADWAY SECTION

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



GIRDER ELEVATION

No Scale



GIRDER ELEVATION

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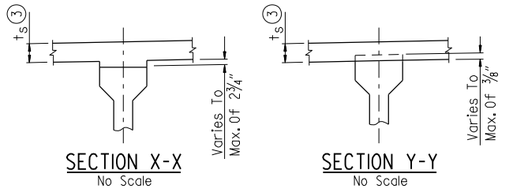


SECTION X-X

No Scale

SECTION Y-Y

No Scale

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

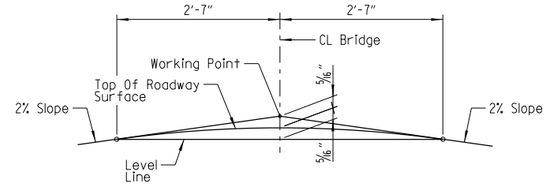
t_S = slab thickness as shown on superstructure details. See "TYPICAL ROADWAY SECTION - FINAL CONDITION".

(3) Tolerance when removable deck forming is used is +1/2", -1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. 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 3/8" 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.

LEGEND

U.N.O. = Unless Noted Otherwise



Note:
Working Point matches Theoretical Grade.

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 1 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497x1_S1.dgn
CHECKED BY: DRG DATE: FEB. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020

BRIDGE NO. 07483 DRAWING NO. 61654

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WORKSPACE: ARDOT Bridge
L:\20\T\1701560 - Mill and Bodcau Creek\Drawings\B030497x1_S30_SX (Typ Sect Final).dgn
REVISED DATE:

SLAB REINFORCING:

Transverse: Stage 1:
S501E @ 12" O.C. Top and Bottom — Alternate
S502E @ 12" O.C. Bent Up Over Girders — Alternate
S402E @ 6" O.C. in Top of Overhangs (Bundled with No. 5 bars)

Stage 2:
S503E @ 12" O.C. Top and Bottom — Alternate
S504E @ 12" O.C. Bent Up Over Girders — Alternate
S402E @ 6" O.C. in Top of Overhangs (Bundled with No. 5 bars)

Longitudinal: Stage 1 & Stage 2:
S401E in Top and Bottom as Shown
S601E As Shown Over Int. Bents, see "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 61658
S602E As Shown Over End Bents, see "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 61658

(1) TOLERANCE:
Minus = 1/4"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 61654.

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 61654.

(3) Bar Projection:
3'-5" for #5 bars
2'-9" for #4 bars

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

(5) For "ROUNDING DETAIL", see Dwg. No. 61654.

(6) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. 3/4"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

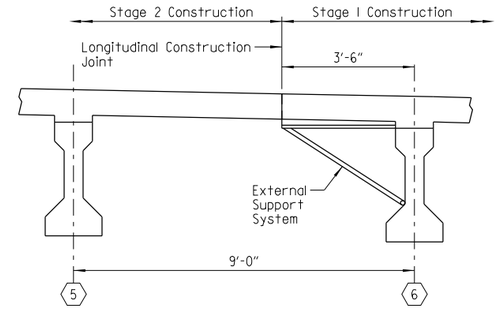
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	57	130
				(1) 07483		141'-4" UNIT		61655

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

At the Contractor's option, two straight epoxy coated No. 5 bars may be substituted for bars S502E & S504E. Payment for reinforcing will be based on the weight of bars S502E & S504E.

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 will not be allowed.

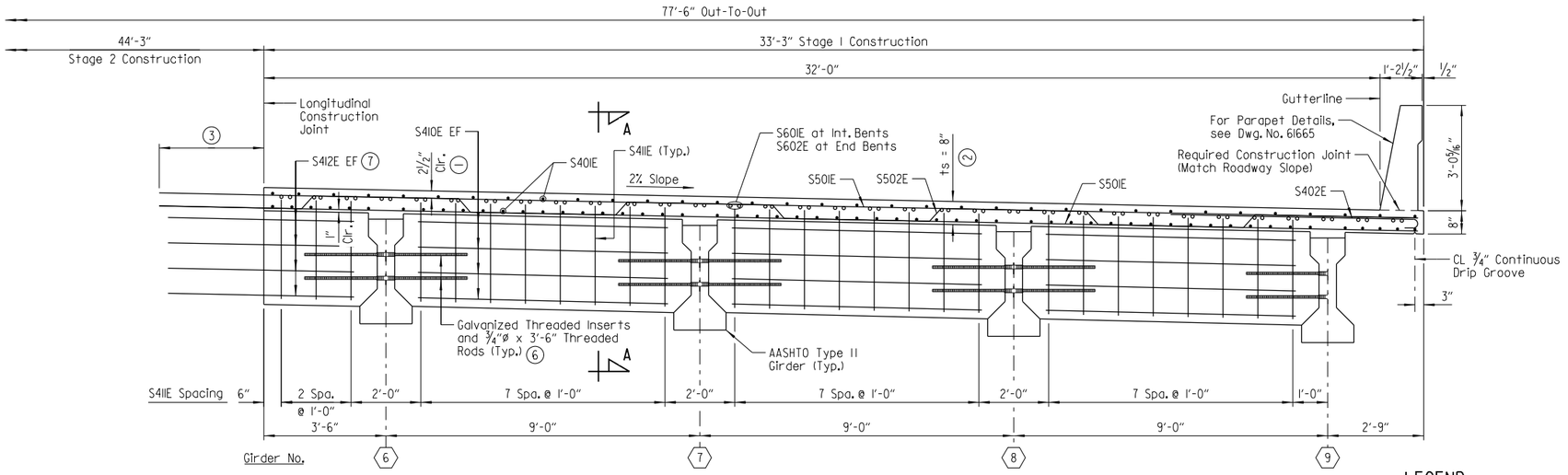
For "SECTION A-A" & "SECTION B-B", see Dwg. No. 61657.



NOTE:
Stage 1 external supports at Girder 6 shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding the removal of the support system.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

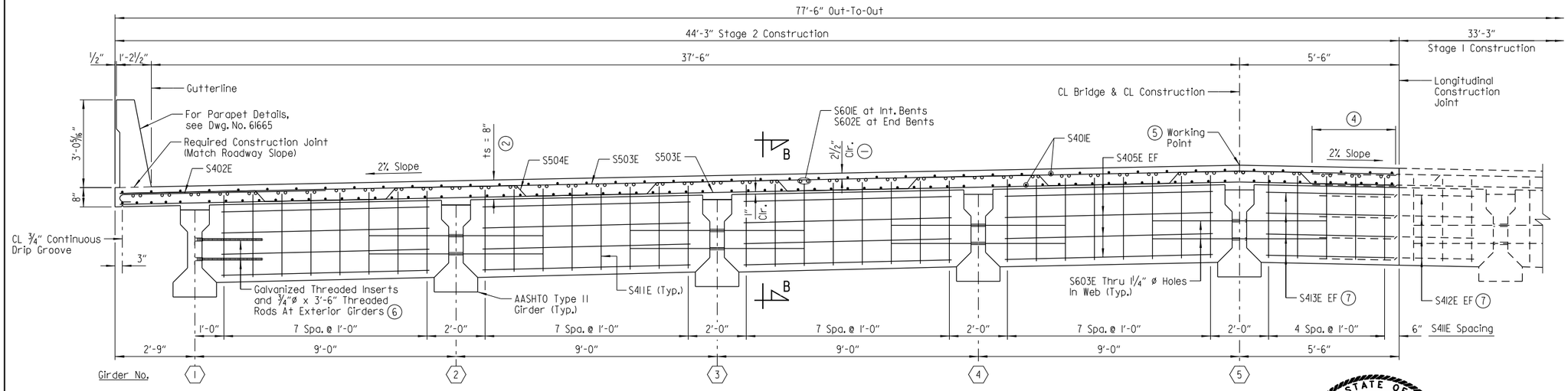
(Looking Ahead)
No Scale



TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION

(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: 1/2" = 1'-0"

LEGEND
EF = Each Face



TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
(Showing Partial Depth End Diaphragms)
Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497xl_S2.dgn
CHECKED BY: DRG DATE: FEB. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020
BRIDGE NO. 07483 DRAWING NO. 61655

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WORKSPACE: ARDOT Bridge
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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.		030497	58	130
				(1) 07483		141'-4" UNIT		61656

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. 3/4" 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)".

(2) See End Bent Details on Dwg. Nos. 61641-61648 for additional details.

(3) 2'-9" min. projection (Typ. #4 bars)

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

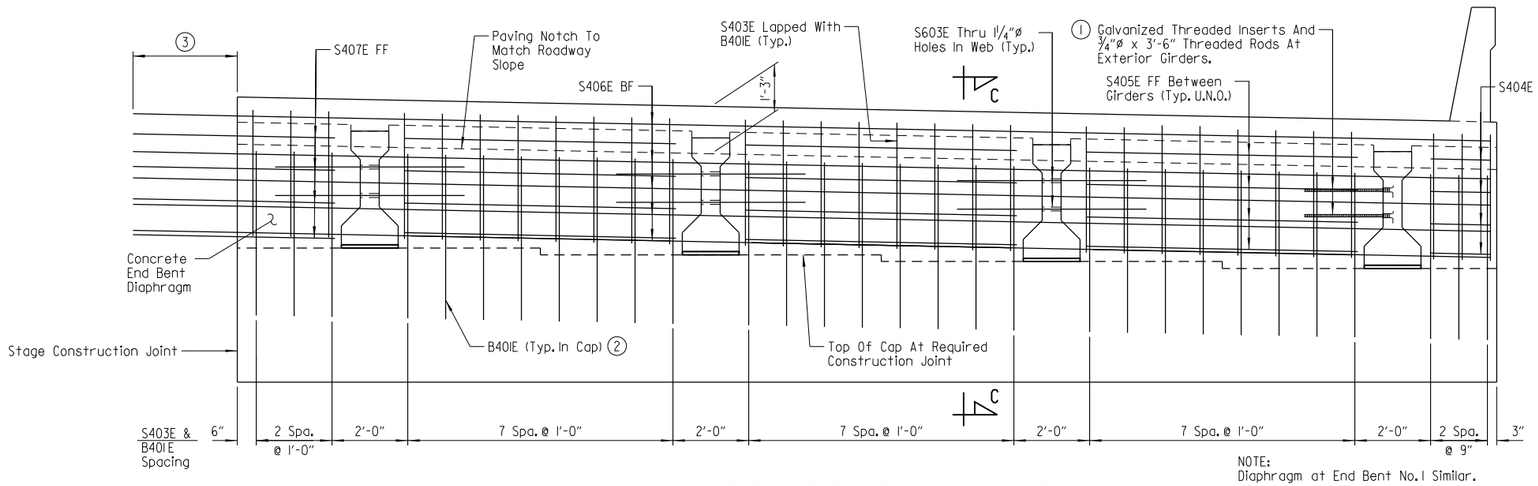
(5) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE".

(6) S603E thru 1 1/4" ø holes in web or 3/4" ø threaded inserts at exterior girders.

(7) #5 bars. See "REINFORCING PLAN & SLAB POURING SEQUENCE on Dwg. No. 61658 for bar designations. (Typ. U.N.O.)

(8) Measured along CL Girder

(9) Material shall conform to AASHTO M153, Type I per Subsection 501.02(h)(1)

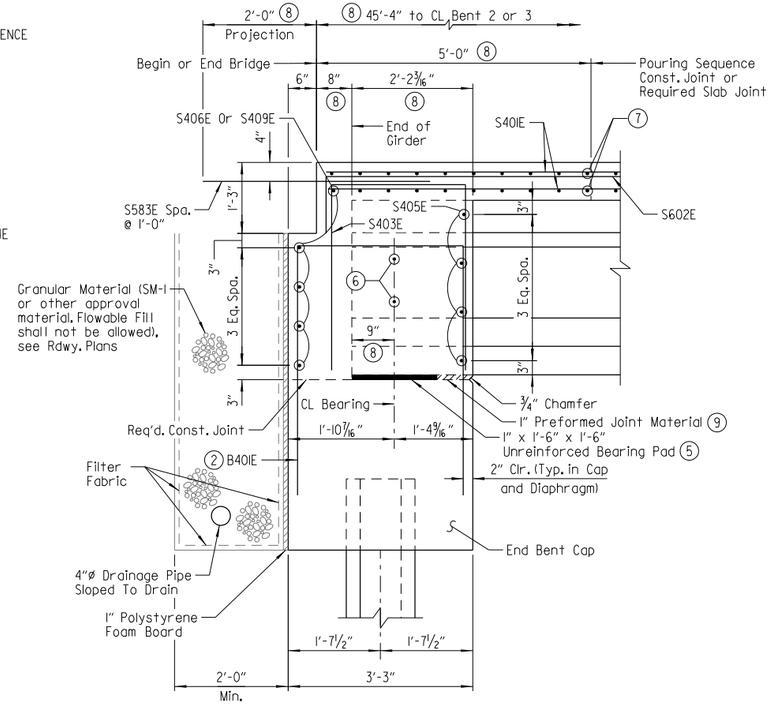


NOTE:
Deck reinforcing omitted for clarity.

NOTE:
Diaphragm at End Bent No. 1 Similar.

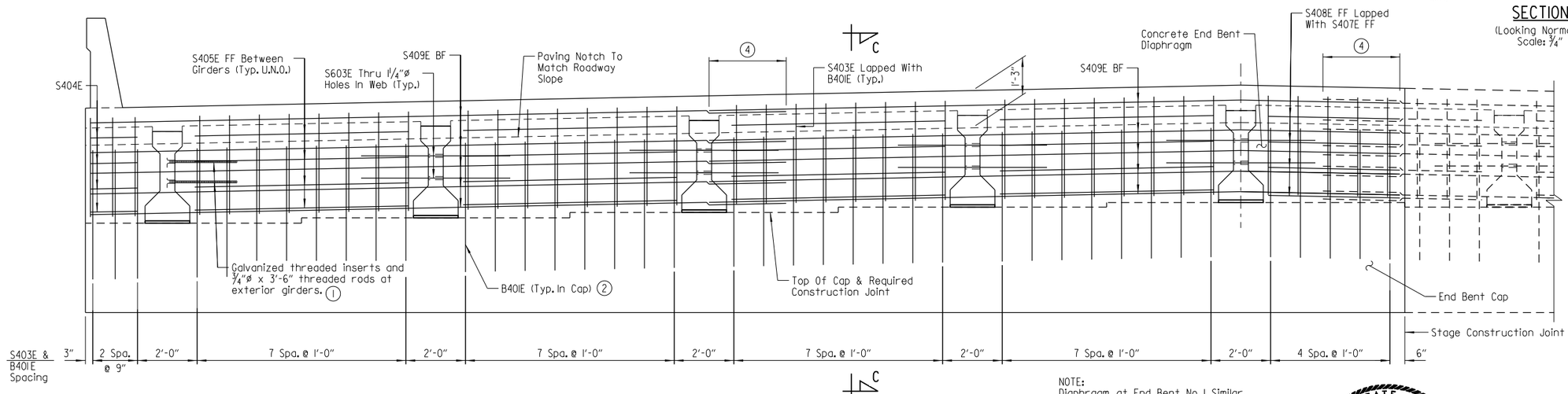
TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 1 CONSTRUCTION

(Looking Ahead At Bent 4)
Scale: 1/2" = 1'-0"



SECTION C-C

(Looking Normal To Bent)
Scale: 3/4" = 1'-0"



NOTE:
Diaphragm at End Bent No. 1 Similar.

TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 2 CONSTRUCTION

(Looking Ahead At Bent 4)
Scale: 1/2" = 1'-0"

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497x1_s3.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020
BRIDGE NO. 07483 DRAWING NO. 61656

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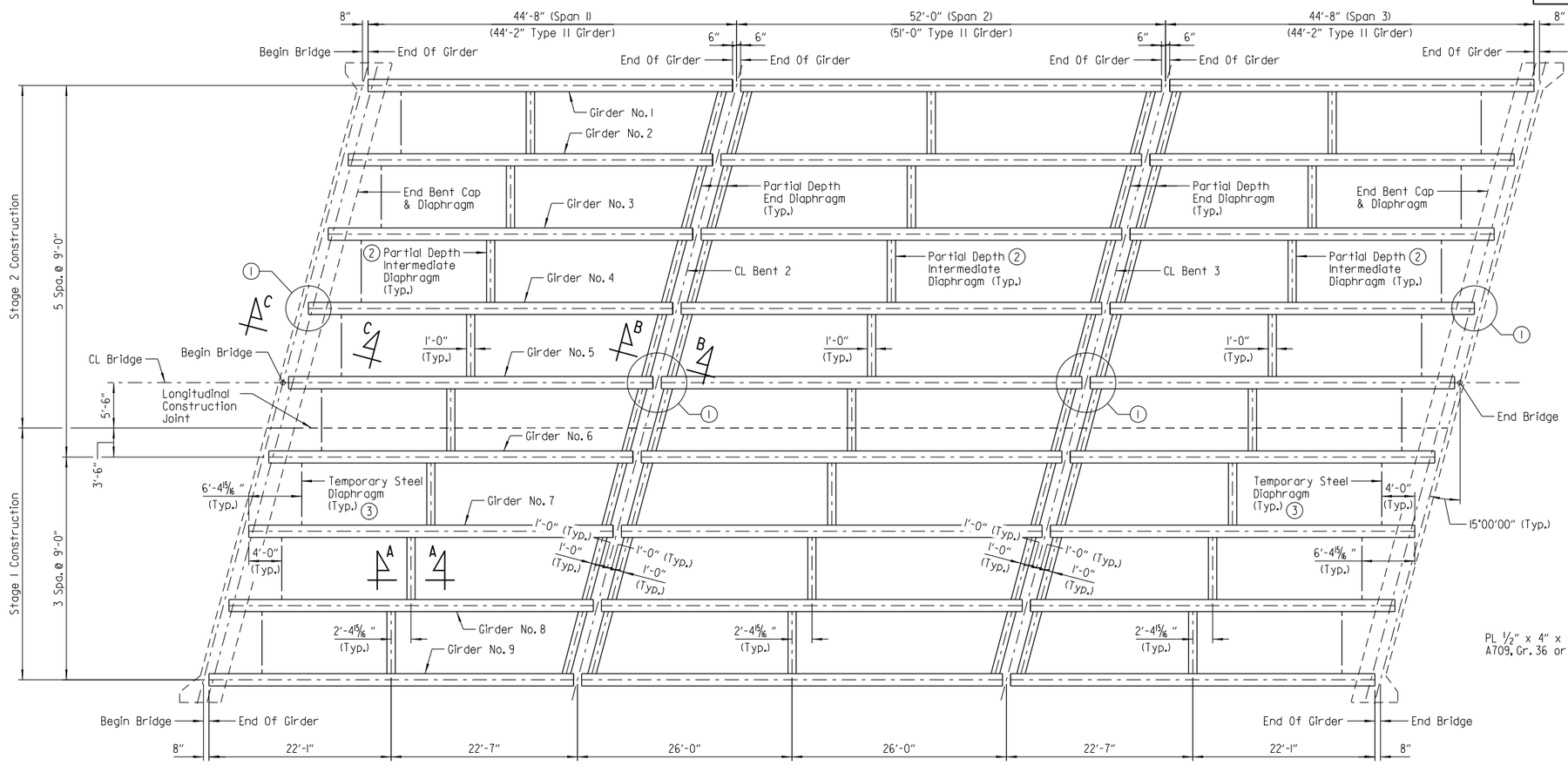
WORKSPACE: ARDOT Bridge
L:\2017\170\7560 - Millard Bodcau Creek\Drawings\b030497x1_S303 (End Diaphragm).dgn
REVISED DATE:

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.		030497	59	130
① 07483		141'-4" UNIT		61657



FRAMING PLAN

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

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 interior 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.

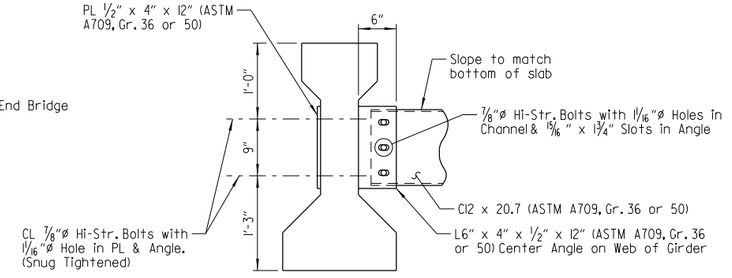
② For details of alternate steel diaphragm, see "DETAILS OF STEEL DIAPHRAGM".

③ After the concrete deck construction and curing is 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 3/4"ø x 3'-6" threaded rods. For details, see "TYPICAL ROADWAY SECTION - STAGE I CONSTRUCTION" on Dwg. No. 61655

NOTE:
A standard washer shall be supplied under both the nut and the head of the 7/8"ø Hi-Str. Bolts. An additional plate washer shall cover the angle slots.



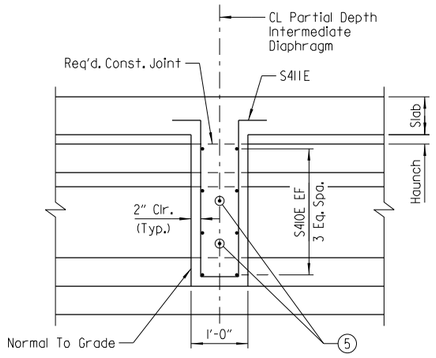
DETAILS OF STEEL DIAPHRAGM

Scale: 1" = 1'-0"

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)".

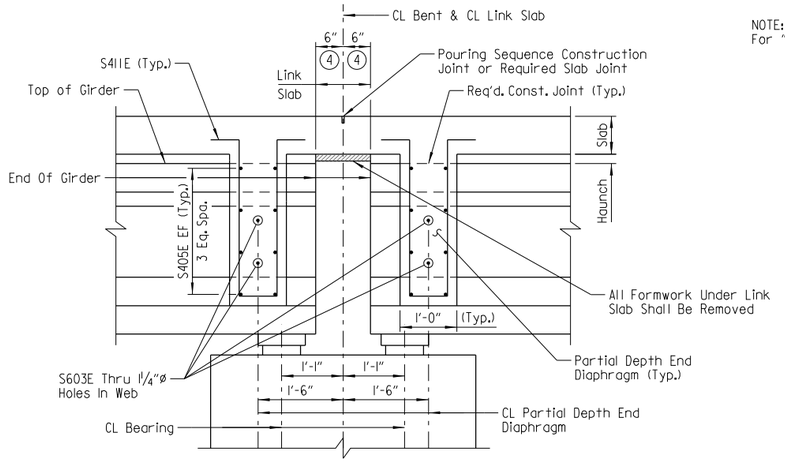
Permanent Steel Diaphragms may be used in lieu of concrete diaphragms at locations noted as "Partial Depth Intermediate Diaphragm". Payment will be based on concrete diaphragms.

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



SECTION A-A

Scale: 3/4" = 1'-0"



SECTION B-B

(Looking Normal To CL Bent)
Scale: 3/4" = 1'-0"

NOTE:
For "SECTION C-C", see Dwg. No. 61656.

LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 4 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

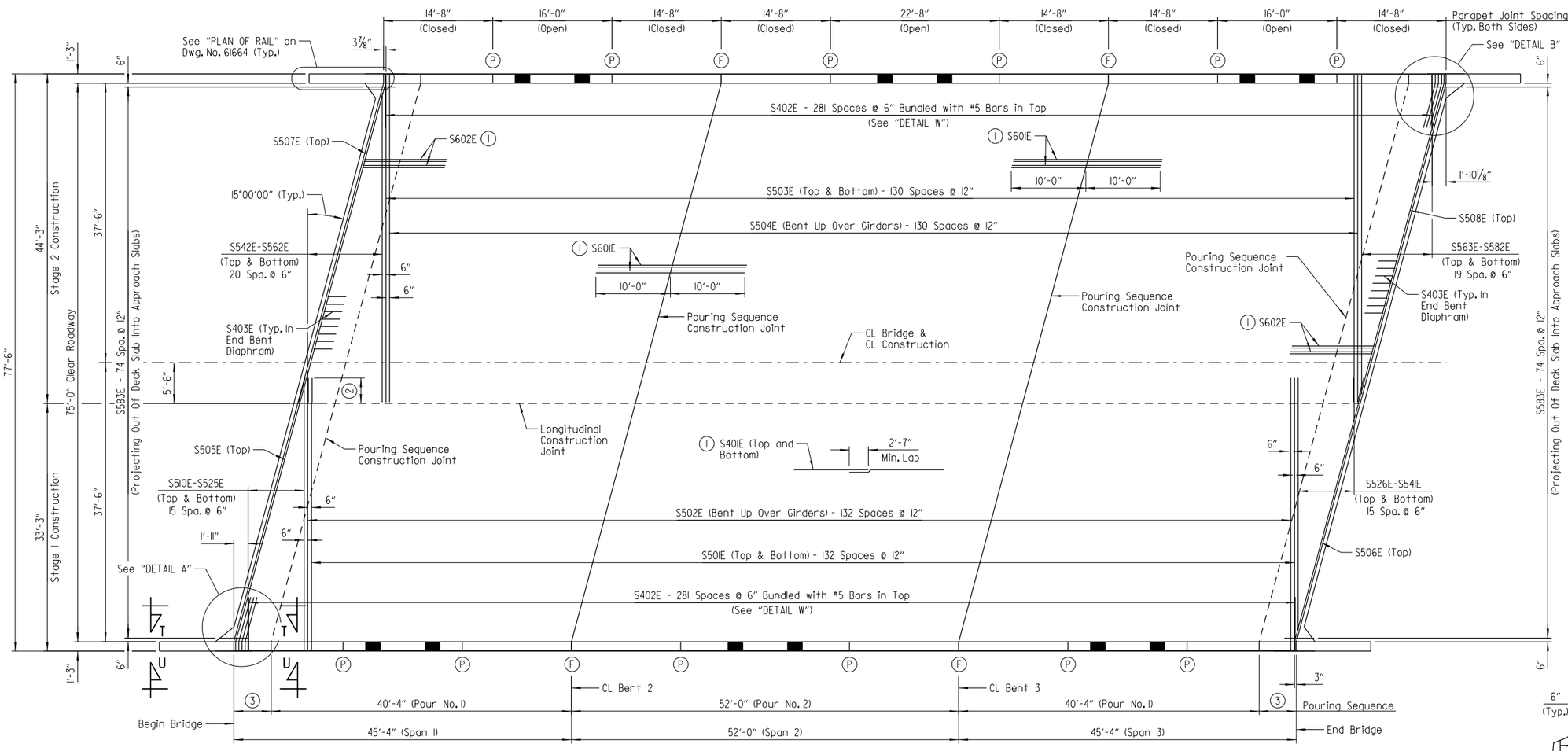
DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497xl_s5.dgn
CHECKED BY: DRG DATE: FEB. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020

BRIDGE NO. 07483 DRAWING NO. 61657

drgoad
WORKSPACE: ARDOT Bridge
L:\2017\17017560 - Mill and Badcau Creek\Drawings\B030497xl_S304_SF (Framing Plan).dgn
6/12/2020 12:42:29 PM
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.		030497	60	130
① 07483		141'-4" UNIT		61658



(1) Placed as shown in "TYPICAL ROADWAY SECTION - STAGE I CONSTRUCTION" and "TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION", on Dwg. No. 61655.

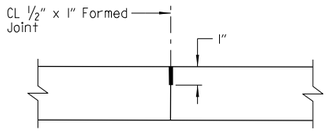
(2) 3'-5" bar projection

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

(4) Bundled with #5 bars in top

(5) 3 Spa. @ 5"

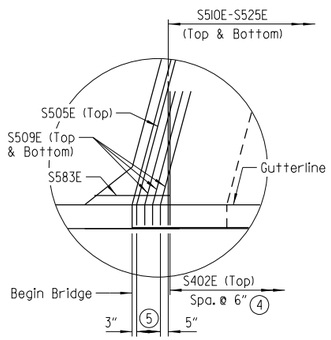
(6) 2 Spa. @ 5"



LONGITUDINAL CONSTRUCTION JOINT DETAIL

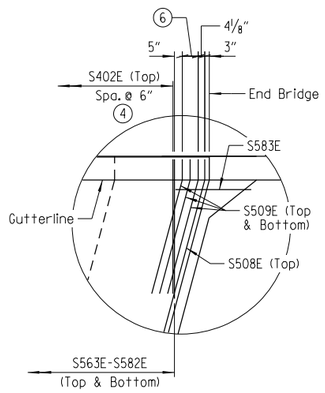
No Scale

NOTE:
Use 1/2" 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.



DETAIL A

Scale: 1/4" = 1'-0"

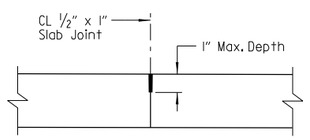


DETAIL B

Scale: 1/4" = 1'-0"

REINFORCING PLAN & SLAB POURING SEQUENCE

Scale: 1/8" = 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.

NOTES:
Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 61665.

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 "GENERAL NOTES - SUPERSTRUCTURE", see Dwg. No. 61699.

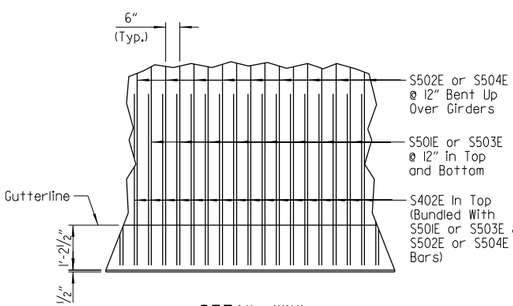
For bar lists and bar bending diagrams, see Dwg. No. 61663.

For "ALTERNATE SLAB POURING SEQUENCE" and "SLAB POURING SEQUENCE NOTES", see Dwg. No. 61662.

For "SECTION T-T" and "SECTION U-U", see Dwg. No. 61664

(P) Partial-Depth Parapet Joint at this location

(F) Full-Depth Parapet Joint at this location



DETAIL "W"

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 5 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

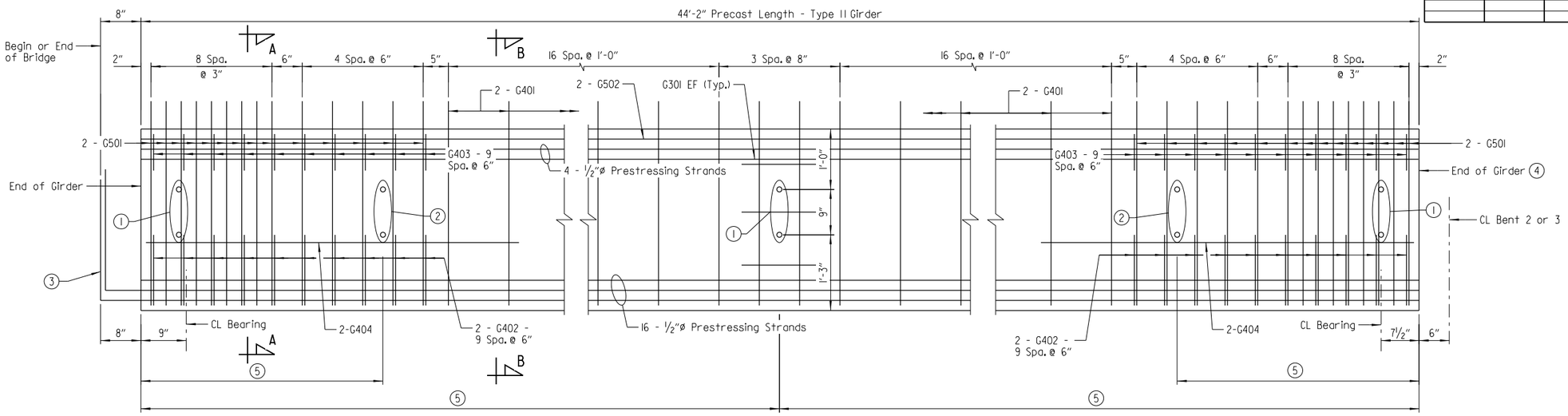
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497xl_s5.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020

BRIDGE NO. 07483 DRAWING NO. 61658

drgoad 6/12/2020 12:42:29 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\b030497xl_S505_SB (Slab Plan).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.		030497	61	130
				(1) 07483		141'-4" UNIT		61659



TYPICAL GIRDER ELEVATION (TYPE II) - 44'-2"

Span 1 Shown, Span 3 Similar
Scale: 1" = 1'-0"

(1) Connection for End Bent or Partial Depth Diaphragm: 3/4"ø threaded inserts at interior face of exterior girders or 1 1/4"ø holes at interior girders. See Dwg. No. 61661 for spacing and Dwg. Nos. 61655 & 61656 for additional details.

(2) Connection for Temporary Steel Diaphragm: 1 1/4"ø holes in web. See Dwg. No. 61657 for additional details.

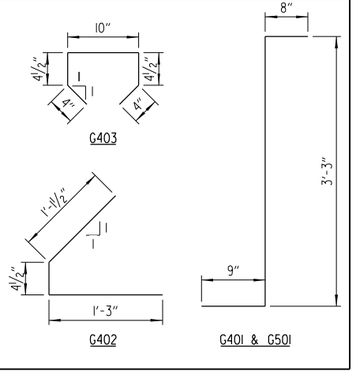
(3) Prestressing Strands bent up into end bent diaphragm. See "END OF GIRDER VIEW AT END BENT".

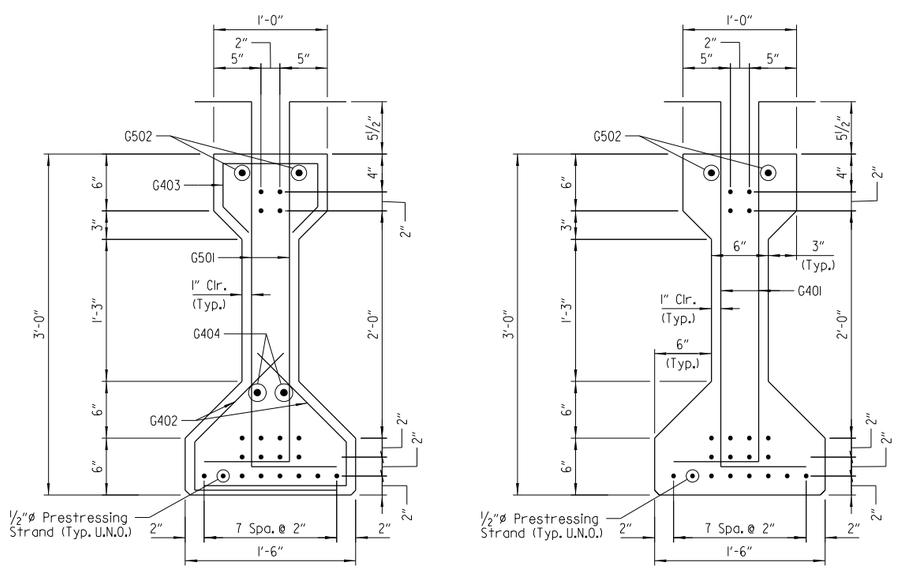
(4) End of Girder at Intermediate Bent to receive an epoxy coating. See "END OF GIRDER VIEW AT INTERMEDIATE BENT".

(5) See Dwg. No. 61661 for spacing of connections for temporary steel diaphragm and partial depth diaphragms.

BAR LIST - PER GIRDER			
MARK	NO. REQ'D	LENGTH	P.D.
G301	6	3'-9"	Str.
G401	72	4'-6"	3"
G402	40	2'-8"	2"
G403	20	2'-1"	2"
G404	4	6'-2"	Str.
G501	56	4'-5"	3 3/4"
G502	2	43'-10"	Str.

BENDING DIAGRAMS





SECTION A-A

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

SECTION B-B

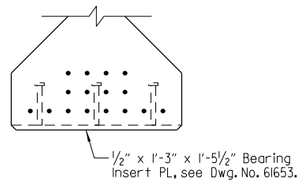
Scale: 1 1/2" = 1'-0"

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)".

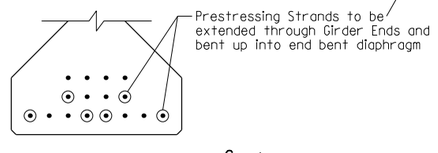
Prestressing strands shall be bonded along the entire length of the girder.

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

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

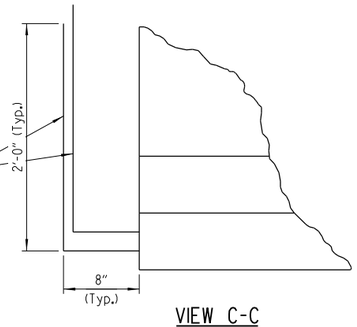


END OF GIRDER VIEW AT END BENT

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

At end bents only, 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

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

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 III)".

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

At the Contractor's option, 3/8" diameter strands pulled to 2,000 lbs. may be substituted for bars G502.

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

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 6 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

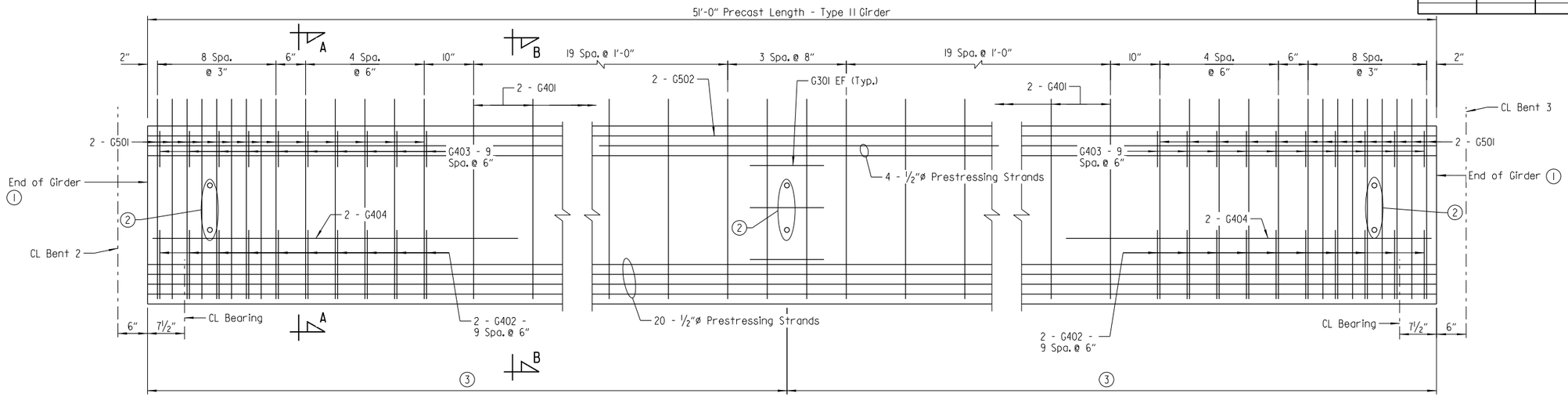
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: JAN. 2020 FILENAME: b030497x1_s6.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: JAN. 2020
BRIDGE NO. 07483 DRAWING NO. 61659

drgoad 6/12/2020 12:42:30 PM
WORKSPACE: ARDOT Bridge
L:\2017\170\7560 - Milland Bodcau Creek\Drawings\B030497x1_S306_BB (Beam-End).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.		030497	62	130
				(1) 07483		141'-4" UNIT		61660



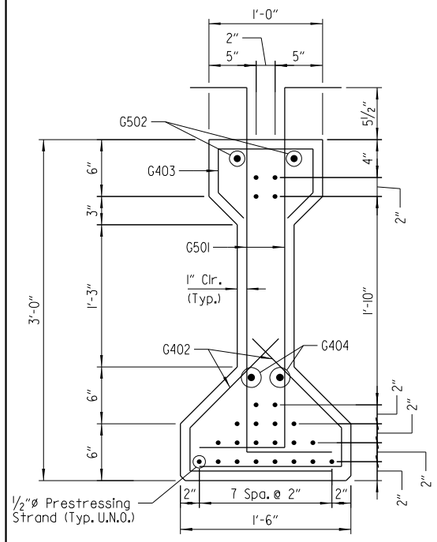
TYPICAL GIRDER ELEVATION (TYPE II) - 5'-0"

Span 2 Shown
Scale: 1" = 1'-0"

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

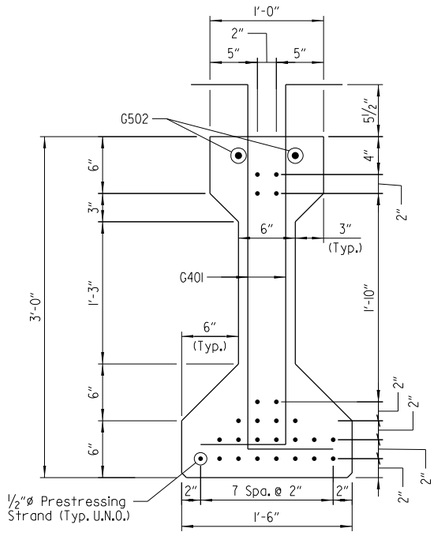
(2) Connection for Partial Depth Diaphragm: 3/4"ø threaded inserts at interior face of exterior girders or 1 1/4"ø holes at interior girders. See Dwg. No. 61661 for spacing and Dwg. No. 61655 for additional details.

(3) See Dwg. No. 61661 for spacing of connections for partial depth diaphragms.



SECTION A-A

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



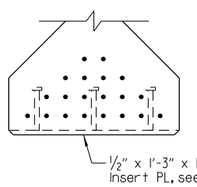
SECTION B-B

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

Notes:
Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but willbe considered subsidiary to the item "Prestressed Concrete Girders (Type II)".

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



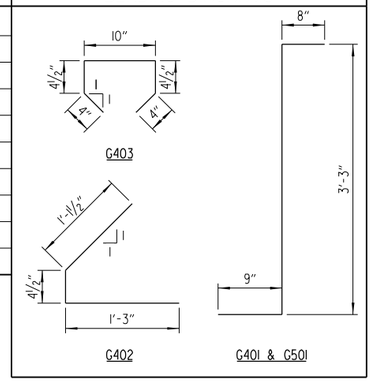
END OF GIRDER VIEW AT INTERMEDIATE BENT

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

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.

BAR LIST - PER GIRDER			
MARK	NO. REQ'D	LENGTH	P.D.
G301	6	3'-9"	Str.
G401	84	4'-6"	3"
G402	40	2'-8"	2"
G403	20	2'-1"	2"
G404	4	6'-2"	Str.
G501	56	4'-5"	3 3/4"
G502	2	50'-8"	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 III)".

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

At the Contractor's option, 3/8" diameter strands pulled to 2,000 lbs. may be substituted for bars G502.

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

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 7 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: JAN. 2020 FILENAME: b030497xl_s7.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: JAN. 2020
BRIDGE NO. 07483 DRAWING NO. 61660

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WORKSPACE: ARDOT Bridge
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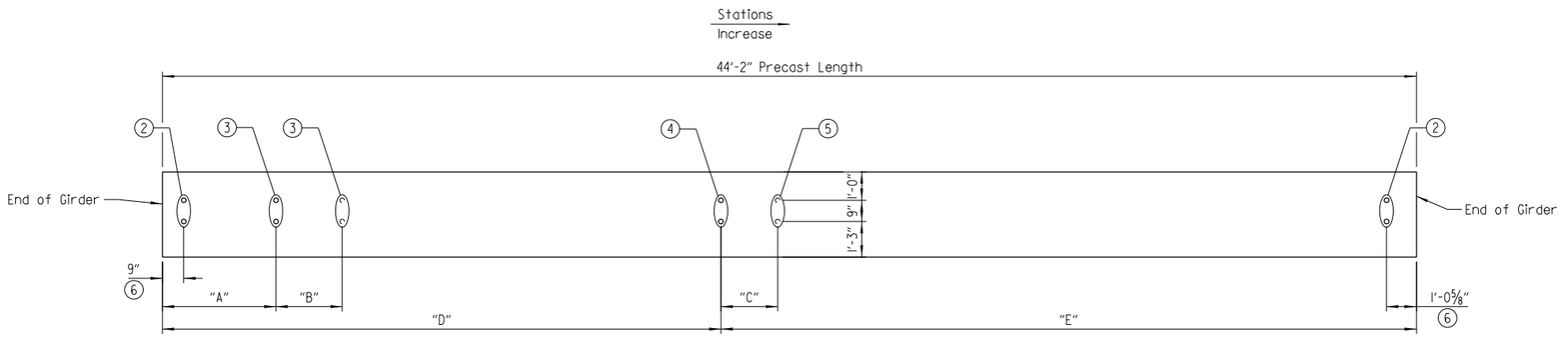
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

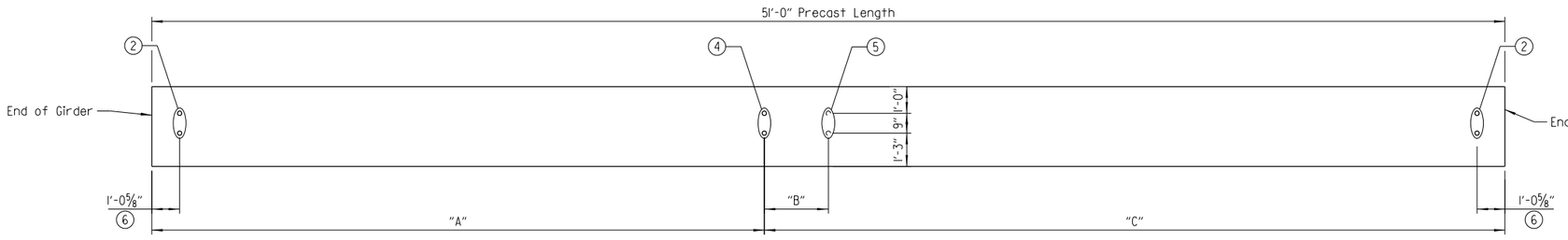
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	63	130
(1) 07483		141'-4" UNIT		61661



SPAN NO. 1
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 1					
GIRDER NO.	"A"	"B"	"C"	"D"	"E"
1	4'-0"	(1)	(1)	19'-8 1/16"	24'-5 5/16"
2-8	4'-0"	2'-4 15/16"	2'-4 15/16"	19'-8 1/16"	24'-5 5/16"
9	6'-4 15/16"	(1)	(1)	22'-1"	22'-1"

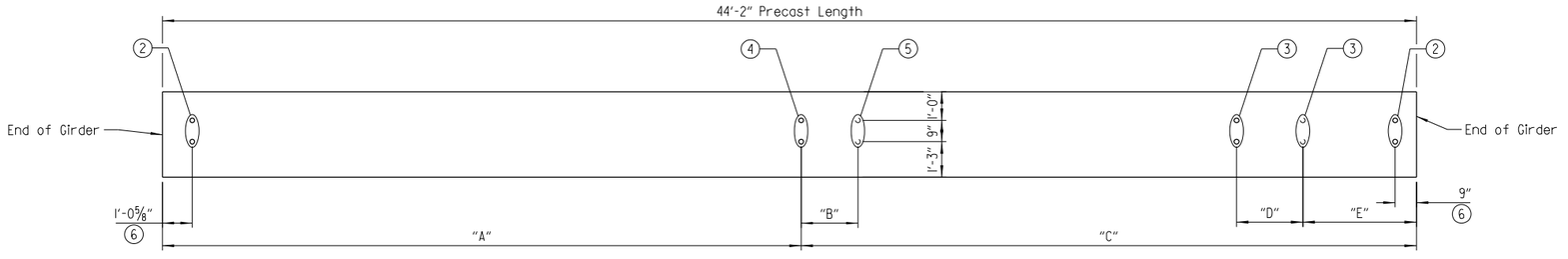
NOTE:
All measurements are along CL Girder



SPAN NO. 2
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 2			
GIRDER NO.	"A"	"B"	"C"
1	23'-11/16"	(1)	27'-10 5/16"
2-8	23'-11/16"	2'-4 15/16"	27'-10 5/16"
9	25'-6"	(1)	25'-6"

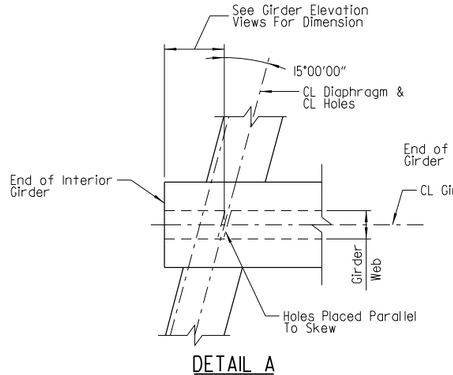
NOTE:
All measurements are along CL Girder



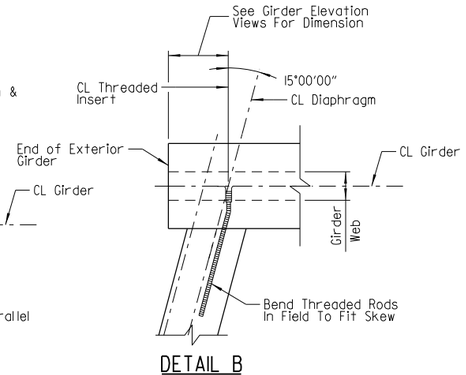
SPAN NO. 3
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 3					
GIRDER NO.	"A"	"B"	"C"	"D"	"E"
1	19'-8 1/16"	(1)	24'-5 15/16"	(1)	6'-4 15/16"
2-8	19'-8 1/16"	2'-4 15/16"	24'-5 15/16"	2'-4 15/16"	4'-0"
9	22'-1"	(1)	22'-1"	(1)	4'-0"

NOTE:
All measurements are along CL Girder



DETAIL A
(Plan View of Interior Girder End)
Scale: 3/4" = 1'-0"



DETAIL B
(Plan View of Exterior Girder End)
Scale: 3/4" = 1'-0"

(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: 1 1/4"ø hole through web
Exterior Girders: 3/4" Galvanized Threaded Inserts

(3) Connection for Temporary Steel Diaphragm: 1 1/4"ø holes in web

(4) 3/4" Galvanized Threaded Inserts placed in near side of web - Girder Nos. 1-8
3/4" Galvanized Threaded Inserts placed in far side of web - Girder No. 9

(5) 3/4" Galvanized Threaded Inserts placed in far side of web

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

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JOHN H. RUDDELL

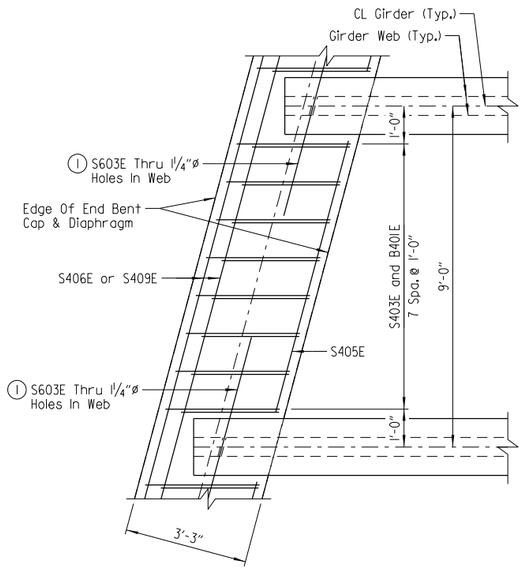
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 8 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

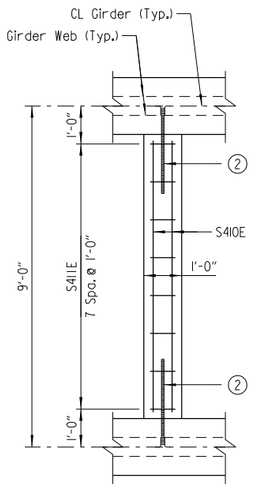
DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x1_s8.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61661

drgoad 6/12/2020 12:42:31 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497x1_S308.BB (Beam insert s).dgn
REVISED DATE:

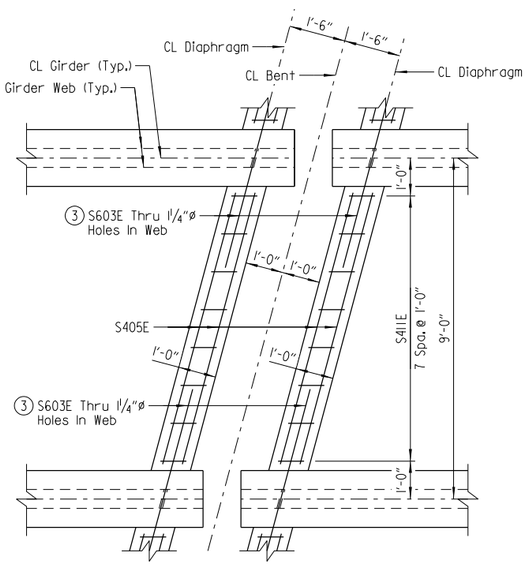
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	64	130
				(1) 07483		141'-4" UNIT		61662



PLAN - END BENT DIAPHRAGM
Scale: 1/2" = 1'-0"



PLAN - PARTIAL DEPTH INTERMEDIATE DIAPHRAGM
Scale: 1/2" = 1'-0"



PLAN - PARTIAL DEPTH END DIAPHRAGM
Scale: 1/2" = 1'-0"

(1) Galvanized threaded inserts and 3/4"ø x 3'-6" threaded rods shall be used at exterior girders. For details, see end bent diaphragm details on Dwg. No. 61656.

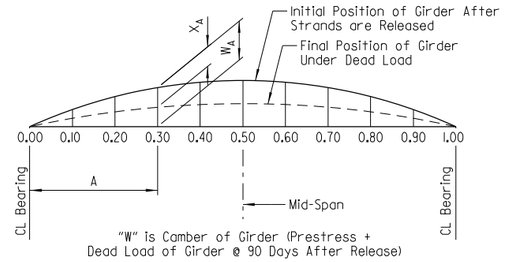
(2) Galvanized threaded inserts and 3/4"ø x 3'-6" threaded rods. For details, see "TYPICAL ROADWAY SECTION-STAGE 1 CONSTRUCTION" on Dwg. No. 61655.

(3) Galvanized threaded inserts and 3/4"ø x 3'-6" threaded rods shall be used at exterior girders. For details, see "TYPICAL ROADWAY SECTION-STAGE 2 CONSTRUCTION" on Dwg. No. 61655.

SPAN PT.	INCHES	
	W_A	X_A
0.00	0.000	0.000
0.10	0.268	0.083
0.20	0.475	0.170
0.30	0.618	0.238
0.40	0.701	0.281
0.50	0.729	0.297

Table symmetric about mid-span

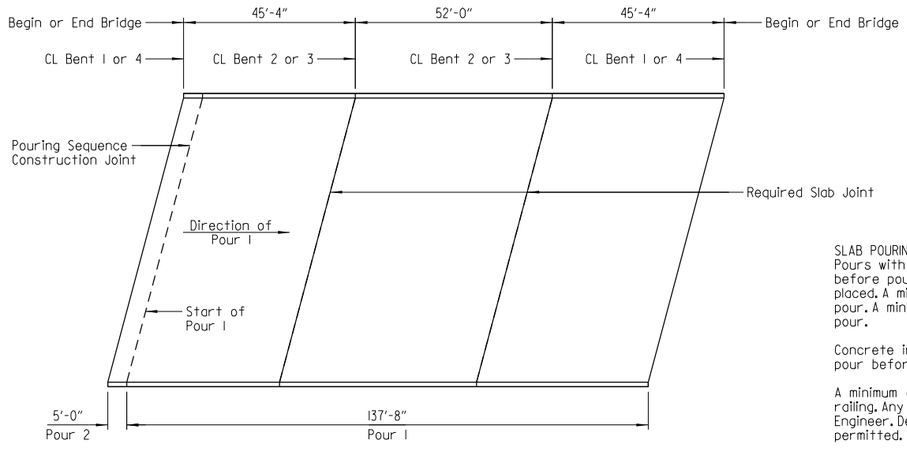
(1) Note:
Camber and Deflection Values shown are based on a concrete girder strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 61699.



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

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

(1) CAMBER & DEFLECTIONS (INCHES) - 44'-2" BEAM
No Scale



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 pour(s) 2 must be placed before pour(s) 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. 61658 are not permitted.

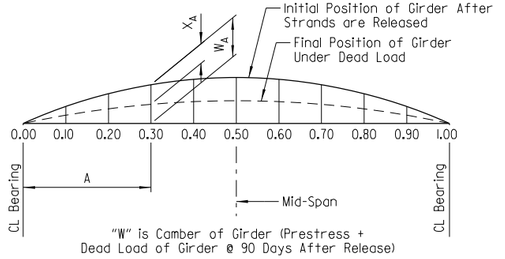
Concrete diaphragms at end bents shall be poured monolithically with the slab.

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	0.449	0.149
0.20	0.791	0.303
0.30	1.027	0.425
0.40	1.165	0.502
0.50	1.210	0.529

Table symmetric about mid-span

(1) Note:
Camber and Deflection Values shown are based on a concrete girder strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 61699.



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

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

(1) CAMBER & DEFLECTIONS (INCHES) - 51'-0" BEAM
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 9 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497xl_s9.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020
BRIDGE NO. 07483 DRAWING NO. 61662

drgoad 6/12/2020 12:42:31 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Badeau Creek\Drawings\B030497xl_S309.MD (Misc Dtls).dgn
REVISED DATE:

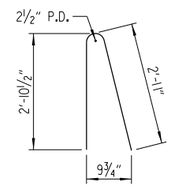
BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
S401E	840	37'-7"			Str.
S402E	564	7'-7"			3"
S403E	140	8'-10"			2"
S404E	16	6'-3"			2"
S405E	280	7'-5"			Str.
S406E	10	37'-1"			Str.
S407E	8	5'-5"			Str.
S408E	8	4'-7"			Str.
S409E	20	24'-1"			Str.
S410E	192	7'-2"			Str.
S411E	448	6'-10"			2"
S412E	56	5'-6"			Str.
S413E	56	4'-7"			Str.
S501E	266	36'-6"			Str.
S502E	133	37'-3"			3"
S503E	262	43'-11"			Str.
S504E	131	44'-11"			3"
S505E	1	37'-9"	36'-8"	1'-1"	3¾"
S506E	1	36'-8"			Str.
S507E	1	44'-4"			Str.
S508E	1	45'-5"	44'-4"	1'-1"	3¾"
S509E	12	7'-4"	6'-3"	1'-1"	3¾"
S510E To S525E	2 Ea.	7'-7" To 35'-7"			Str.
S526E To S541E	2 Ea.	33'-10" To 5'-11"			Str.
S542E To S562E	2 Ea.	4'-3" To 41'-6"			Str.
S563E To S582E	2 Ea.	42'-9" To 7'-4"			Str.
S583E	150	4'-0"			Str.
S601E	308	20'-0"			Str.
S602E	308	10'-10"			4½"
S603E	84	6'-0"			Str.
S604E	8	8'-4"			4½"
S605E	8	7'-1"			4½"
P401E	520	5'-11"			2½"
P402E	48	5'-2"			2½"
P403E	520	3'-5"			3"
P404E	48	5'-8"			Str.
P405E	96	14'-4"			Str.
P406E	32	15'-8"			Str.
P407E	16	22'-4"			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	120	3'-5"			Str.
W402E	80	3'-11"			3¾"
W701E	48	12'-2"			Str.

BAR BENDING DIAGRAMS



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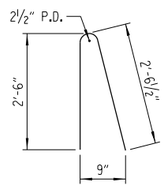

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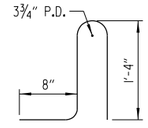

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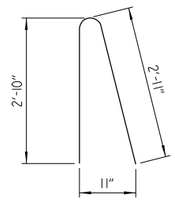
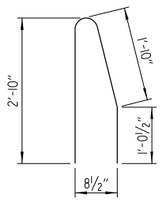


R401E



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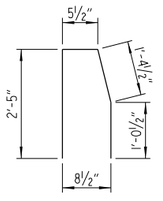
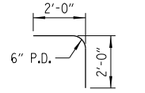
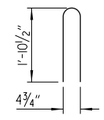


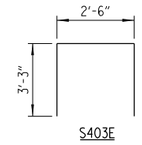
R403E



R407E



W402E



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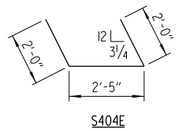

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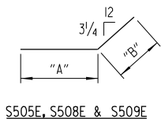
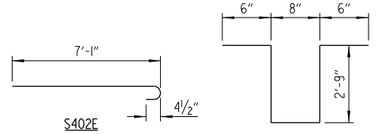
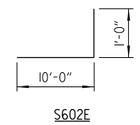


S505E, S508E & S509E

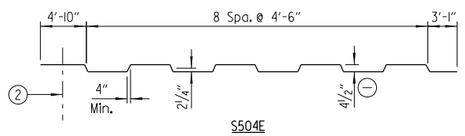


S402E

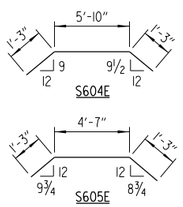
S411E



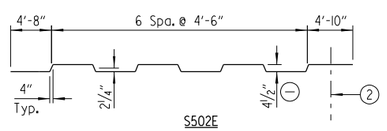
S602E



S504E



S604E
S605E



S502E

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

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

(1) ½" Overtolerance
No Undertolerance

(2) CL Exterior Girder

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.		030497	65	130
				(1) 07483		141'-4" UNIT		61663

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 10 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

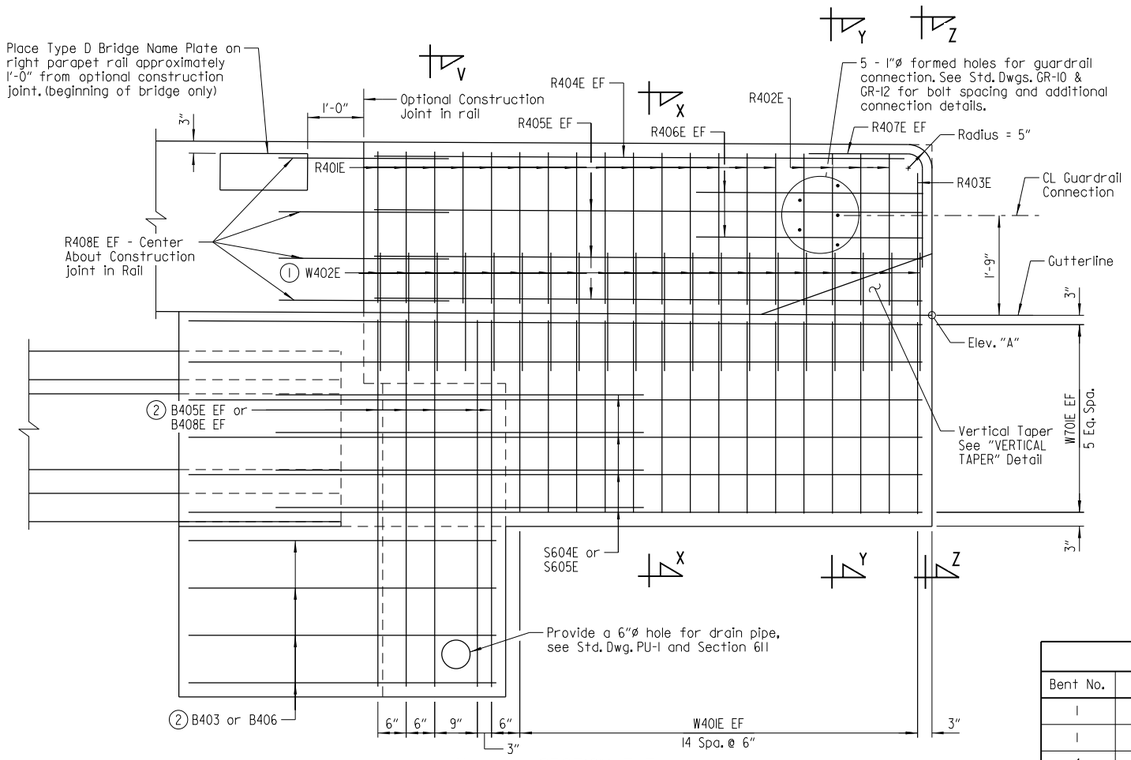
DRAWN BY: JJB DATE: MAR. 2020 FILENAME: b030497xl_s10.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020

BRIDGE NO. 07483 DRAWING NO. 61663

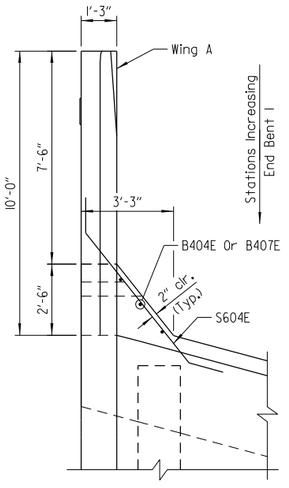
drgoad 6/12/2020 12:42:32 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701760 - Mill and Bodcau Creek\Drawings\B030497xl_S310_SD (Bar List).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

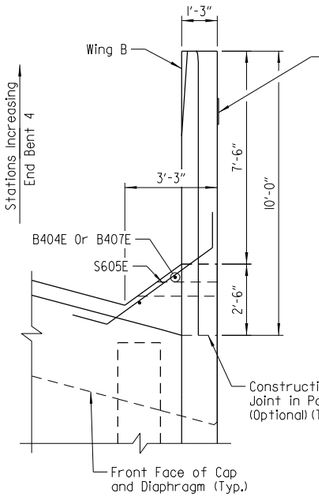
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	66	130
① 07483		141'-4" UNIT		61664

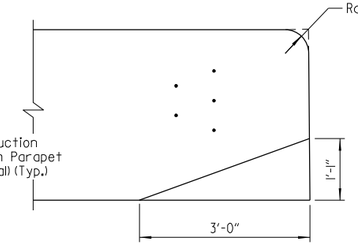


SECTION T-T
Scale: 3/4" = 1'-0"



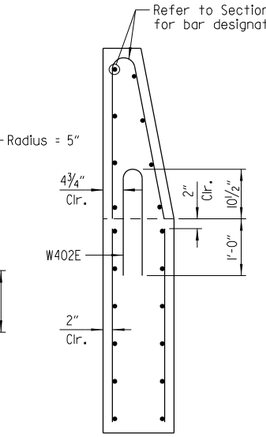
PLAN OF RAIL
Scale: 3/8" = 1'-0"



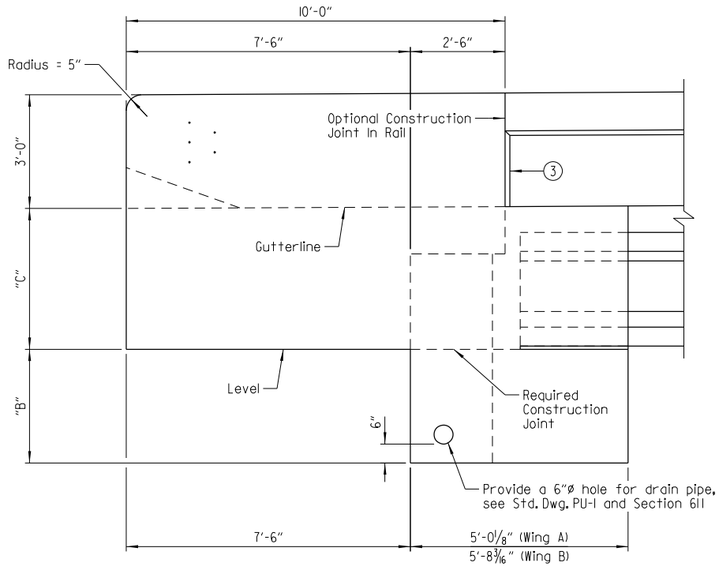


VERTICAL TAPER
Scale: 3/4" = 1'-0"

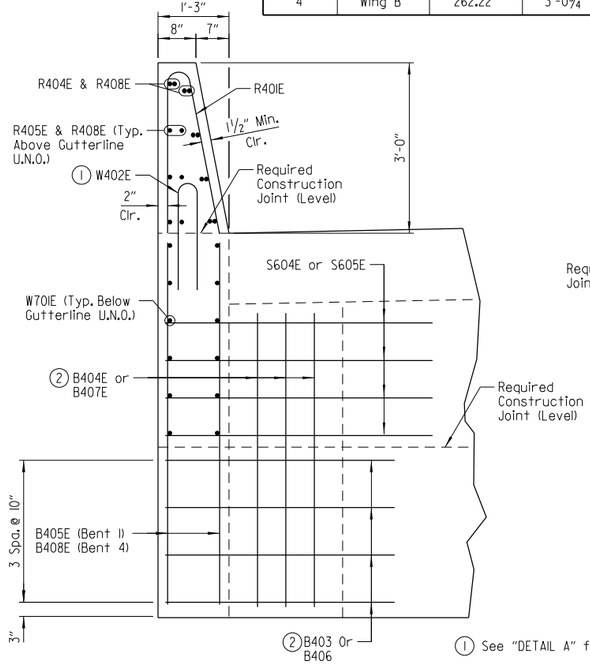
TABLE OF VARIABLES				
Bent No.	Location	Elev. "A"	"B"	"C"
1	Wing A	262.07	3'-0"	3'-10"
1	Wing B	262.16	3'-1 1/16"	3'-10"
4	Wing A	262.14	3'-0"	3'-10"
4	Wing B	262.22	3'-0 3/4"	3'-10 3/16"



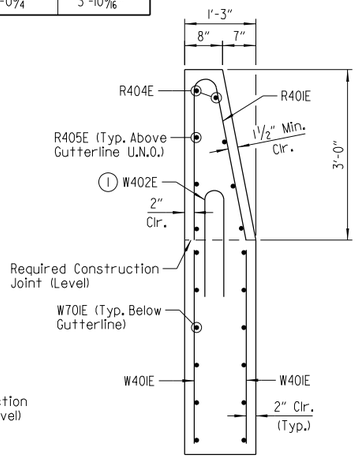
DETAIL A
Scale: 3/4" = 1'-0"



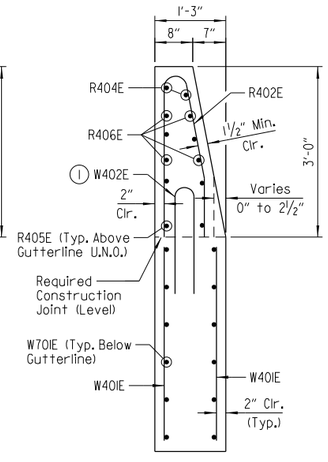
VIEW U-U
Scale: 1/2" = 1'-0"



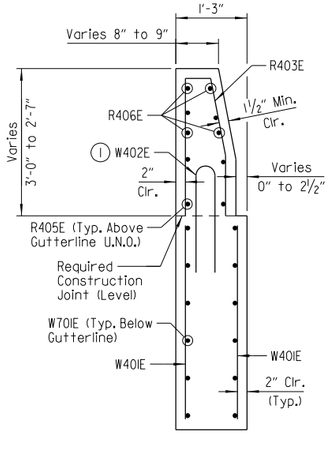
SECTION V-V
Scale: 3/4" = 1'-0"



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



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



SECTION Z-Z
Scale: 3/4" = 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. 61641-61648 for reinforcing and additional details

③ Vertical chamfer not required if optional construction joint is used

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 11 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

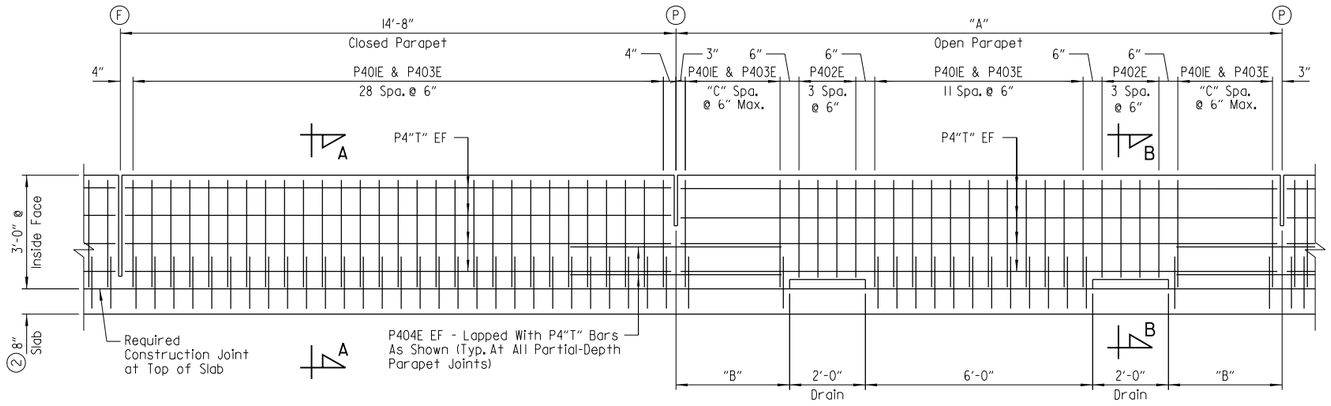
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: FEB. 2020 FILENAME: b030497x1_s11.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020

BRIDGE NO. 07483 DRAWING NO. 61664

drgoad 6/12/2020 12:42:32 PM
WORKSPACE: ARDOT Bridge
L:\2017\17017560 - Mill and Bodcau Creek\Drawings\B030497x1_S11_SD (Wings).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.		030497	67	130
				(1) 07483		141'-4" UNIT		61665



(2) Measured at Edge of Deck

DETAILS OF PARAPET RAIL

Scale: ½" = 1'-0"

TABLE OF PARAPET VARIABLES			
"A" PANEL LENGTH	"B"	"C"	"T"
14'-8"	-	-	05E
16'-0"	3'-0"	5	06E
22'-8"	6'-4"	12	07E

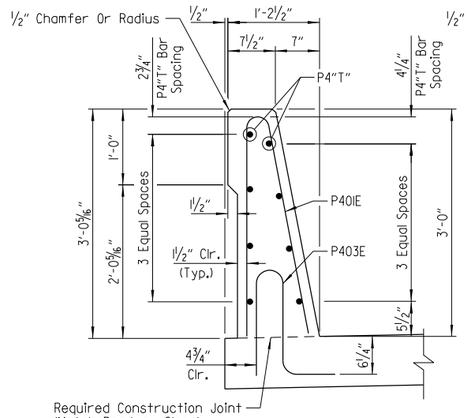
LEGEND

EF = Each Face

(F) CL Full-Depth Parapet Joint (1¼"-1" max.) Stop 4" from Top of Slab.

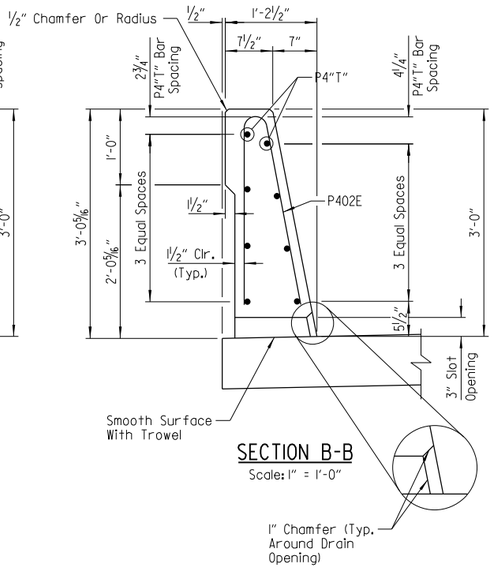
(P) CL Partial-Depth Parapet Joint (1¼"-1" max.) Stop 1'-4" from Top of Slab.

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. 61658.



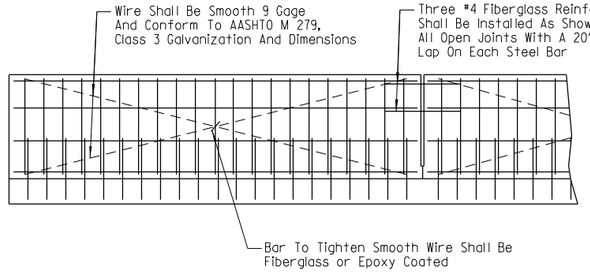
SECTION A-A

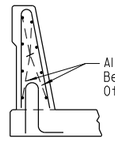
Scale: 1" = 1'-0"



SECTION B-B

Scale: 1" = 1'-0"





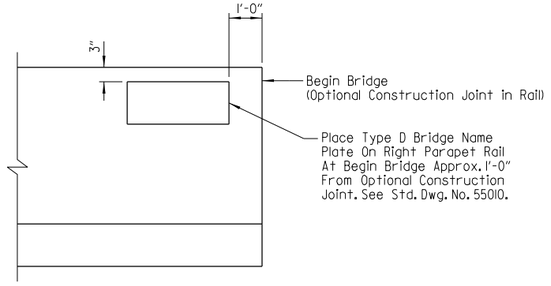
NOTE:
For actual placement of reinforcing steel, see "DETAILS OF PARAPET RAIL".

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



VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face Of Parapet)
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 12 OF 12
DETAILS OF 141'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497x1_sl2.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020

BRIDGE NO. 07483 DRAWING NO. 61665

drgoad 6/12/2020 12:42:32 PM
WORKSPACE: ARDOT Bridge
L:\2017\17017560 - Milland Bodcau Creek\Drawings\b030497x1_S32.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.		030497	68	130
① 07484		LAYOUT - SITE 2		61666

NOTE:
Place 1'-6" Dumped Riprap on top of filter blanket in the limits shown. See Std. Dwg. No. 55001. (typ. both ends of bridge)

Toe of Fill Slope

Cut Level As Shown To Elev. 249.00

Toe of Cut Slope

BODCAU CREEK

CL Bridge, CL Construction & CL Hwy. 82

CL Ditch - See Roadway Plans

Existing Bridge No. 02122 (To Be Removed)

Test Hole (Typ.)

Top of Cut Slope

Toe of Fill Slope

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. 61696. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "UNCLASSIFIED EXCAVATION".

NOTE:
Excavate existing embankment at both ends of bridge as shown. Approx. 647 cubic yards of excavation.

NOTES:
Use Type 5 & 6 Special Approach Slabs at Begin Bridge. Use Type 7 & 8 Special Approach Slabs at End Bridge. See Dwg. Nos. 61704 and 61705.

Use Type 3 & 4 Special Approach Gutters at each end of bridge. See Dwg. No. 61701.

75'-0" Finished Crown
59'-0" Pavement
24'-0" Lanes
11'-0" Turn Lane
24'-0" Lanes
8'-0" Shldr.
1V:3H
PT Sta. 210+29.23
211+00
212+00
213+00
214+00
215+00
PC Sta. 214+89.22
Stage 2 Constr. 44'-3"
Stage 1 Constr. 33'-3"
5'-6"
77'-6" Out-To-Out
75'-0" Cir. Rdwy.
1'-2½" Parapet
2% Slope
N 84°30'46" E
Shoring ①
Approx. 3.3 mi. to Jct. Hwy. 29
Approx. 5.1mi. to Jct. Hwy. 53 (6.4 mi. to Columbia County Line)
1V:2H
CL Longitudinal Construction Joint
10'-0" (Typ.)
Cut Level As Shown To Elev. 245.00
Overhead Utility Line

HORIZONTAL CURVE DATA

Highway 82
PI = 208+21.95
Δ = 2°04'23" Lt.
D = 0°30'00"
T = 207.33'
L = 414.61'
e = N.C.
R = 11,459.16'

HORIZONTAL CURVE DATA

Highway 82
PI = 216+96.55
Δ = 2°04'23" Lt.
D = 0°30'00"
T = 207.33'
L = 414.62'
e = N.C.
R = 11,459.16'

PLAN

BEGIN BRIDGE
STA. 210+79.06

END BRIDGE
STA. 214+39.39

NOTE:
The proposed bridge has been positioned to avoid interference with the existing piling. The Contractor shall verify measurements before driving any piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval.

① See Special Provision Job 030497 "SHORING".

Total Length of Bridge = 360'-4"

10" | 179'-4" Integral Prestressed Concrete Girder Unit Type III (59.33'-60'-60') | 179'-4" Integral Prestressed Concrete Girder Unit Type III (60'-60'-59.33') | 10"

End of Girder

CL 2½" Strip Seal Joint (4" Movement Rating)

End of Girder

Proposed Grade Line Along CL Bridge

Slope Intercept Sta. 210+67.86

Elev. 258.90

Design H.W. To Low Concrete = 1.4'

CL Deck At CL Bent To Low Side Top Of Cap = 5'-8⅞"

CL Bent No. 2 Sta. 211+39.22 Elev. 259.20

CL Deck At CL Bent To Low Side Top Of Cap = 5'-8½"

Concrete Parapet Rail

CL Bent No. 3 Sta. 211+99.22 Elev. 259.45

CL Deck At CL Bent To Low Side Top Of Cap = 5'-8 1/16"

CL Bent No. 4 Sta. 212+59.22 Elev. 259.52

CL Deck At CL Bent To Low Side Top Of Cap = 5'-8⅝"

CL Bent No. 5 Sta. 213+19.22 Elev. 259.39

CL Deck At CL Bent To Low Side Top Of Cap = 5'-8¾"

CL Bent No. 6 Sta. 213+79.22 Elev. 259.10

CL Deck To Low Concrete = 5'-3⅞"

Elev. 258.80

Slope Intercept Sta. 214+50.58

Guard Rail, See Rdwy. Plans (Typ.)

Existing Ground Line Along CL Bridge

Design H.W. (Q_{50}) Elev. 252.0

Int. Fix. Fix. Fix. Fix. Fix. Fix. Exp. Exp. Fix. Fix. Fix. Fix. Int.

Dumped Riprap (Typ.)

Elev. 245.00

Pile Encasement (Typ.)

74' Piles | 71' Piles | 86' Piles | 86' Piles | 86' Piles | 71' Piles | 69' Piles

270 260 250 240 230 220 210 200 190

Bent No. 1 | 211+00 | 2 | 212+00 | 3 | 4 | 213+00 | 5 | 6 | 214+00

ELEVATION

NOTE:
Stations shown are along CL Construction. Elevations shown are theoretical working point elevations at CL Bridge. Any vertical dimension referenced to CL Deck is based on theoretical working point elevation at CL Bridge. See "ROUNDING DETAIL" on Dwg. No. 61684 for additional information.

NOTE:
For "GENERAL NOTES", "ELEVATION OF SOIL BORINGS", and "HYDRAULIC DATA", see Dwg. No. 61642.

PVI Sta. 212+50.00
Elev. 259.75
V.C. = 180'
+0.50% -0.50%

VERTICAL CURVE DATA

Highway 82
(Theoretical Grade Along CL Construction)

FOR R/W DATA AND GUARD RAIL DETAILS, SEE ROADWAY PLANS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 3
LAYOUT OF BRIDGE
HIGHWAY 82 OVER BODCAU CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
LAFAYETTE COUNTY

ROUTE 82 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2019 FILENAME: b030497x2_LI.dgn
CHECKED BY: WMM DATE: SEP. 2019 SCALE: 1" = 20'-0"
DESIGNED BY: ABH DATE: JAN. 2019
BRIDGE NO. 07484 DRAWING NO. 61666

drgoad 6/12/2020 1:34:00 PM
WORKSPACE: ARDOT Bridge
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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.		030497	69	130
(1) 07484		LAYOUT - SITE 2		61667

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} = 0.12g Site Class = D

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, Gr. 60)	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: Piling in Bents 1 & 7 shall be HP14x73 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum ultimate bearing capacity of 205 tons per pile and to a minimum tip elevation of 225 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities only. Actual pile lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

STEEL SHELL PILING: Piling in Bents 2 thru 6 shall be 30" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 425 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer to a minimum tip elevation of 180 at Bents 2 & 6 and a minimum tip elevation of 166 at Bents 3-5. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the items "STEEL PILING (HP14X73)" and "STEEL SHELL PILING (30" DIA.)."

PILE ENCASEMENT: Pile encasement for Bents 2 thru 6 shall extend from bottom of cap to 3' below natural ground. See Std. Dwg. No. 55021 for additional information.

PREBORING: Preboring is required for all piling at Bents 1 and 7. 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".

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for HP14X73 piles shall be 40,400 foot pounds per blow and for 30" piles shall be 87,600 foot pounds per blow.

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

EXISTING BRIDGE: Existing Bridge No. 02122 (Log Mile 10.60) is 362.0' in length, 32.2' wide (26'-0" clear roadway) and consists of a concrete slab on I-beam spans (8 spans total) supported by precast concrete pile bents.

REMOVAL AND SALVAGE: After Stage 1 Construction is complete and open to traffic, existing Bridge No. 02122, including any exposed substructures from previous construction, shall be removed in accordance with Section 205. Exposed substructures from previous construction shall be removed to a depth of 2' below subgrade or final ground surface. This work shall be considered subsidiary to the item "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)". All material from the existing bridge and previous construction shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

DETAIL DRAWINGS:	DRAWING NO.
Stage Construction	61669
End Bents	61670-61677
Intermediate Bents	61678-61681
Elastomeric Bearings	61683
179'-2" Integral Prestressed Concrete Girder Unit	61684-61698
Common Details of Prestressed Concrete Girder Units	61699
Strip Seal Joint	61698 & 55009
Type Special Approach Gutters	61701
Type Special Approach Slabs	61704 & 61705
Dumped Riprap	55001
Steel Piling	55020
Concrete Filled Steel Shell Piling	55021

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	50	18,835	249.2	252.0
BASE	100	22,835	250.6	253.2
EXTREME	500	33,371	253.5	254.0
OVERTOPPING	> 500	N/A	N/A	N/A

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

Q100 backwater elevation for existing structure = 253.3

Proposed Low Bridge Chord Elev. = 253.44 (Sta. 214+49.56)
Existing Low Bridge Chord Elev. = 253.44 (survey shot)

Drainage Area = 236 square miles
Historical High Water Elev. = N/A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

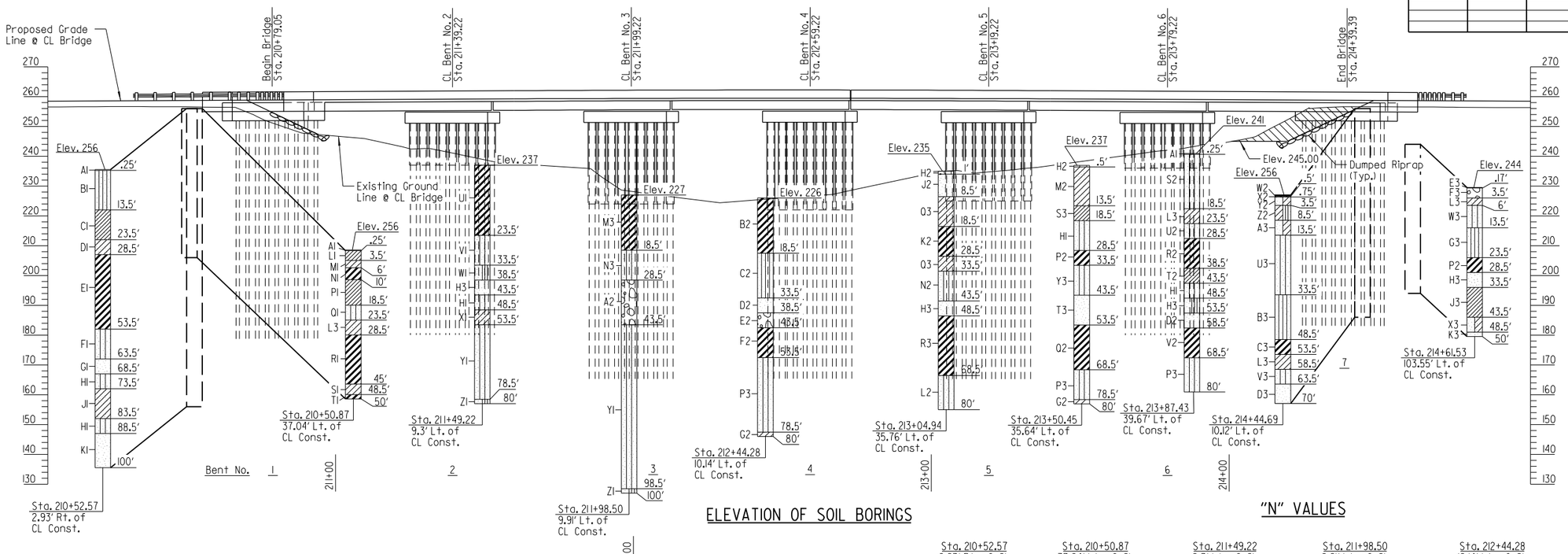
SHEET 2 OF 3
LAYOUT OF BRIDGE
HIGHWAY 82 OVER BODCAU CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
LAFAYETTE COUNTY
ROUTE 82 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2019 FILENAME: b030497x2_L2.dgn
CHECKED BY: WMM DATE: SEP. 2019 SCALE: No Scale
DESIGNED BY: ABH DATE: JAN. 2019
BRIDGE NO. 07484 DRAWING NO. 61667

dr goad 6/12/2020 12:42:34 PM
WORKSPACE: ARDOT Bridge
L:\20ITN170175\60 - Mill and Bodcau Creek\Drawings\B030497x2_L2 (Bodcau).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.		030497	70	130
(1) 07484		LAYOUT - SITE 2		61668



ELEVATION OF SOIL BORINGS

"N" VALUES

Sta. 210+52.57, 2.93' Rt. of CL Construction

1.0-2.0, N=9
3.5-4.5, N=6
6.0-7.0, N=4
8.5-9.5, N=10
13.5-14.5, N=7
18.5-19.5, N=18
23.5-24.5, N=6
28.5-29.5, N=6
33.5-34.5, N=4
38.5-39.5, N=0
43.5-44.5, N=3
48.5-49.5, N=4
53.5-54.5, N=8
58.5-59.5, N=22
63.5-64.5, N=36
68.5-69.5, N=9
73.5-74.5, N=6
78.5-79.5, N=4
83.5-84.5, N=8
88.5-89.5, N=33
99.0-99.5, N=50/6"

Sta. 210+50.87, 37.04' Lt. of CL Construction

1-2, N=7
3.5-4.5, N=8
6-7, N=5
8.5-9.5, N=3
13.5-14.5, N=11
18.5-19.5, N=17
23.5-24.5, N=5
28.5-29.5, N=2
33.5-34.5, N=3
38.5-39.5, N=0
43.5-44.5, N=10
48.5-49.5, N=3

Sta. 211+49.22, 9.3' Lt. of CL Construction

6-7, N=4
8.5-9.5, N=5
13.5-14.5, N=5
18.5-19.5, N=0
23.5-24.5, N=1
28.5-29.5, N=12
33.5-34.5, N=7
38.5-39.5, N=21
43.5-44.5, N=7
48.5-49.5, N=12
53.5-54.5, N=25
58.5-59.9, N=50/5"
68.5-69.0, N=50/6"
78.5-79.0, N=50/6"

Sta. 211+98.50, 9.91' Lt. of CL Construction

6-7, N=2
8.5-9.5, N=2
13.5-14.5, N=3
18.5-19.5, N=8
23.5-24.5, N=9
28.5-29.5, N=29
33.5-34.5, N=12
38.5-39.5, N=7
43.5-44.5, N=30
48.5-49.5, N=70
53.5-54.0, N=50/6"
58.5-58.9, N=50/5"
68.5-69.0, N=50/6"
78.5-78.9, N=50/5"
88.5-89.0, N=50/6"
99.0-99.5, N=50/6"

Sta. 212+44.28, 10.14' Lt. of CL Construction

8.5-9.5, N=0
13.5-14.5, N=2
18.5-19.5, N=0
23.5-24.5, N=6
28.5-29.5, N=7
33.5-34.5, N=28
38.5-39.5, N=5
43.5-44.5, N=16
48.5-49.5, N=29
53.5-53.9, N=50/5"
58.5-59.0, N=50/6"
68.5-68.7, N=50/2"
78.5-79.5, N=57

Sta. 213+04.94, 35.76' Lt. of CL Construction

1-2, N=4
3.5-4.5, N=3
6-7, N=1
8.5-9.5, N=2
13.5-14.5, N=3
18.5-19.5, N=13
23.5-24.5, N=3
28.5-29.5, N=1
33.5-34.5, N=8
38.5-39.5, N=10
43.5-44.5, N=27
48.5-49.5, N=18
53.5-54.5, N=26
58.5-59.5, N=31
68.5-69.0, N=50/6"
78.5-78.8, N=50/4"

Sta. 213+50.45, 35.64' Lt. of CL Construction

1-2, N=1
3.5-4.5, N=2
6-7, N=5
8.5-9.5, N=2
13.5-14.5, N=7
18.5-19.5, N=9
23.5-24.5, N=5
28.5-29.5, N=0
33.5-34.5, N=7
38.5-39.5, N=4
43.5-44.5, N=29
48.5-49.5, N=18
53.5-54.5, N=12
58.5-59.5, N=30
68.5-68.9, N=50/5"
78.5-79.5, N=62

Sta. 213+87.43, 39.67' Lt. of CL Construction

1-2, N=2
3.5-4.5, N=5
6-7, N=8
8.5-9.5, N=3
13.5-14.5, N=3
18.5-19.5, N=5
23.5-24.5, N=17
28.5-29.5, N=4
33.5-34.5, N=1
38.5-39.5, N=9
43.5-44.5, N=8
48.5-49.5, N=30
53.5-54.5, N=27
58.5-59.5, N=30
68.5-68.9, N=50/5"
78.5-78.8, N=50/4"

Sta. 214+44.69, 10.12' Lt. of CL Construction

1-2, N=15
3.5-4.5, N=10
8.5-9.5, N=4
13.5-14.5, N=10
18.5-19.5, N=6
23.5-24.5, N=6
28.5-29.5, N=2
33.5-34.5, N=4
38.5-39.5, N=11
43.5-44.5, N=11
48.5-49.5, N=0
53.5-54.5, N=5
58.5-59.5, N=3
63.5-64.5, N=50
68.5-69.5, N=20

Sta. 214+61.53, 103.55' Lt. of CL Construction

1-2, N=7
3.5-4.5, N=5
6-7, N=10
8.5-9.5, N=13
13.5-14.5, N=3
18.5-19.5, N=1
23.5-24.5, N=1
28.5-29.5, N=17
33.5-34.5, N=1
38.5-39.5, N=3
43.5-44.5, N=10
48.5-49.5, N=35

BORING LEGEND

AI - TOPSOIL: Grass with brown silt and trace gravel
BI - Loose to very loose, tan and gray to gray and brown, sandy SILT
CI - Medium stiff to very stiff, brown and gray, sandy, LEAN CLAY
DI - Medium stiff, gray to tan and gray, sandy, LEAN CLAY
EI - Medium stiff to very soft, brown and red, FAT CLAY
FI - Loose to medium dense, gray, SILTY SAND
GI - Dense, gray SAND, some gravel
HI - Loose, gray, SILTY SAND
JI - Loose to very loose, gray, CLAYEY SAND
KI - Dense to very dense, tan and gray to gray SAND, some gravel
LI - Medium stiff, brown, LEAN CLAY, trace roots
MI - Loose, brown and gray, CLAYEY SAND, trace gravel
NI - Medium stiff to soft, brown and gray, FAT CLAY, trace silt and sand
PI - Medium stiff to stiff, brown and gray, LEAN CLAY, trace sand
QI - Medium dense, gray and tan, SILTY SAND
RI - Soft to very soft, gray to red, FAT CLAY
SI - Gray, CLAYEY SAND
TI - Soft, gray, sandy, FAT CLAY
UI - Medium stiff to very soft, brown and gray to brown, FAT CLAY
VI - Very loose to medium dense, gray, SILTY SAND, with clay
WI - Loose, gray, SAND with silt
XI - Medium dense, gray, CLAYEY SAND, trace silt
YI - Medium dense to very dense, gray, SILTY SAND
ZI - Very dense, gray SAND with silt
A2 - Medium dense to loose, tan, gray and black GRAVEL, trace sand
B2 - Very soft to soft, gray and brown to gray, FAT CLAY
C2 - Very soft to medium stiff, gray, sandy SILT
D2 - Medium dense, gray and tan SAND, little gravel
E2 - Loose, gray and tan GRAVEL, trace sand
F2 - Stiff to very stiff, gray, sandy, FAT CLAY
G2 - Very dense, gray, CLAYEY SAND
H2 - Gray GRAVEL with sand
J2 - Very loose, black SAND and gravel, trace roots
K2 - Stiff to soft, gray, sandy, FAT CLAY
L2 - Very dense, gray and black, SILTY SAND
M2 - Very loose to loose, brown and gray to brown, CLAYEY SAND
N2 - Loose, gray, SILTY SAND
P2 - Very soft, gray, sandy, FAT CLAY
Q2 - Stiff to hard, gray, FAT CLAY
R2 - Soft to very soft, gray, sandy, FAT CLAY
S2 - Loose to very loose, gray and brown to orange and gray, SILTY SAND
T2 - Stiff, gray, sandy LEAN CLAY
U2 - Medium dense, gray, SILTY SAND
V2 - Hard, gray, silty, FAT CLAY, little sand
W2 - Asphalt
X2 - Base Material: Brown and gray silt with sand and trace gravel
Y2 - Medium dense, brown SAND with clay, trace gravel
Z2 - Loose, brown, SILTY, CLAYEY SAND, trace gravel
A3 - Very loose, brown, gray and orange SAND with clay
B3 - Soft to stiff, orange and gray, sandy SILT
C3 - Very soft, gray, silty, FAT CLAY
D3 - Very dense to medium dense, tan and gray SAND, little gravel
E3 - FILL: White and gray gravel and sand
F3 - Loose, gray, GRAVEL with sand
G3 - Soft to very soft, orange and gray, sandy SILT, little clay
H3 - Medium dense, gray SAND
J3 - Very soft to soft, gray, sandy, LEAN CLAY
K3 - Dense, gray SAND
L3 - Loose, gray, CLAYEY SAND
M3 - Soft, brown to gray, FAT CLAY
N3 - Loose, gray and brown to gray, SILTY SAND
P3 - Very dense, gray, SILTY SAND
Q3 - Very loose, gray CLAYEY SAND
R3 - Very stiff to hard, brown and gray to gray and brown, FAT CLAY
S3 - Medium stiff, gray, sandy, LEAN CLAY
T3 - Medium dense, gray and black to tan and gray, SAND
U3 - Loose to very loose, gray and tan to orange and gray, SILTY SAND
V3 - Very loose, gray, SILTY SAND
W3 - Loose to medium dense, gray and tan, SILTY SAND
X3 - Loose, gray SAND with clay
Y3 - Loose to very loose, gray, SILTY SAND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE
HIGHWAY 82 OVER BODCAU CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
LAFAYETTE COUNTY

ROUTE 82 SEC. 2

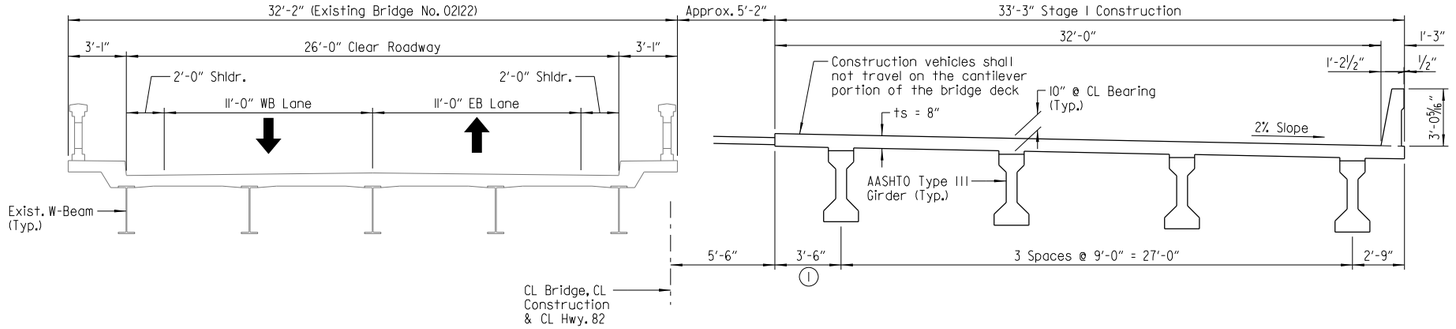
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ERM DATE: DEC. 2019 FILENAME: b030497x2_L3.dgn
CHECKED BY: JES DATE: DEC. 2019 SCALE: No Scale
DESIGNED BY: ERM DATE: DEC. 2019

BRIDGE NO. 07484 DRAWING NO. 61668

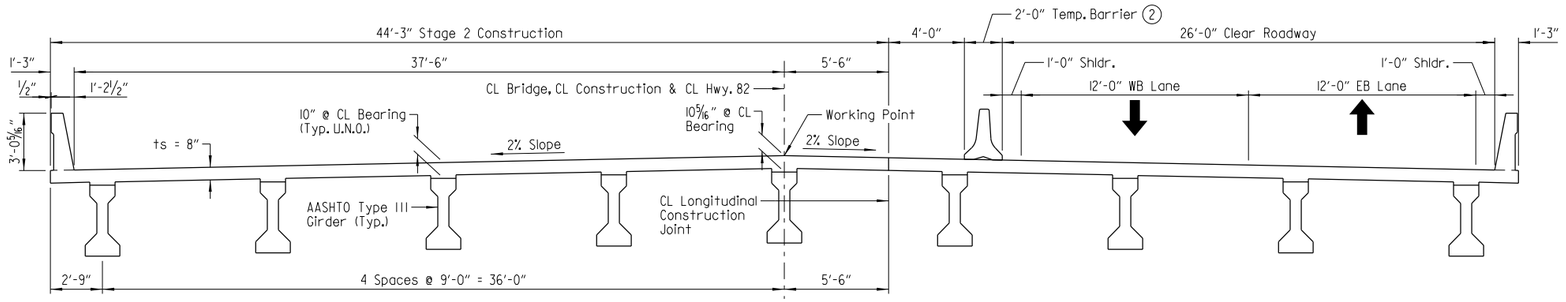
drgood
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\b030497x2_L3 (Bodcau).dgn
REVISED DATE:
6/12/2020 12:42:34 PM

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.		030497	71	130
				(1) 07484		STAGE CONST. - SITE 2		61669



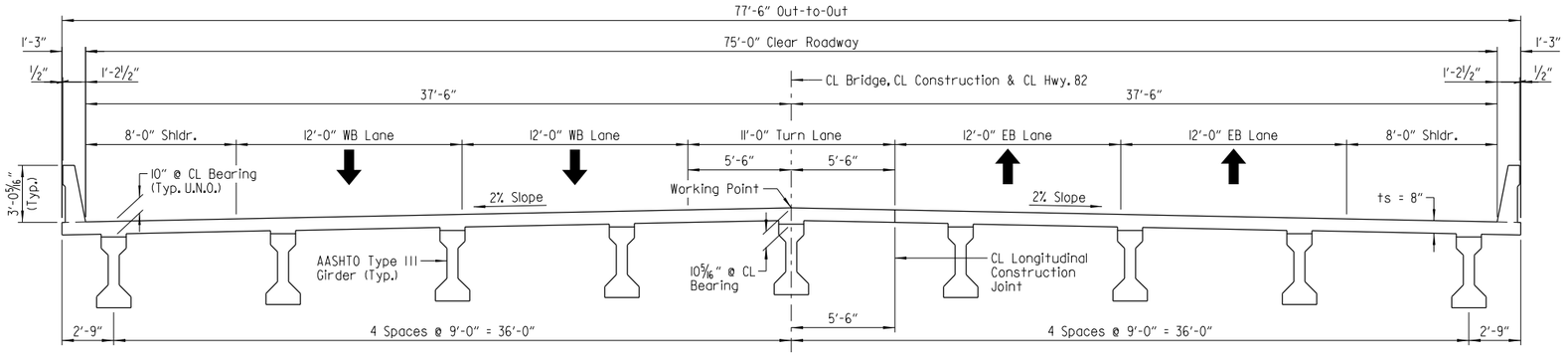
TYPICAL SECTION - STAGE I CONSTRUCTION

(Looking Ahead)
No Scale



TYPICAL SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
No Scale



TYPICAL SECTION - FINAL CONDITION

(Looking Ahead)
No Scale

(1) Construction vehicles shall not travel on cantilever portion of deck.

(2) Temporary Construction Barrier. Do not connect to new deck (See Std. Dwg. TC-4).

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

DETAILS OF STAGED CONSTRUCTION
HIGHWAY 82 OVER BODCAU CREEK
MILL & BODCAU CREEKS
STRS. & APPRS. (S)
LAFAYETTE COUNTY

ROUTE 82 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

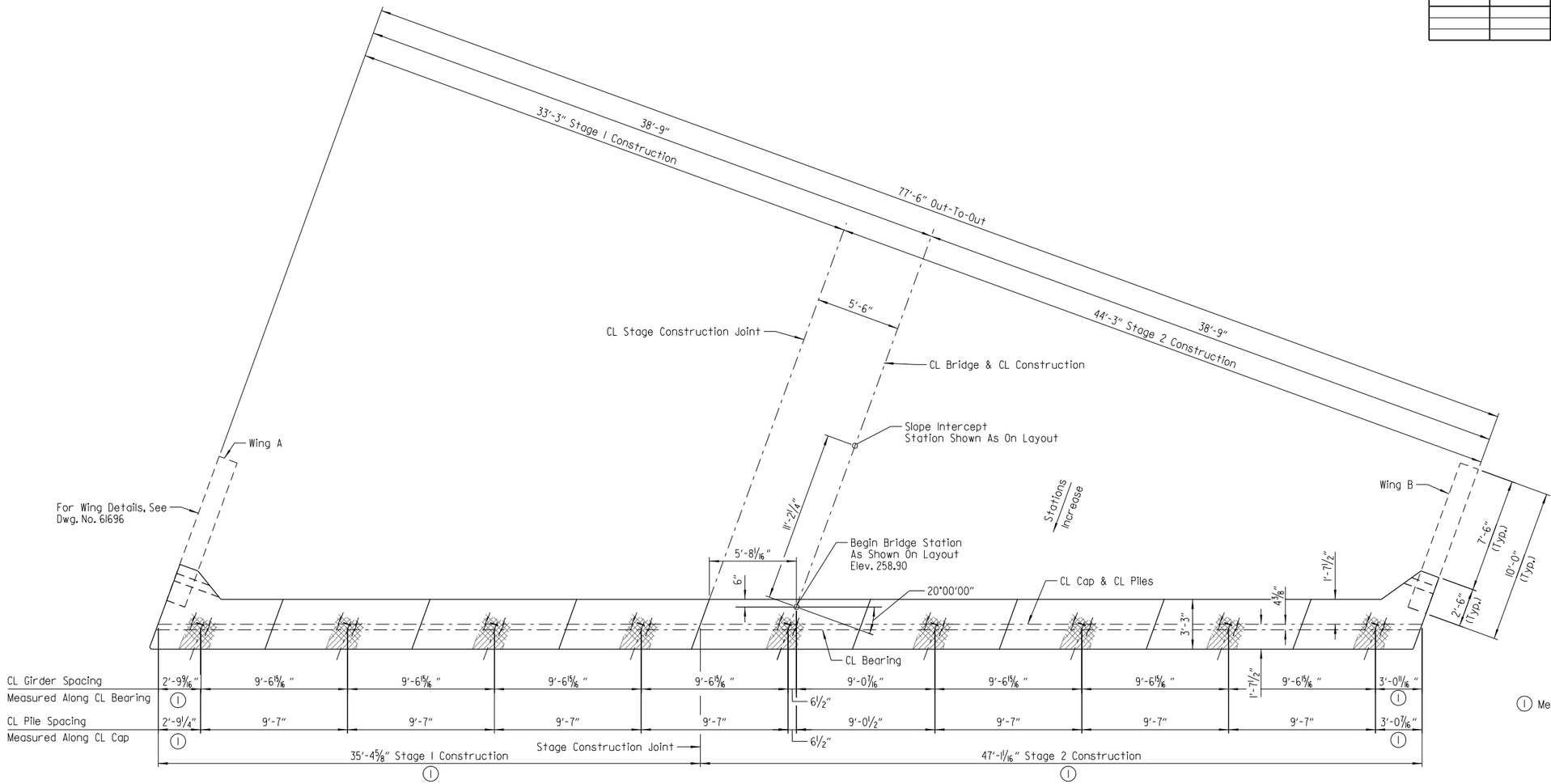
DRAWN BY: HEW DATE: JAN. 2019 FILENAME: b030497x2_SC.dgn
CHECKED BY: WMM DATE: SEP. 2019 SCALE: As Shown
DESIGNED BY: ABH DATE: JAN. 2019

BRIDGE NO. 07484 DRAWING NO. 61669

drgoad 6/12/2020 12:42:35 PM
WORKSPACE: ARDOT Bridge
L:\2017\7017560 - Mill and Bodcau Creek\Drawings\B030497x2_SIOI_SO (Bodcau).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.		030497	72	130
(1) 07484		END BENT		61670

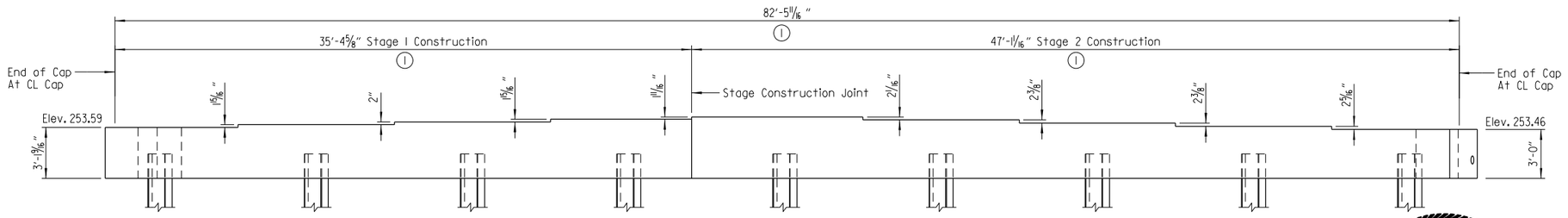


PLAN - END BENT NO. 1

Scale: 1/4" = 1'-0"

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

NOTE:
For reinforcing details, see Dwg. Nos. 61671 & 61672.



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: 1/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_a1.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61670

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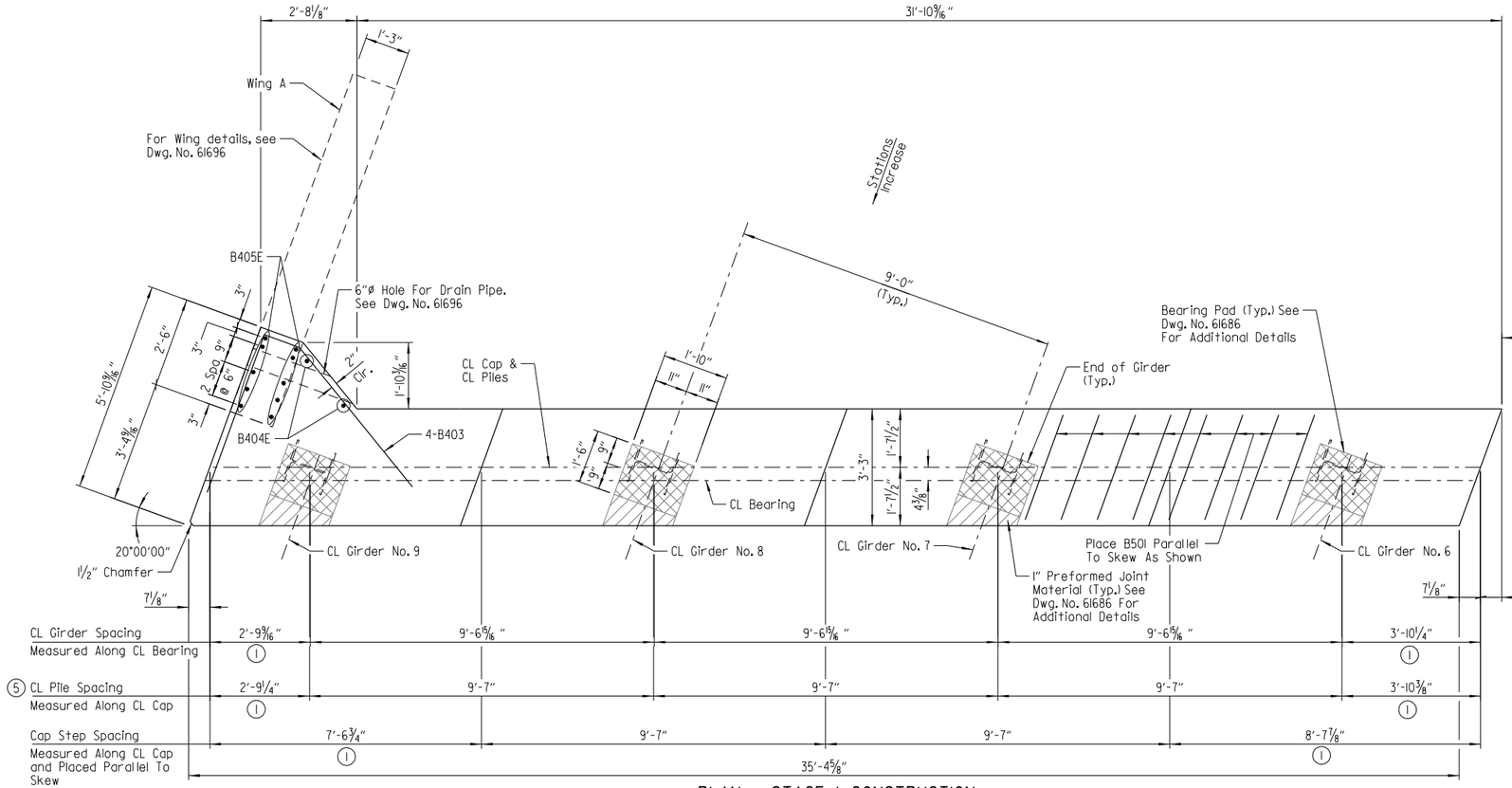
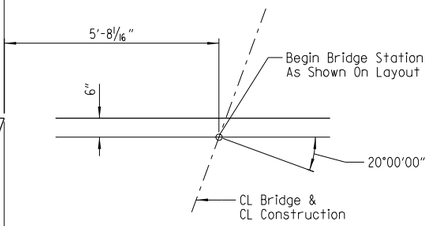
WORKSPACE: ARDOT Bridge
L:\20IT\17017560 - Mill and Bodcau Creek\Drawings\B030497x2_S201_AB.dgn
REVISED DATE:

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.		030497	73	130
				(1) 07484		END BENT		61671



PLAN - STAGE I CONSTRUCTION

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

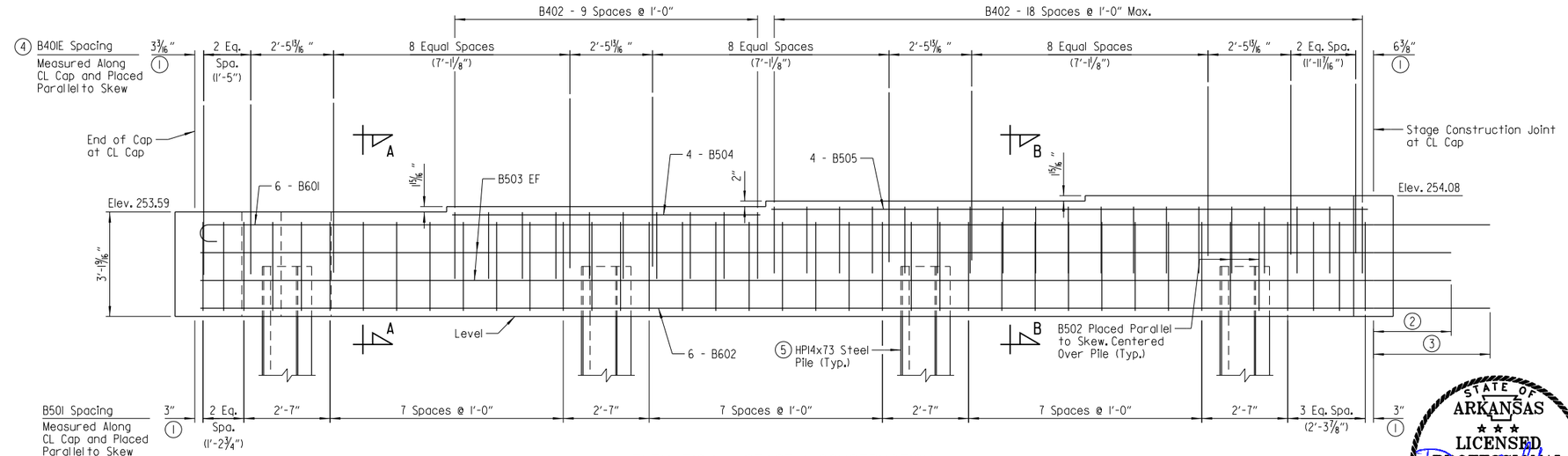


(1) Measured From Intersection Of CL Cap And Edge Of Cap
(2) 2'-4" Min. Projection (Typ. #5 Bars)
(3) 3'-6" Min. Projection (Typ. #6 Bars)
(4) Top of B401E bars shall maintain 2" clr. of bottom of paving bracket in end diaphragm.
(5) Piles shall be oriented as shown.

LEGEND

EF = Each Face

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61673.



ELEVATION - STAGE I CONSTRUCTION

(Looking Back)
Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_a2.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61671

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WORKSPACE: ARDOT Bridge
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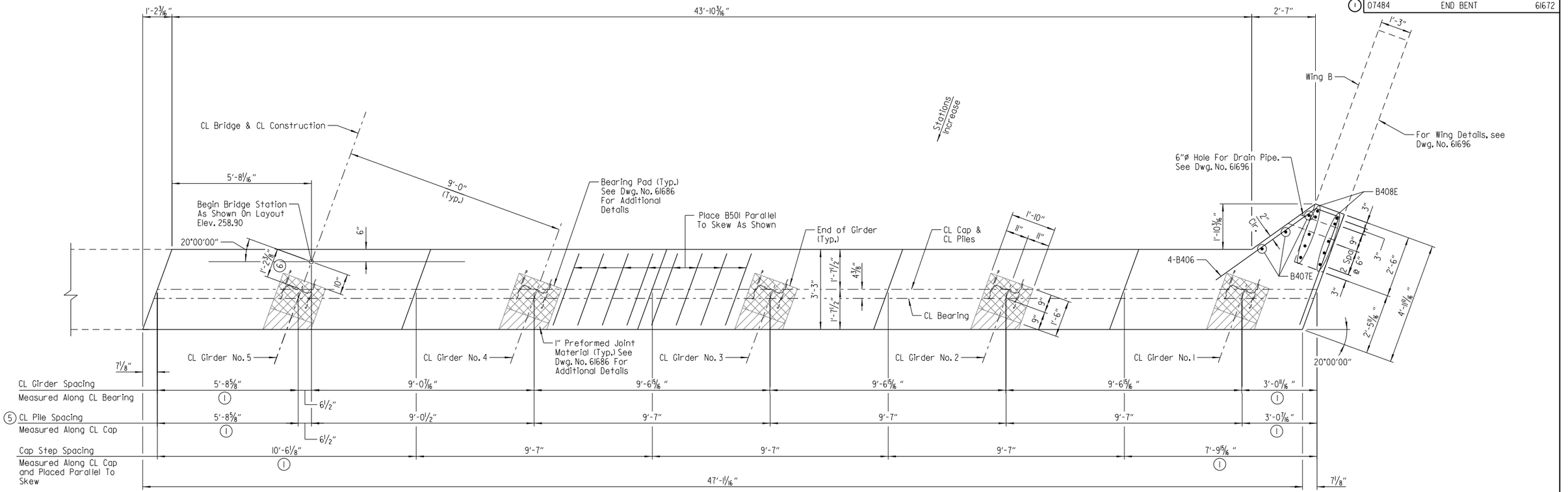
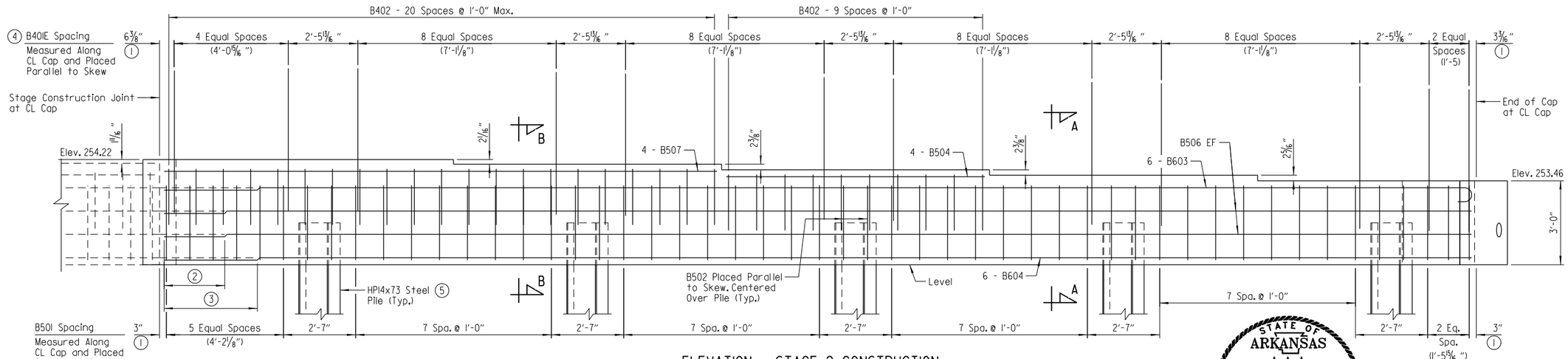
REVISED DATE:

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.		030497	74	130
				(1) 07484		END BENT		61672



PLAN - STAGE 2 CONSTRUCTION

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



ELEVATION - STAGE 2 CONSTRUCTION

(Looking Back)
Scale: 1/2" = 1'-0"

LEGEND

EF = Each Face

(1) Measured From 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" clr. of bottom of paving bracket in end diaphragm.
(5) Piles shall be oriented as shown.
(6) Measured to CL Cap

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61673.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_g3.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61672

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WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497x2_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.		030497	75	130
(1) 07484		END BENT		61673

BAR LIST - END BENT 1

STAGE 1 CONSTRUCTION

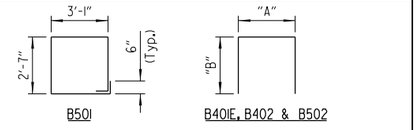
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	33	13'-1"	3'-1"	5'-1"	2"
B402	29	6'-11"	3'-1"	2'-0"	2"
B403	4	10'-7"			2"
B404E	2	6'-1"			Str.
B405E	10	7'-4"			Str.
B501	31	11'-10"			2½"
B502	8	8'-0½"	3'-1"	2'-7"	2½"
B503	4	37'-7"			Str.
B504	4	9'-3"			Str.
B505	4	17'-11"			Str.
B601	6	39'-5"	38'-9"		4½"
B602	6	38'-9"			Str.

STAGE 2 CONSTRUCTION

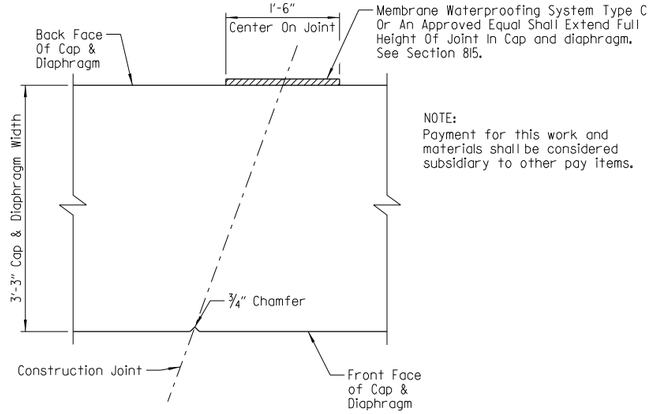
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	44	13'-1"	3'-1"	5'-1"	2"
B402	31	6'-11"	3'-1"	2'-0"	2"
B406	4	10'-3½"			2"
B407E	3	5'-11"			Str.
B408E	10	7'-2"			Str.
B501	41	11'-10"			2½"
B502	10	8'-0½"	3'-1"	2'-7"	2½"
B504	4	9'-3"			Str.
B506	4	46'-9"			Str.
B507	4	19'-9"			Str.
B603	6	47'-5"	46'-9"		4½"
B604	6	46'-9"			Str.

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

BAR BENDING DIAGRAMS



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



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

CONSTRUCTION JOINT DETAIL

No Scale

LEGEND

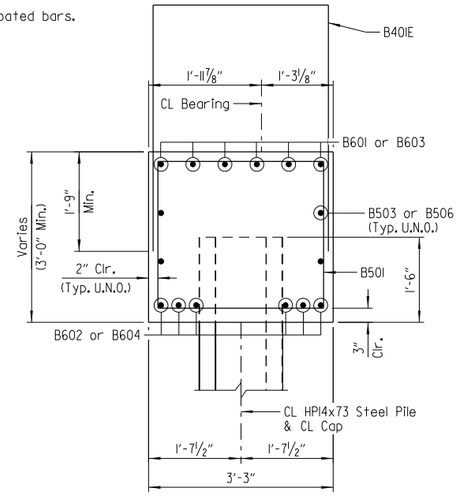
U.N.O. = Unless Noted Otherwise

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.

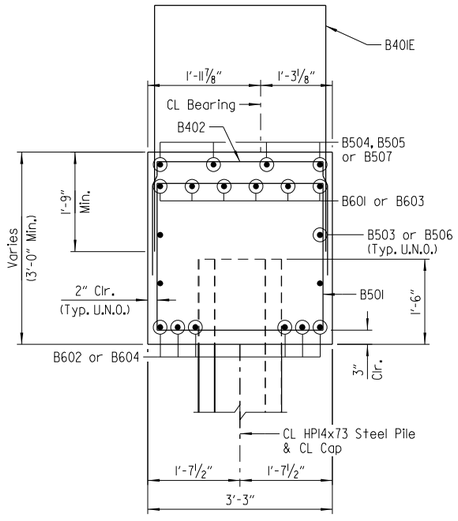
Granular backfill and pipe underdrain required behind cap. See Dwg. No. 61686 for details.

For additional information, see Layout.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENT NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

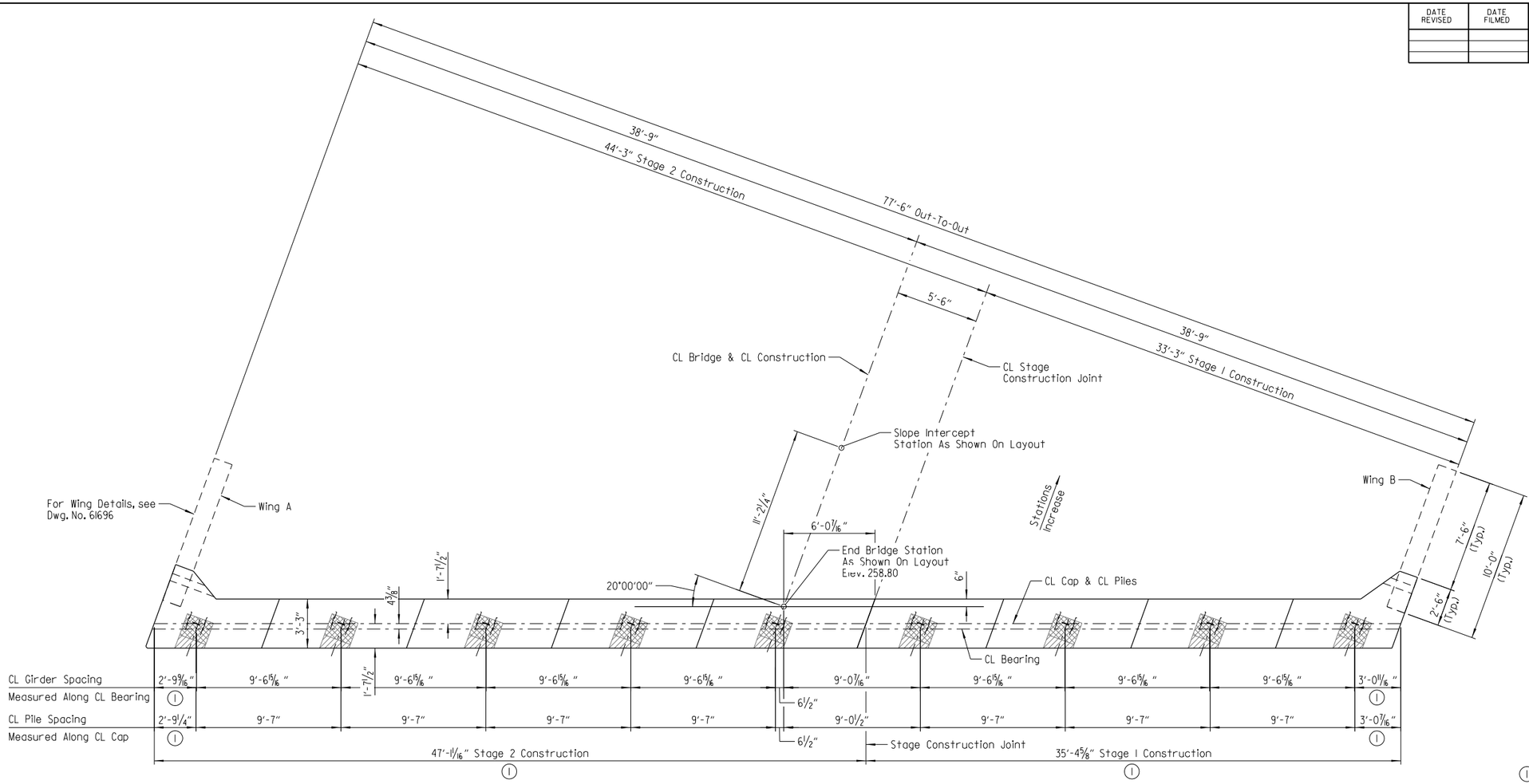
DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x2_a4.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61673

drgoad 6/12/2020 12:42:37 PM
WORKSPACE: ARDOT Bridge
L:\2017\170\7560 - Milland Bodcau Creek\Drawings\B030497x2_5204_AB.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

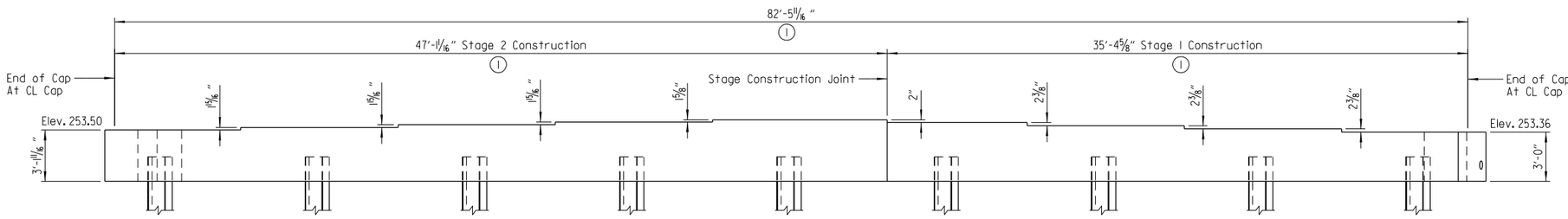
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	76	130
(1) 07484		END BENT		61674



PLAN - END BENT NO. 7

Scale: ¼" = 1'-0"

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



ELEVATION - END BENT NO. 7

(Looking Ahead)
Scale: ¼" = 1'-0"

NOTE:
For reinforcing details, see Dwg. Nos. 61675 & 61676.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT NO. 7

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

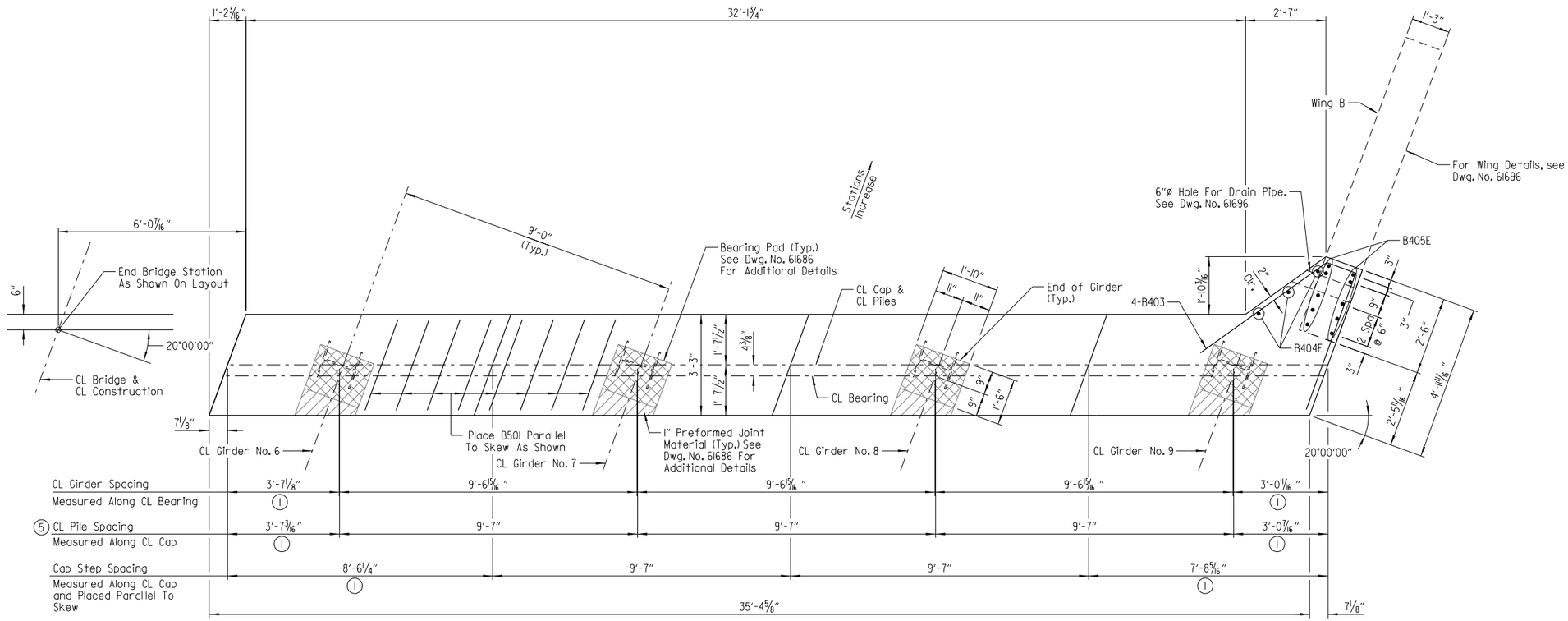
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_a5.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61674

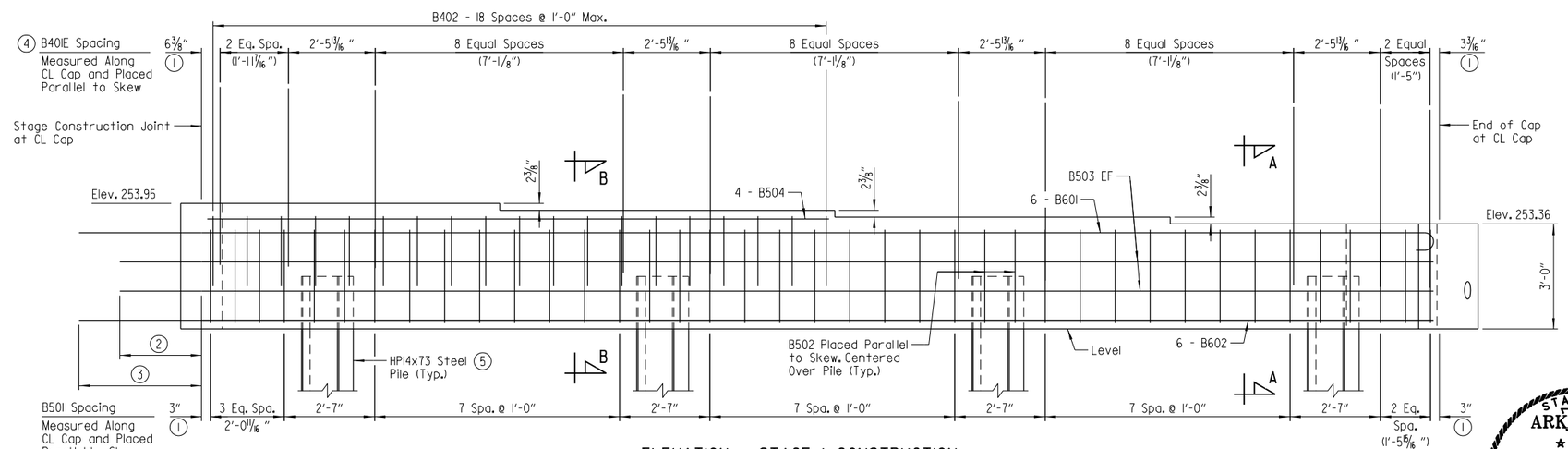
drgoad 6/12/2020 12:42:37 PM
WORKSPACE: ARDOT Bridge
L:\20I7\I70I760 - Mill and Bodcau Creek\Drawings\B030497x2_S205_AB.dgn
REVISED DATE:

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.		030497	77	130
				(1) 07484		END BENT		61675



PLAN - STAGE I CONSTRUCTION

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



ELEVATION - STAGE I CONSTRUCTION

(Looking Ahead)

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

LEGEND

EF = Each Face

(1) Measured From Intersection Of CL Cap And Edge Of Cap
(2) 2'-4" Min. Projection (Typ. #5 Bars)
(3) 3'-6" Min. Projection (Typ. #6 Bars)
(4) Top of B401E bars shall maintain 2" clr. of bottom of paving bracket in end diaphragm.
(5) Piles shall be oriented as shown.

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61677.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENT NO. 7

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_a6.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61675

drgoad 6/12/2020 12:42:37 PM
WORKSPACE: ARDOT Bridge
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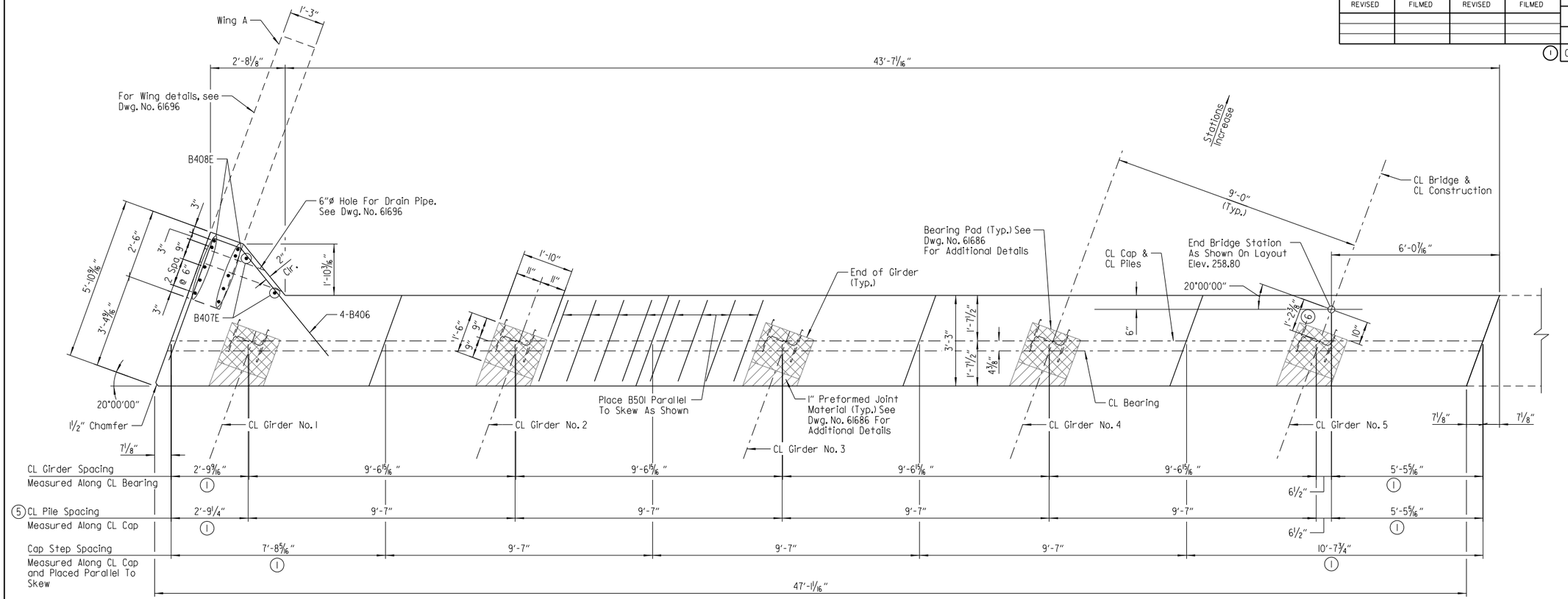
REVISED DATE:

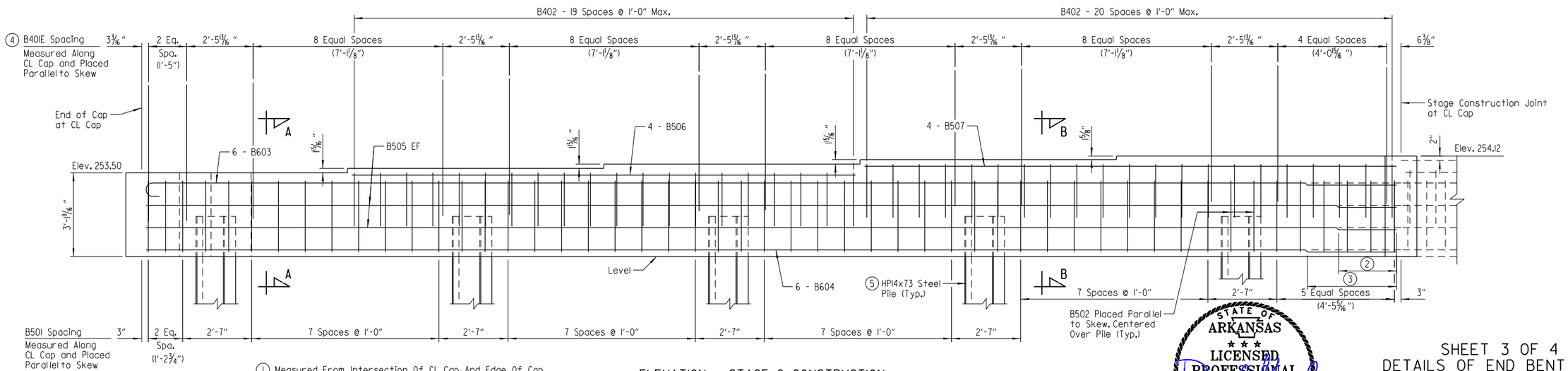
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	78	130
(1) 07484		END BENT		61676



PLAN - STAGE 2 CONSTRUCTION

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



ELEVATION - STAGE 2 CONSTRUCTION

(Looking Ahead)
Scale: 1/2" = 1'-0"

(1) Measured From 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" clr. of bottom of paving bracket in end diaphragm.
(5) Piles shall be oriented as shown.
(6) Measured to CL Cap

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 61677.

LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT NO. 7

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_a7.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61676

drgoad 6/12/2020 12:42:38 PM
WORKSPACE: ARDOT Bridge
L:\20IT\10I7560 - Mill and Bodcau Creek\Drawings\B030497x2_S207_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.		030497	79	130
				(1) 07484		END BENT		61677

BAR LIST - END BENT 7

STAGE 1 CONSTRUCTION

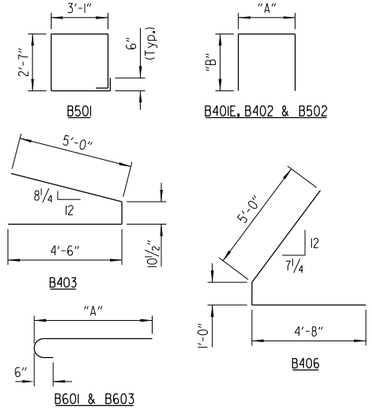
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	33	13'-1"	3'-1"	5'-1"	2"
B402	19	6'-11"	3'-1"	2'-0"	2"
B403	4	10'-3½"			2"
B404E	3	5'-11"			Str.
B405E	10	7'-2"			Str.
B501	31	11'-10"			2½"
B502	8	8'-0½"	3'-1"	2'-7"	2½"
B503	4	37'-7"			Str.
B504	4	17'-9"			Str.
B601	6	39'-5"	38'-9"		4½"
B602	6	38'-9"			Str.

STAGE 2 CONSTRUCTION

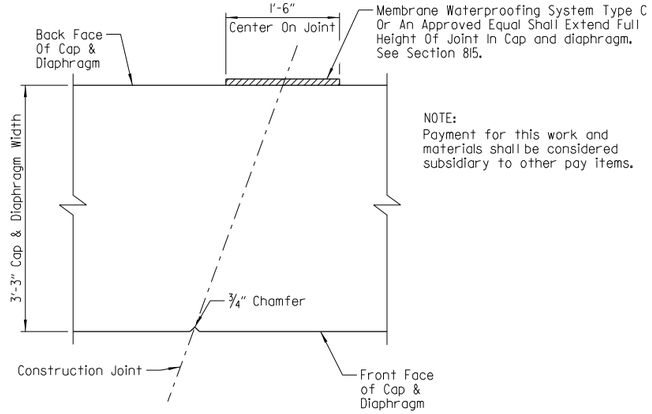
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401E	44	13'-1"	3'-1"	5'-1"	2"
B402	41	6'-11"	3'-1"	2'-0"	2"
B406	4	10'-7"			2"
B407E	2	6'-1"			Str.
B408E	10	7'-4"			Str.
B501	41	11'-10"			2½"
B502	10	8'-0½"	3'-1"	2'-7"	2½"
B505	4	46'-9"			Str.
B506	4	18'-10"			Str.
B507	4	19'-10"			Str.
B603	6	47'-5"	46'-9"		4½"
B604	6	46'-9"			Str.

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

BAR BENDING DIAGRAMS



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



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

CONSTRUCTION JOINT DETAIL

No Scale

LEGEND

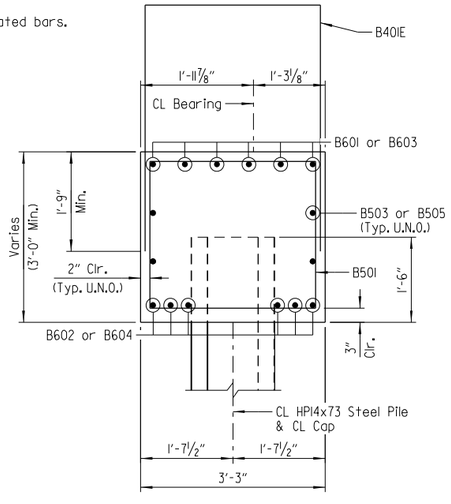
U.N.O. = Unless Noted Otherwise

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.

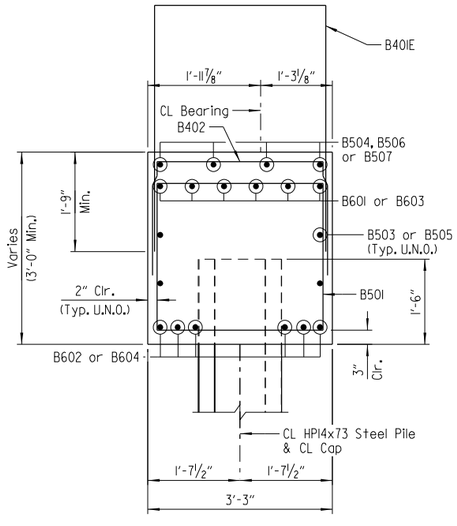
Granular backfill and pipe underdrain required behind cap. See Dwg. No. 61686 for details.

For additional information, see Layout.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENT NO. 7

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

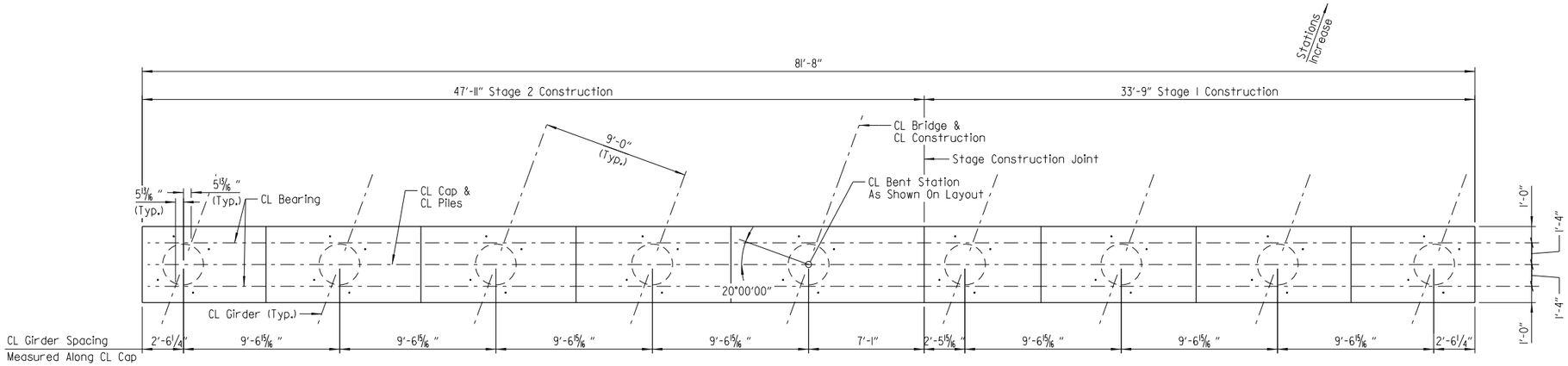
DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x2_a8.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61677

drgoad 6/12/2020 12:42:38 PM
WORKSPACE: ARDOT Bridge
L:\2017\170175\60 - Milland Bodcau Creek\Drawings\B030497x2_5208_AB.dgn
REVISED DATE:

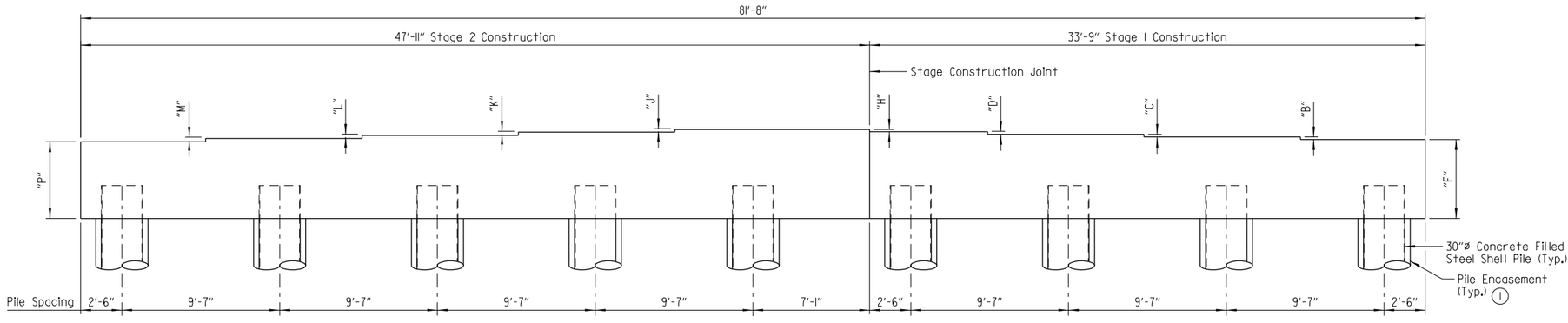
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	80	130
(1) 07484		INT. BENT		61678



PLAN - BENT NOS. 2-6
Scale: 1/4" = 1'-0"

NOTES:
For "TABLE OF VARIABLES" and reinforcing details, see Dwg. Nos. 61650 & 61651.



ELEVATION - BENT NOS. 2-6
(Looking Ahead)
Scale: 1/4" = 1'-0"

(1) For details of pile encasement, see Dwg. No. 61682.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_b1.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: FEB. 2020
BRIDGE NO. 07484 DRAWING NO. 61678

drgood 6/12/2020 12:42:39 PM
WORKSPACE: ARDOT Bridge
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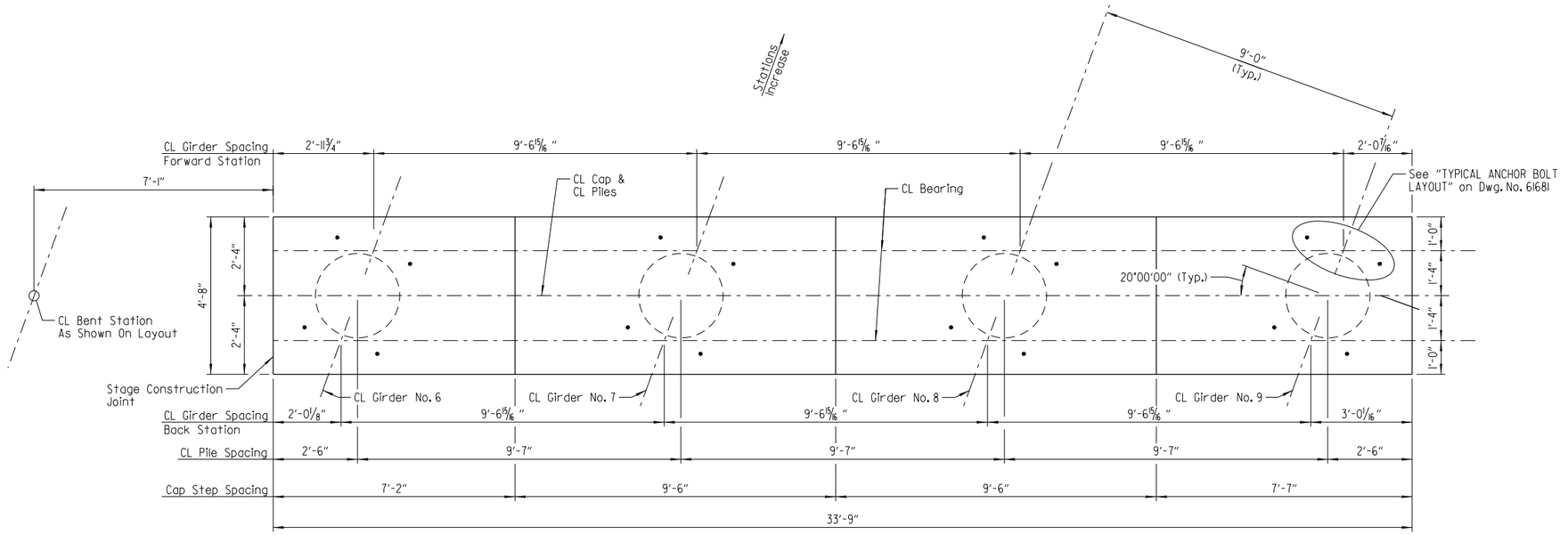
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

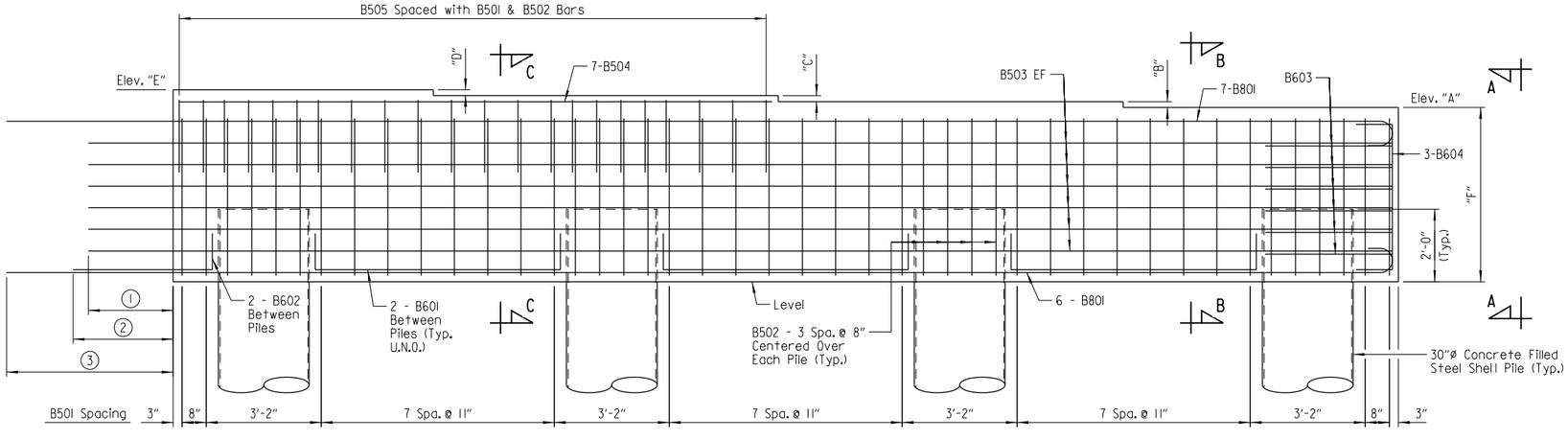
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	81	130
① 07484		INT. BENT		61679



PLAN - BENT NOS. 2-6 - STAGE I CONSTRUCTION

Scale: ½" = 1'-0"

TABLE OF VARIABLES						
BENT NO.	"A"	"B"	"C"	"D"	"E"	"F"
2	253.60	1¹⁵⁄₁₆"	1¹⁵⁄₁₆"	2"	254.09	4'-9¹¹⁄₁₆"
3	253.82	2¹⁄₁₆"	2¹⁄₁₆"	2¹⁄₁₆"	254.33	4'-8¹³⁄₁₆"
4	253.85	2³⁄₁₆"	2³⁄₁₆"	2¼"	254.40	4'-8"
5	253.67	2⁵⁄₁₆"	2⅜"	2⅜"	254.26	4'-8"
6	253.37	2⅜"	2⅜"	2⁵⁄₁₆"	253.96	4'-8"



ELEVATION - BENT NOS. 2-6 - STAGE I CONSTRUCTION

(Looking Ahead)
Scale: ½" = 1'-0"

NOTES:
For "VIEW A-A", "SECTION B-B", "SECTION C-C", bar lists and bar bending diagrams, see Dwg. No. 61681.

① 2'-4" Min. Projection (Typ. #5 Bars)
② 2'-9" Min. Projection (Typ. #6 Bars)
③ 4'-7" Min. Projection (Typ. #8 Bars)

NOTE:
Pile encasement not shown for clarity.

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

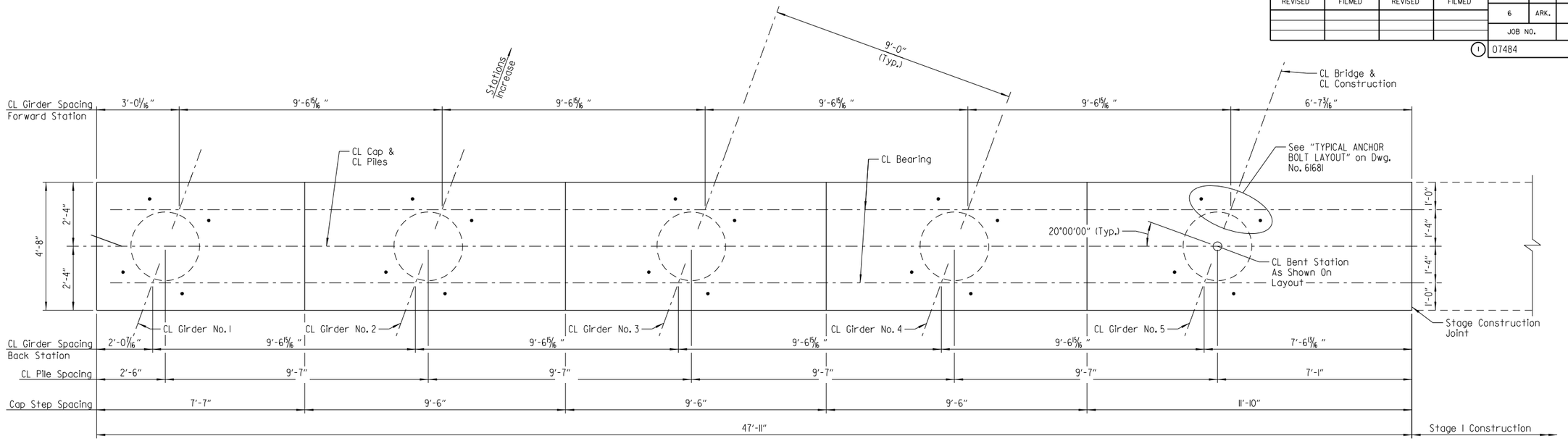
SHEET 2 OF 4
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_b2.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: FEB. 2020
BRIDGE NO. 07484 DRAWING NO. 61679

drgaad 6/12/2020 12:42:39 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701760 - Mill and Bodcau Creek\Drawings\B030497x2_S210_BE.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

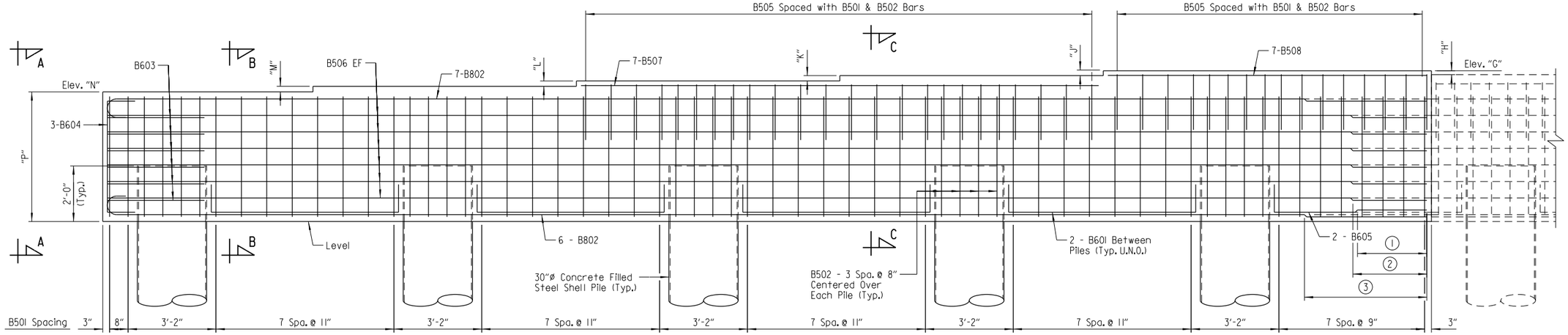
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	82	130
① 07484		INT. BENT		61680



PLAN - BENT NOS. 2-6 - STAGE 2 CONSTRUCTION

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

① 2'-2" Min. Lap (Typ. #5 Bars)
② 2'-7" Min. Lap (Typ. #6 Bars)
③ 4'-5" Min. Lap (Typ. #8 Bars)



ELEVATION - BENT NOS. 2-6 - STAGE 2 CONSTRUCTION

(Looking Ahead)
Scale: 1/2" = 1'-0"

TABLE OF VARIABLES								
BENT NO.	"G"	"H"	"J"	"K"	"L"	"M"	"N"	"P"
2	254.22	1 9/16"	2"	2 3/8"	2 3/8"	2 3/8"	253.46	4'-8"
3	254.48	1 3/4"	1 15/16"	2 5/16"	2 1/4"	2 1/4"	253.75	4'-8"
4	254.55	1 3/4"	1 13/16"	2 1/8"	2 3/16"	2 1/8"	253.86	4'-8 1/8"
5	254.42	1 15/16"	1 11/16"	2 1/16"	2"	2 1/16"	253.77	4'-9 3/16"
6	254.13	2 1/16"	1 5/8"	2"	1 15/16"	2"	253.50	4'-9 9/16"

NOTE:
Pile encasement not shown for clarity.

NOTES:
For "VIEW A-A", "SECTION B-B", "SECTION C-C", bar lists and bar bending diagrams, see Dwg. No. 61681.

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_b3.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: FEB. 2020
BRIDGE NO. 07484 DRAWING NO. 61680

drgood 6/12/2020 12:42:39 PM
WORKSPACE: ARDOT Bridge
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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.		030497	83	130
				(1) 07484		INT. BENT		61681

BAR LIST - (PER BENT)

STAGE 1 CONSTRUCTION

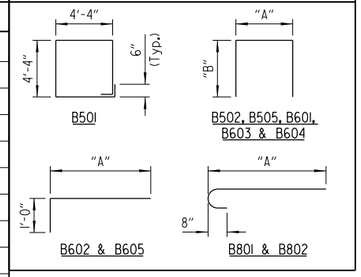
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B501	28	17'-10"			2½"
B502	16	12'-9½"	4'-4"	4'-4"	2½"
B503	12	35'-11"			Str.
B504	7	16'-4"			Str.
B505	22	8'-1½"	4'-4"	2'-0"	2½"
B601	6	8'-5½"	6'-9"	1'-0"	4½"
B602	2	4'-8½"	3'-10"		4½"
B603	6	10'-10½"	4'-2½"	3'-6"	4½"
B604	3	5'-10½"	4'-2½"	1'-0"	4½"
B801	13	39'-1"	38'-2"		6"

STAGE 2 CONSTRUCTION

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B501	42	17'-10"			2½"
B502	20	12'-9½"	4'-4"	4'-4"	2½"
B505	40	8'-1½"	4'-4"	2'-0"	2½"
B506	12	47'-7"			Str.
B507	7	18'-8"			Str.
B508	7	11'-6"			Str.
B601	8	8'-5½"	6'-9"	1'-0"	4½"
B603	6	10'-10½"	4'-2½"	3'-6"	4½"
B604	3	5'-10½"	4'-2½"	1'-0"	4½"
B605	2	6'-4½"	5'-6"		4½"
B802	13	48'-6"	47'-7"		6"

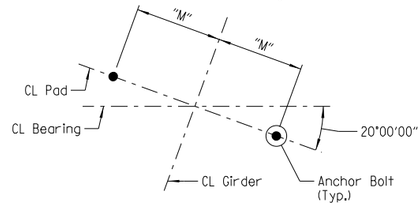
NOTE:
Number of bars is for a single bent.

BAR BENDING DIAGRAMS



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

NOTE:
For details of elastomeric bearings and anchor bolts, see Dwg. No. 61683.



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.

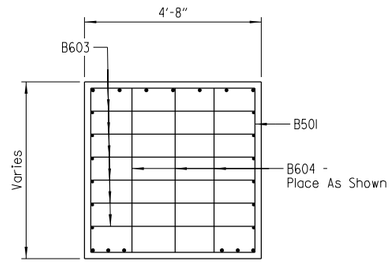
Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Piles at Bent Nos. 2-6 shall be 30"ø concrete filled steel shell piles.

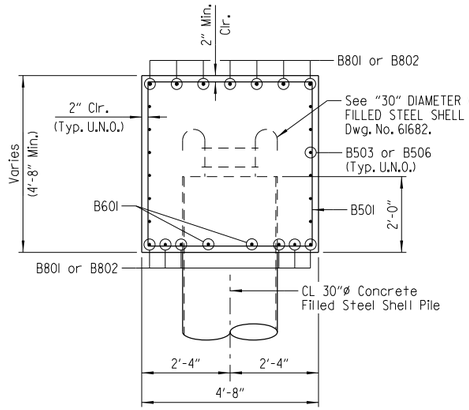
For additional information, see Layout.

LEGEND

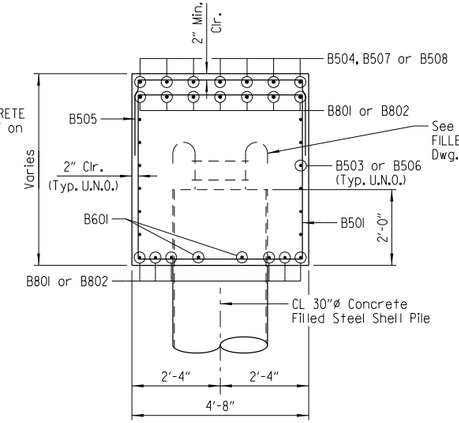
U.N.O. = Unless Noted Otherwise



VIEW A-A
Scale: ½" = 1'-0"



SECTION B-B
Scale: ½" = 1'-0"



SECTION C-C
Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF INTERMEDIATE BENTS

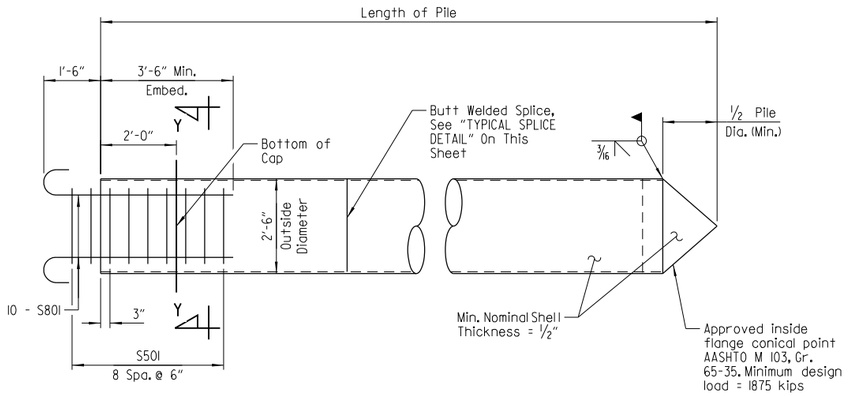
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_b4.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: FEB. 2020
BRIDGE NO. 07484 DRAWING NO. 61681

drgood 6/12/2020 12:42:40 PM
WORKSPACE: ARDOT Bridge
L:\20IT\170I7560 - Mill and Bodcau Creek\Drawings\B030497x2_S2I2_BE.dgn
REVISED DATE:

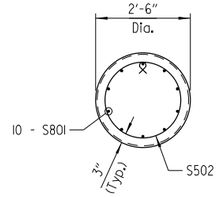
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	84	130
				(1)	07484	30" DIA. STEEL SHELL PILES		61682



30" DIAMETER CONCRETE FILLED STEEL SHELL PILE

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

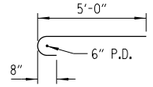
NOTE:
Steel pile tip will not be paid for directly, but shall be subsidiary to the item "STEEL SHELL PILING (30" DIA.)".



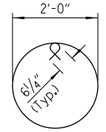
SECTION Y-Y

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

BAR BENDING DIAGRAMS

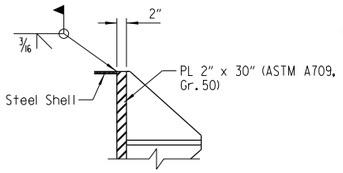


S801

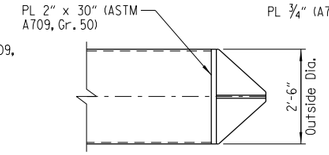


S501

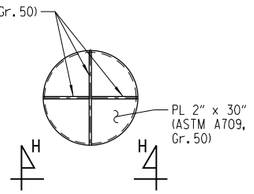
NOTE:
Dimensions of bars are out-to-out.



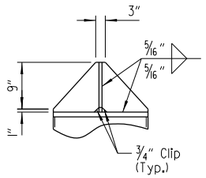
PART SECTION



ELEVATION

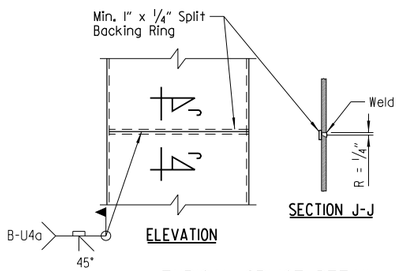


VIEW H-H



ALTERNATE VANED TIP DETAIL FOR 30" PILE

No Scale

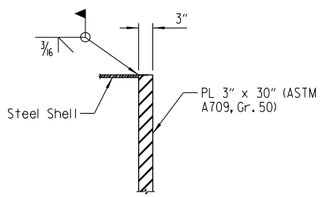


ELEVATION

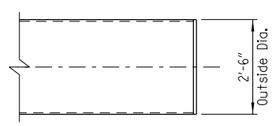
SECTION J-J

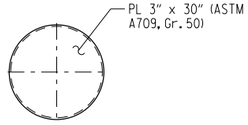
TYPICAL SPLICE DETAIL

No Scale



PART SECTION





ELEVATION

ALTERNATE FLAT TIP DETAIL FOR 30" PILE

No Scale

GENERAL NOTES - 30" CONCRETE FILLED STEEL SHELL PILES

Steel shells shall conform to ASTM A252, Grade 3 (Fy = 45,000 psi)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi and shall be poured in the dry.

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

Steel shell piling shall be encased with concrete in accordance with Std. Dwg. No. 55021 to the elevation shown on the Bridge Layout. Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

Concrete, structural steel, and reinforcing steel shall not be paid for directly, but shall be considered subsidiary to the item "STEEL SHELL PILING (30" DIA.)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

DETAILS OF 30" DIA. STEEL SHELL PILES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

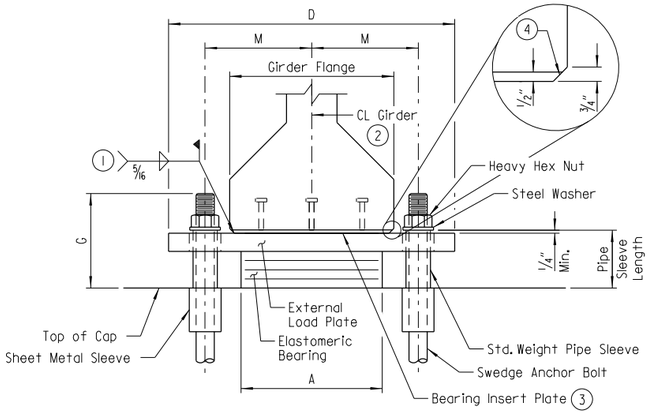
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: APR. 2020 FILENAME: b030497x2_bl3.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: APR. 2020

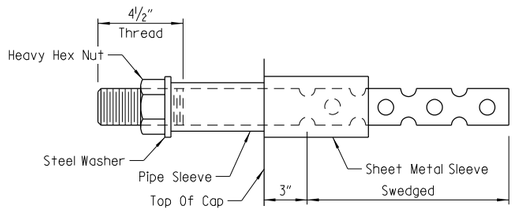
BRIDGE NO. 07484 DRAWING NO. 61682

drgoad 6/12/2020 12:42:40 PM
WORKSPACE: ARDOT Bridge
L:\20\7\1701560 - Mill and Bodcau Creek\Drawings\B030497x2_S213_MD.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.		030497	85	130
				(1) 07484		ELASTOMERIC BEARINGS		61683



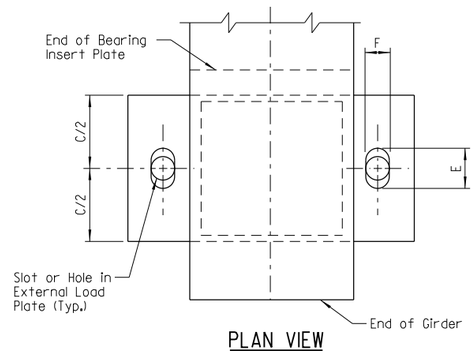
FRONT VIEW



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."

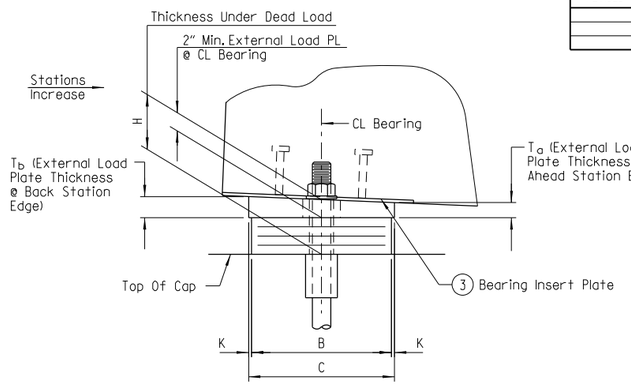
External load plates shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

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.

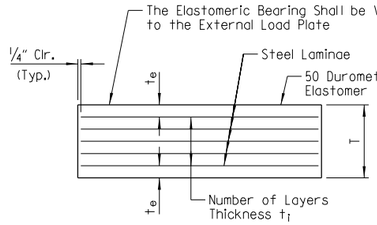
Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M 270, GR. 50W)". External load plates will not be measured or paid for separately but will be considered incidental to the unit price bid for "ELASTOMERIC BEARINGS".

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.



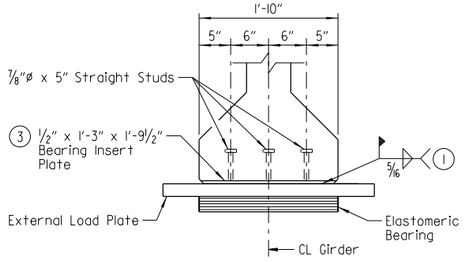
SIDE VIEW

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

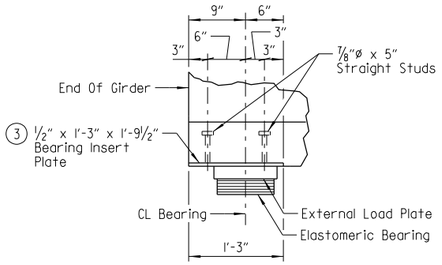


t_e = Thickness of Elastomer Cover on Top and Bottom of Pad
t_i = Thickness of Elastomer Between Steel Laminae
N = Number of Elastomer Layers of Thickness t_i

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 III)". 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) Maximum Design Load (Kips)	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	All	Fixed	18	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	2.02	1.98	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
3 Bk.	All	Fixed	9	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	2.02	1.98	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
3 Ah.	I-5	Fixed	5	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	2.01	1.99	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
3 Ah.	6-9	Fixed	4	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	2.00	2.00	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
4 Bk.	I-5	Exp.	5	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	4 1/2"	2 5/8"	-	1/2"	13 3/4"	2.01	1.99	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
4 Bk.	6-9	Exp.	4	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	4 1/2"	2 5/8"	-	1/2"	13 3/4"	2.00	2.00	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
4 Ah.	All	Exp.	9	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	4 1/2"	2 5/8"	-	1/2"	13 3/4"	1.99	2.01	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
5 Bk.	All	Fixed	9	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	1.99	2.01	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
5 Ah.	All	Fixed	9	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	1.98	2.02	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
6	All	Fixed	18	136	7 3/8"	4 3/8"	22"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	33 1/2"	2 5/8"	2 5/8"	-	1/2"	13 3/4"	1.98	2.02	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"

(5) Maximum Design Load = LRFD Service I Limit State

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

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2020 FILENAME: b020589x2_el.dgn
CHECKED BY: JHR DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: FEB. 2020

BRIDGE NO. 07484 DRAWING NO. 61683

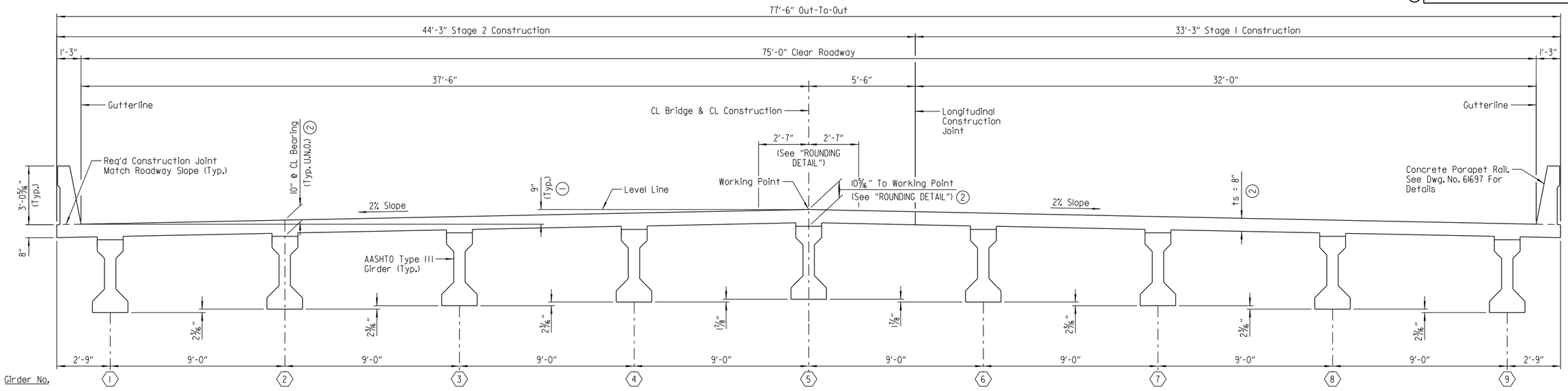
6/12/2020 12:42:41 PM
arggood
WORKSPACE: ARDOT Bridge
L:\20IT\T017560 - Mill and Bodcau Creek\Drawings\B030497x2_S50L_BG.dgn
REVISED DATE:

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.		030497	86	130
(1) 07484		179'-4" UNIT		61684

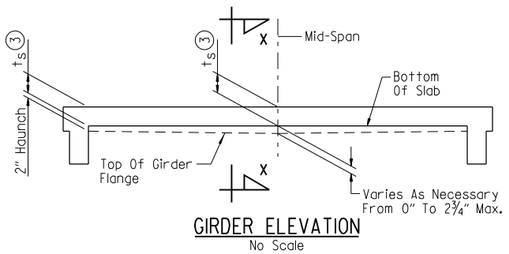
(1) Working Point to Gutterline

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"



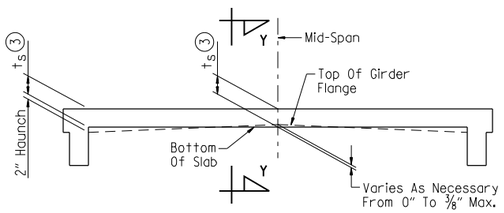
TYPICAL ROADWAY SECTION

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



GIRDER ELEVATION

No Scale



GIRDER ELEVATION

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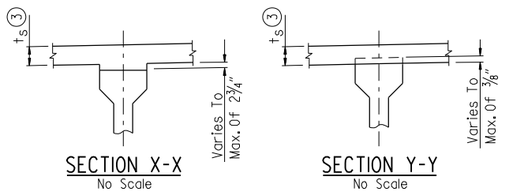


SECTION X-X

No Scale

SECTION Y-Y

No Scale

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

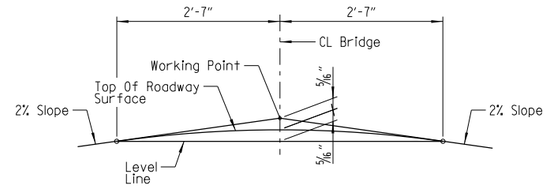
t_S = slab thickness as shown on superstructure details. See "TYPICAL ROADWAY SECTION - FINAL CONDITION".

(3) Tolerance when removable deck forming is used is +1/2", -1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. 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 3/8" 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.

LEGEND

U.N.O. = Unless Noted Otherwise



Note:
Working Point matches Theoretical Grade.

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 1 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x2_Sl.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61684

drgoad 6/12/2020 12:42:41 PM
WORKSPACE: ARDOT Bridge
L:\20\7\01\7560 - Mill and Bodcau Creek\Drawings\B030497x2_S30L.SX (Typ Sect Finall.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.		030497	87	130
				(1) 07484		179'-4" UNIT		61685

SLAB REINFORCING:

Transverse: Stage 1:
S501E @ 12" O.C. Top and Bottom — Alternate
S502E @ 12" O.C. Bent Up Over Girders — Alternate
S402E @ 6" O.C. in Top of Overhangs (Bundled with No. 5 bars)

Stage 2:
S503E @ 12" O.C. Top and Bottom — Alternate
S504E @ 12" O.C. Bent Up Over Girders — Alternate
S402E @ 6" O.C. in Top of Overhangs (Bundled with No. 5 bars)

Longitudinal: Stage 1 & Stage 2:
S401E in Top and Bottom as Shown
S601E As Shown Over Int. Bents, see "PART REINFORCING PLAN AND SLAB POURING SEQUENCE" on Dwg. Nos. 61690 & 61691
S602E As Shown Over End Bents, see "PART REINFORCING PLAN AND SLAB POURING SEQUENCE" on Dwg. Nos. 61690 & 61691

(1) TOLERANCE:
Minus = 1/4"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 61684.

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 61684.

(3) Bar Projection:
3'-5" for #5 bars
2'-9" for #4 bars

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

(5) For "ROUNDING DETAIL", see Dwg. No. 61684.

(6) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. 3/4"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 III)".

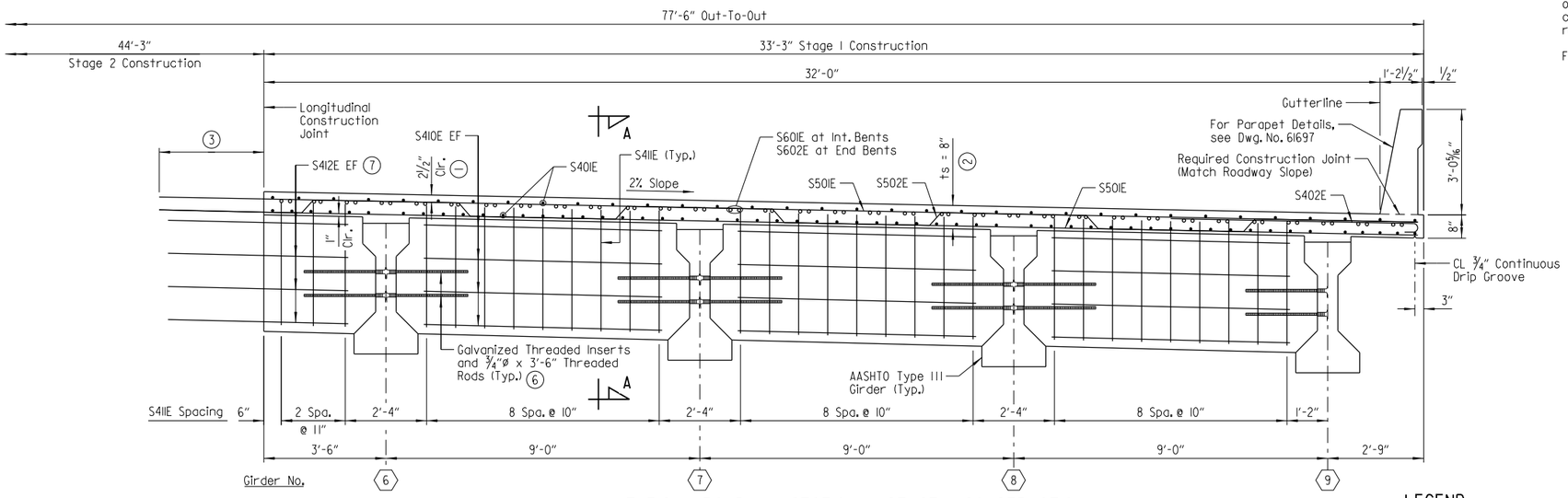
(7) Bars used in both the partial depth intermediate diaphragms and partial depth end diaphragms

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

At the Contractor's option, two straight epoxy coated No. 5 bars may be substituted for bars S502E & S504E. Payment for reinforcing will be based on the weight of bars S502E & S504E.

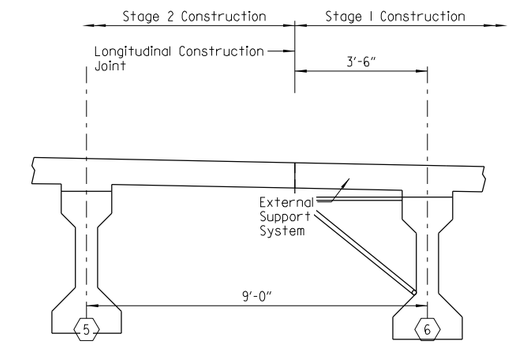
Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06. Placement of slab bolsters or hi-chairs with full-length lower runners directly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

For "SECTION A-A" & "SECTION B-B", see Dwg. No. 61688.



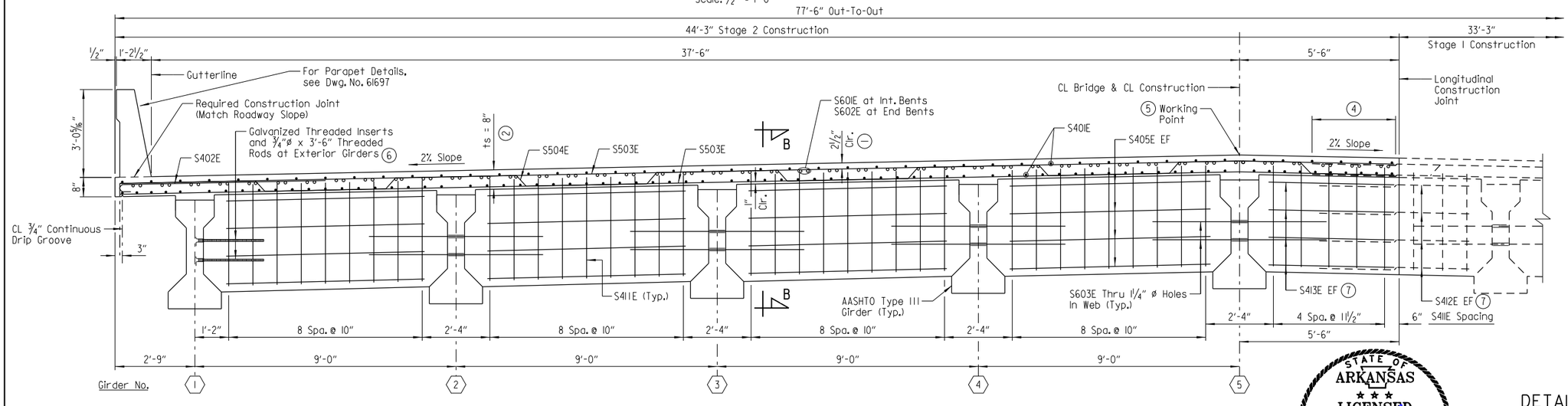
TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION
(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: 1/2" = 1'-0"

LEGEND
EF = Each Face



NOTE:
Stage 1 external supports at Girder 6 shall remain in place until after completion of the Stage 2 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



TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION
(Looking Ahead)
(Showing Partial Depth End Diaphragms)
Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: MAR. 2020 FILENAME: b030497x2_S2.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61685

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WORKSPACE: ARDOT Bridge
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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.		030497	88	130
				(1) 07484		179'-4" UNIT		61686

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. 3/4"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 III)".

(2) See End Bent Details on Dwg. Nos. 61670-61677 for additional details.

(3) 2'-9" min. projection (Typ. #4 bars)

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

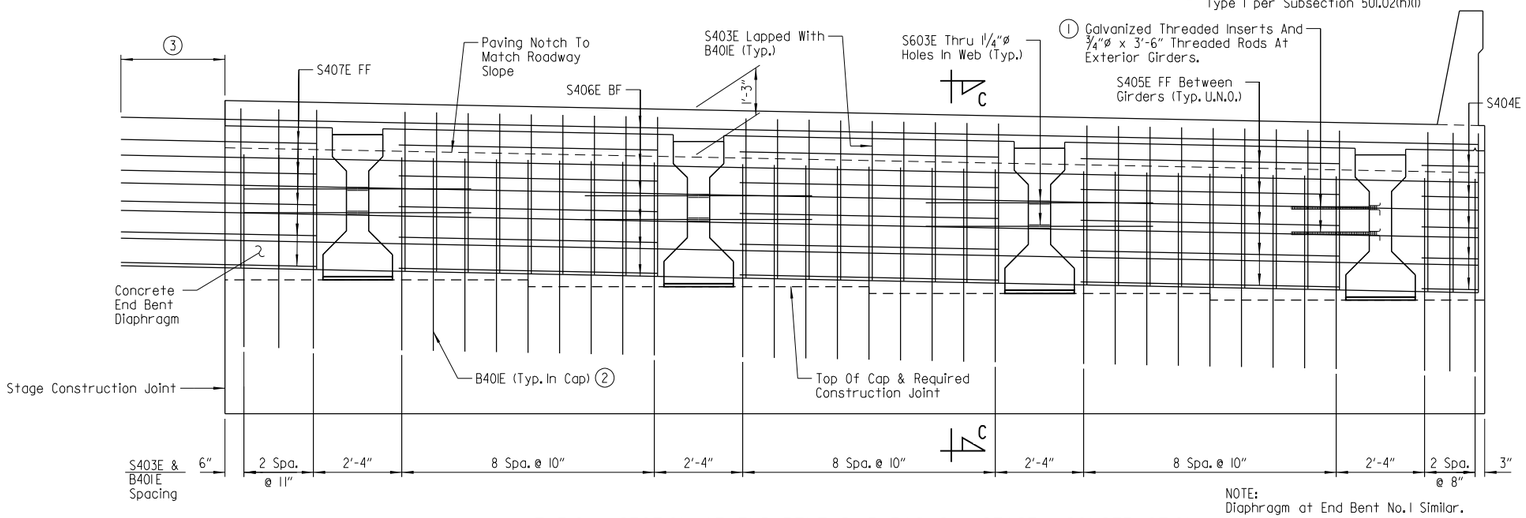
(5) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shal l not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE".

(6) S603E thru 1 1/4" ø holes in web or 3/4" ø inserts at exterior girders

(7) #5 bars, See "PART REINFORCING PLAN & SLAB POURING SEQUENCE on Dwg. Nos. 61690 & 61691 for bar designations. (Typ. U.N.O.)

(8) Measured along CL Girder

(9) Material shall conform to AASHTO M153, Type I per Subsection 501.02(h)(1)

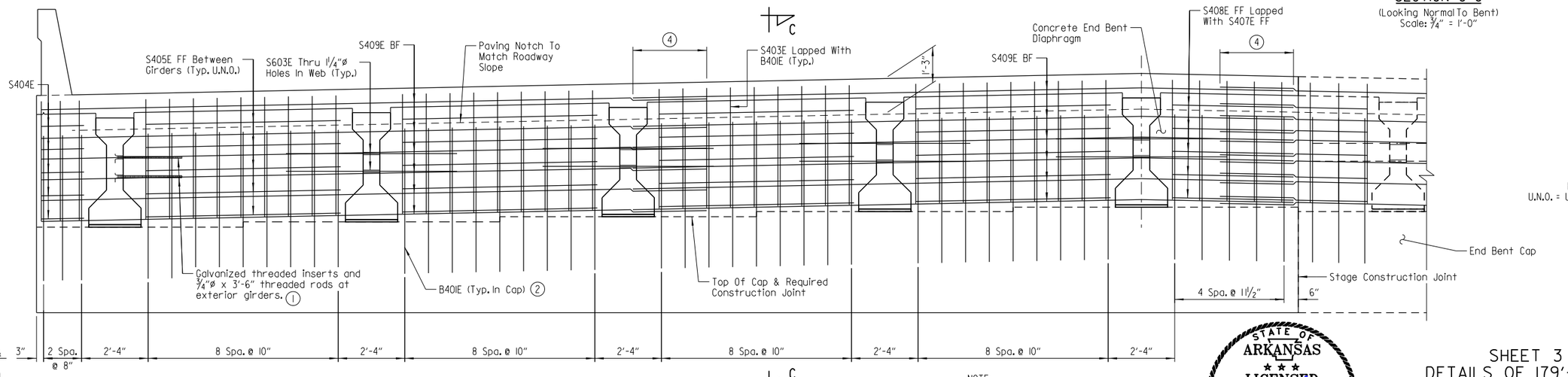


NOTE:
Diaphragm at End Bent No.1 Similar.

TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 1 CONSTRUCTION

(Looking Ahead At Bent 7)
Scale: 1/2" = 1'-0"

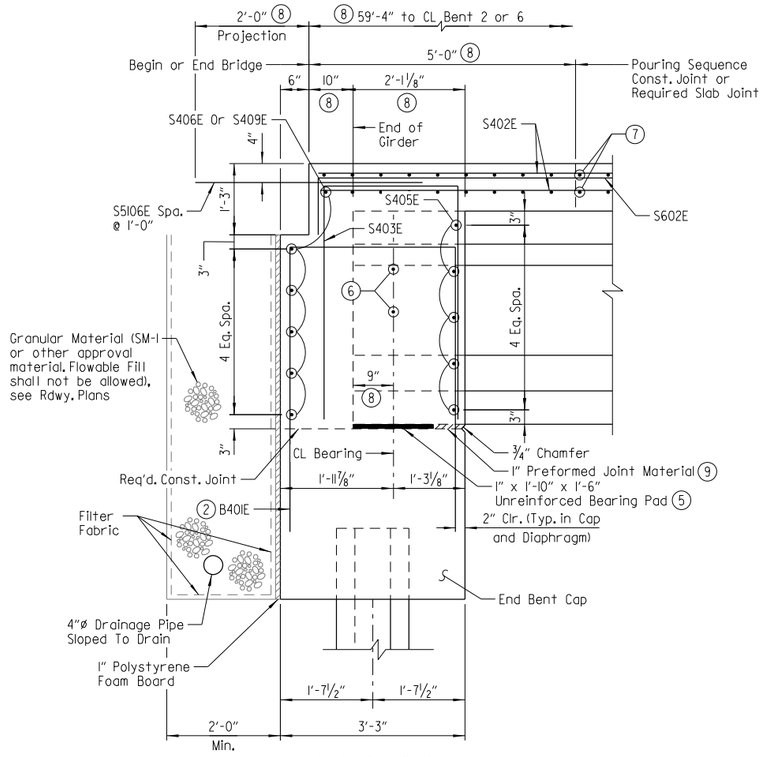
NOTE:
Deck reinforcing omitted for clarity.



NOTE:
Diaphragm at End Bent No.1 Similar.

TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 2 CONSTRUCTION

(Looking Ahead At Bent 7)
Scale: 1/2" = 1'-0"



SECTION C-C

(Looking Normal To Bent)
Scale: 3/4" = 1'-0"

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 3 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

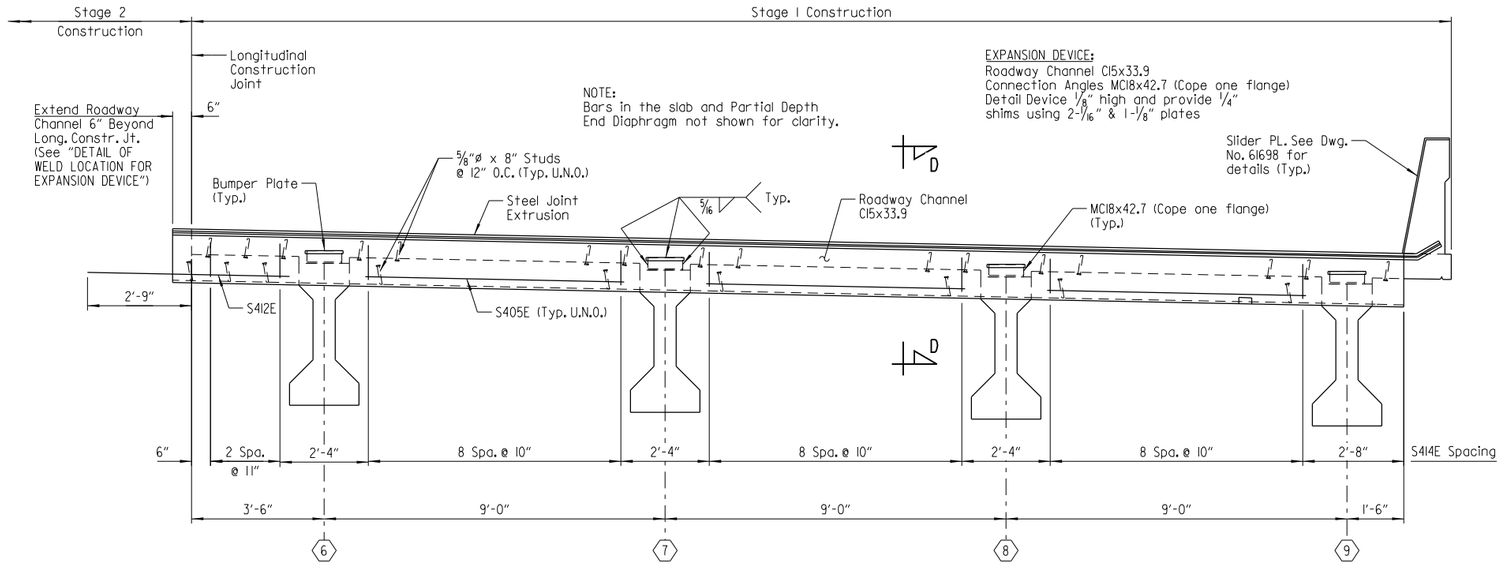
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: MAR. 2020 FILENAME: b030497x2_s3.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61686

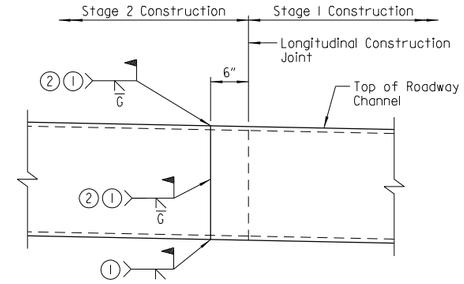
drgoad 6/12/2020 12:42:42 PM
WORKSPACE: ARDOT Bridge
L:\2017\7017560 - Mill and Bodcau Creek\Drawings\B030497x2_S303_SX (End Diaphragm).dgn
REVISED DATE:

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.		030497	89	130
				(1) 07484		179'-4" UNIT		61687



TYPICAL SECTION THRU STRIP SEAL JOINT - STAGE 1

(Looking Ahead)
Scale: 1/2" = 1'-0"

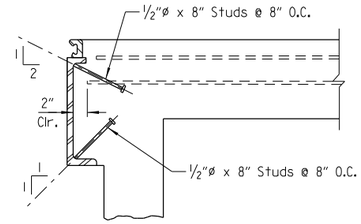


(1) Weld after Stage 1 Pour & prior to Stage 2 Pour

(2) Grind flush from top of deck to top of bumper plate

DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

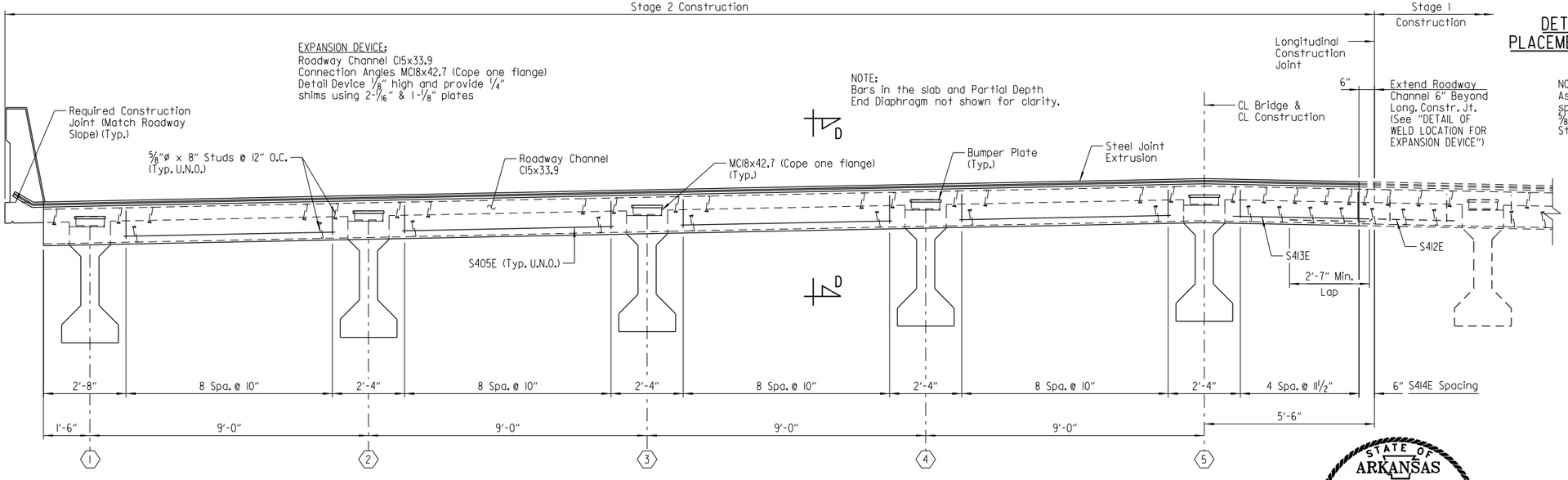
(Looking Ahead)
No Scale



DETAIL OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

No Scale

NOTE:
As an alternate to 5/8"ø studs, 1/2"ø x 8" studs spaced as shown may be used. Use weight of 5/8"ø stud as basis of measurement of Structural Steel in anchors.



TYPICAL SECTION THRU STRIP SEAL JOINT - STAGE 2

(Looking Ahead)
Scale: 1/2" = 1'-0"

NOTE:
For additional details of Strip Seal Joint, see Dwg. No. 61698 & Std. Dwg. No. 55009.

For "SECTION D-D", see Dwg No. 61689.

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 4 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

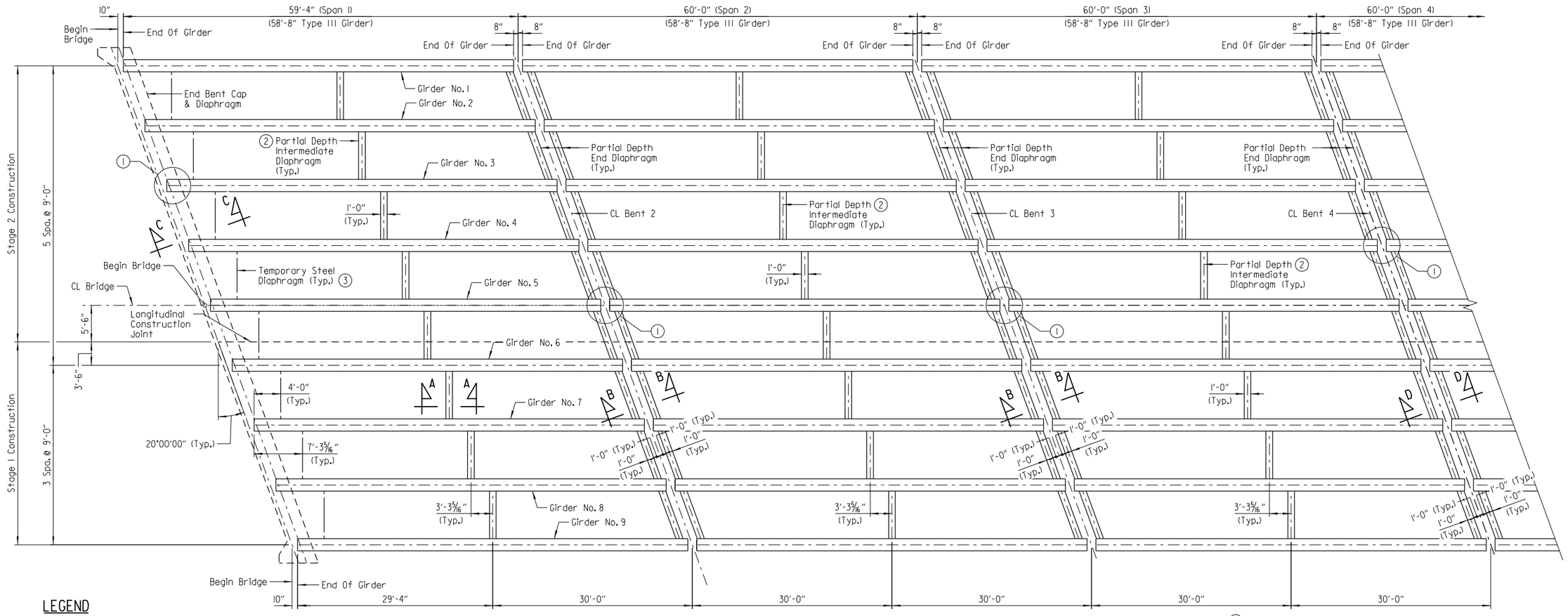
DRAWN BY: JJB DATE: APR. 2020 FILENAME: b030497x2_s4.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: APR. 2020

BRIDGE NO. 07484 DRAWING NO. 61687

drgoad 6/12/2020 12:42:42 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497x2_S304_SX (Thru-Joint).dgn
REVISED DATE:

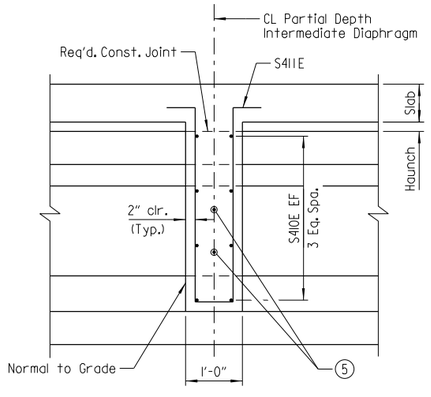
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	90	130
(1) 07484		179'-4" UNIT		61688



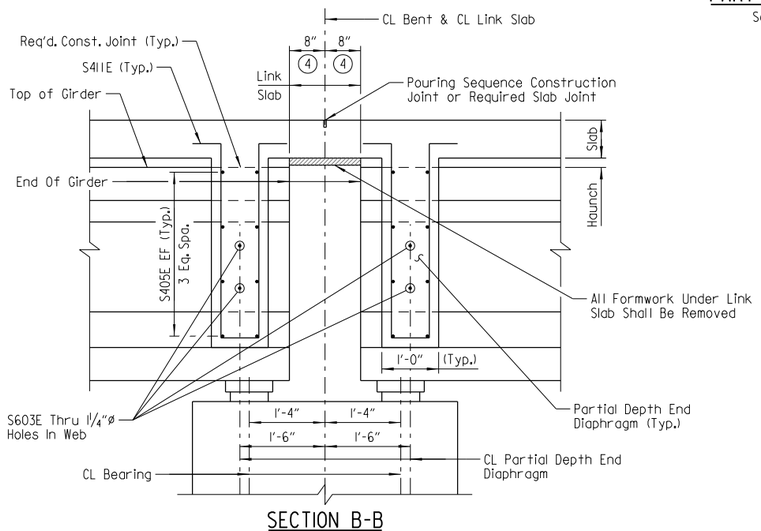
LEGEND

EF = Each Face



SECTION A-A

Scale: 3/4" = 1'-0"



SECTION B-B

(Looking Normal To CL Bent)
Scale: 3/4" = 1'-0"

PART FRAMING PLAN

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

NOTES:
For "SECTION C-C", see Dwg. No. 61686.

For "SECTION D-D", see Dwg. No. 61689.

(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 interior 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" on Dwg. No. 61689.

(3) After the concrete deck construction and curing is 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 OPL approved non-shrink epoxy grout. For additional diaphragm details, see "DETAILS OF STEEL DIAPHRAGM" on Dwg. no. 61689.

(4) Measured along CL Girder

(5) Galvanized threaded inserts and 3/4"ø x 3'-6" threaded rods. For details, see "TYPICAL ROADWAY SECTION - STAGE I CONSTRUCTION" on Dwg. No. 61685

STATE OF ARKANSAS
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No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 5 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

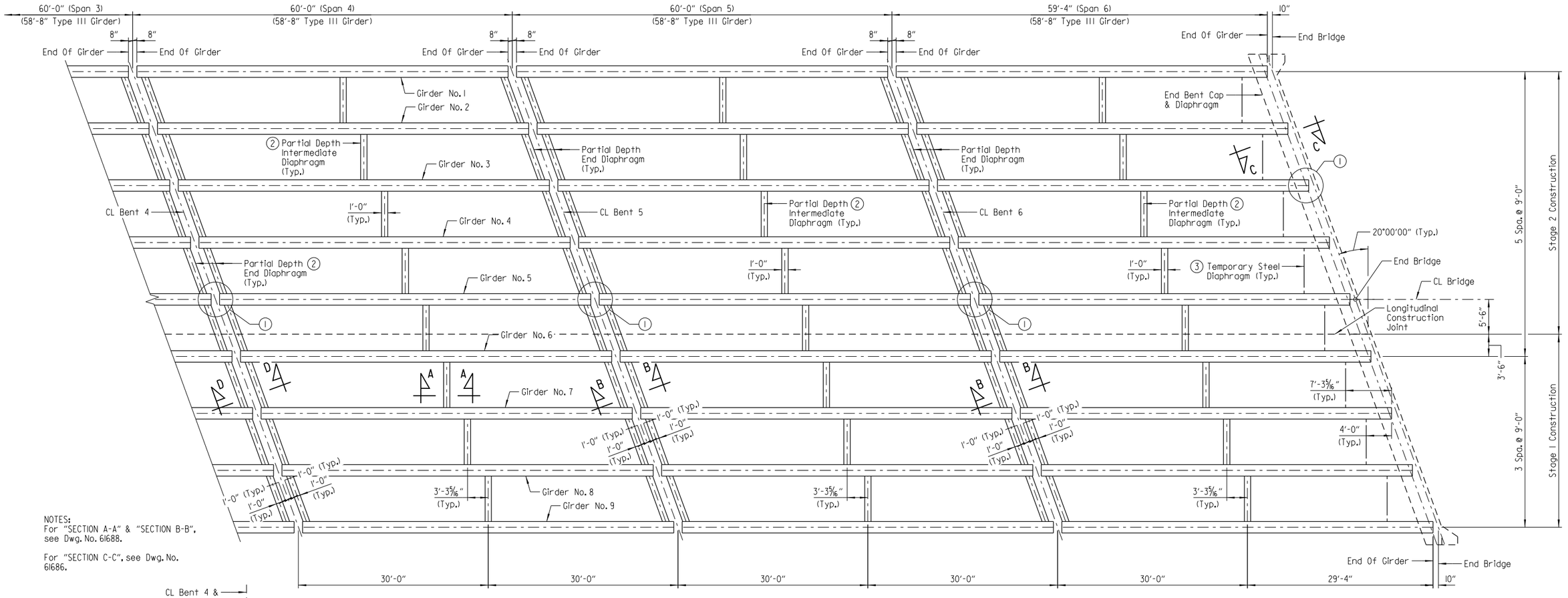
DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x2_s5.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61688

drgoad 6/12/2020 12:42:43 PM
WORKSPACE: ARDOT Bridge
L:\20ITV\170\7560 - Mill and Bodcau Creek\Drawings\B030497x2_S305.SF (Framing Plan 1).dgn
REVISED DATE:

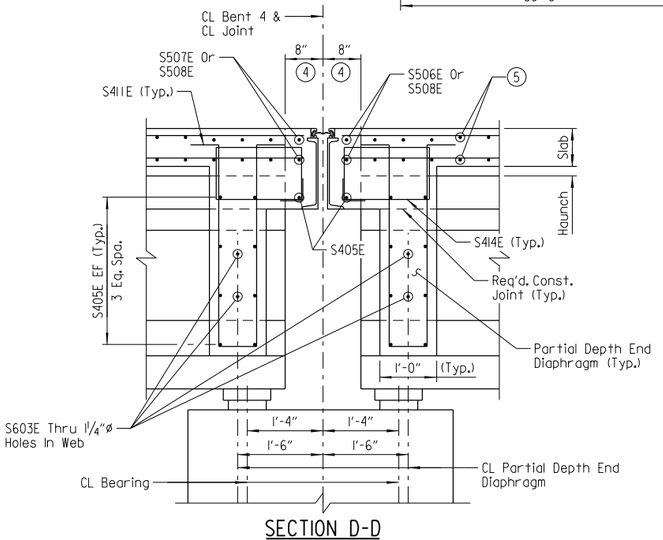
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	91	130
(1) 07484		179'-4" UNIT		61689



NOTES:
For "SECTION A-A" & "SECTION B-B", see Dwg. No. 61688.

For "SECTION C-C", see Dwg. No. 61686.

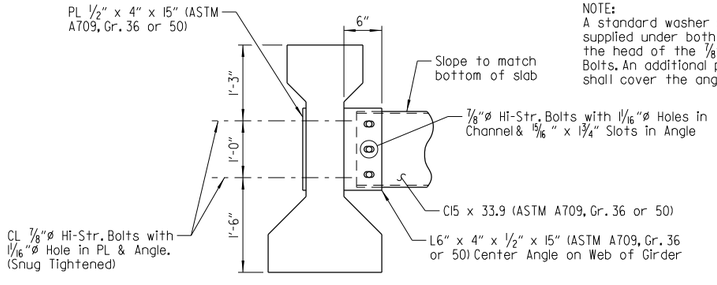


SECTION D-D

(Looking Normal To CL Bent)
Scale: 3/4" = 1'-0"

PART FRAMING PLAN

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



NOTE:
A standard washer shall be supplied under both the nut and the head of the 7/8"ø 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 III)".

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.

(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 interior 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 is 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) #5 bars, See "PART REINFORCING PLAN & SLAB POURING SEQUENCE on Dwg. Nos. 61691 & 61692 for bar designations. (Typ. U.N.O.)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 6 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2020 FILENAME: b030497x2_s6.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61689

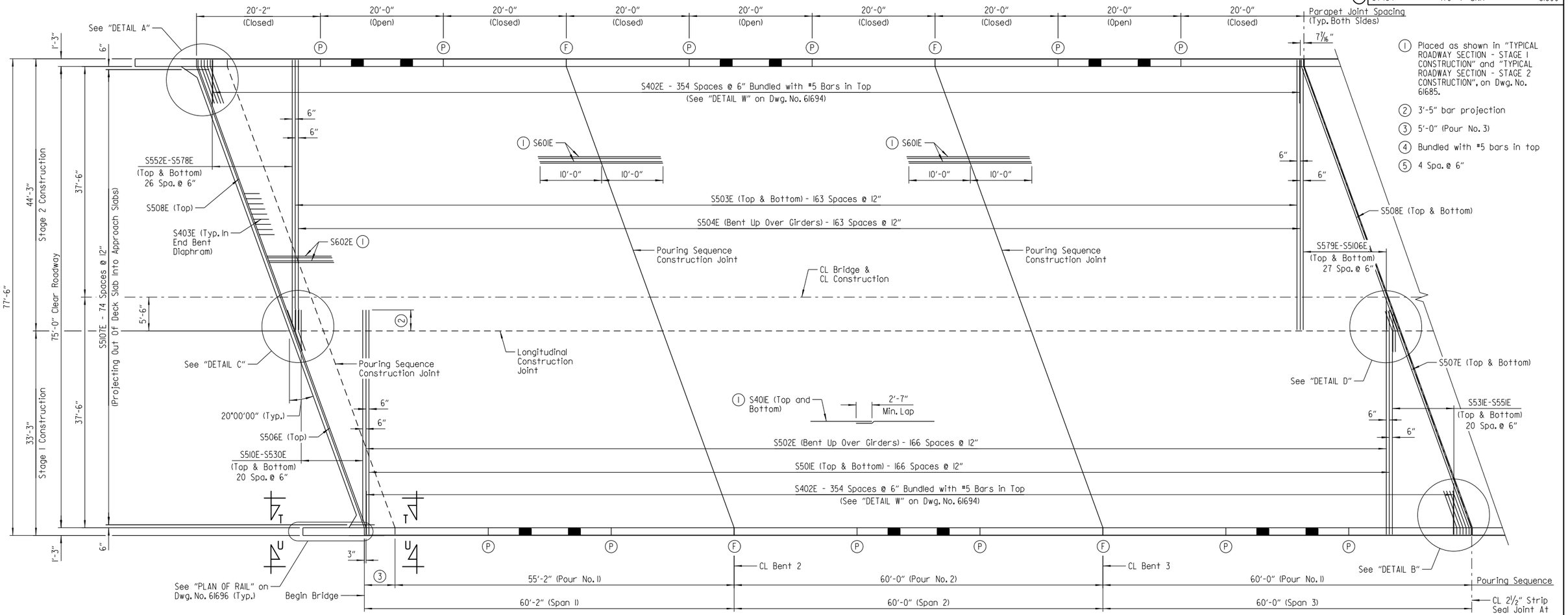
drgoad 6/12/2020 12:42:43 PM
WORKSPACE: ARDOT Bridge
L:\2017\17017560 - Millard Bodcau Creek\Drawings\B030497x2_S306_SF (Framing Plan 2).dgn
REVISED DATE:

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.		030497	92	130
(1) 07484		179'-4" UNIT		61690

(P) Partial-Depth Parapet Joint at this location

(F) Full-Depth Parapet Joint at this location



(1) Placed as shown in "TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION" and "TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION", on Dwg. No. 61685.

(2) 3'-5" bar projection

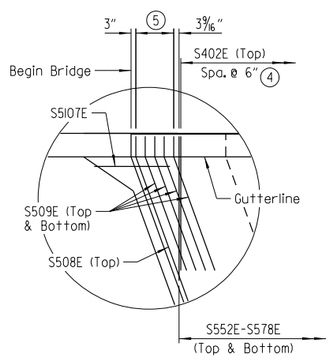
(3) 5'-0" (Pour No. 3)

(4) Bundled with #5 bars in top

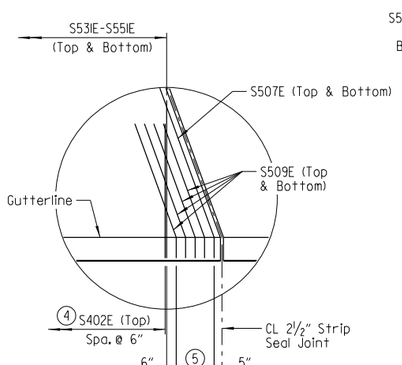
(5) 4 Spa. @ 6"

PART REINFORCING PLAN & SLAB POURING SEQUENCE

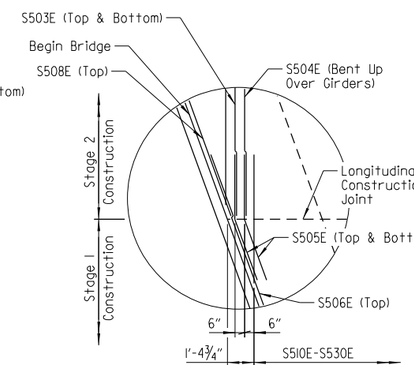
Scale: 1/8" = 1'-0"



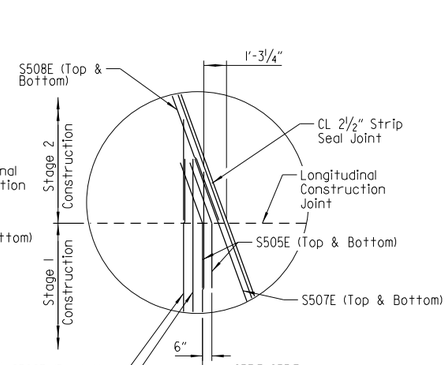
DETAIL A
Scale: 1/4" = 1'-0"



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



DETAIL C
Scale: 1/4" = 1'-0"



DETAIL D
Scale: 1/4" = 1'-0"

NOTES:
Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 61697.

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 "SLAB JOINT DETAIL", "LONGITUDINAL CONSTRUCTION JOINT DETAIL", and "DETAIL W", see Dwg. No. 61694.

For "GENERAL NOTES - SUPERSTRUCTURE", see Dwg. No. 61699.

For bar lists and bar bending diagrams, see Dwg. No. 61695.

For "ALTERNATE SLAB POURING SEQUENCE" and "SLAB POURING SEQUENCE NOTES", see Dwg. No. 61694.

For "SECTION T-T" and "SECTION U-U", see Dwg. No. 61696.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 7 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: MAR. 2020 FILENAME: b030497x2_s7.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020

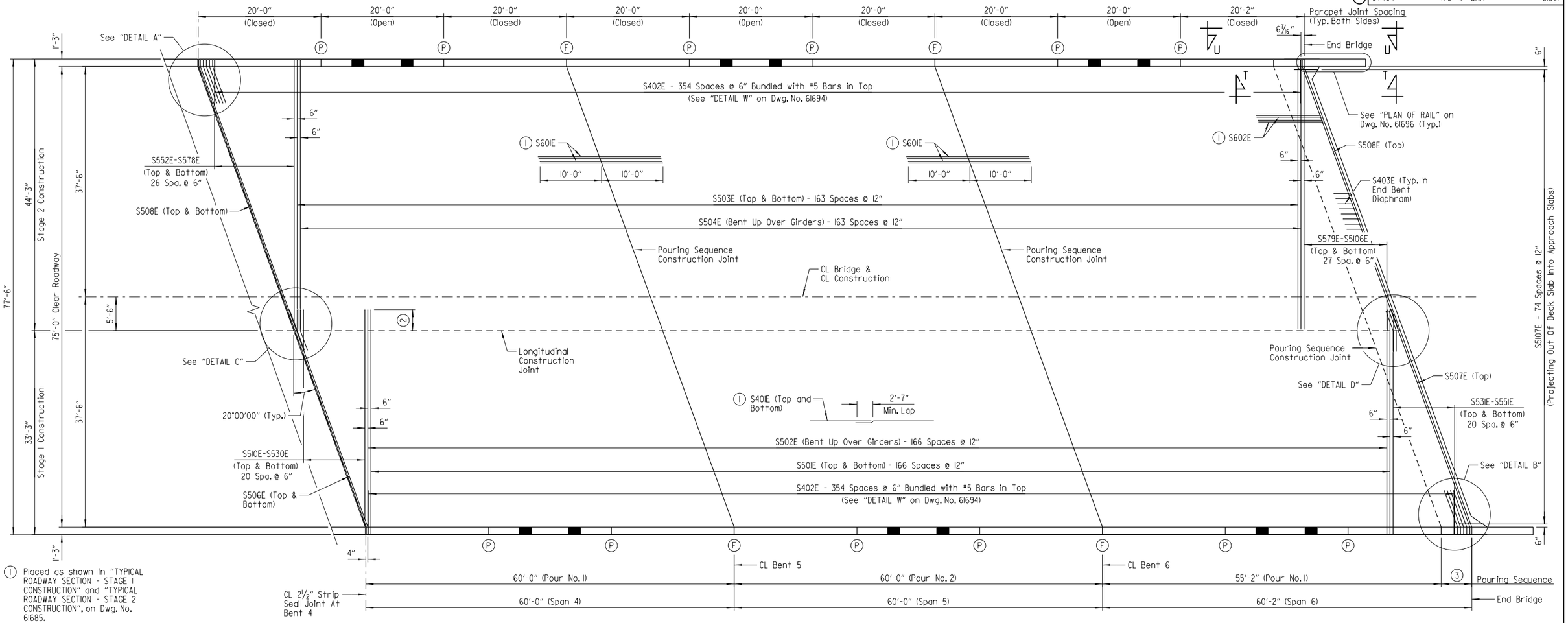
BRIDGE NO. 07484 DRAWING NO. 61690

drgoad
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497x2_S307_SB (Slab Plan 1).dgn
6/12/2020 12:42:44 PM
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.		030497	93	130
				(1) 07484		179'-4" UNIT		61691

(P) Partial-Depth Parapet Joint at this location

(F) Full-Depth Parapet Joint at this location



(1) Placed as shown in "TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION" and "TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION", on Dwg. No. 61685.

(2) 3'-5" bar projection

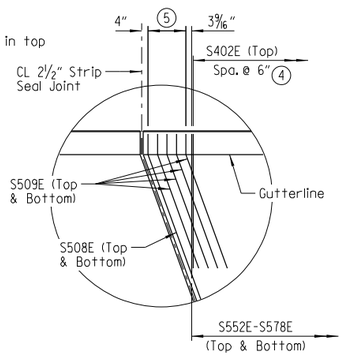
(3) 5'-0" (Pour No. 3)

(4) Bundled with #5 bars in top

(5) 4 Spa. @ 6"

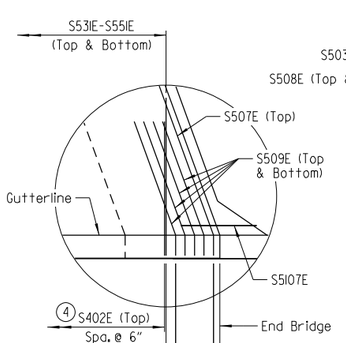
PART REINFORCING PLAN & SLAB POURING SEQUENCE

Scale: ⅛" = 1'-0"



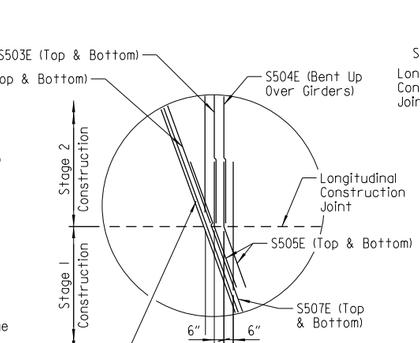
DETAIL A

Scale: ¼" = 1'-0"



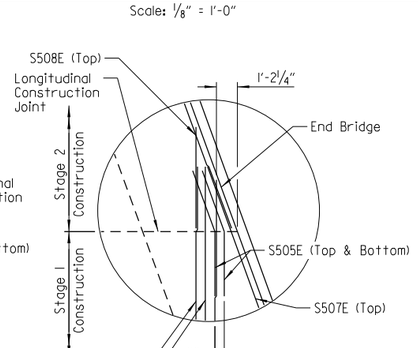
DETAIL B

Scale: ¼" = 1'-0"



DETAIL C

Scale: ¼" = 1'-0"



DETAIL D

Scale: ¼" = 1'-0"

NOTES:
Parapet rail spacing and joint depth shown are typical for both sides of roadway.
For reinforcing details, see Dwg. No. 61697.

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 General Notes, see Dwg. No. 61699.

For bar lists and bar bending diagrams, see Dwg. No. 61695.

For "ALTERNATE SLAB POURING SEQUENCE", "SLAB POURING SEQUENCE NOTES", "SLAB JOINT DETAIL", "LONGITUDINAL CONSTRUCTION JOINT DETAIL", and "DETAIL W", see Dwg. No. 61694.

For "SECTION T-T" and "SECTION U-U", see Dwg. No. 61696.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

SHEET 8 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

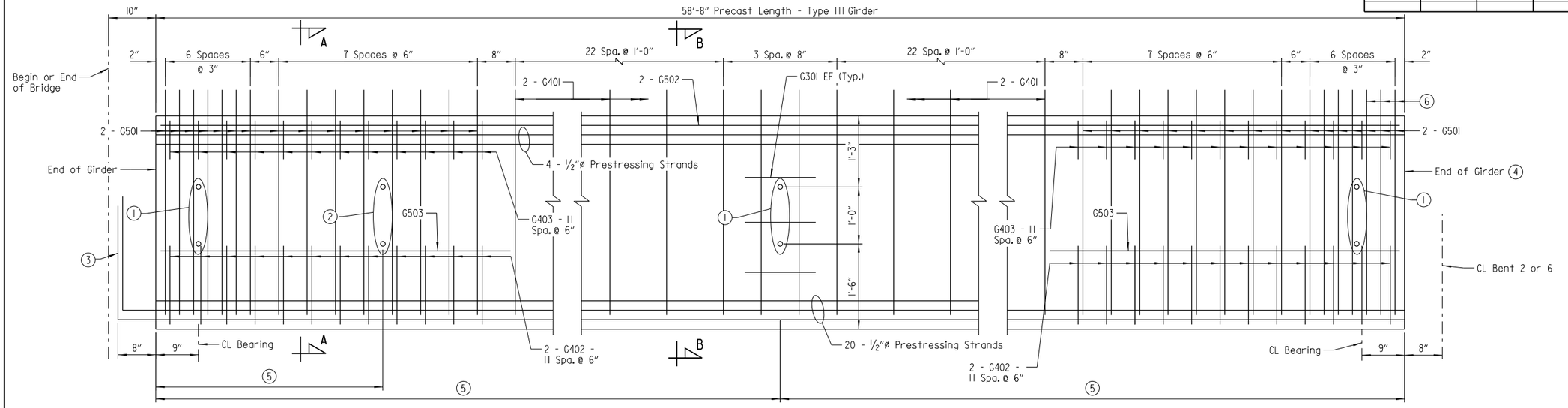
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: MAR. 2020 FILENAME: b030497x2_s8.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61691

drgoad 6/12/2020 12:42:44 PM
WORKSPACE: ARDOT Bridge
L:\20IT\170I7560 - Mill and Bodcau Creek\Drawings\B030497x2_S308.SB (Slab Plan 2).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.		030497	94	130
				(1) 07484		179'-4" UNIT		61692



TYPICAL GIRDER ELEVATION (TYPE III) - 58'-8"

Spans 1 or 6 Shown, Spans 2-5 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. 61693 for spacing and Dwg. Nos. 61685 &61686 for additional details.

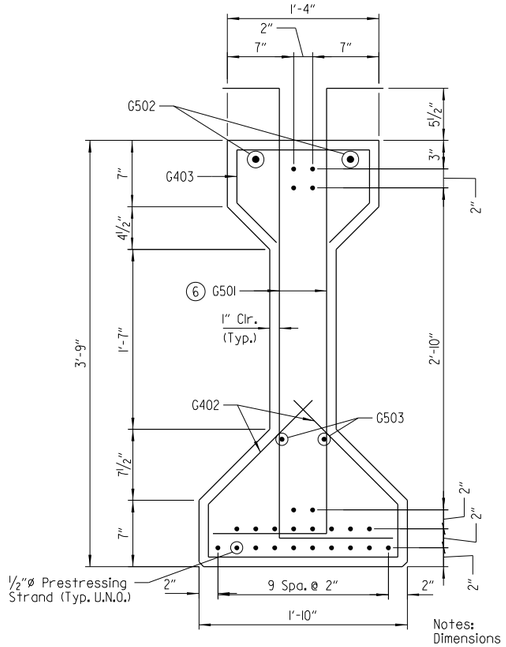
(2) Connection for Temporary Steel Diaphragm: 1¼"ø holes in web. See Dwg. No. 61693 for additional details.

(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".

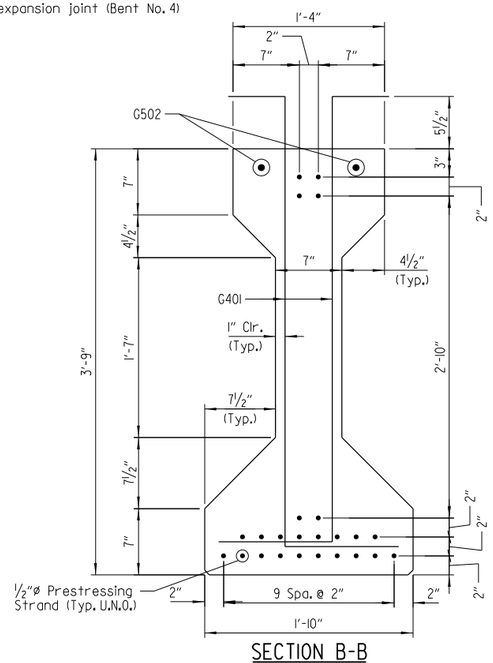
(5) See Dwg. Nos. 61688 & 61689 for spacing of connections for temporary steel diaphragm and partial depth diaphragms.

(6) Replace 3-Bars G501 with 3-Bars G504 at girder ends adjacent to expansion joint (Bent No. 4)



SECTION A-A

Scale: 1½" = 1'-0"



SECTION B-B

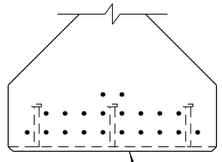
Scale: 1½" = 1'-0"

Notes:
Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but willbe considered subsidiary to the item "Prestressed Concrete Girders (Type II)".

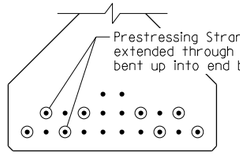
Prestressing strands shall be bonded along the entire length of the girder.

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

Scale: 1½" = 1'-0"

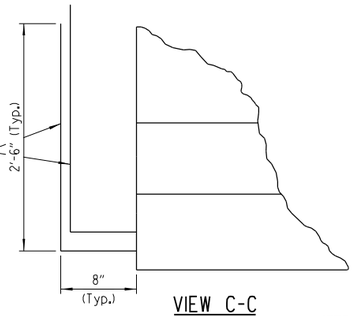


END OF GIRDER VIEW AT END BENT

Scale: 1½" = 1'-0"

At end bents only, shop bend 8 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.



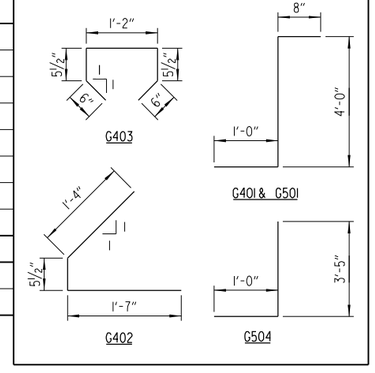
VIEW C-C

Scale: 1½" = 1'-0"

BAR LIST - PER GIRDER

	MARK	NO. REQ'D	LENGTH	P.D.
BARS COMMON TO ALL SPANS	G301	6	3'-9"	Str.
	G401	96	5'-6"	3"
	G402	48	3'-3½"	2"
	G403	24	2'-11"	2"
	G502	2	58'-4"	Str.
	G503	4	6'-2"	Str.
SPAN NOS. 1, 2, 5 & 6	G501	60	5'-5"	3¾"
SPAN NOS. 3 & 4	G501	57	5'-5"	3¾"
	G504	3	4'-4"	3¾"

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 III)".

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.

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

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 9 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

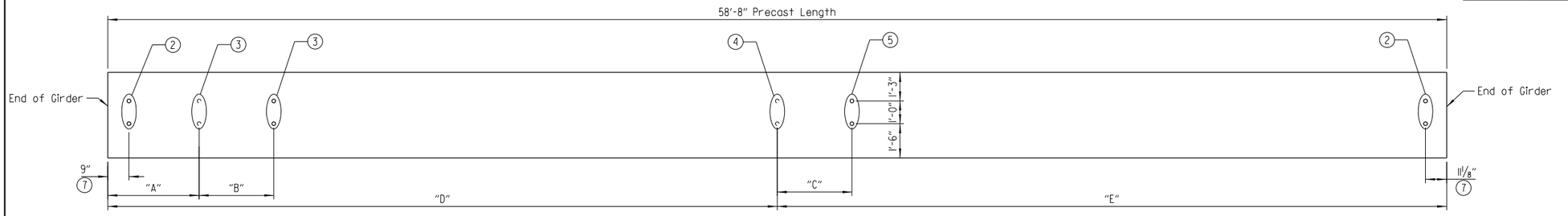
DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_s9.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

BRIDGE NO. 07484 DRAWING NO. 61692

drgoad 6/12/2020 12:42:44 PM
WORKSPACE: ARDOT Bridge
L:\2017\170175\60 - Milland Bodcau Creek\Drawings\B030497x2.5309.BB (Beam-End).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.		030497	95	130
				(1) 07484		179'-4" UNIT		61693

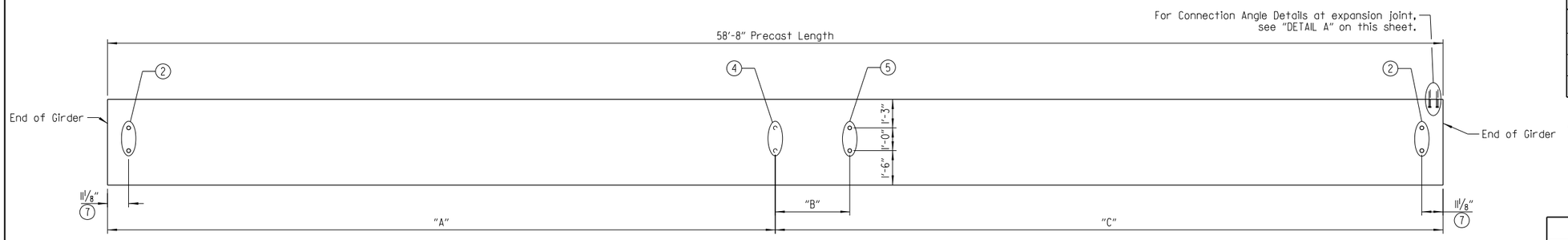
Stations Increase



SPAN NO. 1
Scale: ⅜" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 1					
GIRDER NO.	"A"	"B"	"C"	"D"	"E"
1	7'-3 5/16"	(1)	(1)	32'-7 5/16"	26'-0 11/16"
2-8	4'-0"	3'-3 5/16"	3'-3 5/16"	29'-4"	29'-4"
9	4'-0"	(1)	(1)	29'-4"	29'-4"

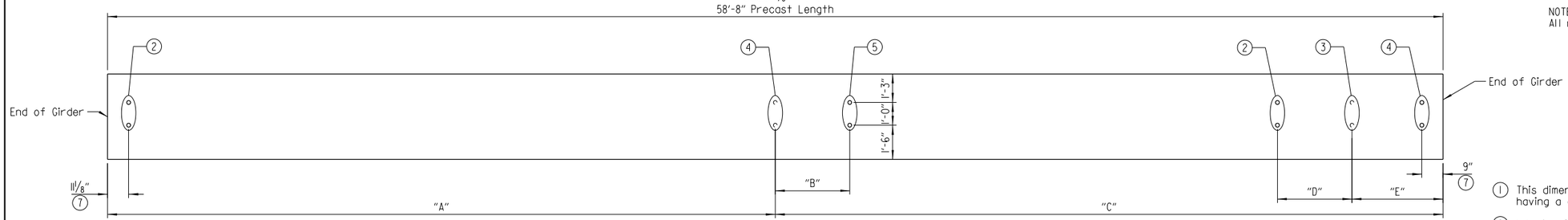
NOTE:
All measurements are along CL Girder



SPAN NOS. 2-5
Scale: ⅜" = 1'-0"

TABLE OF VARIABLES - SPAN NOS. 2-5			
GIRDER NO.	"A"	"B"	"C"
1	32'-7 5/16"	(1)	26'-0 11/16"
2-8	29'-4"	3'-3 5/16"	29'-4"
9	29'-4"	(1)	29'-4"

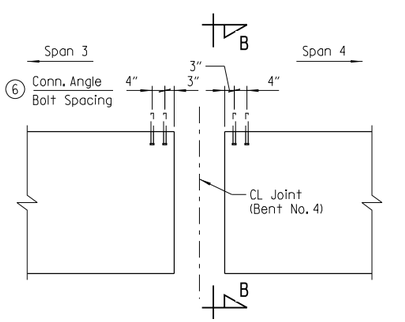
NOTE:
All measurements are along CL Girder



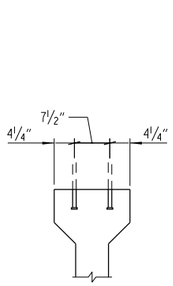
SPAN NO. 6
Scale: ⅜" = 1'-0"

TABLE OF VARIABLES - SPAN NO. 3					
GIRDER NO.	"A"	"B"	"C"	"D"	"E"
1	32'-7 5/16"	(1)	26'-0 11/16"	(1)	4'-0"
2-8	29'-4"	3'-3 5/16"	29'-4"	3'-3 5/16"	4'-0"
9	29'-4"	(1)	29'-4"	(1)	7'-3 5/16"

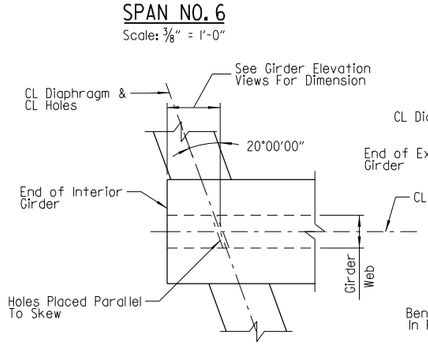
NOTE:
All measurements are along CL Girder



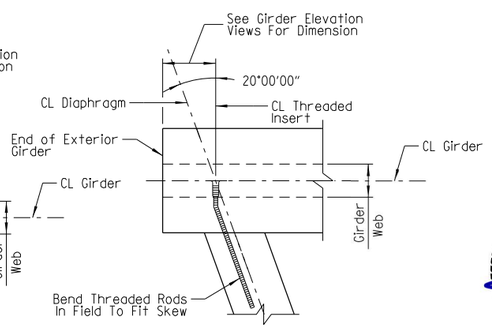
DETAIL A
(Span 3 & 4 Only)
No Scale



SECTION B-B
No Scale



DETAIL C
(Plan View of Interior Girder End)
Scale: ¾" = 1'-0"



DETAIL D
(Plan View of Exterior Girder End)
Scale: ¾" = 1'-0"

(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: 1¼"ø hole through web
Exterior Girders: ¾" Galvanized Threaded Inserts

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

(4) ¾" Galvanized Threaded Inserts placed in near side of web - Girder No. 1
¾" Galvanized Threaded Inserts placed in far side of web - Girder Nos. 2-9

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

(6) ¾"ø x 13" High Strength bolts shall be provided at girder ends adjacent to expansion joint. See Dwg. No. 61698 for additional information.

(7) Dimension measured from end of girder to intersection of CL Diaphragm & CL Girder. See "DETAIL C" & "DETAIL D".

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

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 10 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

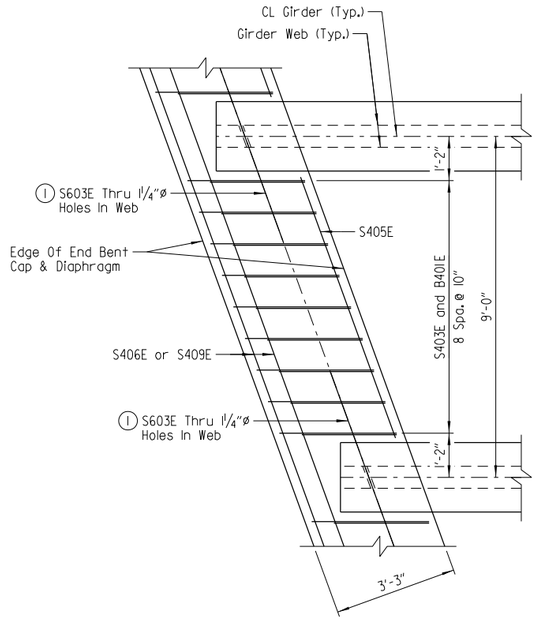
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSW DATE: MAR. 2020 FILENAME: b030497x2_sl0.dgn
CHECKED BY: JHR DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: CSW DATE: MAR. 2020

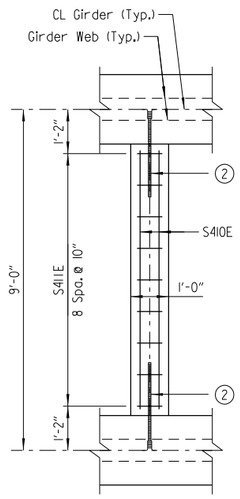
BRIDGE NO. 07484 DRAWING NO. 61693

drgood
WORKSPACE: ARDOT Bridge
L:\2017\7017560 - Mill and Bodcau Creek\Drawings\B030497x2_S310.BB (Beam-inserts).dgn
REVISED DATE:
6/12/2020 12:42:45 PM

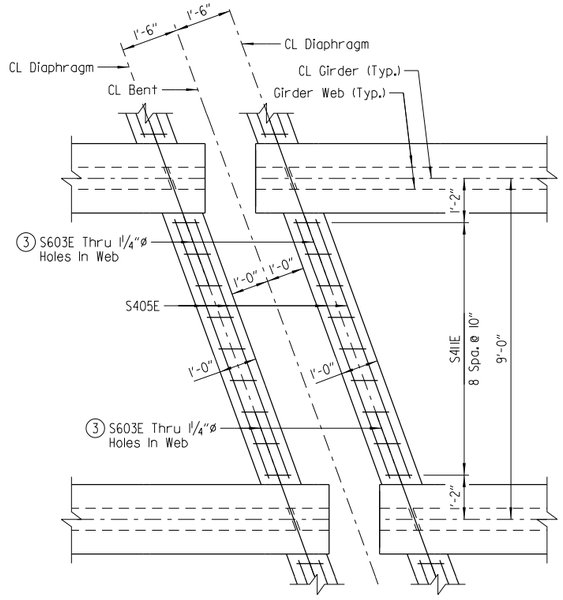
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	96	130
				(1) 07484		179'-4" UNIT		61694



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. 61686.

(2) Galvanized threaded inserts and ¾"ø x 3'-6" threaded rods. For details, see "TYPICAL ROADWAY SECTION-STAGE 1 CONSTRUCTION" on Dwg. No. 61685.

(3) Galvanized threaded inserts and ¾"ø x 3'-6" threaded rods shall be used at exterior girders. For details, see "TYPICAL ROADWAY SECTION-STAGE 2 CONSTRUCTION" on Dwg. No. 61685.

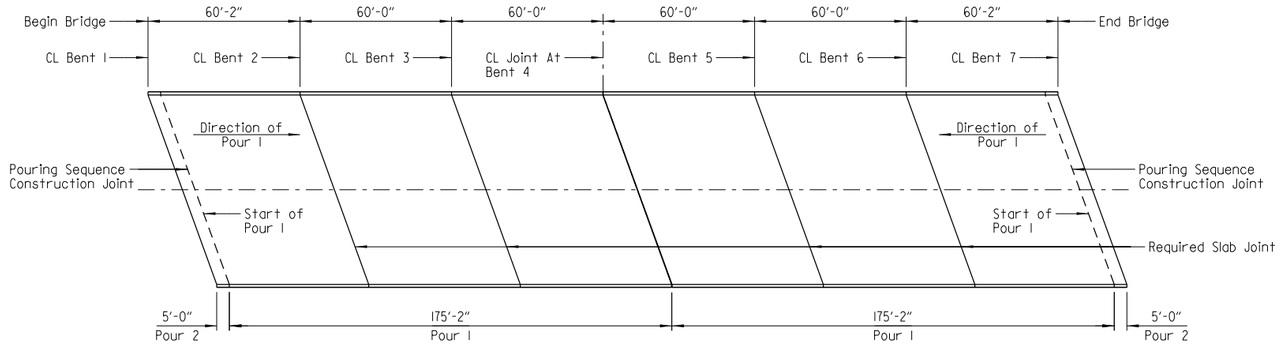
SLAB POURING SEQUENCE NOTES:
Pours with the same number may be placed simultaneously or separately. All pour(s) 1 must be placed before pour(s) 2 can be placed. Where applicable, all pour(s) 2 must be placed before pour(s) 3 can be placed. A minimum of 48 hours shall elapse between the end of a pour 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. Nos. 61690 & 61691 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.

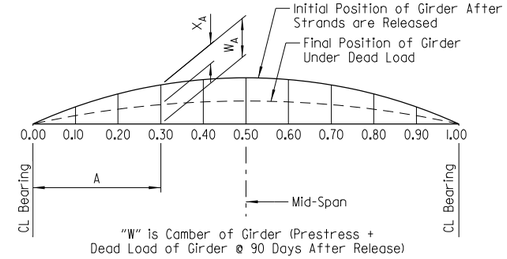


ALTERNATE SLAB POURING SEQUENCE
No Scale

SPAN PT.	INCHES	
	W_A	X_A
0.00	0.000	0.000
0.10	0.302	0.107
0.20	0.524	0.217
0.30	0.675	0.305
0.40	0.762	0.361
0.50	0.791	0.380

Table symmetric about mid-span

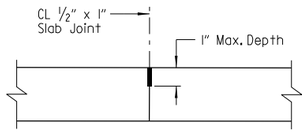
(1) Note:
Camber and Deflection Values shown are based on a concrete girder strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 61699.



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

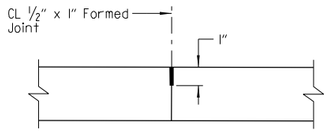
"X" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

(1) CAMBER & DEFLECTIONS (INCHES) - 58'-8" GIRDER
No Scale



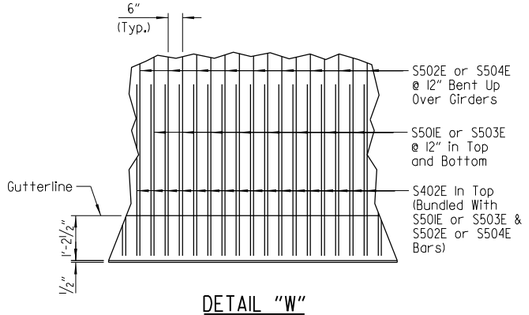
SLAB JOINT DETAIL
No Scale

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 DETAIL
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.



DETAIL "W"
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 11 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b030497x2_sll.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: APR. 2020
BRIDGE NO. 07484 DRAWING NO. 61694

drgood 6/12/2020 12:42:45 PM
WORKSPACE: ARDOT Bridge
L:\2017\7017560 - Mill and Bodcau Creek\Drawings\B030497x2_S3ll.MD (Misc Dtls).dgn
REVISED DATE:

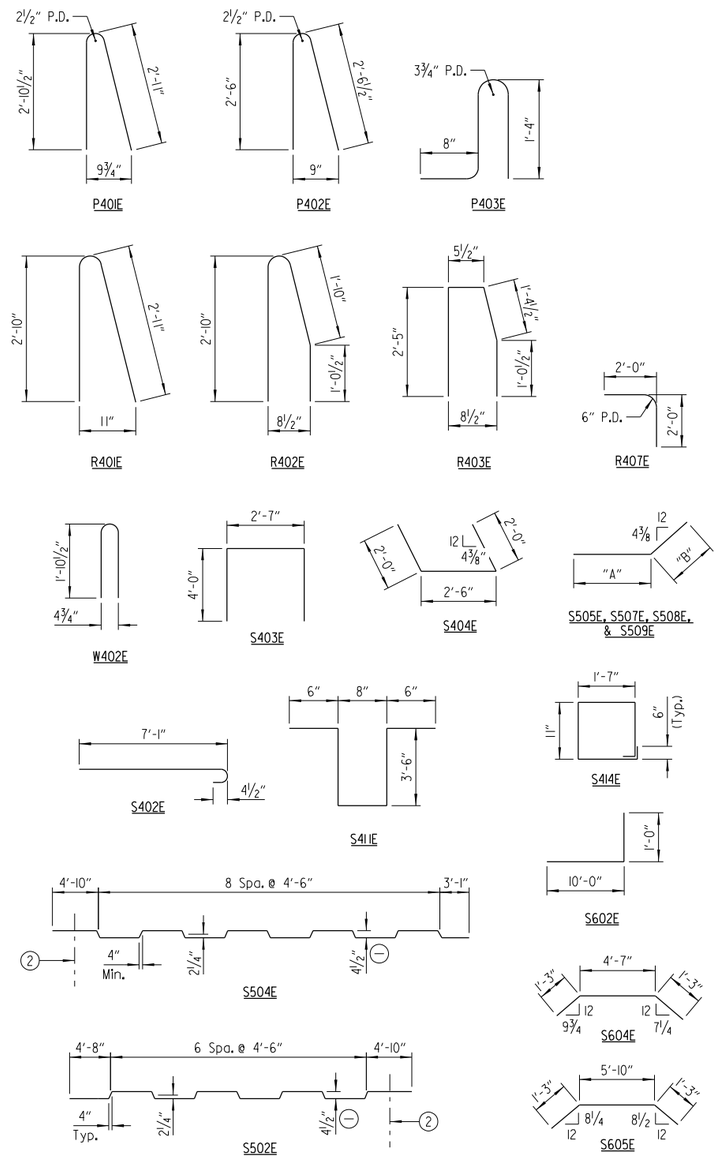
BAR LIST - PER UNIT

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
S401E	1050	38'-1"			Str.
S402E	710	7'-7"			3"
S403E	77	10'-5"			2"
S404E	10	6'-4"			2"
S405E	322	7'-3"			Str.
S406E	6	38'-0"			Str.
S407E	5	5'-4"			Str.
S408E	5	4'-6"			Str.
S409E	12	24'-8"			Str.
S410E	168	6'-10"			Str.
S411E	568	8'-4"			2"
S412E	65	5'-4"			Str.
S413E	65	4'-6"			Str.
S414E	71	5'-6"			2"
S501E	334	36'-6"			Str.
S502E	167	37'-3"			3"
S503E	328	43'-11"			Str.
S504E	164	44'-11"			3"
S505E	8	6'-10"	3'-5"	3'-5"	3¾"
S506E	2	37'-7"			Str.
S507E	2	38'-10"	37'-9"	1'-1"	3¾"
S508E	3	46'-8"	45'-7"	1'-1"	3¾"
S509E	16	7'-4"	6'-3"	1'-1"	3¾"
S510E To S530E	2 Ea.	6'-9" To 34'-3"			Str.
S531E To S551E	2 Ea.	35'-10" To 8'-4"			Str.
S552E To S578E	2 Ea.	7'-7" To 43'-3"			Str.
S579E To S5106E	2 Ea.	42'-5" To 5'-4"			Str.
S5107E	75	4'-0"			Str.
S601E	308	20'-0"			Str.
S602E	154	10'-10"			4½"
S603E	84	6'-0"			Str.
S604E	5	8'-4"			4½"
S605E	5	7'-1"			4½"
P401E	674	5'-11"			2½"
P402E	48	5'-2"			2½"
P403E	674	3'-5"			3"
P404E	48	5'-8"			Str.
P405E	128	19'-8"			Str.
P406E	16	19'-10"			Str.

BAR LIST - PER UNIT

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
R401E	30	5'-11"			3¾"
R402E	8	5'-10"			3¾"
R403E	2	5'-2"			2"
R404E	4	9'-4"			Str.
R405E	12	9'-8"			Str.
R406E	8	4'-0"			Str.
R407E	4	3'-11"			6"
R408E	16	5'-8"			Str.
W401E	60	4'-2"			Str.
W402E	40	3'-11"			3¾"
W701E	28	12'-2"			Str.

BAR BENDING DIAGRAMS



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

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

(1) ½" Overtolerance
No Undertolerance

(2) CL Exterior Girder

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.		030497	97	130
				(1) 07484		179'-4" UNIT		61695

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 12 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

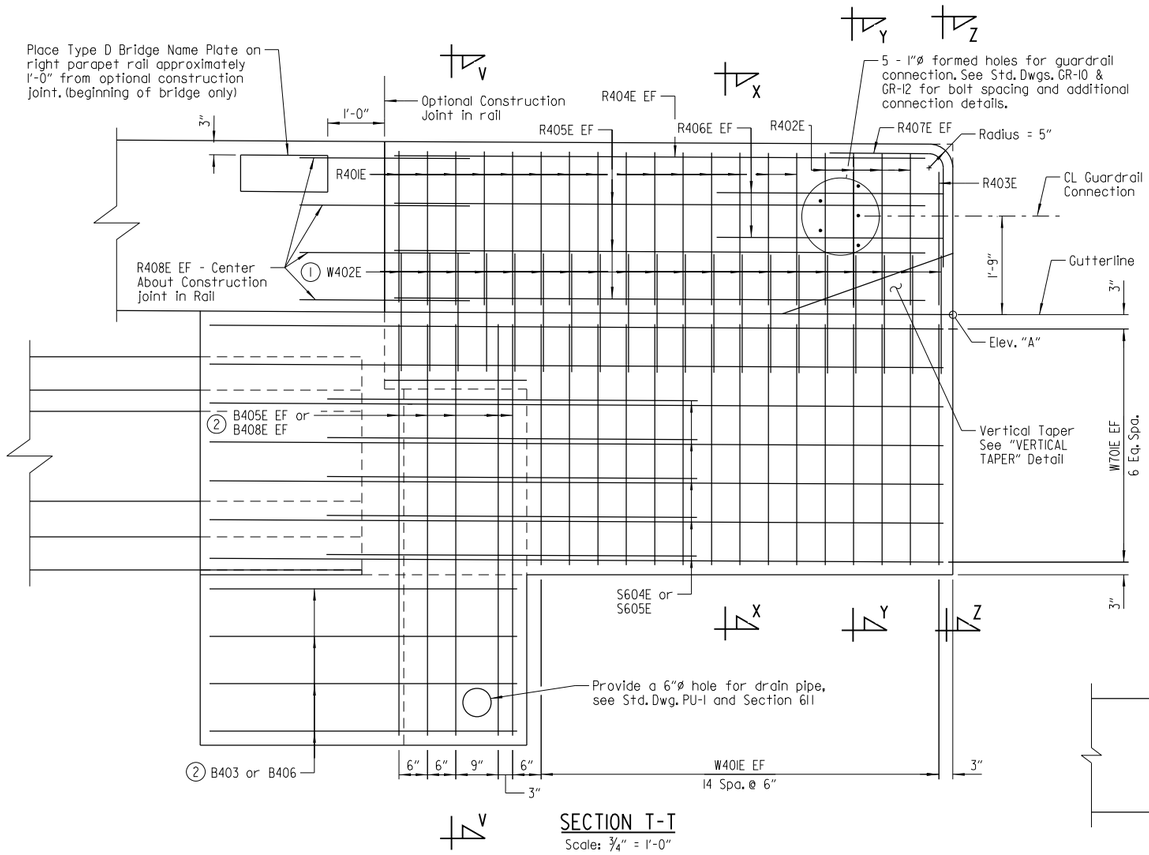
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

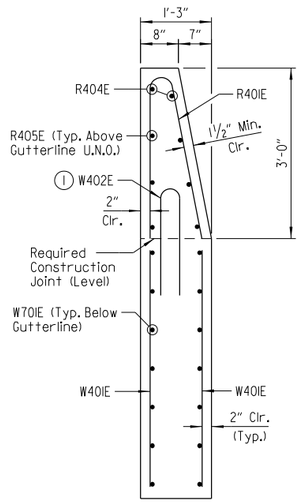
DRAWN BY: JJB DATE: APR. 2020 FILENAME: b030497x2_sl2.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: None
DESIGNED BY: JJB DATE: APR. 2020
BRIDGE NO. 07484 DRAWING NO. 61695

drgoad
WORKSPACE: ARDOT Bridge
L:\201\7017560 - Mill and Badcau Creek\Drawings\B030497x2_S312.SD (Bar List).dgn
6/12/2020 12:42:46 PM
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.		030497	98	130
				(1) 07484		179'-4" UNIT		61696



SECTION T-T
Scale: 3/4" = 1'-0"



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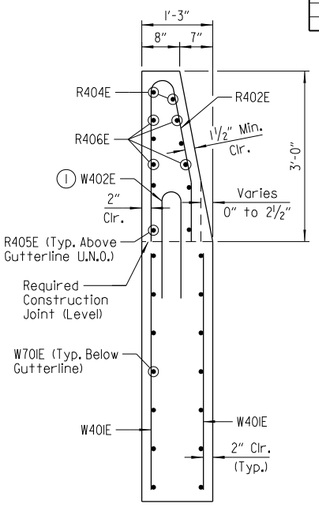
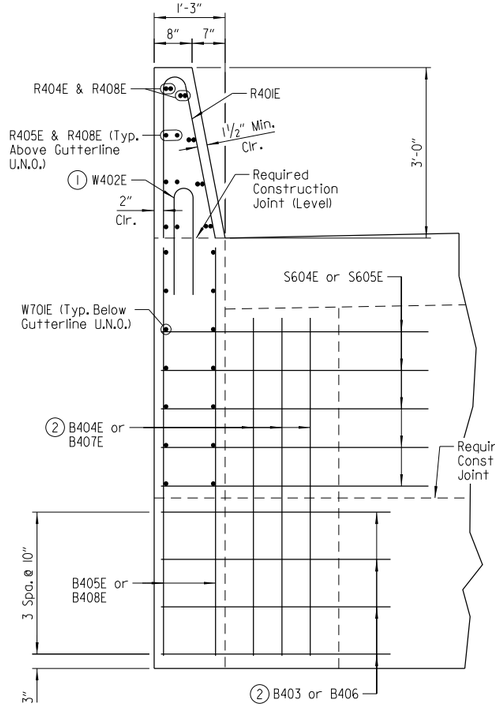


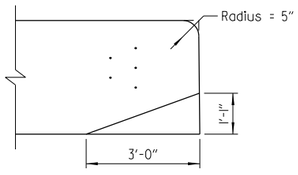
SECTION Y-Y
Scale: 3/4" = 1'-0"

TABLE OF VARIABLES				
Bent No.	Location	Elev. "A"	"B"	"C"
1	Wing A	258.16	3'-1 3/16"	4'-6 13/16"
1	Wing B	258.03	3'-0"	4'-6 13/16"
7	Wing A	258.07	3'-1 11/16"	4'-6 13/16"
7	Wing B	257.93	3'-0"	4'-6 13/16"

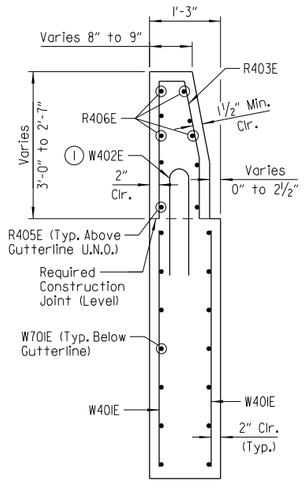


SECTION V-V
Scale: 3/4" = 1'-0"

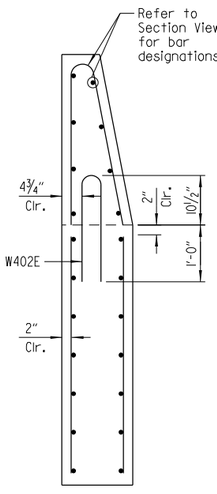
VIEW U-U
No Scale



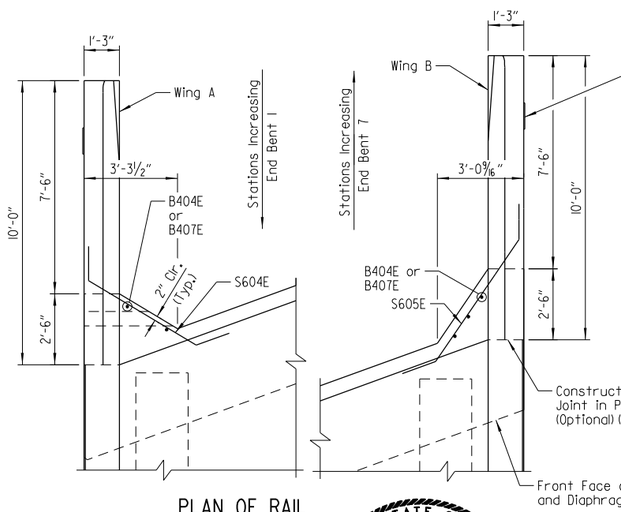
VERTICAL TAPER
Scale: 1/2" = 1'-0"



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



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



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

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

(2) See end bent details on Dwg. Nos. 61670-61677 for reinforcing and additional details

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

LEGEND

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 13 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

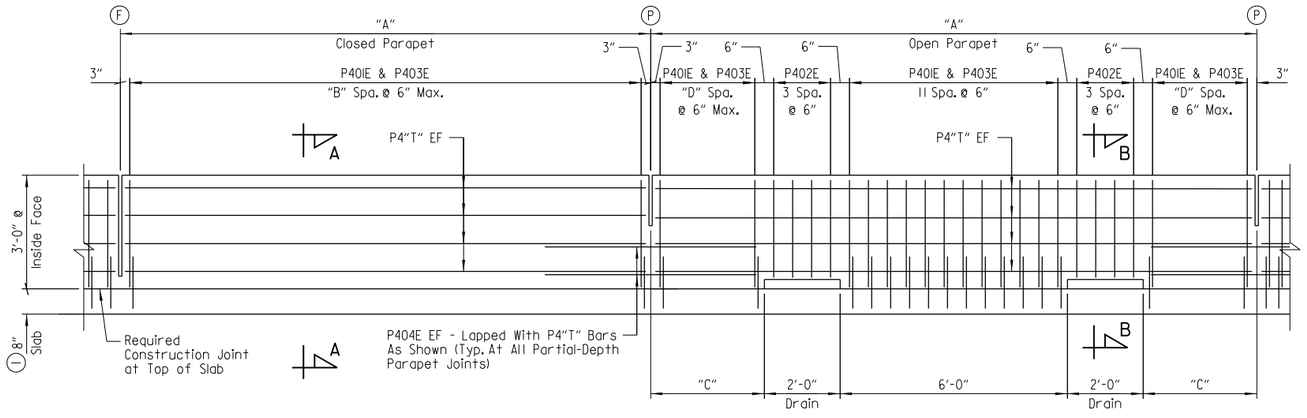
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: APR. 2020 FILENAME: b030497x2_sl3.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: APR. 2020
BRIDGE NO. 07484 DRAWING NO. 61696

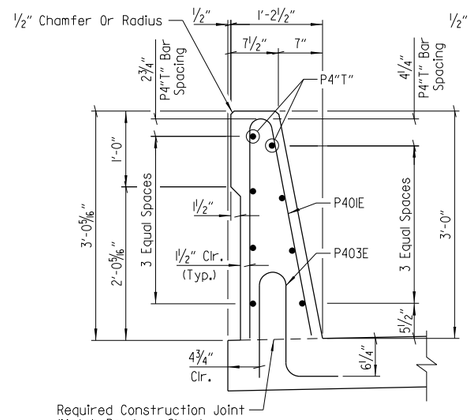
drgoad 6/12/2020 12:42:46 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497x2_S313_SD (Wings).dgn
REVISED DATE:

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.		030497	99	130
				(1) 07484		179'-4" UNIT		61697

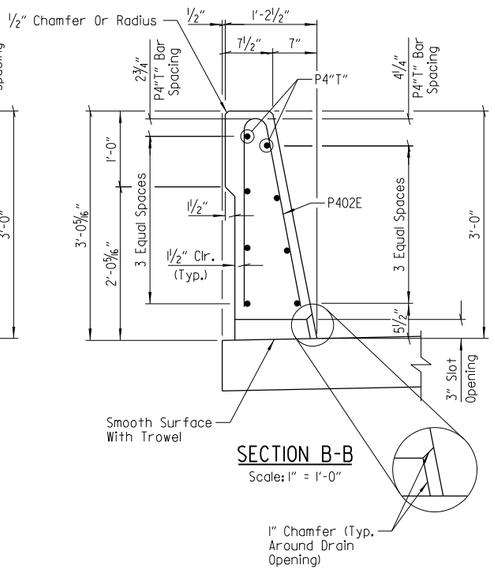


(1) Measured at Edge of Deck

DETAILS OF PARAPET RAIL
Scale: 1/2" = 1'-0"



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



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

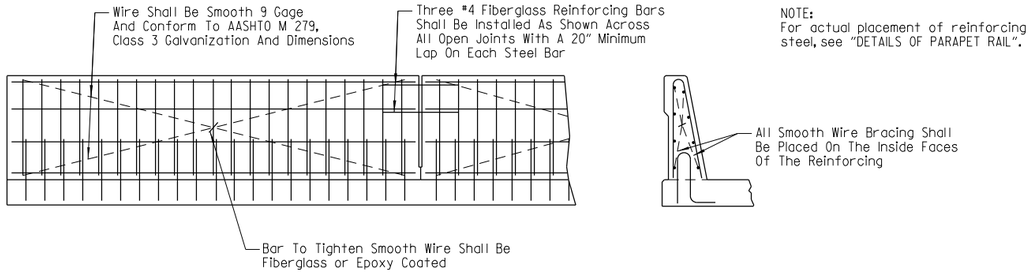
TABLE OF PARAPET VARIABLES				
PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET	
"A"	"T"	"B"	"C"	"D"
20'-0"	05E	39	5'-0'	9
20'-2"	06E	40	-	-

LEGEND
EF = Each Face

(F) CL Full-Depth Parapet Joint (1/4"-1" max.) Stop 4" from Top of Slab.

(P) CL Partial-Depth Parapet Joint (1/4"-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 "PART REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. Nos. 61690 & 61691.

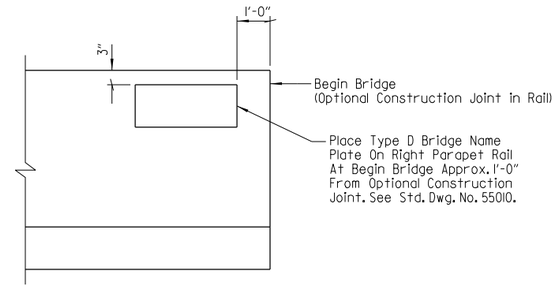


NOTE:
For actual placement of reinforcing steel, see "DETAILS OF PARAPET RAIL".

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 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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



VIEW SHOWING LOCATION OF NAME PLATE
(Showing Inside Face Of Parapet)
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

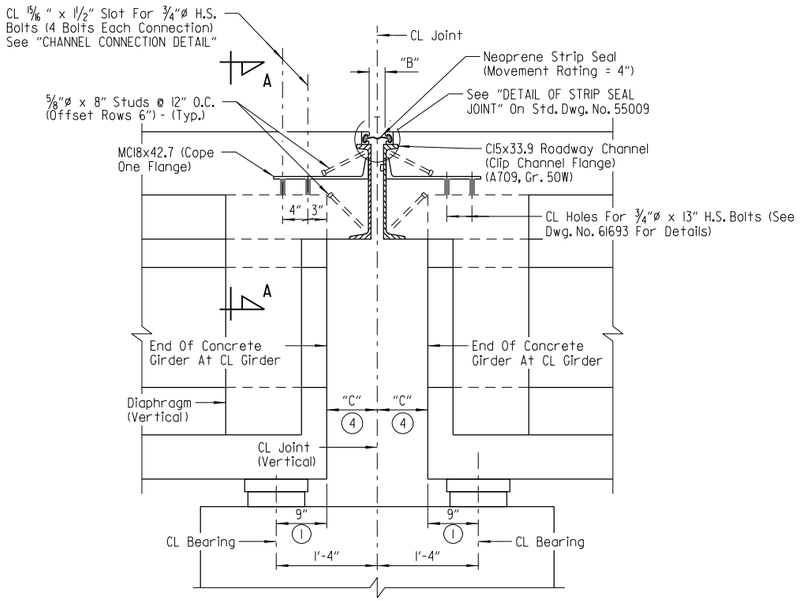
DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 14 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: MAR. 2020 FILENAME: b030497x2_sl4.dgn
CHECKED BY: DRG DATE: MAR. 2020 SCALE: AS SHOWN
DESIGNED BY: JME DATE: MAR. 2020
BRIDGE NO. 07484 DRAWING NO. 61697

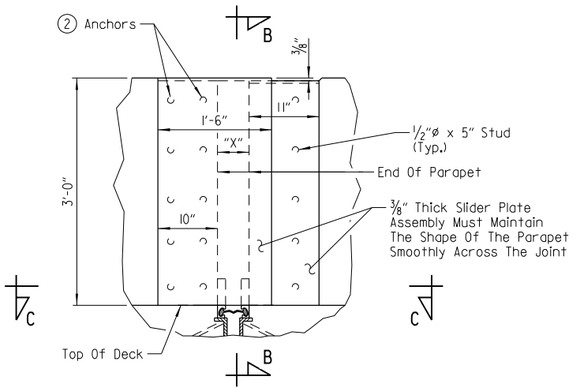
drgoad 6/12/2020 12:42:50 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\b030497x2_S314_MD (Parapet).dgn
REVISED DATE:

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.		030497	100	130
				(1) 07484		179'-4" UNIT		61698



SECTION THRU JOINT AT BENT 4

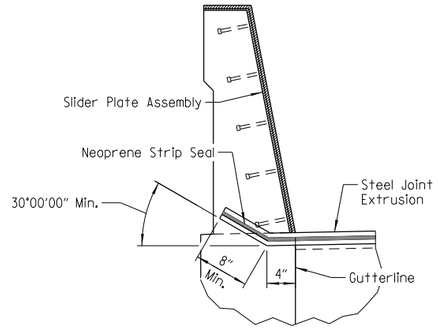
(Section Taken Normal To CL Joint)
Scale: 1" = 1'-0"



DETAILS OF PARAPET SLIDER PLATES

Scale: 1" = 1'-0"

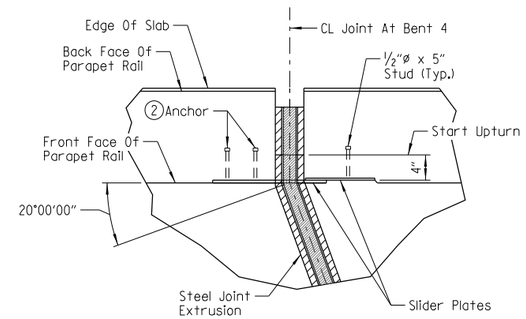
NOTE:
Dimension "X" equals the distance between the outside faces of the steel extrusions and the ends of the parapet rails.

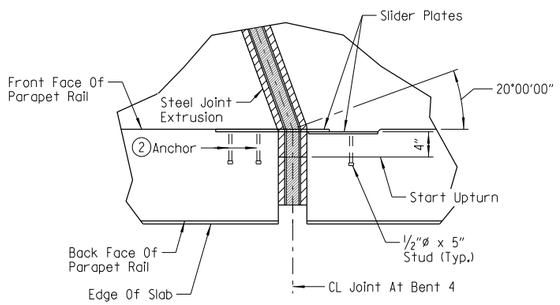


SECTION B-B

Scale: 1" = 1'-0"

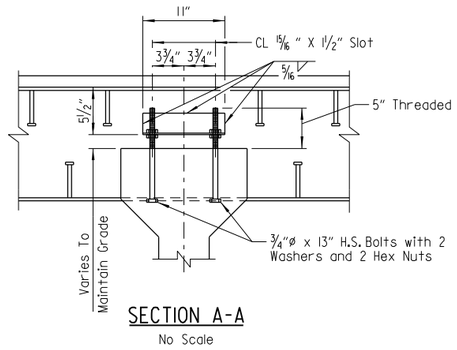
NOTE:
Details of joint turn-up in parapet are general and show basic design controls only. See Section 809. Method of installation and fabrication shall be determined by the Manufacturer.





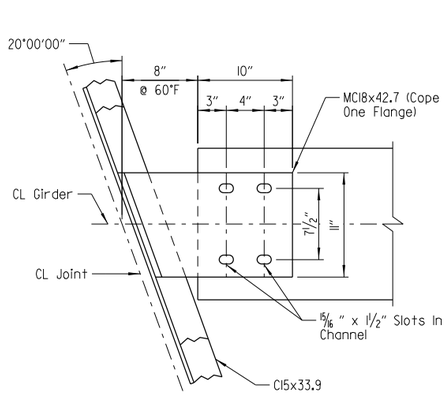
SECTION C-C

Scale: 1" = 1'-0"



SECTION A-A

No Scale



CHANNEL CONNECTION DETAIL

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

Note:
3/4"ø x 13" H.S. bolts, washers, and hex nuts shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE III)."

STRIP SEAL JOINT DATA

Bent No.	Movement Rating	"A" Width Perpendicular To Joint At 24 Hour Average Temperature (3) Of:			"B" Width Perpendicular To Joint At 24 Hour Average Temperature (3) Of:			"C" Perpendicular To Joint At 24 Hour Average Temperature Of 60°F
		40°F	60°F	80°F	40°F	60°F	80°F	
4	4"	2 1/2"	2"	1 1/2"	3"	2 1/2"	2"	(4)

(3) The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F min. and 80°F max. Interpolation of the table may be necessary. The temperature limitations of the lubricant-adhesive Manufacturer shall be observed.

(4) Concrete girders have square ends and distance varies from 3 3/4" to 11 1/4" measured perpendicular to CL Joint.

(1) Measured along CL Girder

(2) The method of attachment of the slider plate assembly shall allow for removal to provide for future replacement of the neoprene seal. Anchors will not be paid for directly but will be considered subsidiary to "ARMORED JOINT WITH NEOPRENE STRIP SEAL". Method of installation and fabrication shall be determined by the Manufacturer.

NOTE:
For "DETAIL OF STRIP SEAL JOINT", "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE", and "GENERAL NOTES FOR STRIP SEAL JOINTS", see Std. Dwg. No. 55009.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 15 OF 15
DETAILS OF 179'-4" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: APR. 2020 FILENAME: b030497x2_sl5.dgn
CHECKED BY: JHR DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: DRG DATE: APR. 2020

BRIDGE NO. 07484 DRAWING NO. 61698

dr goad 6/12/2020 12:42:51 PM
WORKSPACE: ARDOT Bridge
L:\20\T\1701560 - Mill and Bodcau Creek\Drawings\B030497x2_S315_EJ (Strip Seal).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.		030497	101	130
(1) 07483, 07484		END BENT		61699

GENERAL NOTES - SUPERSTRUCTURE

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be ½"ø 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 (Bridge No. 07483) or Type III (Bridge No. 07484) 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 first 10" along the tops of the girders at ends adjacent to expansion joints shall have a smooth surface. The tops of the remaining length of the girders shall be rough floated at approximately the time of set. This portion of 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 collapse 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 M31 or M322 Type A, Gr. 60 (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 M31 or M322 Type A, Gr. 60 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 deck (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. Nos. 61653 & 61683 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.16667
DANIEL R. GOAD

DIGITALLY SIGNED 6/12/20

BRIDGE ENGINEER

COMMON DETAILS OF PRESTRESED CONCRETE GIRDER UNITS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

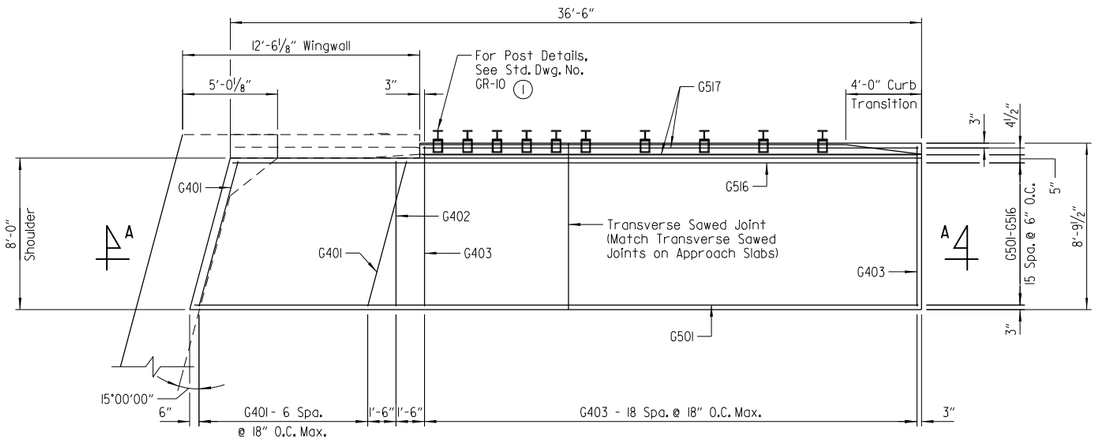
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: FEB. 2020 FILENAME: b030497_sl.dgn
CHECKED BY: DRG DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JJB DATE: FEB. 2020

BRIDGE NO. 07483, 07484 DRAWING NO. 61699

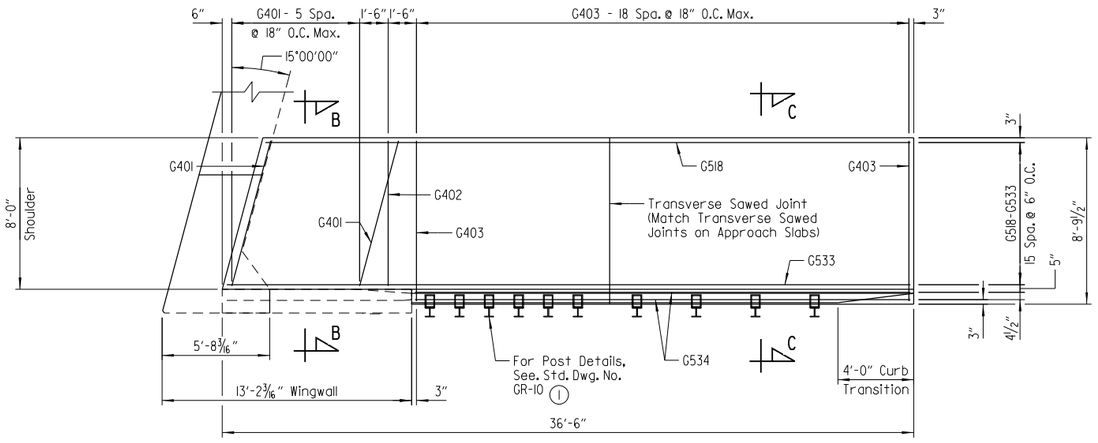
drgood
WORKSPACE: ARDOT Bridge
L:\201\1701\560 - Millard Bodcau Creek\Drawings\B030497_SI01_SD (SuperStr Notes1.dgn
REVISED DATE:
6/12/2020 12:42:51 PM

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.		030497	102	130
				(1) 07483		APPROACH GUTTERS		61700



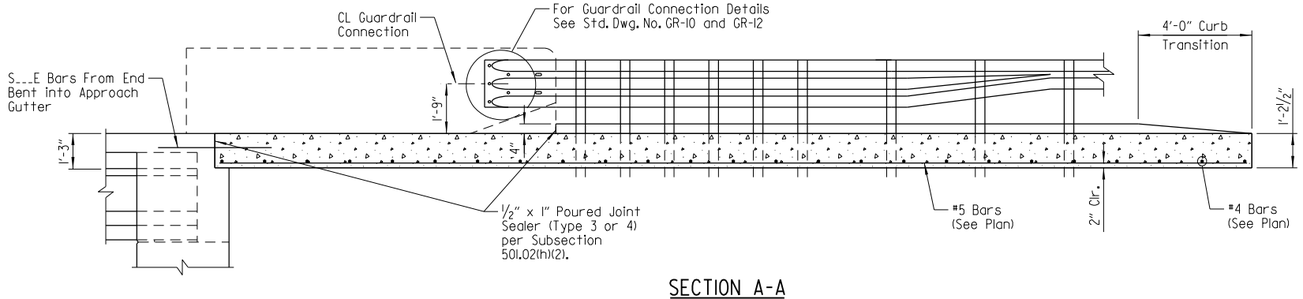
PLAN - TYPE 1 SPECIAL APPROACH GUTTER

(Shown For End Bridge No. 07483, Begin Bridge No. 07483 Similar)
Scale: 1/4" = 1'-0"



PLAN - TYPE 2 SPECIAL APPROACH GUTTER

(Shown For End Bridge No. 07483, Begin Bridge No. 07483 Similar)
Scale: 1/4" = 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

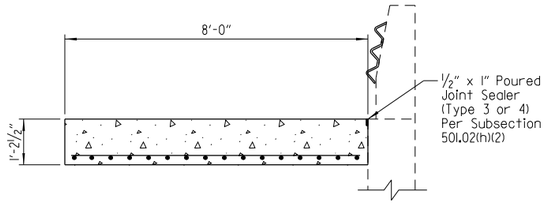
MARK	NO. REQ'D.	LENGTH	P.D.
G401	7	7'-11"	Str.
G402	1	7'-8"	Str.
G403	19	8'-5"	Str.
G501 To G516	1 Ea.	38'-2" To 36'-2"	Str.
G517	2	26'-2"	Str.

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

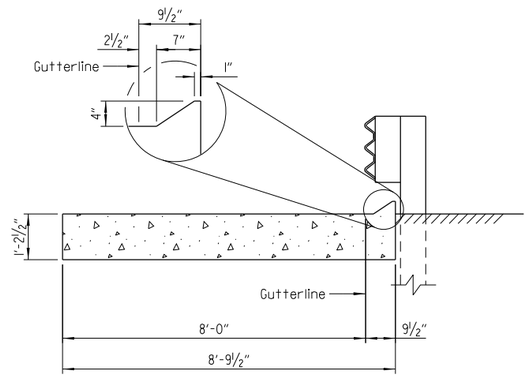
MARK	NO. REQ'D.	LENGTH	P.D.
G401	6	7'-11"	Str.
G402	1	7'-8"	Str.
G403	19	8'-5"	Str.
G518 To G533	1 Ea.	34'-0" To 36'-1"	Str.
G534	2	26'-2"	Str.

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



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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF TYPE SPECIAL APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

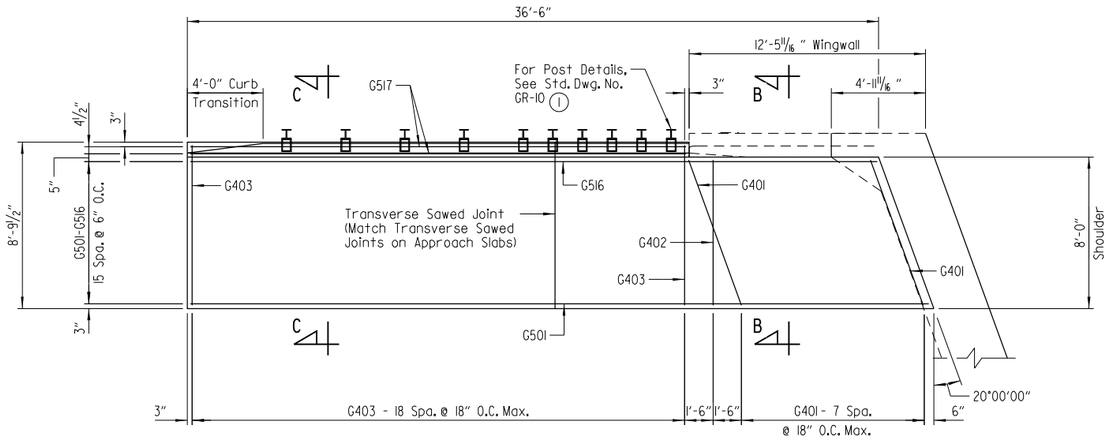
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: MAR. 2020 FILENAME: b030497xl_agl.dgn
CHECKED BY: JES DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAR. 2020

BRIDGE NO. 07483 DRAWING NO. 61700

drgood
WORKSPACE: ARDOT Bridge
L:\201\T01\560 - Mill and Bodcau Creek\Drawings\B030497_S501_AG (Mill).dgn
REVISED DATE:
6/12/2020 12:42:51 PM

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.		030497	103	130
				(1) 07484		APPROACH GUTTERS		61701



PLAN - TYPE 3 SPECIAL APPROACH GUTTER

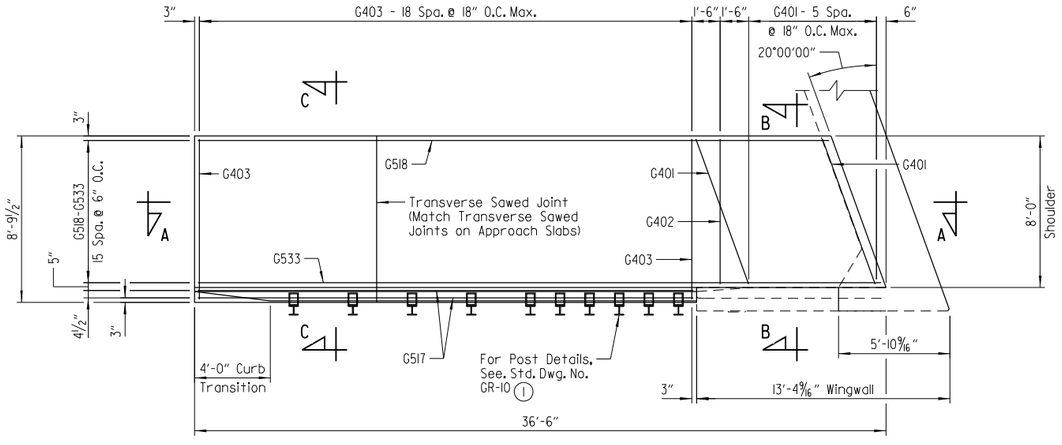
(Shown For Begin Bridge No. 07484, End Bridge No. 07484 Similar)
Scale: 1/4" = 1'-0"

BAR LIST - TYPE 3 SPECIAL APPROACH GUTTER			
MARK	NO. REQ'D.	LENGTH	P.D.
G401	8	8'-1"	Str.
G402	1	7'-8"	Str.
G403	19	8'-5"	Str.
G501 To G516	1 Ea.	38'-11" To 36'-2"	Str.
G517	2	26'-2"	Str.

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

QUANTITIES (FOR INFORMATION ONLY)		
TYPE	Concrete	Reinforcing Steel (Gr. 60)
Type 3 Special	14.63 Cu. Yds.	836 lb.
Type 4 Special	13.59 Cu. Yds.	777 lb.

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



PLAN - TYPE 4 SPECIAL APPROACH GUTTER

(Shown For Begin Bridge No. 07484, End Bridge No. 07484 Similar)
Scale: 1/4" = 1'-0"

BAR LIST - TYPE 4 SPECIAL APPROACH GUTTER			
MARK	NO. REQ'D.	LENGTH	P.D.
G401	6	8'-1"	Str.
G402	1	7'-8"	Str.
G403	19	8'-5"	Str.
G517	2	26'-2"	Str.
G518 To G533	1 Ea.	36'-0" To 33'-4"	Str.

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

For "SECTION A-A," "SECTION B-B," "SECTION C-C" & "GENERAL NOTES", See Dwg. No. 61700.

(1) See Bridge Layouts for locations of guardrails.

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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF TYPE SPECIAL APPROACH GUTTERS

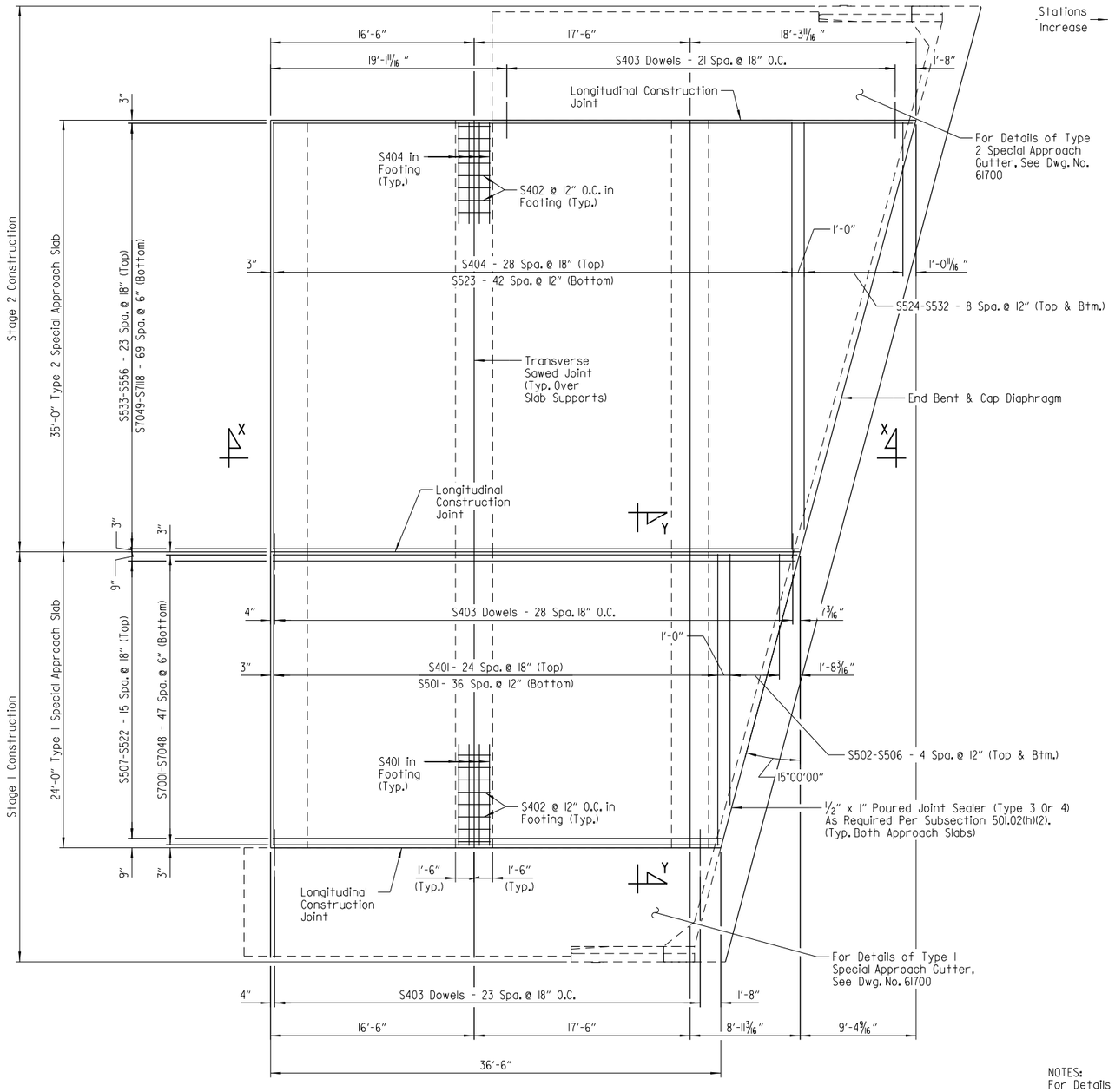
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: APR. 2020 FILENAME: b030497x2_ag2.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: APR. 2020
BRIDGE NO. 07484 DRAWING NO. 61701

drgood 6/12/2020 12:42:52 PM
WORKSPACE: ARDOT Bridge
L:\2017\1701560 - Mill and Bodcau Creek\Drawings\B030497.SS02.AG (Bodcau).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.		030497	104	130
				(1) 07483		APPROACH SLABS		61702



PLAN - TYPE 1 & 2 SPECIAL APPROACH SLABS

(Shown For Begin Bridge No. 07483)
Scale: 3/16" = 1'-0"

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 S506	2 Ea.	20'-4" To 5'-5"	Str.
S507 To S522	1 Ea.	36'-4" To 42'-4"	Str.
S7001 To S7048	1 Ea.	36'-2" To 42'-6"	Str.

BAR LIST - TYPE 2 SPECIAL APPROACH SLAB			
Mark	No. Req'd	Length	Pin Dia.
S402	105	2'-8"	Str.
S403	22	3'-0"	Str.
S404	41	34'-8"	Str.
S523	43	34'-8"	Str.
S524 To S532	2 Ea.	32'-11" To 3'-1"	Str.
S533 To S556	1 Ea.	42'-7" To 51'-10"	Str.
S7049 To S7118	1 Ea.	42'-7" To 51'-10"	Str.

QUANTITIES (FOR INFORMATION ONLY)		
TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 1 Special	56.66 Cu. Yds.	6,382 lb.
Type 2 Special	95.01 Cu. Yds.	11,010 lb.

NOTES:
For Details of Slab Supports, See Dwg. No. 61706.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", See Dwg. No. 61706.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF TYPE SPECIAL APPROACH SLABS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: MAR. 2020 FILENAME: b030497x1_asl.dgn
CHECKED BY: JES DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAR. 2020
BRIDGE NO. 07483 DRAWING NO. 61702

drgoad 6/12/2020 12:42:52 PM
WORKSPACE: ARDOT Bridge
L:\2017\170756 - Mill and Badcau Creek\Drawings\B030497_S503_AS (Mill).dgn
REVISED DATE:

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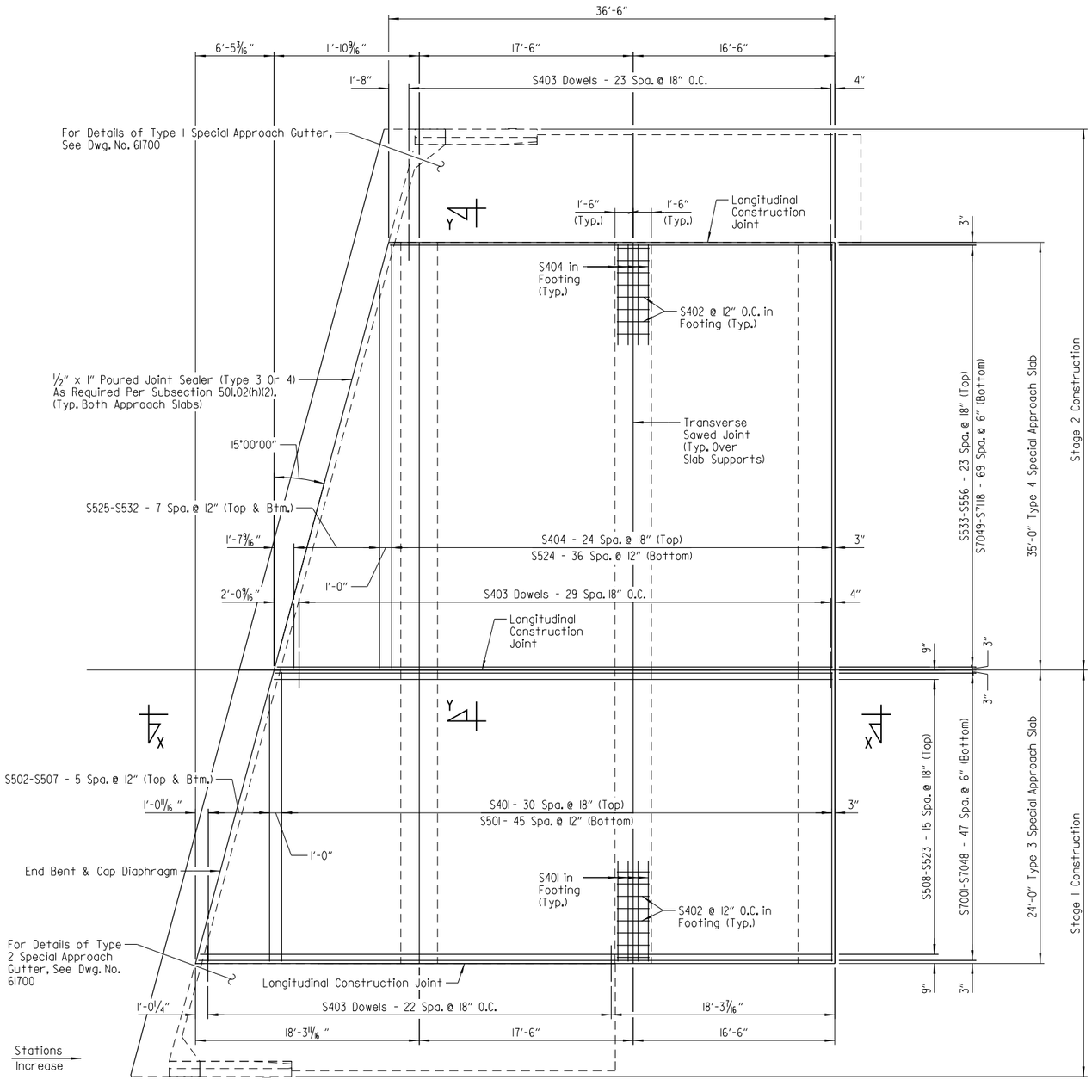

PLAN - TYPE 3 & 4 SPECIAL APPROACH SLABS

(Shown For End Bridge No. 07483)
Scale: 3/16" = 1'-0"

BAR LIST - TYPE 3 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin Dia.
S401	43	23'-8"	Str.
S402	72	2'-8"	Str.
S403	53	3'-0"	Str.
S501	46	23'-8"	Str.
S502 To S507	2 Ea.	3'-1" To 21'-9"	Str.
S508 To S523	1 Ea.	51'-9" To 45'-8"	Str.
S7001 To S7048	1 Ea.	51'-10" To 45'-7"	Str.

BAR LIST - TYPE 4 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin Dia.
S402	105	2'-8"	Str.
S403	24	3'-0"	Str.
S404	37	34'-8"	Str.
S524	37	34'-8"	Str.
S525 To S532	2 Ea.	5'-3" To 31'-4"	Str.
S533 To S556	1 Ea.	45'-5" To 36'-2"	Str.
S7049 To S7118	1 Ea.	45'-5" To 36'-2"	Str.

QUANTITIES
(FOR INFORMATION ONLY)

TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 3 Special	66.73 Cu. Yds.	7,797 lb.
Type 4 Special	84.93 Cu. Yds.	9,593 lb.

NOTES:
For Details of Slab Supports, See Dwg. No. 61706.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", See Dwg. No. 61706.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF TYPE SPECIAL APPROACH SLABS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: APR. 2020 FILENAME: b030497xl_as2.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: APR. 2020

BRIDGE NO. 07483 DRAWING NO. 61703

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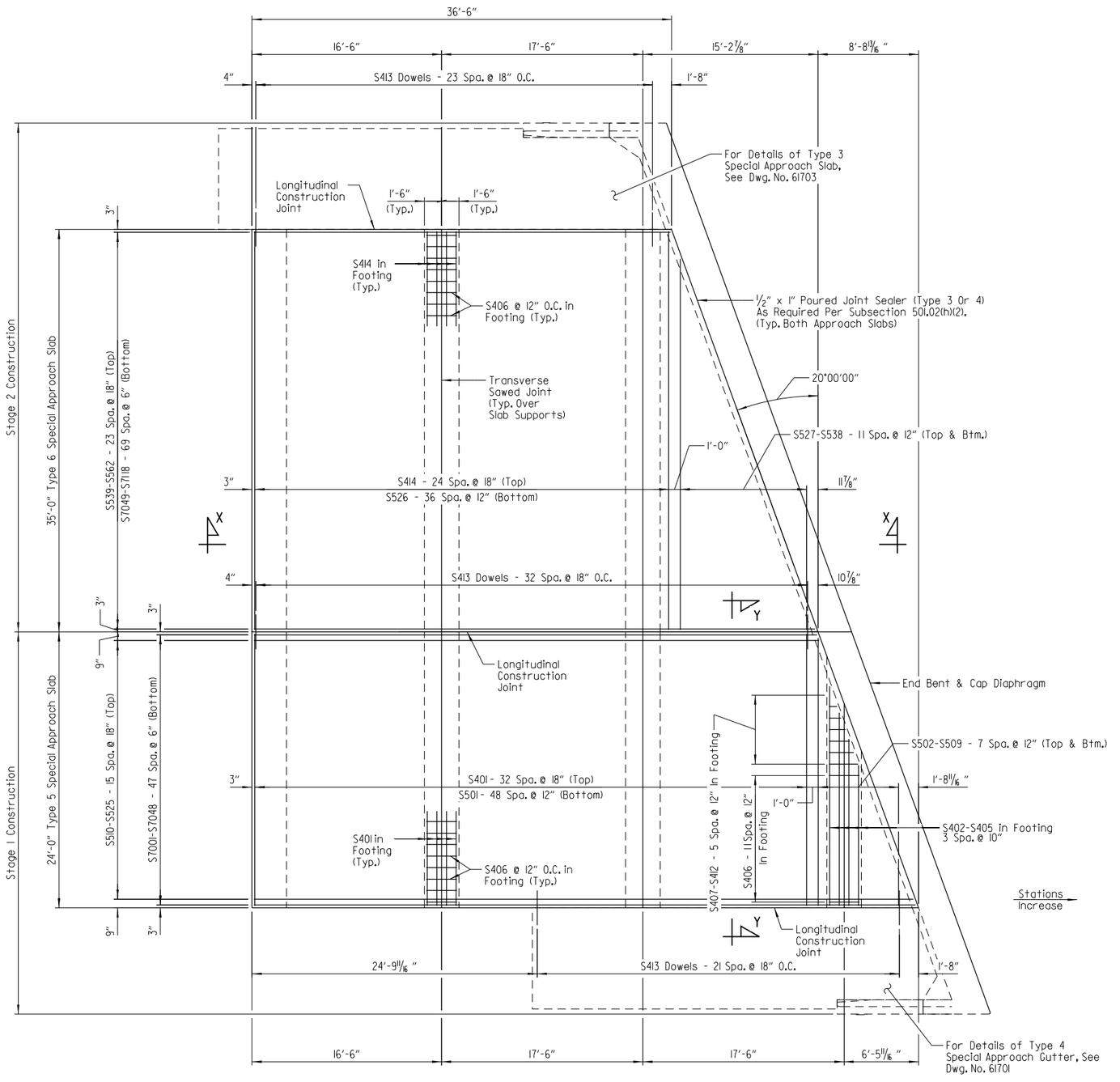
WORKSPACE: ARDOT Bridge
L:\2017\170\7560 - Milland Badcau Creek\Drawings\B030497_5504_AS (Mill).dgn
REVISED DATE:

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.		030497	106	130
(1) 07484		APPROACH SLABS		61704



PLAN - TYPE 5 & 6 SPECIAL APPROACH SLABS

(Shown For Begin Bridge No. 07484)
Scale: 3/16" = 1'-0"

NOTES:
For Details of Slab Supports, see Dwg. No. 61706.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", see Dwg. No. 61706.

BAR LIST - TYPE 5 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin Dia.
S401	45	23'-8"	Str.
S402 To S405	1 Ea.	19'-1" To 12'-2"	Str.
S406	84	2'-8"	Str.
S407 To S412	1 Ea.	2'-6" To 8"	Str.
S413	55	3'-0"	Str.
S501	49	23'-8"	Str.
S502 To S509	2 Ea.	23'-3" To 4'-1"	Str.
S510 To S525	1 Ea.	57'-4" To 49'-2"	Str.
S7001 To S7048	1 Ea.	57'-6" To 48'-11"	Str.

BAR LIST - TYPE 6 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin Dia.
S406	105	2'-8"	Str.
S413	24	3'-0"	Str.
S414	37	34'-8"	Str.
S526	37	34'-8"	Str.
S527 To S538	2 Ea.	32'-3" To 2'-0"	Str.
S539 To S562	1 Ea.	48'-7" To 36'-5"	Str.
S7049 To S7118	1 Ea.	48'-9" To 36'-2"	Str.

QUANTITIES
(FOR INFORMATION ONLY)

TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 5 Special	75.04 Cu. Yds.	8,566 lb.
Type 6 Special	87.57 Cu. Yds.	9,997 lb.

STATE OF ARKANSAS
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SHEET 3 OF 5
DETAILS OF TYPE SPECIAL APPROACH SLABS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: APR. 2020 FILENAME: b030497x2_as3.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: APR. 2020
BRIDGE NO. 07484 DRAWING NO. 61704

drgoad 6/12/2020 12:42:53 PM
WORKSPACE: ARDOT Bridge
L:\2017\170\7560 - Mill and Bodcau Creek\Drawings\B030497.5505.AS (Bodcau).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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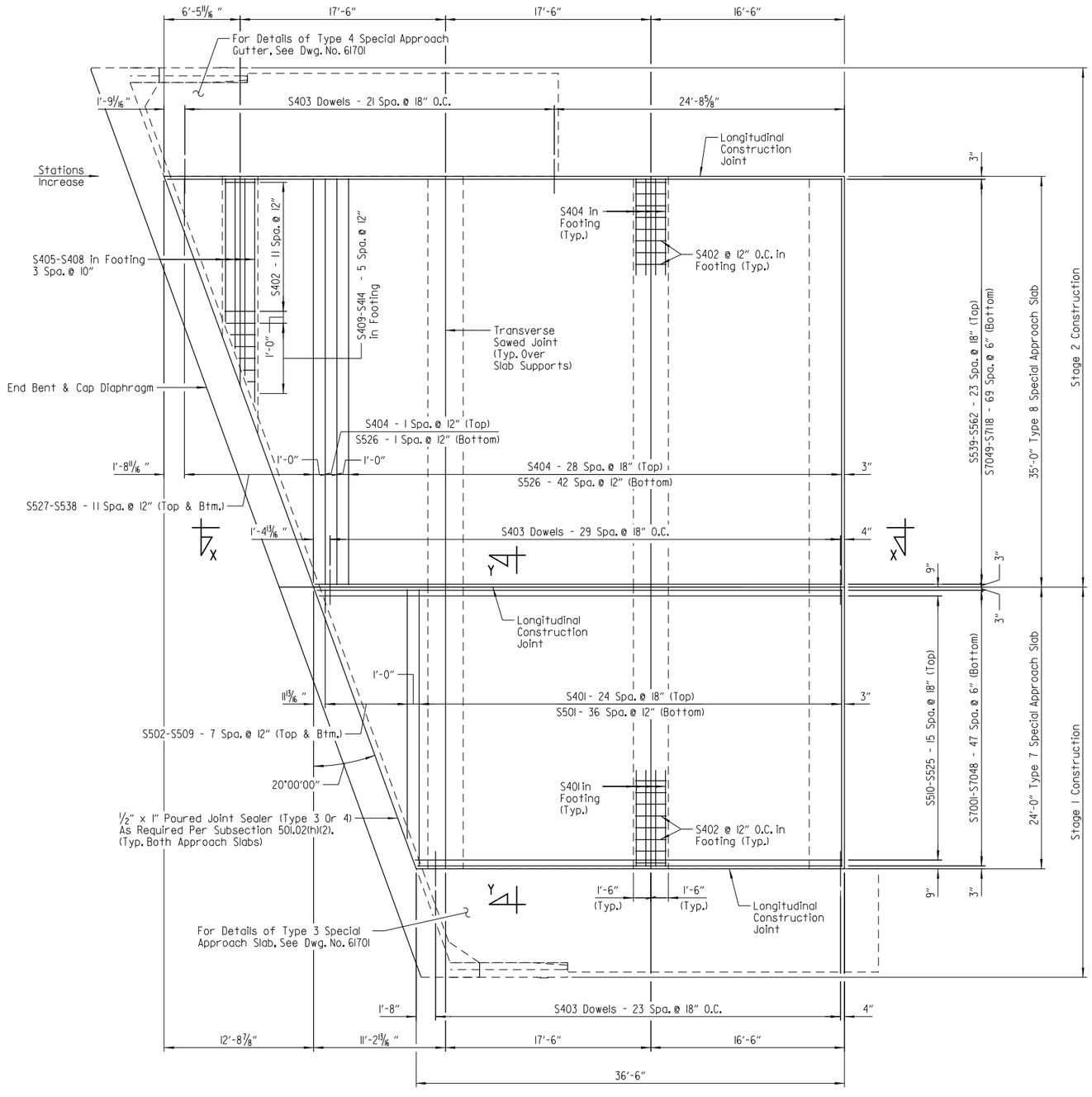

PLAN - TYPE 7 & 8 SPECIAL APPROACH SLABS

(Shown For End Bridge No. 07484)
Scale: 3/16" = 1'-0"

NOTES:
For Details of Slab Supports, see Dwg. No. 61706.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", see Dwg. No. 61706.

BAR LIST - TYPE 7 SPECIAL APPROACH SLAB			
Mark	No. Req'd	Length	Pin Dia.
S401	37	23'-8"	Str.
S402	72	2'-8"	Str.
S403	54	3'-0"	Str.
S501	37	23'-8"	Str.
S502 To S509	2 Ea.	2'-0" To 21'-3"	Str.
S510 To S525	1 Ea.	36'-5" To 44'-7"	Str.
S7001 To S7048	1 Ea.	36'-2" To 44'-9"	Str.

BAR LIST - TYPE 8 SPECIAL APPROACH SLAB			
Mark	No. Req'd	Length	Pin Dia.
S402	117	2'-8"	Str.
S403	22	3'-0"	Str.
S404	43	34'-8"	Str.
S405 To S408	1 Ea.	12'-2" To 19'-1"	Str.
S409 To S414	1 Ea.	8" To 2'-6"	Str.
S526	45	34'-8"	Str.
S527 To S538	2 Ea.	4'-1" To 34'-3"	Str.
S539 To S562	1 Ea.	44'-11" To 57'-6"	Str.
S7049 To S7118	1 Ea.	44'-11" To 57'-6"	Str.

QUANTITIES (FOR INFORMATION ONLY)		
TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 7 Special	57.89 Cu. Yds.	6,574 lb.
Type 8 Special	104.71 Cu. Yds.	12,012 lb.

STATE OF ARKANSAS
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SHEET 4 OF 5
DETAILS OF TYPE SPECIAL APPROACH SLABS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: APR. 2020 FILENAME: b030497x2_as4.dgn
CHECKED BY: JES DATE: APR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: APR. 2020
BRIDGE NO. 07484 DRAWING NO. 61705

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WORKSPACE: ARDOT Bridge
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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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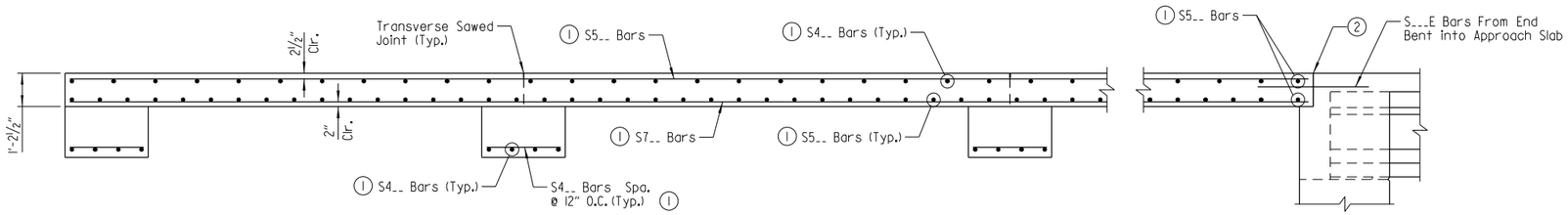
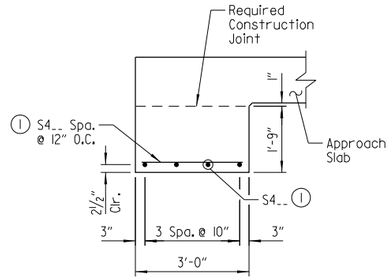
				(1)	07483, 07484	APPROACH SLABS		61706

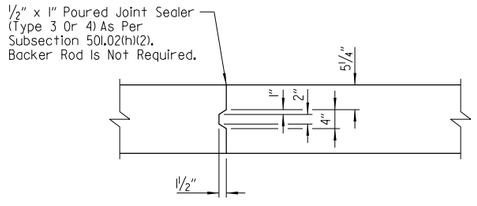


SECTION X-X
Scale: ⅜" = 1'-0"

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.

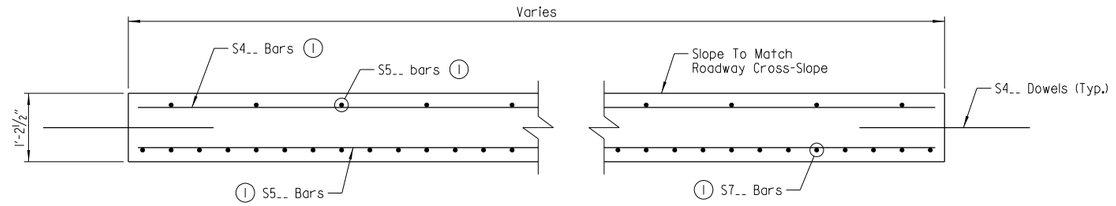
The surface finish for Approach Slabs shall match that used on the bridge deck.

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
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No.16458
JOEL E. SKINNER

DIGITALLY SIGNED 6/12/20
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF TYPE SPECIAL APPROACH SLABS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: MAR. 2020 FILENAME: b030497x2_as5.dgn
CHECKED BY: JES DATE: MAR. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAR. 2020

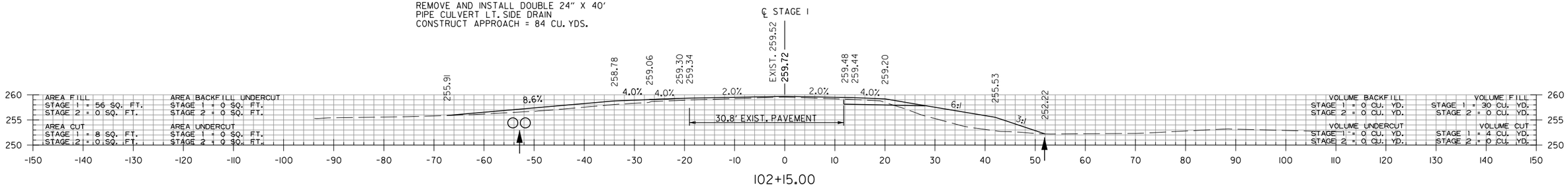
BRIDGE NO. 07483, 07484 DRAWING NO. 61706

drgoad 6/12/2020 12:42:53 PM
WORKSPACE: ARDOT Bridge
L:\2017\170\7560 - Mill and Badcau Creek\Drawings\B030497_SSO7_AS (Mill & Badcau).dgn
REVISED DATE:

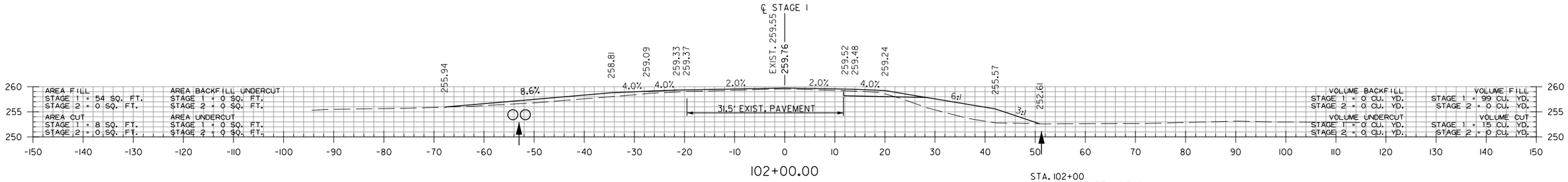
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	109	130

(2) CROSS SECTIONS

STA. 102+15.00 IN PLACE
24" X 40' CMP LT. SIDE DRAIN
REMOVE AND INSTALL DOUBLE 24" X 40'
PIPE CULVERT LT. SIDE DRAIN
CONSTRUCT APPROACH = 84 CU. YDS.



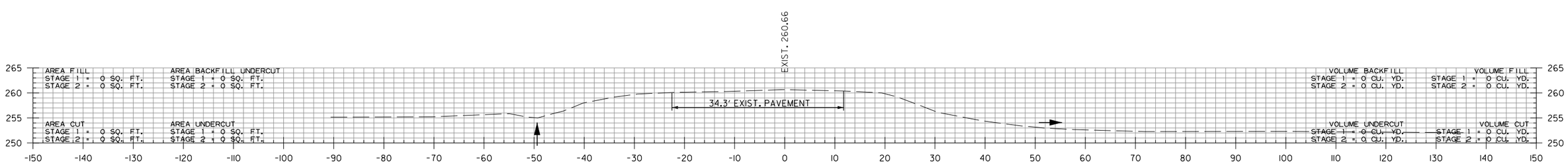
102+15.00



102+00.00

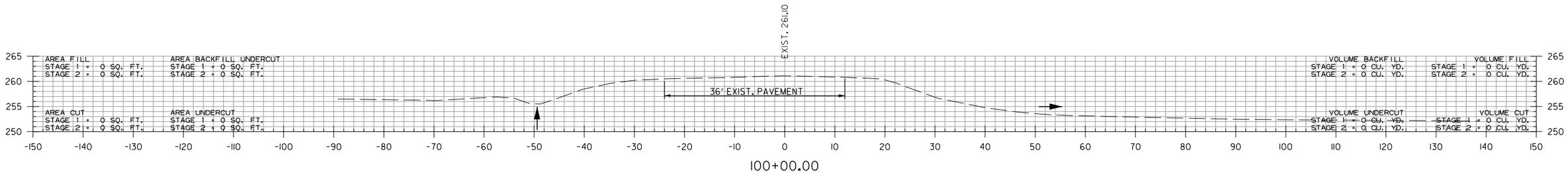
STA. 102+00.00 BEGIN JOB 030497
SITE 1

STA. 102+00
BEGIN SP. DT. RT. -0.50%
ELEV. 252.61



101+00.00

STA. 101+00.00 BEGIN 100' TRANSITION



100+00.00

HWY. 82 - SITE 1
STA. 100+80 TO STA. 102+15

DLTackett 6/12/2020 8:52:44 AM
WORKSPACE: AHTD
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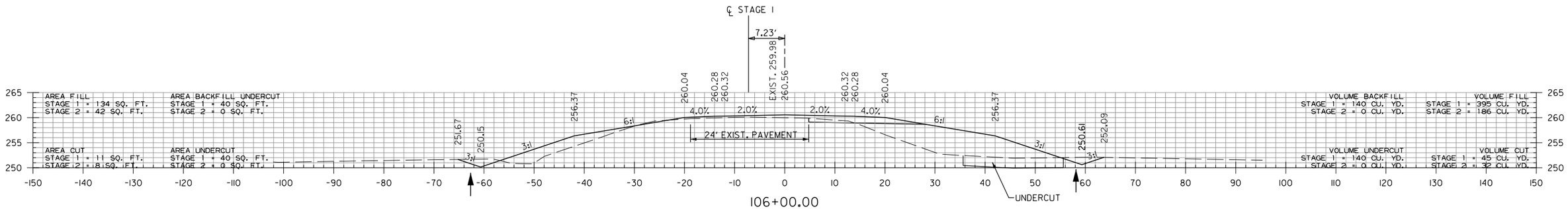
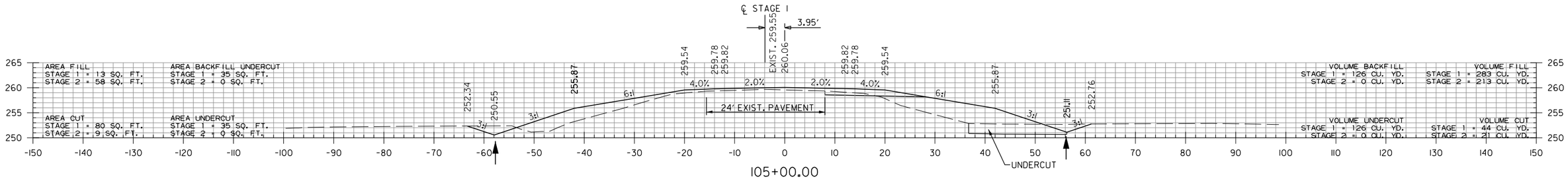
REVISED DATE:

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.		030497	110	130

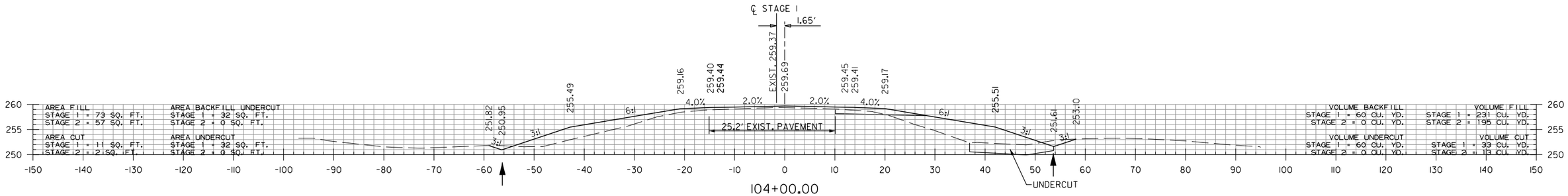
(2) CROSS SECTIONS



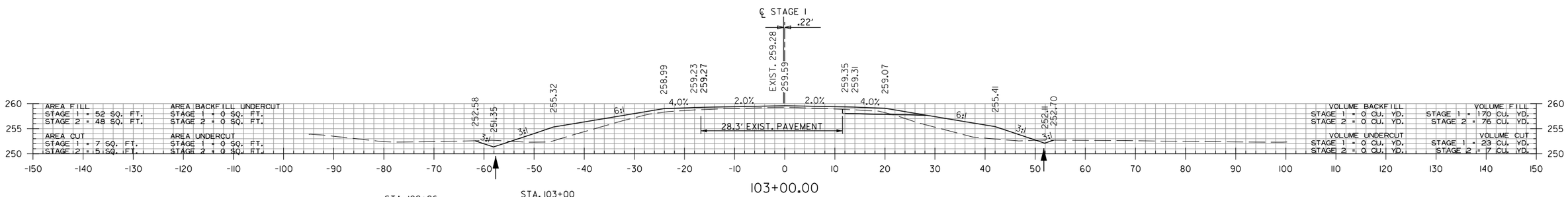
106+00.00



105+00.00



104+00.00



103+00.00

STA. 102+26
BEGIN SP. DT. LT. -2.78%
ELEV. 253.41

STA. 103+00
END SP. DT. LT. -2.78%
BEGIN SP. DT. LT. -0.40%
ELEV. 251.35

HWY. 82 - SITE 1
STA. 103+00 TO STA. 106+00

DLTacket† 6/12/2020 8:52:45 AM
WORKSPACE: AHTD
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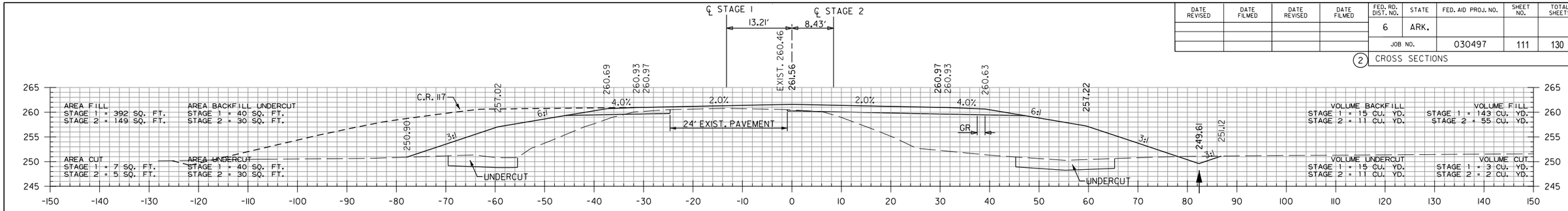
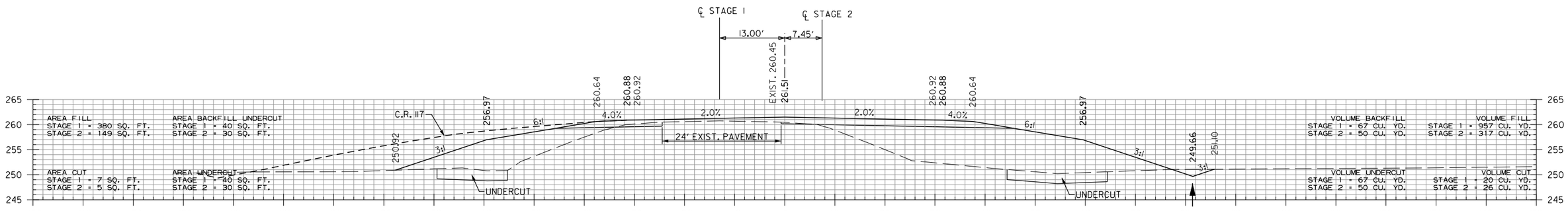
REVISED DATE:

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.		030497	111	130

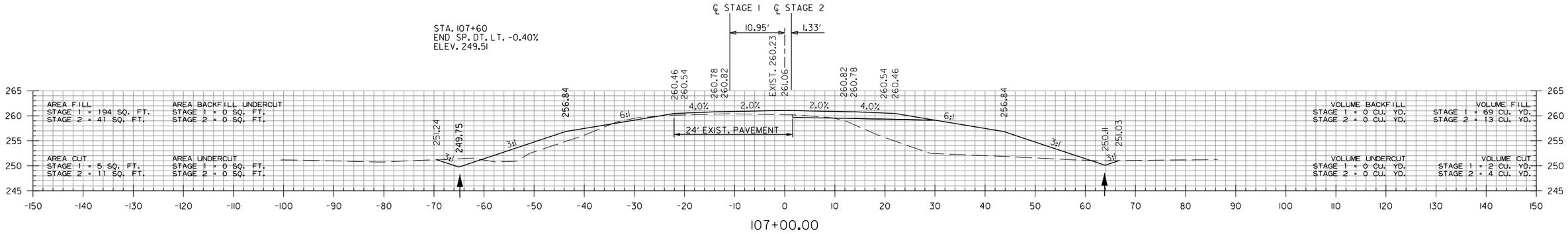
(2) CROSS SECTIONS



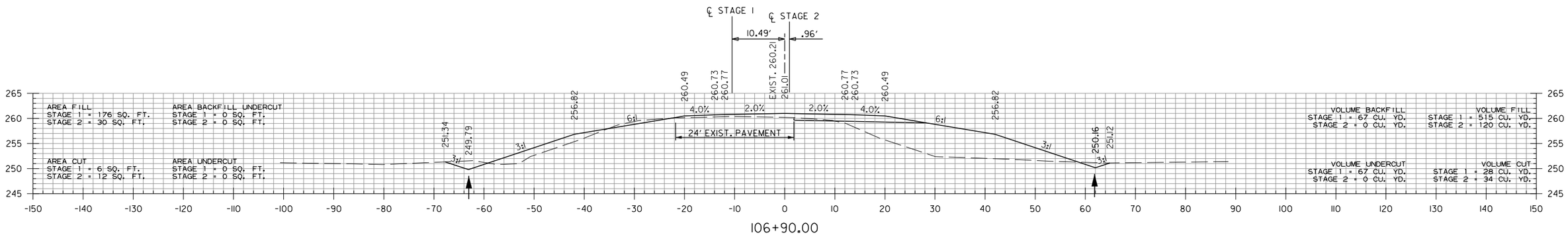
108+00.00



107+90.00



107+00.00



106+90.00

HWY. 82 - SITE 1
STA. 106+90 TO STA. 108+00

DLTackett 6/12/2020 8:52:45 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.		030497	112	130

(2) CROSS SECTIONS

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

STA. 111+68.26 BEGIN BRIDGE EXCAVATION
AT ELEVATION 252.00

STA. 111+35
BEGIN SP. DT. RT. 0.50%
ELEV. 247.10

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 15 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 215 CU. YD.
STAGE 2 = 68 CU. YD.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 15 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 3 CU. YD.
STAGE 2 = 0 CU. YD.

STA. 110+91.25 END TOE OF SLOPE
AT ELEVATION 250.00

AREA FILL
STAGE 1 = 593 SQ. FT.
STAGE 2 = 188 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 40 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 106 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 1318 CU. YD.
STAGE 2 = 289 CU. YD.

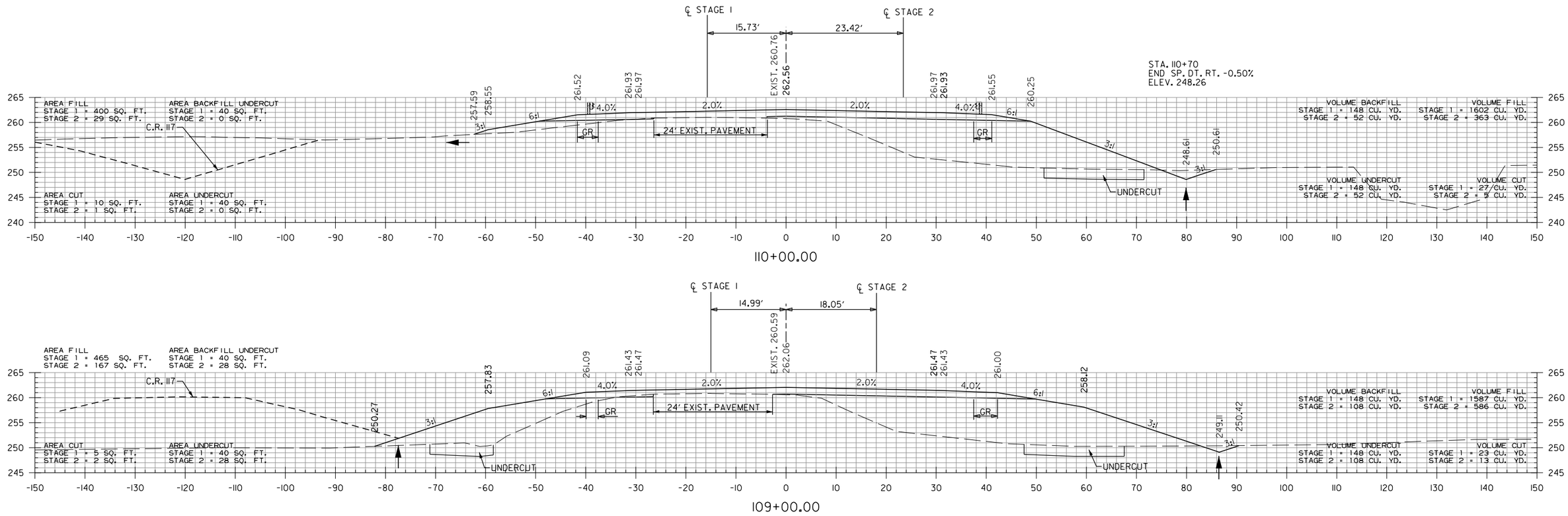
AREA CUT
STAGE 1 = 9 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
STAGE 1 = 40 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 106 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 26 CU. YD.
STAGE 2 = 0 CU. YD.

STA. 110+71.66 BEGIN BRIDGE



STA. 110+70
END SP. DT. RT. -0.50%
ELEV. 248.26

110+00.00

109+00.00

HWY. 82 - SITE 1
STA. 109+00 TO STA. 111+00

DLTackett 6/12/2020 8:52:46 AM
WORKSPACE: AHTD
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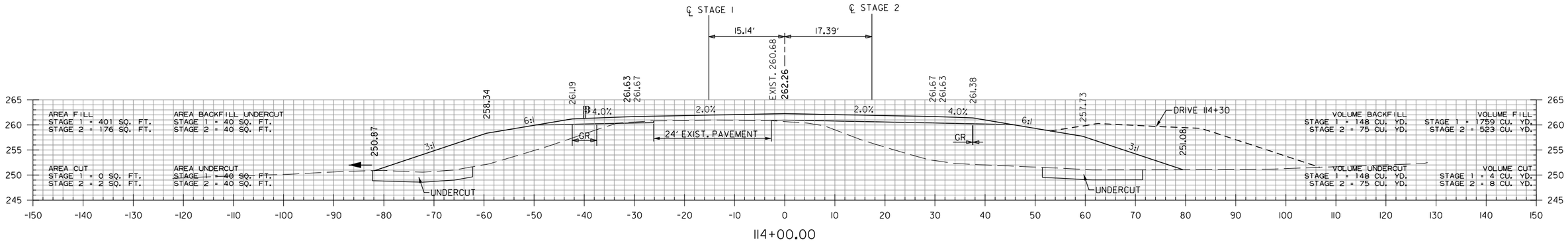
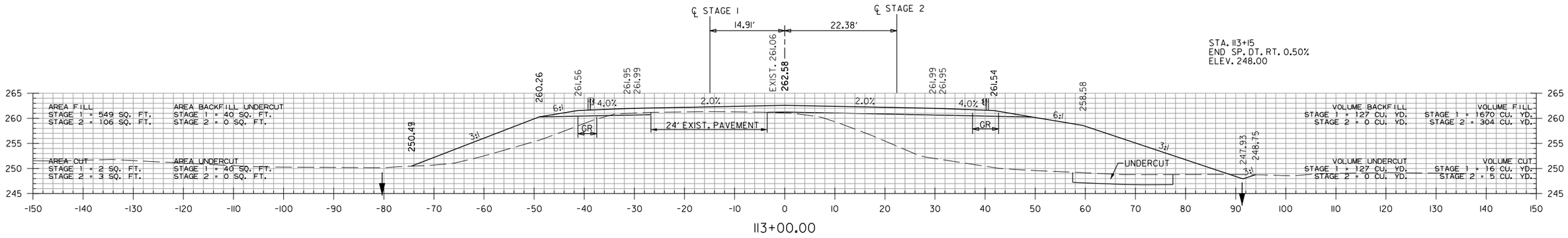
REVISED DATE:

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.		030497	113	130

(2) CROSS SECTIONS



114+00.00



113+00.00

STA. 113+15
END SP. DT. RT. 0.50%
ELEV. 248.00

AREA FILL
STAGE 1 = 504 SQ. FT.
STAGE 2 = 85 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 40 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 11 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 144 CU. YD.
STAGE 2 = 24 CU. YD.

STA. 112+14.33 END BRIDGE

AREA CUT
STAGE 1 = 8 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
STAGE 1 = 40 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 11 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 68 CU. YD.
STAGE 2 = 168 CU. YD.

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

STA. 111+98.90 BEGIN TOE OF SLOPE
AT ELEVATION 252.00

AREA CUT
STAGE 1 = 229 SQ. FT.
STAGE 2 = 589 SQ. FT.

AREA UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 130 CU. YD.
STAGE 2 = 334 CU. YD.

HWY. 82 - SITE 1
STA. 112+00 TO STA. 114+00

DLTackett 6/12/2020 8:52:46 AM
WORKSPACE: AHTD
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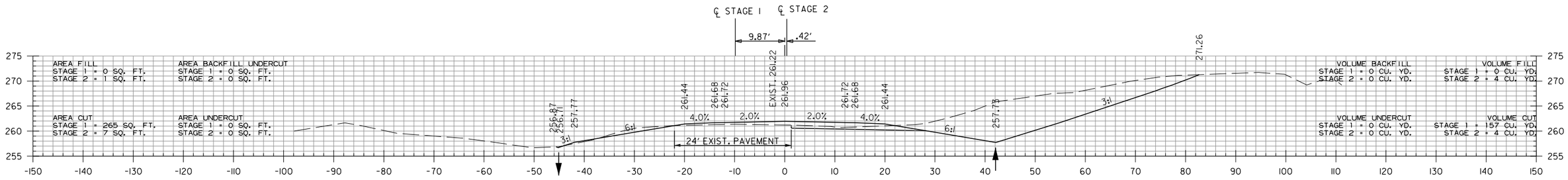
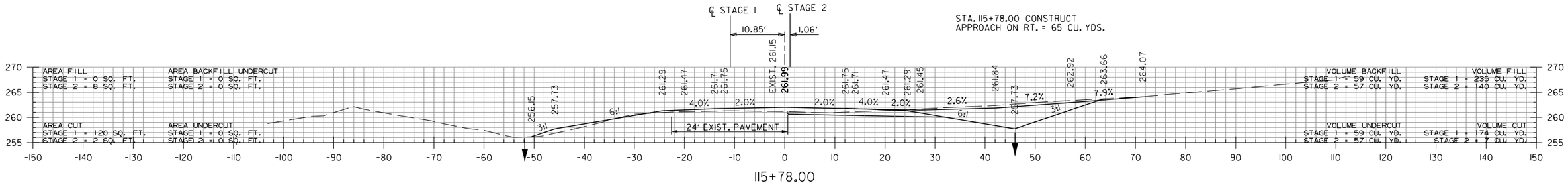
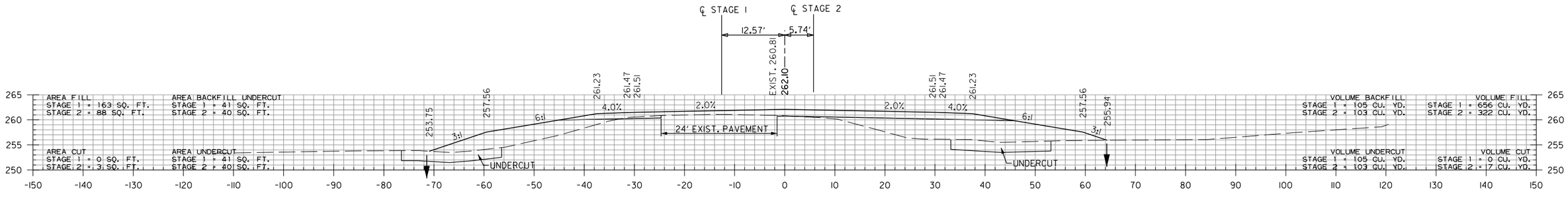
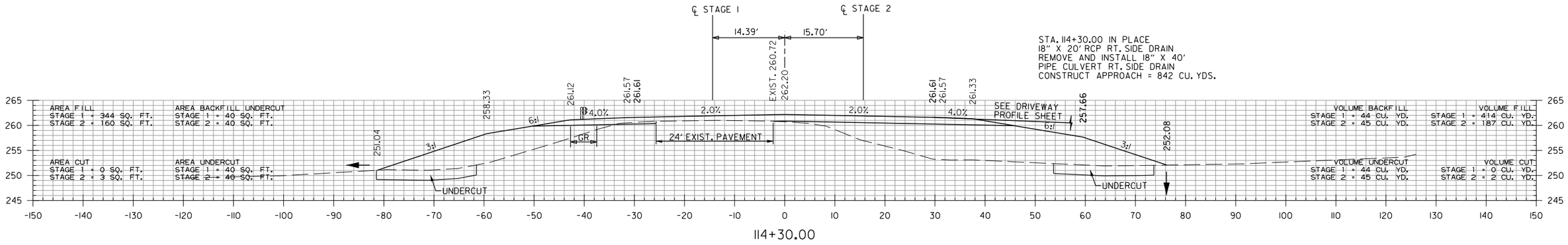
				6	ARK.			
				JOB NO.		030497	114	130

(2) CROSS SECTIONS









HWY. 82 - SITE 1
STA. 114+30 TO STA. 116+00

DLTicket† 6/12/2020 8:52:47 AM
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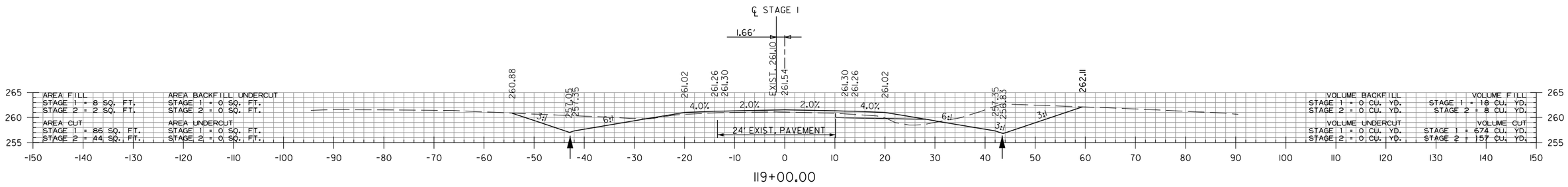
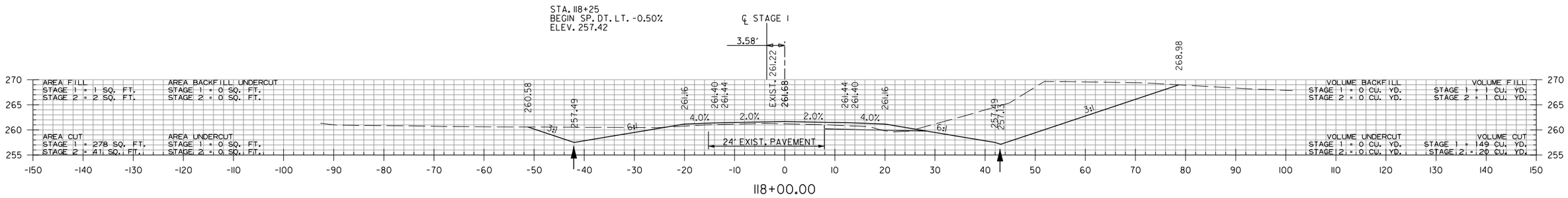
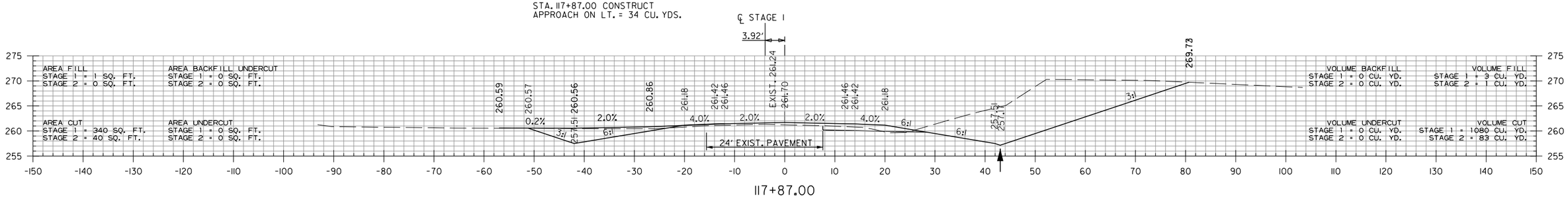
REVISED DATE:

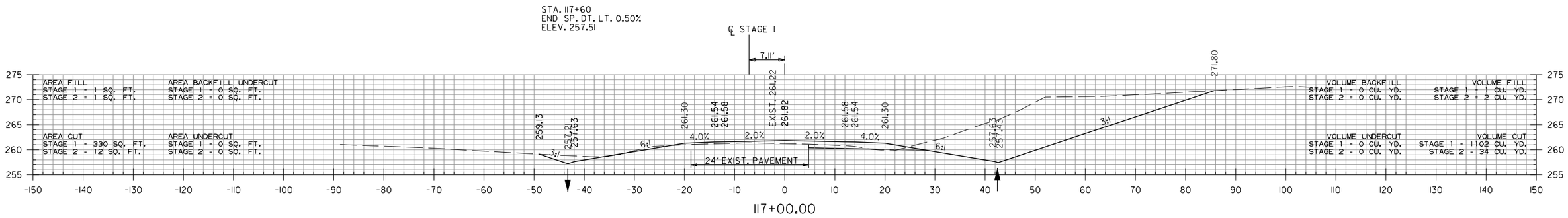
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	115	130

(2) CROSS SECTIONS









HWY. 82 - SITE 1
STA. 117+00 TO STA. 119+00

DLTicket
WORKSPACE: AHTD
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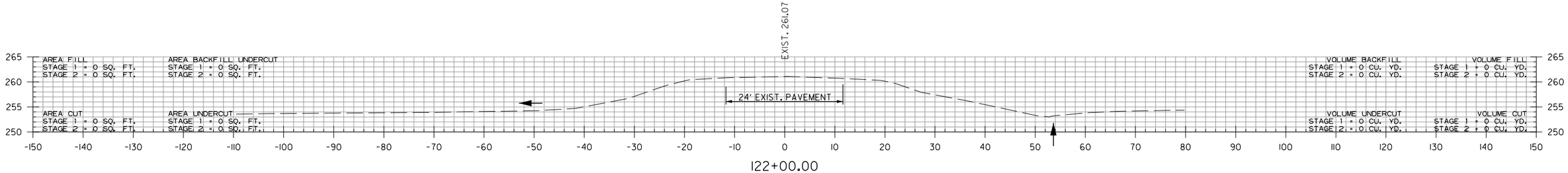
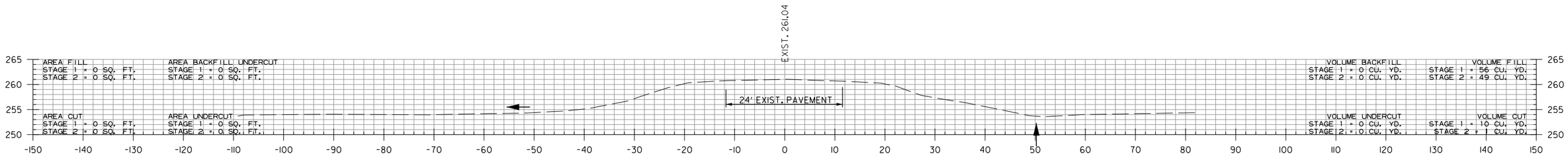
				6	ARK.			
				JOB NO.		030497	116	130

(2) CROSS SECTIONS



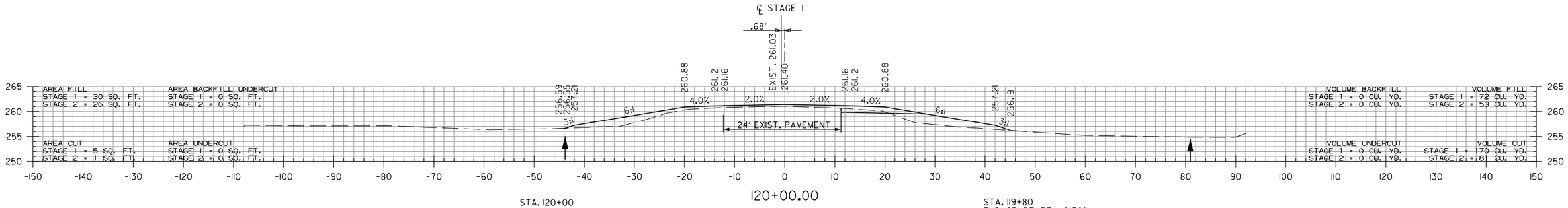
122+00.00

STA. 121+93.46 END 100' TRANSITION



121+00.00

STA. 120+93.46 END SITE 1



120+00.00

STA. 120+00
END SP. DT. LT. -0.50%
ELEV. 256.55

STA. 119+80
END SP. DT. RT. -0.30%
ELEV. 256.59

HWY. 82 - SITE 1
STA. 120+00 TO STA. 121+10

DLTackett 6/12/2020 8:52:48 AM
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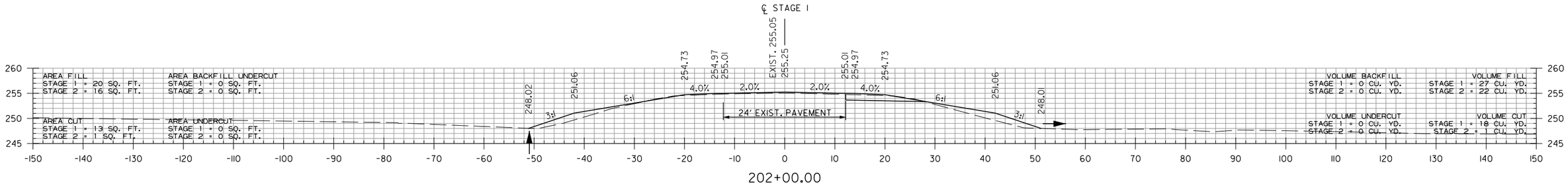
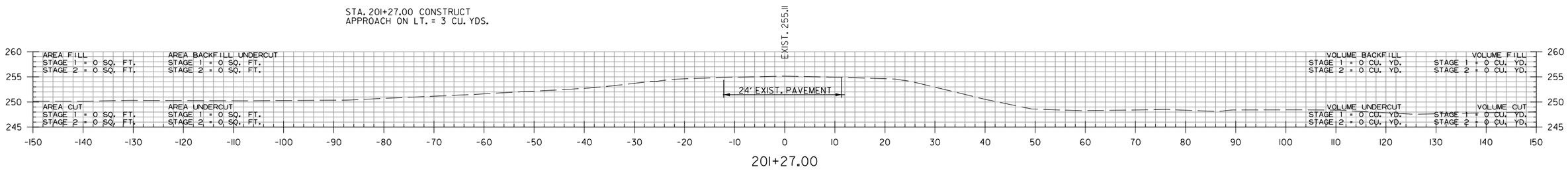
				6	ARK.			
				JOB NO.		030497	117	130

(2) CROSS SECTIONS



202+00.00

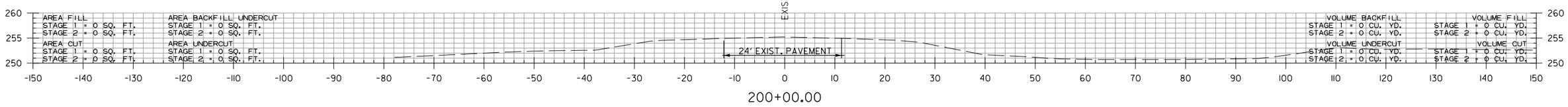
STA. 202+00.00 BEGIN SITE 2



201+27.00

201+00.00

STA. 201+00.00 BEGIN 100' TRANSITION



200+00.00

HWY. 82 - SITE 2
STA. 200+00 TO STA. 202+00

DLTicket# 6/12/2020 8:52:48 AM
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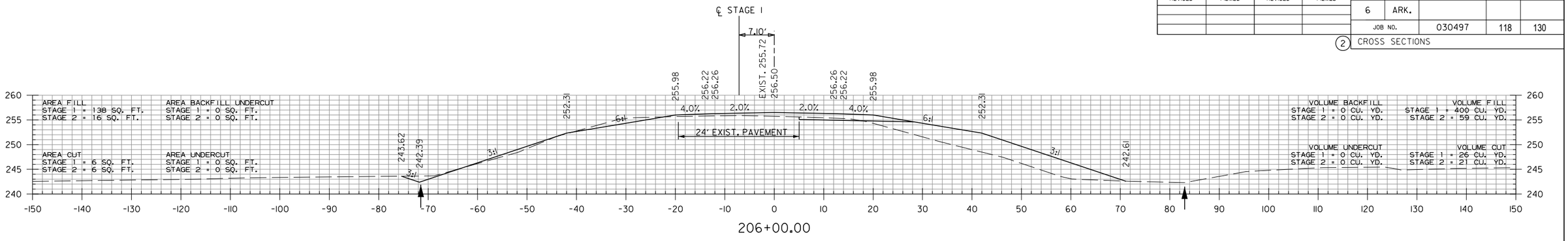
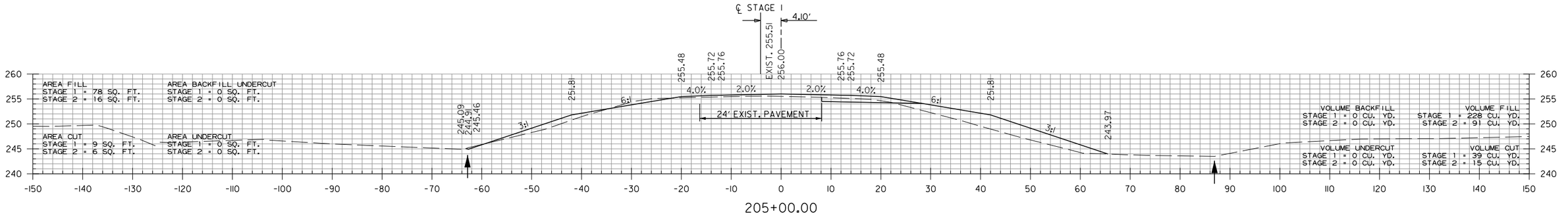
				6	ARK.			
				JOB NO.		030497	118	130
				(2) CROSS SECTIONS				

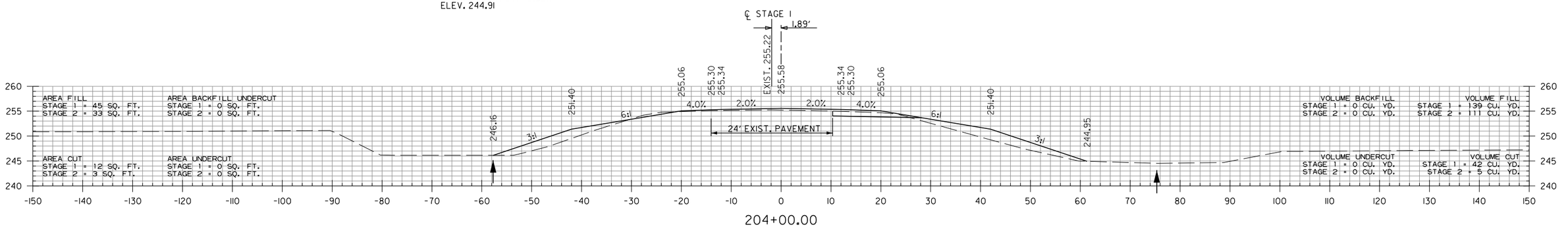


206+00.00

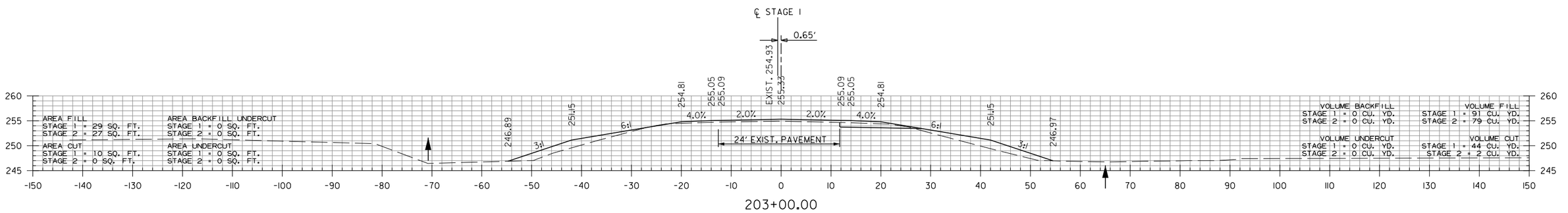


205+00.00

STA. 205+00
BEGIN SP. DT. LT. -2.52%
ELEV. 244.91



204+00.00



203+00.00

HWY. 82 - SITE 2
STA. 203+00 TO STA. 206+00

DLTackett 6/12/2020 8:52:48 AM
WORKSPACE: AHTD
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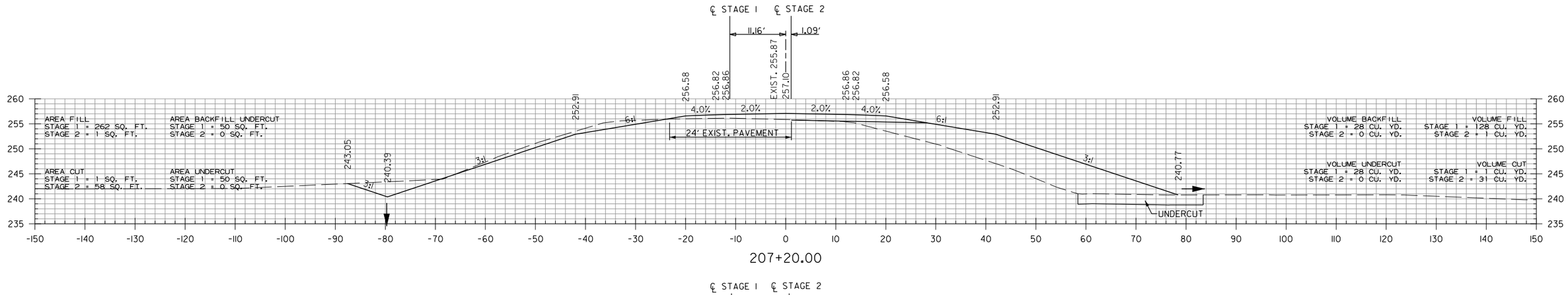
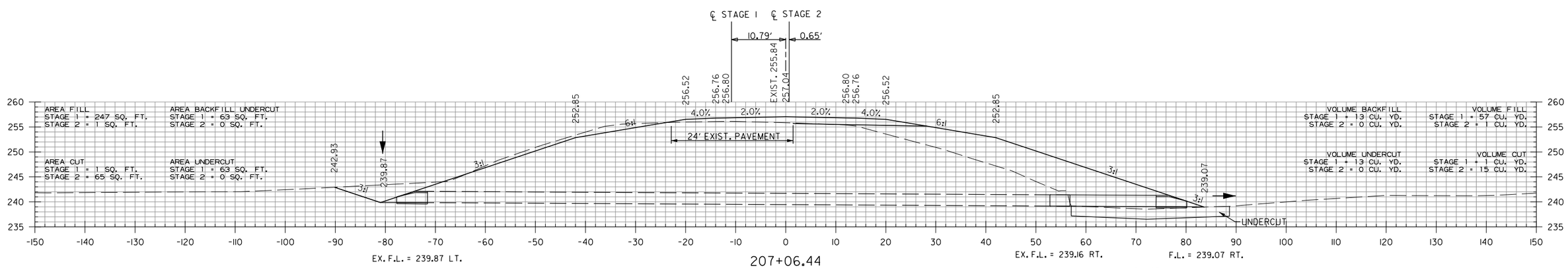
				6	ARK.			
				JOB NO.		030497	119	130
				(2) CROSS SECTIONS				



207+20.00



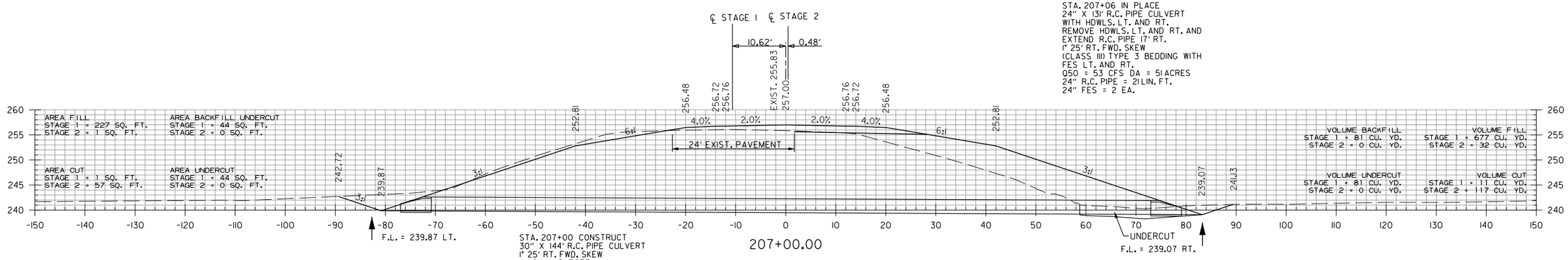
EX. F.L. = 239.87 LT.

207+06.44

EX. F.L. = 239.16 RT.

F.L. = 239.07 RT.

STA. 207+06 IN PLACE
24" X 131' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWLS. LT. AND RT. AND
EXTEND R.C. PIPE 17' RT.
1° 25' RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING WITH
FES LT. AND RT.
Q50 = 53 CFS DA = 51 ACRES
24" R.C. PIPE = 211 LIN. FT.
24" FES = 2 EA.



F.L. = 239.87 LT.

STA. 207+00
END SP. DT. LT. -2.52%
BEGIN SP. DT. LT. 2.59%
ELEV. 239.87

STA. 207+00 CONSTRUCT
30" X 144' R.C. PIPE CULVERT
1° 25' RT. FWD. SKEW
(JACK AND BORE)
(CLASS V) TYPE 3 BEDDING WITH
FES LT. AND RT.
Q50 = 53 CFS DA = 51 ACRES
30" R.C. PIPE = 144 LIN. FT.
30" FES = 2 EA.

207+00.00

F.L. = 239.07 RT.

HWY. 82 - SITE 2
STA. 207+00 TO STA. 207+20

DLTackett 6/12/2020 8:52:49 AM
WORKSPACE: AHTD
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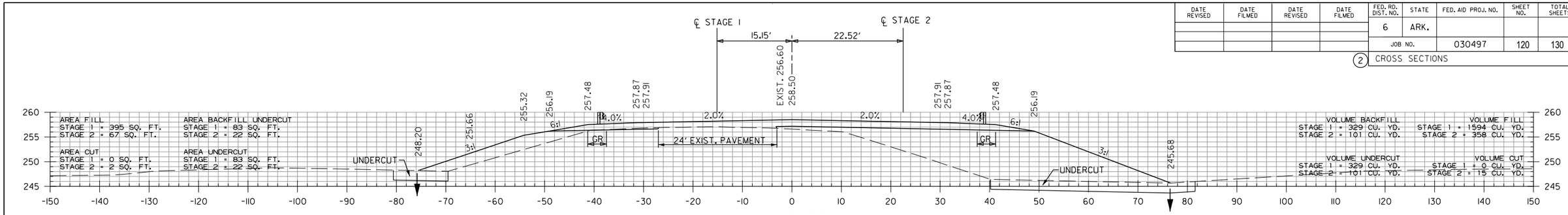
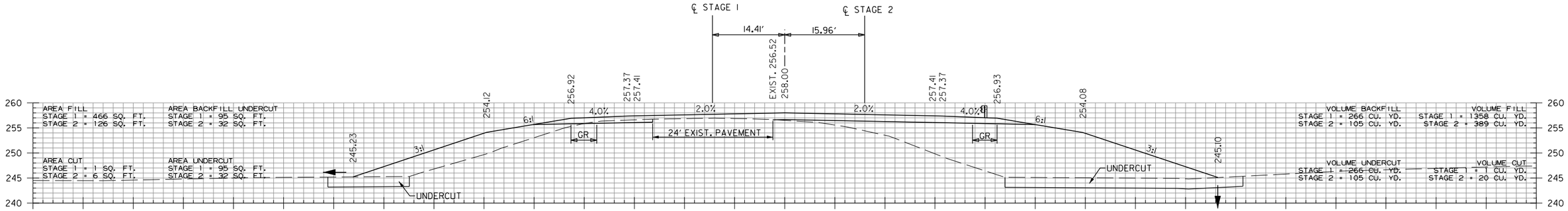
				6	ARK.			
				JOB NO.		030497	120	130

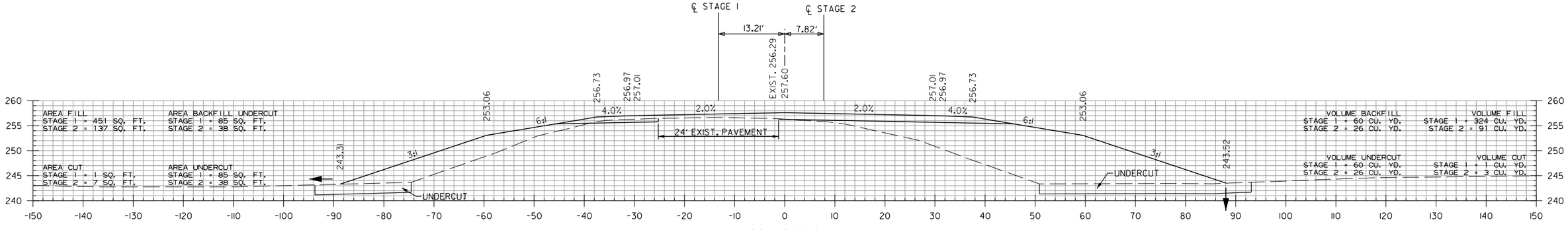
(2) CROSS SECTIONS



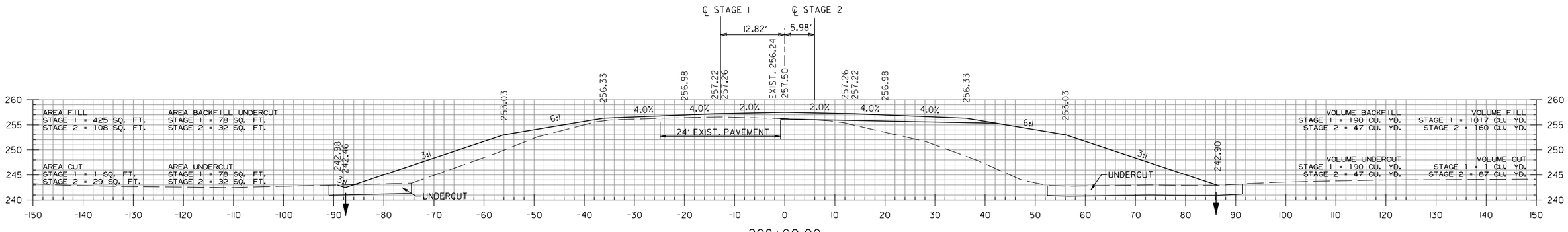
210+00.00



209+00.00



208+20.00



208+00.00

STA. 208+00
END SP. DT. LT. 2.59%
ELEV. 242.46

HWY. 82 - SITE 2
STA. 208+00 TO STA. 210+00

DLTackett 6/12/2020 8:52:49 AM
WORKSPACE: AHTD
L:\2017\170\7560 - Millard Bodcau Creek\Drawings\R030497_CX_HWY 82.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.		030497	121	130

(2) CROSS SECTIONS

AREA FILL
STAGE 1 = 492 SQ. FT.
STAGE 2 = 169 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 40 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 29 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 182 CU. YD.
STAGE 2 = 63 CU. YD.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 9 SQ. FT.

AREA UNDERCUT
STAGE 1 = 40 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 29 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 92 CU. YD.
STAGE 2 = 180 CU. YD.

STA. 214+39.39 END BRIDGE

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

AREA CUT
STAGE 1 = 248 SQ. FT.
STAGE 2 = 479 SQ. FT.

AREA UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 87 CU. YD.
STAGE 2 = 167 CU. YD.

STA. 214+19.43 BEGIN TOE OF SLOPE
AT ELEVATION 245.00

STA. 213+60
BEGIN SP. DT. LT. 0.63%
ELEV. 241.61

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

STA. 214+00.53 BEGIN BRIDGE EXCAVATION
AT ELEVATION 245.00

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 23 CU. YD.
STAGE 2 = 6 CU. YD.

VOLUME FILL
STAGE 1 = 171 CU. YD.
STAGE 2 = 114 CU. YD.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 23 CU. YD.
STAGE 2 = 6 CU. YD.

VOLUME CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 19 CU. YD.

STA. 210+94.27 END TOE OF SLOPE
AT ELEVATION 247.31

AREA FILL
STAGE 1 = 606 SQ. FT.
STAGE 2 = 406 SQ. FT.

AREA BACKFILL UNDERCUT
STAGE 1 = 83 SQ. FT.
STAGE 2 = 22 SQ. FT.

VOLUME BACKFILL
STAGE 1 = 242 CU. YD.
STAGE 2 = 65 CU. YD.

VOLUME FILL
STAGE 1 = 1465 CU. YD.
STAGE 2 = 693 CU. YD.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 68 SQ. FT.

AREA UNDERCUT
STAGE 1 = 83 SQ. FT.
STAGE 2 = 22 SQ. FT.

VOLUME UNDERCUT
STAGE 1 = 242 CU. YD.
STAGE 2 = 65 CU. YD.

VOLUME CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 102 CU. YD.

STA. 210+79.06 BEGIN BRIDGE

HWY. 82 - SITE 2
STA. 211+00 TO STA. 213+00

DLTacket 6/12/2020 8:52:50 AM
WORKSPACE: AHTD
L:\2017\170175\60 - Mill and Bodcau Creek\Drawings\R030497_CX_HWY 82.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.		030497	122	130
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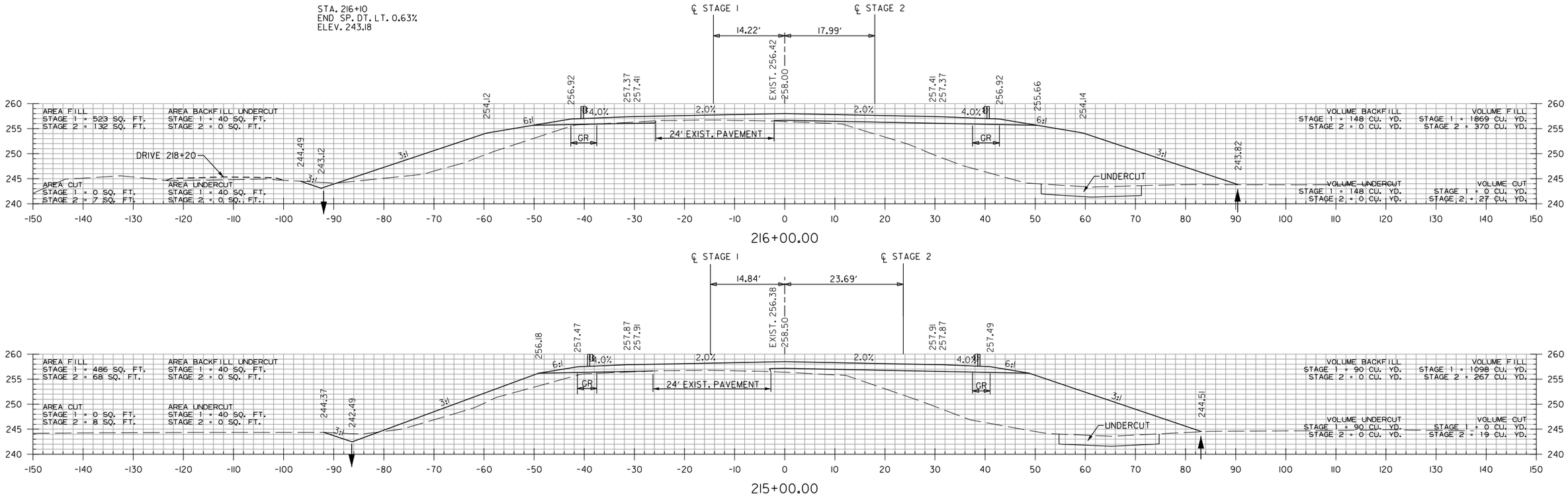

HWY. 82 - SITE 2
STA. 214+00 TO STA. 216+00

DLTackett 6/12/2020 8:52:50 AM
WORKSPACE: AHTD
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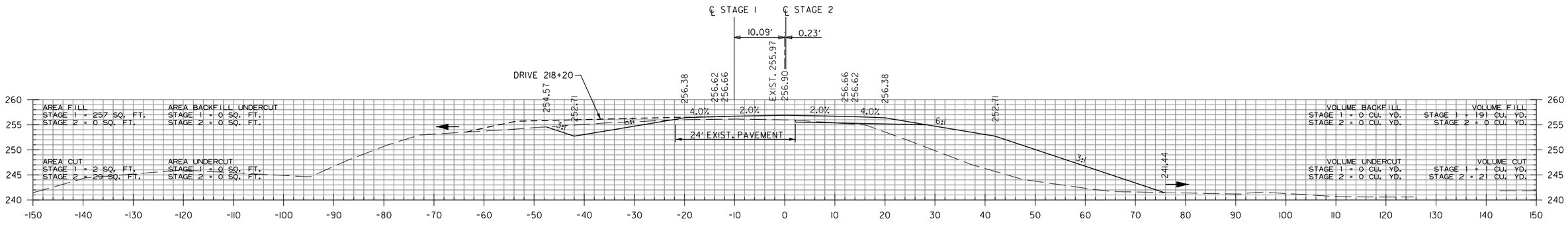
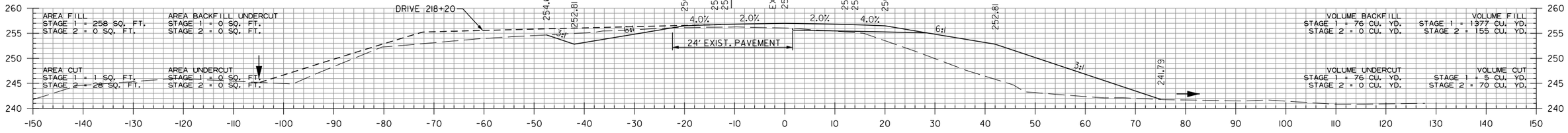
REVISED DATE:

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.		030497	123	130
				(2) CROSS SECTIONS				

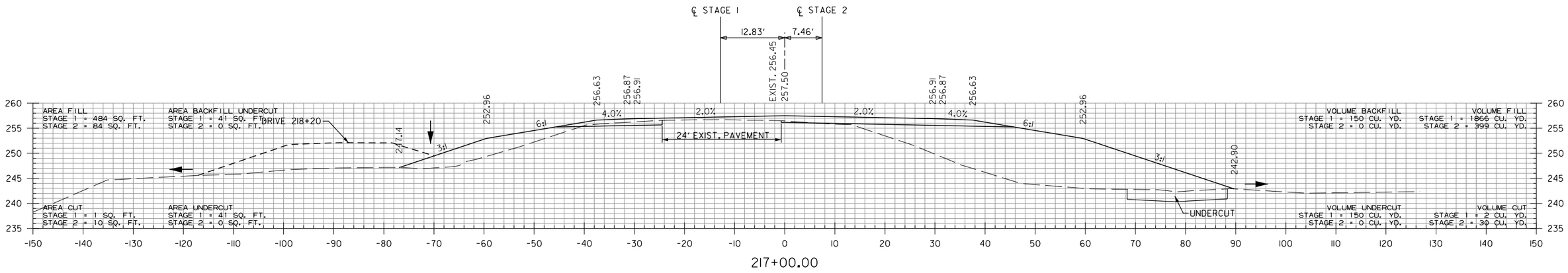
STA. 218+20.00 CONSTRUCT
APPROACH ON LT. = 758 CU. YDS.



218+20.00



218+00.00



217+00.00

HWY. 82 - SITE 2
STA. 217+00 TO STA. 218+20

DLTacket 6/12/2020 8:52:51 AM
WORKSPACE: AHTD
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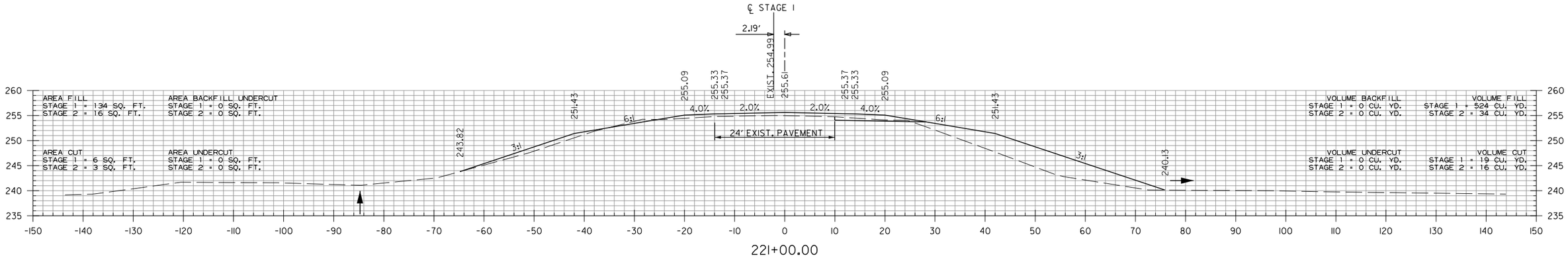
REVISED DATE:

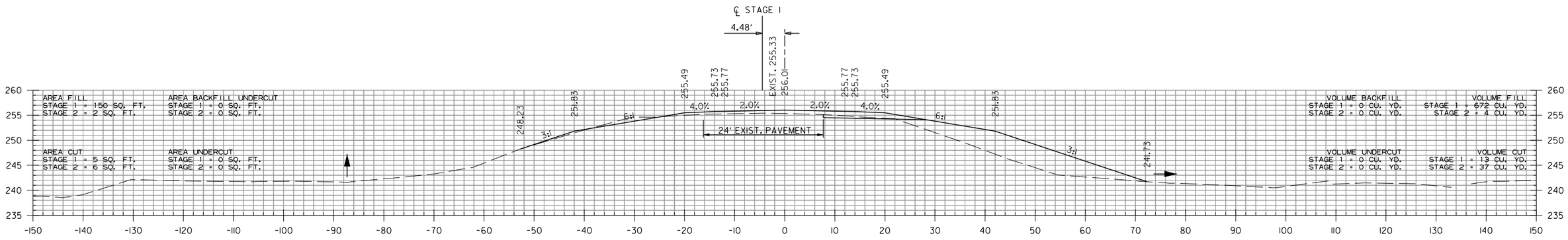
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030497	124	130

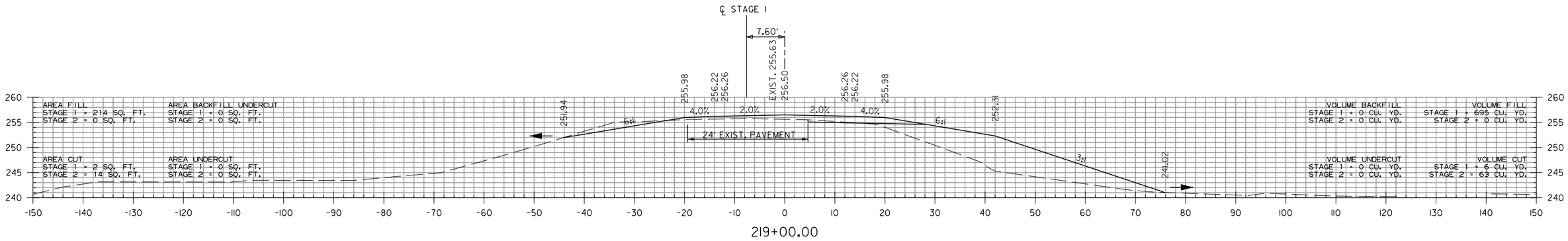
(2) CROSS SECTIONS



221+00.00



220+00.00



219+00.00

HWY. 82 - SITE 2
STA. 219+00 TO STA. 221+00

DLTackett 6/12/2020 8:52:51 AM
WORKSPACE: AHTD
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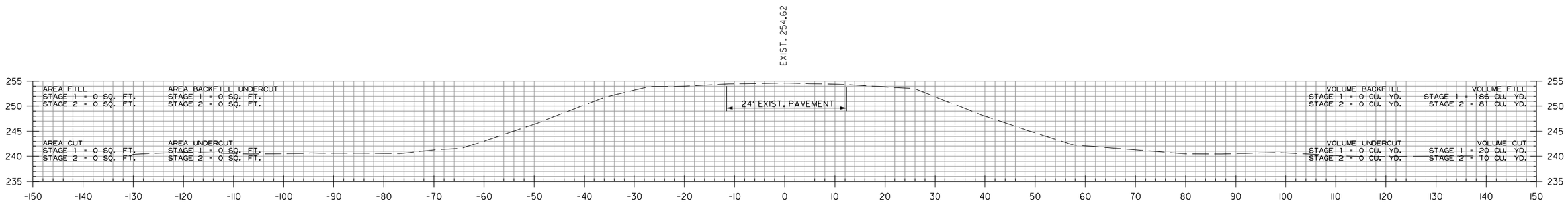
REVISED DATE:

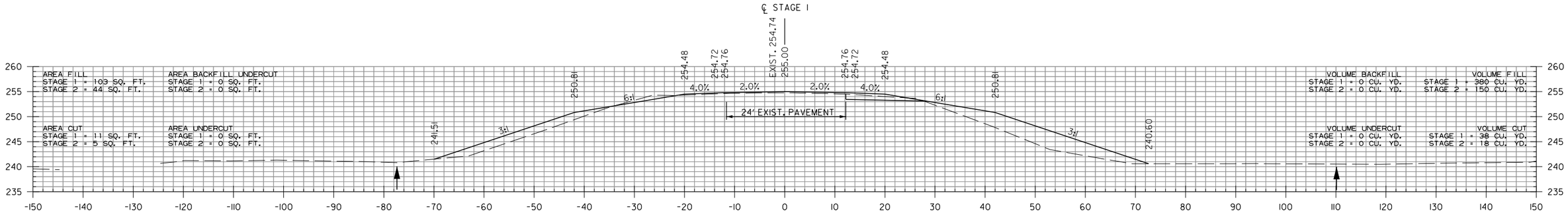
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030497	125	130
				(2)	CROSS SECTIONS			

STA. 224+18.45 END 100' TRANSITION

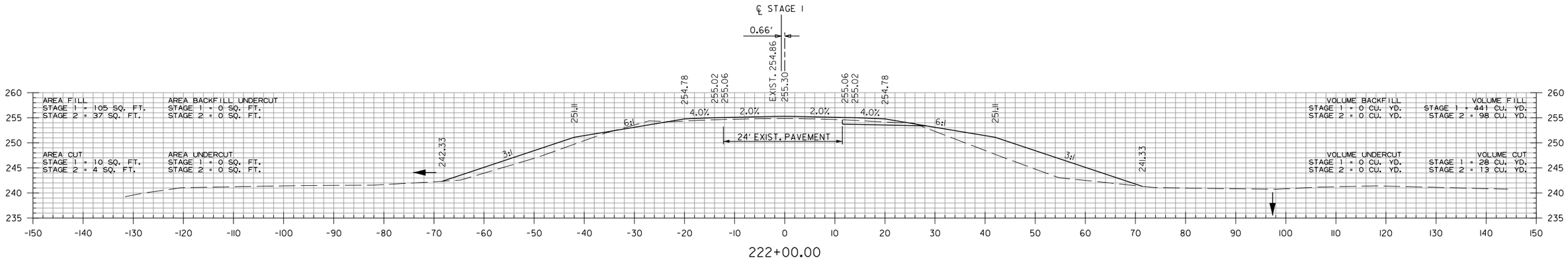


224+00.00

STA. 223+18.45 END JOB 030497
SITE 2



223+00.00



222+00.00

HWY. 82 - SITE 2
STA. 222+00 TO STA. 224+00

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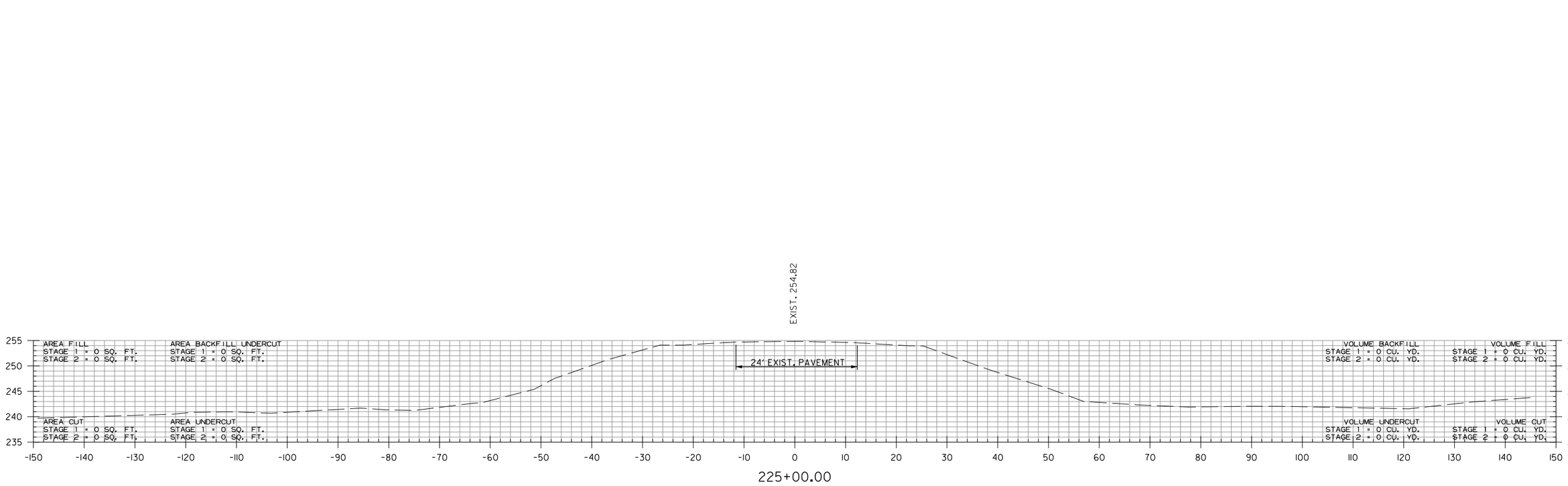
REVISED DATE:

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.		030497	126	130

(2) CROSS SECTIONS



HWY. 82 - SITE 2
STA. 225+00 TO STA. 225+00

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WORKSPACE: AHTD
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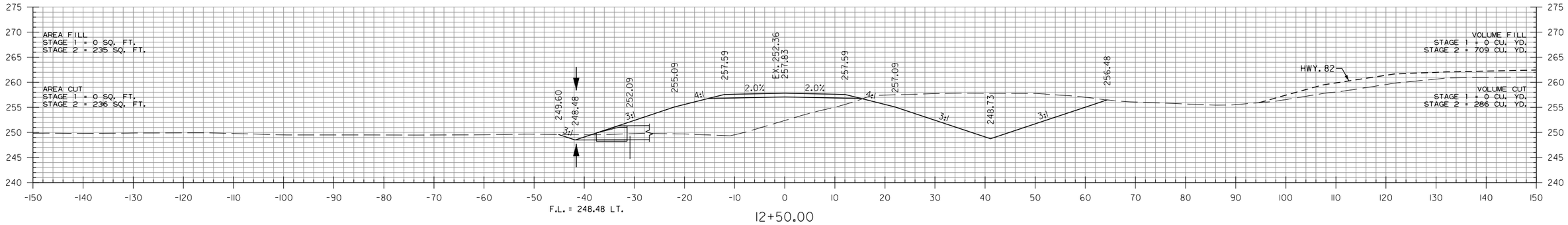
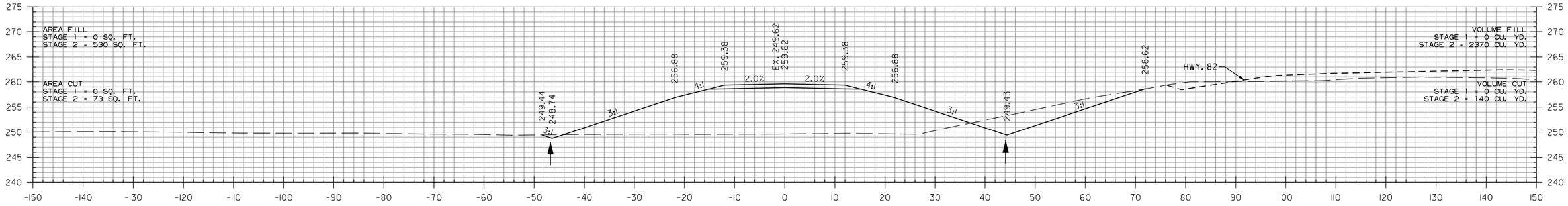
REVISED DATE:

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.		030497	127	130
				(2)	CROSS SECTIONS			



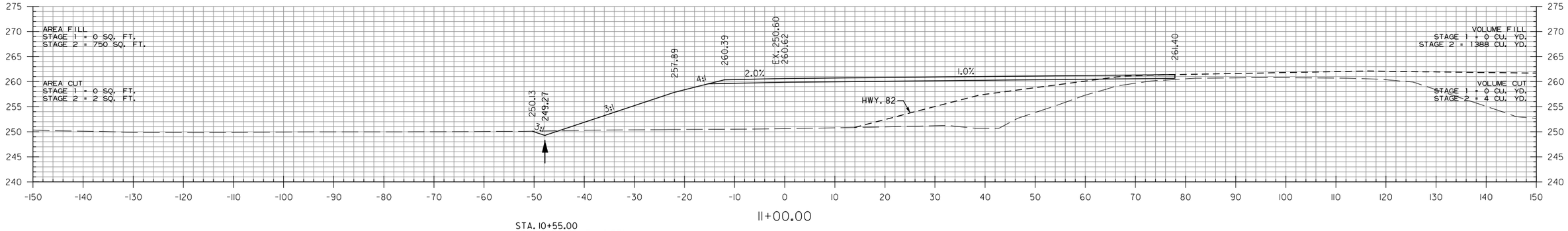
12+50.00

STA. 12+50.00
END SP. DT. LT. -0.53%
BEGIN SP. DT. LT. 2.11%
ELEV. 248.48



12+00.00

STA. 11+75.00
BEGIN SP. DT. RT. -1.40%
ELEV. 249.78



11+00.00

STA. 10+55.00
BEGIN SP. DT. LT. -0.53%
ELEV. 249.51

STA. 10+29.58 BEGIN C.R. 117

C.R.117- SITE 1
STA. 11+00 TO STA. 12+50

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WORKSPACE: AHTD
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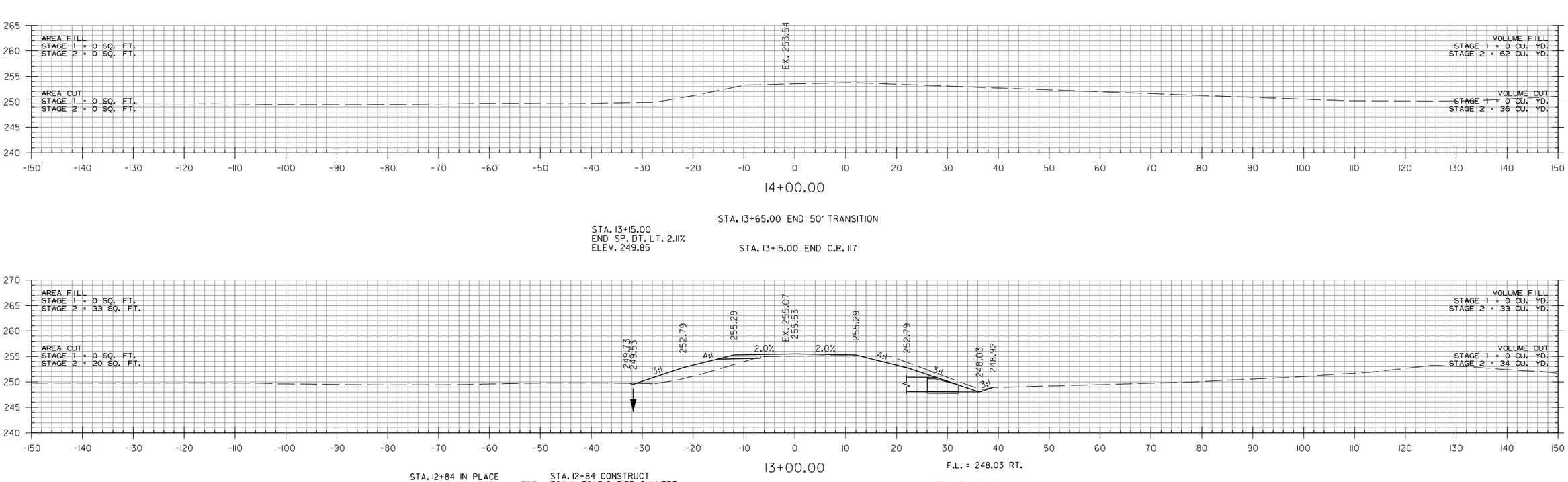
REVISED DATE:

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.		030497	128	130

(2) CROSS SECTIONS



C.R.117- SITE 1
STA. 13+00 TO STA. 14+00

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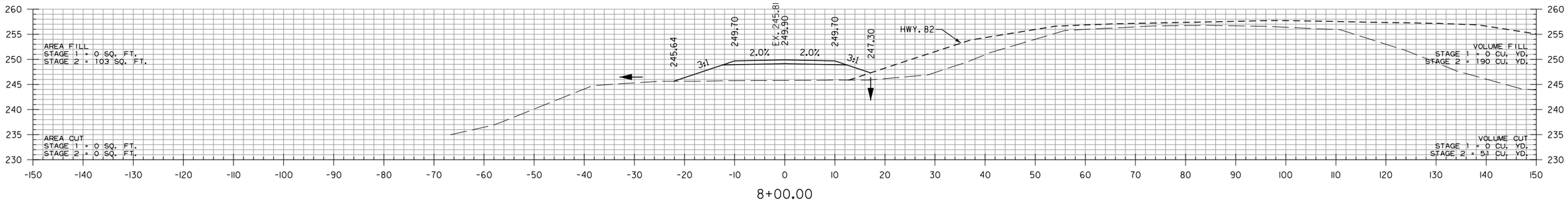
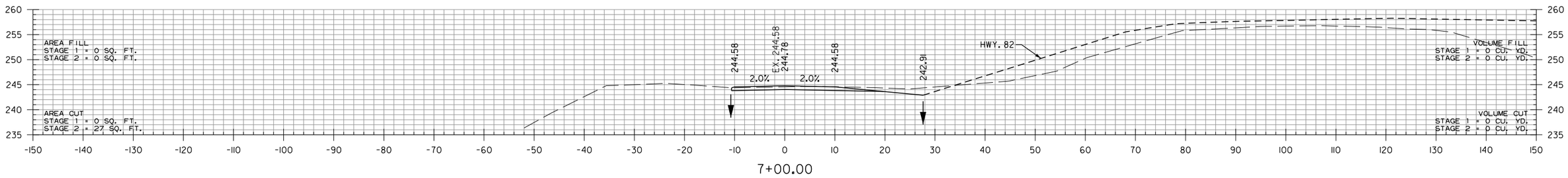
				6	ARK.			
				JOB NO.		030497	129	130
				(2) CROSS SECTIONS				

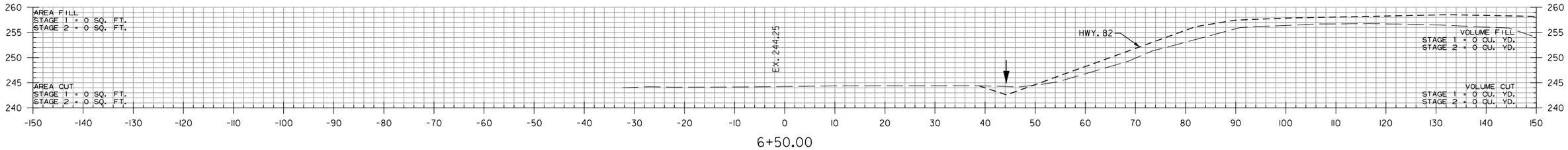


8+00.00



7+00.00

STA. 7+00.00 BEGIN DRIVE 218+20



6+50.00

DRIVE 218+20 - SITE 2
STA. 6+50 TO STA. 8+00

DLTackett 6/12/2020 8:52:53 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.			
JOB NO.		030497	130	130

(2) CROSS SECTIONS

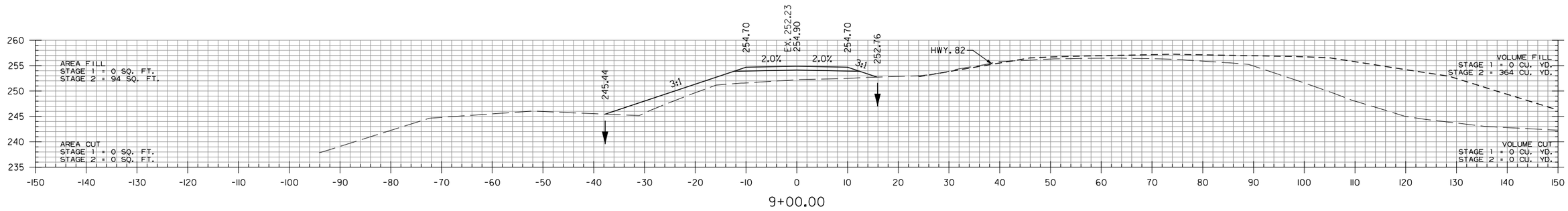
AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 153 CU. YD.

STA. 9+88.00 END DRIVE 218+20

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

VOLUME CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.



DRIVE 218+20 - SITE 2
STA. 9+00 TO STA. 9+00

DLTacket 6/12/2020 8:52:54 AM
WORKSPACE: AHTD
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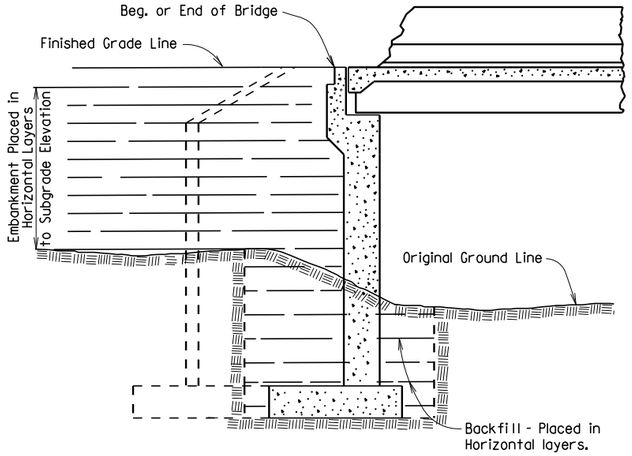
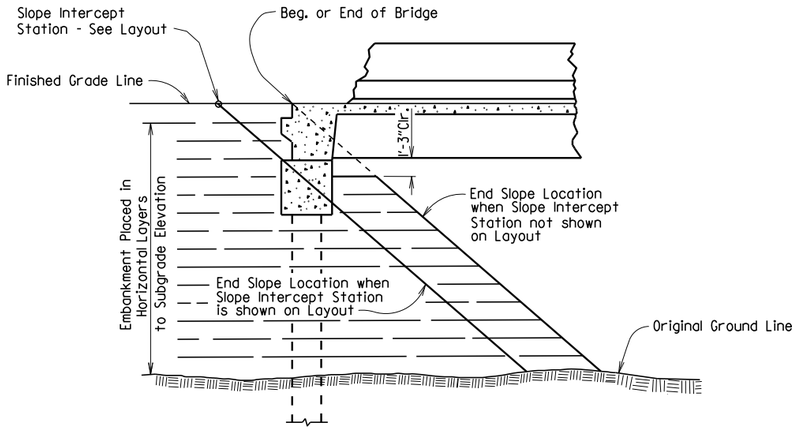
REVISED DATE:

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.				

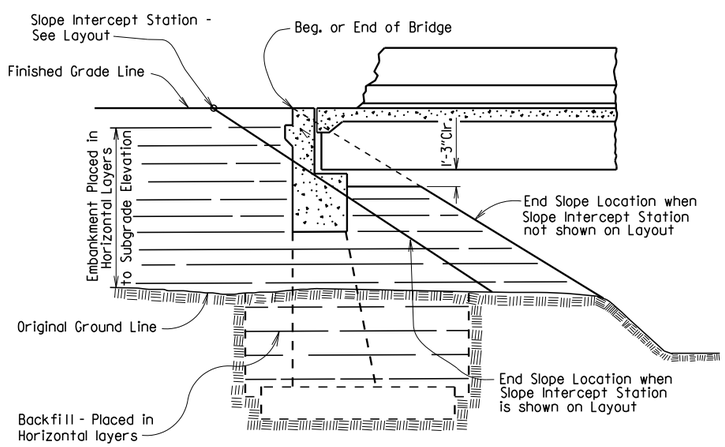
1 EMBANKMENT & BACKFILL 55000



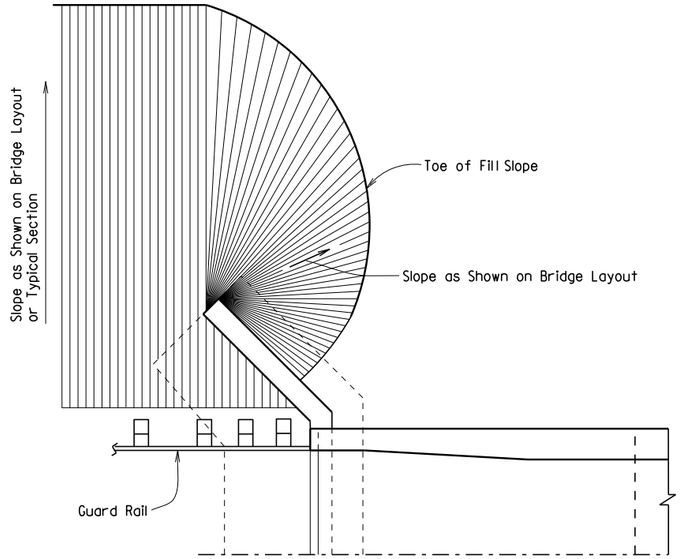
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



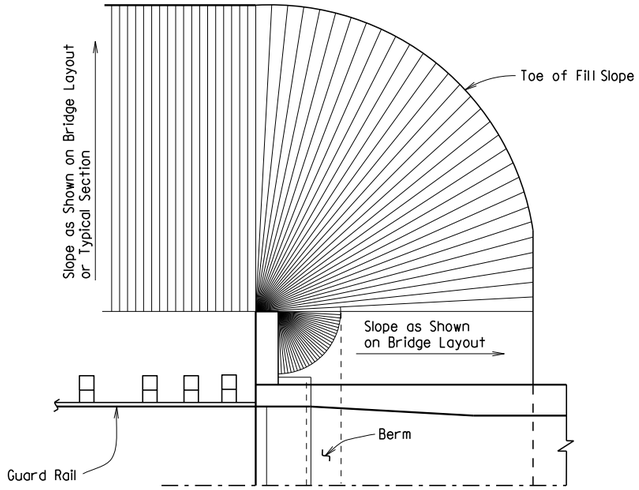
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



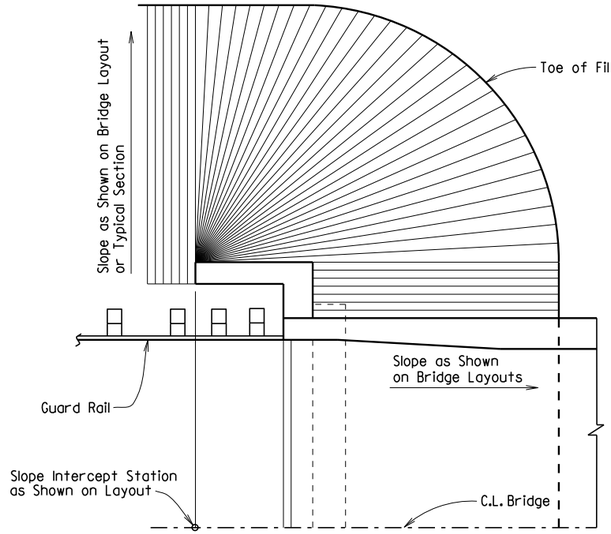
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



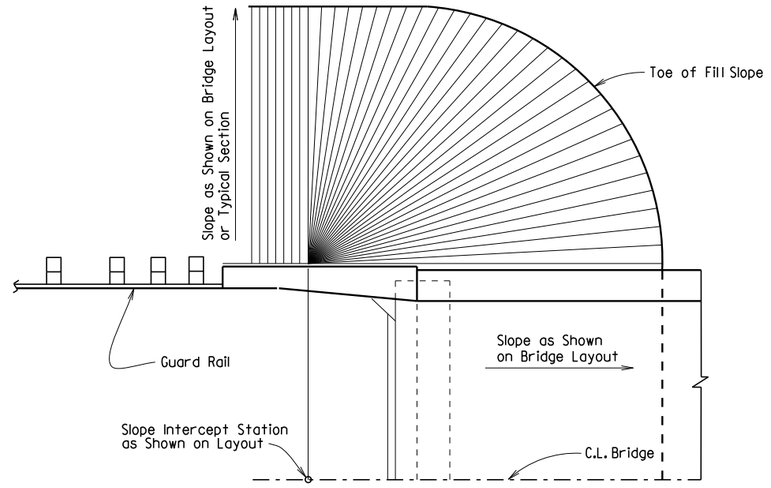
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

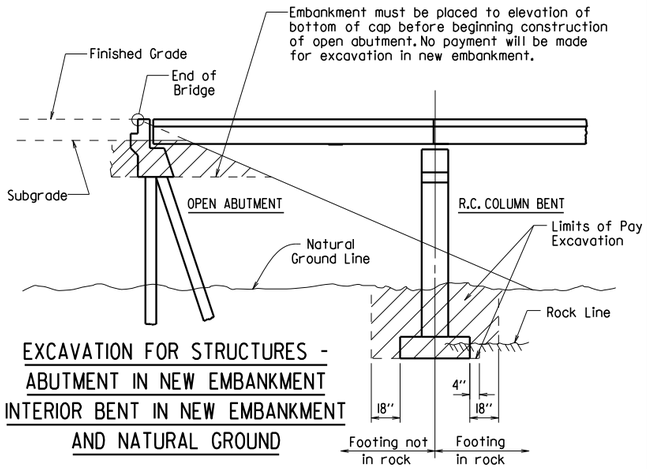
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

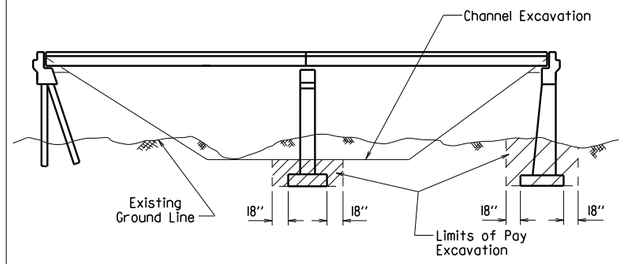
DRAWING NO. 55000

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

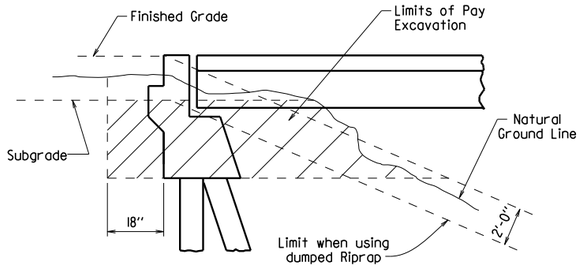
1 RIPRAP & EXCAV. 55001



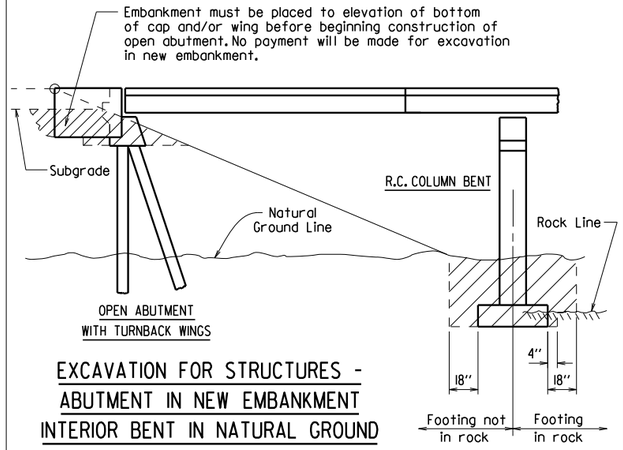
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



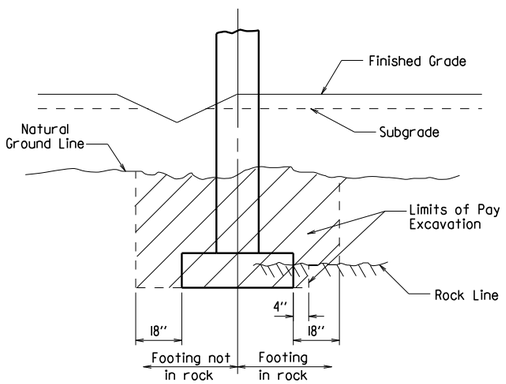
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



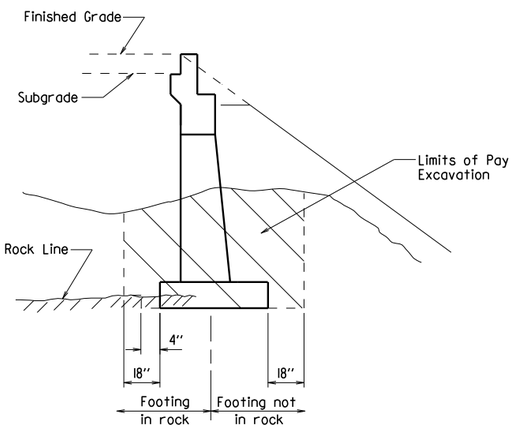
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



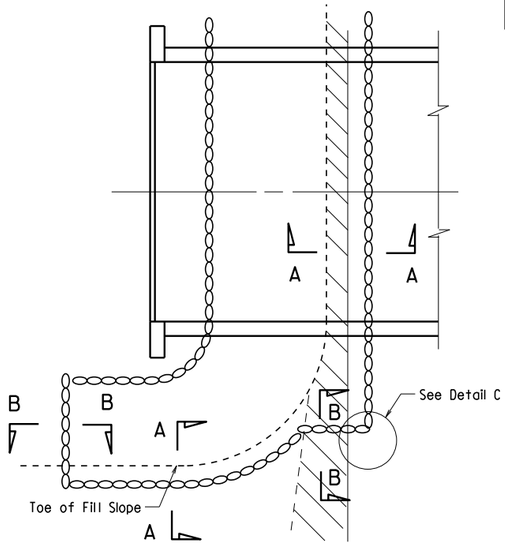
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



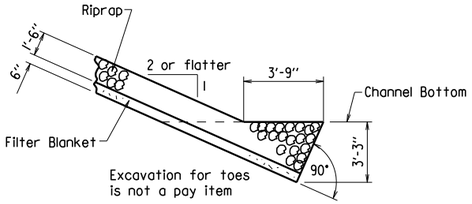
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

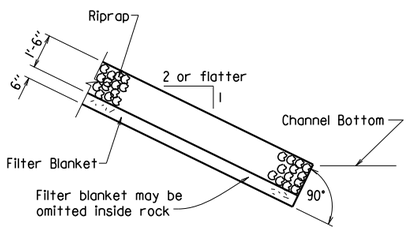


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



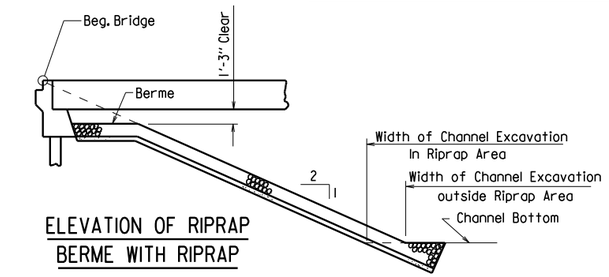
SECTION A-A

(Toe Excavation in Rock)

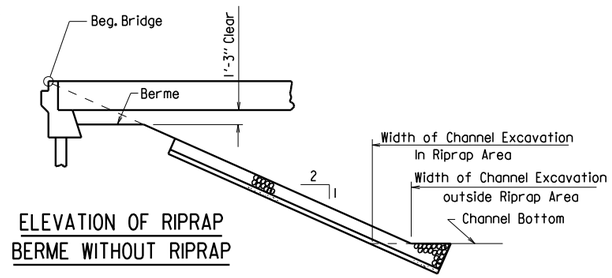
Note : Use this type of toe when rock is encountered which is in a stable condition.

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

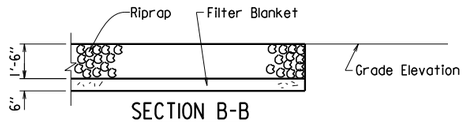
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



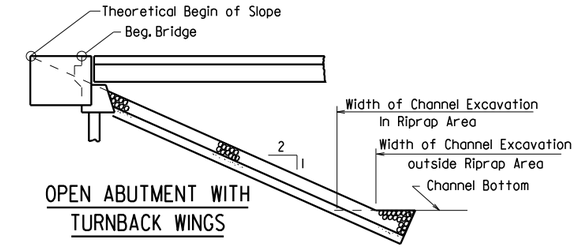
ELEVATION OF RIPRAP BERME WITH RIPRAP



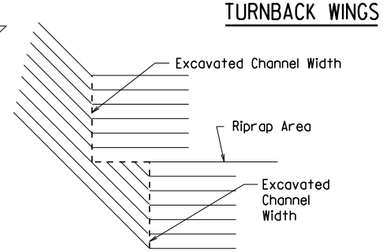
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

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

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

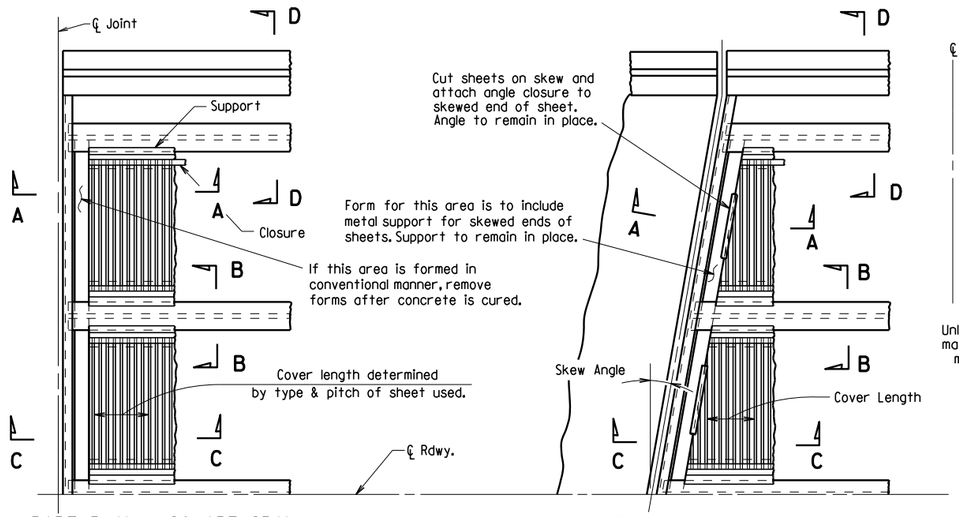
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

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

① BRIDGE DECK FORMS 55005

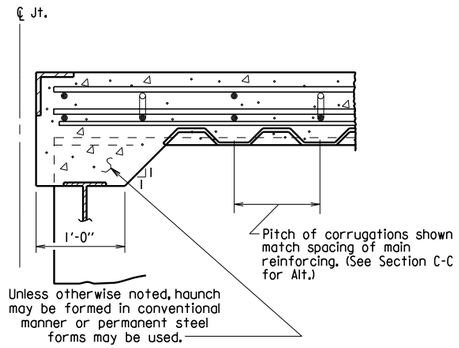


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

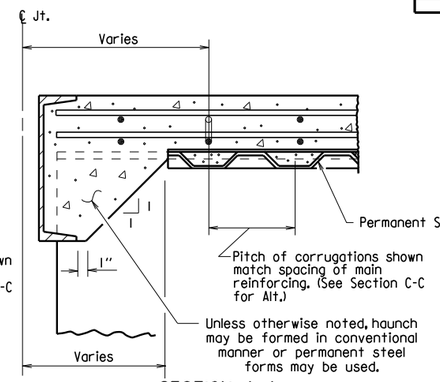
3/8" = 1'-0"



SECTION A-A

N.T.S.

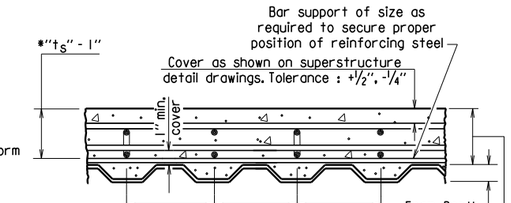
(Angle at end of span)



SECTION A-A

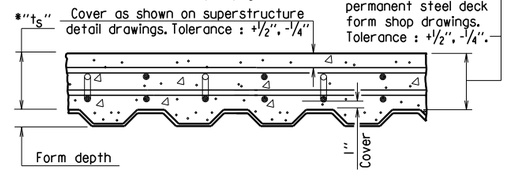
N.T.S.

(Channel at end of span)



SECTION C-C

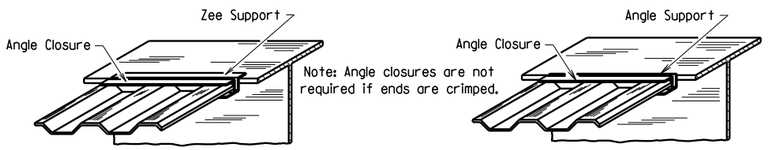
1" = 1'-0"



SECTION C-C - ALTERNATE

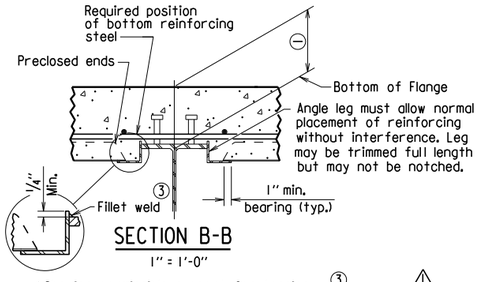
1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

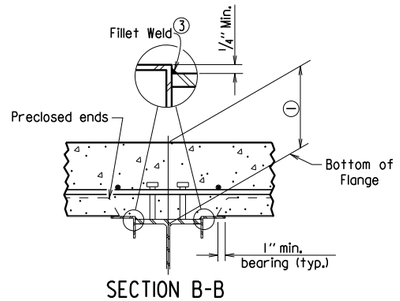


SECTION B-B

1" = 1'-0"

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

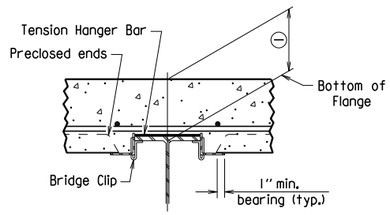
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

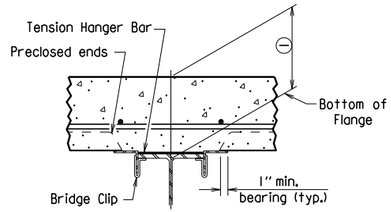
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

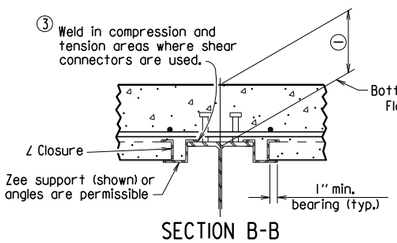
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

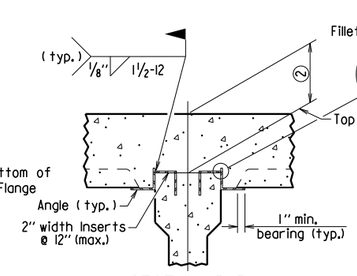
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

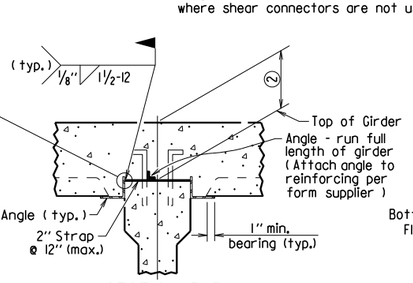


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

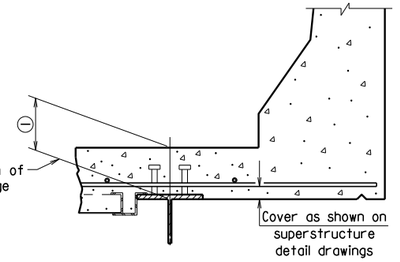


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

*t_S = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

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

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

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

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

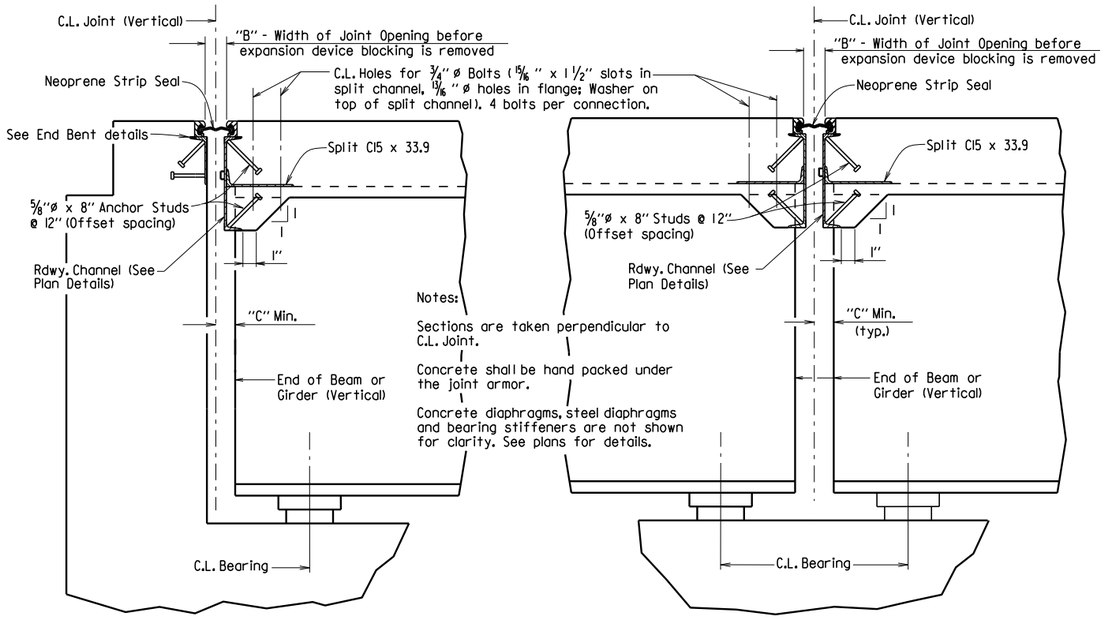
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

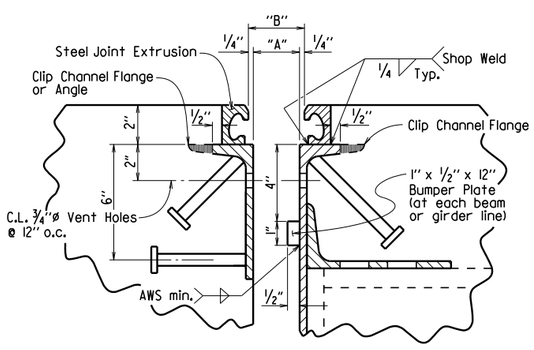
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

1 STRIP SEAL JOINT 55009



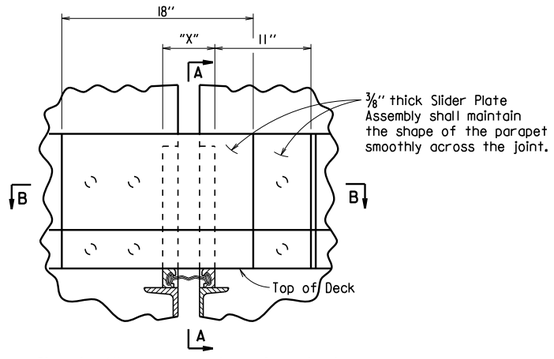
SECTION THRU JOINT AT END BENT

SECTION THRU JOINT AT INTERMEDIATE BENT



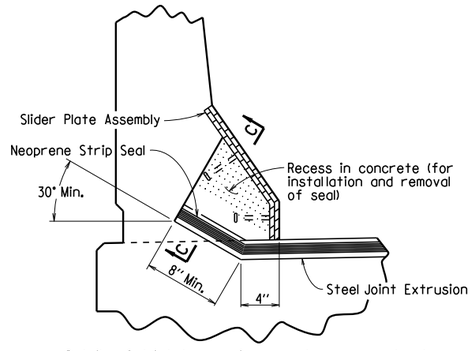
DETAIL OF STRIP SEAL JOINT

Detail shown at End Bent,
Details similar at Intermediate Bent



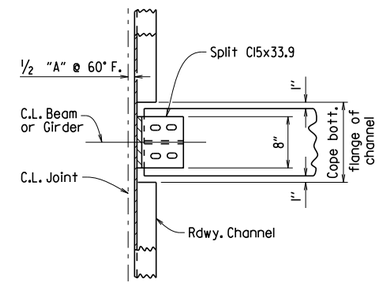
Dimension "X" equals the width of opening in parapet to allow for removal or repair of joint.

DETAIL OF PARAPET SLIDER PLATES



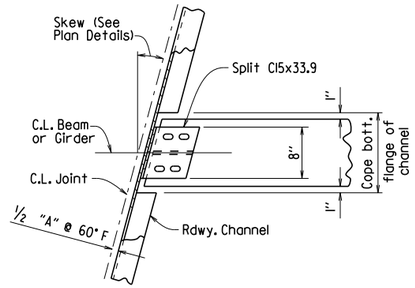
Details of Joint turn-up in parapet are general and show basic design controls only. See plan details for joint installation at sidewalks.

SECTION A-A



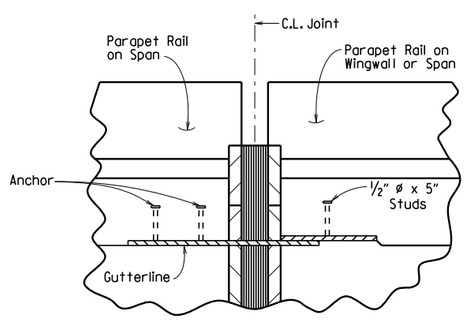
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW



CHANNEL CONNECTION DETAIL

BENTS WITH SKEW

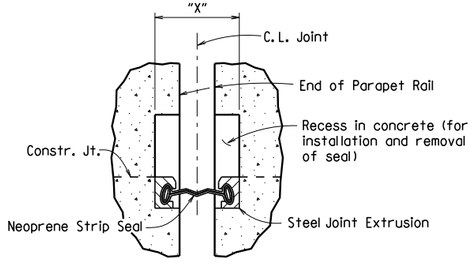


The method of attachment of the slider plate assembly shall allow for removal to provide for future replacement of the neoprene seal. Anchors shall not be paid for directly, but shall be considered subsidiary to the item "Armored Joint with Neoprene Strip Seal".

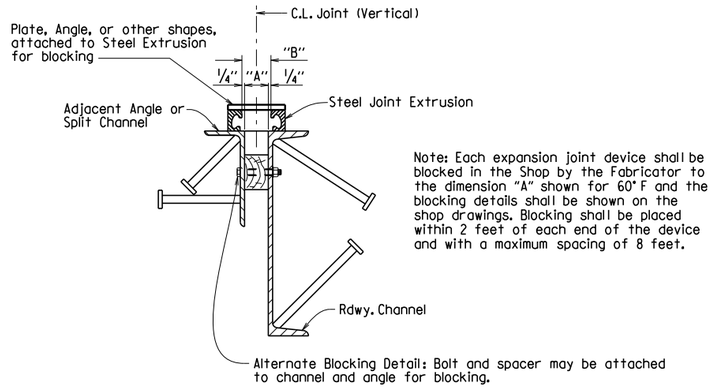
Method of installation and fabrication shall be determined by the Manufacturer.

SECTION B-B

BENTS WITHOUT SKEW SHOWN



SECTION C-C



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

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

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

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES FOR NEOPRENE STRIP SEAL JOINTS:

The steel extrusion and neoprene strip seal material and installation shall be in accordance with Section 809.

The expansion device shall provide for the movement rating(s) shown in the "TABLE OF STRIP SEAL JOINT DATA" in the plan details. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to the Engineer for approval prior to the fabrication of any structural steel at the expansion device.

All structural steel shall conform to AASHTO M 270, Grade 50W and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). The parapet slider plates and structural steel completely embedded in concrete shall conform to AASHTO M 270, Grade 36, 50 or 50W steel. Unless otherwise noted in the plans, all exposed surfaces of the parapet slider plates shall be cleaned and painted in accordance with Section 638. Painting shall not be paid for directly and structural steel completely embedded in concrete need not be painted. Payment for structural steel shall be as specified in the plans.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS. SEE "TABLE OF STRIP SEAL JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A", "B", AND "C".

STANDARD DETAILS FOR NEOPRENE STRIP SEAL JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: L.J.B. DATE: 2/11/2016 FILENAME: b55009.dgn
CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: —

DRAWING NO. 55009

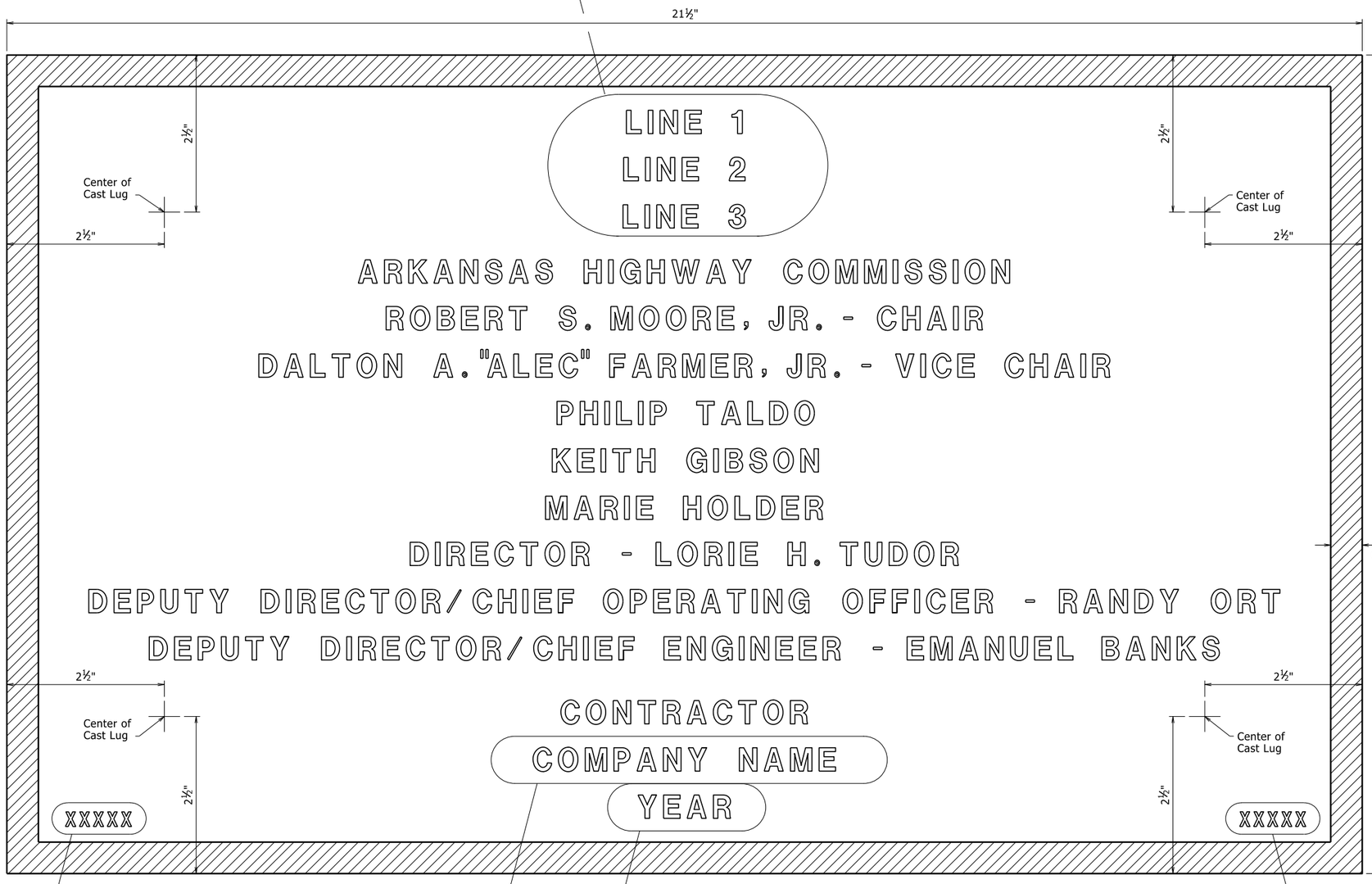
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-1-14		1-15-19	
1-14-15		3-24-2020	
1-17-17			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.				

(1) TYPE D NAME PLATE - 55010

The name of the bridge as shown on the plans shall be placed on Lines 1-3 using ⅛" raised letters and numerals ⅜" high.

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



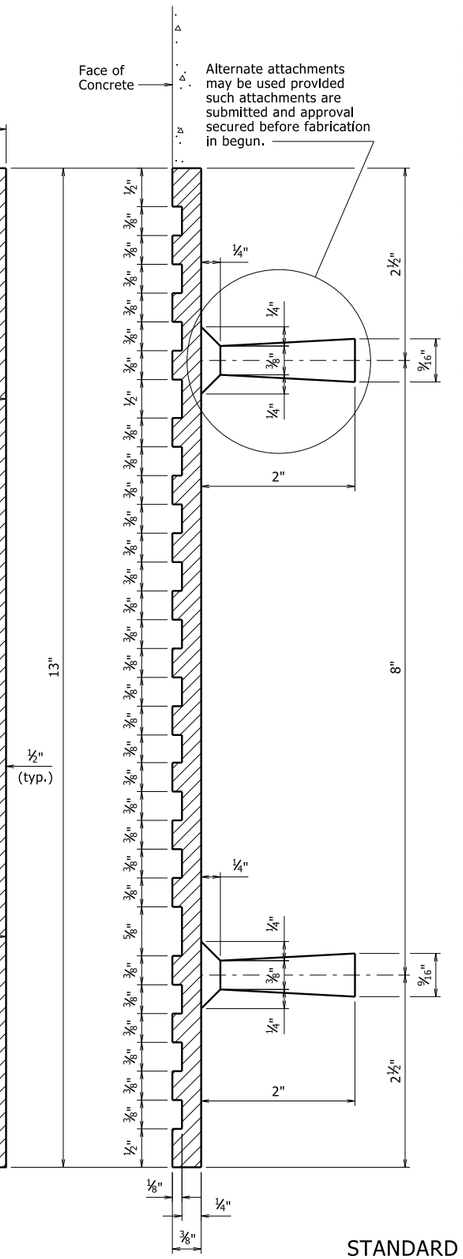
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

Place the Year in which Contract was awarded here using ⅛" raised numerals ⅜" high. Example: 2001

Place the name of the company awarded the construction contract here using ⅛" raised letters and numerals ⅜" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using ⅛" raised letters and numerals ¼" high. Examples: A1234, 05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

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

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

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to 9/16" x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

(5) Revised Director, Deputy Director/Chief Operating Officer, Chair, Vice Chair and added New Commissioner
3-24-2020 CGP Checked By: CRE

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

(3) Added New Commissioner
1-17-17 KDH Checked By: CRE

(2) Revised Chair and Vice Chair Added New Commissioner
1-14-15 KDH Checked By: CRE

(1) Revised Deputy DIrector/ Chief Engineer Added Deputy Director/ Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

PRINT DATE: 4/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				①		STEEL H-PILES		55020

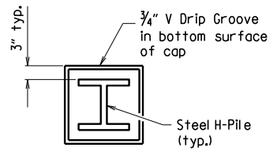
GENERAL NOTES FOR STEEL H-PILES:

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

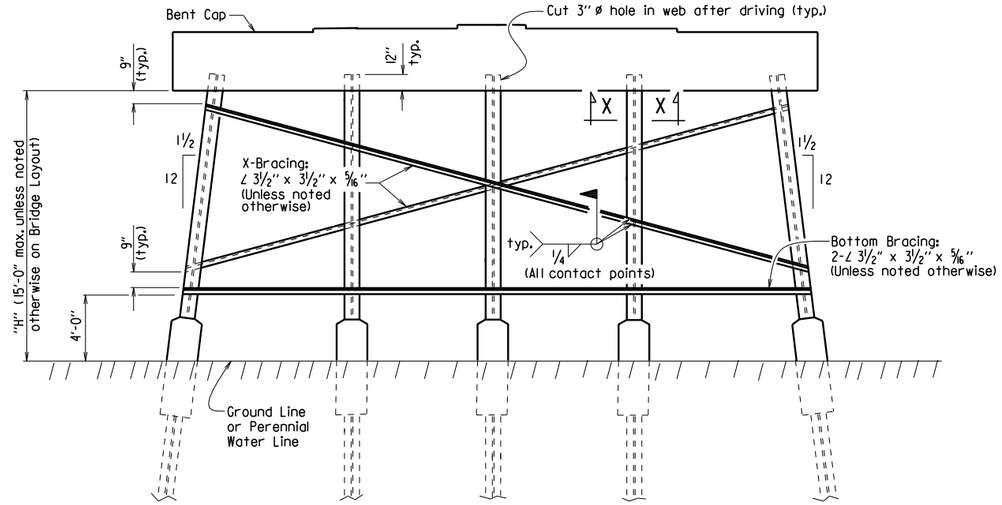
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

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

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



VIEW X-X



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

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

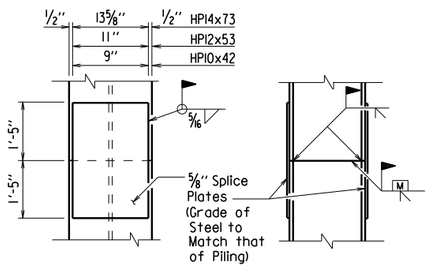
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

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

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

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



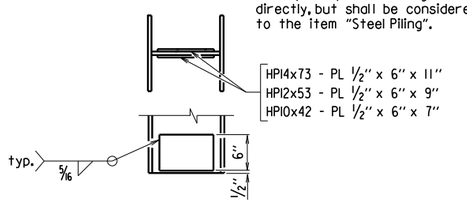
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

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

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

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



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

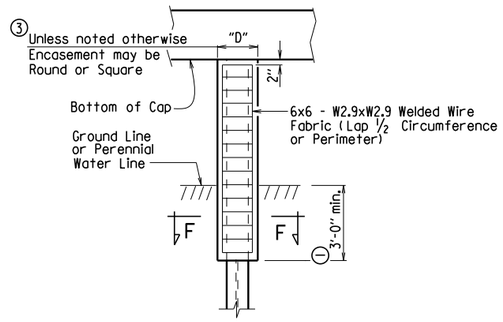
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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

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

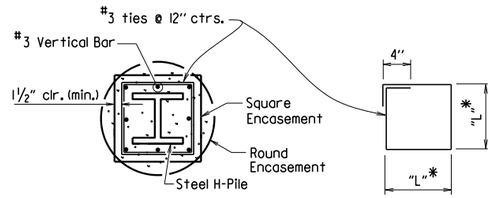
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

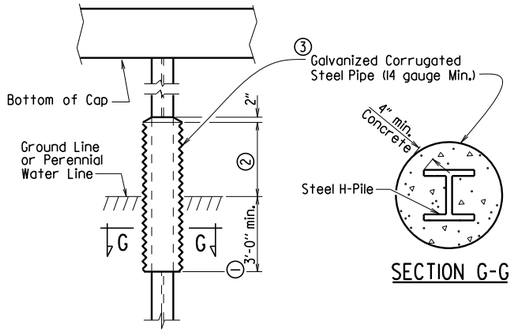


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HPI0x42	1'-7"	2'-0"	1'-4"
HPI2x53	1'-8"	2'-2"	1'-5"
HPI4x73	1'-11"	2'-6"	1'-8"



SECTION G-G

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

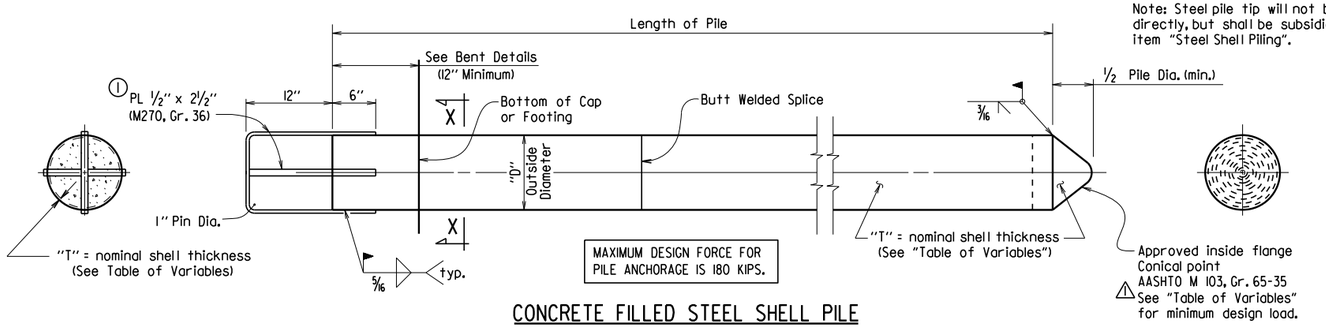
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

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

(1) STEEL SHELL PILES 55021

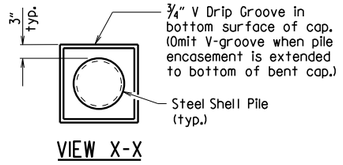


Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

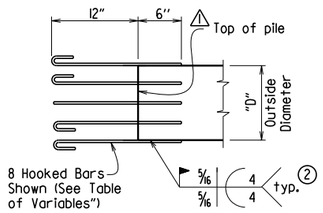
CONCRETE FILLED STEEL SHELL PILE

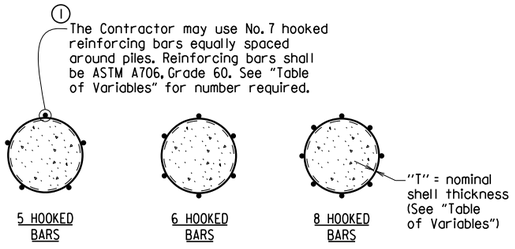
(1) Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

(2) Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



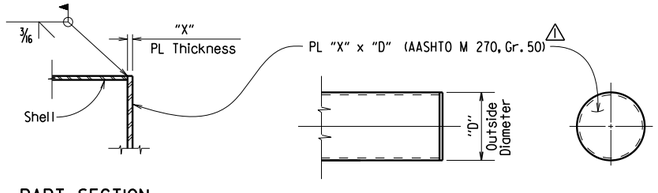
VIEW X-X





ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

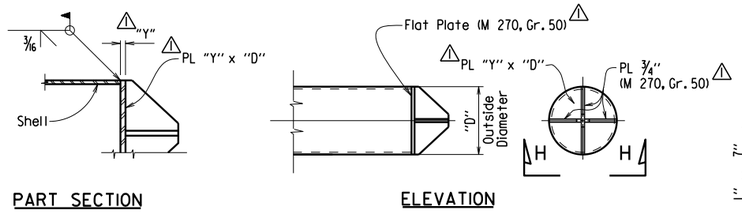


PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.



PART SECTION

ELEVATION

VIEW H-H

ALTERNATE VANED TIP DETAIL

GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

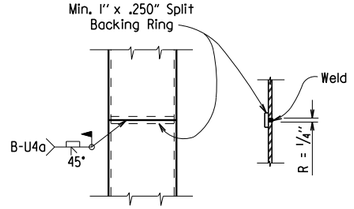
Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

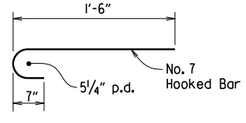
Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".



TYPICAL SPLICE DETAILS

TABLE OF VARIABLES

OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	⚠ PLATE THICKNESS "X"	⚠ PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	⚠ MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
14"	0.50"	2 1/4"	1 1/2"	5	859
16"	0.50"	2 1/4"	1 1/2"	5	986
18"	0.50"	2 1/2"	1 1/2"	6	1,114
20"	0.50"	2 1/2"	1 3/4"	6	1,241
24"	0.50"	2 3/4"	1 3/4"	8	1,495



HOOKED BAR DETAIL

⚠ Revised and added various details by KWY, Ck'd. by BEF, 3/24/16.

GENERAL NOTES FOR PILE ENCASEMENTS:

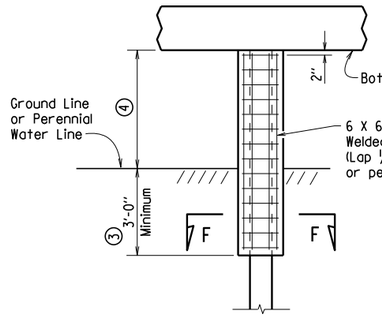
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

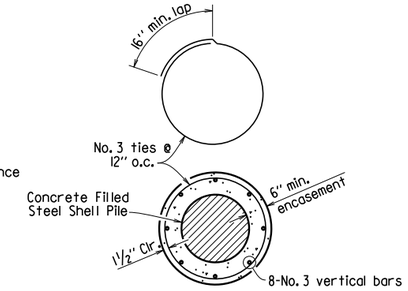
Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

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.

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".





SECTION F-F (REINF. ALTERNATE)

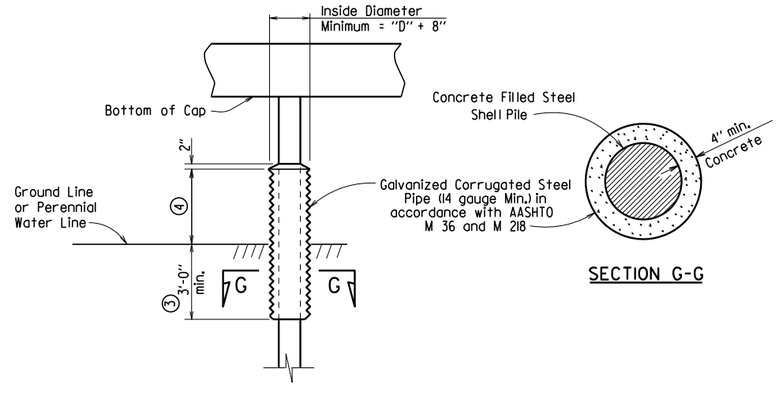
PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(5) (Shown with Encasement to Bottom of Cap)

(3) Unless otherwise noted on Bridge Layout.

(4) See Bridge Layout for height of pile encasement (3'-0" Minimum).

(5) Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Partial Height Encasement)

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

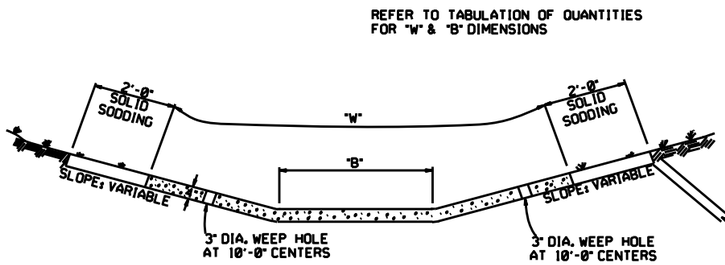
STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

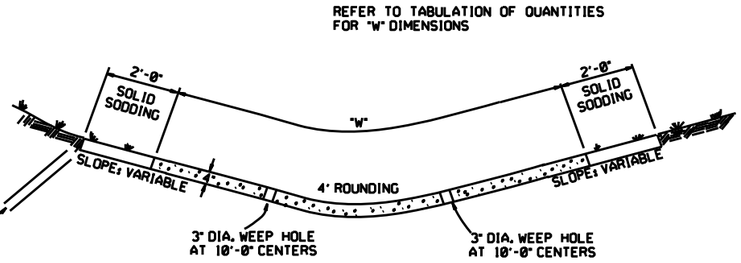
DRAWN BY:	A.M.S.	DATE:	2/27/2014	FILENAME:	b55021.dgn
CHECKED BY:	B.E.F.	DATE:	2/27/2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55021



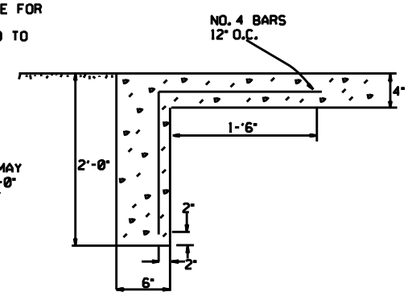
TYPE A

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



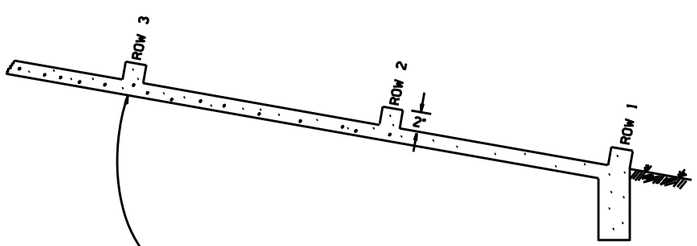
TYPE B

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."



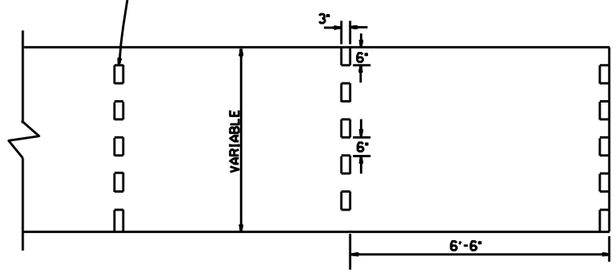
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

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.

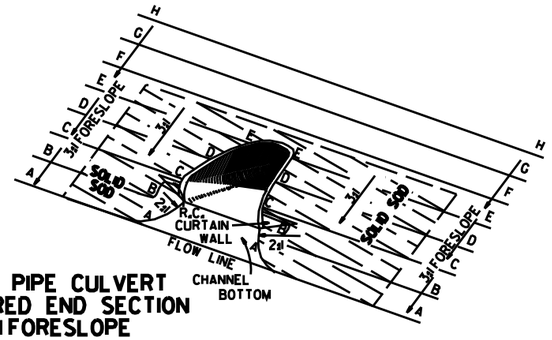
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

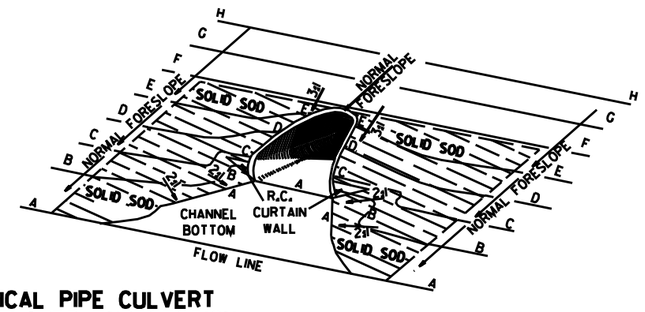
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

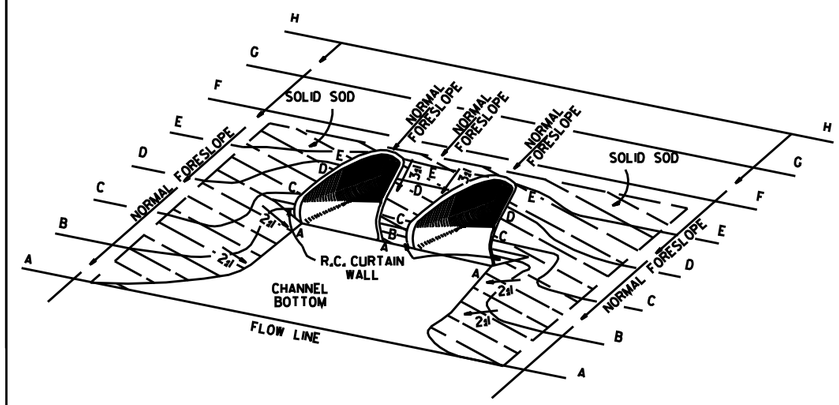
STANDARD DRAWING CDP-1



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



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

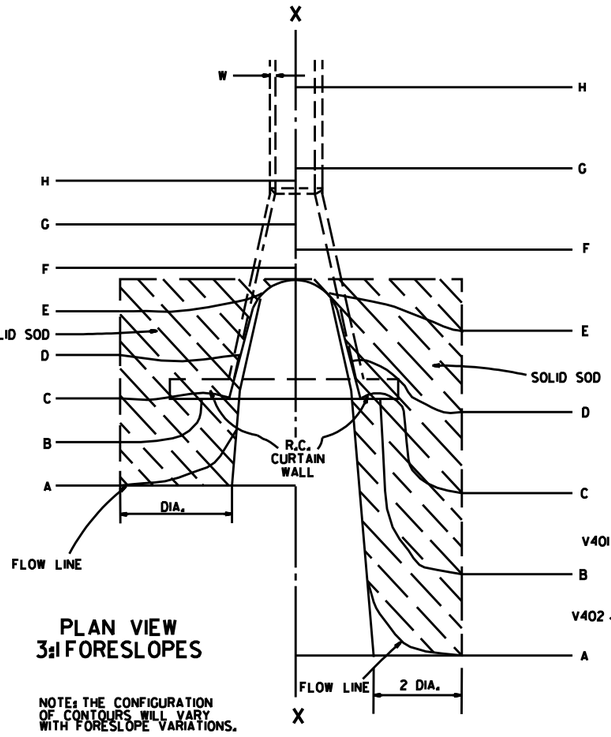
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC. CU. YDS.	SINGLE R.C.P.C. REINF. STEEL LBS.	DOUBLE R.C.P.C. CONC. CU. YDS.	DOUBLE R.C.P.C. REINF. STEEL LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

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

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

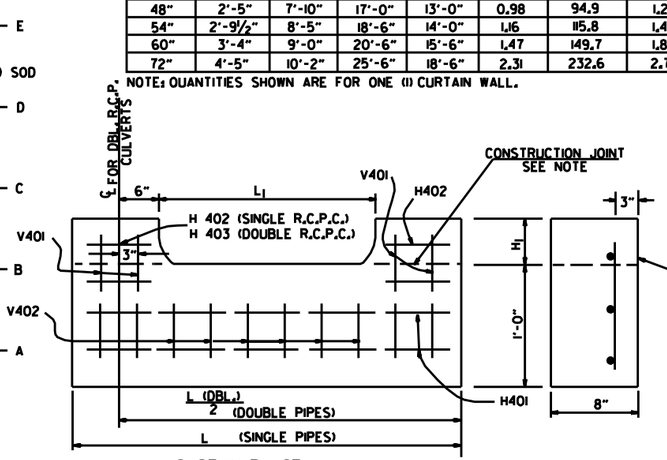
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

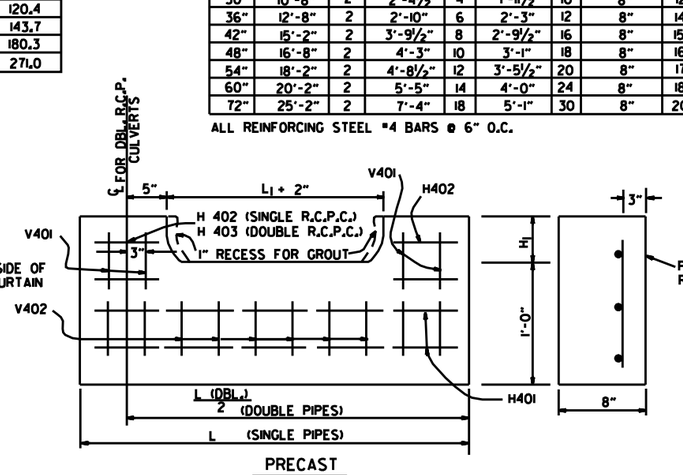
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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



PRECAST

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

SOLID SODDING

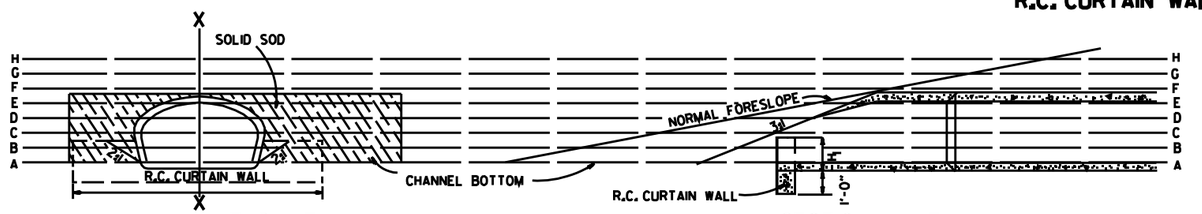
PIPE DIA.	SINGLE R.C.P.C. 3:1 SQ. YDS.	SINGLE R.C.P.C. 4:1 SQ. YDS.	SINGLE R.C.P.C. 6:1 SQ. YDS.	DOUBLE R.C.P.C. 3:1 SQ. YDS.	DOUBLE R.C.P.C. 4:1 SQ. YDS.	DOUBLE R.C.P.C. 6:1 SQ. YDS.
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68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

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.

R.C. CURTAIN WALL DETAILS



END VIEW

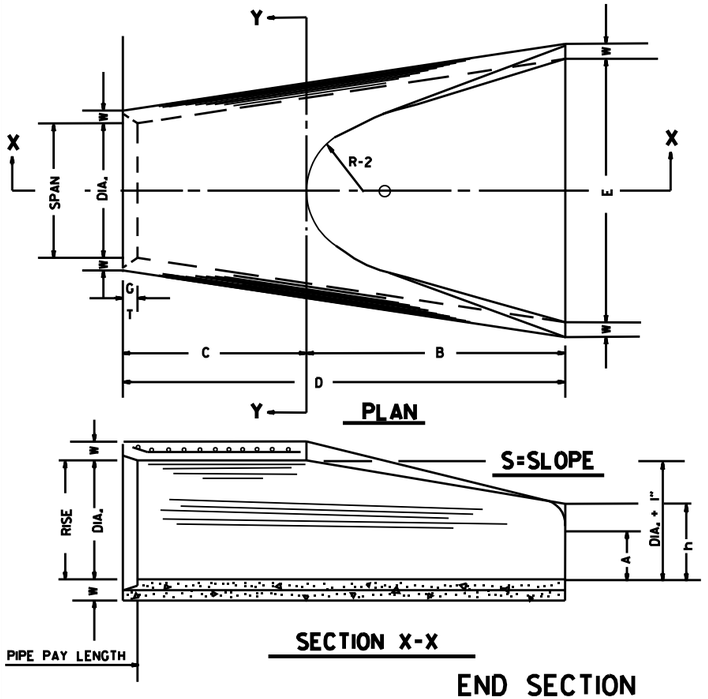
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

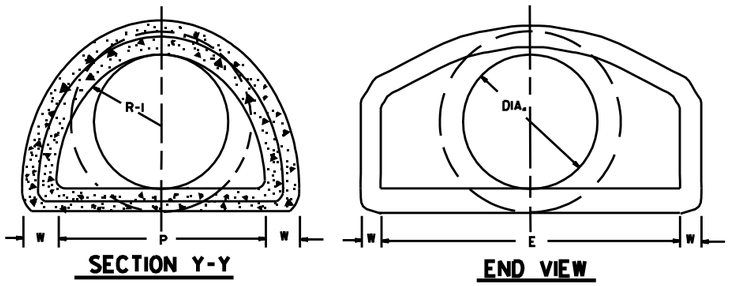
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3st	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3st	25"	33 3/16"	16 1/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3st	31"	37"	18½"	15"	3¼"	1940	1'-4 5/16"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3st	37"	47 1/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3st	43"	53 1/16"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3st	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3st	55"	65½"	33 1/16"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3st	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3st	73"	77 1/16"	38 5/16"	24"	5"	13250	4'-6"

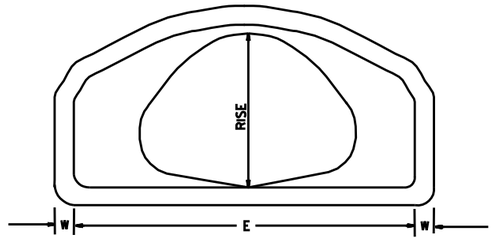
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½st
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2½"	2½st
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2½"	2½st
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 5/16"	15"	2½"	2½st
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 1/16"	20"	3"	2½st
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½st
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½st
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 3/16"	24"	4¼"	2½st
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼st
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼st

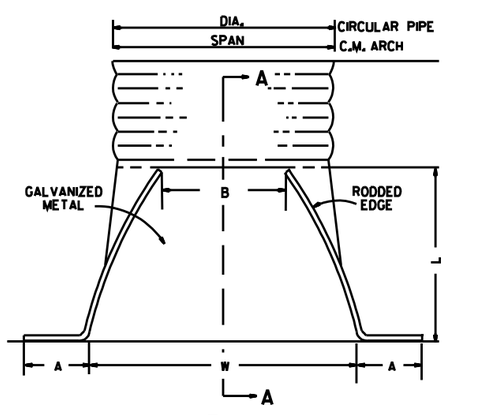
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

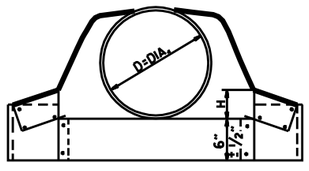


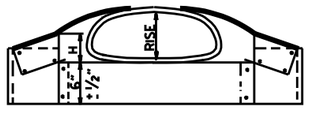
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



END VIEW
CONCRETE ARCH PIPE







CIRCULAR PIPE

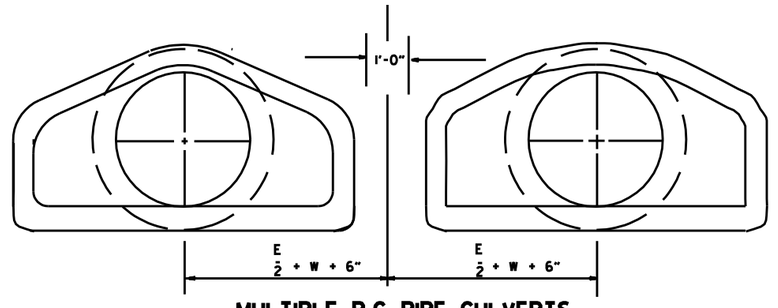
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½st
15	16	7	8	6	26	30	2½st
18	16	8	10	6	31	36	2½st
21	16	9	12	6	36	42	2½st
24	16	10	13	6	41	48	2½st
30	14	12	16	8	51	60	2½st
36	14	14	19	9	60	72	2½st
42	12	16	22	11	69	84	2½st
48	12	18	27	12	78	90	2½st
54	12	18	30	12	84	102	2st
60	12	18	33	12	87	114	1½st
66	12	18	36	12	87	120	1½st
72	12	18	39	12	87	126	1 1/3st

C.M. ARCH PIPE

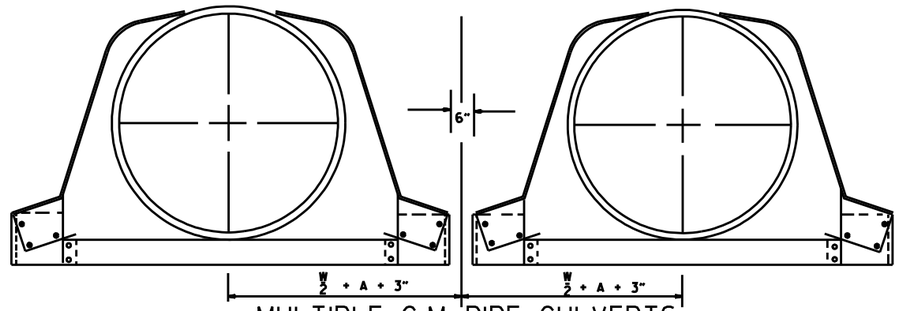
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½st	16
18"	21	15	7	10	6	23	36	2½st	16
21"	24	18	8	12	6	28	42	2½st	16
24"	28	20	9	14	6	32	48	2½st	16
30"	35	24	10	16	6	39	60	2½st	14
36"	42	29	12	18	8	46	75	2½st	14
42"	49	33	13	21	9	53	85	2½st	12
48"	57	38	18	26	12	63	90	2½st	12
54"	64	43	18	30	12	70	102	2½st	12
60"	71	47	18	33	12	77	114	2½st	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



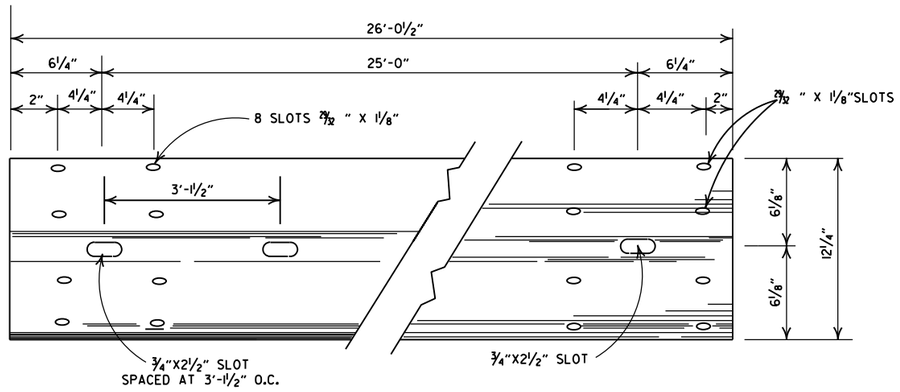
MULTIPLE C.M. PIPE CULVERTS

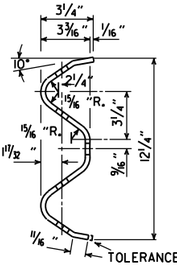
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

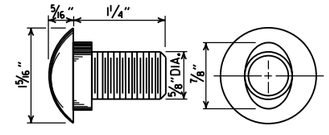
STANDARD DRAWING FES-2



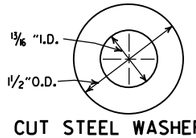


DETAILS OF W-BEAM GUARDRAIL

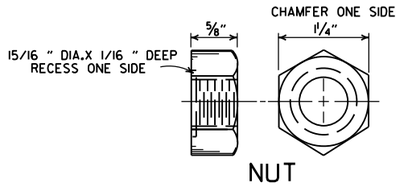
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



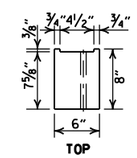
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



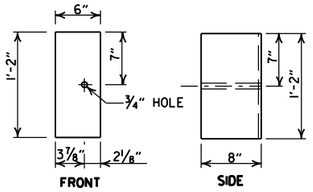
CUT STEEL WASHER



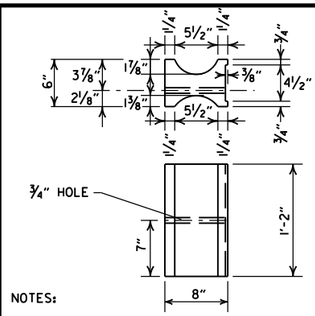
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.



WOOD BLOCKOUT (W-BEAM)

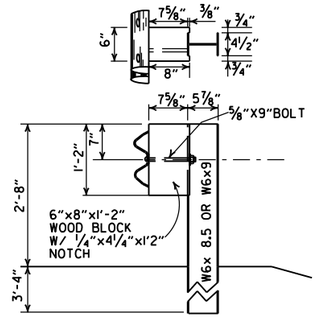


NOTES:

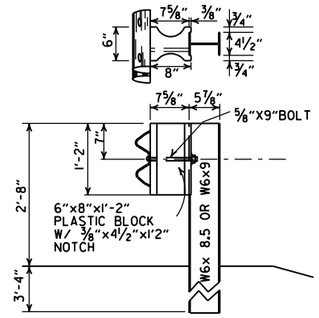
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

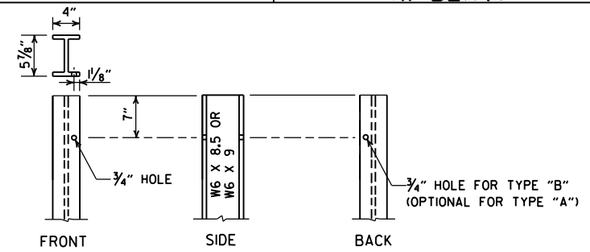


WOOD BLOCKOUT CONNECTIONS

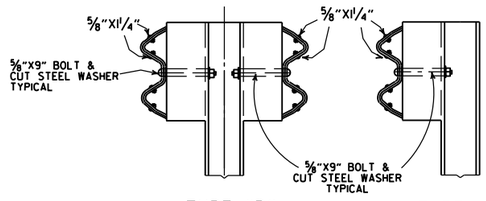


PLASTIC BLOCKOUT CONNECTIONS

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 3/4" 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.

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

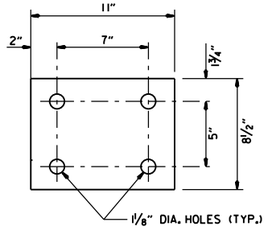
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARDRAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

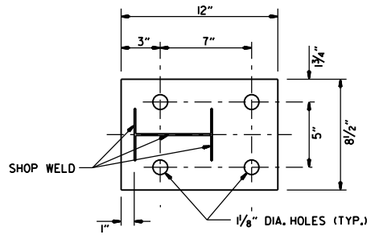
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-6

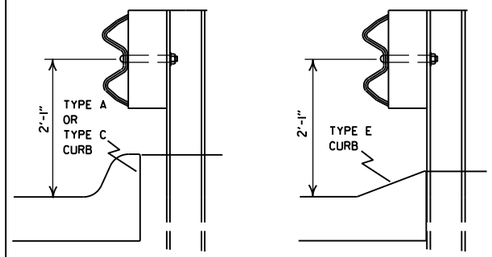


WASHER PLATE



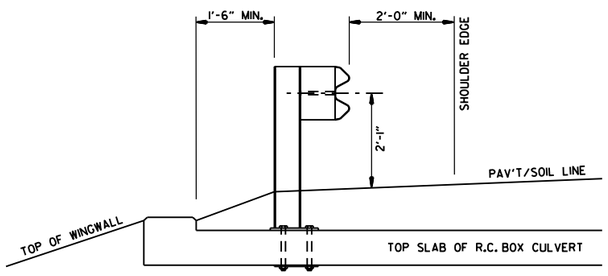
BASE PLATE

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

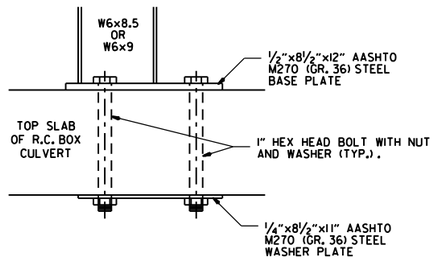


DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

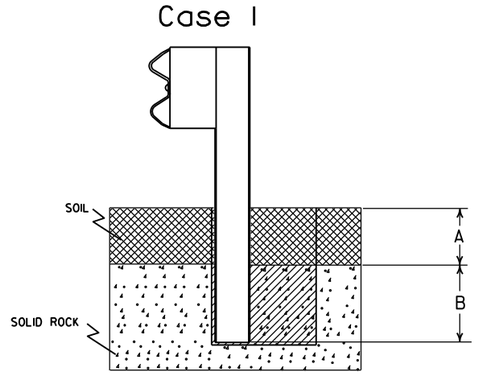
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

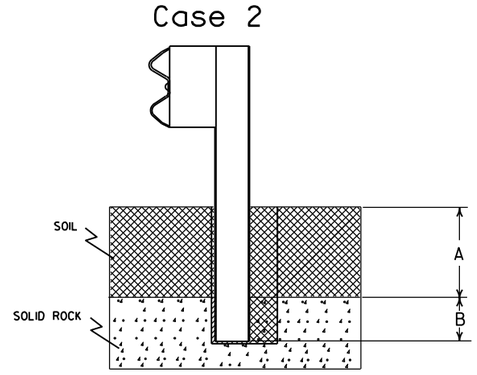


SECTION A-A



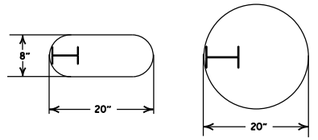
DETAIL OF CONNECTION

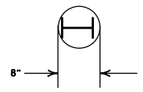




Plan View Steel Posts

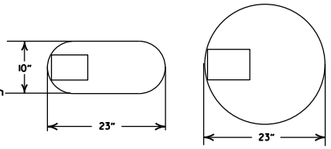
Either hole configuration acceptable

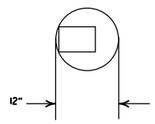




Plan View Wood Posts

Either hole configuration acceptable





Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

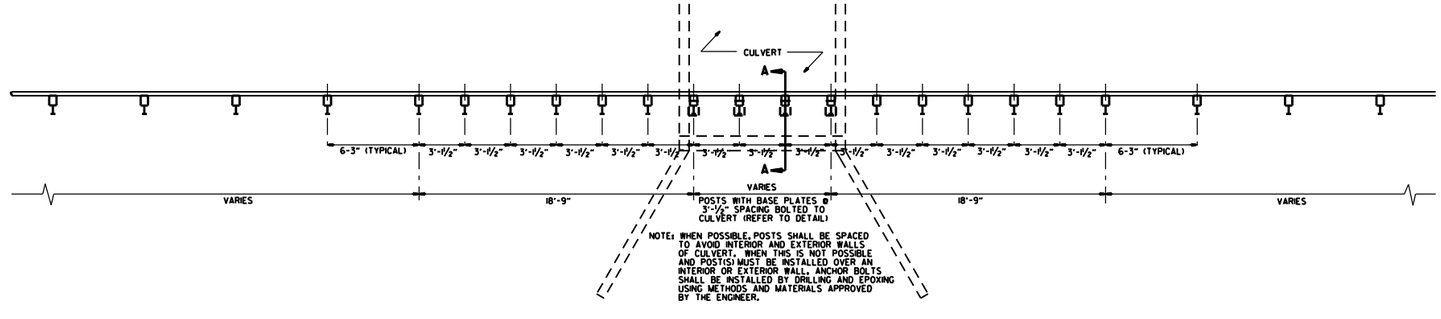
Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DWG. GR-6.

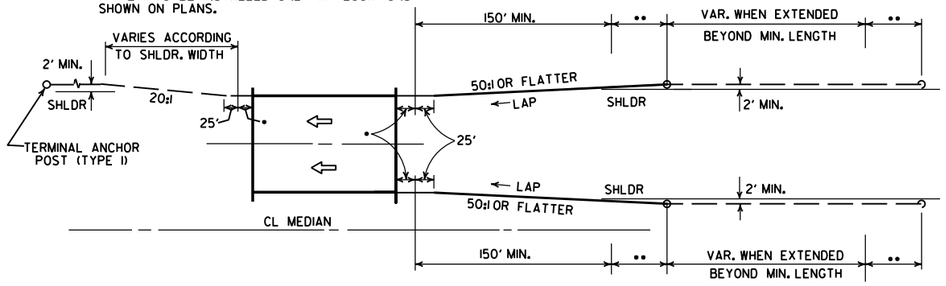
DATE	REVISION	FILMED
11-07-19	RENUMBERED, RENAMED, REVISED REFERENCE	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
04-12-07	REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

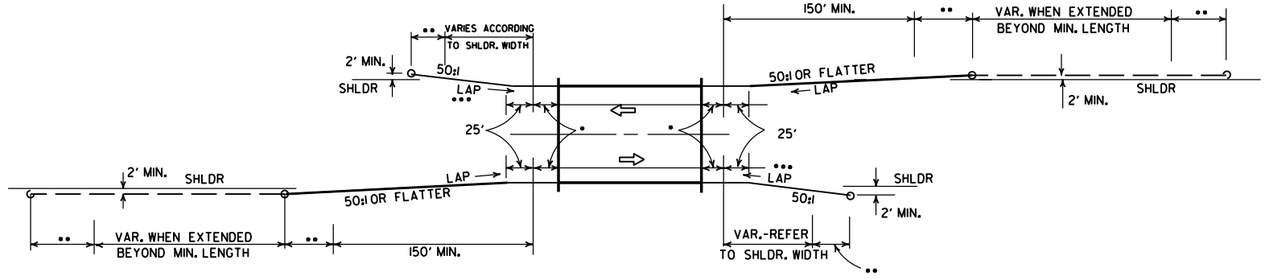
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

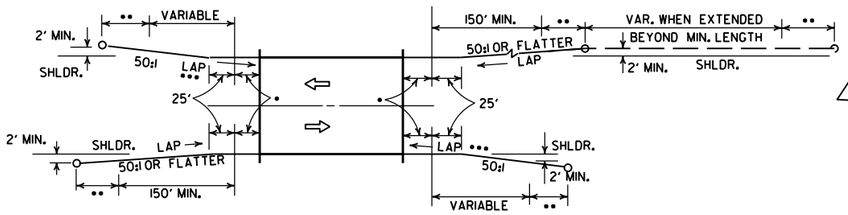
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

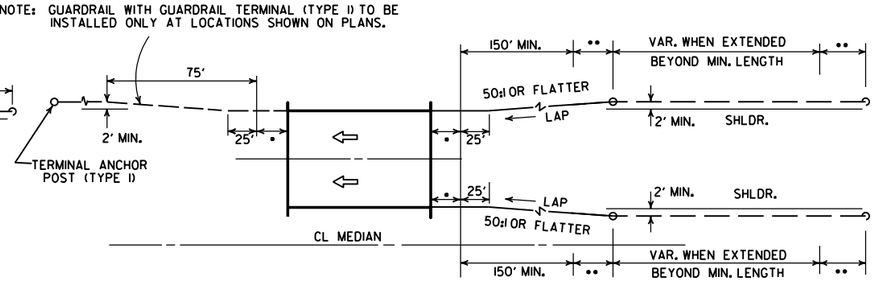
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

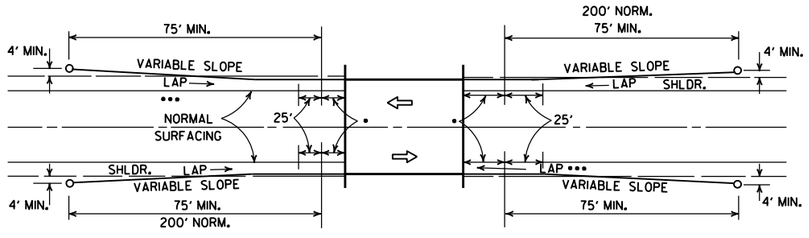
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

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



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

LEGEND

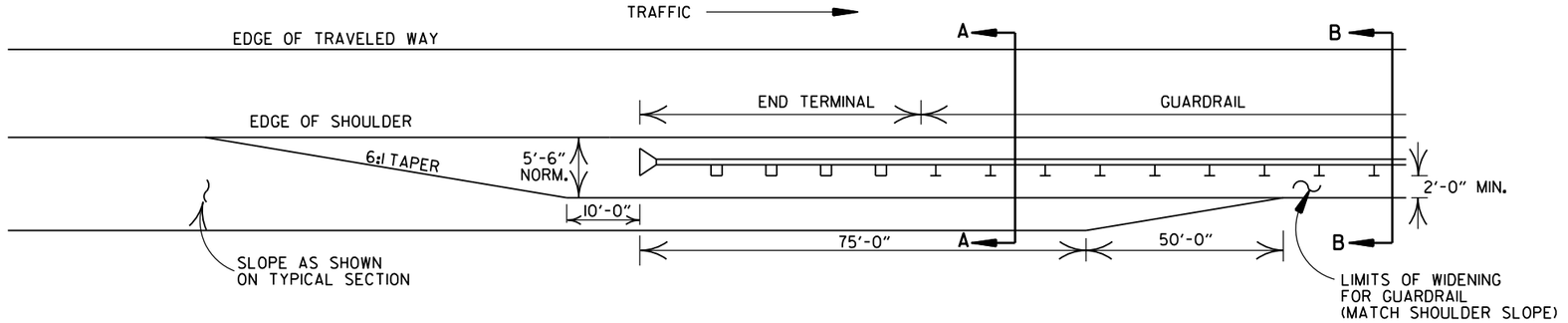
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

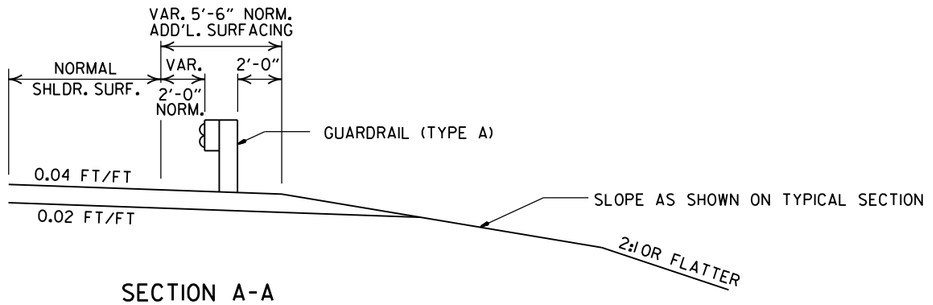
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

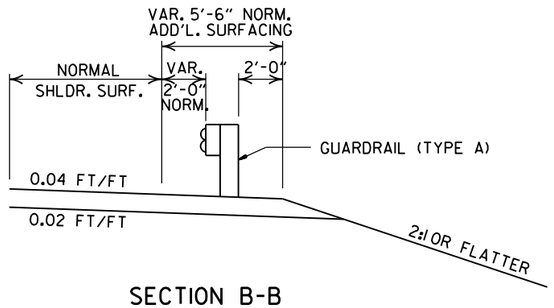
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



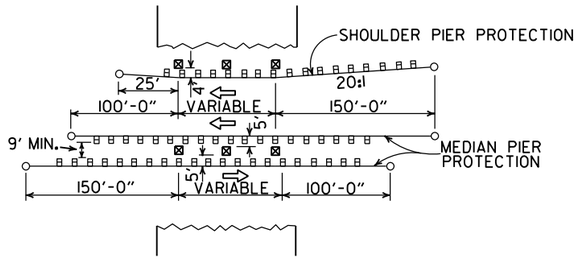


SECTION A-A



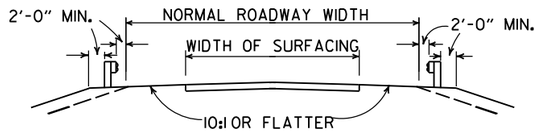
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

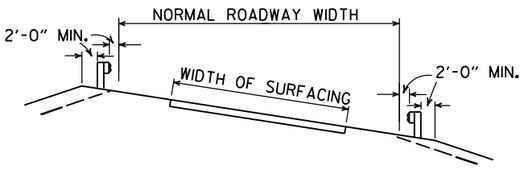


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

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



SECTION ON TANGENT



SECTION ON CURVE

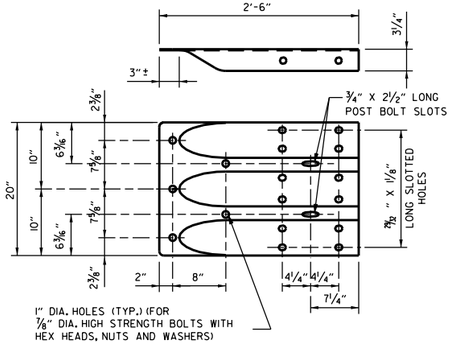
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

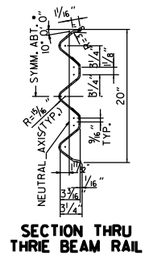
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

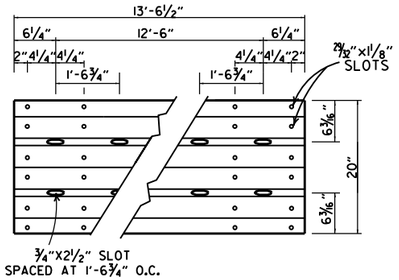
STANDARD DRAWING GR-9



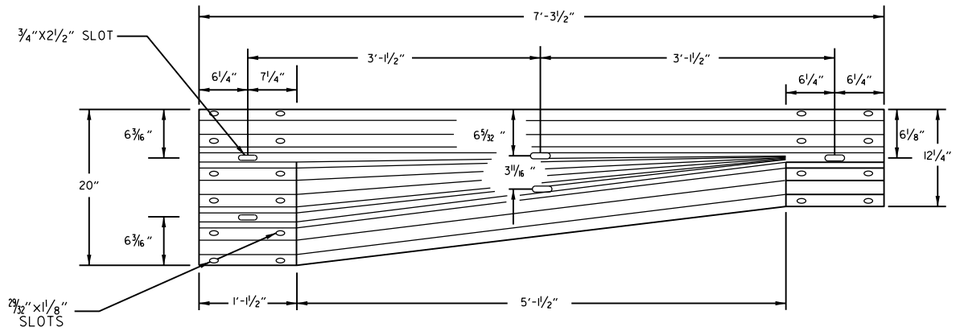
SPECIAL END SHOE



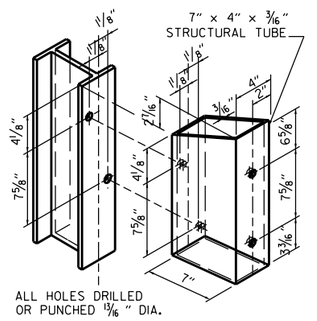
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

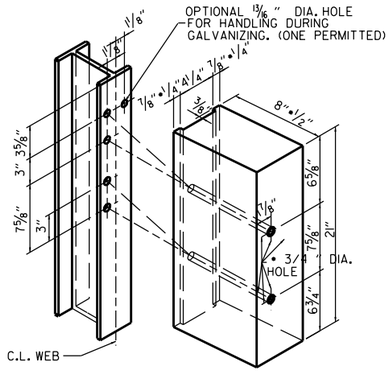


TRANSITION SECTION



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

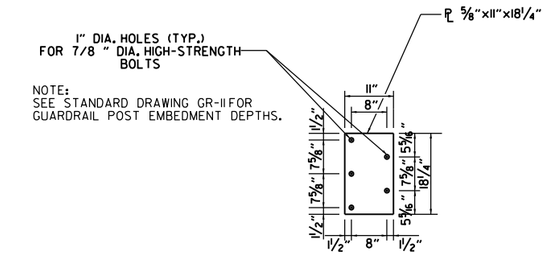
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

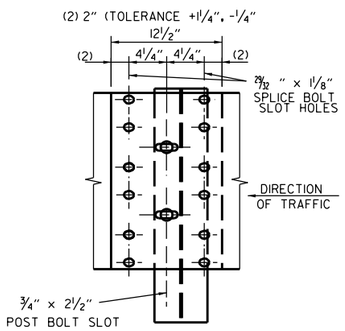
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



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.

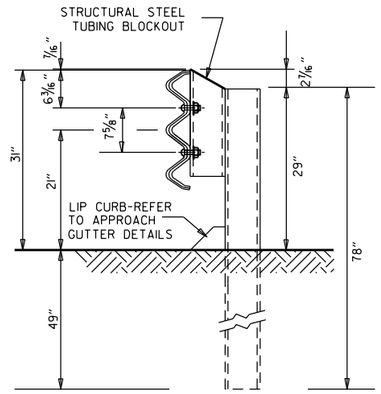
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

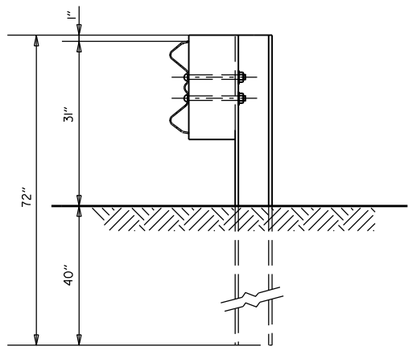
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

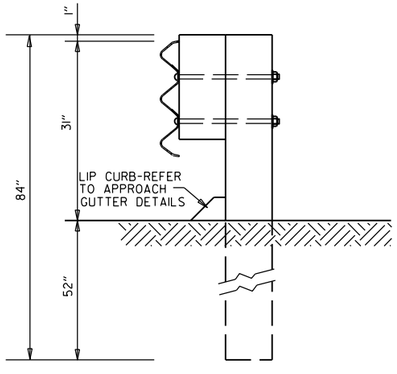
STANDARD DRAWING GR-10



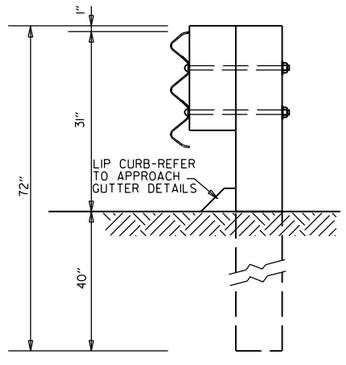
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



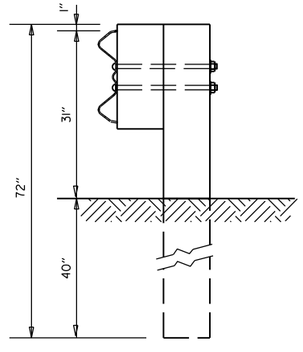
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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.

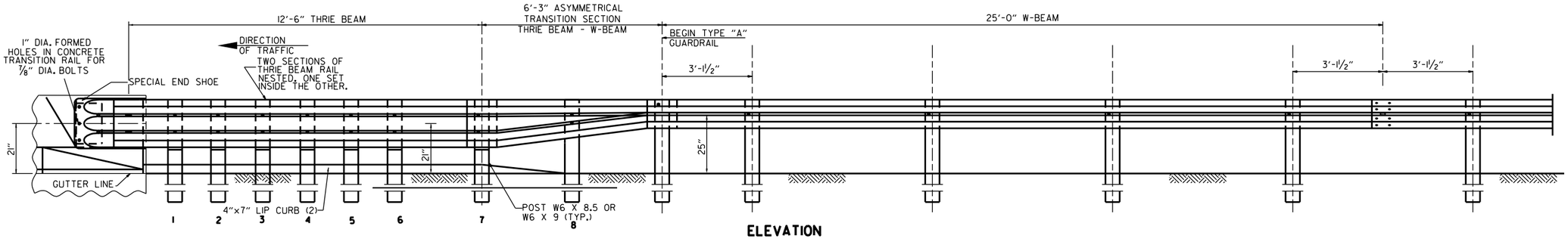
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

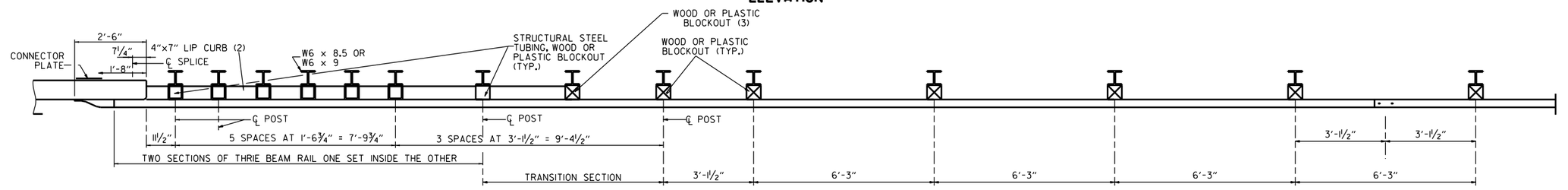
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

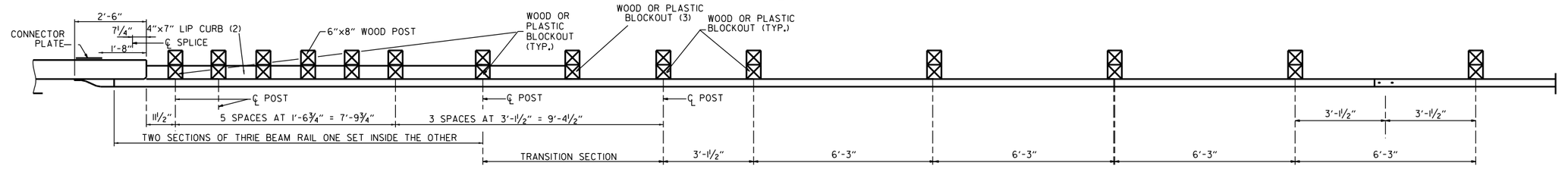
STANDARD DRAWING GR-11



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.

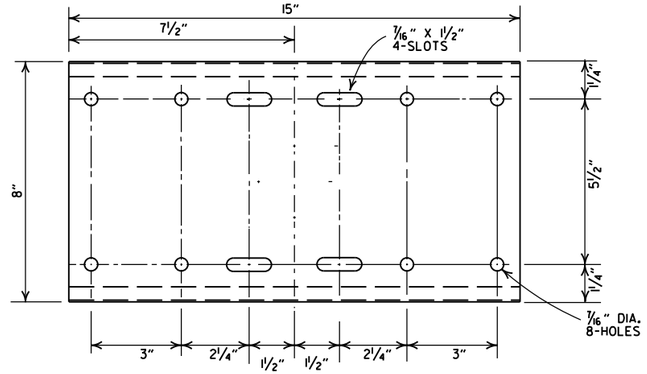
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

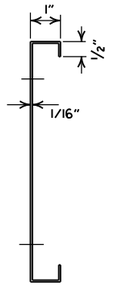
ARKANSAS STATE HIGHWAY COMMISSION

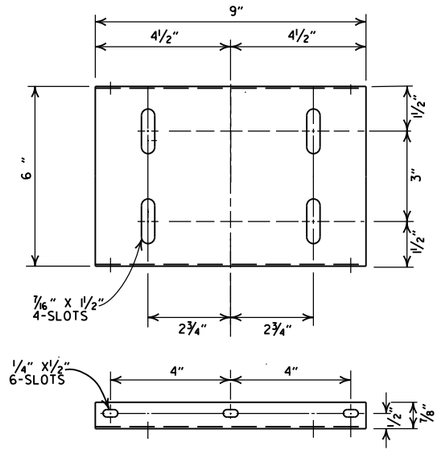
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

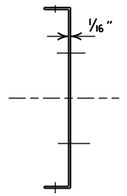


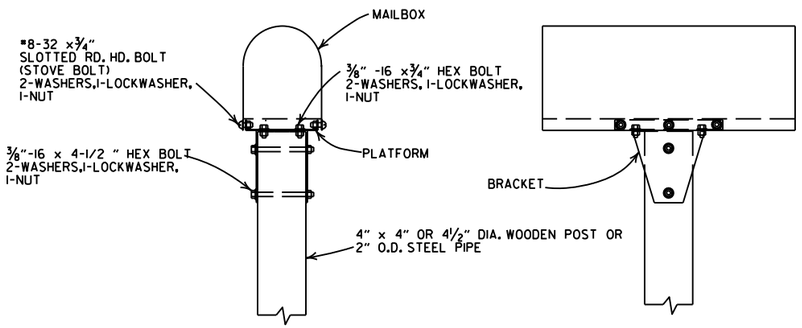
SHELF



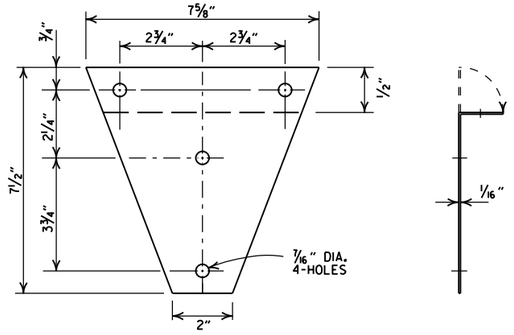


PLATFORM





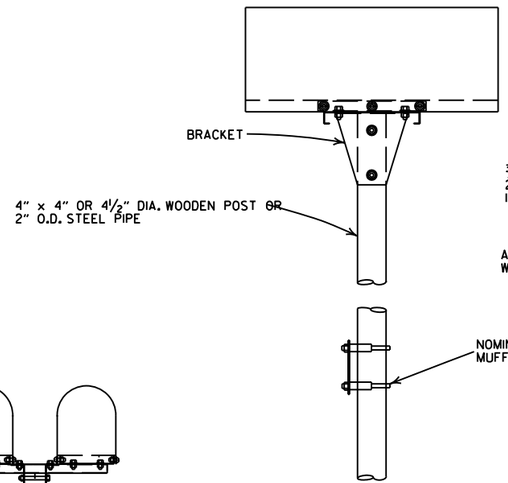
SINGLE INSTALLATION



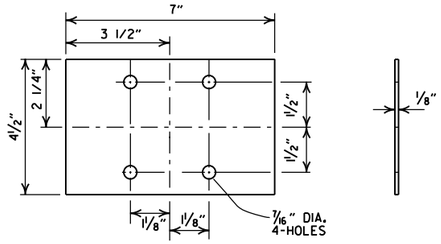
BRACKET

GENERAL NOTES

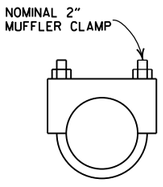
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED 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.



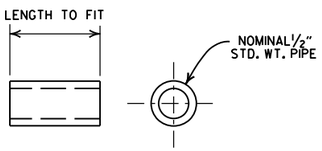
DOUBLE INSTALLATION



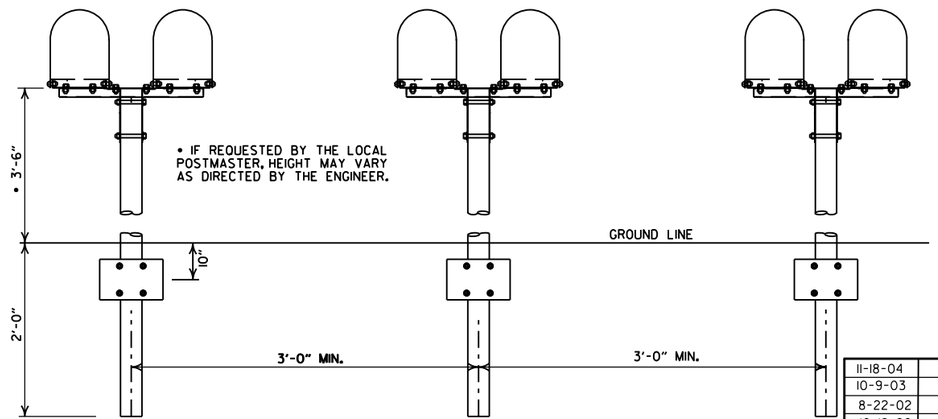
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	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.

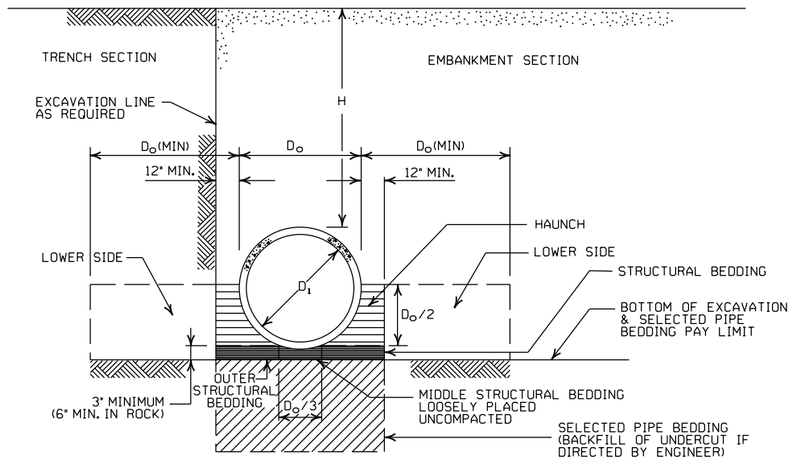
- LEGEND -

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

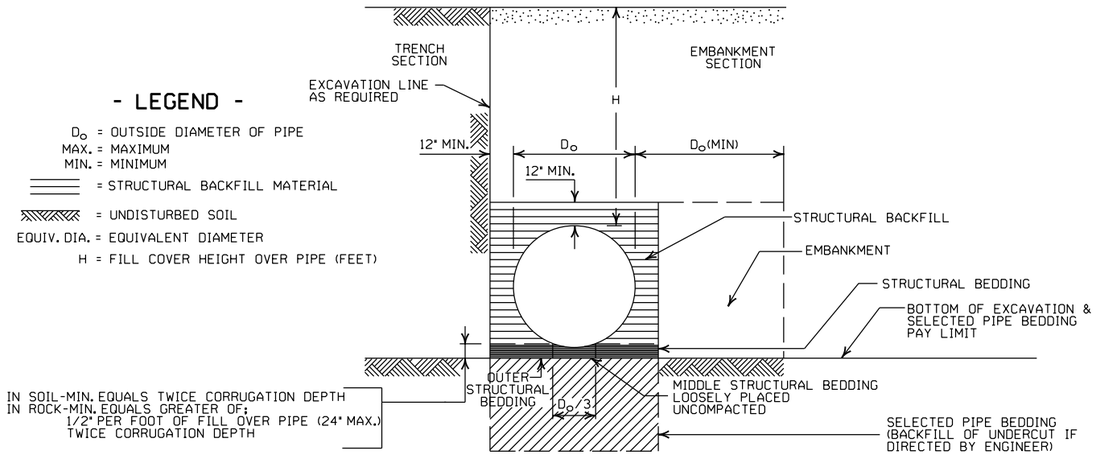
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
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

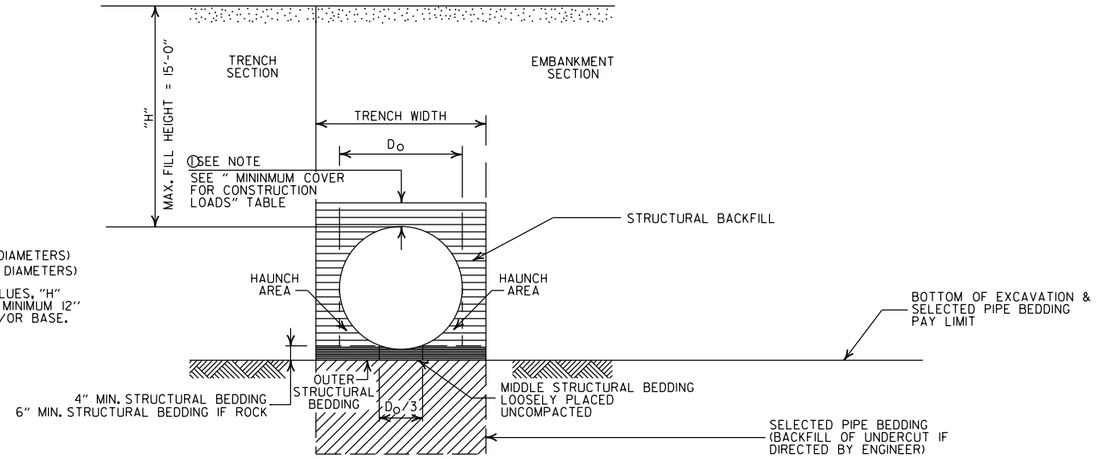
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

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_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	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

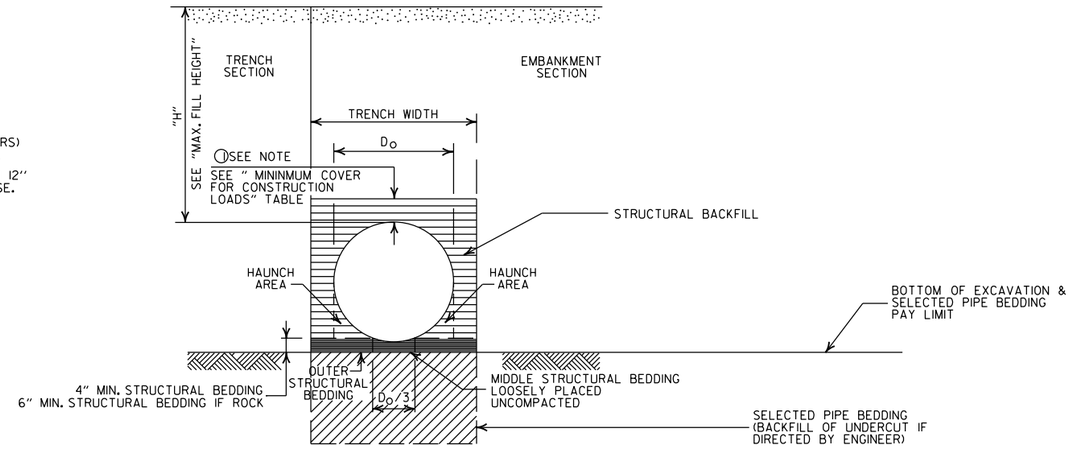
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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"

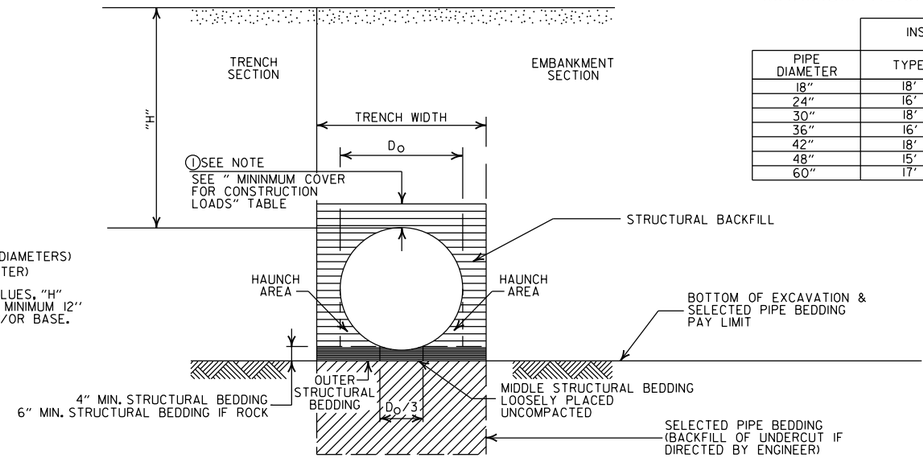
MINIMUM COVER FOR CONSTRUCTION LOADS

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.

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'

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

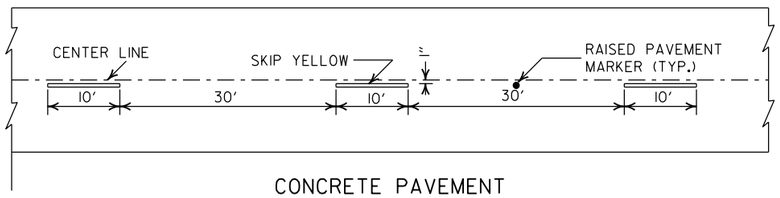
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

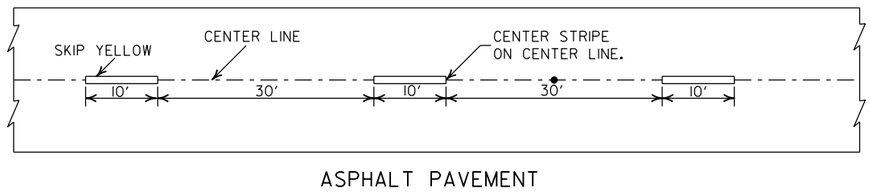
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

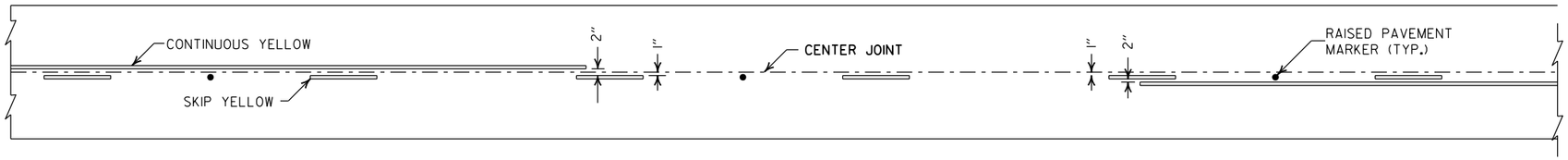


CONCRETE PAVEMENT

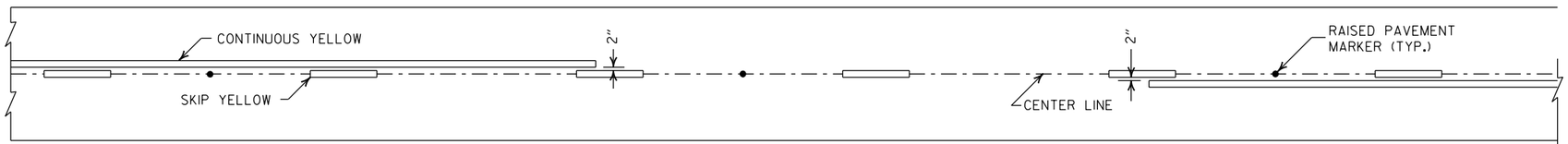


ASPHALT PAVEMENT

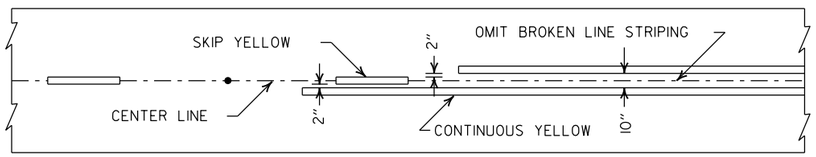
BROKEN LINE STRIPING



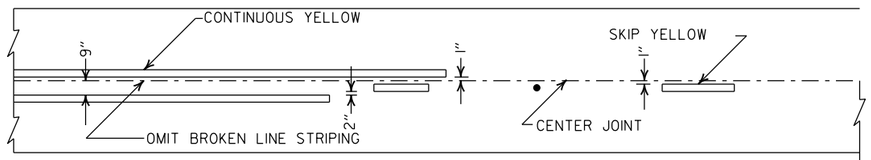
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

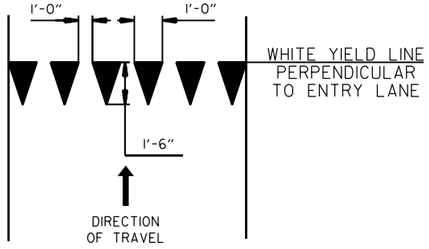


ASPHALT PAVEMENT

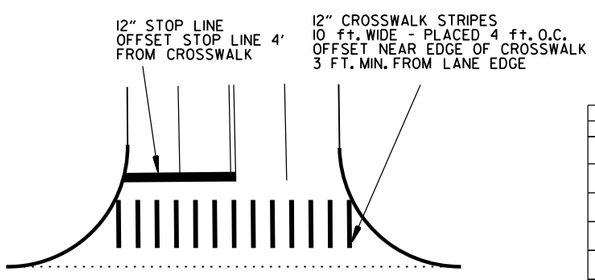


CONCRETE PAVEMENT

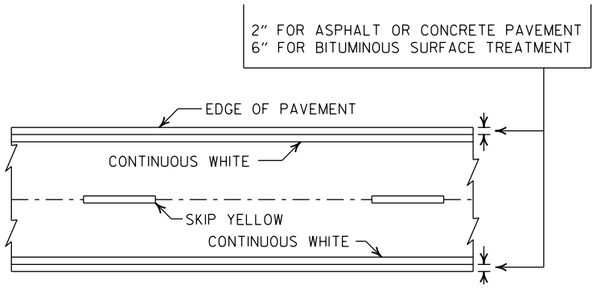
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



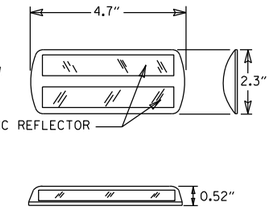
CROSSWALK AND STOP LINE DETAILS



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

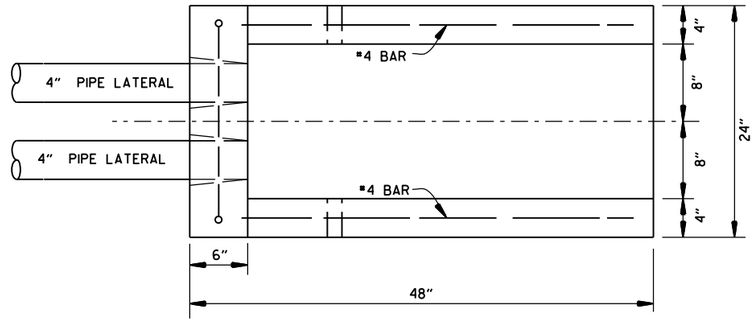
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

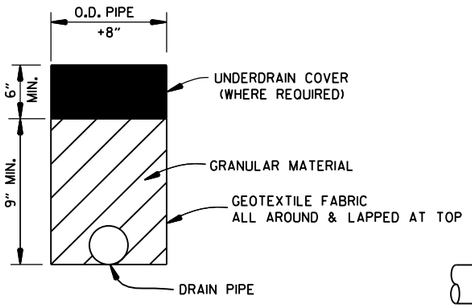
NOTE:

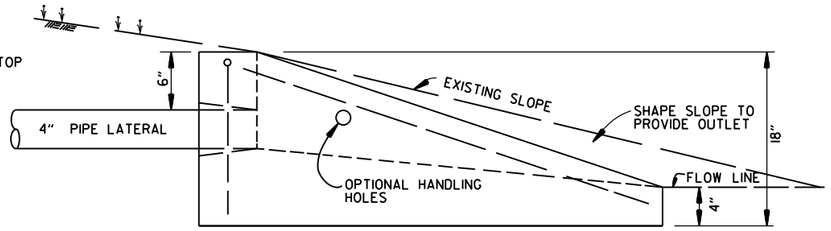
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

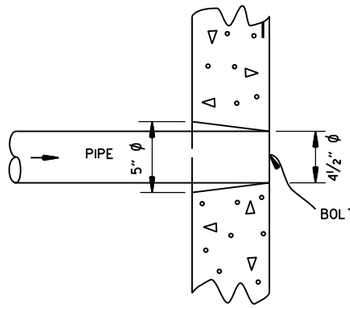


PLAN VIEW

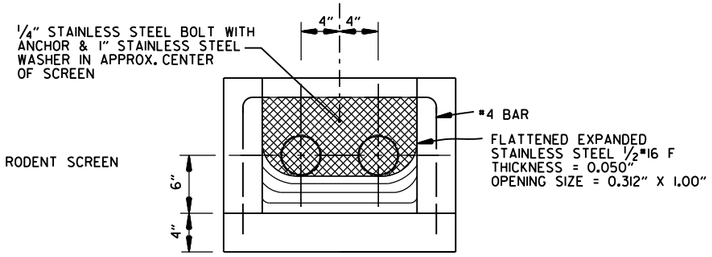




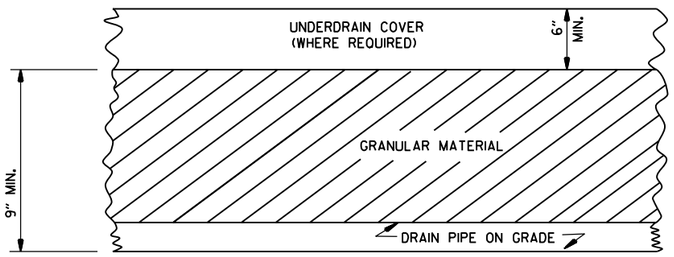
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

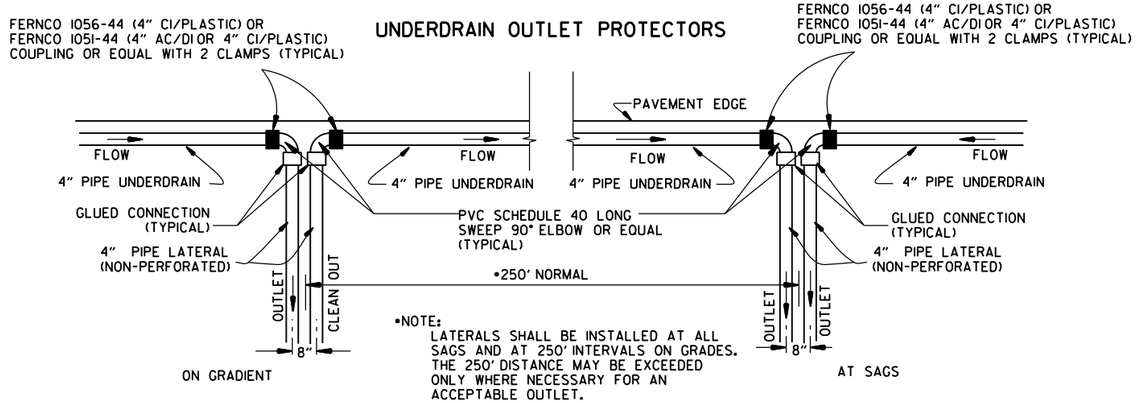


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

NOTES FOR PIPE UNDERDRAINS

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

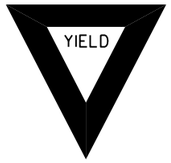
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

R1-1

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

R1-2



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

R2-1

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

W3-5

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

W3-5a

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

R4-1

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

R4-2

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

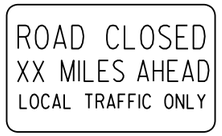
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

48"X30"

RII-3A



60"X30"

RII-4

60"X30"

W21-5a

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

WI-1

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

WI-2

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

WI-3

STD. 48"X48"

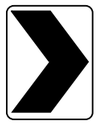
WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

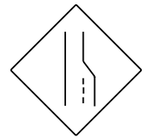
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

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

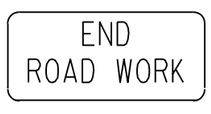
W8-9

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

G20-1

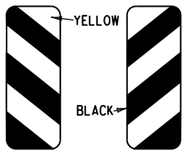
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

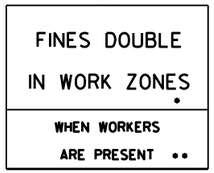
M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

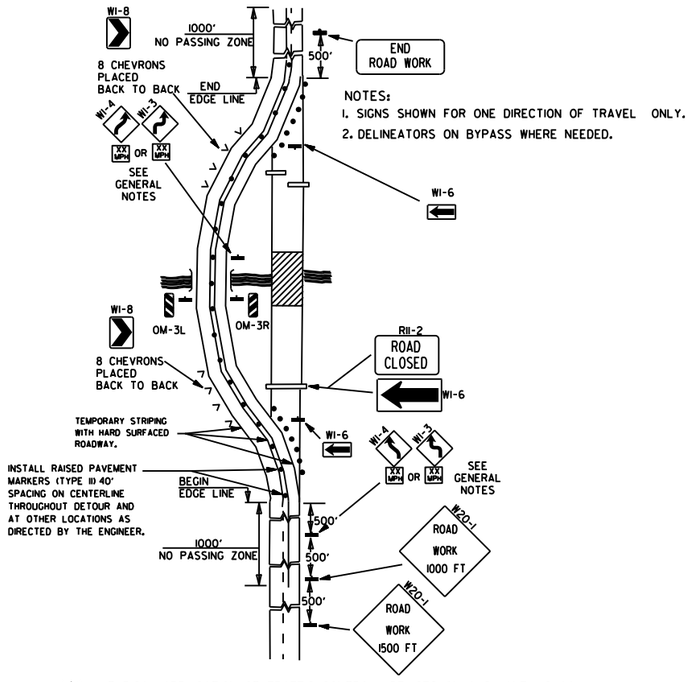
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

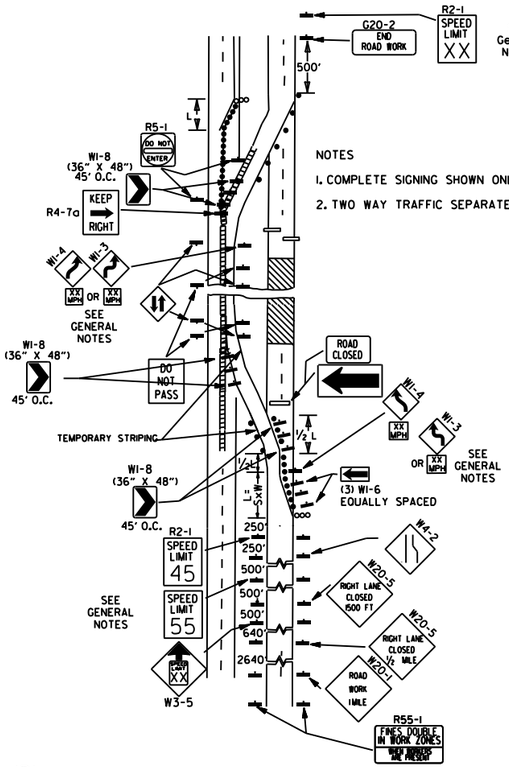
STANDARD DRAWING TC-1



(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:

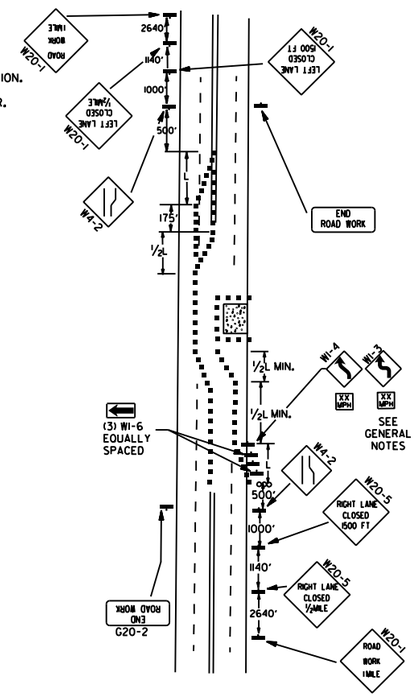
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.



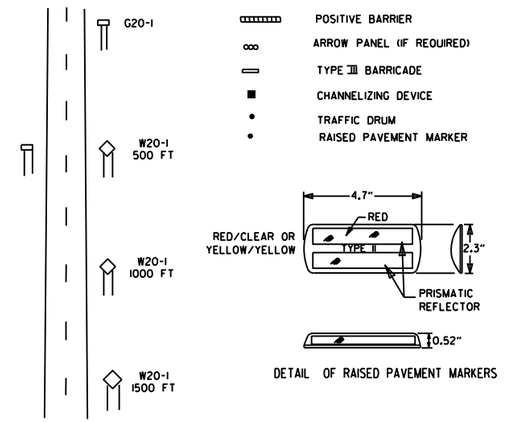
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

NOTES

1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

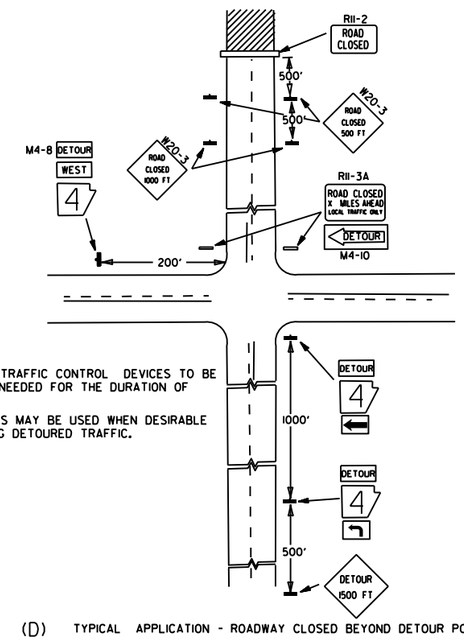
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

GENERAL NOTES:

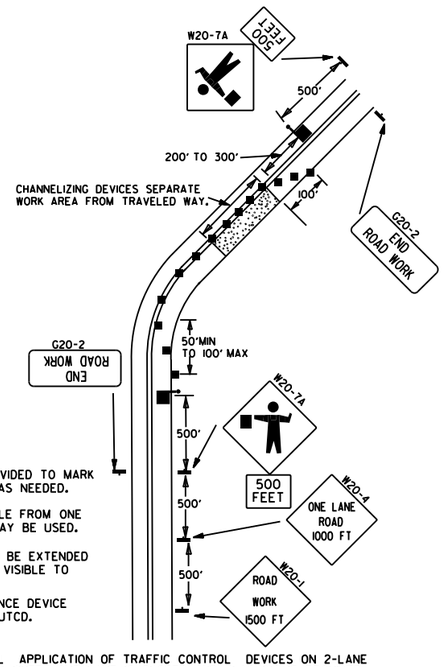
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



NOTES:

1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

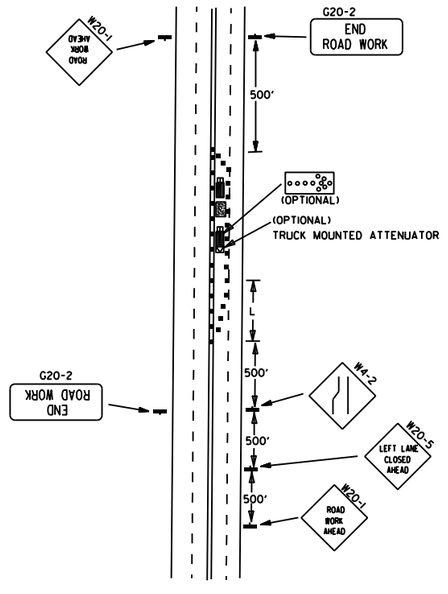
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:

1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



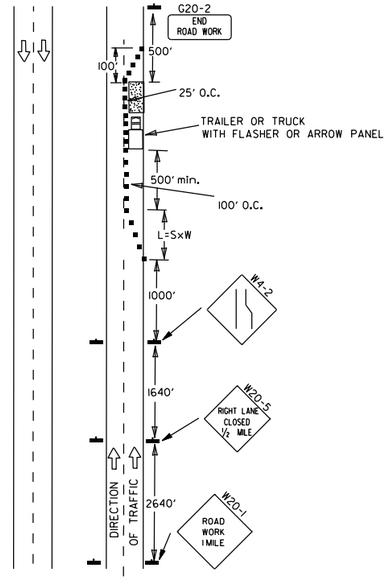
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

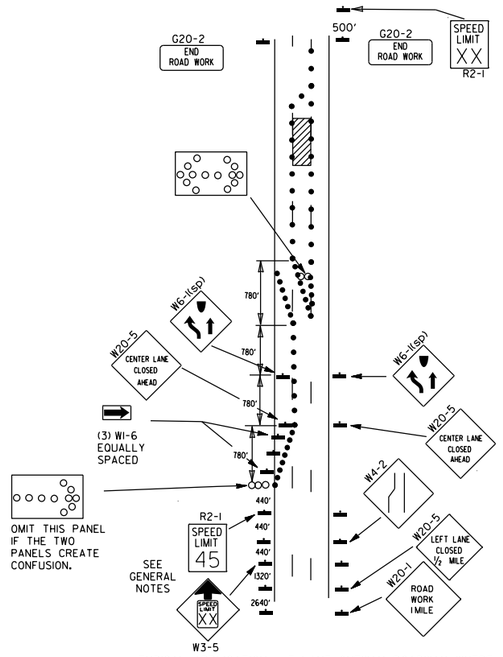
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

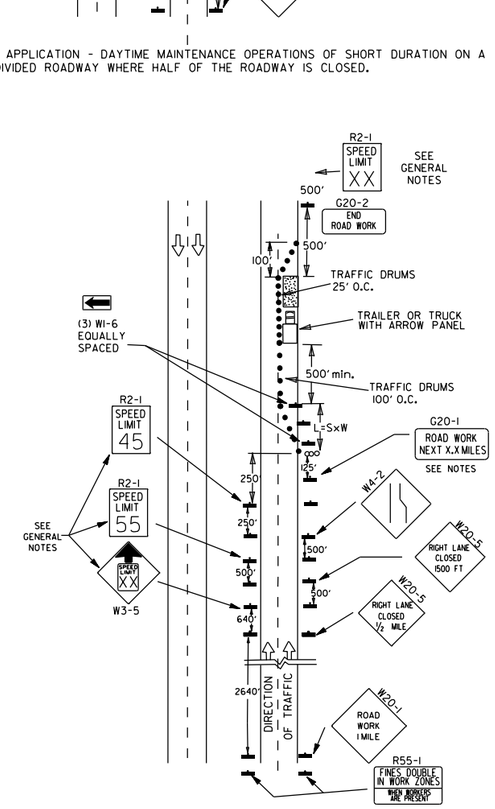
STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.



(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

KEY:

ooo ARROW PANEL (IF REQUIRED)

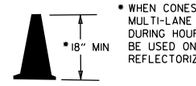
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

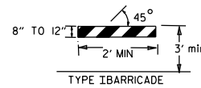
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

CHANNELIZING DEVICES

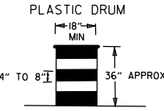


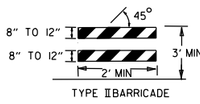
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

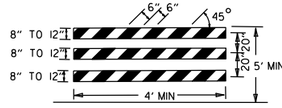
CONES



PLASTIC DRUM

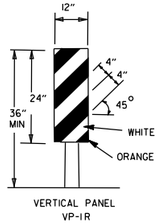




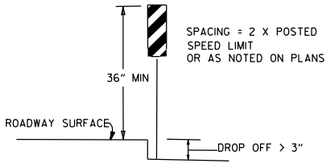


TYPE III BARRICADE

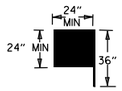
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

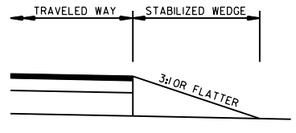
TRAFFIC CONTROL DEVICES

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

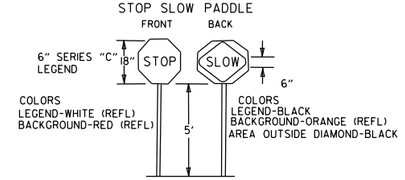
GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED 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.



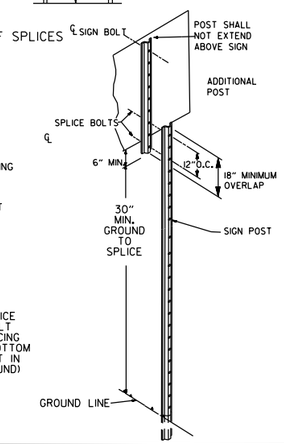
STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE



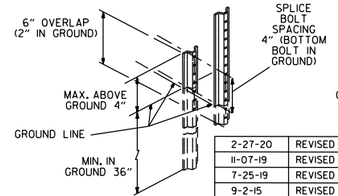
DETAIL OF SPLICES

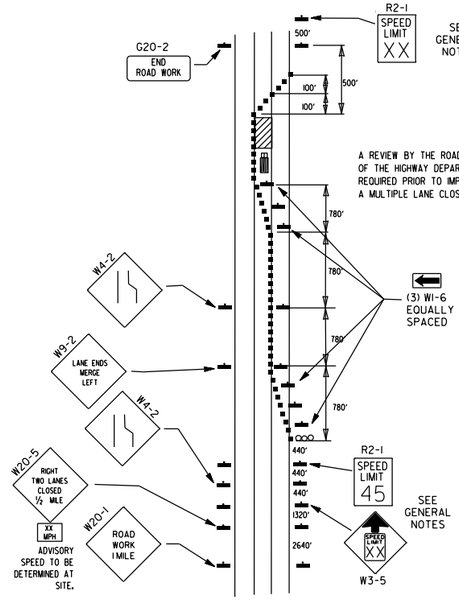


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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.





(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

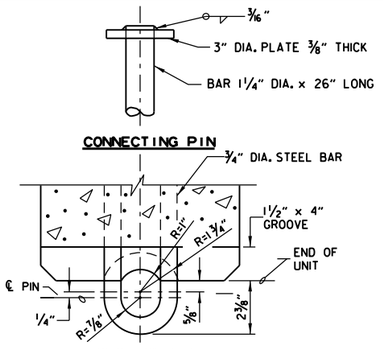
ARKANSAS STATE HIGHWAY COMMISSION

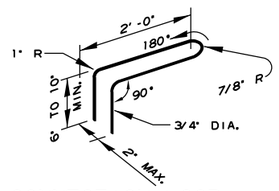
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

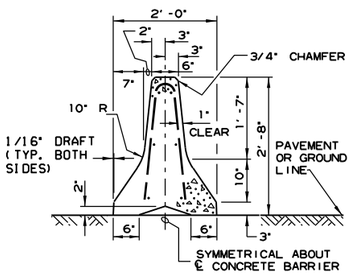
STANDARD DRAWING TC-3

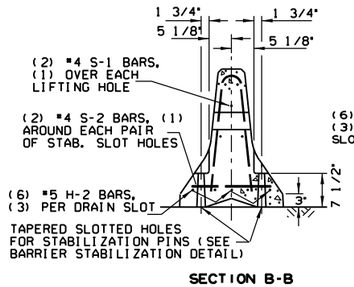
REINFORCING BAR TABLE PER BARRIER UNIT

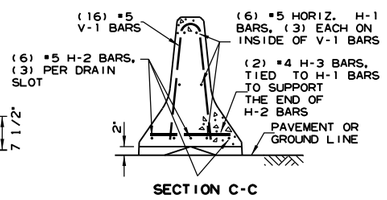
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

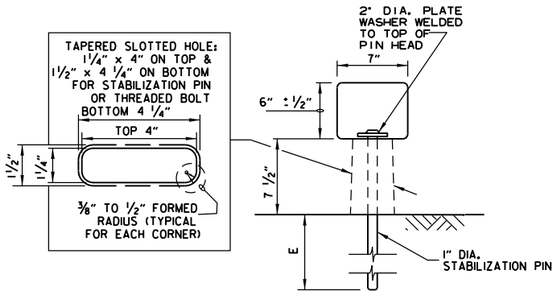




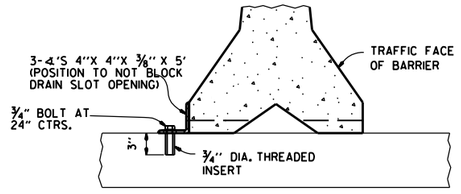






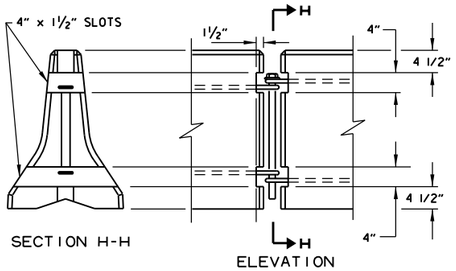


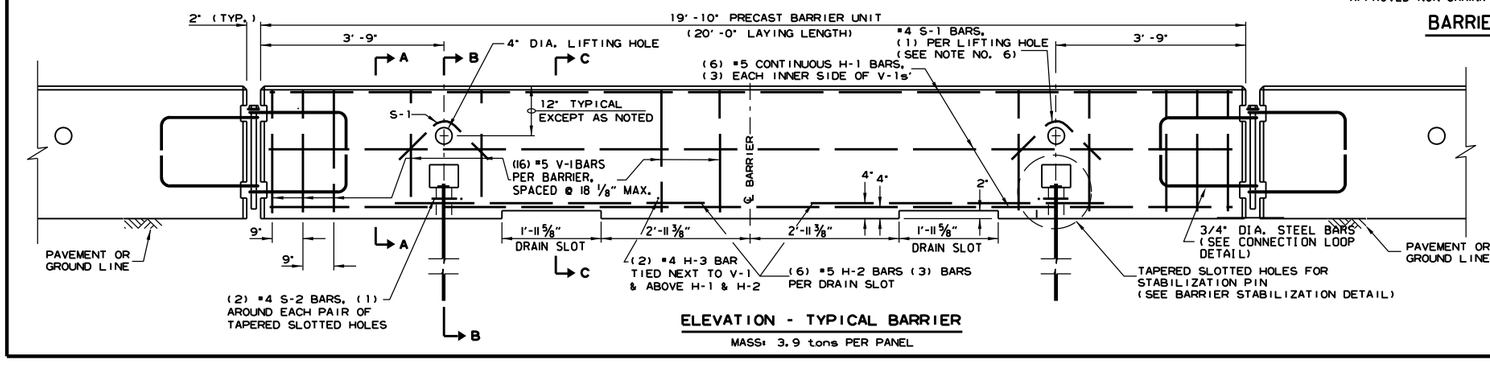
Ⓔ 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



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





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.

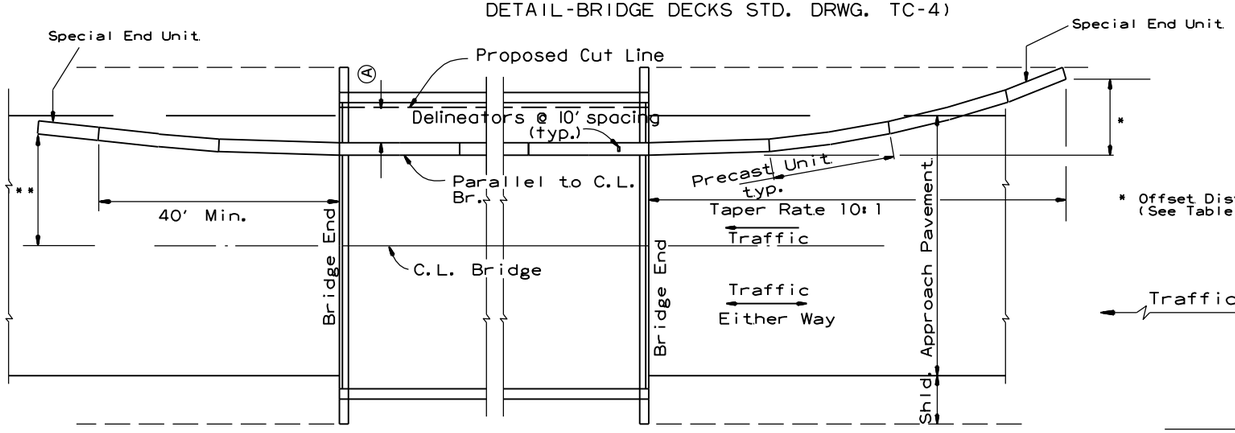
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED 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

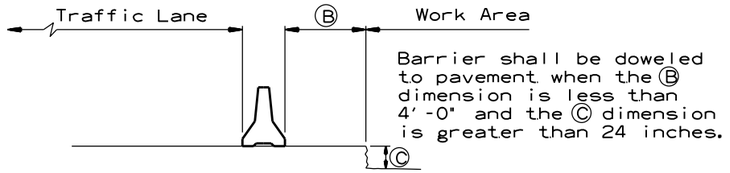
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

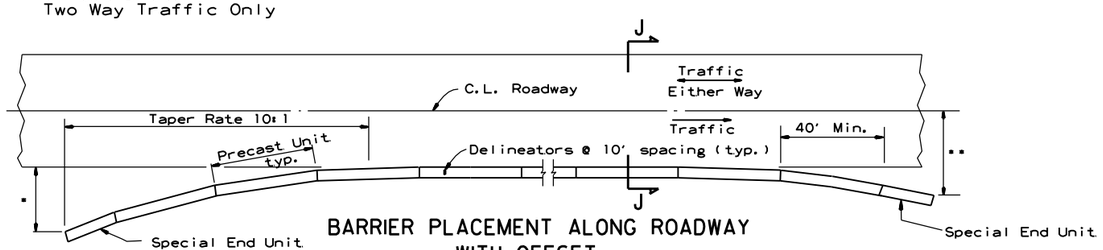
** Offset Distance for Two Way Traffic Only



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

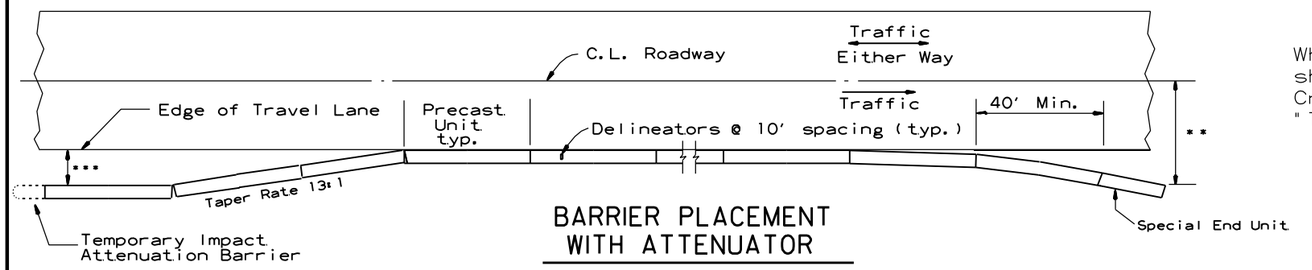
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

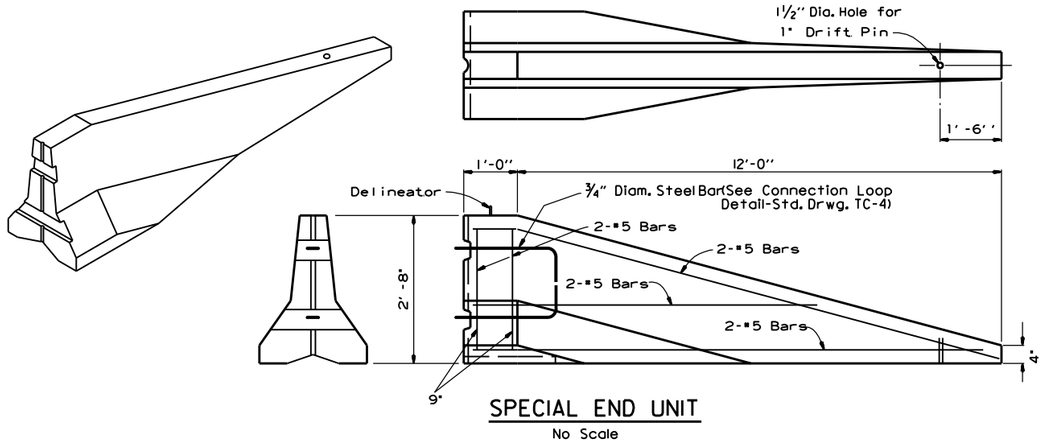


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with 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	

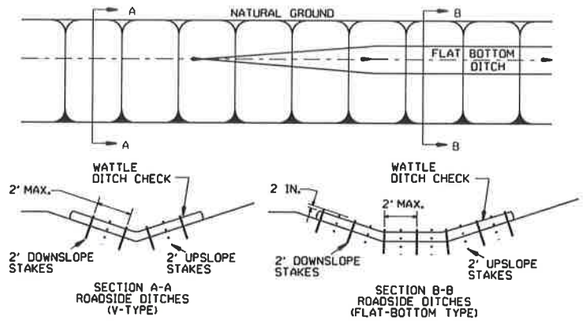
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

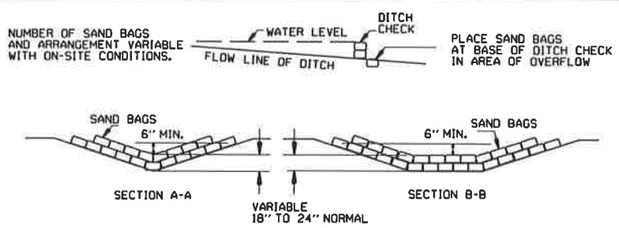
STANDARD DRAWING TC-5

GENERAL NOTES

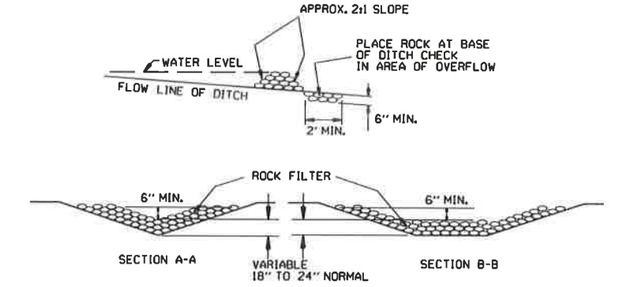
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

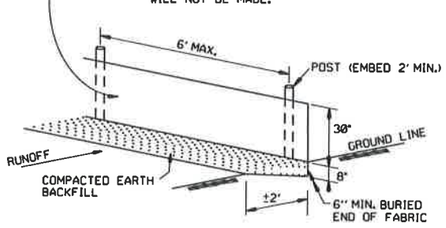


ROCK DITCH CHECK (E-6)

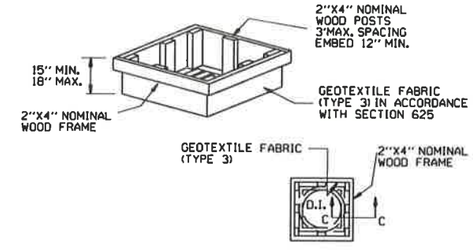
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

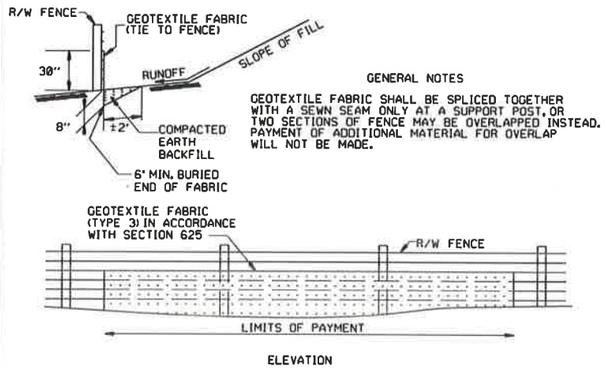
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



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.

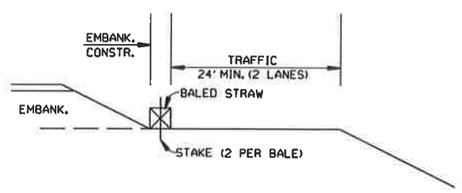
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

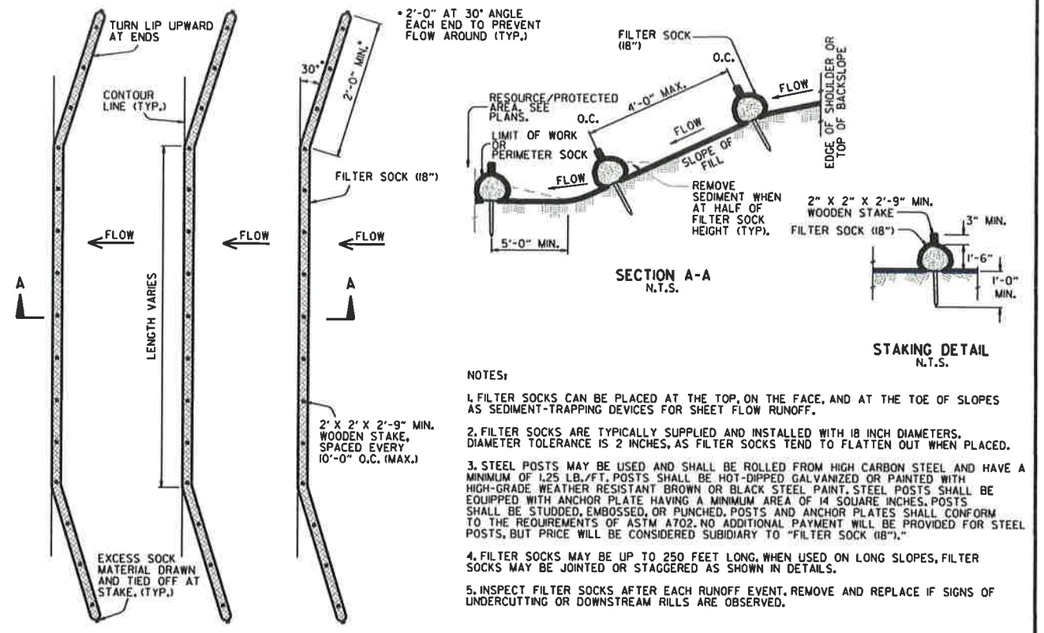
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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.

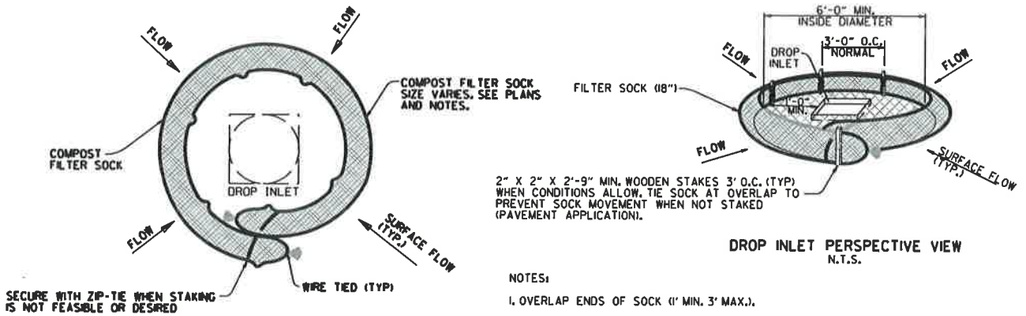
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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.

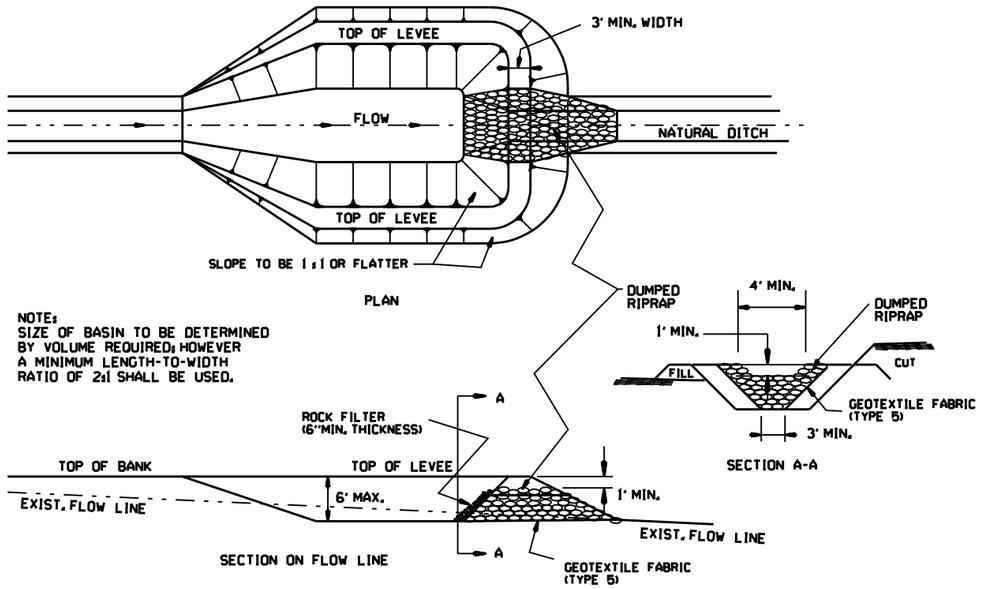
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

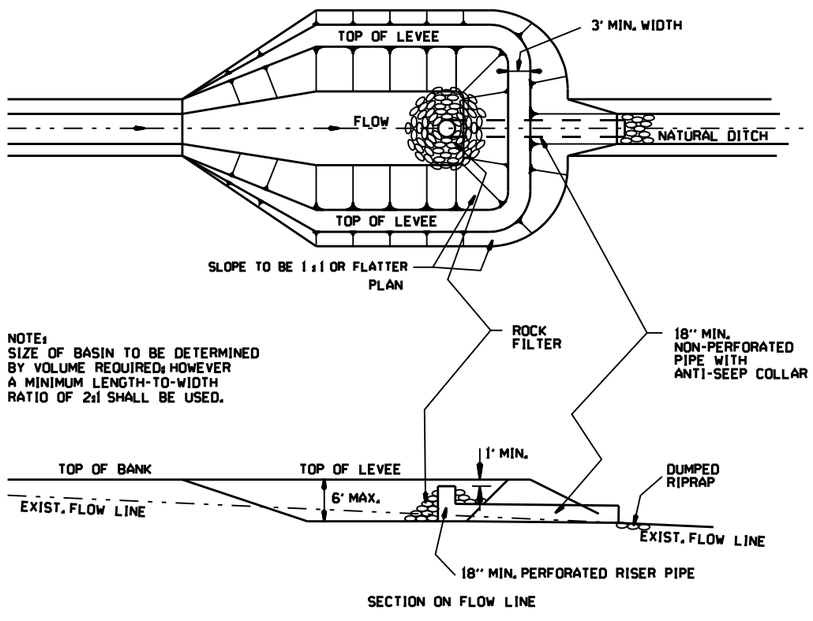
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

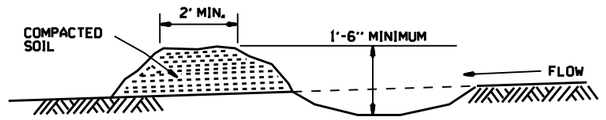
STANDARD DRAWING TEC-1



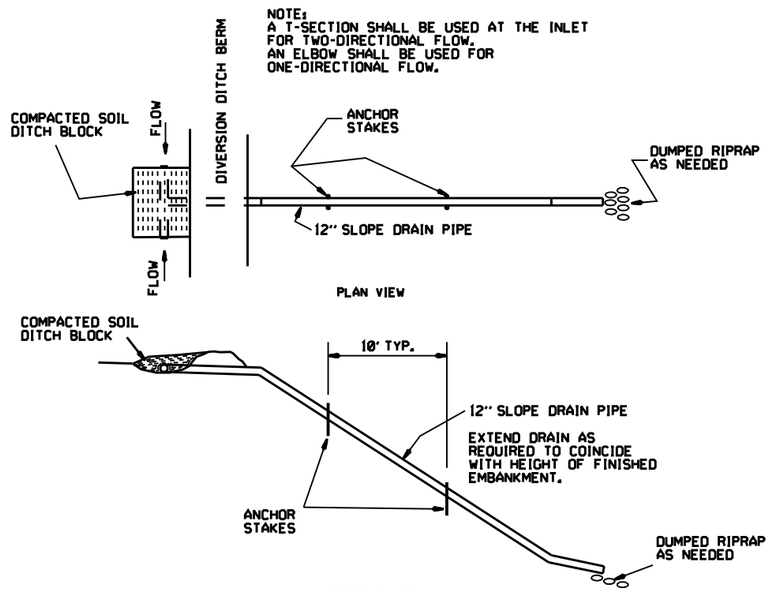
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



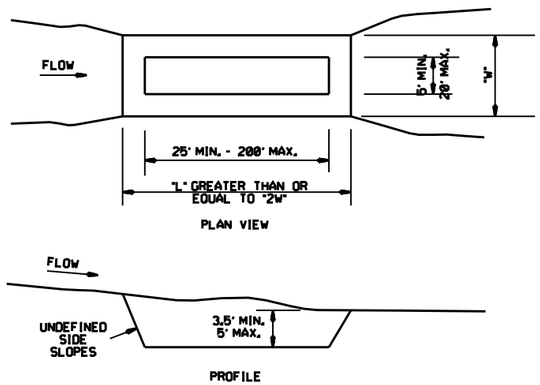
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

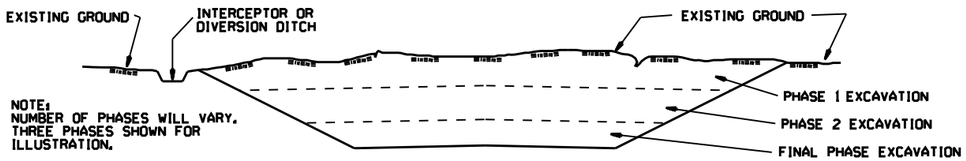
STANDARD DRAWING TEC-2

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



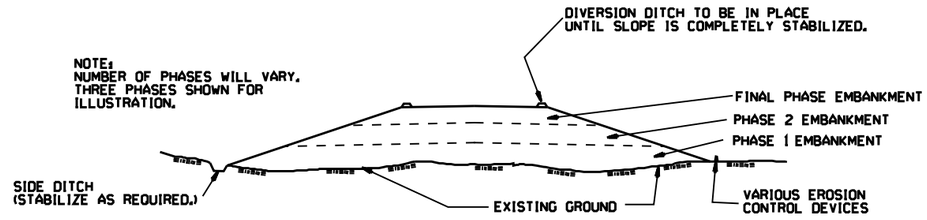
GENERAL NOTE

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

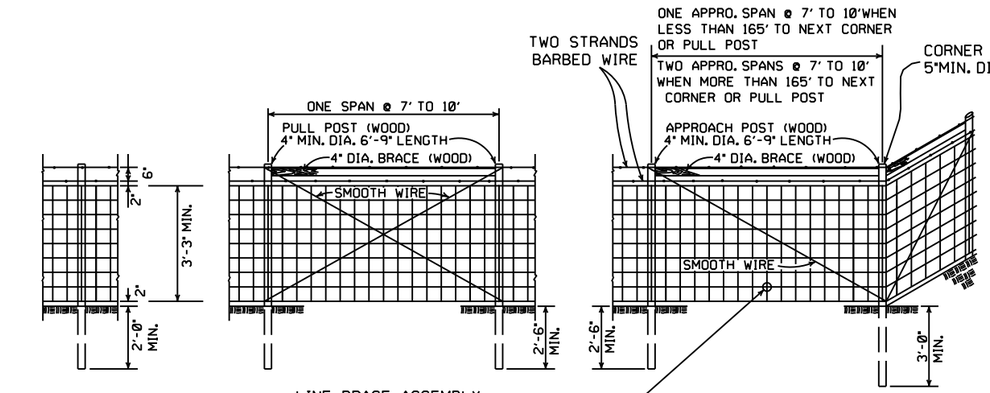
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

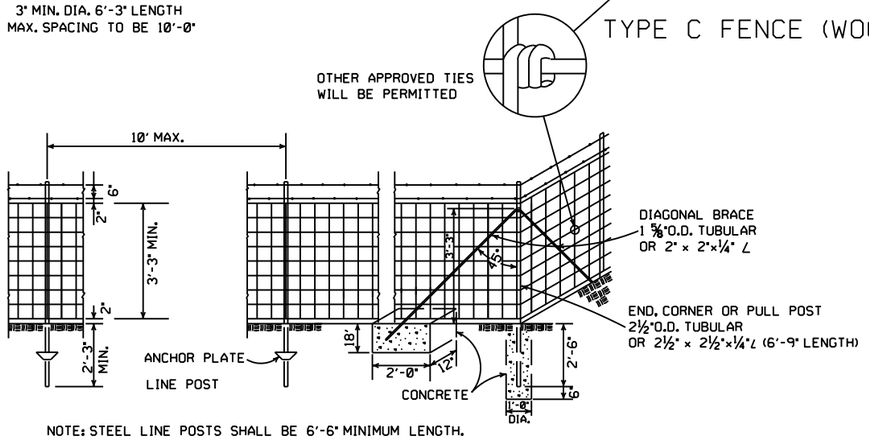
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

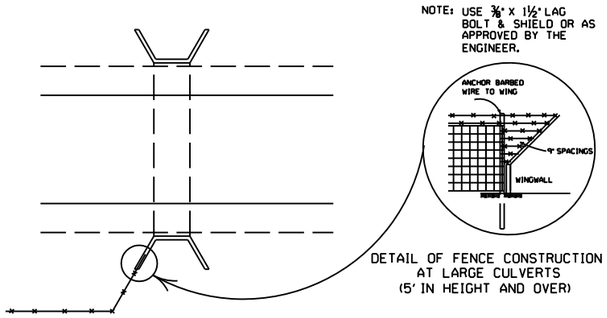


TYPE C FENCE (WOOD POSTS)



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)



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

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

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

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

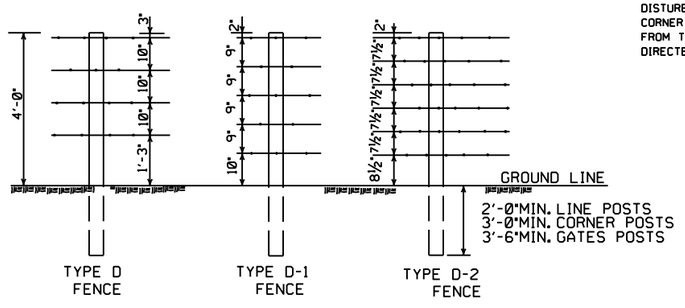
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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

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

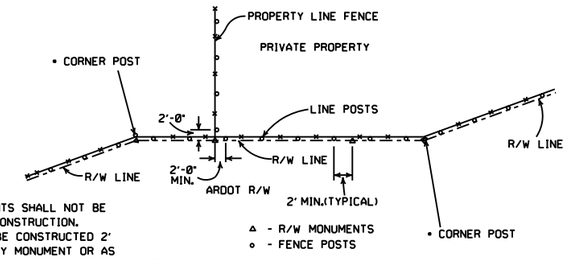
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

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

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

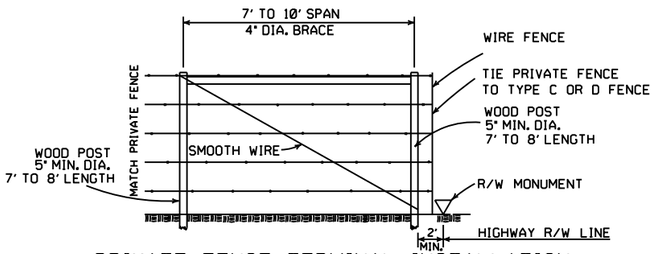


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



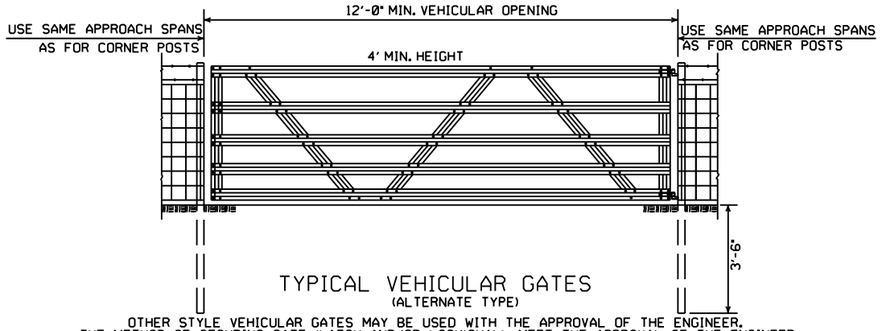
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

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

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4