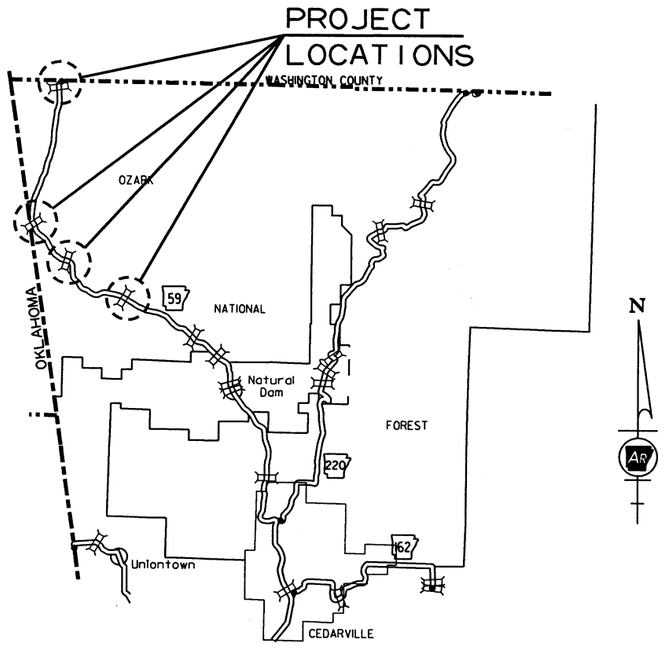
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	1	140
				(2)	WASHINGTON CO. LINE - SOUTH STRS. & APPRS. (S)			



VICINITY MAP

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

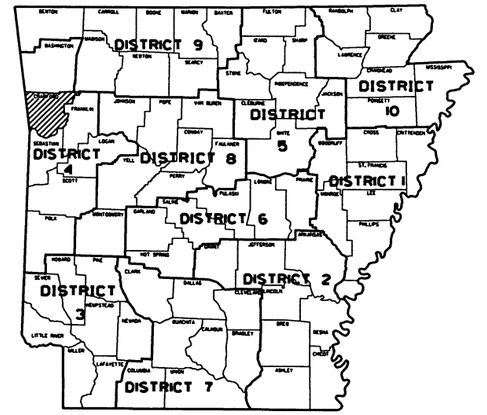
WASHINGTON CO. LINE - SOUTH STRS. & APPRS. (S)

CRAWFORD COUNTY

ROUTE 59 SECTION 5

JOB 040622

FED. AID PROJ. NHPP-0072(46)



ARK. HWY. DIST. NO. 4

BRIDGE DATA

① BR. END STA. 67+99.75
BRIDGE NO. 07448
40'-0" CLEAR ROADWAY
120'-6" TOTAL LENGTH
119'-6" INTEGRAL
PRESTRESSED CONCRETE GIRDER
UNIT TYPE II
(39'-9", 40'-0", 39'-9")
BR. END STA. 69+20.25

② BR. END STA. 111+66.75
BRIDGE NO. 07449
40'-0" CLEAR ROADWAY
150'-6" TOTAL LENGTH
149'-6" INTEGRAL
PRESTRESSED CONCRETE GIRDER
UNIT TYPE II
(49'-9", 50'-0", 49'-9")
BR. END STA. 113+17.25

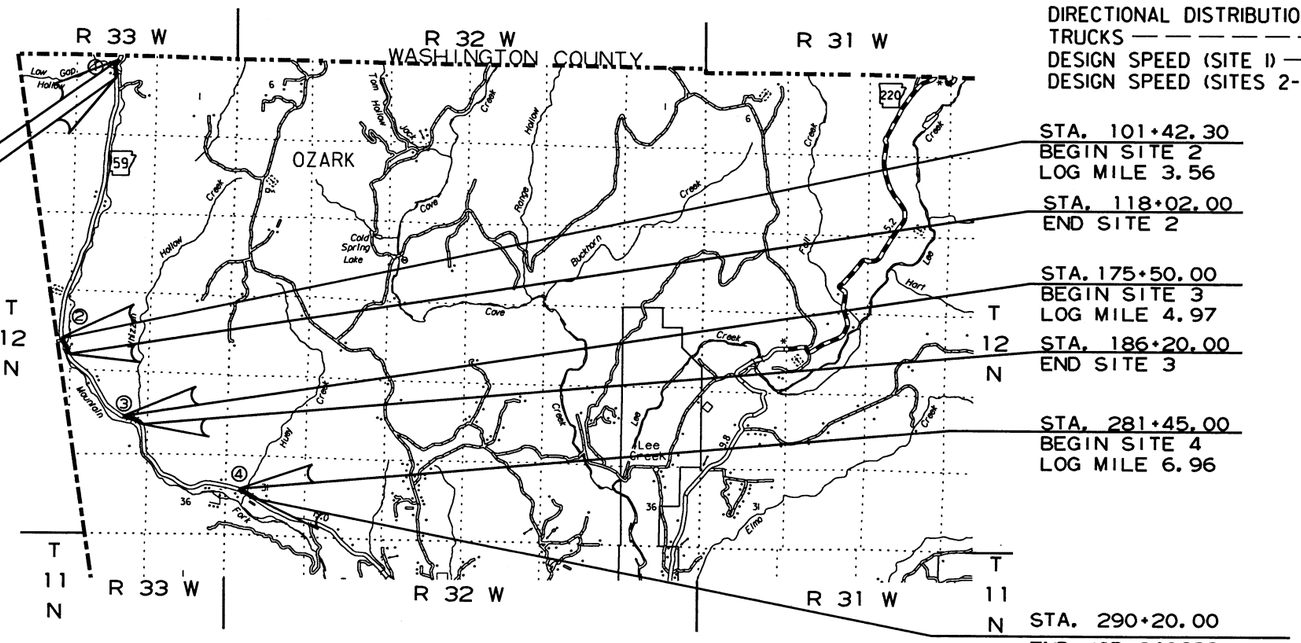
③ BR. END STA. 180+91.75
BRIDGE NO. 07450
40'-0" CLEAR ROADWAY
130'-6" TOTAL LENGTH
129'-6" INTEGRAL
PRESTRESSED CONCRETE GIRDER
UNIT TYPE II
(39'-9", 50'-0", 39'-9")
BR. END STA. 182+22.25

④ BR. END STA. 286+48.75
BRIDGE NO. 07451
40'-0" CLEAR ROADWAY
120'-6" TOTAL LENGTH
119'-6" INTEGRAL
PRESTRESSED CONCRETE GIRDER
UNIT TYPE II
(39'-9", 40'-0", 39'-9")
BR. END STA. 287+69.25

STA. 61+91.16
BEGIN JOB 040622
BEGIN SITE 1
LOG MILE 0.06

STA. 72+00.00
END SITE 1

NOT TO SCALE



STA. 101+42.30
BEGIN SITE 2
LOG MILE 3.56

STA. 118+02.00
END SITE 2

STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.97

STA. 186+20.00
END SITE 3

STA. 281+45.00
BEGIN SITE 4
LOG MILE 6.96

STA. 290+20.00
END JOB 040622
END SITE 4

SITE 1

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°45'29"	N 35°45'25"	N 35°45'20"
LONGITUDE	W 94°28'14"	W 94°28'17"	W 94°28'16"

SITE 2

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°42'35"	N 35°42'27"	N 35°42'20"
LONGITUDE	W 94°29'01"	W 94°29'00"	W 94°28'56"

SITE 3

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°41'36"	N 35°41'34"	N 35°41'32"
LONGITUDE	W 94°28'11"	W 94°28'04"	W 94°27'59"

SITE 4

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°40'48"	N 35°40'45"	N 35°40'44"
LONGITUDE	W 94°26'38"	W 94°26'32"	W 94°26'29"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	4613.54	FEET OR	0.874	MILES
NET	ROADWAY	4091.54		0.775	MILES
NET	BRIDGES	522.00		0.099	MILES
NET	PROJECT	4613.54		0.874	MILES

• DESIGN TRAFFIC DATA •

DESIGN YEAR	2039
2019 ADT	2000
2039 ADT	2400
2039 DHV	264
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	22%
DESIGN SPEED (SITE 1)	40 MPH
DESIGN SPEED (SITES 2-4)	50 MPH

N

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
M. E. BANKS

9-19-19

DEPUTY DIRECTOR
AND CHIEF ENGINEER

02/08/19

r040622.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	2	140

(2) INDEX OF SHEETS & STANDARD DRAWINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

Trinity Smith

May 4 2020 4:52 PM
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INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.
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78	LAYOUT OF BRIDGE HIGHWAY 59 OVER HUEY CREEK (SHEET 1 OF 2)	07451	60748
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97 - 140	CROSS SECTIONS		

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

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	03-24-20
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16
55030C	STANDARD DETAILS FOR TYPE C APPROACH GUTTERS	02-27-14
55040C1	STANDARD DETAILS FOR TYPE C1 APPROACH SLAB	02-27-14
55054	STANDARD DETAILS FOR TEMPORARY BRIDGE STRUCTURE BRIDGE END PROTECTION SYSTEM	04-17-14
55055	STANDARD DETAILS FOR TEMPORARY BRIDGE STRUCTURE PRECAST CONCRETE SPANS 24' ROADWAY WIDTH (SHEET 1 OF 2)	04-17-14
55056	STANDARD DETAILS FOR TEMPORARY BRIDGE STRUCTURE PRECAST CONCRETE SPANS 24' ROADWAY WIDTH (SHEET 2 OF 2)	04-17-14

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
GR-6	GUARDRAIL DETAILS	11-07-19
GR-7	GUARDRAIL DETAILS	11-07-19
GR-8	GUARDRAIL DETAILS	11-07-19
GR-9	GUARDRAIL DETAILS	11-07-19
GR-10	GUARDRAIL DETAILS	11-07-19
GR-11	GUARDRAIL DETAILS	11-07-19
GR-12	GUARDRAIL DETAILS	11-07-19
IB-1	IMPACT ATTENUATION BARRIER	10-15-09
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
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

5/29/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
4/17/2020			
6/23/2020			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040622	3	140

(2) GOVERNING SPECIFICATIONS & GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

Jun 23 2020 8:13 AM
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GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
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
634-1_____	CURBING
734-1_____	BRIDGE END TERMINAL
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 040622__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 040622__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 040622__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 040622__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 040622__	CAVE DISCOVERY
JOB 040622__	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 040622__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 040622__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 040622__	DIRECT TENSION INDICATORS FOR HIGH STRENTH BOLT ASSEMBLIES
JOB 040622__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 040622__	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 040622__	EXTENSION FOR PIPE CULVERTS
JOB 040622__	FLEXIBLE BEGINNING OF WORK
JOB 040622__	FOREST SERVICE REQUIREMENTS
JOB 040622__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 040622__	MANDATORY ELECTRONIC CONTRACT
JOB 040622__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 040622__	NESTING SITES OF MIGRATORY BIRDS
JOB 040622__	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 040622__	PARTNERING REQUIREMENTS
JOB 040622__	PLASTIC PIPE
JOB 040622__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 040622__	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB 040622__	SHORING
JOB 040622__	SHORING FOR CULVERTS
JOB 040622__	SOIL STABILIZATION
JOB 040622__	SPECIAL CLEARING REQUIREMENTS
JOB 040622__	SPECIAL SEEDING REQUIREMENTS
JOB 040622__	STORM WATER POLLUTION PREVENTION PLAN
JOB 040622__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040622__	UTILITY ADJUSTMENTS
JOB 040622__	VALUE ENGINEERING
JOB 040622__	WARM MIX ASPHALT
JOB 040622__	WATER POLLUTION CONTROL

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

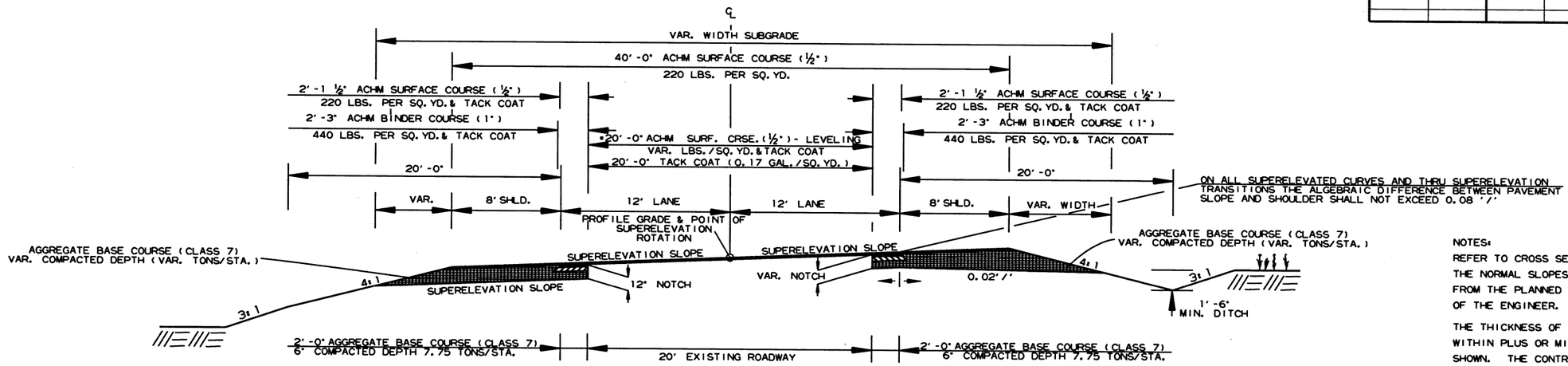
5/29/2019

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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.		040622	4	140

(2) TYPICAL SECTIONS OF IMPROVEMENT

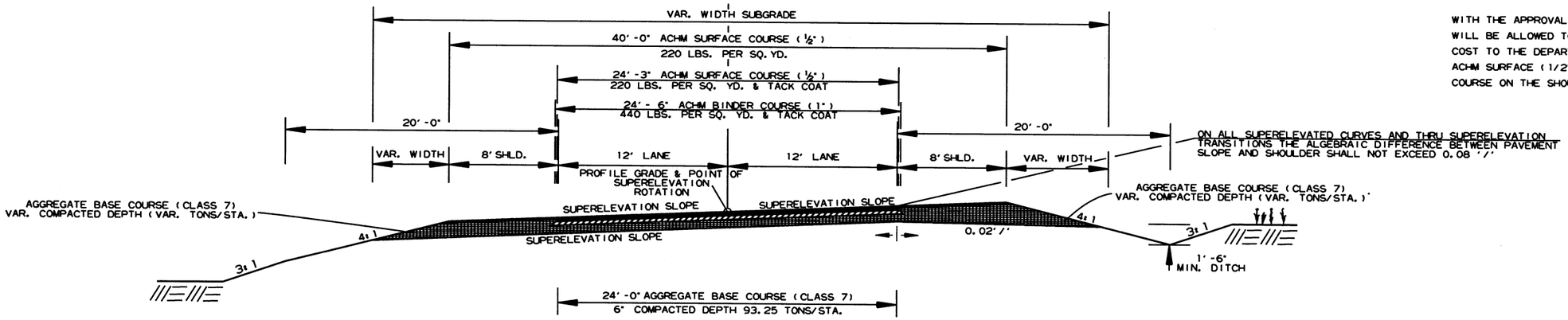
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



HWY. 59 - SITE 1 - NOTCH AND WIDEN SUPERELEVATION

(**REVERSE TYPICAL)
STA. 61+91.16 TO STA. 65+00.00
**STA. 71+50.00 TO STA. 72+00.00

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



HWY. 59 - SITE 1 - FULL DEPTH SUPERELEVATION

(**REVERSE TYPICAL)
STA. 65+00.00 TO STA. 67+87.37
**STA. 70+60.00 TO STA. 71+50.00

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE 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 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 WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS PAY ITEMS.

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

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

5/28/2019

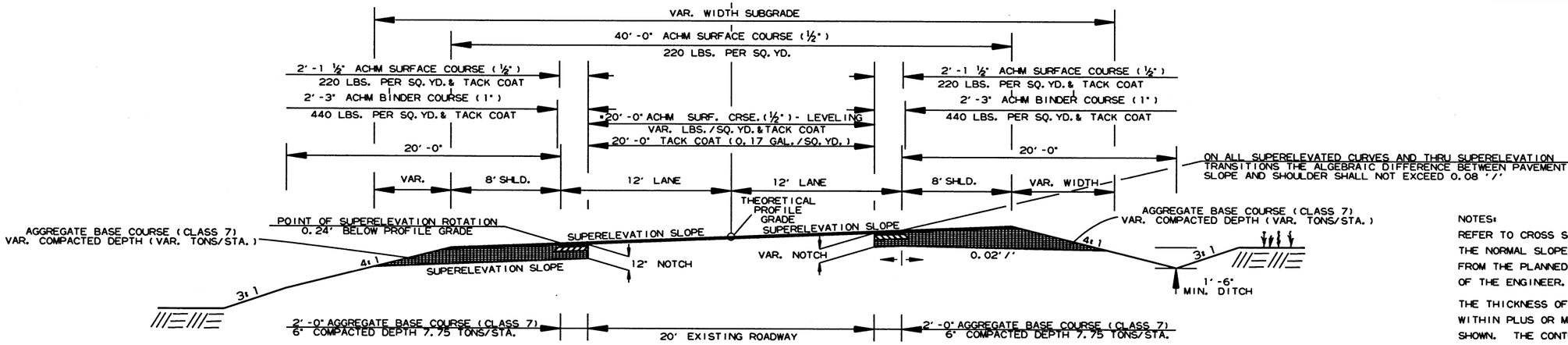
R040622.DGN

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	5	140

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



HWY. 59 - SITE 2, 3, & 4- NOTCH AND WIDEN SUPERELEVATION

(**REVERSE TYPICAL)

STA. 101+42.30 TO STA. 106+25.00
**STA. 117+00.00 TO STA. 117+40.00
**STA. 185+00.00 TO STA. 185+50.00
**STA. 281+45.00 TO STA. 283+50.00

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

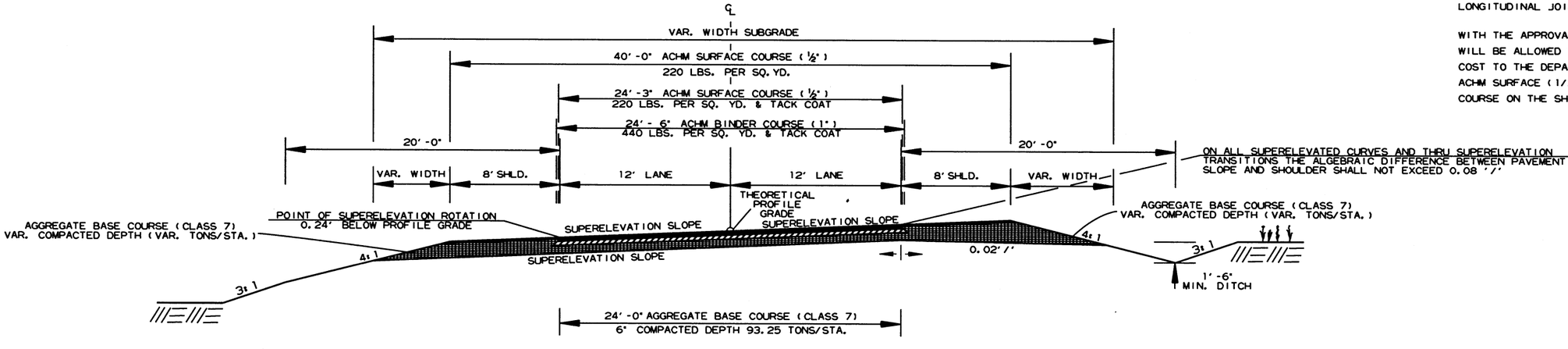
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 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 WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS PAY ITEMS.

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

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



HWY. 59 - SITE 2, 3, & 4 - FULL DEPTH SUPERELEVATION

(**REVERSE TYPICAL)

STA. 106+25.00 TO STA. 111+65.00
**STA. 115+02.91 TO STA. 117+00.00
**STA. 182+24.00 TO STA. 185+50.00
**STA. 283+50.00 TO STA. 286+48.68

5/28/2019

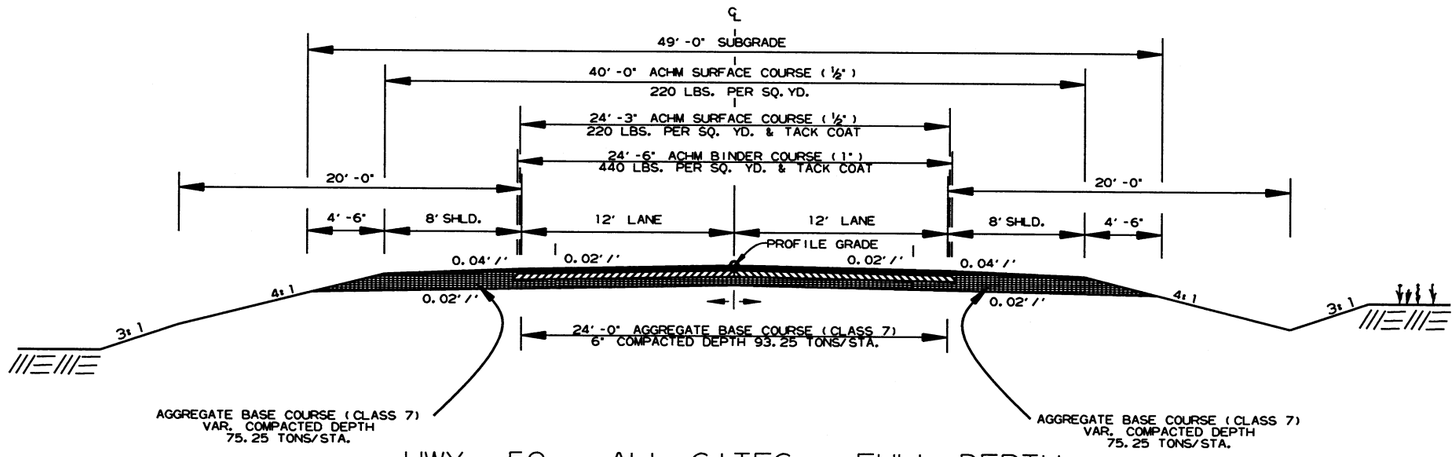
R040622.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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.		040622	6	140

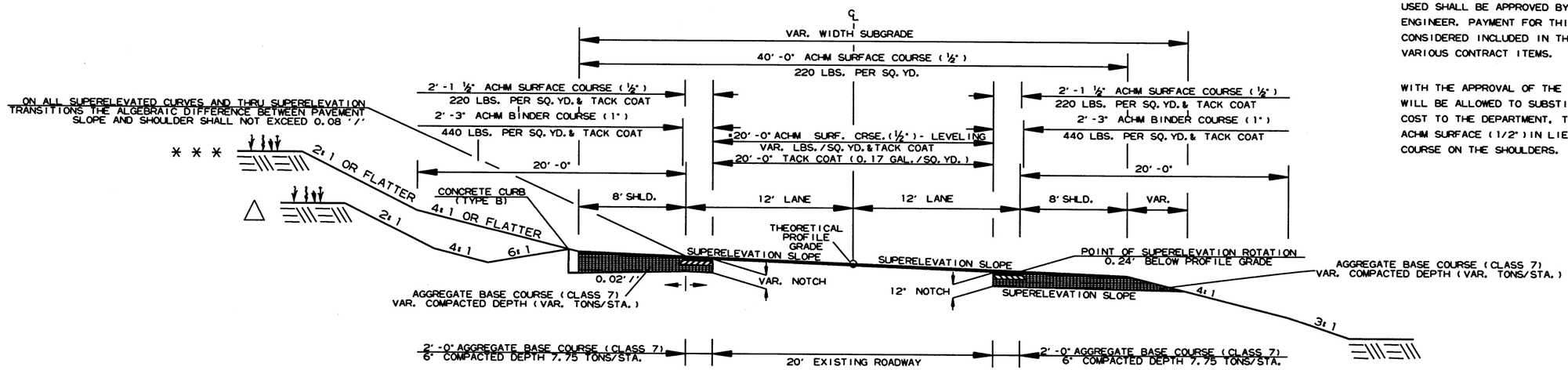
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



HWY. 59 - ALL SITES - FULL DEPTH

STA. 67+87.37 TO STA. 67+99.75
STA. 69+20.25 TO STA. 70+60.00
STA. 111+65.00 TO STA. 111+66.75
STA. 113+17.25 TO STA. 115+02.91
STA. 177+50.00 TO STA. 180+91.75
STA. 182+22.25 TO STA. 182+24.00
STA. 286+48.68 TO STA. 286+48.75
STA. 287+69.25 TO STA. 289+00.00



HWY. 59 - STIE 2 & 3 - NOTCH AND WIDEN W/ MOUNTABLE CURB - SUPERELEVATION

(••REVERSE TYPICAL)

STA. 117+40.00 TO STA. 118+02.00 •••
••STA. 175+50.00 TO STA. 176+02.18 •••
STA. 185+50.00 TO STA. 186+20.00 Δ

NOTES:

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* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

5/28/2019

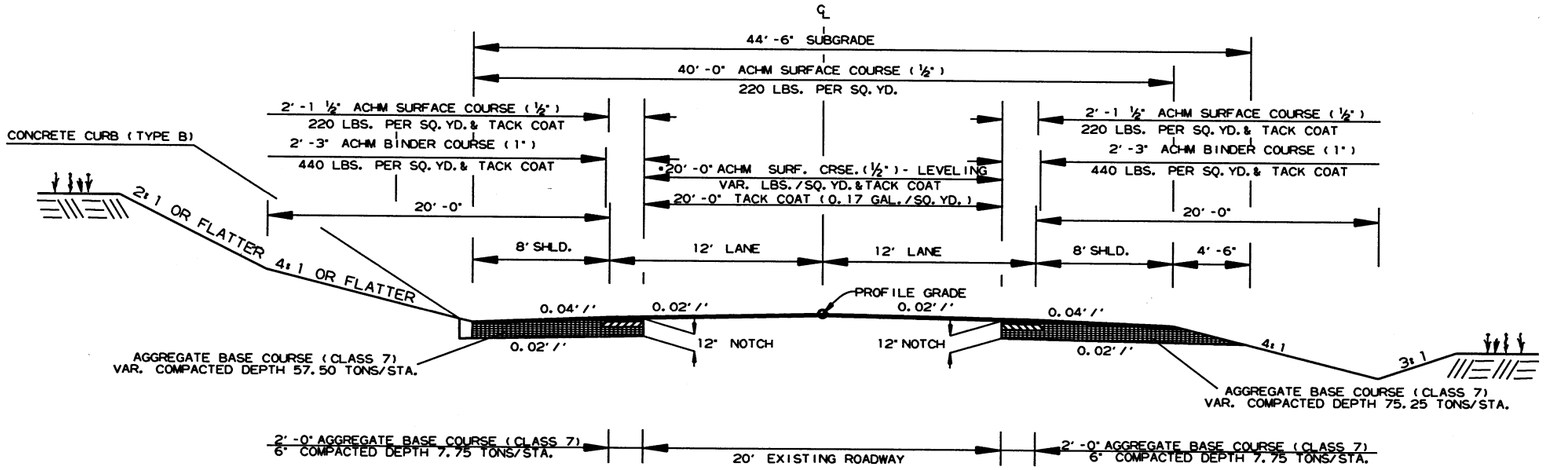
R040622.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
				JOB NO.		040622	7	140

(2) TYPICAL SECTIONS OF IMPROVEMENT

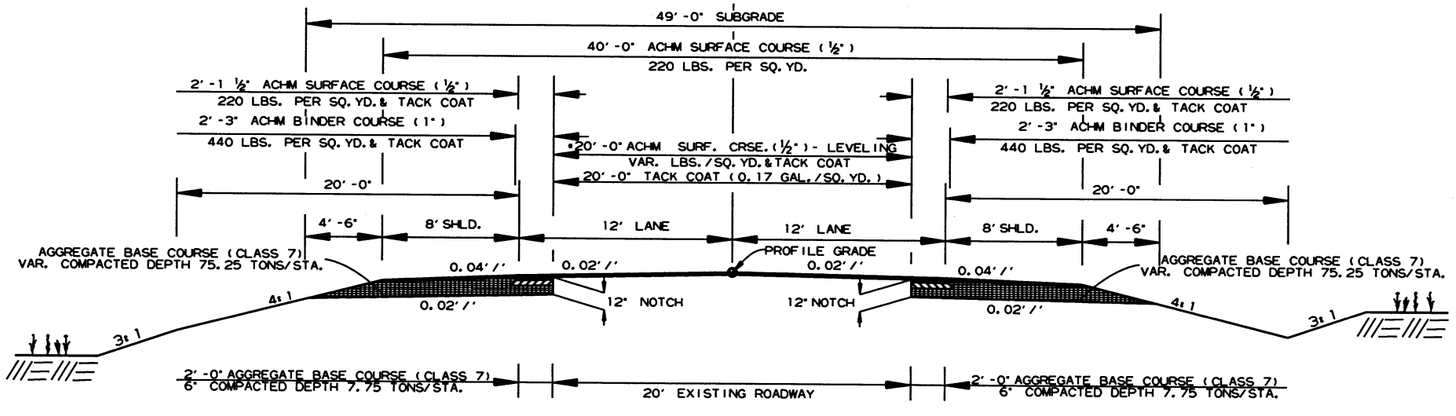
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



HWY. 59 - SITE 3 - NOTCH AND WIDEN W/ MOUNTABLE CURB - FULL DEPTH

STA. 176+02.18 TO STA. 177+00.00

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



HWY. 59 - SITE 3 & 4 - NOTCH AND WIDEN

STA. 177+00.00 TO STA. 177+50.00
STA. 289+00.00 TO STA. 290+20.00

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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5/28/2019

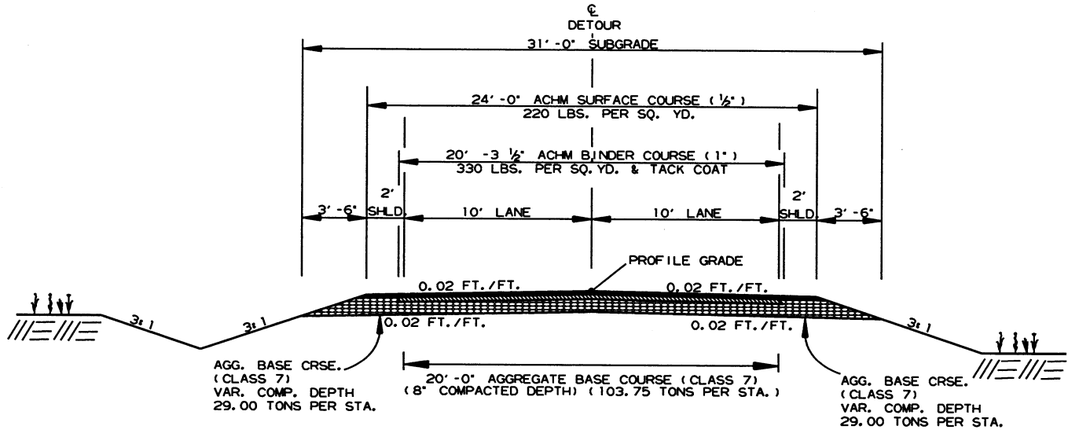
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TYPICAL SECTIONS OF IMPROVEMENT

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				JOB NO.		040622	8	140

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



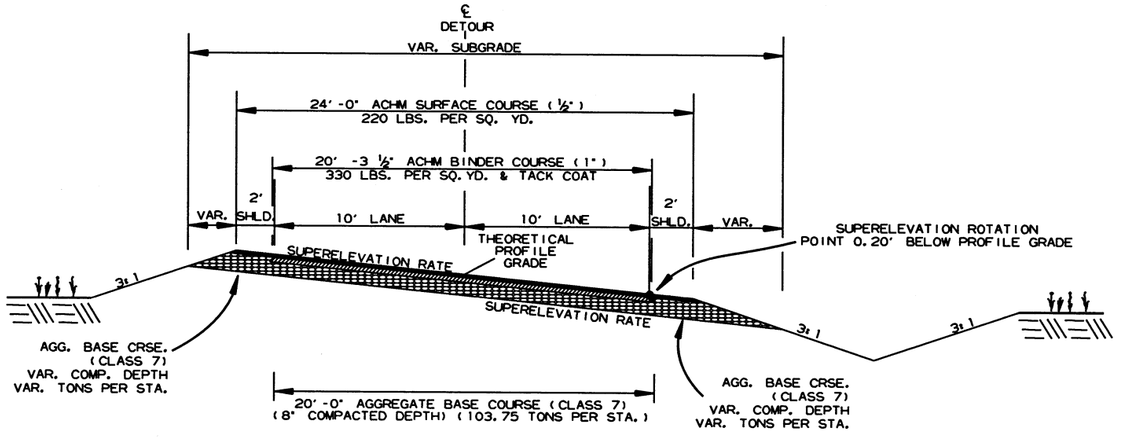
DETOUR - FULL DEPTH

STA. 411+70.00 TO STA. 418+05.00
STA. 418+95.00 TO STA. 418+95.60
STA. 420+20.21 TO STA. 422+49.15
STA. 598+38.17 TO STA. 601+54.71
STA. 603+81.00 TO STA. 603+83.00
STA. 604+85.00 TO STA. 604+87.00
STA. 699+37.55 TO STA. 701+99.72
STA. 704+09.00 TO STA. 704+11.00
STA. 704+86.00 TO STA. 704+88.00
STA. 706+65.67 TO STA. 708+63.30

NOTES:
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DETOUR - SITE 1 & 4
FULL DEPTH - SUPERELEVATION

STA. 418+95.60 TO STA. 420+20.21
STA. 701+99.72 TO STA. 704+09.00
STA. 704+88.00 TO STA. 706+65.67

5/28/2019

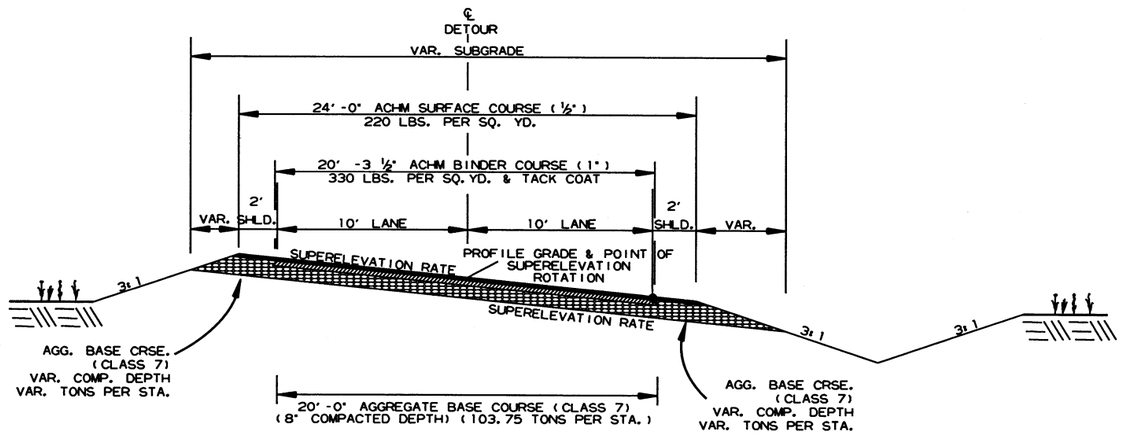
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TYPICAL SECTIONS OF IMPROVEMENT

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				JOB NO.		040622	9	140

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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DETOUR - SITE 3
FULL DEPTH - SUPERELEVATION

STA. 601+54.71 TO STA. 603+81.00
STA. 604+87.00 TO STA. 609+90.14

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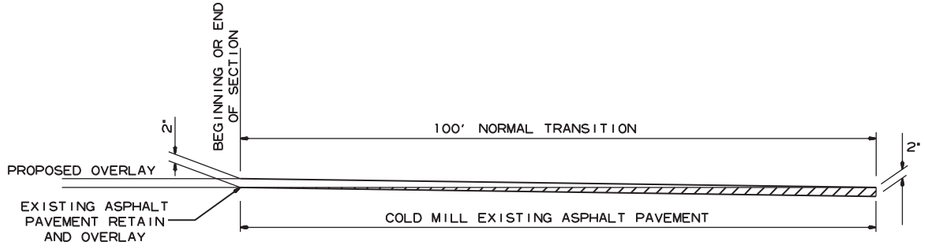
R040622.DGN 5/28/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	10	140

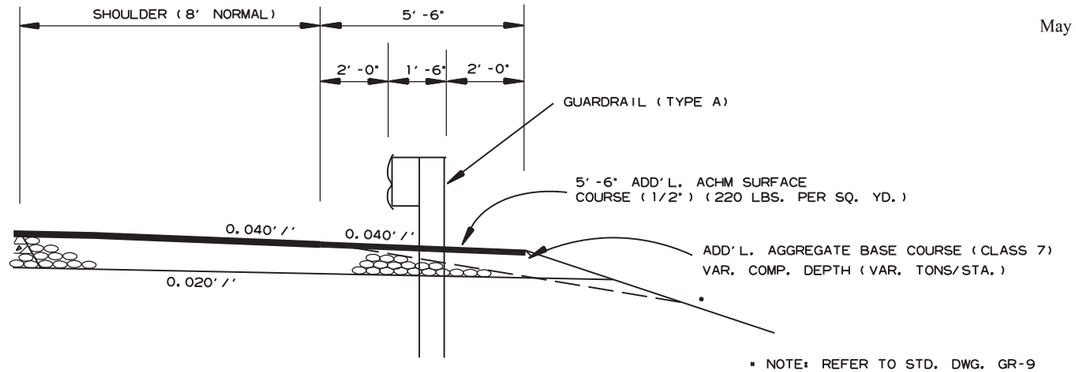
(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

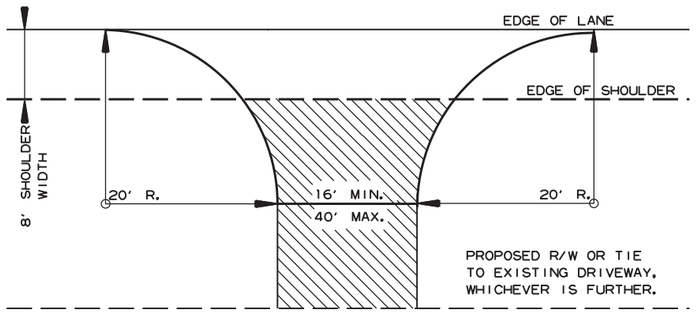
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DETAIL FOR TRANSITIONS



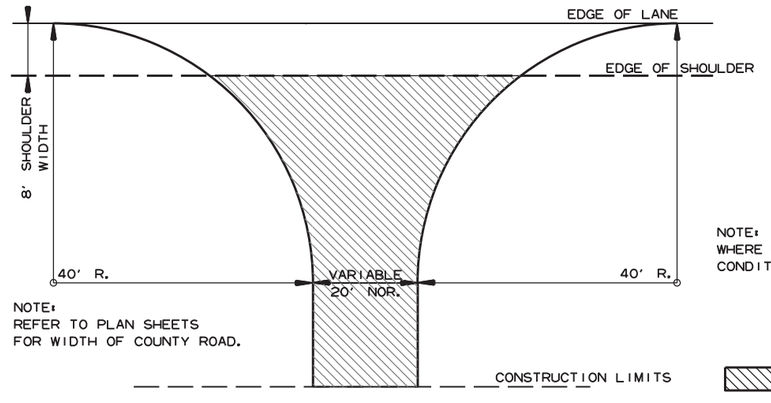
WIDENING FOR GUARDRAIL



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

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

DETAIL FOR DRIVEWAY TURNOUTS
OPEN SHOULDER SECTION
(ARTERIALS)



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

5/29/2019

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				6	ARK.			
				JOB NO.		040622	11	140

(2) SPECIAL DETAILS

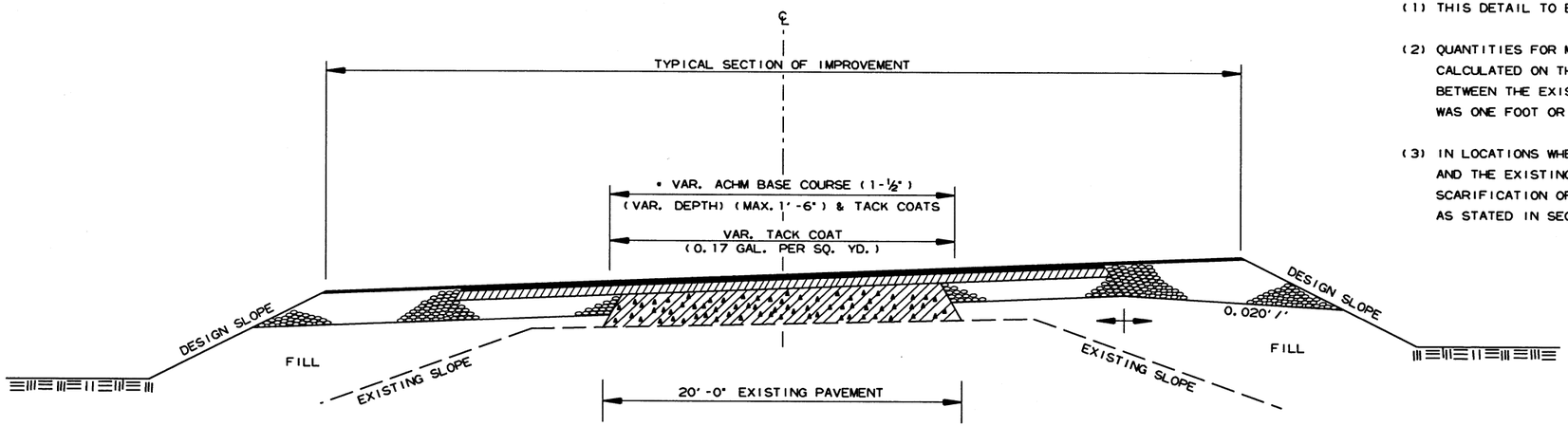
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

NOTES:

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

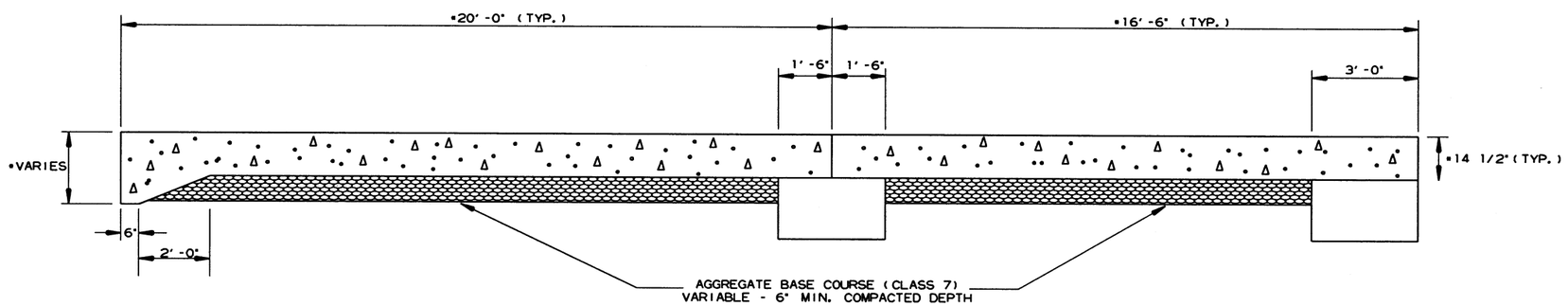
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

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



* 6" AGGREGATE BASE COURSE (CLASS 7) TO BE REPLACED WITH ACHM BASE COURSE (1-½")

METHOD OF RAISING GRADE



* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB

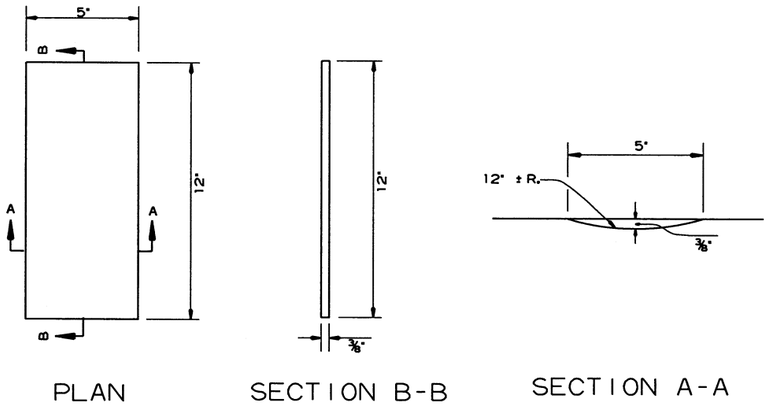
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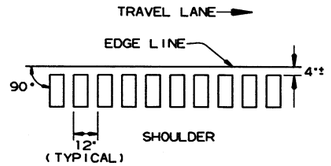
(2) SPECIAL DETAILS

STATE OF ARKANSAS
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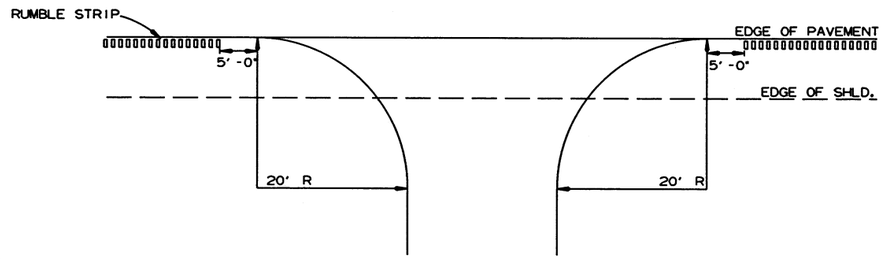


PLAN SECTION B-B SECTION A-A

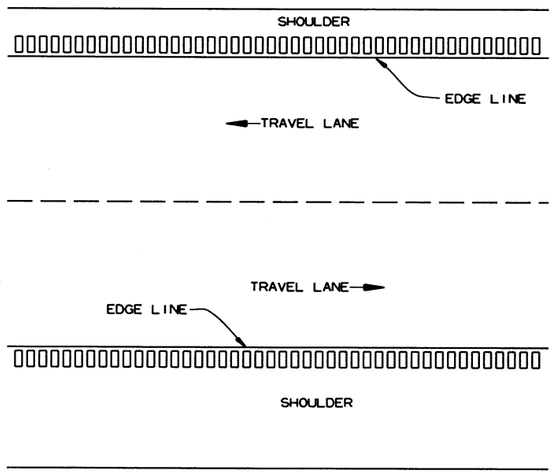
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



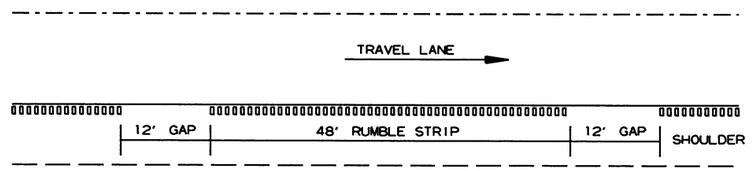
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



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

5/29/2019

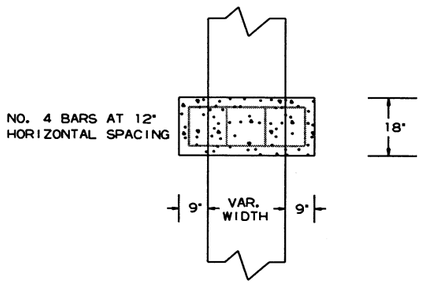
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SPECIAL DETAILS

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				JOB NO.		040622	13	140

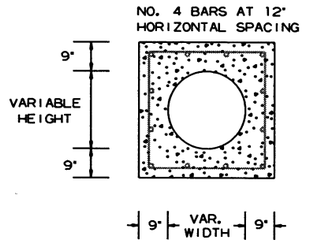
(2) SPECIAL DETAILS

STATE OF ARKANSAS
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TRINITY D. SMITH
9-18-19

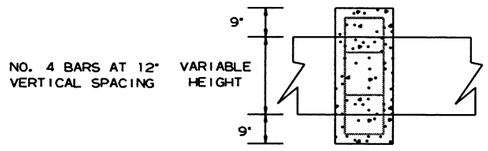


TOP VIEW

MIN 3" COVER

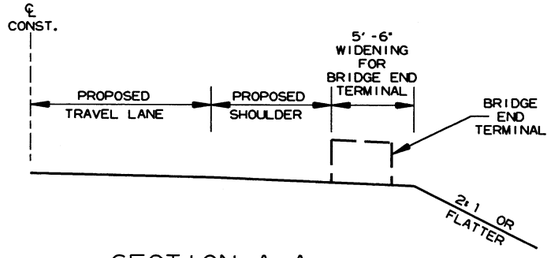


FRONT VIEW



SIDE VIEW

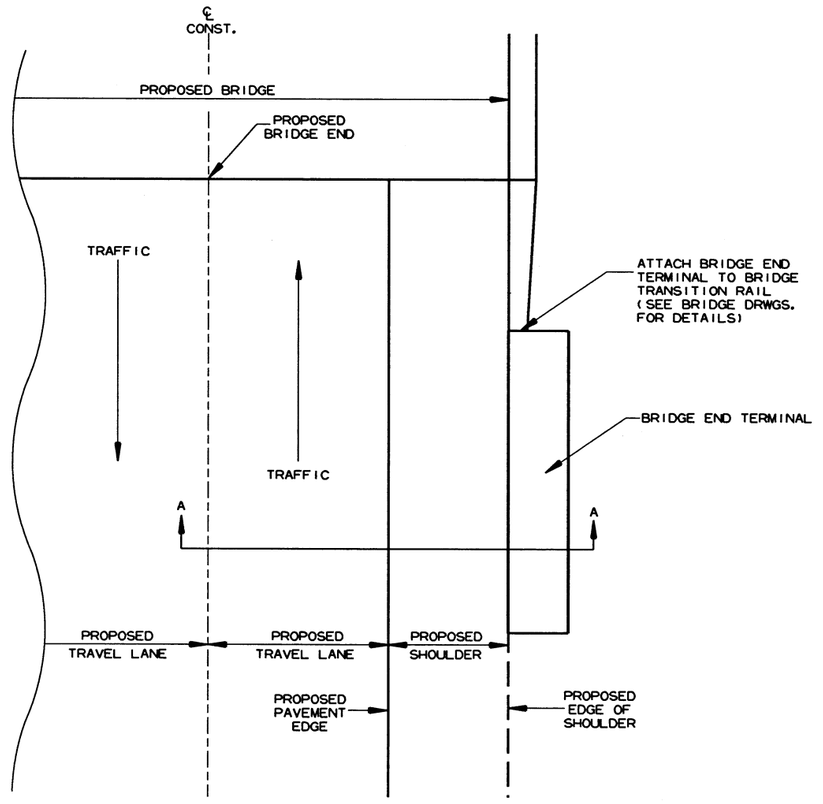
PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



SECTION A-A

NOTE:
ELIMINATE OR MODIFY APPROACH CURB SECTION TO FIT BRIDGE END TERMINAL. NO PAYMENT SHALL BE MADE FOR ELIMINATING OR MODIFYING THIS CURB BUT SHALL BE CONSIDERED IN PAYMENT MADE FOR APPROACH GUTTERS OF THE TYPE SPECIFIED.

NOTE:
BRIDGE END TERMINAL SHALL CONFORM TO THE FOLLOWING:
-MAXIMUM LENGTH: 20'
-MAXIMUM HEIGHT: 2.75'
-DESIGN SPEED: 50 MPH



PLAN VIEW

BRIDGE END TERMINAL DETAILS

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SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	14	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

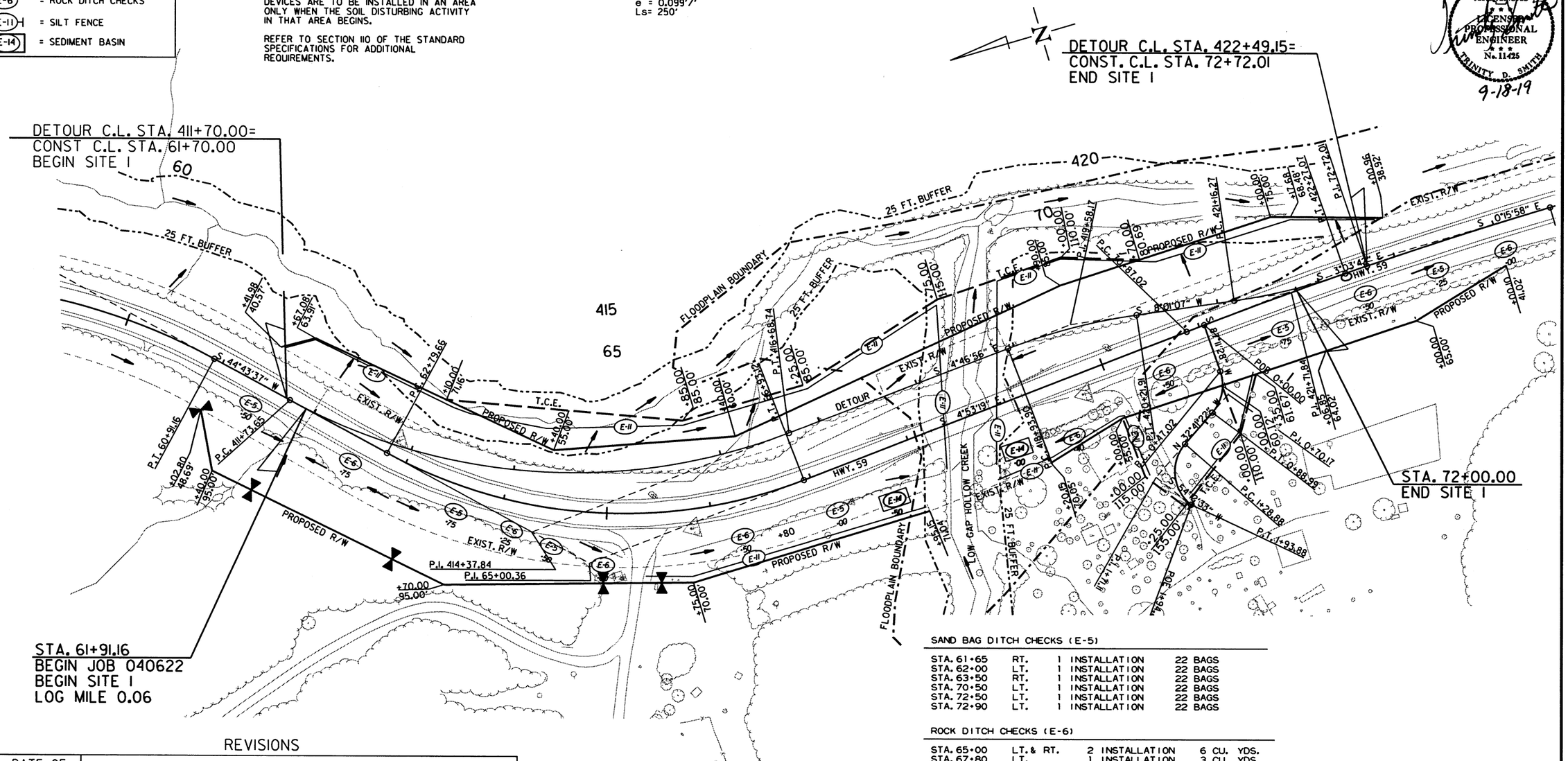
TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

HWY. 59 SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



REVISIONS

DATE OF REVISION	REVISION

HWY. 59 SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

SAND BAG DITCH CHECKS (E-5)

STA. 61+65	RT.	1 INSTALLATION	22 BAGS
STA. 62+00	LT.	1 INSTALLATION	22 BAGS
STA. 63+50	RT.	1 INSTALLATION	22 BAGS
STA. 70+50	LT.	1 INSTALLATION	22 BAGS
STA. 72+50	LT.	1 INSTALLATION	22 BAGS
STA. 72+90	LT.	1 INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 65+00	LT.& RT.	2 INSTALLATION	6 CU. YDS.
STA. 67+80	LT.	1 INSTALLATION	3 CU. YDS.
STA. 69+40	LT.& RT.	2 INSTALLATION	6 CU. YDS.

SILT FENCE (E-11)

STA. 61+00 - STA. 65+25	RT.	480'
STA. 61+67 - STA. 68+75	LT.	675'
STA. 65+40 - STA. 68+00	RT.	280'
STA. 68+70 - STA. 70+10	RT.	200'
STA. 69+40 - STA. 73+00	LT.	400'
STA. 70+90 - STA. 74+00	RT.	380'

SEDIMENT BASIN (E-14)

STA. 67+50 - STA. 67+50	RT.	440 CU. YDS.
STA. 69+00 - STA. 69+00	RT.	440 CU. YDS.

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SITE 1-CLEARING AND GRUBBING
TEMPORARY EROSION 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.		040622	15	140

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

LEGEND

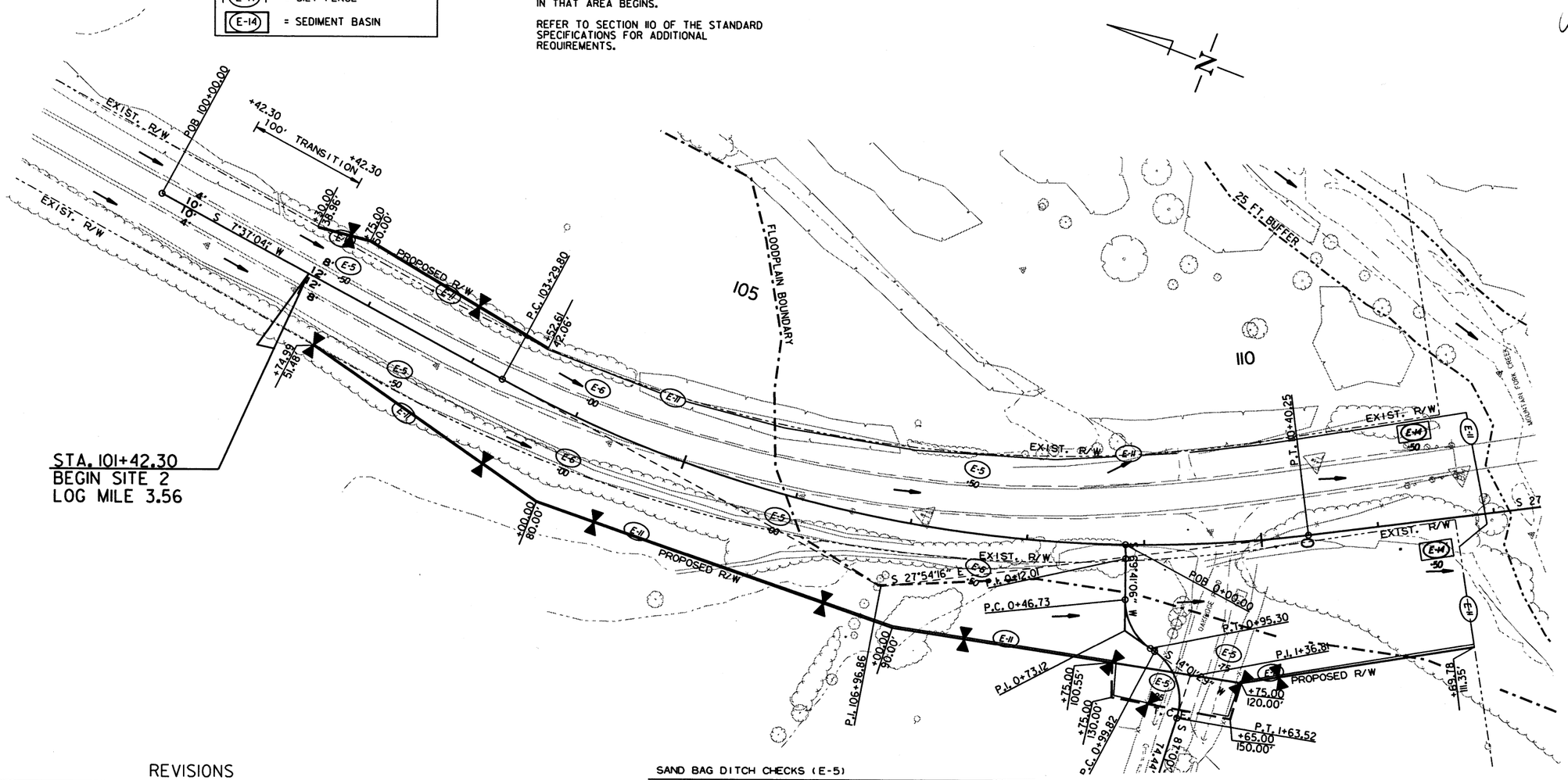
(E-5)	= SAND BAG DITCH CHECKS
(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE
(E-14)	= SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

HWY. 59 SITE 2
PI = 106+96.86
Δ = 35°31'20"LT.
D = 5°00'00"
T = 367.05'
L = 710.44'
PC= 103+29.80
PT= 110+40.25
e = 0.083'/'
Ls= 250'



STA. 101+42.30
BEGIN SITE 2
LOG MILE 3.56

REVISIONS

DATE OF REVISION	REVISION

SAND BAG DITCH CHECKS (E-5)

STA. 101+50	LT.	1	INSTALLATION	22 BAGS
STA. 102+50	RT.	1	INSTALLATION	22 BAGS
STA. 106+00	RT.	1	INSTALLATION	22 BAGS
STA. 107+50	LT.	1	INSTALLATION	22 BAGS
STA. 109+25	RT.	1	INSTALLATION	22 BAGS
STA. 109+75	RT.	1	INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 104+00	LT. & RT.	2	INSTALLATION	6 CU. YDS.
STA. 107+50	RT.	1	INSTALLATION	3 CU. YDS.

SILT FENCE (E-11)

STA. 101+30 - STA. 109+30	LT.	800'
STA. 101+75 - STA. 109+00	RT.	815'
STA. 109+50 - STA. 110+70	RT.	255'
STA. 109+60 - STA. 110+70	LT.	250'

SEDIMENT BASIN (E-14)

STA. 111+50	LT.	440 CU. YDS.
STA. 111+50	RT.	440 CU. YDS.

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SITE 2 - CLEARING AND GRUBBING
TEMPORARY EROSION 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.		040622	16	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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SAND BAG DITCH CHECKS (E-5)

STA. 116+25	LT.	1 INSTALLATION	22 BAGS
STA. 116+75	LT.	1 INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 117+50	RT.	1 INSTALLATION	3 CU. YDS.

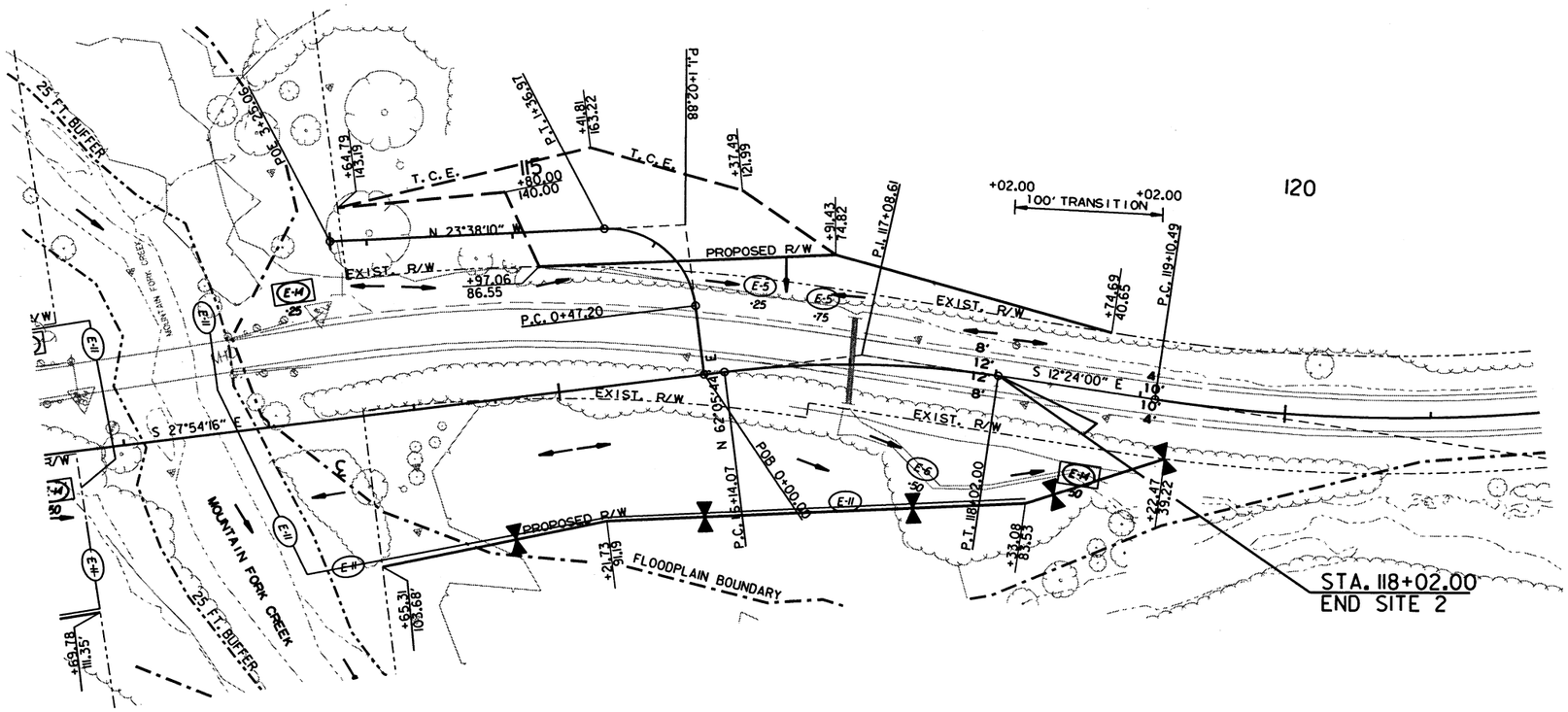
SILT FENCE (E-11)

STA. 113+00 - STA. 118+25	RT.	675'

SEDIMENT BASIN (E-14)

STA. 113+25	LT.	440 CU. YDS.
STA. 118+50	RT.	440 CU. YDS.

STATE OF ARKANSAS
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9-18-19



REVISIONS

DATE OF REVISION	REVISION

HWY. 59 SITE 2
PI = 116+89.79
Δ = 13°58'03"RT.
D = 3°00'00"
T = 233.95'
L = 465.58'
PC= 114+55.84
PT= 119+21.42
e = 0.057'/'
Ls= 250'

HWY. 59 SITE 2
PI = 122+95.60
Δ = 37°21'11"LT.
D = 5°00'00"
T = 387.35'
L = 747.06'
PC= 119+08.26
PT= 126+55.31
INFORMATION ONLY

9/10/2019

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SITE 2 - CLEARING AND GRUBBING
TEMPORARY EROSION 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.		040622	17	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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SITE 3 DETOUR
PI = 598+74.66
Δ = 7°17'14"LT.
D = 10°00'00"
T = 36.49'
L = 72.87'
PC= 598+38.17
PT= 599+11.05
NO SUPER

SAND BAG DITCH CHECKS (E-5)

STA. 175+00	LT.	1 INSTALLATION	22 BAGS
STA. 176+25	LT.	1 INSTALLATION	22 BAGS
STA. 176+75	LT.	1 INSTALLATION	22 BAGS
STA. 178+50	LT.	1 INSTALLATION	22 BAGS
STA. 179+50	RT.	1 INSTALLATION	22 BAGS
STA. 186+00	LT. & RT.	2 INSTALLATION	44 BAGS

ROCK DITCH CHECKS (E-6)

STA. 175+50	LT.	1 INSTALLATION	3 CU. YDS.
STA. 177+50	LT.	1 INSTALLATION	3 CU. YDS.
STA. 180+00	LT.	1 INSTALLATION	3 CU. YDS.
STA. 181+00	RT.	1 INSTALLATION	3 CU. YDS.
STA. 182+00	RT.	1 INSTALLATION	3 CU. YDS.
STA. 184+75	LT.	1 INSTALLATION	3 CU. YDS.
STA. 187+00	LT.	1 INSTALLATION	3 CU. YDS.

SILT FENCE (E-11)

STA. 174+75 - STA. 176+75	RT.	225'
STA. 177+00 - STA. 181+00	RT.	400'
STA. 179+00 - STA. 181+25	LT.	290'
STA. 182+00 - STA. 183+25	LT.	275'
STA. 182+00 - STA. 187+00	RT.	485'
STA. 183+50 - STA. 185+00	LT.	160'

SEDIMENT BASIN (E-14)

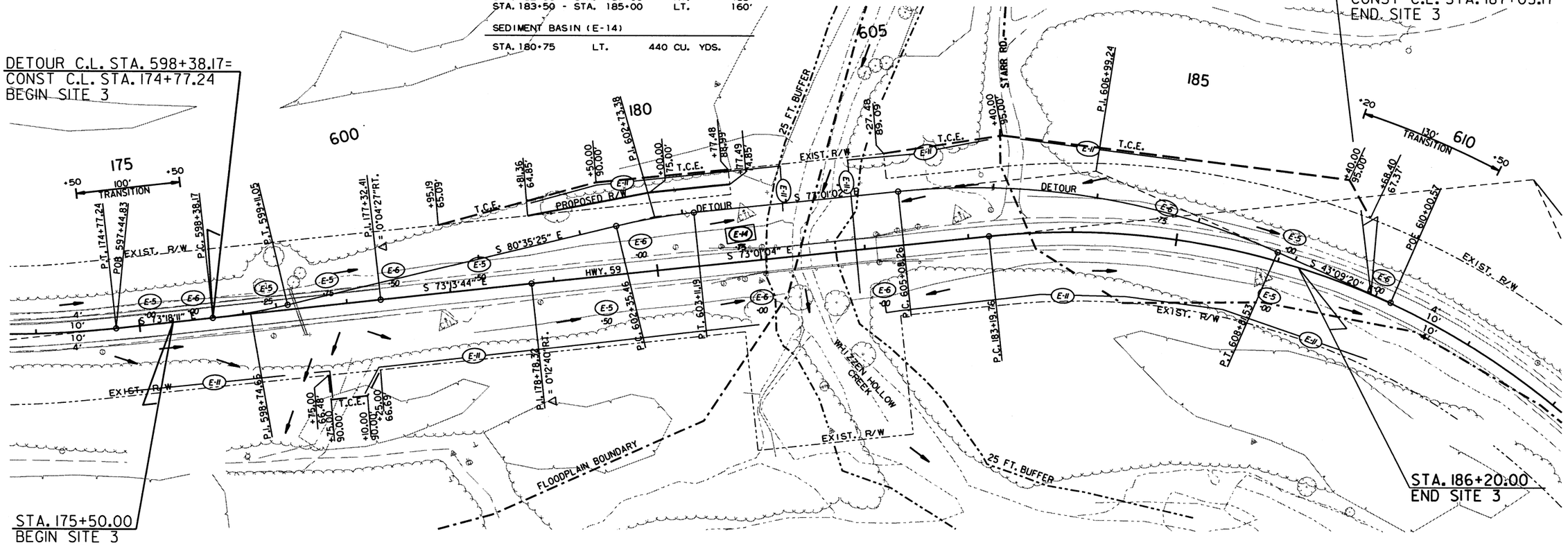
STA. 180+75	LT.	440 CU. YDS.

HWY. 59 SITE 3
PI = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= 183+19.76
PT= 192+35.03
e = 0.100'/'
Ls= 300'

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DETOUR C.L. STA. 598+38.17=
CONST C.L. STA. 174+77.24
BEGIN SITE 3

DETOUR C.L. STA. 609+90.14=
CONST C.L. STA. 187+05.17
END SITE 3



STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.96

STA. 186+20.00
END SITE 3

SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC= 602+35.46
PT= 603+11.19
e = 0.094'/'
Ls= 250'

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC= 605+08.26
PT= 608+81.53
e = 0.084'/'
Ls= 250'

REVISIONS

DATE OF REVISION	REVISION

9/11/2019

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SITE 3 - CLEARING AND GRUBBING
TEMPORARY EROSION 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.		040622	18	140

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 59 SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

LEGEND

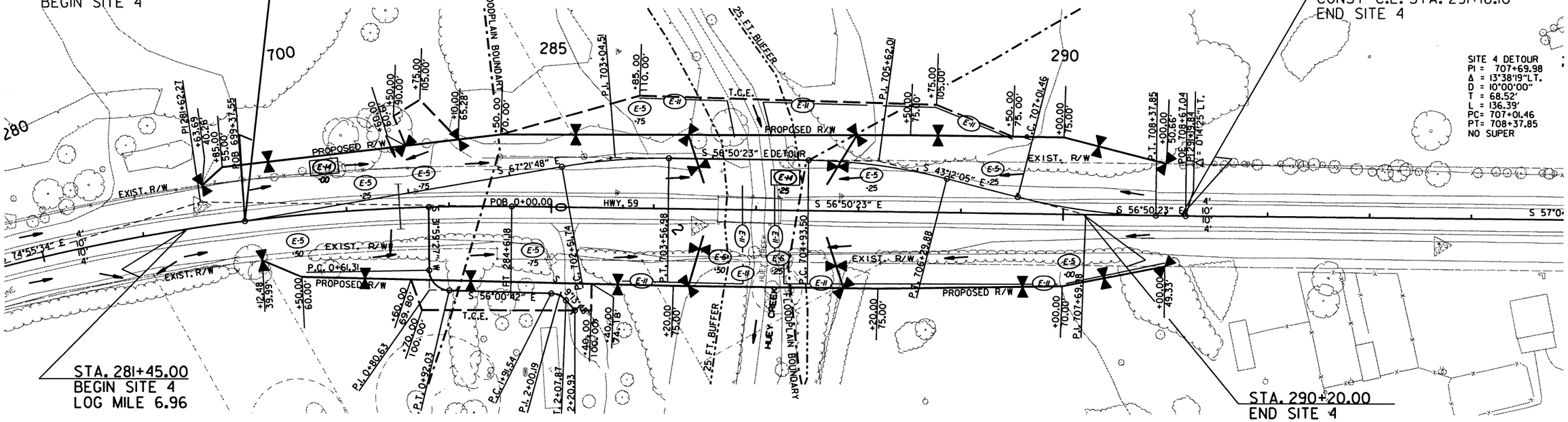
(E-5)	= SAND BAG DITCH CHECKS
(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE
(E-14)	= SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
9-18-19



SAND BAG DITCH CHECKS (E-5)

STA. 282+50	RT.	1 INSTALLATION	22 BAGS
STA. 283+25	LT.	1 INSTALLATION	22 BAGS
STA. 283+75	LT.	1 INSTALLATION	22 BAGS
STA. 284+75	RT.	1 INSTALLATION	22 BAGS
STA. 285+75	LT.	1 INSTALLATION	22 BAGS
STA. 288+25	LT.	1 INSTALLATION	22 BAGS
STA. 289+25	LT.	1 INSTALLATION	22 BAGS
STA. 290+00	RT.	1 INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 286+50	RT.	1 INSTALLATION	3 CU. YDS.
STA. 287+25	RT.	1 INSTALLATION	3 CU. YDS.

SILT FENCE (E-11)

STA. 285+75 - STA. 286+75	LT.	125'
STA. 285+75 - STA. 286+75	RT.	215'
STA. 287+00 - STA. 288+50	LT.	285'
STA. 287+00 - STA. 291+00	RT.	475'

SEDIMENT BASIN (E-14)

STA. 283+00	LT.	440 CU. YDS.
STA. 287+25	LT.	440 CU. YDS.

REVISIONS

DATE OF REVISION	REVISION

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

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SITE 4 - CLEARING AND GRUBBING
TEMPORARY EROSION 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.		040622	19	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

HWY. 59 SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

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9-18-19

DETOUR C.L. STA. 411+70.00=
CONST C.L. STA. 61+70.00
BEGIN SITE 1

SITE 1 DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.094'/'
Ls= 250'

DETOUR C.L. STA. 422+48.78=
CONST. C.L. STA. 72+71.91
END SITE 1

SITE 1 DETOUR
PI = 421+71.74
Δ = 12°34'16"RT.
D = 10°00'00"
T = 63.11'
L = 125.71'
PC= 421+08.63
PT= 422+34.34
NO SUPER

STA. 61+91.16
BEGIN JOB 040622
SITE 1
LOG MILE 0.06

STA. 72+00.00
END SITE 1

SITE 1 DETOUR
PI = 419+58.17
Δ = 10°47'11"RT.
D = 10°00'00"
T = 54.09'
L = 107.86'
PC= 419+04.08
PT= 420+11.94
e = 0.094'/'
Ls= 250'

HWY. 59 SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

SAND BAG DITCH CHECKS (E-5)

STA. 65+00	LT.	1	INSTALLATION	22 BAGS
STA. 66+75	LT.	1	INSTALLATION	22 BAGS
STA. 69+50	LT.	1	INSTALLATION	22 BAGS
STA. 70+00	LT	1	INSTALLATION	22 BAGS

REVISIONS

DATE OF REVISION	REVISION

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SITE 1- STAGE 1
TEMPORARY EROSION 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.		040622	20	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

HWY. 59 SITE 2
PI = 106+96.86
Δ = 35°31'20"LT.
D = 5°00'00"
T = 367.05'
L = 710.44'
PC= 103+29.80
PT= 110+40.25
e = 0.083'/'
Ls= 250'

SAND BAG DITCH CHECKS (E-5)

STA. 102+00	RT.	1 INSTALLATION	22 BAGS
STA. 105+00	RT.	1 INSTALLATION	22 BAGS
STA. 108+00	RT.	1 INSTALLATION	22 BAGS
STA. 111+75	LT.	1 INSTALLATION	22 BAGS

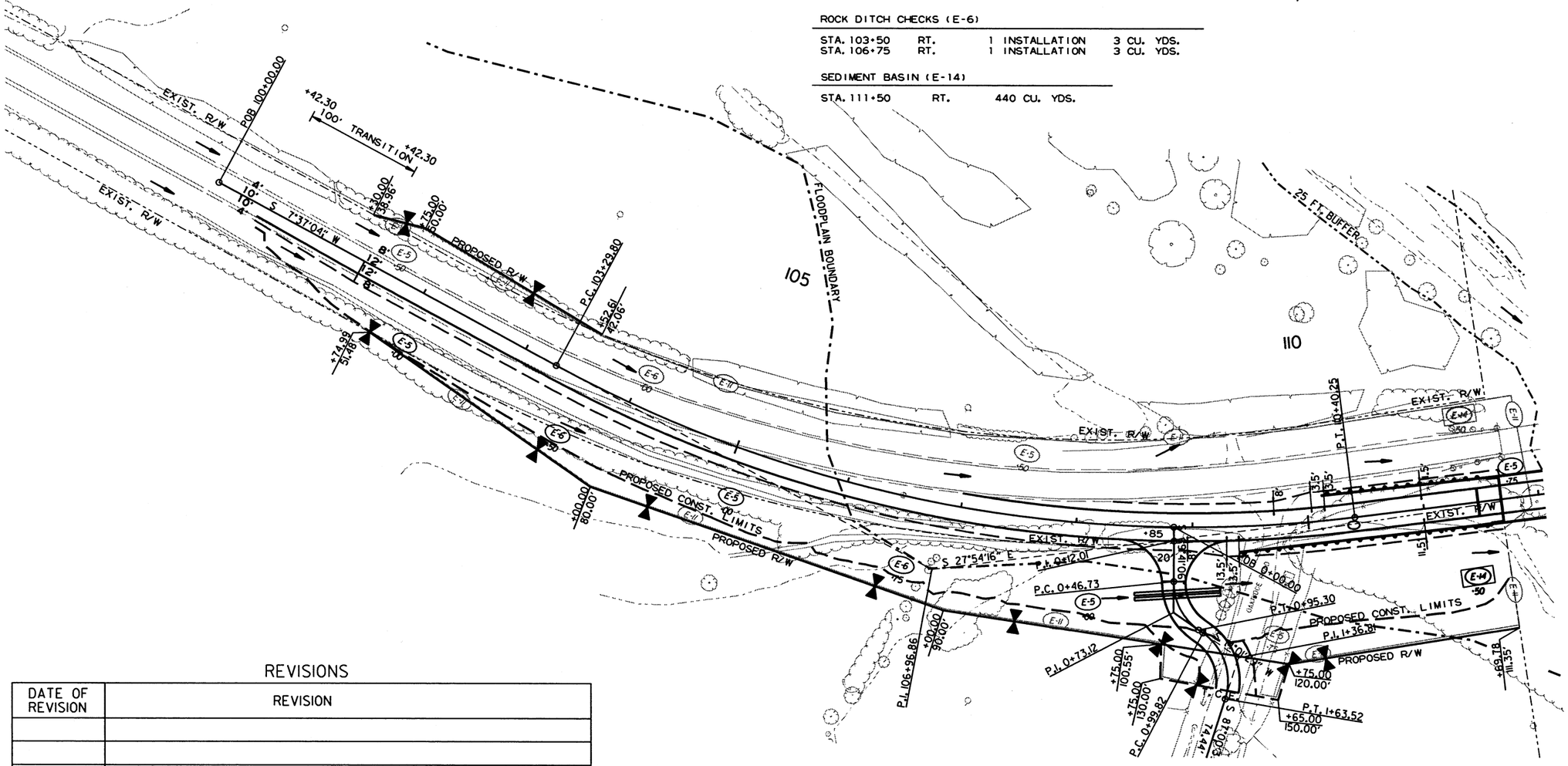
ROCK DITCH CHECKS (E-6)

STA. 103+50	RT.	1 INSTALLATION	3 CU. YDS.
STA. 106+75	RT.	1 INSTALLATION	3 CU. YDS.

SEDIMENT BASIN (E-14)

STA. 111+50	RT.	440 CU. YDS.

STATE OF ARKANSAS
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No. 11425
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9-18-19



REVISIONS

DATE OF REVISION	REVISION

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SITE 2 - STAGE I
TEMPORARY EROSION 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.		040622	21	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

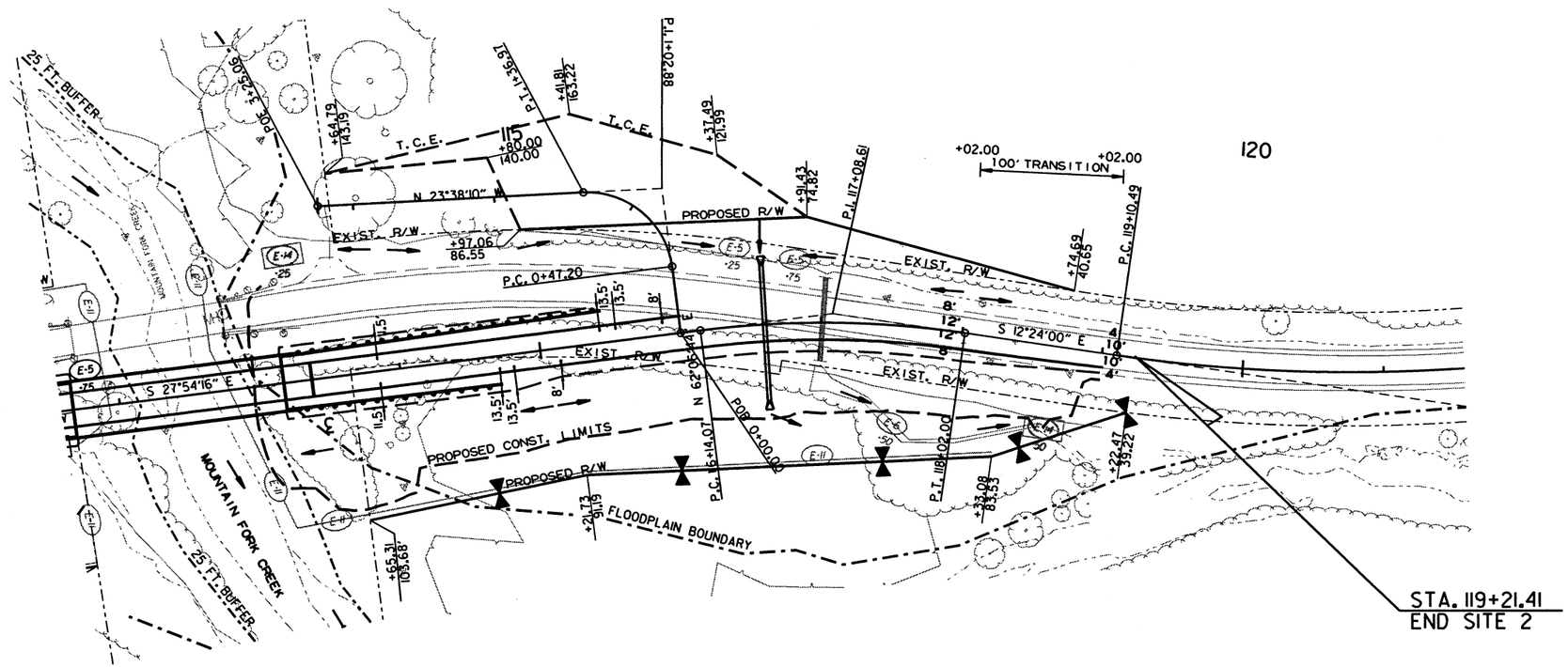
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



HWY. 59 SITE 2
PI = 116+89.79
Δ = 13°58'03"RT.
D = 3°00'00"
T = 233.95'
L = 465.58'
PC= 114+55.84
PT= 119+21.42
e = 0.057'/'
Ls= 250'

HWY. 59 SITE 2
PI = 122+95.60
Δ = 37°21'11"LT.
D = 5°00'00"
T = 387.35'
L = 747.06'
PC= 119+08.26
PT= 126+55.31
INFORMATION ONLY

REVISIONS

DATE OF REVISION	REVISION

9/10/2019

R040622.DGN

SITE 2 - STAGE I
TEMPORARY EROSION 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.		040622	22	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

SAND BAG DITCH CHECKS (E-5)			
STA. 180+00	LT.	1 INSTALLATION	22 BAGS
STA. 181+00	LT.	1 INSTALLATION	22 BAGS
STA. 183+25	LT.	1 INSTALLATION	22 BAGS
STA. 183+75	LT.	1 INSTALLATION	22 BAGS
ROCK DITCH CHECKS (E-6)			
STA. 181+25	LT.	1 INSTALLATION	3 CU. YDS.
STA. 182+00	LT.	1 INSTALLATION	3 CU. YDS.
SEDIMENT BASIN (E-14)			
STA. 182+00	LT.	440 CU. YDS.	

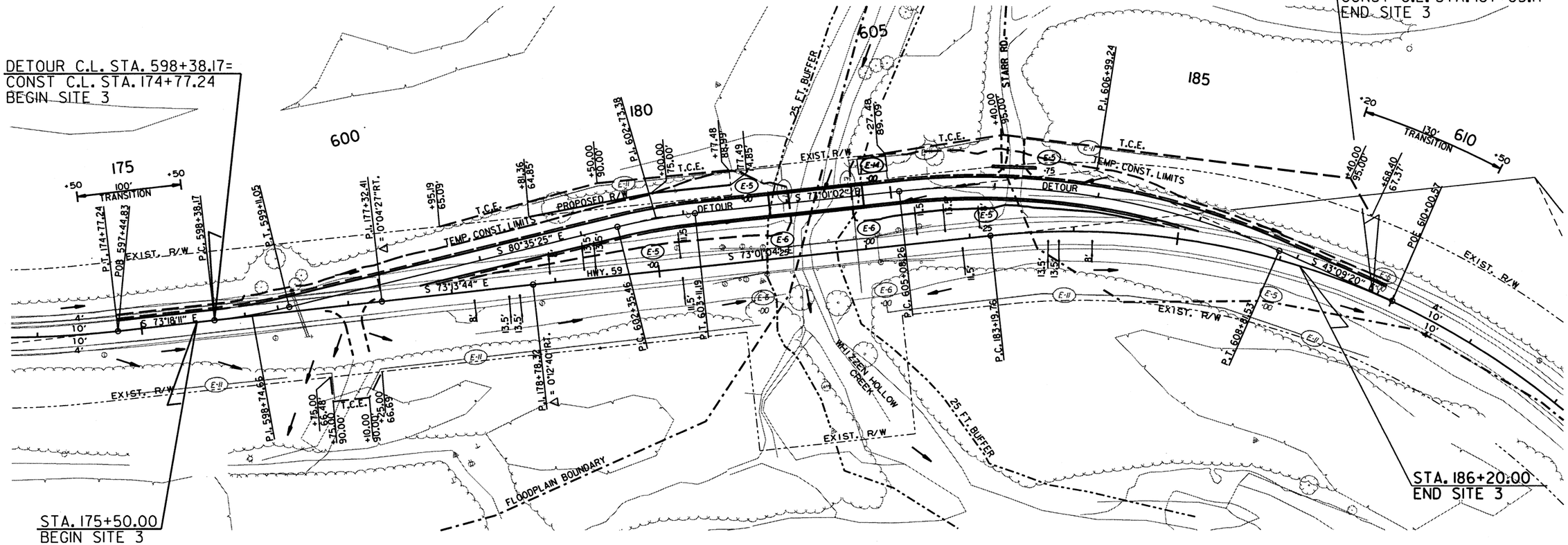
HWY. 59 SITE 3
PI = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC = 183+19.76
PT = 192+35.03
e = 0.100'/'
Ls = 300'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SITE 3 DETOUR
PI = 598+74.66
Δ = 7°17'14"LT.
D = 10°00'00"
T = 36.49'
L = 72.87'
PC = 598+38.17
PT = 599+11.05
NO SUPER

DETOUR C.L. STA. 598+38.17=
CONST C.L. STA. 174+77.24
BEGIN SITE 3

DETOUR C.L. STA. 609+90.14=
CONST C.L. STA. 187+05.17
END SITE 3



STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.96

STA. 186+20.00
END SITE 3

SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC = 602+35.46
PT = 603+11.19
e = 0.094'/'
Ls = 250'

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC = 605+08.26
PT = 608+81.53
e = 0.084'/'
Ls = 250'

REVISIONS

DATE OF REVISION	REVISION

9/11/2019

R040622.DGN

SITE 3 - STAGE 1
TEMPORARY EROSION 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.		040622	23	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

SAND BAG DITCH CHECKS (E-5)

STA. 283+25	LT.	1 INSTALLATION	22 BAGS
STA. 283+75	LT.	1 INSTALLATION	22 BAGS
STA. 288+25	LT.	1 INSTALLATION	22 BAGS

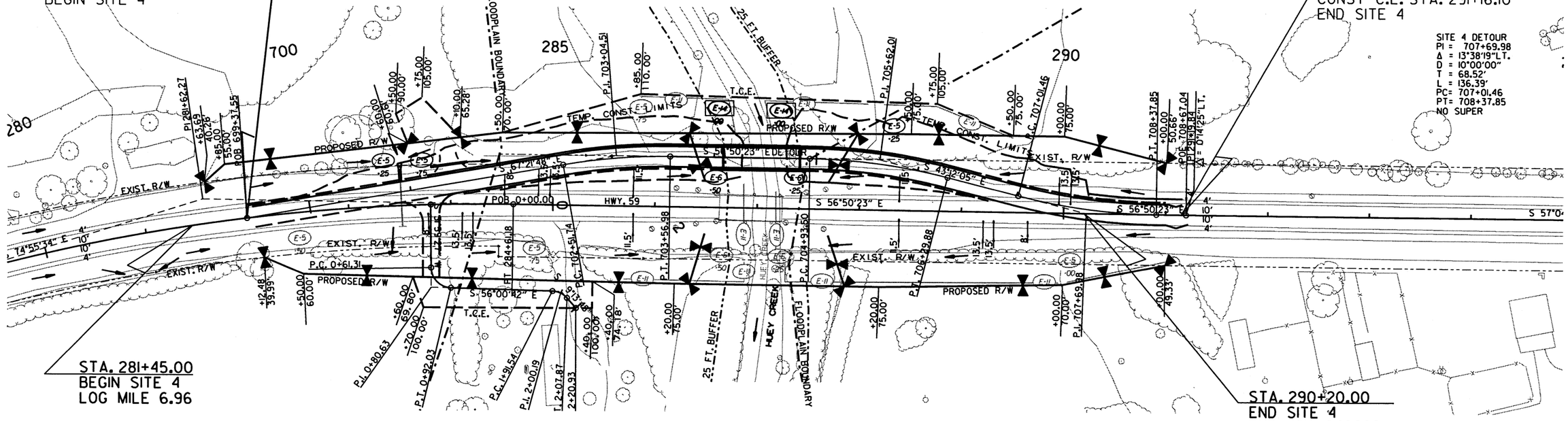
ROCK DITCH CHECKS (E-6)

STA. 286+50	LT.	1 INSTALLATION	3 CU. YDS.
STA. 287+25	LT.	1 INSTALLATION	3 CU. YDS.

SEDIMENT BASIN (E-14)

STA. 286+50	LT.	440 CU. YDS.
STA. 287+25	LT.	440 CU. YDS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



HWY. 59 SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

REVISIONS

DATE OF REVISION	REVISION

9/10/2019

RD40622.DGN

SITE 4 - STAGE I
TEMPORARY EROSION 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.		040622	24	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

HWY. 59 SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SITE 1 DETOUR
PI = 421+71.74
Δ = 12°34'16"RT.
D = 10°00'00"
T = 63.11'
L = 125.71'
PC= 421+08.63
PT= 422+34.34
NO SUPER

SITE 1 DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.094'/'
Ls= 250'

DETOUR C.L. STA. 411+70.00=
CONST C.L. STA. 61+70.00
BEGIN SITE 1

DETOUR C.L. STA. 422+48.78=
CONST. C.L. STA. 72+71.91
END SITE 1

STA. 61+91.16
BEGIN JOB 040622
SITE 1
LOG MILE 0.06

STA. 72+00.00
END SITE 1

SITE 1 DETOUR
PI = 419+58.17
Δ = 10°47'11"RT.
D = 10°00'00"
T = 54.09'
L = 107.86'
PC= 419+04.08
PT= 420+11.94
e = 0.094'/'
Ls= 250'

HWY. 59 SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

SAND BAG DITCH CHECKS (E-5)

STA. 61.75	RT.	1	INSTALLATION	22 BAGS
STA. 62+25	RT.	1	INSTALLATION	22 BAGS
STA. 63+75	RT.	1	INSTALLATION	22 BAGS
STA. 65+00	RT.	1	INSTALLATION	22 BAGS
STA. 71+75	RT.	1	INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 64+50	RT.	1	INSTALLATION	3 CU. YDS.
STA. 67+50	RT.	1	INSTALLATION	3 CU. YDS.
STA. 72+50	RT.	1	INSTALLATION	3 CU. YDS.

SEDIMENT BASIN (E-14)

STA. 68+00 - STA. 68+00	RT.	440	CU. YDS.
STA. 69+00 - STA. 69+00	RT.	440	CU. YDS.

REVISIONS

DATE OF REVISION	REVISION

9/10/2019

R040622.DGN

SITE 1- STAGE 2
TEMPORARY EROSION 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.		040622	25	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

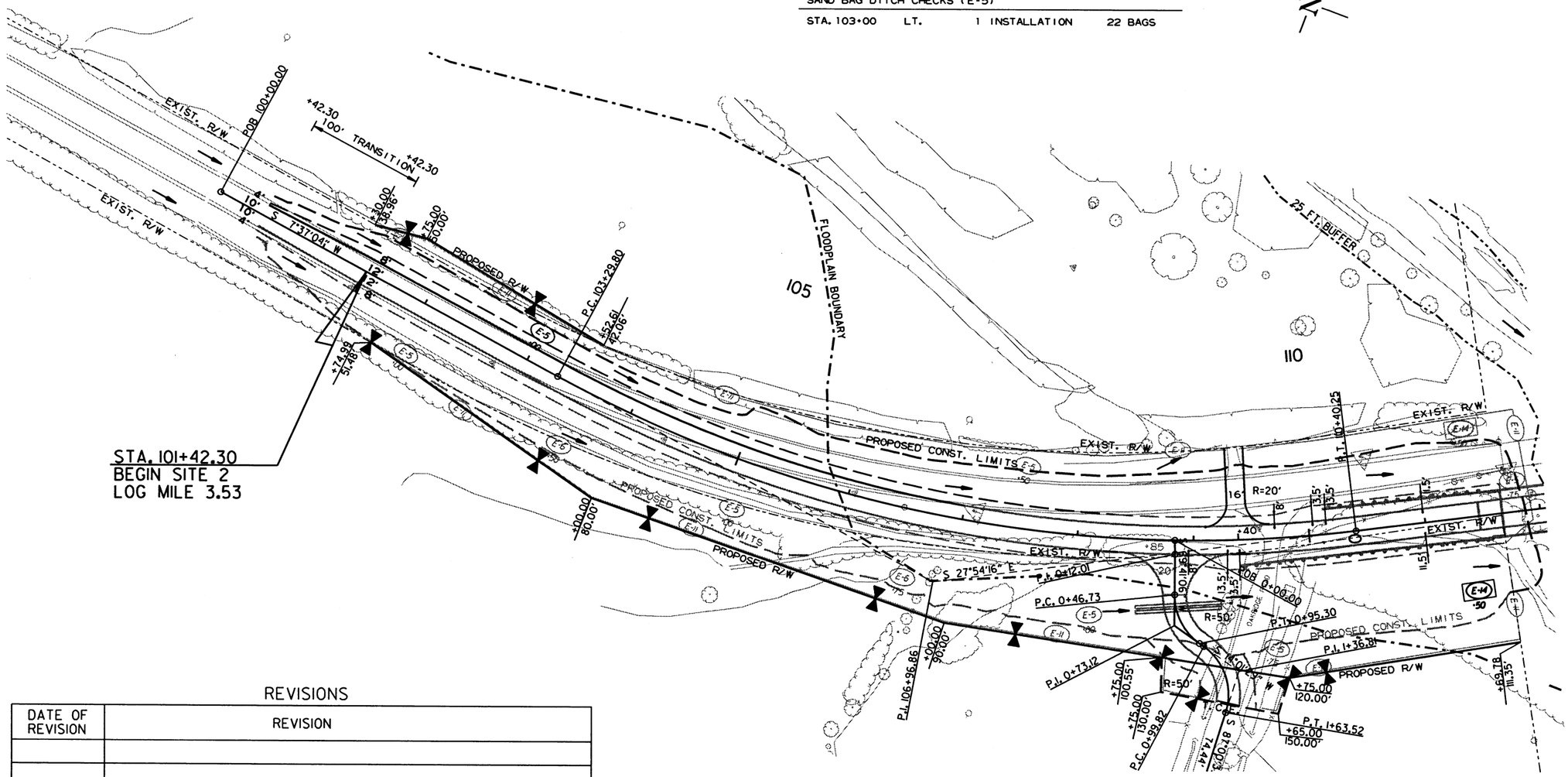
REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

HWY. 59 SITE 2
PI = 106+96.86
Δ = 35°31'20"LT.
D = 5°00'00"
T = 367.05'
L = 710.44'
PC= 103+29.80
PT= 110+40.25
e = 0.083'/'
Ls= 250'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SAND BAG DITCH CHECKS (E-5)

STA.			
103+00	LT.	1 INSTALLATION	22 BAGS



REVISIONS

DATE OF REVISION	REVISION

9/10/2019

R040622.DGN

SITE 2 - STAGE 2
TEMPORARY EROSION 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.		040622	26	140

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

LEGEND

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

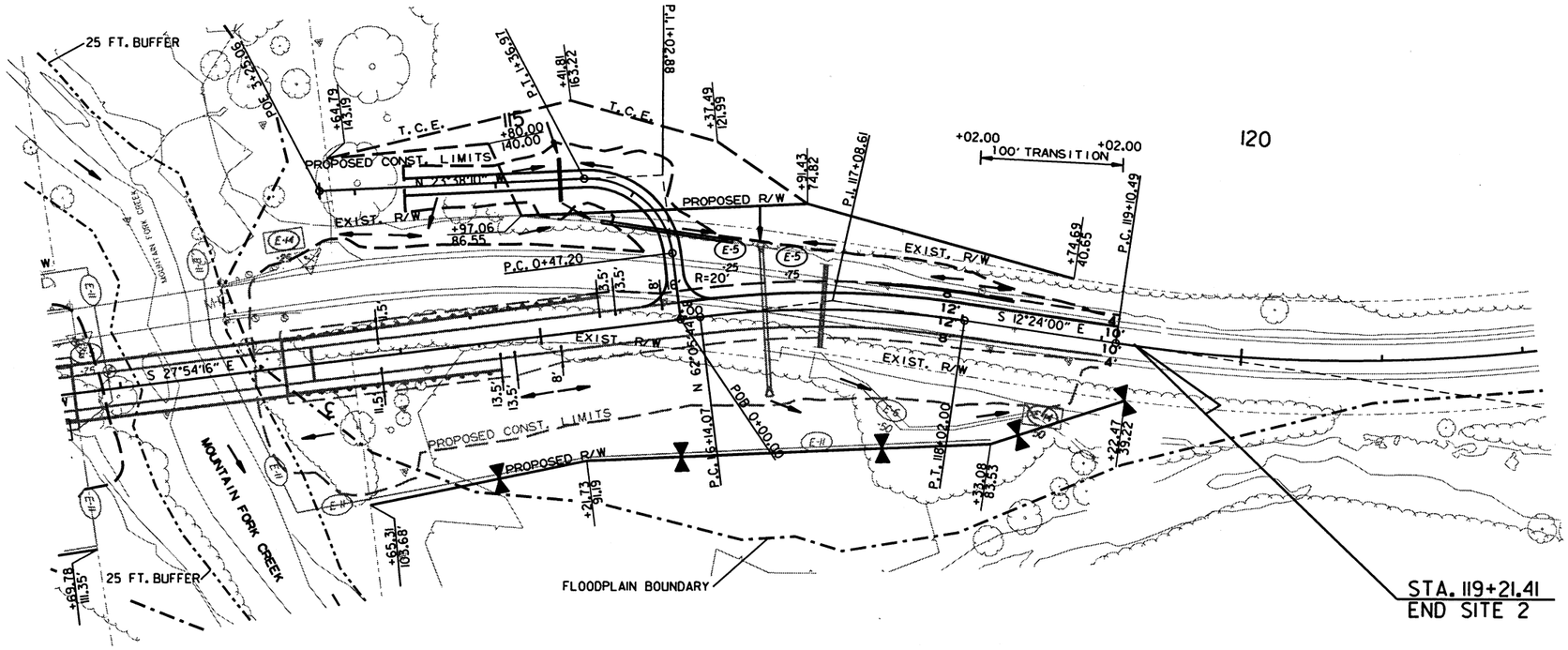
TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

SAND BAG DITCH CHECKS (E-5)

STA. 116+25	LT.	1 INSTALLATION	22 BAGS
STA. 116+75	LT.	1 INSTALLATION	22 BAGS



REVISIONS

DATE OF REVISION	REVISION

CURVE DATA
PI = 116+89.79
Δ = 13°58'03"RT.
D = 3°00'00"
T = 233.95'
L = 465.58'
PC= 114+55.84
PT= 119+21.42
e = 0.057'/'
Ls= 250'

CURVE DATA
PI = 122+95.60
Δ = 37°21'11"LT.
D = 5°00'00"
T = 387.35'
L = 747.06'
PC= 119+08.26
PT= 126+55.31
INFORMATION ONLY

9/10/2019

R040622.DGN

SITE 2 - STAGE 2
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	27	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-3)	FILTER SOCK
(E-5)	= SAND BAG DITCH CHECKS
(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE
(E-14)	= SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

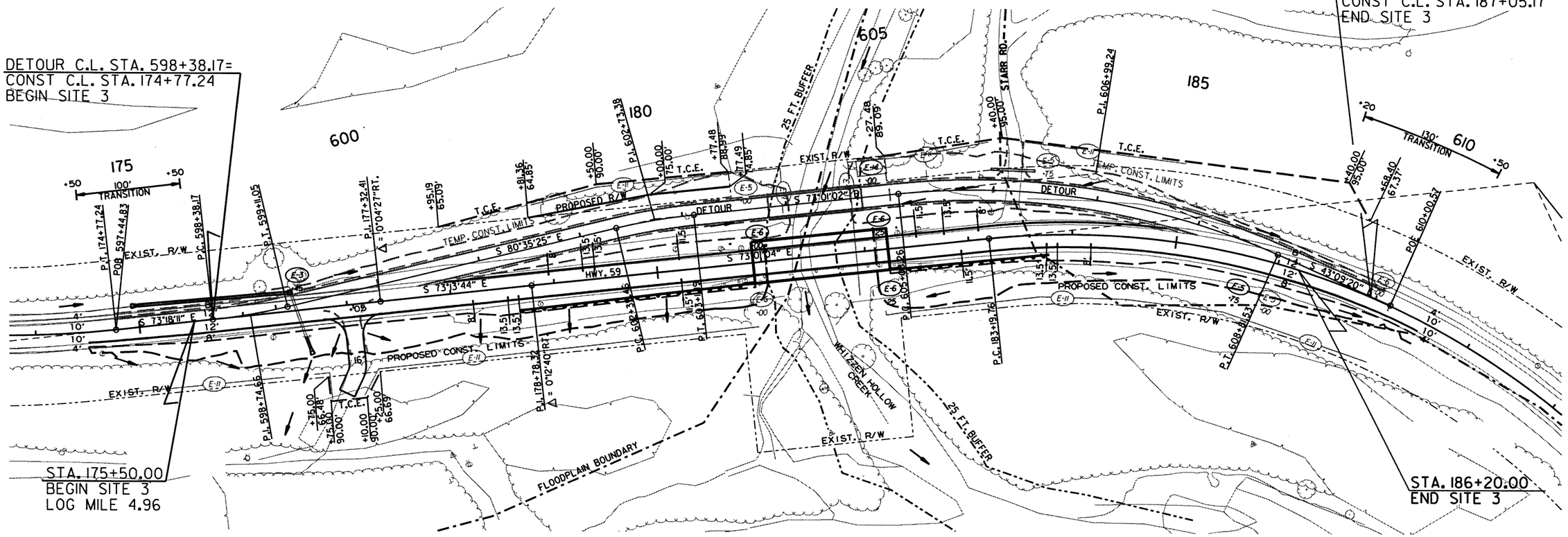
HWY. 59 SITE 3
PI = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= 183+19.76
PT= 192+35.03
e =0.100'/'
Ls= 300'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SITE 3 DETOUR
PI = 598+74.66
Δ = 7°17'14"LT.
D = 10°00'00"
T = 36.49'
L = 72.87'
PC= 598+38.17
PT= 599+11.05
NO SUPER

DETOUR C.L. STA. 598+38.17=
CONST C.L. STA. 174+77.24
BEGIN SITE 3

DETOUR C.L. STA. 609+90.14=
CONST C.L. STA. 187+05.17
END SITE 3



REVISIONS

DATE OF REVISION	REVISION

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R040622.DGN

SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC= 602+35.46
PT= 603+11.19
e = 0.094'/'
Ls= 250'

FILTER SOCK (E-3)

STA. 176+45	LT.	1 INSTALLATION	40'

SAND BAG DITCH CHECKS (E-5)

STA. 185+75	RT.	1 INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 181+00	LT.	1 INSTALLATION	3 CU. YDS.
STA. 182+25	LT. & RT.	2 INSTALLATION	6 CU. YDS.

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC= 605+08.26
PT= 608+81.53
e = 0.084'/'
Ls= 250'

SITE 3 - STAGE 2
TEMPORARY EROSION 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.		040622	28	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

HWY. 59 SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

TEMPORARY EROSION CONTROL GENERAL NOTES

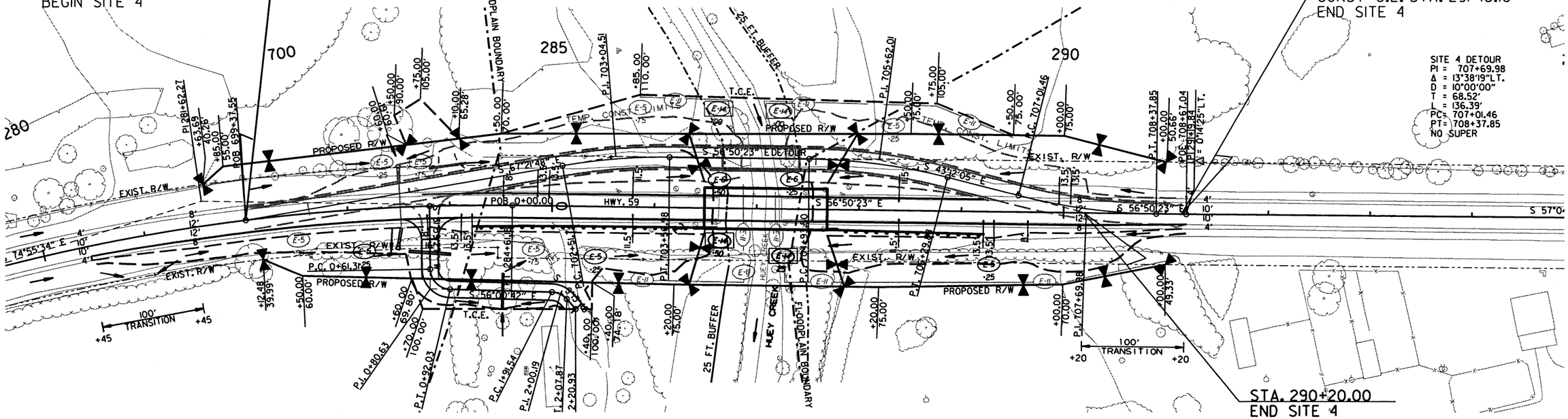
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

DETOUR C.L. STA. 699+37.55=
CONST C.L. STA. 282+00.00
BEGIN SITE 4

DETOUR C.L. STA. 708+63.30=
CONST C.L. STA. 291+16.10
END SITE 4



SAND BAG DITCH CHECKS (E-5)

STA. 283+25	RT.	1 INSTALLATION	22 BAGS
STA. 285+50	RT.	1 INSTALLATION	22 BAGS
STA. 289+25	RT.	1 INSTALLATION	22 BAGS

ROCK DITCH CHECKS (E-6)

STA. 286+50	LT.	1 INSTALLATION	3 CU. YDS.
STA. 287+25	LT.	1 INSTALLATION	3 CU. YDS.

SEDIMENT BASIN (E-14)

STA. 286+50	RT.	440 CU. YDS.
STA. 287+25	RT.	440 CU. YDS.

REVISIONS

DATE OF REVISION	REVISION

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

9/10/2019

R040622.DGN

SITE 4 - STAGE 2
TEMPORARY EROSION 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.		040622	29	140

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

HWY. 59 SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

OBLITERATE ROADWAY

SITE 1 DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.094'/'
Ls= 250'

SITE 1 DETOUR
PI = 421+71.74
Δ = 12°34'16"RT.
D = 10°00'00"
T = 63.11'
L = 125.71'
PC= 421+08.63
PT= 422+34.34
NO SUPER

DETOUR C.L. STA. 411+70.00=
CONST C.L. STA. 61+70.00
BEGIN SITE 1

DETOUR C.L. STA. 422+48.78=
CONST. C.L. STA. 72+71.91
END SITE 1

STA. 61+91.16
BEGIN JOB 040622
SITE 1
LOG MILE 0.06

STA. 72+00.00
END SITE 1

SITE 1 DETOUR
PI = 419+58.17
Δ = 10°47'11"RT.
D = 10°00'00"
T = 54.09'
L = 107.86'
PC= 419+04.08
PT= 420+11.94
e = 0.094'/'
Ls= 250'

HWY. 59 SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

REVISIONS

DATE OF REVISION	REVISION

9/10/2019

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SITE 1- STAGE 3
TEMPORARY EROSION 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.		040622	30	140

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-3) FILTER SOCK
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN

SITE 3 DETOUR
PI = 598+74.66
Δ = 7°17'14"LT.
D = 10°00'00"
T = 36.49'
L = 72.87'
PC= 598+38.17
PT= 599+11.05
NO SUPER

TEMPORARY EROSION CONTROL GENERAL NOTES

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

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

OBLITERATE ROADWAY

SAND BAG DITCH CHECKS (E-5)			
STA. 184+00	LT.	1 INSTALLATION	22 BAGS

SILT FENCE (E-11)		
STA. 175+00 - STA. 177+00	LT.	225'
STA. 185+50 - STA. 187+00	LT.	150'

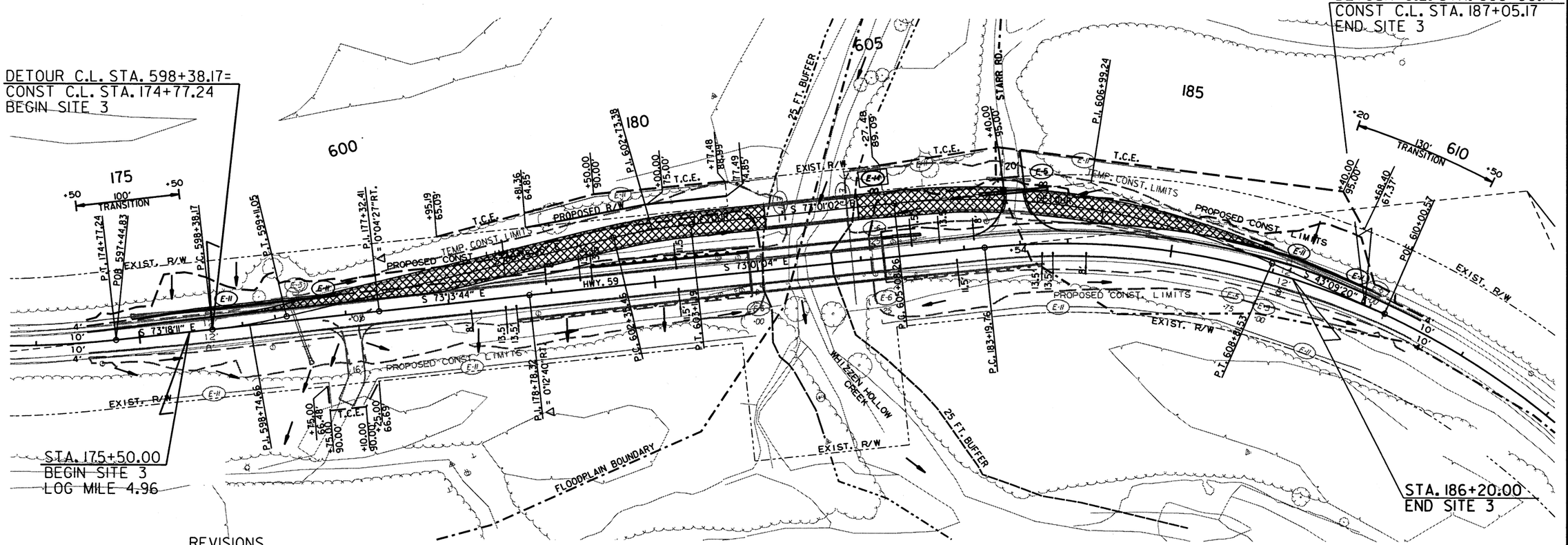
SEDIMENT BASIN (E-14)		
STA. 182+00	LT.	440 CU. YDS.

HWY. 59 SITE 3
PI = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= 183+19.76
PT= 192+35.03
e =0.100'/'
Ls= 300'

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DETOUR C.L. STA. 598+38.17=
CONST C.L. STA. 174+77.24
BEGIN SITE 3

DETOUR C.L. STA. 609+90.14=
CONST C.L. STA. 187+05.17
END SITE 3



REVISIONS

DATE OF REVISION	REVISION

SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC= 602+35.46
PT= 603+11.19
e = 0.094'/'
Ls= 250'

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC= 605+08.26
PT= 608+81.53
e = 0.084'/'
Ls= 250'

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SITE 3 - STAGE 3
TEMPORARY EROSION 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.		040622	31	140

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 59 SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES

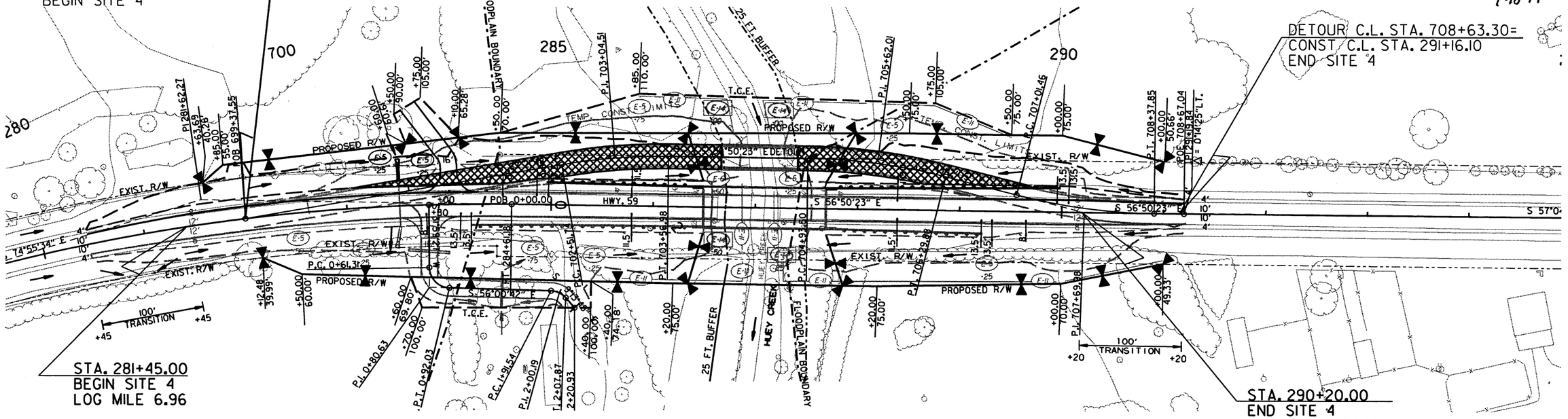
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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

OBLITERATE ROADWAY

SITE 4 DETOUR
PI = 707+69.98
Δ = 13°38'19"LT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 707+01.46
PT= 708+37.85
NO SUPER

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SAND BAG DITCH CHECKS (E-5)

STA. 283+25	RT.	1 INSTALLATION	22 BAGS
STA. 285+50	RT.	1 INSTALLATION	22 BAGS

REVISIONS

DATE OF REVISION	REVISION

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

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SITE 4 - STAGE 3
TEMPORARY EROSION 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.		040622	32	140

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION - SITES 1, 3, & 4

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT DETOUR ROADWAY AND TEMPORARY BRIDGE STRUCTURE.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL
STRIPING. SHIFT TRAFFIC TO PROPOSED
ROADWAY, OBLITERATE DETOUR ROADWAY,
AND COMPLETE PERMANENT SEEDING.

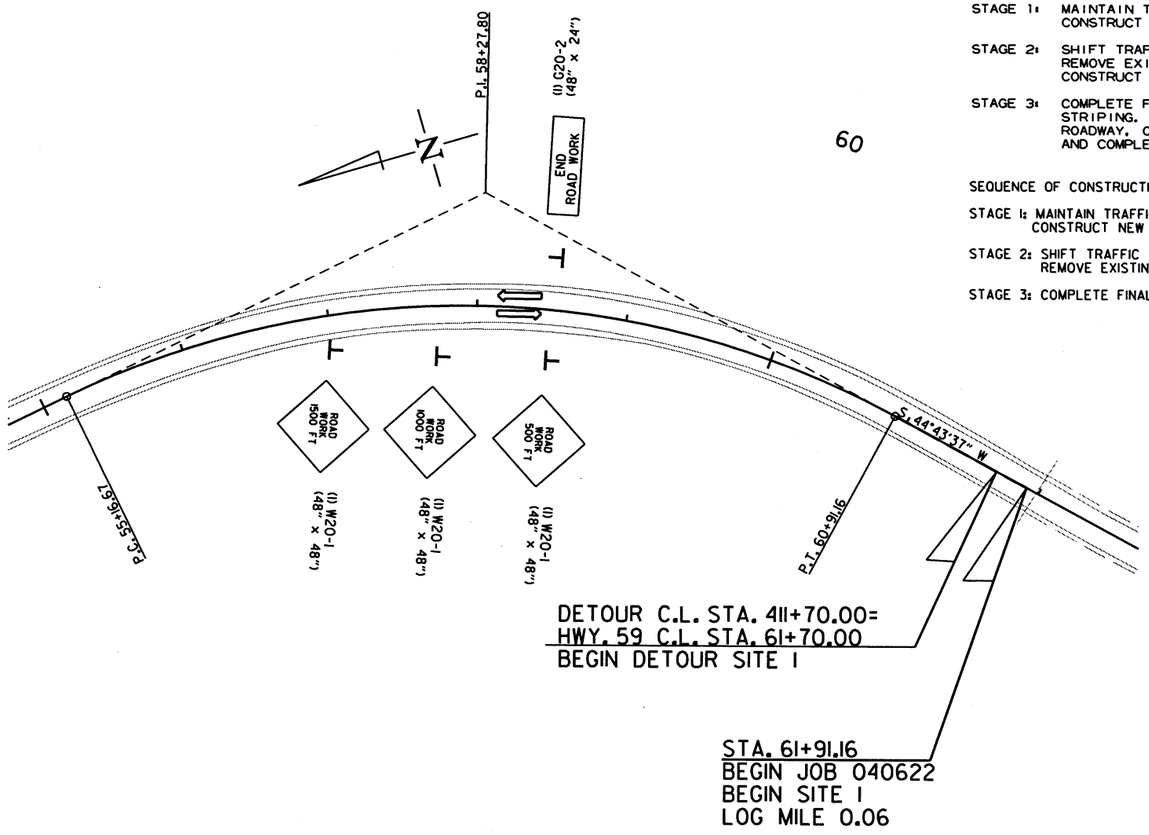
SEQUENCE OF CONSTRUCTION - SITE 2

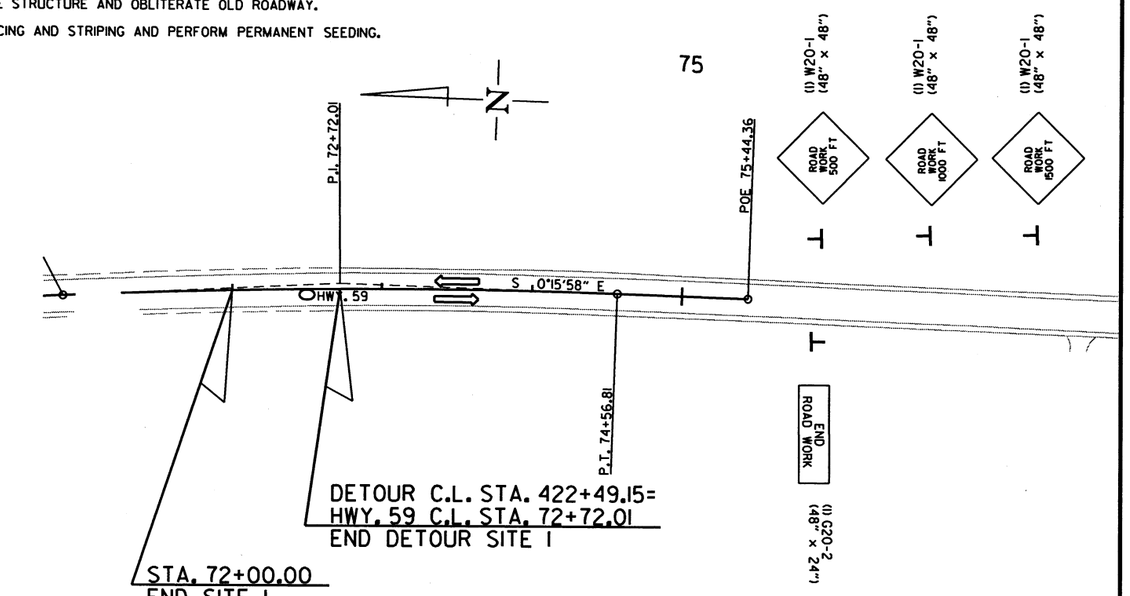
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT NEW BRIDGE STRUCTURE AND ROADWAY ON NEW ALIGNMENT.

STAGE 2: SHIFT TRAFFIC TO NEW ALIGNMENT AND COMPLETE TIE ENDS & DRIVEWAYS.
REMOVE EXISTING BRIDGE STRUCTURE AND OBLITERATE OLD ROADWAY.

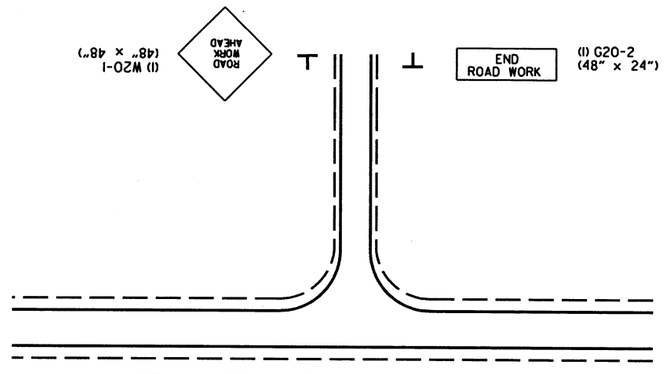
STAGE 3: COMPLETE FINAL SURFACING AND STRIPING AND PERFORM PERMANENT SEEDING.

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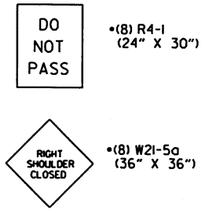




ALL SITES



ADVANCE WARNING - SIDE ROADS
(ALL STAGES)
OAKRIDGE RD. - SITE 2
STARR RD. - SITE 3



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

9/9/2019

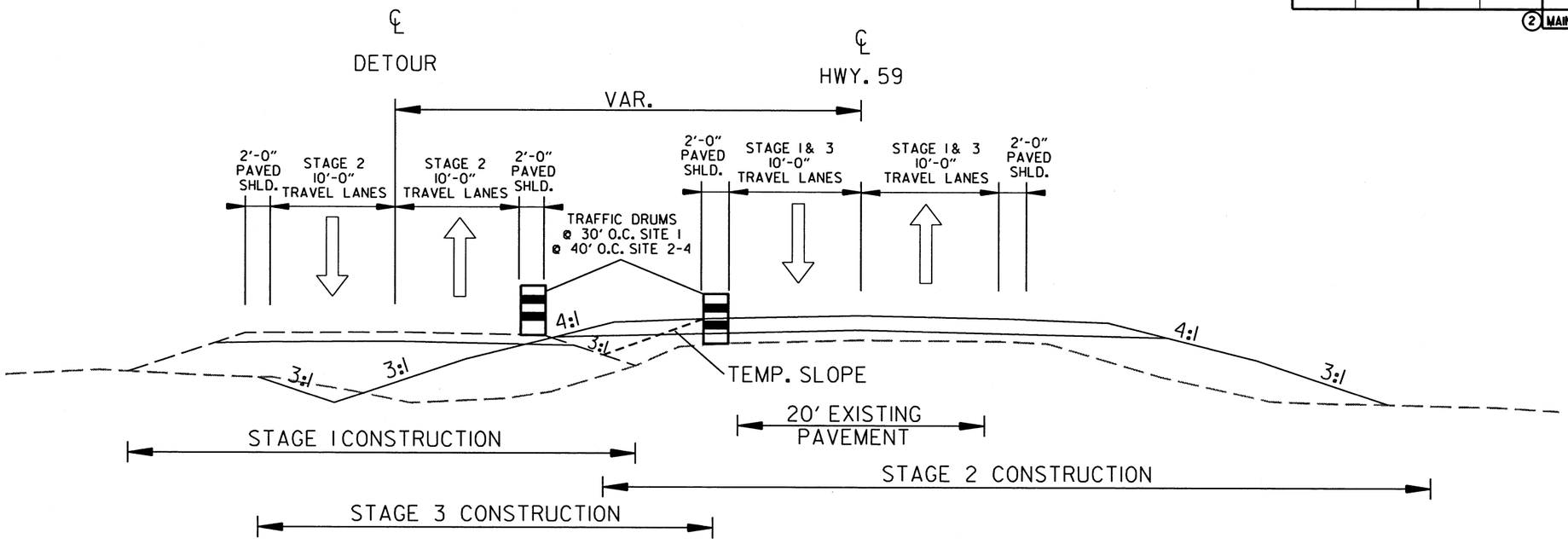
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ALL STAGES
MAINTENANCE OF TRAFFIC DETAILS

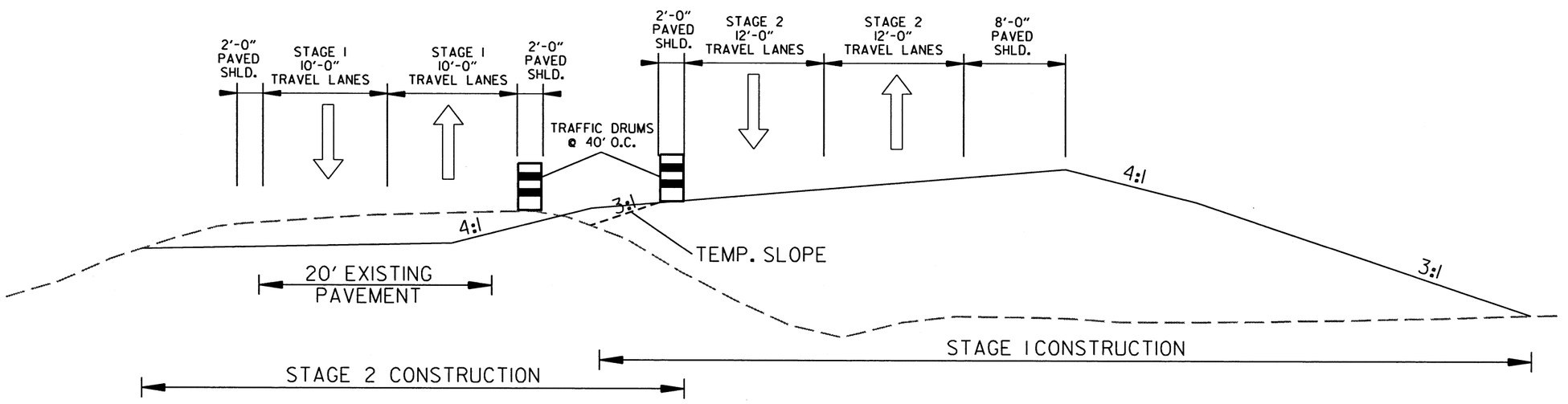
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	33	140

(2) MAINTENANCE OF TRAFFIC DETAILS

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TYPICAL SECTION OF STAGE CONSTRUCTION (SITES 1, 3, & 4)



TYPICAL SECTION OF STAGE CONSTRUCTION (SITE 2)

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ALL STAGES
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	34	140

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION - SITE 1

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT DETOUR ROADWAY AND TEMPORARY BRIDGE STRUCTURE.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL
STRIPING. SHIFT TRAFFIC TO PROPOSED
ROADWAY, OBLITERATE DETOUR ROADWAY,
AND COMPLETE PERMANENT SEEDING.

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SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

SITE 1 DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.094'/'
Ls= 250'

ROAD CLOSED
(1) RII-2 (48" X 30")
8' BARR. TYP. III LT.
8' BARR. TYP. III LT.

7 VERTICAL PANELS @ 30' O.C.

ROAD CLOSED
(1) RII-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III RT.

6 VERTICAL PANELS @ 30' O.C.

2 TRAFFIC DRUMS @ 30' O.C.

60
70
415
65
420

HWY. 59 SITE 1
PI = 58+27.80
Δ = 54°34'34"RT.
D = 9°30'00"
T = 311.13'
L = 574.49'
PC= 55+16.67
PT= 60+91.16

P.I. 66+93.12
P.I. 416+68.74
P.I. 419+58.17
P.C. 62+79.66
P.C. 411+73.65
P.T. 60+91.16
P.C. 421+16.27
P.I. 422+21.01
P.I. 72+72.01
P.T. 74+56.81

S 44°43'37" W
S 4°46'56" E
S 4°53'19" E
S 3°33'42" E
S 0°15'58" E
S 80°01'07" W
N 32°41'22" W
S 54°18'33" W
HWY. 59
DETOUR
TEMP. CONST. LIMITS
LOW GAP HOLLOW CREEK

SITE 1 DRIVEWAY
PI = 0+70.17
Δ = 60°07'10"RT.
D = 143°14'22"
T = 23.97'
L = 41.97'
PC= 0+47.02
PT= 0+88.99

P.C. 0+47.02
P.I. 420+21.91
P.T. 420+71.84
P.I. 0+70.17
P.I. 0+88.99
P.C. 1+28.88
P.T. 1+93.88
P.I. 1+71.11
POE 1+94.26
POB 0+00.00

DETOUR C.L. STA. 422+49.15=
HWY. 59 C.L. STA. 72+72.01
END DETOUR SITE 1

STA. 72+00.00
END SITE 1

SITE 1 DRIVEWAY
PI = 1+71.11
Δ = 93°06'05"RT.
D = 143°14'22"
T = 42.23'
L = 65.00'
PC= 1+28.88
PT= 1+93.88

SITE 1 DETOUR
PI = 419+58.17
Δ = 10°47'11"RT.
D = 10°00'00"
T = 54.09'
L = 107.86'
PC= 419+04.08
PT= 420+11.94
e = 0.094'/'
Ls= 250'

HWY. 59 SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

STA. 61+91.16
BEGIN JOB 040622
BEGIN SITE 1
LOG MILE 0.06

P.I. 414+37.84
P.I. 65+00.36

11 TRAFFIC DRUMS @ 30' O.C.

2 TRAFFIC DRUMS @ DRWY.

DETOUR C.L. STA. 411+70.00=
HWY. 59 C.L. STA. 61+70.00
BEGIN DETOUR SITE 1

VERTICAL PANELS = 13 EACH
TRAFFIC DRUMS = 11 EACH

CONSTRUCTION PAVEMENT MARKINGS =6156'
REMOVAL OF PERMANENT PAVEMENT MARKINGS =2000'
RPM (TYPE II) YELLOW/YELLOW @ 80' O.C. =14 EACH

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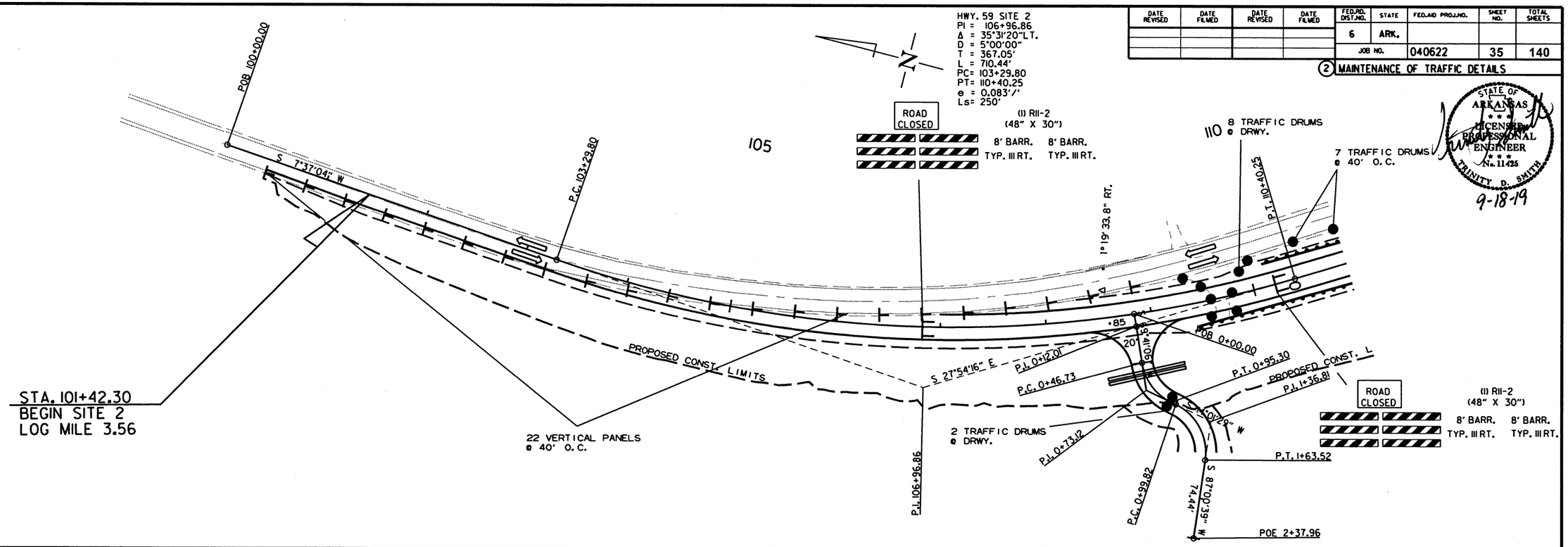
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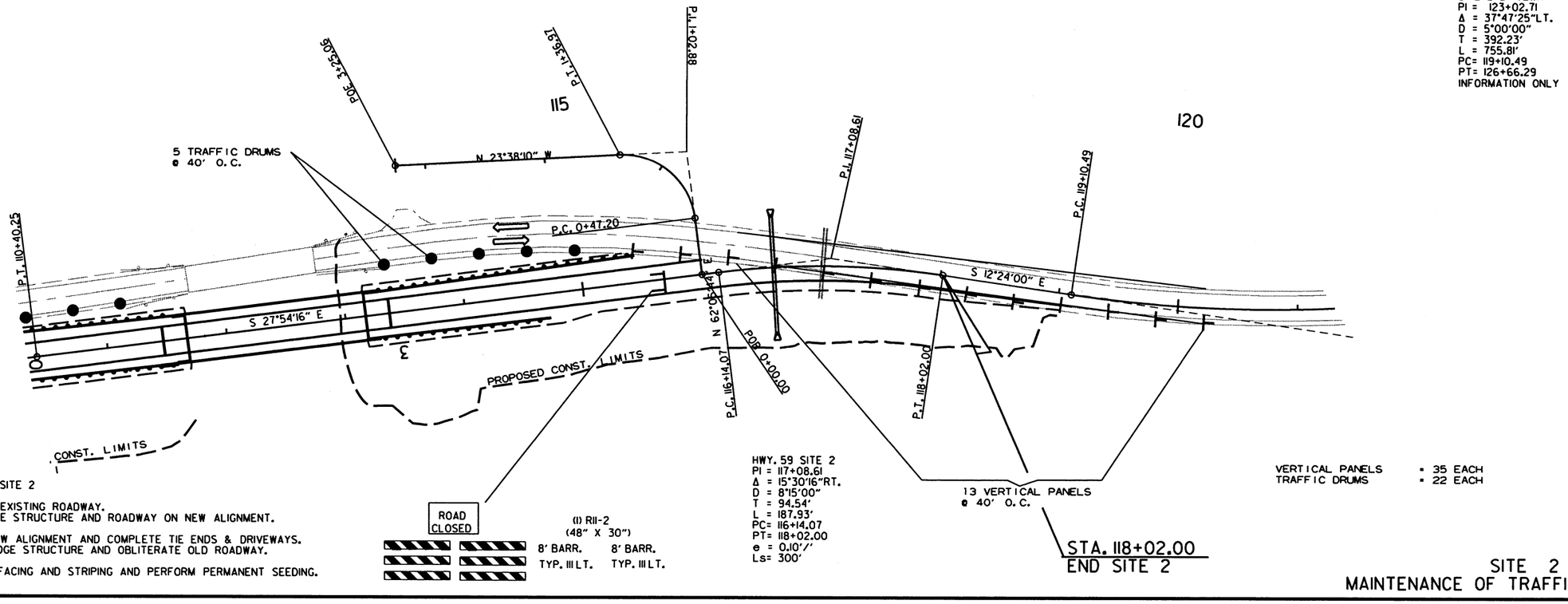
SITE 1 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	35	140

(2) MAINTENANCE OF TRAFFIC DETAILS

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SEQUENCE OF CONSTRUCTION - SITE 2

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT NEW BRIDGE STRUCTURE AND ROADWAY ON NEW ALIGNMENT.

STAGE 2: SHIFT TRAFFIC TO NEW ALIGNMENT AND COMPLETE TIE ENDS & DRIVEWAYS.
REMOVE EXISTING BRIDGE STRUCTURE AND OBLITERATE OLD ROADWAY.

STAGE 3: COMPLETE FINAL SURFACING AND STRIPING AND PERFORM PERMANENT SEEDING.

VERTICAL PANELS = 35 EACH
TRAFFIC DRUMS = 22 EACH

SITE 2 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	36	140

(2) MAINTENANCE OF TRAFFIC DETAILS

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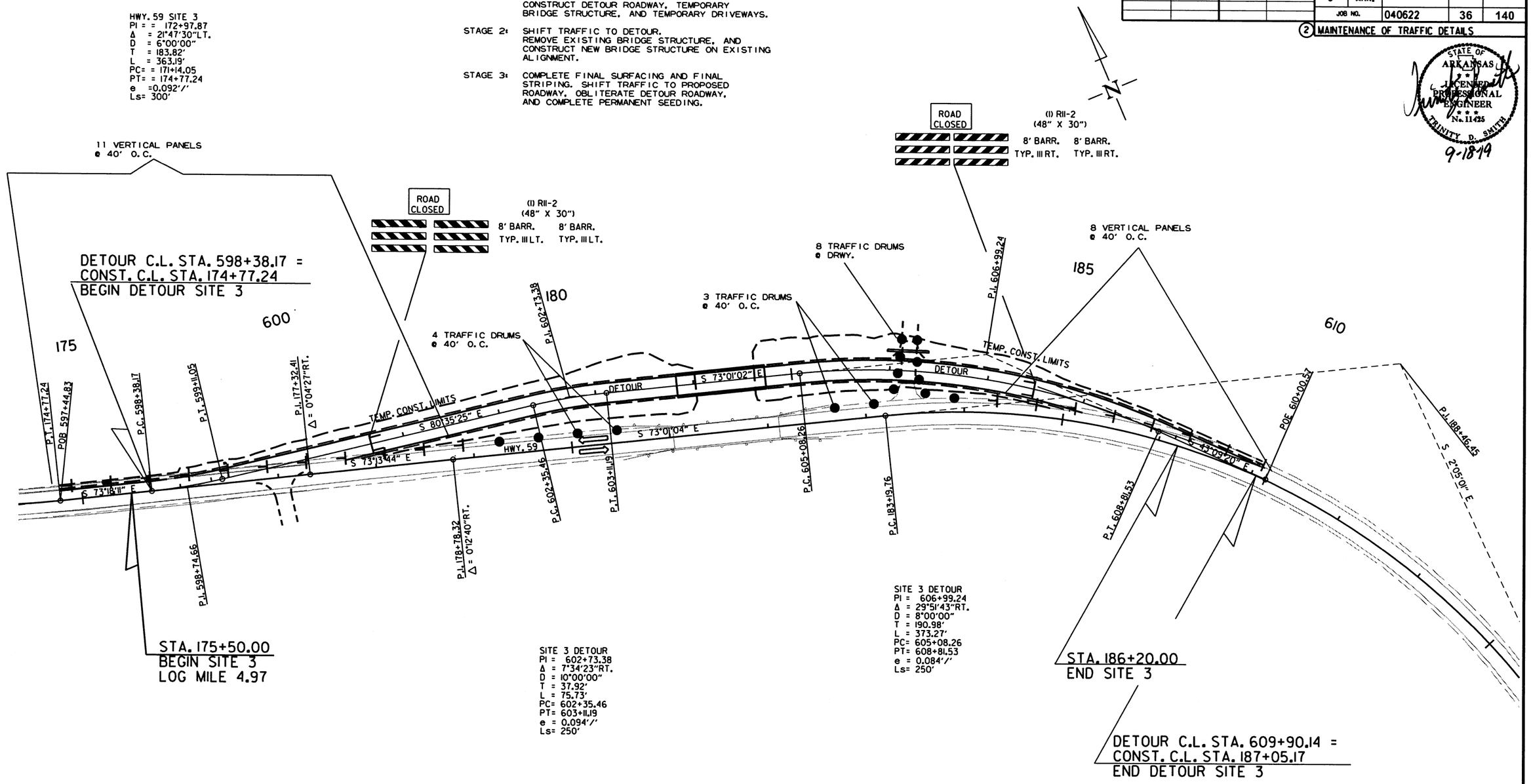
SEQUENCE OF CONSTRUCTION - SITE 3

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT DETOUR ROADWAY, TEMPORARY BRIDGE STRUCTURE, AND TEMPORARY DRIVEWAYS.

STAGE 2: SHIFT TRAFFIC TO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE, AND CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

HWY. 59 SITE 3
PI = = 172+97.87
Δ = 21°47'30"LT.
D = 6°00'00"
T = 183.82'
L = 363.19'
PC= = 171+14.05
PT= = 174+77.24
e =0.092'/'
Ls= 300'



SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC= 602+35.46
PT= 603+11.19
e = 0.094'/'
Ls= 250'

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC= 605+08.26
PT= 608+81.53
e = 0.084'/'
Ls= 250'

VERTICAL PANELS = 19 EACH
TRAFFIC DRUMS = 15 EACH

CONSTRUCTION PAVEMENT MARKINGS	=6446'
REMOVAL OF PERMANENT PAVEMENT MARKINGS	=2400'
RPM (TYPE II) YELLOW/YELLOW	=15 EACH

HWY. 59 SITE 3
PI = = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= = 183+19.76
PT= = 192+35.03
e =0.100'/'
Ls= 300'

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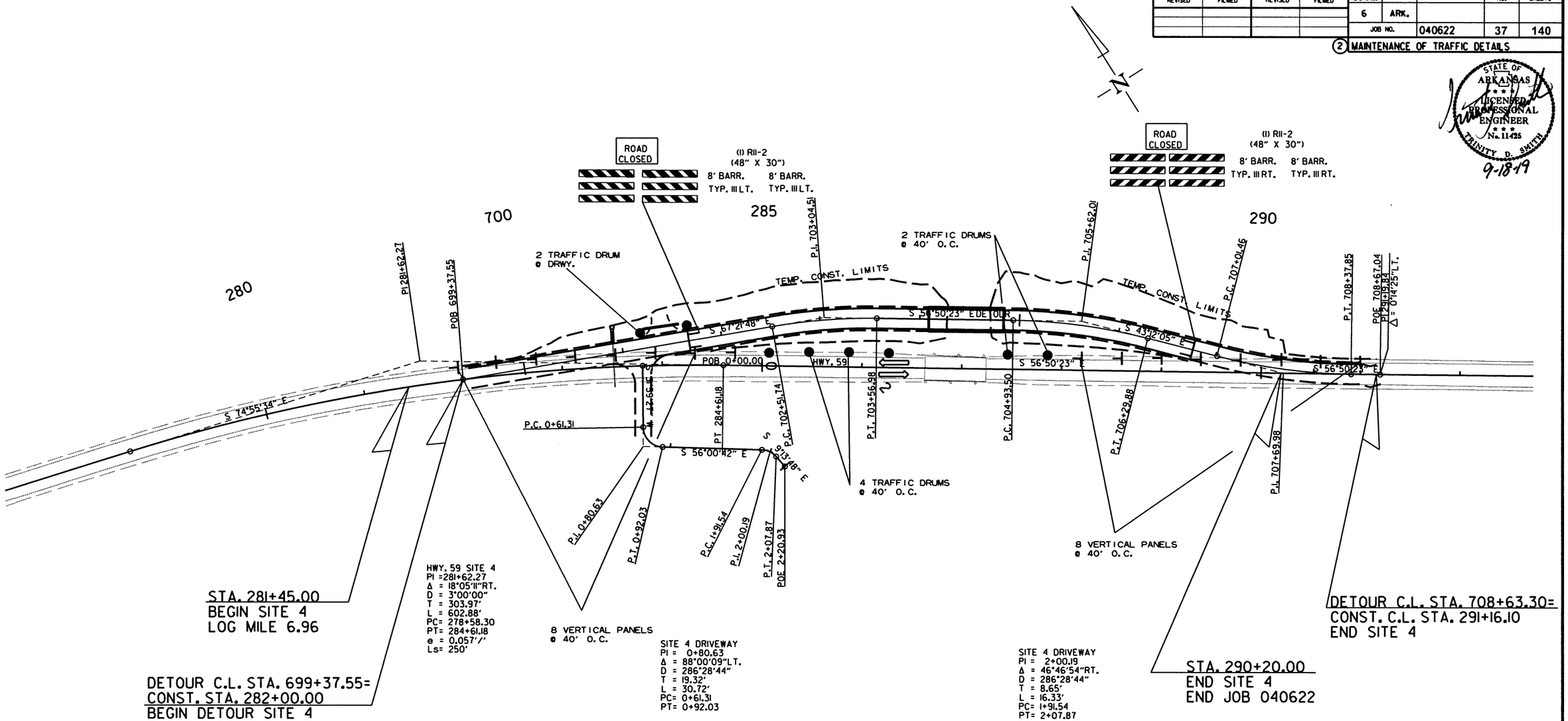
SITE 3 - STAGE I
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040622	37	140

(2) MAINTENANCE OF TRAFFIC DETAILS

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TRINITY D. SMITH
9-18-19



SEQUENCE OF CONSTRUCTION - SITE 4

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT DETOUR ROADWAY, TEMPORARY BRIDGE, AND DRIVEWAYS.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

VERTICAL PANELS	=16 EACH
TRAFFIC DRUMS	= 8 EACH
CONSTRUCTION PAVEMENT MARKINGS	=5542'
REMOVAL OF PERMANENT PAVEMENT MARKINGS	=2400'
RPM (TYPE II) YELLOW/YELLOW	=12 EACH

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SITE 4 - STAGE I
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	040622	38	140

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION - SITE 1

STAGE 1: MAINTAIN TRAFFIC.
CONSTRUCT DETOUR ROADWAY AND TEMPORARY BRIDGE STRUCTURE.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SITE 1
PI = 58+27.80
Δ = 54°34'34"RT.
D = 9°30'00"
T = 311.13'
L = 574.49'
PC= 55+16.67
PT= 60+91.16

SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

SITE 1 DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.094'/'
Ls= 250'

60

17 TRAFFIC DRUMS
@ 30' O.C.

415

65

S. 44°43'37" W

P.T. 60+91.16

P.C. 411+73.65

P.C. 62+79.66

P.I. 66+93.12

P.I. 416+68.74

TEMP. CONST. LIMITS

DETOUR

HWY. 59

PROPOSED CONST. LIMITS

PROPOSED CONST. LIMITS

LOW GAP HOLLOW CREEK

R=20'

STA. 61+91.16
BEGIN JOB 040622
BEGIN SITE 1
LOG MILE 0.06

P.I. 414+37.84
P.I. 65+00.36

DETOUR C.L. STA. 411+70.00=
HWY. 59 C.L. STA. 61+70.00
BEGIN DETOUR SITE 1

ROAD CLOSED

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

(1) W1-6 (60" X 30")

8' BARR. TYP. III RT.

8' BARR. TYP. III RT.

6 TRAFFIC DRUMS
@ DRWY.

(2) OM-3L (12"X 36")

(2) OM-3R (12"X 36")

(1) W13-1 (18" X 18")

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

(8) W1-8 (18" X 24")

8 CHEVRONS PLACED BACK TO BACK

8 TRAFFIC DRUMS
@ 30' O.C.

420

70

P.I. 419+58.17

P.C. 419+16.21

P.I. 422+21.01

P.I. 72+72.01

S. 8°01'07" W.

S. 10°15'58" E.

S. 4°46'56" E.

S. 4°53'19" E.

P.C. 420+21.94

P.C. 420+47.02

P.I. 420+68.96

P.I. 0+70.17

P.I. 0+88.99

P.C. 1+28.88

P.I. 1+93.88

P.I. 74+56.81

POB 0+00.00

P.I. 72+71.88

S. 4°12'33" W.

DETOUR C.L. STA. 422+49.15=
HWY. 59 C.L. STA. 72+72.01
END DETOUR SITE 1

STA. 72+00.00
END SITE 1

4 TRAFFIC DRUMS
@ DRWY.

SITE 1 DETOUR
PI = 419+58.17
Δ = 10°47'11"RT.
D = 10°00'00"
T = 54.09'
L = 107.86'
PC= 419+04.08
PT= 420+11.94
e = 0.094'/'
Ls= 250'

SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

TRAFFIC DRUMS = 35 EACH

ROAD CLOSED

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

(1) W1-6 (60" X 30")

8' BARR. TYP. III LT.

8' BARR. TYP. III LT.

9/10/2019

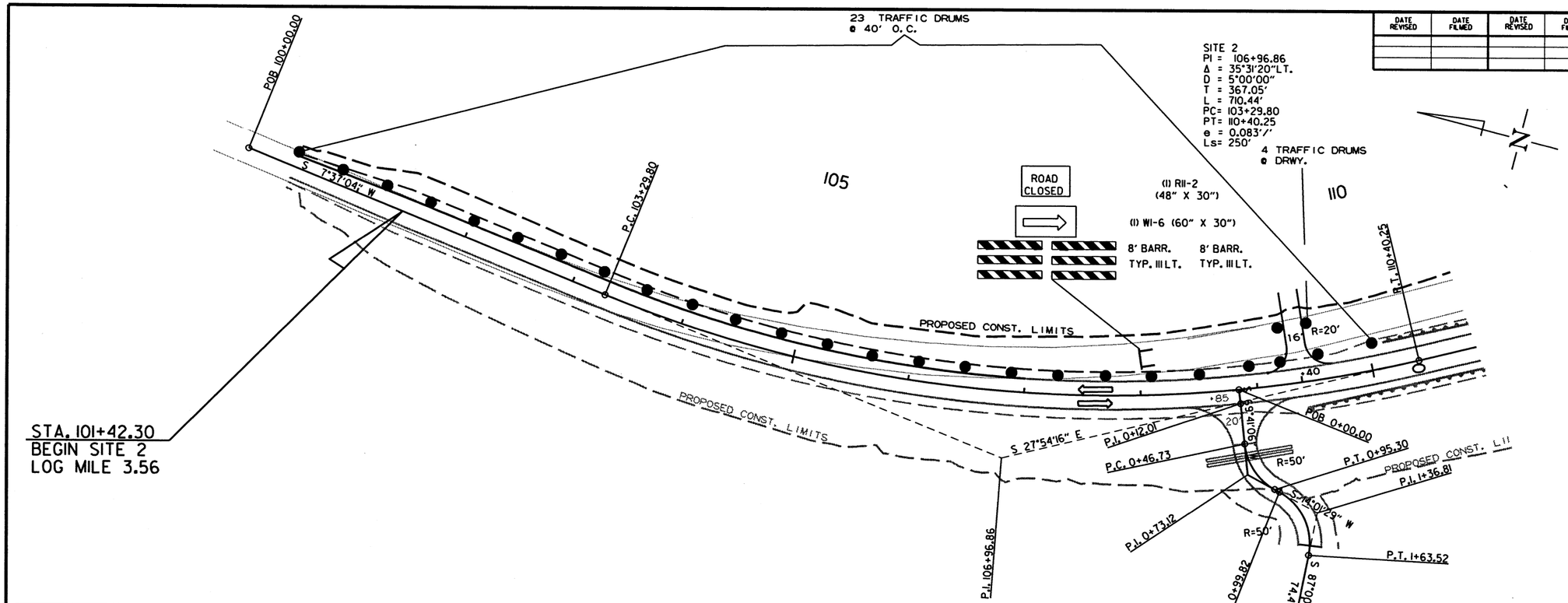
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SITE 1 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	39	140

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

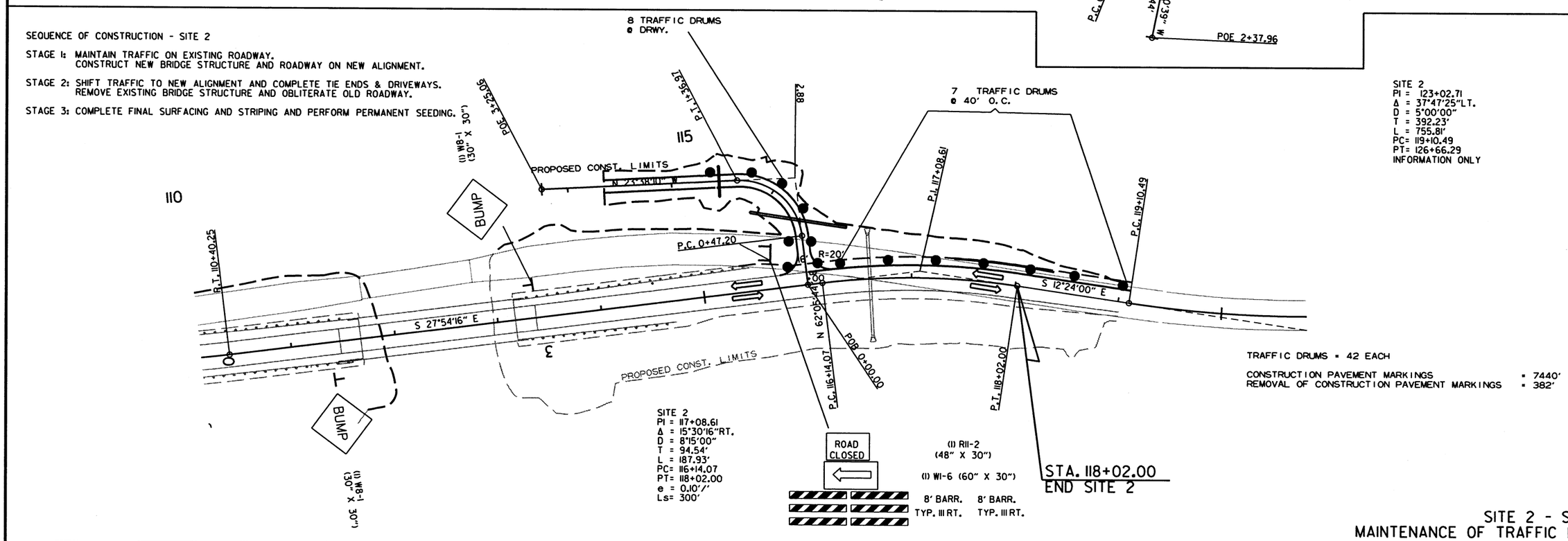


SEQUENCE OF CONSTRUCTION - SITE 2

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT NEW BRIDGE STRUCTURE AND ROADWAY ON NEW ALIGNMENT.

STAGE 2: SHIFT TRAFFIC TO NEW ALIGNMENT AND COMPLETE TIE ENDS & DRIVEWAYS.
REMOVE EXISTING BRIDGE STRUCTURE AND OBLITERATE OLD ROADWAY.

STAGE 3: COMPLETE FINAL SURFACING AND STRIPING AND PERFORM PERMANENT SEEDING.



TRAFFIC DRUMS = 42 EACH

CONSTRUCTION PAVEMENT MARKINGS	= 7440'
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	= 382'

SITE 2 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

9/10/2019

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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.		040622	40	140

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SITE 3
PI = = 172+97.87
Δ = 21°47'30"LT.
D = 6°00'00"
T = 183.82'
L = 363.19'
PC= = 171+14.05
PT= = 174+77.24
e =0.092'/'
Ls= 300'

15 TRAFFIC DRUMS @ 40' O.C.

(2) OM-3L (12"X 36") (2) OM-3R (12"X 36")

14 TRAFFIC DRUMS @ 40' O.C.

(8) WI-8 (18" X 24")
8 CHEVRONS PLACED BACK TO BACK

(1) WI-40L (48" X 48")

(1) WI3-1 (18" X 18")

4 TRAFFIC DRUMS @ DRWY.

(8) WI-8 (18" X 24")
8 CHEVRONS PLACED BACK TO BACK

DETOUR C.L. STA. 598+38.17 = CONST. C.L. STA. 175+70.58
BEGIN DETOUR SITE 3

600 175 180 185 6/0

P.T. 174+77.24
POB 597+44.83
P.C. 598+38.17
P.T. 599+11.05
P.I. 177+32.41
Δ = 0°04'27"RT.
P.I. 602+73.38
P.I. 606+99.42
POE 610+00.57
P.I. 188+46.45
S 2°05'01" E

TEMP. CONST. LIMITS
DETOUR
S 80°35'25" E
S 73°01'02" E
S 73°01'04" E
S 43°09'20" E
HWY. 59
S 73°13'14" E
S 73°18'11" E
PROPOSED CONST. LIMITS

P.C. 602+33.46
P.I. 603+11.19
P.C. 605+08.26
P.C. 183+19.76
P.I. 608+81.53
P.I. 178+78.32
Δ = 0°12'40"RT.
P.I. 538+74.66

4 TRAFFIC DRUMS @ DRWY.

2 TRAFFIC DRUMS @ DRWY.

ROAD CLOSED

(1) RII-2 (48" X 30")
(1) WI-6 (60" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III RT.

ROAD CLOSED

(1) RII-2 (48" X 30")
(1) WI-6 (60" X 30")
8' BARR. TYP. III LT.
8' BARR. TYP. III LT.

STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.97

STA. 186+20.00
END SITE 3

DETOUR C.L. STA. 609+90.14 = CONST. C.L. STA. 187+05.17
END DETOUR SITE 3

(1) WI3-1 (18" X 18")
(1) WI-40L (48" X 48")

SITE 3
PI = = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= = 183+19.76
PT= = 192+35.03
e =0.100'/'
Ls= 300'

SEQUENCE OF CONSTRUCTION - SITE 3

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT DETOUR ROADWAY, TEMPORARY BRIDGE STRUCTURE, AND TEMPORARY DRIVEWAYS.

STAGE 2: SHIFT TRAFFIC TO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE, AND CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

TRAFFIC DRUMS = 39 EACH

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SITE 3 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	41	140

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

SITE 4 DETOUR
PI = 707+69.98
Δ = 13°38'19"LT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 707+01.46
PT= 708+37.85
NO SUPER

15 TRAFFIC DRUMS @ 40' O.C.

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

XX M.P.H.

(1) W13-1 (18" X 18")

(2) OM-3L (12"X 36")

(2) OM-3R (12"X 36")

(8) W1-8 (18" X 24")
8 CHEVRONS PLACED BACK TO BACK

(8) W1-8 (18" X 24")
8 CHEVRONS PLACED BACK TO BACK

10 TRAFFIC DRUMS @ 40' O.C.

4 TRAFFIC DRUMS @ DRWY.

280 700 285 290

PI 281+62.27
POB 699+37.55
P.I. 703+04.51
P.I. 705+62.01
P.C. 707+01.46
P.T. 708+37.85
POE 708+67.04
Δ = 014°25"LT.

TEMP. CONST. LIMITS

S 67°21'48" E
S 56°50'23" E DETOUR
S 43°12'05" E
S 56°50'23" E
S 14°55'34" E

POB 0+00.00
HWY. 59

P.C. 0+61.31
P.I. 284+61.18
P.C. 702+51.74
P.I. 703+44.98
P.C. 704+93.50
P.T. 706+29.88
P.I. 707+69.98

S 56°00'42" E
S 56°50'23" E

P.I. 0+80.63
P.T. 0+92.03
P.C. 1+29.54
P.I. 2+00.19
P.T. 2+07.87
POE 2+20.93

4 TRAFFIC DRUMS @ DRWY.

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

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

(1) W13-1 (18" X 18")

XX M.P.H.

STA. 281+45.00
BEGIN SITE 4
LOG MILE 6.96

DETOUR C.L. STA. 699+37.55=
CONST. STA. 282+00.00
BEGIN DETOUR SITE 4

ROAD CLOSED

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

(1) W1-6 (60" X 30")

8' BARR. TYP. III RT.

8' BARR. TYP. III RT.

ROAD CLOSED

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

(1) W1-6 (60" X 30")

8' BARR. TYP. III LT.

8' BARR. TYP. III LT.

STA. 290+20.00
END SITE 4
END JOB 040622

DETOUR C.L. STA. 708+63.30=
CONST. C.L. STA. 291+16.10
END SITE 4

SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

TRAFFIC DRUMS = 33 EACH

SEQUENCE OF CONSTRUCTION - SITE 4

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT DETOUR ROADWAY, TEMPORARY BRIDGE, AND DRIVEWAYS.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

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SITE 4 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	42	140

(2) MAINTENANCE OF TRAFFIC DETAILS

SITE 1
PI = 58+27.80
Δ = 54°34'34"RT.
D = 9°30'00"
T = 311.13'
L = 574.49'
PC= 55+16.67
PT= 60+91.16

OBLITERATE ROADWAY

SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

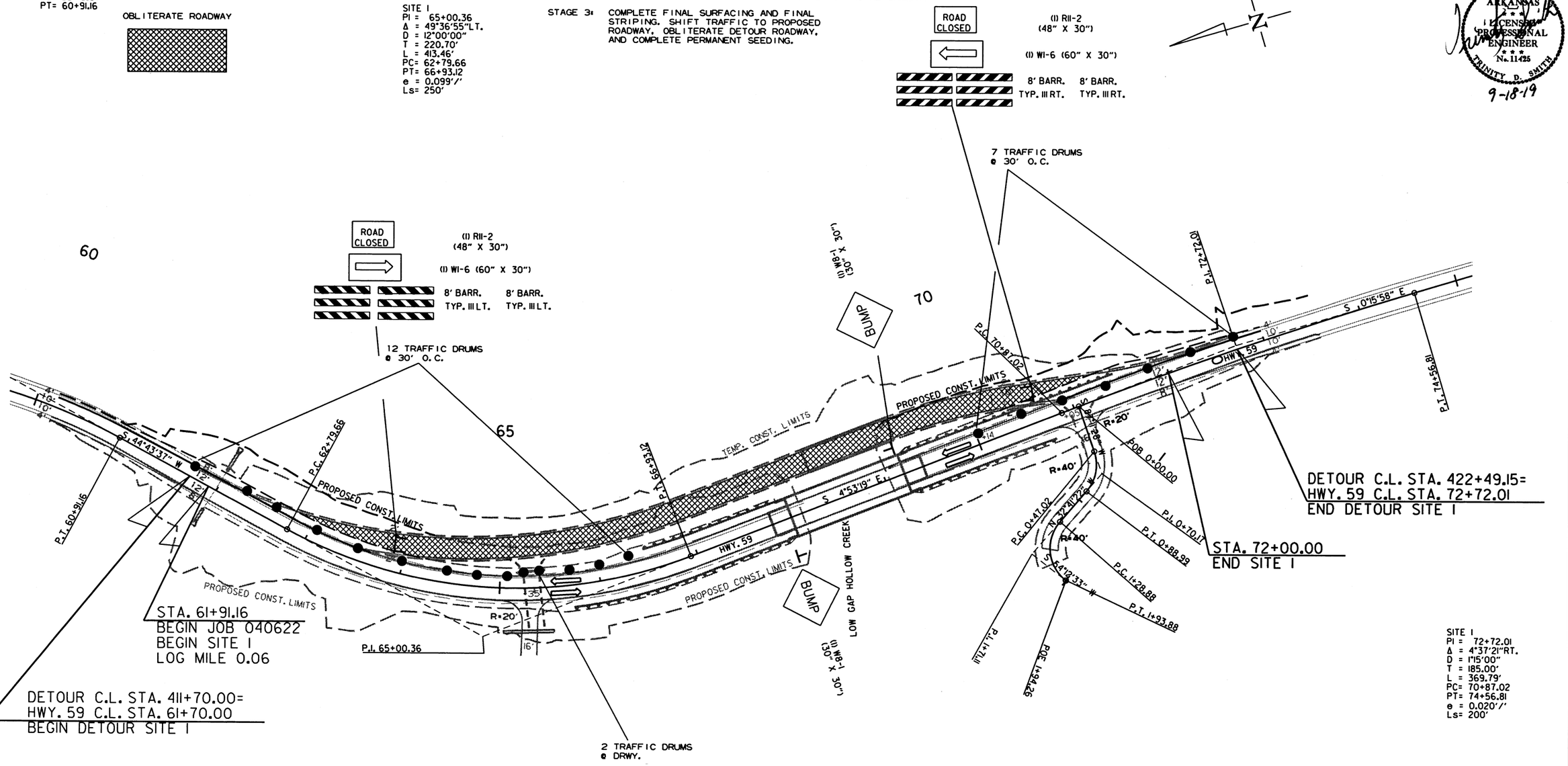
SEQUENCE OF CONSTRUCTION - SITE 1

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT DETOUR ROADWAY AND TEMPORARY BRIDGE STRUCTURE.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

TRAFFIC DRUMS = 21 EACH

9/9/2019

R040622.DGN

SITE 1 - STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	43	140

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

OBLITERATE ROADWAY

SITE 3
PI = = 172+97.87
Δ = 21°47'30"LT.
D = 6°00'00"
T = 183.82'
L = 363.19'
PC= = 171+14.05
PT= = 174+77.24
e =0.092'/'
Ls= 300'

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (60" X 30")
8' BARR. TYP. III LT.
8' BARR. TYP. III LT.

DETOUR C.L. STA. 598+38.17 = CONST. C.L. STA. 175+70.58
BEGIN DETOUR SITE 3

RELOCATE 433' P.C.C.B. & SPECIAL END UNIT(1)
(3) OM-3L (12"X 36")
(1) W8-1 (30" X 30")
BUMP
(4) OM-3R (12"X 36")
TEMP. IMPACT ATT. BAR.(1)
6 TRAFFIC DRUMS @ DRWY.
10 TRAFFIC DRUMS @ 40' O.C.
ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (60" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III RT.

600 605 610
175 180 185

P.T. 174+77.24
POB 597+44.83
P.C. 598+38.17
P.I. 599+11.05
P.I. 177+32.41 Δ = 0°04'27"RT.
P.I. 602+73.38
P.C. 602+35.16
P.I. 603+11.09
P.C. 605+08.26
P.C. 183+19.76
P.I. 606+99.24
P.I. 608+81.53
POE 610+00.57
P.I. 188+46.45
P.I. 598+74.66
P.I. 178+78.32 Δ = 0°12'40"RT.

TEMP. CONST. LIMITS
PROPOSED CONST. LIMITS
HWY. 59
S 73°18'11" E
S 73°13'44" E
S 73°10'04" E
S 43°09'20" E
S 2°05'01" E
20'
16'
12'
54'

STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.97

13 TRAFFIC DRUMS @ 40' O.C.

SITE 3
PI = = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= = 183+19.76
PT= = 192+35.03
e =0.100'/'
Ls= 300'

STA. 186+20.00
END SITE 3

DETOUR C.L. STA. 609+90.14 = CONST. C.L. STA. 187+05.17
END DETOUR SITE 3

SEQUENCE OF CONSTRUCTION - SITE 3

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT DETOUR ROADWAY, TEMPORARY BRIDGE STRUCTURE, AND TEMPORARY DRIVEWAYS.

STAGE 2: SHIFT TRAFFIC TO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE, AND CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL STRIPING. SHIFT TRAFFIC TO PROPOSED ROADWAY, OBLITERATE DETOUR ROADWAY, AND COMPLETE PERMANENT SEEDING.

TRAFFIC DRUMS = 29 EACH
PRECAST CONCRETE BARRIER WALL = 760 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

9/11/2019

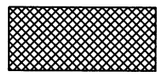
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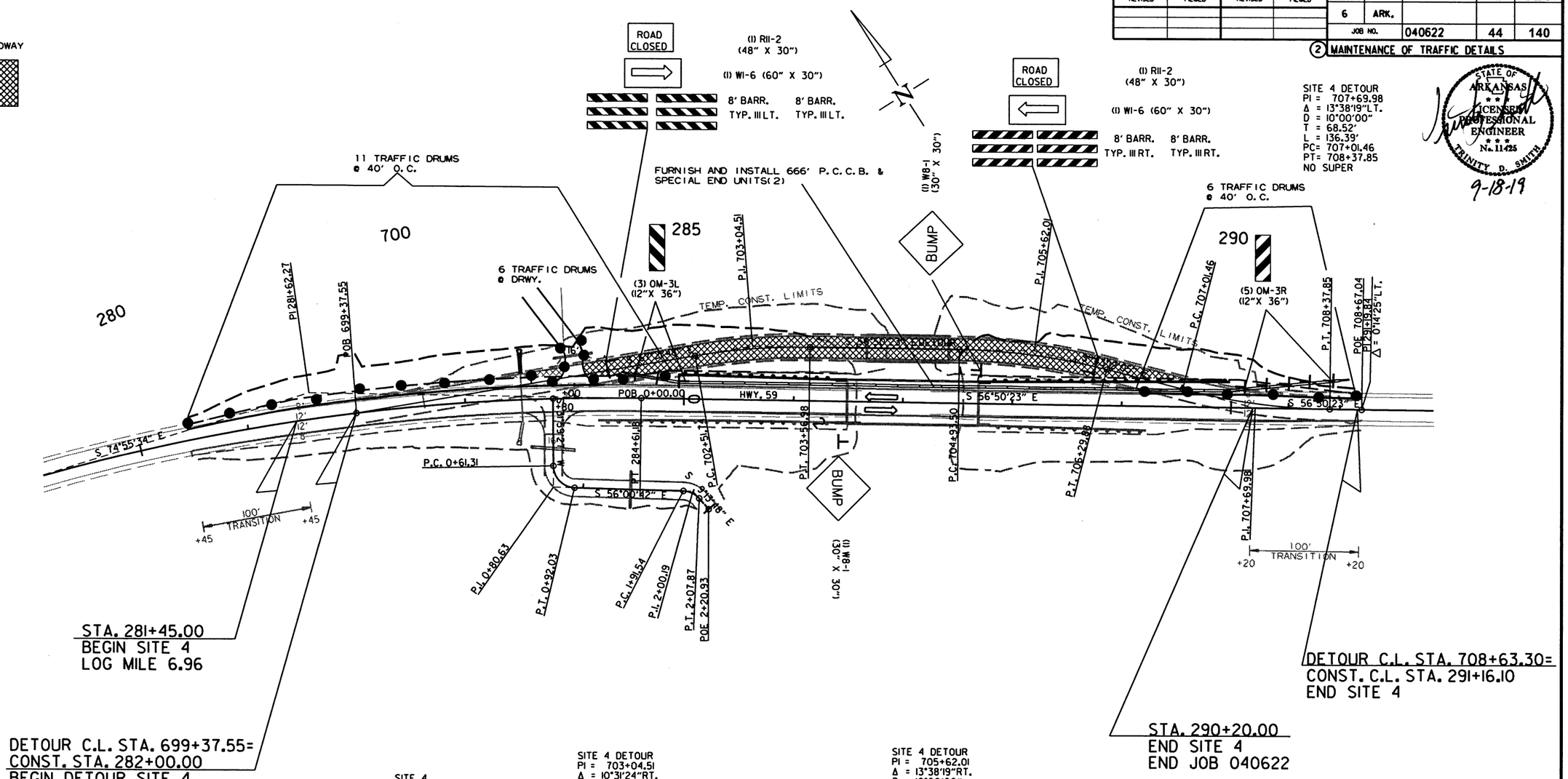
SITE 3 - STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	44	140

(2) MAINTENANCE OF TRAFFIC DETAILS

OBLITERATE ROADWAY





SITE 4 DETOUR
PI = 707+69.98
Δ = 13°38'19"LT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 707+01.46
PT= 708+37.85
NO SUPER

SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

SEQUENCE OF CONSTRUCTION - SITE 4

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.
CONSTRUCT DETOUR ROADWAY, TEMPORARY BRIDGE, AND DRIVEWAYS.

STAGE 2: SHIFT TRAFFIC TO DETOUR.
REMOVE EXISTING BRIDGE STRUCTURE, AND
CONSTRUCT NEW BRIDGE STRUCTURE ON EXISTING ALIGNMENT.

STAGE 3: COMPLETE FINAL SURFACING AND FINAL
STRIPING. SHIFT TRAFFIC TO PROPOSED
ROADWAY, OBLITERATE DETOUR ROADWAY,
AND COMPLETE PERMANENT SEEDING.

TRAFFIC DRUMS = 23 EACH

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

9/9/2019

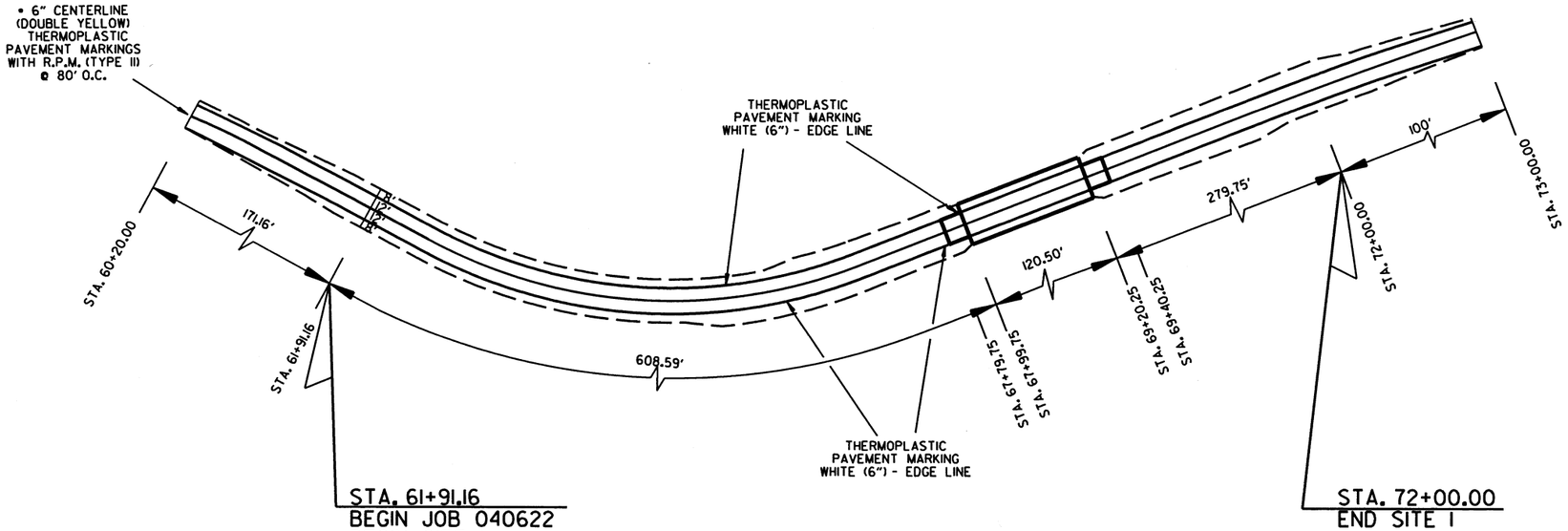
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SITE 4 - STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	45	140

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



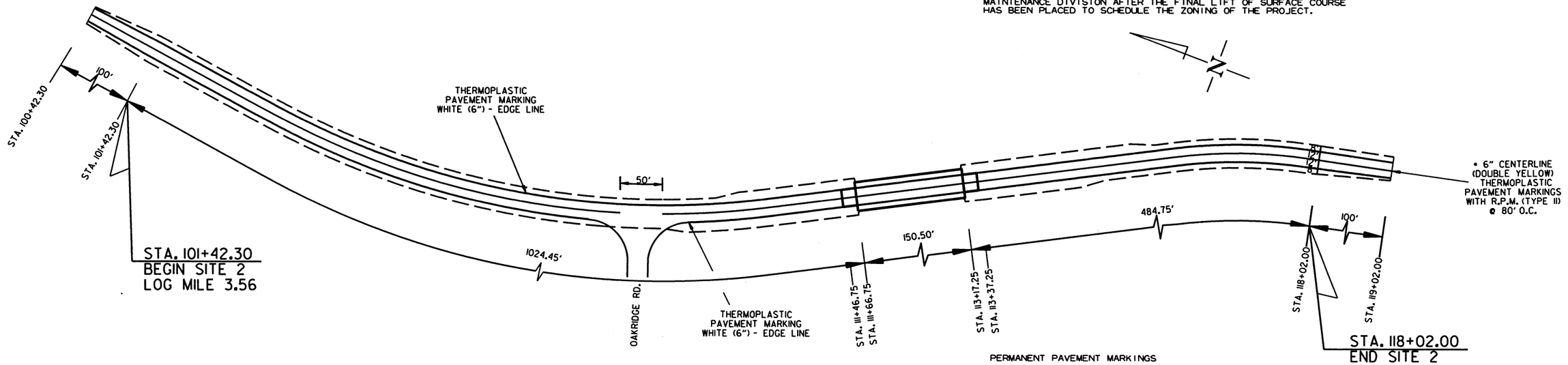
PERMANENT PAVEMENT MARKINGS

THERMOPLASTIC PAVEMENT MARKINGS
6" EDGE LINE SOLID WHITE = 2560'
•6" DBL. CENTERLINE YELLOW = 2560'

RAISED PAVEMENT MARKERS (TYPE II)
YELLOW/YELLOW (80' O.C.) = 16 EACH

• 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.

SITE 1



PERMANENT PAVEMENT MARKINGS

THERMOPLASTIC PAVEMENT MARKINGS
6" EDGE LINE SOLID WHITE = 3620'
•6" DBL. CENTERLINE YELLOW = 3620'

RAISED PAVEMENT MARKERS (TYPE II)
YELLOW/YELLOW (80' O.C.) = 23 EACH

RUMBLE STRIPS LT. = 1288'
RUMBLE STRIPS RT. = 1354'

SITE 2
PERMANENT PAVEMENT MARKING DETAILS

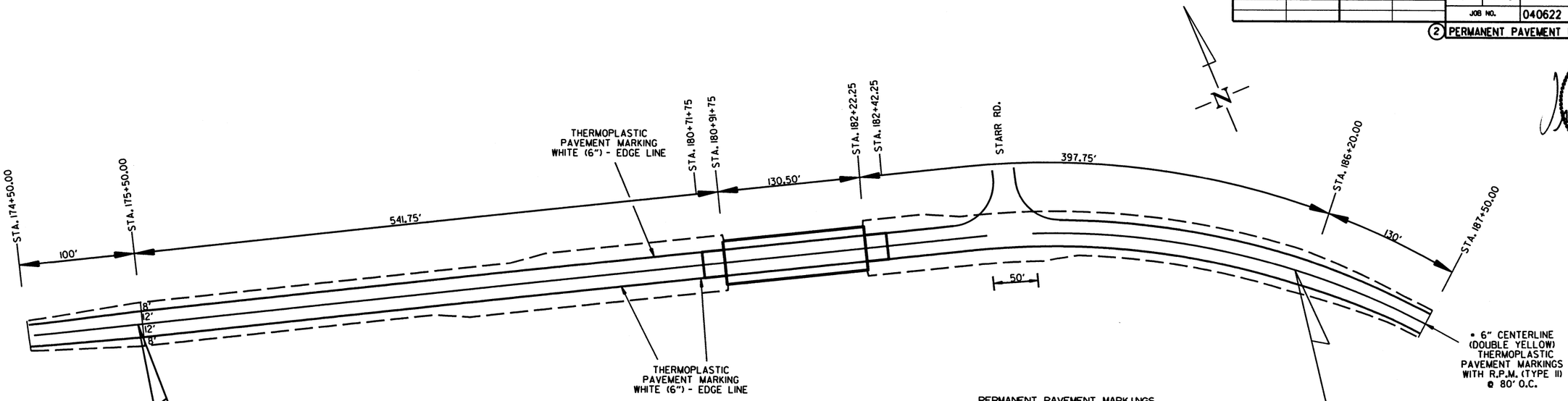
9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	46	140

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19



PERMANENT PAVEMENT MARKINGS

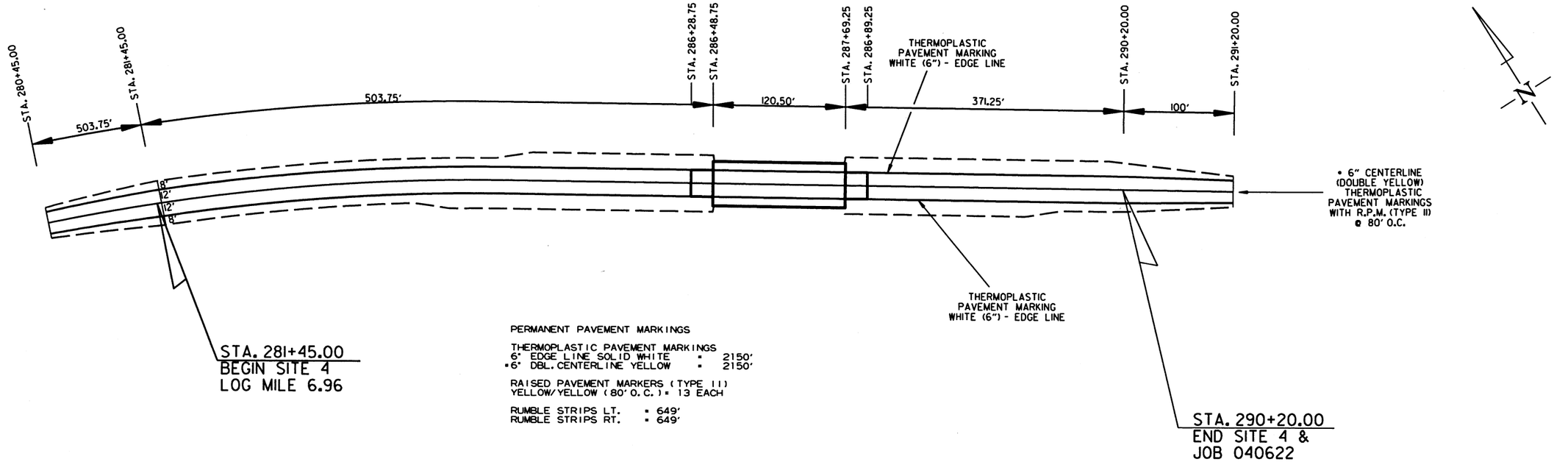
THERMOPLASTIC PAVEMENT MARKINGS
6" EDGE LINE SOLID WHITE = 2700'
•6" DBL. CENTERLINE YELLOW = 2700'

RAISED PAVEMENT MARKERS (TYPE II)
YELLOW/YELLOW (80' O.C.) = 16 EACH

RUMBLE STRIPS LT. = 870'
RUMBLE STRIPS RT. = 914'

• 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.

SITE 3



PERMANENT PAVEMENT MARKINGS

THERMOPLASTIC PAVEMENT MARKINGS
6" EDGE LINE SOLID WHITE = 2150'
•6" DBL. CENTERLINE YELLOW = 2150'

RAISED PAVEMENT MARKERS (TYPE II)
YELLOW/YELLOW (80' O.C.) = 13 EACH

RUMBLE STRIPS LT. = 649'
RUMBLE STRIPS RT. = 649'

SITE 4
PERMANENT PAVEMENT MARKING DETAILS

9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	47	140

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING	
							TYPE II	6"	
							(YELLOW/YELLOW)	WHITE	YELLOW
	LIN. FT. - EACH			LIN. FT.		LIN. FT.	EACH	LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	6800	382		7182					
CONSTRUCTION PAVEMENT MARKINGS	18144	3320			21464				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS			382			382			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	41	68					109		
THERMOPLASTIC PAVEMENT MARKING WHITE (6")			11030					11030	
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")			11030						11030
TOTALS:				**7182**	**21464**	**382**	**109**	**11030**	**11030**

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.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
												RIGHT	LEFT				
			LIN. FT. - EACH					NO.	SQ. FT.	EACH				LIN. FT.		EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4		4	4	64.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4		4	4	64.0								
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4		4	4	64.0								
W20-1	ROAD WORK AHEAD	48"x48"	1	1	1		1	1	16.0								
G20-2	END ROAD WORK	48"x24"	5	5	5		5	5	40.0								
W1-4AR	REVERSE CURVE RT.	48"x48"		4			4	4	64.0								
W1-4AL	REVERSE CURVE LT.	48"x48"		2			2	2	32.0								
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		6			6	6	24.0								
R11-2	ROAD CLOSED	48"x30"	8	8	8		8	8	80.0								
OM-3L	OBJECT MARKER	12"x36"		12			12	12	36.0								
OM-3R	OBJECT MARKER	12"x36"		12			12	12	36.0								
W1-6	LARGE ARROW	48"x24"		8			8	8	64.0								
W1-8	CHEVRONS	18"x24"		32			32	32	96.0								
R4-1	DO NOT PASS	24"x30"	8	8	8		8	8	40.0								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	8	8	8		8	8	72.0								
W8-1	BUMP	30"x30"		2	6		6	6	37.5								
	VERTICAL PANELS		83				83			83							
	TRAFFIC DRUMS		56	149	73		149				149						
	TYPE III BARRICADE-RT. (8')		9	8	6		9					72					
	TYPE III BARRICADE-LT. (8')		9	8	6		9						72				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER				666		666							666			
	RELOCATING PRECAST CONCRETE BARRIER				433		433								433		
	TEMPORARY IMPACT ATTENUATION BARRIER				1		1									1	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)				1		1										1
TOTALS:									**829.5**	**83**	**149**	**72**	**72**	**666**	**433**	**1**	**1**

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

5/29/2019

R040622.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	48	140

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

May 4 2020 4:50 PM
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REMOVAL AND DISPOSAL OF FENCE & GATES

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
61+00	65+54	RT. OF MAIN LANES - SITE 1	444	
70+41	70+51	RT. OF MAIN LANES - SITE 1		2
101+30	103+55	LT. OF MAIN LANES - SITE 2	225	
101+75	110+00	RT. OF MAIN LANES - SITE 2	1165	
113+65	119+21	RT. OF MAIN LANES -SITE 2	560	
114+56		LT. OF MAIN LANES - SITE 2		1
281+62	289+50	LT. OF MAIN LANES - SITE 4	685	
282+10	291+00	RT. OF MAIN LANES - SITE 4	780	
TOTALS:			3859	3

SOIL LOG

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
		FEET				
17+00	05 RT.	0-5	21	6	A-4(0)	BROWN
17+00	15 RT.	0-5	29	13	A-6(3)	BROWN
31+00	05 LT.	0-5	40	23	A-6(16)	GRAY
31+00	15 LT.	0-5	37	19	A-6(12)	GRAY
63+00	05 RT.	0-5	23	9	A-4(2)	RD/BR
63+00	15 RT.	0-5	23	7	A-4(0)	BROWN
71+00	05 LT.	0-5	22	7	A-4(1)	BROWN
71+00	15 LT.	0-5	23	8	A-4(2)	BROWN
178+00	05 RT.	1-1.5Z	28	14	A-6(4)	RD/BR
178+00	12 RT.	0-5	22	7	A-4(1)	RED
178+00	15 RT.	0-5	24	2	A-4(0)	BROWN
185+00	05 LT.	0-5	ND	NP	A-4(0)	BROWN
185+00	12 LT.	0-.5Z	21	3	A-1-B(0)	BROWN
185+00	14 LT.	0-5	25	6	A-4(0)	BROWN
284+00	05 RT.	0-5	25	10	A-4(3)	RD/BR
284+00	11 RT.	0-5	23	9	A-4(2)	RED
284+00	15 RT.	0-5	22	6	A-4(0)	RD/BR
290+00	05 LT.	0-1.5Z	23	7	A-4(1)	RD/BR
290+00	15 LT.	0-5	37	16	A-6(12)	BROWN
17+00	15 RT.	0-5	24	6	A-2-4(0)	BROWN
71+00	15 LT.	0-5	25	3	A-4(0)	BROWN
178+00	15 RT.	0-5	32	13	A-6(1)	BROWN
290+00	15 LT.	0-5	25	9	A-2-4(0)	BROWN

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
61+91	72+00	HWY. 59 - SITE 1	11	11
101+75	118+00	HWY. 59 - SITE 2	17	17
177+32	186+20	HWY. 59 - SITE 3	9	9
281+45	290+20	HWY. 59 - SITE 4	9	9
TOTALS:			46	46

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
60+20	73+00	SITE 1-STAGE 1-DETOUR CONST.	140	3903	
60+20	73+00	SITE 1-STAGE 2-MAIN LANE RT.	1204	2456	
60+20	73+00	SITE 1-STAGE 3-DETOUR OBLT. & MAIN LANE LT.	2753	1006	
100+42	119+02	SITE 2-STAGE 1-MAIN LANE RT.	1914	26567	
100+42	119+02	SITE 2-STAGE 2-MAIN LANE LT.	1864	325	
174+50	187+50	SITE 3-STAGE 1-DETOUR CONST.	75	3277	
174+50	187+50	SITE 3-STAGE 2-MAIN LANE RT.	101	3761	
174+50	187+50	SITE 3-STAGE 3-DETOUR OBLT. & MAIN LANE LT.	2607	871	
280+45	291+20	SITE 4-STAGE 1-DETOUR CONST.	95	4085	
280+45	291+20	SITE 4-STAGE 2-MAIN LANE RT.	156	4136	
280+45	291+20	SITE 4-STAGE 3-DETOUR OBLT. & MAIN LANE LT.	2415	1096	
ENTIRE	PROJECT	APPROACHES	166	2624	
ENTIRE	PROJECT	TEMPORARY APPROACHES		505	
67+99.75	69+20.25	SITE 1 BRIDGE EXCAVATION	280		
111+66.75	113+17.25	SITE 2 BRIDGE EXCAVATION	732		
180+91.75	182+22.25	SITE 3 BRIDGE EXCAVATION	282		
286+48.75	287+69.25	SITE 4 BRIDGE EXCAVATION	689		
71+05	71+05	DRIVEWAY-SITE 1	82		
108+85	108+85	OAKRIDGE RD.-SITE 2		1377	
116+00	116+00	DRIVEWAY-SITE 2	123	216	
283+80	283+80	DRIVEWAY-SITE 4		294	
112+79.72	113+05	SITE 2-OBLITERATION OF EXISTING ROADWAY	65		
* ENTIRE	PROJECT	TO BE USED IF AND WHERE			400
		DIRECTED BY THE ENGINEER			
TOTALS:			15743	56499	400

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
68+00	SITE 1 - BRIDGE END	1
111+66	SITE 2 - BRIDGE END	1
180+92	SITE 3 - BRIDGE END	1
286+49	SITE 4 - BRIDGE END	1
TOTAL:		4

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

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	3	3
TOTALS:	3	3

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	(CLASS III) 30"	(CLASS V) 24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	30"	TEMPORARY CULVERTS 18"	24"	DROP INLETS TYPE ST	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			EACH		LIN. FT.		EACH	SQ.YD.	M.GAL.	
61+97	SITE 1 - EXTEND 30" R.C. PIPE CULVERT LT. & RT.		28			2				26	0.33	PCC-1, FES-1, FES-2
116+60	SITE 2 - CONST. 30" R.C. PIPE CULVERT		94			2				26	0.33	PCC-1, FES-1, FES-2
176+47	SITE 3 - CONST. DI ON LT. & 24" X 147' R.C. PIPE CULVERT			147	1				1	8	0.10	PCC-1, FES-1, FES-2, FPC-9S
176+47	SITE 3 - EXTEND 24" R.C. PIPE CULVERT RT.	16			1					8	0.10	PCC-1, FES-1, FES-2
283+50	SITE 4 - EXTEND 24" R.C. PIPE CULVERT LT. & RT.	38			2					16	0.20	PCC-1, FES-1, FES-2
415+15	SITE 1 DETOUR - TEMP. 18" PIPE CULVERT LT.						28					PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
599+15	SITE 3 DETOUR - TEMP. EXTEND 24" R.C. PIPE CULVERT LT.							2				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
606+18	SITE 3 DETOUR - TEMP. 24" R.C. PIPE CULVERT LT.							42				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
701+15	SITE 4 DETOUR - TEMP. 24" R.C. PIPE CULVERT RT.							34				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
TOTALS:		54	122	147	4	4	28	78	1	84	1.06	

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

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

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

5/29/2019

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QUANTITIES

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.		040622	49	140

(2) QUANTITIES

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
66+00.00	67+98.92	SITE 1 LT.	198.92	176.82
101+00.00	111+82.00	SITE 2 RT.	1082.00	961.78
182+90.00	184+00.00	SITE 3 LT.	110.00	97.78
282+49.00	286+49.00	SITE 4 RT.	400.00	355.56
287+69.00	290+00.00	SITE 4 RT.	231.00	205.33
287+70.00	290+00.00	SITE 4 LT.	230.00	204.44
* ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER		500.00
TOTAL:				2501.71

NOTE: AVERAGE WIDTH = 8'-0"
* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D)	* 16'-0" GATES
			LIN. FT.		EACH
61+00	65+54	HWY. 59 - SITE 1 RT.	420		1
71+05	71+05	HWY. 59 - SITE 1 RT.			2
101+30	103+55	HWY. 59 - SITE 2 LT.	225		
101+75	108+75	HWY. 59 - SITE 2 RT.	805		
108+95	110+00	HWY. 59 - SITE 2 RT.	35		
115+00	119+25	HWY. 59 - SITE 2 RT.	390		
116+00		HWY. 59 - SITE 2 LT.			1
281+50	286+50	HWY. 59 - SITE 4 LT.		535	2
282+00	286+50	HWY. 59 - SITE 4 RT.	470		1
287+70	291+00	HWY. 59 - SITE 4 LT.		365	
287+70	291+00	HWY. 59 - SITE 4 RT.	370		1
TOTALS:			2715	900	8

* DENOTES ALTERNATE BID ITEM.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
101+42	118+02	HWY. 59 - SITE 2 LT. & RT.	2642
175+50	186+20	HWY. 59 - SITE 3 LT. & RT.	1784
281+45	290+20	HWY. 59 - SITE 4 LT. & RT.	1298
TOTAL:			5724

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

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.
61+40.00	62+20.00	SITE 1 RT.	80.00	6.00	53.33	35.56	0.45
65+00.00	66+00.00	SITE 1 RT.	100.00	8.00	88.89	44.44	0.56
69+21.00	70+14.00	SITE 1 RT.	93.00	6.00	62.00	41.33	0.52
116+50.00	117+00.00	SITE 2 RT.	50.00	6.00	33.33	22.22	0.28
* ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			50.00	33.34	0.42
TOTALS:					287.55	176.89	2.23

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

REMOVAL AND DISPOSAL OF GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL
			LIN. FT.
67+63	68+16	SITE 1 LT. & RT.	54
69+06	69+60	SITE 1 LT. & RT.	54
111+19	111+73	SITE 2 LT. & RT.	54
112+80	113+34	SITE 2 LT. & RT.	54
180+50	181+04	SITE 3 LT. & RT.	54
182+12	182+65	SITE 3 LT. & RT.	54
TOTAL:			324

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING	SPECIAL SEEDING	LIME	MULCH COVER	SPECIAL MULCH COVER	WATER	SECOND SEEDING APPLICATION	SPECIAL SECOND SEEDING APPLICATION	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING	MULCH COVER	SPECIAL MULCH COVER	WATER	FILTER SOCK (12") (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	ACRE	TON	ACRE	ACRE	M.GAL.	ACRE	ACRE	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
61+91.16	72+00.00	CLEARING AND GRUBBING-SITE 1									3.88	3.88		79.2		132	15	2415	880	880	969
101+42.30	118+02.00	CLEARING AND GRUBBING-SITE 2									6.21	6.21		126.7		176	12	2795	1760	1760	1864
175+50.00	183+20.00	CLEARING AND GRUBBING-SITE 3									3.48		3.48	71.0		154	21	1835	440	440	508
281+45.00	290+20.00	CLEARING AND GRUBBING-SITE 4									2.91	2.91		59.4		176	6	1100	880	880	921
61+91.16	72+00.00	STAGE 1-SITE 1	0.67		1.34	0.67		68.3	0.67		0.70	0.70		14.3		88					
101+42.30	118+02.00	STAGE 1-SITE 2	1.81		3.62	1.81		184.6	1.81		1.97	1.97		40.2		88	6		440	440	440
175+50.00	183+20.00	STAGE 1-SITE 3		0.61	1.22		0.61	62.2		0.61	0.41		0.41	8.4		88	6		440	440	440
281+45.00	290+20.00	STAGE 1-SITE 4	0.52		1.04	0.52		53.0	0.52		0.49	0.49		10.0		66	6		880	880	880
61+91.16	72+00.00	STAGE 2-SITE 1	0.67		1.34	0.67		68.3	0.67		0.75	0.75		15.3		110	9		880	880	880
101+42.30	118+02.00	STAGE 2-SITE 2	1.16		2.32	1.16		118.3	1.16		1.27	1.27		25.9		66					
175+50.00	183+20.00	STAGE 2-SITE 3		0.50	1.00		0.50	51.0		0.50	0.52		0.52	10.6	40	22	9				
281+45.00	290+20.00	STAGE 2-SITE 4	0.58		1.16	0.58		59.2	0.58		0.73	0.73		14.9		66	6		880	880	880
61+91.16	72+00.00	STAGE 3-SITE 1	0.56		1.12	0.56		57.1	0.56		0.42	0.42		8.6							
175+50.00	183+20.00	STAGE 3-SITE 3		0.57	1.14		0.57	58.1		0.57	0.50		0.50	10.2		22		375	440	440	454
281+45.00	290+20.00	STAGE 3-SITE 4	0.48		0.96	0.48		49.0	0.48		0.62	0.62		12.6		44					
ENTIRE	PROJECT	OBLITERATION OF EXISTING ROADWAY-SITE 2	0.03		0.06	0.03		3.1	0.03												
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			2.00		4.00	2.00		204.0	2.00		2.00	2.00		40.8	100	88	9	1000	7500	7500	7537
TOTALS:			8.48	1.68	20.32	8.48	1.68	1036.2	8.48	1.68	26.86	21.95	4.91	548.1	140	1386	105	9520	15420	15420	15773

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

5/29/2019

R040622.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	50	140

(2) QUANTITIES

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	40
ENGINEER	
TOTAL:	**40**

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	20	40
DIRECTED BY THE ENGINEER		
TOTALS:	**20**	**40**

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE
QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
60+20.00	61+91.16	HWY. 59 - TRANSITION- SITE 1	26.00	494.46
72+00.00	73+00.00	HWY. 59 - TRANSITION- SITE 1	26.00	288.89
100+42.30	101+42.30	HWY. 59 - TRANSITION- SITE 2	26.00	288.89
118+02.00	119+02.00	HWY. 59 - TRANSITION- SITE 2	26.00	288.89
174+50.00	175+50.00	HWY. 59 - TRANSITION- SITE 3	26.00	288.89
186+20.00	187+50.00	HWY. 59 - TRANSITION- SITE 3	26.00	375.56
280+45.00	281+45.00	HWY. 59 - TRANSITION- SITE 4	26.00	288.89
290+20.00	291+20.00	HWY. 59 - TRANSITION- SITE 4	26.00	288.89
TOTAL:				**2603.36**

NOTE: AVERAGE MILLING DEPTH 1".

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	BRIDGE END TERMINAL
			LIN. FT.	EACH		
65+71.60	67+90.35	HWY. 59 - RT. SIDE - SITE 1	150	1	1	
66+46.60	67+90.35	HWY. 59 - LT. SIDE - SITE 1	75	1	1	
69+29.65	70+73.40	HWY. 59 - RT. SIDE - SITE 1	75	1	1	
69+29.65	71+48.40	HWY. 59 - LT. SIDE - SITE 1	150	1	1	
109+38.60	111+57.35	HWY. 59 - RT. SIDE - SITE 2	150	1	1	
110+13.60	111+57.35	HWY. 59 - LT. SIDE - SITE 2	75	1	1	
113+26.65	114+70.40	HWY. 59 - RT. SIDE - SITE 2	75	1	1	
113+26.65	115+45.40	HWY. 59 - LT. SIDE - SITE 2	150	1	1	
178+63.60	180+82.35	HWY. 59 - RT. SIDE - SITE 3	150	1	1	
179+57.35	180+82.35	HWY. 59 - LT. SIDE - SITE 3	75	1	1	
182+31.65	183+75.40	HWY. 59 - RT. SIDE - SITE 3	75	1	1	
182+32.25	182+47.25	HWY. 59 - LT. SIDE - SITE 3				1
284+20.60	286+39.35	HWY. 59 - RT. SIDE - SITE 4	150	1	1	
284+95.60	286+39.35	HWY. 59 - LT. SIDE - SITE 4	75	1	1	
287+78.65	289+22.45	HWY. 59 - RT. SIDE - SITE 4	75	1	1	
287+78.65	289+97.40	HWY. 59 - LT. SIDE - SITE 4	150	1	1	
TOTALS:			**1650**	**15**	**15**	**1**

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
185+65	186+65	SITE 3-LT. SIDE	122	244
TOTALS:			**122**	**244**

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			2050	10
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**2050**	**10**

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

CONCRETE CURB

STATION	STATION	LOCATION	TYPE B (12")
			LIN. FT.
117+40	118+35	HWY. 59 - SITE 2 LT.	95
175+00	177+00	HWY. 59 - SITE 3 LT.	200
185+50	187+00	HWY. 59 - SITE 3 LT.	150
TOTAL:			**445**

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
116+60	SITE 2-MAIN LANE	9.08	36	24
TOTAL:				**24**

AVG. DEPTH = 12"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

Trinity Smith
5/6/2020 4:50 PM
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APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE C)	APPROACH SLABS (TYPE C1)	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE COURSE (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
67+63.25	67+99.75	HWY. 59 - LT. SIDE - SITE 1	14.80		810	
67+63.25	67+99.75	HWY. 59 - APPROACH SLAB - SITE 1		49.15	5775	29.00
67+63.25	67+99.75	HWY. 59 - RT. SIDE - SITE 1	14.80		810	
69+20.25	69+56.75	HWY. 59 - LT. SIDE - SITE 1	14.80		810	
69+20.25	69+56.75	HWY. 59 - APPROACH SLAB - SITE 1		49.15	5775	29.00
69+20.25	69+56.75	HWY. 59 - RT. SIDE - SITE 1	14.80		810	
111+30.25	111+66.75	HWY. 59 - LT. SIDE - SITE 2	14.80		810	
111+30.25	111+66.75	HWY. 59 - APPROACH SLAB - SITE 2		49.15	5775	29.00
111+30.25	111+66.75	HWY. 59 - RT. SIDE - SITE 2	14.80		810	
113+17.25	113+53.75	HWY. 59 - LT. SIDE - SITE 2	14.80		810	
113+17.25	113+53.75	HWY. 59 - APPROACH SLAB - SITE 2		49.15	5775	29.00
113+17.25	113+53.75	HWY. 59 - RT. SIDE - SITE 2	14.80		810	
180+55.25	180+91.75	HWY. 59 - LT. SIDE - SITE 3	14.80		810	
180+55.25	180+91.75	HWY. 59 - APPROACH SLAB - SITE 3		49.15	5775	29.00
180+55.25	180+91.75	HWY. 59 - RT. SIDE - SITE 3	14.80		810	
182+22.25	182+58.75	HWY. 59 - LT. SIDE - SITE 3	14.80		810	
182+22.25	182+58.75	HWY. 59 - APPROACH SLAB - SITE 3		49.15	5775	29.00
182+22.25	182+58.75	HWY. 59 - RT. SIDE - SITE 3	14.80		810	
286+12.25	286+48.75	HWY. 59 - LT. SIDE - SITE 4	14.80		810	
286+12.25	286+48.75	HWY. 59 - APPROACH SLAB - SITE 4		49.15	5775	29.00
286+12.25	286+48.75	HWY. 59 - RT. SIDE - SITE 4	14.80		810	
287+69.25	288+05.75	HWY. 59 - LT. SIDE - SITE 4	14.80		810	
287+69.25	288+05.75	HWY. 59 - APPROACH SLAB - SITE 4		49.15	5775	29.00
287+69.25	288+05.75	HWY. 59 - RT. SIDE - SITE 4	14.80		810	
TOTALS:			**236.80**	**393.20**	**59160**	**232.00**

NOTE: USE T =14" FOR 8' SHOULDER.

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"	30"	
			FEET	SQ. YD.	TON	TON	LIN. FT.			
65+35	RT.	HWY. 59 - SITE 1	16	89.62	9.86	36.59			50	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
71+05	RT.	HWY. 59 - SITE 1	16	255.84	28.14	104.47				
108+85	RT.	HWY. 59 - SITE 2 (OAKRIDGE RD.)	20	327.59	36.03	133.77			208	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
109+40	LT.	HWY. 59 - SITE 2	16	108.73	11.96	44.40				
115+27	LT.	HWY. 59 - SITE 2					30			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
116+00	LT.	HWY. 59 - SITE 2	16	424.73	46.72	173.43		58		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
177+05	RT.	HWY. 59 - SITE 3	16	131.40	14.45	53.66				
183+54	LT.	HWY. 59 - SITE 3 (STARR RD.)	20	238.70	26.26	97.47		70		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
283+80	RT.	HWY. 59 - SITE 4	16	318.06	34.99	129.87		40		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
284+50	RT.	HWY. 59 - SITE 4					34			
284+00	LT.	HWY. 59 - SITE 4	16	158.06	17.39	64.54				
* ENTIRE PROJECT TEMPORARY DRIVES						140.00				
TOTALS:				**2052.73**	**225.80**	**978.20**	**64**	**168**	**258**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....93.9% MIN. AGGR.....6.1% 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.

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

5/29/2019

R040622.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	51	140

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

May 4 2020 4:50 PM
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BASE AND SURFACING (BOX 1 OF 3)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	TOTAL PG 64-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	FEET			TON
MAIN LANES																												
60+20.00	61+91.16	HWY. 59 - TRANSITION- SITE 1	171.16						34.00	646.60	109.92	109.92													34.00	646.60	220.00	71.13	71.13
61+91.16	65+00.00	HWY. 59 - NOTCH & WIDEN - SITE 1	308.84	166.00	512.67	28.75	986.57	49.33				49.33					4.50	154.42	440.00	33.97	4.25	145.84	220.00	16.04	40.00	1372.62	220.00	150.99	167.03
65+00.00	67+63.25	HWY. 59 - FULL DEPTH - SITE 1	263.25	243.75	641.67	48.75	1425.94	71.30				71.30					24.50	716.63	440.00	157.66	24.25	709.31	220.00	78.02	40.00	1170.00	220.00	128.70	206.72
69+56.75	71+50.00	HWY. 59 - FULL DEPTH - SITE 1	193.25	243.75	471.05	48.75	1046.77	52.34				52.34					24.50	526.07	440.00	115.74	24.25	520.70	220.00	57.28	40.00	858.89	220.00	94.48	151.76
71+50.00	72+00.00	HWY. 59 - NOTCH & WIDEN - SITE 1	50.00	166.00	83.00	28.75	159.72	7.99				7.99					4.50	25.00	440.00	5.50	4.25	23.61	220.00	2.60	40.00	222.22	220.00	24.44	27.04
72+00.00	73+00.00	HWY. 59 - TRANSITION- SITE 1	100.00						34.00	377.78	64.22	64.22													34.00	377.78	220.00	41.56	41.56
100+42.30	101+42.30	HWY. 59 - TRANSITION- SITE 2	100.00						34.00	377.78	64.22	64.22													34.00	377.78	220.00	41.56	41.56
101+42.30	106+25.00	HWY. 59 - NOTCH & WIDEN - SITE 2	482.70	VAR.	871.46	VAR.	1486.74	74.34				74.34					VAR.	414.07	440.00	91.10	VAR.	409.85	220.00	45.08	40.00	2145.33	220.00	235.99	281.07
106+25.00	111+30.25	HWY. 59 - FULL DEPTH - SITE 2	505.25	243.75	1231.55	48.75	2736.77	136.84				136.84					24.50	1375.40	440.00	302.59	24.25	1361.37	220.00	149.75	40.00	2245.56	220.00	247.01	396.76
113+53.75	117+00.00	HWY. 59 - FULL DEPTH - SITE 2	346.25	243.75	843.98	48.75	1875.52	93.78				93.78					24.50	942.57	440.00	207.37	24.25	932.95	220.00	102.62	40.00	1538.89	220.00	169.28	271.90
117+00.00	117+40.00	HWY. 59 - NOTCH & WIDEN - SITE 2	40.00	VAR.	76.15	VAR.	40.27	2.01				2.01					VAR.	33.66	440.00	7.41	VAR.	33.27	220.00	3.66	40.00	177.78	220.00	19.56	23.22
117+40.00	118+02.00	HWY. 59 - NOTCH & WIDEN W/ MOUNTABLE CURB - SITE 2	62.00	VAR.	52.41	VAR.	154.44	7.72				7.72					VAR.	33.33	440.00	7.33	VAR.	32.99	220.00	3.63	40.00	275.56	220.00	30.31	33.94
118+02.00	119+02.00	HWY. 59 - TRANSITION- SITE 2	100.00						34.00	377.78	64.22	64.22													34.00	377.78	220.00	41.56	41.56
174+50.00	175+50.00	HWY. 59 - TRANSITION- SITE 3	100.00						34.00	377.78	64.22	64.22													34.00	377.78	220.00	41.56	41.56
175+50.00	177+00.00	HWY. 59 - NOTCH & WIDEN W/ MOUNTABLE CURB - SITE 3	150.00	148.25	222.38	28.75	479.17	23.96				23.96					4.50	75.00	440.00	16.50	4.25	70.83	220.00	7.79	40.00	666.67	220.00	73.33	81.12
177+00.00	177+50.00	HWY. 59 - NOTCH & WIDEN - SITE 3	50.00	166.00	83.00	28.75	159.72	7.99				7.99					4.50	25.00	440.00	5.50	4.25	23.61	220.00	2.60	40.00	222.22	220.00	24.44	27.04
177+50.00	180+55.25	HWY. 59 - FULL DEPTH - SITE 3	305.25	243.75	744.05	48.75	1653.44	82.67				82.67					24.50	830.96	440.00	182.81	24.25	822.48	220.00	90.47	40.00	1356.67	220.00	149.23	239.70
182+58.75	185+00.00	HWY. 59 - FULL DEPTH - SITE 3	241.25	243.75	588.05	48.75	1306.77	65.34				65.34					24.50	656.74	440.00	144.48	24.25	650.03	220.00	71.50	40.00	1072.22	220.00	117.94	189.44
185+00.00	185+50.00	HWY. 59 - NOTCH & WIDEN - SITE 3	50.00	166.00	83.00	28.75	159.72	7.99				7.99					4.50	25.00	440.00	5.50	4.25	23.61	220.00	2.60	40.00	222.22	220.00	24.44	27.04
185+50.00	186+20.00	HWY. 59 - NOTCH & WIDEN W/ MOUNTABLE CURB - SITE 3	70.00	148.25	103.78	28.75	223.61	11.18				11.18					4.50	35.00	440.00	7.70	4.25	33.06	220.00	3.64	40.00	311.11	220.00	34.22	37.86
186+20.00	187+50.00	HWY. 59 - TRANSITION- SITE 3	130.00						34.00	491.11	83.49	83.49													34.00	491.11	220.00	54.02	54.02
280+45.00	281+45.00	HWY. 59 - TRANSITION- SITE 4	100.00						34.00	377.78	64.22	64.22													34.00	377.78	220.00	41.56	41.56
281+45.00	283+50.00	HWY. 59 - NOTCH & WIDEN - SITE 4	205.00	166.00	340.30	28.75	654.86	32.74				32.74					4.50	102.50	440.00	22.55	4.25	96.81	220.00	10.65	40.00	911.11	220.00	100.22	110.87
283+50.00	286+12.25	HWY. 59 - FULL DEPTH - SITE 4	262.25	243.75	639.23	48.75	1420.52	71.03				71.03					24.50	713.90	440.00	157.06	24.25	706.62	220.00	77.73	40.00	1165.56	220.00	128.21	205.94
288+05.75	289+00.00	HWY. 59 - FULL DEPTH - SITE 4	94.25	243.75	229.73	48.75	510.52	25.53				25.53					24.50	256.57	440.00	56.45	24.25	253.95	220.00	27.93	40.00	418.89	220.00	46.08	74.01
289+00.00	290+20.00	HWY. 59 - NOTCH & WIDEN - SITE 4	120.00	166.00	199.20	28.75	383.33	19.17				19.17					4.50	60.00	440.00	13.20	4.25	56.67	220.00	6.23	40.00	533.33	220.00	58.67	64.90
290+20.00	291+20.00	HWY. 59 - TRANSITION- SITE 4	100.00						34.00	377.78	64.22	64.22													34.00	377.78	220.00	41.56	41.56
DETOURS																												
411+70.00	413+55.00	HWY. 59 - DETOUR TRANSITION - SITE 1	185.00	VAR.	112.32	VAR.	129.94	6.50				6.50					VAR.	129.94	330.00	21.44					VAR.	153.71	220.00	16.91	16.91
413+55.00	418+05.00	HWY. 59 - DETOUR FULL DEPTH - SITE 1	450.00	161.75	727.88	20.29	1014.50	50.73				50.73					20.29	1014.50	330.00	167.39					24.00	1200.00	220.00	132.00	132.00
418+95.00	420+72.00	HWY. 59 - DETOUR FULL DEPTH - SITE 1	177.00	161.75	286.30	20.29	399.04	19.95				19.95					20.29	399.04	330.00	65.84					24.00	472.00	220.00	51.92	51.92
420+72.00	422+49.15	HWY. 59 - DETOUR TRANSITION - SITE 1	177.15	VAR.	115.79	VAR.	140.31	7.02				7.02					VAR.	140.31	330.00	23.15					VAR.	167.65	220.00	18.44	18.44
598+38.17	600+53.29	HWY. 59 - DETOUR TRANSITION - SITE 3	215.12	VAR.	163.29	VAR.	167.63	8.38				8.38					VAR.	167.63	330.00	27.66					VAR.	198.31	220.00	21.81	21.81
600+53.29	603+83.00	HWY. 59 - DETOUR FULL DEPTH - SITE 3	329.71	161.75	533.31	20.29	743.31	37.17				37.17					20.29	743.31	330.00	122.65					24.00	879.23	220.00	96.72	96.72
603+83.00	607+88.41	HWY. 59 - DETOUR FULL DEPTH - SITE 3	405.41	161.75	727.77	20.29	684.02	34.20				34.20					20.29	684.02	330.00	112.86					24.00	800.00	220.00	88.00	88.00
607+88.41	609+90.14	HWY. 59 - DETOUR TRANSITION - SITE 3	201.73	VAR.	117.74	VAR.	132.32	6.62				6.62					VAR.	132.32	330.00	21.83					VAR.	156.54	220.00	17.22	17.22
699+37.55	701+33.00	HWY. 59 - DETOUR TRANSITION - SITE 4	195.45	VAR.	121.64	VAR.	165.48	8.27				8.27					VAR.	165.48	330.00	27.30					VAR.	195.72	220.00	21.53	21.53
701+33.00	704+11.00	HWY. 59 - DETOUR FULL DEPTH - SITE 4	278.00	161.75	449.67	20.29	626.74	31.34				31.34					20.29	626.74	330.00	103.41					24.00	741.33	220.00	81.55	81.55
704+86.00	706+74.82	HWY. 59 - DETOUR FULL DEPTH - SITE 4	188.82	161.75	305.42	20.29	425.68	21.28				21.28					20.29	425.68	330.00	70.24					24.00	503.52	220.00	55.30	55.30
706+74.82	708+63.30	HWY. 59 - DETOUR TRANSITION - SITE 4	188.48	VAR.	98.41	VAR.	99.39	4.97				4.97					VAR.	99.39	330.00	16.40					VAR.	117.58	220.00	12.93	12.93
ADDITIONAL FOR LEVELING																												
61+91.16	65+00.00	HWY. 59 - NOTCH & WIDEN - SITE 1	308.84						20.00	686.31	116.67	116.67									20.00	686.31	VAR.	135.96				135.96
71+50.00	72+00.00	HWY. 59 - NOTCH & WIDEN - SITE 1	50.00						20.00	111.11	18.89	18.89									20.00	111.11	VAR.	12.22				12.22
101+42.30	106+25.00	HWY. 59 - NOTCH & WIDEN - SITE 2	482.70						VAR.	658.60	111.96	111.96									VAR.	658.60	VAR.	72.45				72.45
117+00.00	118+02.00	HWY. 59 - NOTCH & WIDEN - SITE 2	102.00						VAR.	121.11	20.59	20.59									VAR.	121.11	VAR.	13.32				13.32
175+50.00	177+50.00	HWY. 59 - NOTCH & WIDEN - SITE 3	200.00						20.00	444.44	75.55	75.55									20.00	444.44	VAR.	255.00				255.00
185+00.00	186+20.00	HWY. 59 - NOTCH & WIDEN - SITE 3	120.00						20.00	266.67	45.33	45.33									20.00	266.67	VAR.	14.00				14.00
281+45.00	283+50.00	HWY. 59 - NOTCH & WIDEN - SITE 4	205.00						20.00	455.56	77.45	77.45									20.00	455.56	VAR.	41.33				41.33
289+00.00	290+20.00	HWY. 59 - NOTCH & WIDEN - SITE 4	120.00						20.00	266.67	45.33	45.33									20.00	266.67	VAR.	26.92				26.92
ADDITIONAL FOR GRADE RAISE																												
61+50.00	65+00.00	HWY. 59 - SITE 1	350.00						20.00	777.78	132.22	132.22					20.00	777.78	VAR.	66.22								
71+50.00	72+00.00	HWY. 59 - SITE 1	50.00						20.00	111.11	18.89	18.89					20.00	111.11	VAR.	2.06								
102+00.00	106+00.00	HWY. 59 - SITE 2	400.00						20.00	888.89	151.11	151.11					20.00	888.89	VAR.	96.89								
117+00.00	118+00.00	HWY. 59 - SITE 2	100.00						20.00	222.22	37.78	37.78					20.00	222.22	VAR.	12.22								
175+50.00	177+50.00	HWY. 59 - SITE 3	200.00						40.00	888.89	151.11	151.11	20.00	444.44	VAR.	144.44	20.00	444.44	VAR.	80.22								
185+00.00	186+00.00	HWY. 59 - SITE 3	100.00						40.00	444.44	75.55	75.55	20.00	222.22	VAR.	3500	20.00	222.22	VAR.	15.42								
282+00.00	283+50.00	HWY. 59 - SITE 4	150.00						40.00	666.67	113.33	113.33	20.00	333.33	VAR.	5112	20.00	333.33	VAR.	27.83								
282+50.00	285+00.00	HWY. 59 - SITE 4 - GRADE RAISE FOR MAINTENANCE OF TRAFFIC	250.00						60.00	1666.67	283.33	283.33	30.00	833.33	VAR.	708.75	30.00	833.33	VAR.	183.33	30.00	833.33	VAR.	91.67				91.67
289+00.00	290+00.00	HWY. 59 - SITE 4	100.00						40.00	444.44	75.55	75.55	20.00	222.22	VAR.	2500	20.00	222.22	VAR.	14.17								
SUBTOTALS:					**11539.20**		**21592.76**	**1079.68**		**12525.97**	**2129.37**	**3209.05**		**2055.54**		**964.31**		**15785.72**		**2818.95**		**10751.36**		**1422.69**		**25885.92**		**2847.47**	**4270.16**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....93.9% MIN. AGGR.....6.1% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.3% MIN. AGGR.....3.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

5/29/2019

R040622.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	52	140

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

May 4 2020 4:51 PM
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BASE AND SURFACING (BOX 2 OF 3)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR GUARDRAIL WIDENING																													
65+28.60	65+61.60	HWY. 59 - SITE 1 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
65+61.60	65+71.60	HWY. 59 - SITE 1 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
65+71.60	67+46.60	HWY. 59 - SITE 1 RT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
67+46.60	67+63.25	HWY. 59 - SITE 1 RT.	16.65	18.75	3.12																				3.50	6.48	220.00	0.71	0.71
66+03.60	66+36.60	HWY. 59 - SITE 1 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
66+36.60	66+46.60	HWY. 59 - SITE 1 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
66+46.60	67+46.60	HWY. 59 - SITE 1 LT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
67+46.60	67+63.25	HWY. 59 - SITE 1 LT.	16.65	18.75	3.12																				3.50	6.48	220.00	0.71	0.71
69+56.75	69+73.40	HWY. 59 - SITE 1 RT.	16.65	18.75	3.12																				3.50	6.48	220.00	0.71	0.71
69+73.40	70+73.40	HWY. 59 - SITE 1 RT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
70+73.40	70+83.40	HWY. 59 - SITE 1 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
70+83.40	71+16.40	HWY. 59 - SITE 1 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
69+56.75	69+73.40	HWY. 59 - SITE 1 LT.	16.65	18.75	3.12																				3.50	6.48	220.00	0.71	0.71
69+73.40	71+48.40	HWY. 59 - SITE 1 LT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
71+48.40	71+58.40	HWY. 59 - SITE 1 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
71+58.40	71+91.40	HWY. 59 - SITE 1 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
108+95.60	109+28.60	HWY. 59 - SITE 2 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
109+28.60	109+38.60	HWY. 59 - SITE 2 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
109+38.60	111+13.60	HWY. 59 - SITE 2 RT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
111+13.60	111+30.25	HWY. 59 - SITE 2 RT.	16.65	18.75	3.12																				3.50	6.48	220.00	0.71	0.71
109+70.60	110+03.60	HWY. 59 - SITE 2 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
110+03.60	110+13.60	HWY. 59 - SITE 2 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
110+13.60	111+13.60	HWY. 59 - SITE 2 LT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
111+13.60	111+57.35	HWY. 59 - SITE 2 LT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
113+26.65	113+70.40	HWY. 59 - SITE 2 RT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
113+70.40	114+70.40	HWY. 59 - SITE 2 RT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
114+70.40	114+80.40	HWY. 59 - SITE 2 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
114+80.40	115+13.40	HWY. 59 - SITE 2 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
113+26.65	113+70.40	HWY. 59 - SITE 2 LT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
113+70.40	115+45.40	HWY. 59 - SITE 2 LT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
115+45.40	115+55.40	HWY. 59 - SITE 2 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
115+55.40	115+88.40	HWY. 59 - SITE 2 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
178+14.35	178+47.35	HWY. 59 - SITE 3 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
178+47.35	178+57.35	HWY. 59 - SITE 3 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
178+57.35	180+32.35	HWY. 59 - SITE 3 RT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
180+32.35	180+76.10	HWY. 59 - SITE 3 RT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
179+14.35	179+47.35	HWY. 59 - SITE 3 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
179+47.35	179+57.35	HWY. 59 - SITE 3 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
179+57.35	180+57.35	HWY. 59 - SITE 3 LT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
180+57.35	181+01.10	HWY. 59 - SITE 3 LT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
183+06.65	183+50.40	HWY. 59 - SITE 3 RT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
183+50.40	184+50.40	HWY. 59 - SITE 3 RT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
184+50.40	184+60.40	HWY. 59 - SITE 3 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
184+60.40	184+93.40	HWY. 59 - SITE 3 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
182+07.90	182+51.65	HWY. 59 - SITE 3 LT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
182+51.65	182+61.65	HWY. 59 - SITE 3 LT.	10.00	24.38	2.44																				5.50	6.11	220.00	0.67	0.67
182+61.65	182+94.65	HWY. 59 - SITE 3 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
283+77.60	284+10.60	HWY. 59 - SITE 4 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
284+10.60	284+20.60	HWY. 59 - SITE 4 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
284+20.60	285+95.60	HWY. 59 - SITE 4 RT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
285+95.60	286+39.35	HWY. 59 - SITE 4 RT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
284+52.60	284+85.60	HWY. 59 - SITE 4 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
284+85.60	284+95.60	HWY. 59 - SITE 4 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
284+95.60	285+95.60	HWY. 59 - SITE 4 LT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
285+95.60	286+39.35	HWY. 59 - SITE 4 LT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
287+78.65	288+22.40	HWY. 59 - SITE 4 RT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
288+22.40	289+22.40	HWY. 59 - SITE 4 RT.	100.00	24.38	24.38																				4.50	50.00	220.00	5.50	5.50
289+22.40	289+32.40	HWY. 59 - SITE 4 RT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
289+32.40	289+65.40	HWY. 59 - SITE 4 RT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
287+78.65	288+22.40	HWY. 59 - SITE 4 LT.	43.75	18.75	8.20																				3.50	17.01	220.00	1.87	1.87
288+22.40	289+97.40	HWY. 59 - SITE 4 LT.	175.00	24.38	42.67																				4.50	87.50	220.00	9.63	9.63
289+97.40	290+07.40	HWY. 59 - SITE 4 LT.	10.00	30.00	3.00																				5.50	6.11	220.00	0.67	0.67
290+07.40	290+40.40	HWY. 59 - SITE 4 LT. - TAPER	33.00	15.00	4.95																				2.75	10.08	220.00	1.11	1.11
SUBTOTALS:					726.17																					1491.05		164.01	164.01

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....93.9% MIN. AGGR.....6.1% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.3% MIN. AGGR.....3.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

5/29/2019

R040622.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
4/17/20				6	ARK.			
				JOB NO.		040622	53	140

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

May 4 2020 4:51 PM
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BASE AND SURFACING (BOX 3 OF 3)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR SUPERELEVATION																													
60+20.00	61+85.41	HWY. 59 - SUPERELEVATION - SITE 1	165.41	39.75	65.75																								
61+85.41	64+35.41	HWY. 59 - SUPERELEVATION - SITE 1	250.00	57.75	144.38																								
64+35.41	65+37.37	HWY. 59 - SUPERELEVATION - SITE 1	101.96	115.50	117.76																								
65+37.37	67+87.37	HWY. 59 - SUPERELEVATION - SITE 1	250.00	57.75	144.38																								
70+60.00	72+00.00	HWY. 59 - SUPERELEVATION - SITE 1	140.00	13.25	18.55																								
101+42.30	103+92.30	HWY. 59 - SUPERELEVATION - SITE 2	250.00	49.75	124.38																								
103+92.30	109+15.00	HWY. 59 - SUPERELEVATION - SITE 2	522.70	99.50	520.09																								
109+15.00	111+65.00	HWY. 59 - SUPERELEVATION - SITE 2	250.00	49.75	124.38																								
115+02.91	116+51.12	HWY. 59 - SUPERELEVATION - SITE 2	148.21	33.88	50.21																								
116+51.12	117+08.04	HWY. 59 - SUPERELEVATION - SITE 2	56.92	67.75	38.56																								
117+08.04	118+56.25	HWY. 59 - SUPERELEVATION - SITE 2	148.21	33.88	50.21																								
175+50.00	176+02.18	HWY. 59 - SUPERELEVATION - SITE 3	52.18	15.00	7.83																								
182+24.00	184+67.00	HWY. 59 - SUPERELEVATION - SITE 3	243.00	48.38	117.56																								
184+67.00	186+20.00	HWY. 59 - SUPERELEVATION - SITE 3	153.00	96.75	148.03																								
281+45.00	283+98.68	HWY. 59 - SUPERELEVATION - SITE 4	253.68	75.00	190.26																								
283+98.68	286+48.68	HWY. 59 - SUPERELEVATION - SITE 4	250.00	37.50	93.75																								
418+95.60	419+57.90	HWY. 59 DETOUR - SUPERELEVATION - SITE 1	62.30	1.75	1.09																								
419+57.91	420+20.21	HWY. 59 DETOUR - SUPERELEVATION - SITE 1	62.30	1.75	1.09																								
601+54.71	602+62.38	HWY. 59 DETOUR - SUPERELEVATION - SITE 3	107.67	2.63	2.83																								
602+62.38	602+73.33	HWY. 59 DETOUR - SUPERELEVATION - SITE 3	10.95	5.25	0.57																								
602+73.33	603+81.00	HWY. 59 DETOUR - SUPERELEVATION - SITE 3	107.67	2.63	2.83																								
604+87.00	606+94.89	HWY. 59 DETOUR - SUPERELEVATION - SITE 3	207.89	4.38	9.11																								
606+94.89	609+90.14	HWY. 59 DETOUR - SUPERELEVATION - SITE 3	295.25	8.75	25.83																								
701+99.72	703+04.36	HWY. 59 DETOUR - SUPERELEVATION - SITE 4	104.64	2.63	2.75																								
703+04.36	704+09.00	HWY. 59 DETOUR - SUPERELEVATION - SITE 4	104.64	2.63	2.75																								
704+88.00	705+61.69	HWY. 59 DETOUR - SUPERELEVATION - SITE 4	73.69	1.75	1.29																								
705+61.69	705+91.98	HWY. 59 DETOUR - SUPERELEVATION - SITE 4	30.29	3.50	1.06																								
705+91.98	706+65.67	HWY. 59 DETOUR - SUPERELEVATION - SITE 4	73.69	1.75	1.29																								
SUBTOTALS (BOX 3 OF 3):					**2008.57**																								
SUBTOTALS (BOX 2 OF 3):					**726.17**																							**1491.05**		**164.01**	**164.01**
SUBTOTALS (BOX 1 OF 3):					**11539.20**		**21592.76**	**1079.68**		**12525.97**	**2129.37**	**3209.05**		**2055.54**		**964.31**		**15785.72**		**2818.95**		**10751.36**		**1422.69**		**25885.92**		**2847.47**	**4270.16**
TOTALS:					**14273.94**		**21592.76**	**1079.68**		**12525.97**	**2129.37**	**3209.05**		**2055.54**		**964.31**		**15785.72**		**2818.95**		**10751.36**		**1422.69**		**27376.97**		**3011.48**	**4434.17**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....93.9% MIN. AGGR.....6.1% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.3% MIN. AGGR.....3.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

5/29/2019

R040622.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	54	140

(1) 07448,07449 07450,07451 - QUANTITIES - 60741

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 040622

BRIDGE NO.	NAME PLATE TITLE	ITEM NO. / UNIT OF STRUCTURE	205	603	801	SS & 802	SP, SS, & 802	SS & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SP, SS & 807	SS & 808	812	816	816
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	TEMPORARY BRIDGE STRUCTURE (24' ROADWAY WIDTH)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	PRESTRESSED CONCRETE GIRDERS (TYPE II)	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	(1) STEEL PILING (HP 14 X 73)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GR. 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	FOUNDATION PROTECTION RIPRAP
		UNIT	LUMP SUM	LINEAR FOOT	CUBIC YARD	CUBIC YARD	CUBIC YARD	LINEAR FOOT	SQUARE YARD	POUND	POUND	LINEAR FOOT	LINEAR FOOT	POUND	CUBIC INCH	EACH	SQUARE YARD	TON
07448	HIGHWAY 59 OVER LOW GAP HOLLOW CREEK	BENT 1			25	16.16				1,335	325	85	75				78	347
		BENT 2			88	74.79				9,525					2,284.0			
		BENT 3			90	74.79				9,525					2,284.0			
		BENT 4			25	16.16				1,335	325	85	75				89	338
		119'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT TYPE II					221.70	592.5	650.0		43,540			160		1		
		SITE NO. 1 (EXISTING BR. NO. 02815)	1															
		TOTALS FOR BRIDGE NO. 07448		90	228	181.90	221.70	592.5	650.0	21,720	44,190	170	150	160	4,568.0	1	167	685
07449	HIGHWAY 59 OVER MOUNTAIN FORK CREEK	BENT 1				16.16				1,335	325	120	50				368	799
		BENT 2			109	69.09				9,310					2,284.0			
		BENT 3			91	69.09				9,310					2,284.0			
		BENT 4				16.16				1,335	325	120	50				410	813
		149'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT TYPE II					261.00	742.5	808.0		51,470			320		1		
		SITE NO. 2 (EXISTING BR. NO. 02814)	1															
		TOTALS FOR BRIDGE NO. 07449			200	170.50	261.00	742.5	808.0	21,290	52,120	240	100	320	4,568.0	1	778	1,612
07450	HIGHWAY 59 OVER WHIZZEN HOLLOW CREEK	BENT 1			25	16.16				1,335	325	115	50				51	221
		BENT 2			101	67.29				9,075					2,284.0			
		BENT 3			137	67.29				9,075					2,284.0			
		BENT 4			25	16.16				1,335	325	110	50				125	385
		129'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT TYPE II					234.70	642.5	703.0		46,040			210		1		
		SITE NO. 3 (EXISTING BR. NO. 02813)	1															
		TOTALS FOR BRIDGE NO. 07450		90	288	166.90	234.70	642.5	703.0	20,820	46,690	225	100	210	4,568.0	1	176	606
07451	HIGHWAY 59 OVER HUEY CREEK	BENT 1			25	16.16				1,335	325	85	75				190	475
		BENT 2			114	67.64				9,115					2,284.0			
		BENT 3			128	67.64				9,115					2,284.0			
		BENT 4			25	16.16				1,335	325	100	75				367	781
		119'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT TYPE II					221.70	592.5	650.0		43,540			160		1		
		SITE NO. 4 (EXISTING BR. NO. 02621)	1															
		TOTALS FOR BRIDGE NO. 07451		75	292	167.60	221.70	592.5	650.0	20,900	44,190	185	150	160	4,568.0	1	557	1,256
		TOTALS FOR JOB NO. 040622		255	(2) 1,008	686.90	939.10	2,570.0	2,811.0	84,730	187,190	820	500	850	18,272.0	4	1,678	4,159

(1) Steel piling is required to be Grade 50 and have special pile tips which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 14 X 73)".

(2) Includes approximately 394 cubic yards of rock excavation.

LUKE BAILEY
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:42 PM
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/24/19
CHECKED BY: DBS DATE: 2/10/19
DESIGNED BY: ——— DATE: ———
FILENAME: b040622_q1.dgn
SCALE: None

BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60741

PRINT DATE: 4/21/2020

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	46	STATION
201	GRUBBING	46	STATION
202	REMOVAL AND DISPOSAL OF FENCE	3859	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	3	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	324	LIN. FT.
SS & 210	UNCLASSIFIED EXCAVATION	15743	CU. YD.
210	COMPACTED EMBANKMENT	56499	CU. YD.
SP & 210	SOIL STABILIZATION	400	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	15484	TON
SS & 401	TACK COAT	3249	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	928	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	36	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	2701	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	118	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	4376	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	284	TON
412	COLD MILLING ASPHALT PAVEMENT	2603	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	20	TON
504	APPROACH SLABS	393.20	CU. YD.
504	APPROACH GUTTERS	236.80	CU. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	28	LIN. FT.
603	24" TEMPORARY CULVERT	78	LIN. FT.
SS & 604	SIGNS	830	SQ. FT.
SS & 604	BARRICADES	144	LIN. FT.
SS & 604	TRAFFIC DRUMS	149	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	666	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	433	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	21464	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	382	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	7182	LIN. FT.
SS & 604	VERTICAL PANELS	83	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)	288	SQ. YD.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	54	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	147	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	122	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	64	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	168	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN	258	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	EACH
606	SELECTED PIPE BEDDING	40	CU. YD.
SS & 609	DROP INLETS (TYPE ST)	1	EACH
SS & 611	4" PIPE UNDERDRAINS	2050	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	10	EACH
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	24	TON
SS & 617	GUARDRAIL (TYPE A)	1650	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	15	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	15	EACH
619	WIRE FENCE (TYPE C)	2715	LIN. FT.
619	WIRE FENCE (TYPE D)	900	LIN. FT
* 619	16' STEEL GATES (ALTERNATE NO. 1)	8	EACH
* 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	8	EACH
620	LIME	20	TON
620	SEEDING	8.48	ACRE
SP & 620	SPECIAL SEEDING	1.68	ACRE
SS & 620	MULCH COVER	30.43	ACRE
SP, SS, & 620	SPECIAL MULCH COVER	6.59	ACRE
620	WATER	1587.6	M. GAL.
621	TEMPORARY SEEDING	26.86	ACRE
621	SILT FENCE	9520	LIN. FT.
621	SAND BAG DITCH CHECKS	1386	BAG
621	SEDIMENT BASIN	15420	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	15420	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	15773	CU. YD.
621	ROCK DITCH CHECKS	105	CU. YD.
SS & 621	FILTER SOCK (12")	140	LIN. FT.
623	SECOND SEEDING APPLICATION	8.48	ACRE
SP & 623	SPECIAL SECOND SEEDING APPLICATION	1.68	ACRE
624	SOLID SODDING	261	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	2502	SQ. YD.
SS & 634	CONCRETE CURB (TYPE B)	445	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	3	EACH
637	MAILBOX SUPPORTS (SINGLE)	3	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	5724	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	11030	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	11030	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	109	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	1	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	EACH
SS & 734	BRIDGE END TERMINAL	1	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	59160	POUND
816	FILTER BLANKET	244	SQ. YD.
816	DUMPED RIPRAP	122	CU. YD.
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 4)	1.00	LUMP SUM
603	TEMPORARY BRIDGE STRUCTURE (24' ROADWAY WIDTH)	255	LIN. FT.
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	1008	CU. YD.
SS & 802	CLASS S CONCRETE-BRIDGE	686.90	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	939.10	CU. YD.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE II)	2570.0	LIN. FT.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	2811.0	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	84730	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	187190	POUND
SS & 805	STEEL PILING (HP 14X73)	820	LIN. FT.
SS & 805	PREBORING	500	LIN. FT.
SP, SS, & 807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)	850	POUND
SS & 808	ELASTOMERIC BEARINGS	18272.0	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)	4	EACH
816	FILTER BLANKET	1678	SQ. YD.
816	FOUNDATION PROTECTION RIPRAP	4159	TON

REVISIONS

DATE	REVISION	SHEET NUMBER
10/28/2019	REVISED "DELAY IN RIGHT OF WAY OCCUPANCY" SP.	55
4/17/2020	REVISED ROADWAY STANDARD DRAWINGS, BRIDGE STANDARD DRAWING "STANDARD DETAILS FOR TYPE-D BRIDGE NAME PLATE", SCHEDULE OF BRIDGE QUANTITIES, AND VARIOUS BRIDGE DETAILS. REVISED "PLASTIC PIPE" AND "FOREST SERVICE REQUIREMENTS" SPS, ADDED SS 210-1, SS 404-3, SS 603-1, SS 604-3, AND SS 807-2 AND "ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT" SP, AND REVISED THE BASIS OF ESTIMATE AND QUANTITIES FOR ACHM BASE, BINDER, AND SURFACE COURSES.	2, 3, 10, 48, 50-55, 84, 86, 87, 91-96
5/7/2020	REVISED UNIT USED FOR PAY ITEM "CLEARING" IN SUMMARY OF QUANTITIES.	55
5/14/2020	REVISED STANDARD DRAWING GR-12.	2, 55
6/2/2020	REVISED "STORM WATER POLLUTION PREVENTION PLAN" SPECIAL PROVISION	55
6/18/2020	CORRECTED DETOUR SITE 3 TEMPORARY BRIDGE END STATIONS AND LENGTH IN PROFILE AND CONSTRUCTION NOTE.	55, 67
6/23/2020	ADDED "FLEXIBLE BEGINNING OF WORK" SPECIAL PROVISION.	3, 55

SUMMARY OF QUANTITIES & REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
6/28/2019		5/14/2020		6/23/2020	
4/17/2020		6/2/2020			
5/7/2020		6/18/2020			

(2) SUMMARY OF QUANTITIES & REVISIONS

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		55	140
JOB NO.				
040622				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11435
TIMOTHY D. SMITH

Jun 23 2020 8:13 AM

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.		040622	56	140

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES
Project Name: 040622
Date: 1/7/2016
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *170023-170023A, 170024-170024A, & 170025-170025A*
Based on NGS PTS : *9 DWB, 16 DWB, UE 16B, & UE 7A*
Projected to Ground Coordinates
Units: U.S. Survey Foot

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

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	503870.1946	0.0249	580111.6882	0.0221	824.18	0.003	CTL	PD:AHTD STD. MON STAMPED T-1
2	504037.6625	0.0224	579868.3178	0.0201	827.24	0.003	CTL	PD:AHTD STD. MON STAMPED T-2
3	504135.4887	0.0209	579374.4481	0.0185	827.12	0.004	CTL	PD:AHTD STD. MON STAMPED T-3
4	504119.4563	0.0215	579678.4846	0.0192	825.98	0.002	CTL	PD:AHTD STD. MON STAMPED T-4
5	508143.2836	0.0214	575712.3897	0.0215	874.35	0.004	CTL	PD:AHTD STD. MON STAMPED T-5
6	509004.4864	0.0256	575471.6622	0.0269	883.64	0.002	CTL	PD:AHTD STD. MON STAMPED T-6
7	509254.9597	0.0259	575325.0229	0.0275	883.25	0.002	CTL	PD:AHTD STD. MON STAMPED T-7
8	509548.7386	0.0276	575161.9825	0.0294	884.63	0.003	CTL	PD:AHTD STD. MON STAMPED T-8
9	526236.9274	0.0166	579287.5348	0.0170	1080.63	0.007	CTL	PD:AHTD STD. MON STAMPED T-9
10	527069.6896	0.0168	579223.3240	0.0173	1093.81	0.008	CTL	PD:AHTD STD. MON STAMPED T-10
11	527466.5783	0.0156	579205.0215	0.0160	1098.72	0.008	CTL	PD:AHTD STD. MON STAMPED T-11
12	527713.8005	0.0190	579364.1219	0.0192	1106.78	0.008	CTL	PD:AHTD STD. MON STAMPED T-12
13	499361.6784	0.0140	586004.6810	0.0120	770.02	0.002	CTL	PD:AHTD STD. MON STAMPED T-13
14	498900.2416	0.0120	587178.8280	0.0100	777.38	0.002	CTL	PD:AHTD STD. MON STAMPED T-14
15	498152.6395	0.0160	588324.6205	0.0130	774.67	0.002	CTL	PD:AHTD STD. MON STAMPED T-15
100	498494.8056	0.0000	587782.0904	0.0000	779.28	0.000	GPS	PD:AHTD GPS MON 170023
101	499176.6841	0	586778.1406	0	774.22	0.000	GPS	PD:AHTD GPS MON 170023A
102	505064.7827	0	577990.9906	0	853.86	0.004	GPS	PD:AHTD GPS #170024
103	506617.2674	0	577203.5067	0	849.86	0.004	GPS	PD:AHTD GPS #170024A
104	521512.2213	0	578470.2899	0	1011.86	0.005	GPS	PD:AHTD GPS #170025
105	522870.4564	0.0001	578757.9560	0.0001	1038.19	0.003	GPS	PD:AHTD GPS #170025A
996	498890.1806	0.0210	587197.4250	0.0150	778.18	0.002	BM	PD:USGS BM "16 DWB" PD:BRASS CAP
997	-99999.0000	30.0000	-99999.0000	30.0000	830.08	0.000	TBM	PD:CUT SQ N COR N END
998	-99999.0000	30.0000	-99999.0000	30.0000	885.49	0.000	BM	PD:USDI GS BRASS CAP 1967
999	-99999.0000	30.0000	-99999.0000	30.0000	1042.67	0.000	TBM	PD:CUT SQ S END W HEADWALL

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job######", & "PS####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.

**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".

SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.

Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.

All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

Positional Accuracy:
- Horizontal - GPS (1.0 cm± 1PPM) — *PN: 100-105*
- Horizontal - Primary (2.0cm± 20PPM): — *PN:1-15*
- Horizontal - Secondary (3 cm ± 50PPM): — *PN:N/A*
- Vertical - NGS 1st Order (±4mm x Vdist in km) — *PN:996-999*
- Vertical - NGS 2nd Order (±6mm x Vdist in km) — *PN:N/A*
- Vertical - NGS 3rd Order (±8mm x Vdist in km) — *PN:1-915*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0301 - North Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999901916 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM: 9 DWB, 16 DWB, UE 16B, & UE 7A
A project Elevation Factor of: 0.9999571891 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 895.04 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-15, 100-105, 996-999 From NGS BM: 9 DWB - 16 DWB *VERT. DATUM NGVD 29 CONVERTED TO NAVD 88

Basis of Bearing: Grid Bearings based on AHTD GPS points: *170023-170023A, 170024-170024A, & 170025-170025A*
Convergence Angle is: 0°20'46.38" Right at PN: 8
LT: 35 42 27.29 N LG: 094 29 01.00 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

HWY. 59 SITE 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	50+00.00	528892.7594	579682.7441
8001	PC	50+46.15	528850.1513	579665.0196
8002	PT	53+70.51	528532.0795	579629.5179
8003	PC	55+16.67	528388.0728	579654.5199
8004	PT	60+91.16	527860.4780	579488.7898
8005	PC	62+79.66	527726.5515	579356.1343
8006	PT	66+93.12	527349.8584	579219.6308
8007	PC	70+87.02	526957.3951	579253.1974
8008	PT	74+56.81	526588.0758	579269.8214
8009	POE	75+44.36	526500.5292	579270.2279

HWY. 59 SITE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8100	POB	100+00.00	510250.4857	575184.6799
8101	PC	103+29.80	509923.5932	575140.9599
8102	PT	110+40.25	509235.4014	575264.0821
8103	PC	116+14.07	508729.2977	575532.6289
8104	PT	118+02.00	508552.4090	575597.1767
8105	PC	119+10.49	508446.4522	575620.4728
8106	PT	126+66.29	507812.2560	576005.9971
8107	PC	136+98.06	507151.6763	576798.5784
8108	PT	141+37.21	506813.4960	577074.5062
8109	POE	141+98.86	506759.1805	577103.6702

HWY. 59 SITE 3 & 4

POINT NO.	TYPE	STATION	NORTHING	EASTING
8109	POB	142+00.00	506759.1805	577103.6702
8150	PC	160+48.42	505130.6619	577978.0813
8151	PT	164+06.55	504857.6922	578206.0944
8152	PC	171+14.05	504417.3739	578759.8769
8153	PT	174+77.24	504250.1608	579079.8237
8154	PI	177+32.41	504176.8487	579324.2314
8155	PI	178+78.32	504134.7484	579463.9302
8156	PC	183+19.76	504005.8142	579886.1211
8157	PT	192+35.03	503325.6311	580409.0005
8158	PC	204+80.22	502081.2631	580454.2742
8159	PT	211+74.46	501472.0466	580745.0402
8160	PC	215+19.80	501245.2336	581005.4500
8161	PT	218+00.10	501024.9613	581175.8956
8162	PC	222+26.97	500643.0045	581366.5023
8163	PT	227+92.28	500271.3059	581775.2722
8164	PC	231+69.21	500135.7272	582126.9692
8165	PT	236+80.69	499853.0428	582548.1457
8166	PC	238+04.40	499763.0754	582633.0581
8167	PT	251+78.10	499487.3544	583896.2266
8168	PC	255+61.02	499630.9789	584251.1876
8169	PT	260+51.27	499682.3728	584732.4102
8170	PC	263+53.99	499630.6536	585030.6771
8171	PT	265+48.12	499589.4302	585220.3195
8172	PI	276+97.27	499298.0073	586331.9119
8173	PC	278+58.30	499256.1316	586487.3933
8174	PT	284+61.18	499010.8149	587035.3698
8175	PI	291+19.84	498650.5366	587586.7679
8176	POE	298+59.41	498248.6060	588207.5800

HWY. 59 SITE 1 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	400+00.00	528892.7594	579682.7441
8001	PC	400+46.15	528850.1513	579665.0196
8002	PT	403+70.51	528532.0795	579629.5179
8003	PC	405+16.67	528388.0728	579654.5199
8004	PT	410+91.16	527860.4780	579488.7898
8050	PC	411+73.65	527801.8676	579430.7356
8051	PT	416+68.74	527346.8778	579219.8857
8052	PC	418+93.90	527122.5404	579239.0728
8053	PT	420+21.91	526996.0815	579249.8886
8054	PC	421+16.27	526904.5461	579257.4097
8055	PT	422+27.07	526794.8717	579264.1926
8056	POE	422+49.15	526772.8167	579265.2382

SITE 3 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8153	POB	597+44.83	504250.1608	579079.8237
8200	PC	598+38.17	504223.3435	579169.2270
8201	PT	599+11.05	504206.8956	579240.1689
8202	PC	602+35.46	504153.8561	579560.2158
8203	PT	603+11.19	504136.5805	579633.8923
8204	PC	605+08.26	504079.0190	579822.3702
8205	PT	608+81.53	503883.9176	580135.6471
8206	POE	610+00.57	503797.0815	580217.0645

SITE 4 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8250	POB	699+37.55	499138.3031	586807.6537
8251	PC	702+51.74	499017.3736	587097.6435
8252	PT	703+56.98	498968.2029	587190.5169
8253	PC	704+93.50	498893.5285	587304.8043
8254	PT	706+29.88	498806.1058	587409.0664
8255	PC	707+01.46	498753.9268	587458.0680
8256	PT	708+37.85	498666.5040	587562.3301
8175	POE	708+67.04	498650.5366	587586.7679

SITE 1 PRIVATE DRIVE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8301	POB	0+00.00	526939.4743	579254.6947
8302	PC	0+47.02	526937.1700	579207.7292
8303	PT	0+88.99	526955.5185	579172.1046
8304	PC	1+28.88	526989.0871	579150.5626
8305	PT	1+93.88	526999.9299	579093.5050
8306	POE	1+94.26	526999.7060	579093.1944

SITE 2 OAKRIDGE RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8310	POB	0+00.00	509377.9782	575200.6040
8311	PI	0+12.01	509373.5681	575189.4379
8312	PC	0+46.73	509361.5138	575156.8772
8314	PT	0+95.30	509326.7409	575125.7267
8315	PC	0+99.82	509322.3510	575124.6302
8317	PT	1+63.52	509284.5361	575078.7281
8318	POE	2+37.96	509280.6540	575004.3865

SITE 2 PRIVATE DRIVE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8320	POB	0+00.00	508740.7295	575526.0454
8321	PC	0+47.20	508762.8168	575567.7535
8323	PT	1+36.97	508839.8962	575594.6403
8324	POE	3+25.06	509012.2053	575519.2309

SITE 4 PRIVATE DRIVE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8330	POB	0+00.00	499053.6258	586966.7154
8331	PC	0+61.31	499001.6259	586934.2337
8333	PT	0+92.03	498974.4472	586940.0158
8334	PC	1+91.54	498918.8181	587022.5254
8336	PT	2+07.87	498905.4430	587031.0860
8337	POE	2+20.93	498892.5535	587033.1805

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

9/10/2019

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HWY. 59
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.		040622	57	140

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

HWY. 59 SITE 1
PI = 58+27.80
Δ = 54°34'34"RT.
D = 9°30'00"
T = 311.16'
L = 574.49'
PC= 55+16.67
PT= 60+91.16
FOR INFORMATION ONLY

HWY. 59 SITE 1
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

SITE 1 DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.068'/'
Ls= 250'

SITE 1 DETOUR
PI = 421+71.84
Δ = 11°04'49"LT.
D = 10°00'00"
T = 55.57'
L = 110.80'
PC= 421+16.27
PT= 422+27.07
NO SUPER

STA. 71+05.00 HWY. 59
STA. 0+00.00 PRIVATE DRIVE
= 90° 00' 00"

60
410
415
65
420
70

8004 S 44°43'37" W 82.50'
8005 S 44°43'37" W 188.50'
8006 S 32°45'48" E 293.99'
8051 S 4°46'56" E 225.16'
8052 S 2°38'25" W 397.31'
8053 S 8°01'07" W 94.36'
8054
8056
8007 S 18°41'28" W 417.02'
8302
8303
8304 S 68°15'38" W 127.41'
8305 S 54°12'33" W 0.38'
8306
8008 S 0°15'58" E 87.55'
6008

P.I. 60+91.16
P.I. 410+91.16
P.C. 411+73.65
P.C. 62+79.66
P.I. 66+93.12
P.T. 416+68.74
P.I. 414+37.84
P.I. 65+00.36
P.I. 419+58.17
P.I. 420+21.91
P.C. 418+93.90
P.C. 421+16.27
P.I. 422+21.07
P.O.E. 422+49.15
P.I. 72+72.01
P.I. 421+71.84
P.O.E. T5+44.36
P.I. 74+56.81
P.C. 0+47.02
P.I. 0+70.17
P.T. 0+88.99
P.I. 1+71.11
P.I. 1+93.88
P.C. 1+28.88
P.O.E. 1+94.26

PNo12
PD:AHTD STD. MON STAMPED T-12 CRAWFORD

PNo11
PD:AHTD STD. MON STAMPED T-11 2" A

PNo10
PD:AHTD STD. MON STAMPED T-10 CRAWFORD

DETOUR C.L.
HWY. 59
SURVEY BASELINE N 32°45'48" E
SURVEY BASELINE N 02°38'25" W
SURVEY BASELINE N 04°24'33" W
835.23'

DETOUR C.L. 422+49.15=
HWY. 59. C.L. 72+72.01
END DETOUR SITE 1

STA. 72+00.00
END SITE 1

SITE 1 DRIVEWAY
PI = 0+70.17
Δ = 60°07'10"RT.
D = 143°14'22"
T = 23.97'
L = 41.97'
PC= 0+47.02
PT= 0+88.99

SITE 1 DRIVEWAY
PI = 1+71.11
Δ = 93°06'05"RT.
D = 143°14'22"
T = 42.23'
L = 65.00'
PC= 1+28.88
PT= 1+93.88

HWY. 59 SITE 1
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

SITE 1 DETOUR
PI = 419+58.17
Δ = 12°48'03"RT.
D = 10°00'00"
T = 64.27'
L = 128.01'
PC= 418+93.90
PT= 420+21.91
e = 0.094'/'
Ls= 250'

STA. 61+91.16
BEGIN JOB 040622
BEGIN SITE 1
LOG MILE 0.06

DETOUR C.L. 411+70.00=
HWY. 59. C.L. 61+70.00
BEGIN DETOUR SITE 1

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HWY. 59 - SITE 1
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.		040622	58	140

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

HWY. 59 SITE 2
PI = 106+96.86
Δ = 35°31'20"LT.
D = 5°00'00"
T = 367.05'
L = 710.44'
PC= 103+29.80
PT= 110+40.25
e = 0.083'/'
Ls= 250'

105

110

POB 100+00.00

8100

S 7°37'04" W
329.80'

8101

P.C. 103+29.80

STA. 101+42.30
BEGIN SITE 2
LOG MILE 3.56

HWY. 59

STA. 108+85.00 HWY. 59
STA. 0+00.00 OAKRIDGE RD.
= 90° 00' 00"

PN8
PD:AHTD STD. MON STAMPED T-8 NATURAL DAM

SURVEY BASELINE N 29°01'45" W
335.99'

P.T. 110+40.25

PN7
PD:AHTD STD. MON STAMPED T-7 NATURAL DAM

SURVEY BASELINE N 30°20'48" W
290.24'

S 27°54'16" E
573.82'

8102

8310

8311

POB 0+00.00

S 68°25'53" W
121.01'

P.I. 0+12.01
Δ = 0°00'00"RT.

S 69°41'05" W
34.72'

8312

P.C. 0+46.73

P.T. 0+95.30

P.I. 1+36.81

8314

8315

S 14°01'29" W
4.56'

P.I. 0+73.12

P.C. 0+99.82

8317

P.T. 1+63.52

S 87°00'39" W
74.44'

8318

POE 2+37.96

P.I. 106+96.86

OAKRIDGE ROAD
PI = 1+36.81
Δ = 72°59'10"RT.
D = 114°35'30"
T = 36.99'
L = 63.69'
PC= 0+99.82
PT= 1+63.52

OAKRIDGE ROAD
PI = 0+12.01
Δ = 55°39'37"LT.
D = 144°35'30"
T = 26.40'
L = 48.57'
PC= 0+46.73
PT= 0+95.30

115

120

SITE 2 DRIVEWAY
PI = 1+02.88
Δ = 85°43'54"LT.
D = 95°29'35"
T = 55.69'
L = 89.78'
PC= 0+47.20
PT= 1+36.97

POE 3+25.06

P.T. 1+36.97

88°20'11"

P.C. 0+47.20

N 23°38'10" W
188.09'

8324

8323

8321

P.I. 117+08.61

P.C. 119+10.49

HWY. 59 SITE 2
PI = 123+02.71
Δ = 37°47'25"LT.
D = 5°00'00"
T = 392.23'
L = 755.81'
PC= 119+10.49
PT= 126+66.29
INFORMATION ONLY

PN6
PD:AHTD STD. MON STAMPED T-6 NATURAL DAM

SURVEY BASELINE N 15°37'01" W
894.21'

N 62°05'44" E
847.20'

8320

8103

S 12°24'00" E
108.49'

8104

8105

S 27°54'16" E
573.82'

HWY. 59

S 27°54'16" E
573.82'

8102

POB 0+00.00

P.C. 0+46.73

P.T. 0+95.30

P.I. 1+36.81

PN5
PD:AHTD STD. MON STAMPED T-5 NATURAL DAM

S 50°11'25" E
1031.77'

P.I. 123+02.71

P.C. 116+14.07

P.T. 118+02.00

STA. 118+02.00
END SITE 2

STA. 116+00.00 HWY. 59
STA. 0+00.00 PRIVATE DRIVE
= 90° 00' 00"

HWY. 59 SITE 2
PI = 117+08.61
Δ = 15°30'16"RT.
D = 8°15'00"
T = 94.54'
L = 187.93'
PC= 116+14.07
PT= 118+02.00
e = 0.100'/'
Ls= 300'

HWY. 59 SITE 2
SURVEY CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	59	140

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

HWY. 59 SITE 3
PI = = 172+97.87
Δ = 21°47'30"LT.
D = 6°00'00"
T = 183.82'
L = 363.19'
PC= = 171+14.05
PT= = 174+77.24
e =0.092'/'
Ls= 300'

SITE 3 DETOUR
PI = 598+74.66
Δ = 7°17'14"LT.
D = 10°00'00"
T = 36.49'
L = 72.87'
PC= 598+38.17
PT= 599+11.05
NO SUPER

DETOUR C.L. STA. 598+38.17=
CONST. C.L. STA. 175+70.58
BEGIN DETOUR SITE 3

175 600 180 605 185 610

POB 597+44.83
P.T. 174+77.24
P.C. 598+38.17
P.T. 599+11.05
P.I. 602+73.38
P.I. 606+99.24
P.I. 608+46.45
POE 610+00.57

PN#4
PD:AHTD STD. MON STAMPED T-4 NATURAL DAM

PN#2
PD:AHTD STD. MON STAMPED T-2 NATURAL DAM

PN#3
PD:AHTD STD. MON STAMPED T-3 NATURAL

PN#1
PD:AHTD STD. MON STAMPED T-1 NATURAL DAM

8153 S 73°18'11" E 93.34' 8200 255.17' S 73°18'11" E 8201 S 80°35'25" E 324.41' 8202 S 73°13'44" E 145.90' 8154 8155 SURVEY BASELINE N 86°58'53" W 304.46' 8203 S 73°01'02" E 197.07' 8204 SURVEY BASELINE N 66°41'25" W 206.70' 8156 S 73°01'04" E 441.44' HWY. 59 8205 S 43°09'20" E 119.03' 8206 SURVEY BASELINE N 55°28'03" W 295.42'

DETOUR C.L.

P.I. 177+32.41
Δ = 0°04'27"RT.

P.I. 178+78.32
Δ = 0°12'40"RT.

P.C. 602+35.46
P.T. 603+11.19
P.C. 605+08.26
P.C. 183+19.76
P.T. 608+81.53

S 2°05'01" E 1245.19'

STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.97

STA. 186+20.00
END SITE 3

DETOUR C.L. STA. 609+90.14=
CONST. C.L. STA. 187+05.17
END SITE 3

SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC= 602+35.46
PT= 603+11.19
e = 0.094'/'
Ls= 250'

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC= 605+08.26
PT= 608+81.53
e = 0.084'/'
Ls= 250'

HWY. 59 SITE 3
PI = = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= = 183+19.76
PT= = 192+35.03
e =0.100'/'
Ls= 300'

9/18/2019

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HWY. 59 SITE 3
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.		040622	60	140

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

HWY. 59 SITE 4
PI =281+62.37
Δ = 18°05'11"RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

STA. 283+80.00 HWY. 59
STA. 0+00.00 PRIVATE DRIVE
= 88° 40' 02"

SITE 4 DETOUR
PI = 707+69.98
Δ = 13°38'19"LT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 707+01.46
PT= 708+37.85
NO SUPER

700 705 285 290 295 80

P.I. 281+62.27
POB 699+37.55
POB 0+00.00
P.I. 284+61.18
P.C. 702+51.74
P.I. 703+04.51
P.I. 705+62.01
P.C. 707+01.46
P.T. 708+37.85
POE 708+67.04
P.I. 291+19.84
Δ = 0°14'25"LT.

PN:101
PD:AHTD GPS MON 170023A

S 67°21'48" E 314.19'
S 74°55'34" E 161.02'
SURVEY BASELINE N 76°32'56" W 795.26'

DETOUR C.L.

8250 8251 8252 S, 56°50'23" E 136.52' 8253 S 43°12'04" E 71.58' 8254 8255 S 56°50'23" E 29.19' 8256 8175 S 57°04'48" E 739.56'

8330 8174 HWY. 59 S 56°50'23" E 658.67'

SURVEY BASELINE N 55°23'51" W 486.80'
PN:14
PD:AHTD STD. MON STAMPED T-14

SURVEY BASELINE N 56°05'46" W 726.85'
PN:100
PD:AHTD GPS MON 170023

P.I. 2+00.19
P.T. 703+56.98
P.C. 704+93.50
P.I. 706+29.88
P.I. 707+69.98

P.C. 0+61.31
S 31°59'27" W 61.31'
8331
S 56°00'42" E 99.51' 8333 8334 8336 8337
S 13°48" E 14.06'
POE 2+20.93

P.I. 0+80.63
P.I. 0+92.03
P.C. 1+91.54
P.I. 2+07.87

SITE 4 DRIVEWAY
PI = 0+80.63
Δ = 88°00'09"LT.
D = 286°28'44"
T = 19.32'
L = 30.72'
PC= 0+61.31
PT= 0+92.03

SITE 4 DRIVEWAY
PI = 2+00.19
Δ = 46°46'54"RT.
D = 286°28'44"
T = 8.65'
L = 16.33'
PC= 1+91.54
PT= 2+07.87

SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094
Ls= 250'

STA. 281+45.00
BEGIN SITE 4
LOG MILE 6.96

DETOUR C.L. STA. 699+37.55
CONST. C.L. STA. 282+00.00
BEGIN DETOUR SITE 4

DETOUR C.L. STA. 708+63.30=
CONST. C.L. STA. 291+16.10
END SITE 4

STA. 290+20.00
END SITE 4
END JOB 040622

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HWY. 59 SITE 4
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.		040622	61	140

(2) PLAN AND PROFILE SHEETS

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HWY. 59 SITE I
PI = 58+27.80
Δ = 54°34'34"RT.
D = 9°30'00"
T = 311.13'
L = 574.49'
PC= 55+16.67
PT= 60+91.16
e = 0.092'/'
Ls = 250'

STA. 68+16 TO STA. 69+06 - IN PLACE
90' X 22' CLEAR ROADWAY BRIDGE NO. 02815
CONSISTING OF 5 SPAN CONCRETE PIERS
REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

STA. 61+97 IN PLACE
30" X 52' RC PIPE CULVERT
W/HDWLS. LT. & RT.
REMOVE HDWLS LT. & RT. & EXTEND R.C. PIPE
14'LT. & 6' RT.
CLASS III) (TYPE 3 BEDDING)
Q50 = 7.87 CFS, D.A. = 1.3 AC
30" R.C. PIPE = 28 LIN.FT.
30" F.E.S. = 2 EACH

	STATION	SIDE	GUARDRAIL (TYPE A) LIN.FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
65+71.60	67+90.35	RT.	150'		
66+46.60	67+90.35	LT.	75'		
69+29.65	70+73.40	RT.	75'		
69+29.65	71+48.40	LT.	150'		

HWY. 59 SITE I
PI = 65+00.36
Δ = 49°36'55"LT.
D = 12°00'00"
T = 220.70'
L = 413.46'
PC= 62+79.66
PT= 66+93.12
e = 0.099'/'
Ls= 250'

BR. END STA. 67+99.75
BRIDGE NO. 07448
40'-00" CLEAR ROADWAY
120'-6" TOTAL LENGTH
119'-6" INTEGRAL
PRESTRESSED CONCRETE GIRDER
UNIT TYPE II (39'-9", 40'-0", 39'-9")
BR. END STA. 69+20.25

STA. 71+05.00 HWY. 27
STA. 0+00.00 PRIVATE DRIVE
= 90° 00' 00"

STA. 65+35 IN PLACE
30"X 50' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE & INSTALL
30"X 50' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPRS. = 215 CU.YD.

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA.	STA.	SIDE	LIN. FT.	GATE (EACH)
61+00	65+54	RT.	420	1

STA. 71+05 CONSTRUCT APPROACH ON RT. = 49 CU.YDS.
EXCAVATION ON RT. = 134 CU.YDS.

HWY. 59 SITE I
PI = 72+72.01
Δ = 4°37'21"RT.
D = 1°15'00"
T = 185.00'
L = 369.79'
PC= 70+87.02
PT= 74+56.81
e = 0.020'/'
Ls= 200'

STA. 72+00.00
END SITE I

40 MPH DESIGN
HWY. 59 - MAIN LANES SITE I

(ALL SITE I MAIN LANE SUPERELEVATION ABOUT CENTERLINE)
STA. 60+20.00 MATCH EXIST. SUPERELEVATION (0.061'/')
STA. 61+85.41 END SUPERELEVATION

(ALL SITE I MAIN LANE SUPERELEVATION ABOUT CENTERLINE)
STA. 61+85.41 BEGIN SUPERELEVATION
STA. 64+35.41 MAX. SUPERELEVATION (0.099'/')
STA. 65+37.37 MAX. SUPERELEVATION (0.099'/')
STA. 67+87.37 END SUPERELEVATION

(ALL SITE I MAIN LANE SUPERELEVATION ABOUT CENTERLINE)
STA. 70+60.00 BEGIN SUPERELEVATION
STA. 72+00.00 MATCH EXIST. SUPERELEVATION (0.014'/')

UNNAMED TRIBUTARY TO MOUNTAIN FORK CREEK
STA. 68+30 - STA. 69+10 IS CLASSIFIED AS AN EPHEMERAL STREAM.
THE TOP OF CHANNEL ELEVATION IS 1087.0 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE
2014 STANDARD SPECIFICATIONS.

STA. 61+91.16
BEGIN JOB 040622
BEGIN SITE I
LOG MILE 0.06

P.V.C. 60+91.16 1114.09'
-2.34%
RT. D.G. -6.67%
61+40.00 RT. 1110.67
61+97.00 RT. 1106.87
RT. D.G. 3.35%
62+20.00 RT. 1107.64
P.V.I. 61+91.16 1111.75'
P.V.T. 62+91.16 1108.29'
-3.46%
P.V.C. 63+56.41 1106.04'
INLET FL. 1106.51 RT.
OUTLET FL. 1101.81 LT.
VC= 200'
e= -0.28'
K= 179.64
VC= 400'
e= 1.73'
K= 115.77
P.V.I. 65+56.41 1099.13'
65+00.00 RT. 1098.00
RT. D.G. -3.40%
66+00.00 RT. 1094.60
66+00.00 LT. 1092.73
LT. D.G. -4.31%
P.V.T. 67+56.41 1099.13'
STA. 67+99.75 BRIDGE END
67+98.92 LT. 1090.13
STA. 68+20.25 BRIDGE END
0.00%
69+20.00 RT. 1090.81
RT. D.G. 2.15%
P.V.C. 69+22.00 1099.13'
P.V.I. 70+37.00 1099.13'
70+14.00 RT. 1092.81
VC= 230'
e= -1.09'
K= 60.66
P.V.T. 71+52.00 1094.77'
-3.79%
P.V.C. 71+57.50 1094.56'
VC= 85'
e= 0.13'
K= 68.65
-2.56%
P.V.I. 72+00.00 1092.95'
P.V.T. 72+42.50 1091.86'
DESIGN HW = ELEV. 1091.70
Q50 = 2580 CFS

1150 1140 1130 1120 1110 1100 1090 1080 1070 1060
60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00

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				6	ARK.			
				JOB NO.		040622	62	140

(2) PLAN AND PROFILE SHEETS

HWY. 59 SITE 2
PI = 106+96.86
Δ = 35°31'20"LT.
D = 5°00'00"
T = 367.05'
L = 710.44'
PC= 103+29.80
PT= 110+40.25
e = 0.083'/'
Ls= 250'

STA. 109+40 CONSTRUCT DRIVEWAY ON LT.
CONST. APPRS. = 60 CU.YD.

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WIRE FENCE (TYPE C)

STA.	STA.	SIDE	LIN. FT.
101+30	103+55	LT.	225
101+75	108+75	RT.	805
108+95	110+00	RT.	35

EXIST. R/W
POB 100+00.00
+42.30
100' TRANSITION
+42.30
+30.00
136.56
+75.00
50.00'
PROPOSED R/W
S 7°37'04" W
P.C. 103+29.80
+52.61
42.06'
+74.99
51.98'
EXIST. R/W
FLOODPLAIN BOUNDARY
105
STA. 108+85.00 HWY. 59
STA. 0+00.00 OAKRIDGE RD.
= 90° 00' 00"
EXIST. R/W
PROPOSED CONST. LIMITS
P.T. 110+40.25
R=20'
PROPOSED CONST. LIMITS
PROPOSED R/W
100.00
80.00
EXIST. R/W
S 27°54'16" E
P.T. 0+12.01
P.C. 0+46.73
R=50'
P.T. 0+95.30
PROPOSED C
P.I. 1+36.81
PROPOS
+75.00
120.00'
P.I. 106+96.86
+75.00
100.55'
+75.00
130.00'
89.82
P.I. 0+73.12
R=50'
P.C.
P.T. 1+63.52
+65.00
150.00'
S 18°
STA. 101+42.30
BEGIN SITE 2
LOG MILE 3.56
STA. 108+85 INSTALL
DBL. 30" X 66' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 315 CU.YD.
STA. 109+68 IN PLACE
DBL. 30" X 34'RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 59 MAIN LANES SITE 2

STA. 101+42.30 BEGIN SUPERELEVATION
STA. 103+92.30 MAX. SUPERELEVATION (0.083'/')
STA. 109+15.00 MAX. SUPERELEVATION (0.083'/')
STA. 111+65.00 END SUPERELEVATION

P.V.I. 101+42.30
883.00'
101+00.00 RT.
883.46
VC= 50'
e= 0.02'
K= 195.62
P.V.C. 104+75.00
886.43'
P.V.T. 105+25.00
886.11'
P.V.C. 105+90.00
885.78'
P.V.I. 105+00.00
886.24'
-0.77%
-0.52%
VC= 320'
e= 0.59'
K= 218.48
P.V.I. 107+50.00
884.95'
P.V.T. 109+10.00
886.47'
0.95%
RT. D.G. -1.32%

910 900 890 880 870 860 850 840

95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00

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				6	ARK.			
				JOB NO.		040622	63	140

(2) PLAN AND PROFILE SHEETS

BR. END STA. 111+66.75
BRIDGE NO. 07449
40'-0" CLEAR ROADWAY
150'-6" TOTAL LENGTH
149'-6" INTEGRAL
PRESTRESSED CONCRETE GIRDER
UNIT TYPE II (49-9", 50'-0", 49'-9")
BR. END STA. 113+17.25

STA. 115+27 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN

STATION	STATION	SIDE	GUARDRAIL (TYPE A) LIN.FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
109+38.60	111+57.35	RT.	150'		
110+13.60	111+57.35	LT.	75'		
113+26.65	114+70.40	RT.	75'		
113+26.65	115+45.40	LT.	150'		

STA. 111+72.14 TO STA. 112+79.72 - IN PLACE
107.58' X 22' CLEAR ROADWAY BRIDGE NO. 02814
CONSISTING OF CONCRETE SLAB.
REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2) = 1.00 LUMP SUM

STA. 116+00 INSTALL
24" X 58' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 457 CU. YD.
EXCAV. APPR. = 62 CU. YD.

STA. 116+60 INSTALL
30" X 94' RC PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
Q50 = 7.87 CFS, D.A. = 1.3 AC
30" R.C. PIPE = 94 LIN.FT.
30" F.E.S. = 2 EACH

STA. 117+00 IN PLACE
30" X 60' RC PIPE CULVERT
W/HDWLS. LT. & RT.
PLUG & ABANDON

HWY. 59 SITE 2
PI = 106+96.86
Δ = 35°31'20"LT.
D = 5°00'00"
T = 367.05'
L = 710.44'
PC= 103+29.80
PT= 110+40.25
e = 0.083'/'
Ls= 250'

HWY. 59 SITE 2
PI = 123+02.71
Δ = 37°47'25"LT.
D = 5°00'00"
T = 392.23'
L = 755.81'
PC= 119+10.49
PT= 126+66.29
INFORMATION ONLY

HWY. 59 SITE 2
PI = 117+08.61
Δ = 15°30'16"RT.
D = 8°15'00"
T = 94.54'
L = 187.93'
PC= 116+14.07
PT= 118+02.00
e = 0.10'/'
Ls= 300'

STA. 116+00.00 HWY. 59
STA. 0+00.00 PRIVATE DRIVE
= 90° 00' 00"

STA. 118+02.00
END SITE 2

WIRE FENCE (TYPE C) STA.	STA.	SIDE	LIN. FT.	GATE (EACH)
115+00	119+25'	RT.	390	
116+00		LT.		

HWY. 59 MAIN LANES SITE 2

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

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STA. 101+42.30 BEGIN SUPERELEVATION
STA. 103+92.30 MAX. SUPERELEVATION (0.083'/')
STA. 109+15.00 MAX. SUPERELEVATION (0.083'/')
STA. 111+65.00 END SUPERELEVATION

MOUNTAIN FORK CREEK
STA. 111+95 - STA. 112+75 IS CLASSIFIED AS PERENNIAL.
THE TOP OF CHANNEL ELEVATION IS 875.0 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

STA. 115+02.91 BEGIN SUPERELEVATION
STA. 116+51.12 MAX. SUPERELEVATION (0.049'/')
STA. 117+08.04 MAX. SUPERELEVATION (0.049'/')
STA. 118+56.25 END SUPERELEVATION

P.V.I. 110+88.73 888.16'
P.V.T. 111+63.73 888.16'
BRIDGE END STA. 111+66.75
BRIDGE END STA. 113+17.25
P.V.C. 113+25.00 888.16'
P.V.I. 114+50.00 888.16'
P.V.C. 116+00.00 884.21'
P.V.T. 118+00.00 880.03'
0.95%
0.00%
-2.64%
-1.54%
P.V.C. 110+13.73 887.45'
VC= 150' e= +0.18' K= 158.12
DESIGN HW= ELEV. 877.10 Q50 = 5170 CFS
VC= 250' e= -0.82' K= 94.74
P.V.T. 115+75.00 884.86'
VC= 200' e= 0.28' K= 181.36
P.V.I. 117+00.00 881.57'
P.V.I. 118+02.00 880.00'
RT. D.G. -1.32%
RT. D.G. 0.54%
RT. D.G. -4.02%
RT. D.G. -1.18%
111+82.00 RT. 869.13
113+17.00 RT. 867.26
114+00.00 RT. 867.71
116+00.00 RT. 870.90
116+60.00 RT. 868.49
118+00.00 RT. 866.84
INLET FL. 874.87 LT.
OUTLET FL. 868.49 RT.
EXIST. INLET FL. 872.50 LT.
EXIST. OUTLET FL. 867.56 RT.

900 890 880 870 860 850 840
110+00 111+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

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HWY. 59 SITE 3
PI = = 172+97.87
Δ = 21°47'30"LT.
D = 6°00'00"
T = 183.82'
L = 363.19'
PC= = 171+14.05
PT= = 174+77.24
e =0.092'/'
Ls= 300'

STATION	STATION	SIDE	GUARDRAIL (TYPE A) LIN.FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH	BRIDGE END TERMINAL EACH
178+63.60	180+82.35	RT.	150'			
179+57.35	180+82.35	LT.	75'			
182+32.25	182+47.25	LT.				
182+31.65	183+75.40	RT.	75'			

STA. 176+47 CONST.
DI ON LT. H = 6'-7"
24" X 147' R.C. INLET PIPE CULVERT
(CLASS V) (TYPE 3 BEDDING) W/FES
TYPE ST = 3'-0" X 3'-0"
CONNECT TO EXIST. R.C. PIPE CULVERT
@ STA. 176+47 LT.
AND REMOVE 3' LT. EXIST. R.C. PIPE CULVERT
EXTEND 12' RT.
24" R.C. PIPE (CLASS III)
(TYPE 3 BEDDING) = 16 LIN. FT.
050 = 0.50 CFS, D.A. = 0.91 AC

STA. 181+03.66 - STA. 182+11.40 IN PLACE
(107.74' X 21.71') CLEAR ROADWAY BRIDGE NO. 02813
02813 CONSISTING OF CONCRETE SLAB
REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3) = LOO LUMP SUM

STA. 183+54 INSTALL
24" X 66' PIPE CULVERT
LT. SIDE DRAIN
CONST. TURNOUT = 460 CU.YDS.

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.		040622	64	140

(2) PLAN AND PROFILE SHEETS

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TRINITY D. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11425
9-18-19

200' LT. TYPE B CURB
100' TRANSITION
150' LT. TYPE B CURB
130' TRANSITION
EXIST. R/W
PROPOSED R/W
PROPOSED CONST. LIMITS
T.C.E.
DETOUR
HWY. 59
S 73°13'44" E
S 73°18'11" E
S 73°01'02" E
S 73°01'04" E
S 43°09'20" E
S 2°05'01" E
P.I. 174+77.24
P.O.B. 597+44.83
P.C. 598+38.17
P.T. 599+11.05
P.I. 177+32.41
Δ = 10°04'27"RT.
P.I. 602+73.38
P.I. 606+99.24
P.I. 188+46.45
P.O.B. 605+00.26
P.C. 605+99.26
P.T. 606+31.53
P.C. 183+19.76
P.O.B. 607+00.51
P.I. 178+78.32
Δ = 0°12'40"RT.
P.I. 598+74.66
P.C. 602+39.38
P.T. 603+11.59
FLOODPLAIN BOUNDARY
WHIZZEN HOLLOW CREEK
25 FT. BUFFER
STARR RD.
605
180
185
610
600
175
STA. 177+05
CONST. APPROACH = 255 CU.YD.
BR. END STA. 180+91.75
BRIDGE NO. 07450
40'-0" CLEAR ROADWAY
130'-6" TOTAL LENGTH
129'-6" INTEGRAL
INTEGRAL PRESTRESSED CONCRETE GIRDER
UNIT TYPE II(39"-9", 50'-0", 39'-9")
BR. END STA. 182+22.25

HWY. 59 SITE 3
PI = = 188+46.45
Δ = 70°56'03"RT.
D = 7°45'00"
T = 526.70'
L = 915.28'
PC= = 183+19.76
PT= = 192+35.03
e =0.100'/'
Ls= 300'

STA. 186+20.00
END SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 59 MAIN LANES SITE 3

STA. 175+50.00 MATCH EXIST. SUPERELEVATION (0.016'/')
STA. 176+02.18 END SUPERELEVATION

STA. 175+50.00
BEGIN SITE 3
LOG MILE 4.97

WHIZZEN HOLLOW CREEK
STA. 181+10 - STA. 181+80 IS CLASSIFIED AS PERENNIAL.
THE TOP OF CHANNEL ELEVATION IS 819.0 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE
2014 STANDARD SPECIFICATIONS.

STA. 182+24.00 BEGIN SUPERELEVATION
STA. 184+67.00 MAX. SUPERELEVATION (0.081'/')
STA. 186+20.00 MATCH EXISTING SUPERELEVATION (0.081'/')

P.V.I. 174+50.00 841.20'
P.V.C. 175+50.00 837.20'
-5.9%
24" X 147' @ -6.28%
D.I. TOP 833.80 BOTTOM 827.21
+67
OUTLET FL. 825.62 RT.
VC= 440'
e= 2.50'
K= 96.77
-3.43%
1.11%
P.V.I. 177+70.00 829.65'
P.V.R.C. 179+90.00 832.10
P.V.I. 180+40.00 832.66'
P.V.T. 180+90.00 832.66'
BRIDGE END STA. 180+91.75
BRIDGE END STA. 182+22.25
P.V.C. 182+25.18 832.66'
P.V.I. 183+65.18 832.66'
0.00%
L.T. D.G. -0.73%
L.T. D.G. 0.43%
L.T. D.G. 1.92%
2:1
VC= 100'
e= -0.14'
K= 89.78
VC= 280'
e= -1.07'
K= 91.88
179+00.00 LT. 824.40
180+91.00 LT. 823.00
182+23.00 LT. 821.80
182+70.00 LT. 822.00
182+90.00 LT. 822.05
184+00.00 LT. 824.16
P.V.T. 185+05.18 828.40'
P.V.C. 185+22.50 827.87'
VC= 195'
e= 0.48'
K= 98.62
P.V.I. 186+20.00 824.90'
-2.08%
P.V.T. 187+17.50 823.86'
P.V.I. 187+50.00 823.51'
-1.07%
-0.62%

DESIGN HW = ELEV. 824.80
050 = 3720 CFS

870 860 850 840 830 820 810 800 790 780
174+00 175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00 188+00 189+00

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6	ARK.			
JOB NO.		040622	65	140

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-18-19

STATION	STATION	SIDE	GUARDRAIL (TYPE A) LIN.FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
284+20.60	286+39.35	RT.	150'		
284+95.60	286+39.35	LT.	75'		
287+78.65	289+97.40	LT.	150'		
287+78.65	289+22.40	RT.	75'		

STA. 283+50 IN PLACE
24" X 44' R.C. PIPE CULVERT
W/HDWLS. LT. & RT. EXTEND R.C. PIPE
16' LT. AND 14' RT.
(CLASS III) (TYPE 3 BEDDING)
Q50 = 1.24 CFS, D.A. = 0.39 AC
24" R.C. PIPE = 38 LIN.FT.
24" F.E.S. = 2 EACH

STA. 284+00 CONSTRUCT
DRIVEWAY ON LT.
CONST. APPRS. = 535 CU.YD.

STA. 286+63 - STA. 287+24 IN PLACE
(61.63' X 23.45') CLEAR ROADWAY BRIDGE NO. 02621
CONSISTING OF STEEL STRINGER MULTI-BEAM DECK
REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 4) = 1.00 LUMP SUM

STA.	STA.	SIDE	LIN. FT.	GATE (EACH)
281+50	286+50	LT.	535	2
287+70	291+00	LT.	365	

WIRE FENCE (TYPE D)

STA.	STA.	SIDE	LIN. FT.	GATE (EACH)
282+00	286+50	RT.	470	
287+70	291+00	RT.	370	1

WIRE FENCE (TYPE C)

BR. END STA. 286+48.75
BRIDGE NO. 07451
40'-00" CLEAR ROADWAY
120'-6" TOTAL LENGTH
119'-6" INTEGRAL
INTEGRAL PRESTRESSED CONCRETE GIRDER
UNIT TYPE II (39'-9", 40'-0", 39'-9")
BR. END STA. 287+69.25

HWY. 59 SITE 4
PI =281+62.27
Δ = 18°05'11" RT.
D = 3°00'00"
T = 303.97'
L = 602.88'
PC= 278+58.30
PT= 284+61.18
e = 0.057'/'
Ls= 250'

STA. 281+45.00
BEGIN SITE 4
LOG MILE 6.96

STA. 283+80.00 HWY. 59
STA. 0+12.00 PRIVATE DRIVE
= 88° 40' 02"

STA. 283+80 INSTALL
24" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 424 CU.YDS.
CONST. EXCAVATION = 54 CU. YDS.

STA. 284+50 INSTALL
18" X 34' PIPE CULVERT
RT. SIDE DRAIN

STA. 290+20.00
END SITE 4
END JOB 040622

HWY. 59 MAIN LANES SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 281+45.00 MATCH EXISTING SUPERELEVATION (0.057'/')
STA. 283+98.68 MAX. SUPERELEVATION (0.057'/')
STA. 286+48.68 END SUPERELEVATION

HUEY CREEK
STA. 286+65 - STA. 287+35 IS CLASSIFIED AS PERENNIAL.
THE TOP OF CHANNEL ELEVATION IS 770.0 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE
2014 STANDARD SPECIFICATIONS.

INLET FL. 771.72 LT.
OUTLET FL. 770.85 RT.

DESIGN HW = ELEV. 774.70
Q50 = 3320 CFS

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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

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TRINITY D. SMITH
9-18-19

SITE I DETOUR
PI = 414+37.84
Δ = 49°30'33"LT.
D = 10°00'00"
T = 264.19'
L = 495.09'
PC= 411+73.65
PT= 416+68.74
e = 0.068%
Ls= 250'

STA. 418+05.00 - STA. 418+95.00 CONSTRUCT 90' X 24' TEMPORARY BRIDGE

SITE I DETOUR
PI = 421+71.84
Δ = 11°04'49"LT.
D = 10°00'00"
T = 55.57'
L = 110.80'
PC= 421+16.27
PT= 422+27.07
NO SUPER.

SITE I DETOUR
PI = 419+58.17
Δ = 12°48'03"RT.
D = 10°00'00"
T = 64.27'
L = 128.01'
PC= 418+93.90
PT= 420+21.91
e = 0.094'/'
Ls= 250'

STA. 415+15 INSTALL 18"X 28' TEMPORARY PIPE CULVERT ON RT.
CONST. APPRS. = 5 CU.YD.

STA. 71+05
TEMPORARY DRIVE ON RT.
CONST. APPRS. = 80 CU.YD.

DETOUR C.L. STA. 411+70.00=
HWY. 59 C.L. STA. 61+70.00
BEGIN DETOUR SITE I

DETOUR C.L. STA. 422+49.15=
HWY. 59 C.L. STA. 72+72.01
END DETOUR SITE I
HWY. 59 - DETOUR SITE I

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 411+70.00 BEGIN SUPERELEVATION
STA. 414+20.00 MAX. SUPERELEVATION (0.068'/')
STA. 415+31.32 MAX. SUPERELEVATION (0.068'/')
STA. 417+81.32 END SUPERELEVATION

STA. 418+95.60 BEGIN SUPERELEVATION
STA. 419+57.90 MAX. SUPERELEVATION (0.023'/')
STA. 419+57.91 MAX. SUPERELEVATION (0.023'/')
STA. 420+20.21 END SUPERELEVATION

P.V.C. 411+25.00 1113.22'
-2.43%
P.V.I. 412+00.00 1111.40'
+97
-4.60%
P.V.T. 412+75.00 1107.95'
P.V.C. 413+34.89 1105.20'
VC= 150'
e= -0.41'
K= 69.17
INLET FL. 1106.51 RT.
OUTLET FL. 1101.81 LT.
VC= 374'
e= 2.15'
K= 81.34
P.V.I. 415+21.89 1096.60'
416+35.46 LT. 1092.74
L.T.D.C. -2.24%
417+72.65 LT. 1089.67
P.V.T. 417+08.89 1096.60'
STA. 418+05 BRIDGE END
STA. 418+95 BRIDGE END
90' BR. LENGTH
0.00%
P.V.C. 419+25.00 1096.60'
P.V.I. 420+25.00 1096.60'
VC= 200'
e= -0.63'
K= 79.04
P.V.T. 421+25.00 1094.07'
-2.53%
P.V.I. 422+48.78 1090.94'

1140 1130 1120 1110 1100 1090 1080 1070 1060 1050

411+00 412+00 413+00 414+00 415+00 416+00 417+00 418+00 419+00 420+00 421+00 422+00 423+00 424+00 425+00 426+00

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6/18/2020				6	ARK.			
				JOB NO.		040622	67	140

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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SITE 3 DETOUR
PI = 598+74.66
Δ = 7°17'14"LT.
D = 10°00'00"
T = 36.49'
L = 72.87'
PC= 598+38.17
PT= 599+11.05
NO SUPER

STA. 599+19 EXIST.
24" X 46' R.C. PIPE CULVERT
EXTEND 2' LT. W/
24" TEMPORARY PIPE CULVERT

STA. 603+83.00 - STA. 604+73.00 CONSTRUCT
90' X 24' TEMPORARY BRIDGE

STA. 606+18 INSTALL
TEMPORARY LT. SIDE DRAIN
24" X 42" PIPE CULVERT
CONST. APPRS. = 125 CU.YD

STA. 599+66
TEMPORARY DRIVE ON RT.
CONST. APPRS. = 120 CU.YD.

SITE 3 DETOUR
PI = 602+73.38
Δ = 7°34'23"RT.
D = 10°00'00"
T = 37.92'
L = 75.73'
PC= 602+35.46
PT= 603+11.19
e = 0.094'/'
Ls= 250'

SITE 3 DETOUR
PI = 606+99.24
Δ = 29°51'43"RT.
D = 8°00'00"
T = 190.98'
L = 373.27'
PC= 605+08.26
PT= 608+81.53
e = 0.084'/'
Ls= 250'

DETOUR C.L. STA. 598+38.17=
CONST. C.L. STA. 175+70.58
BEGIN DETOUR SITE 3

DETOUR C.L. STA. 609+90.14=
CONST. C.L. STA. 187+05.17
END SITE 3

DETOUR SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

(ALL SITE 3 DETOUR SUPERELEVATION ABOUT CENTERLINE)
STA. 601+54.71 BEGIN SUPERELEVATION
STA. 602+62.38 MAX. SUPERELEVATION (0.040'/')
STA. 602+73.33 MAX. SUPERELEVATION (0.040'/')
STA. 603+81.00 END SUPERELEVATION

(ALL SITE 3 DETOUR SUPERELEVATION ABOUT CENTERLINE)
STA. 604+87.00 BEGIN SUPERELEVATION
STA. 606+94.89 MAX. SUPERELEVATION (0.070'/')
STA. 609+90.14 MATCH SUPERELEVATION (0.070'/')

P.V.I. 597+44.83
ELEV. 840.34
-4.34%
P.V.C. 598+30.00
ELEV. 836.64
+67
OUTLET FL. 825.62 RT.
P.V.I. 599+80.00
ELEV. 830.13
VC=300'
K= 69.13
e=1.63'
P.V.T. 601+30.00
ELEV. 830.13
602+70.82 LT.
826.78
603+73.00 LT.
823.65
604+92.86 LT.
822.50
STA. 603+83
BRIDGE END
STA. 604+73
BRIDGE END
90'-0"
BR. LENGTH
0.00%
LT. D.G. -3.06%
LT. D.G. 1.74%
P.V.C. 606+20.00
ELEV. 830.13
606+76.17 LT.
825.69
P.V.I. 607+20.00
ELEV. 830.13
VC=200'
K= 98.54
e=-0.51'
P.V.T. 608+20.00
ELEV. 828.10
-2.03%
P.V.I. 609+90.14
ELEV. 824.65

870 860 850 840 830 820 810 800 790 780

597+00 598+00 599+00 600+00 601+00 602+00 603+00 604+00 605+00 606+00 607+00 608+00 609+00 610+00 611+00 612+00

6/18/2020

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(2) PLAN AND PROFILE SHEETS

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No. 11425
TRINITY D. SMITH
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STA. 704+09.00 - STA. 704+84.00 CONSTRUCT 75' X 24' TEMPORARY BRIDGE

STA. 701+39.50 INSTALL TEMPORARY CONST. APPRS. = 60 CU.YD.

STA. 283+80 INSTALL 24" X 34' TEMPORARY PIPE CULVERT CONST. APPRS. = 115 CU.YD.

DETOUR C.L. STA. 699+37.55
CONST. C.L. STA. 282+00.00
BEGIN DETOUR SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

SITE 4 DETOUR
PI = 707+69.98
Δ = 13°38'19"LT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 707+01.46
PT= 708+37.85
NO SUPER

SITE 4 DETOUR
PI = 705+62.01
Δ = 13°38'19"RT.
D = 10°00'00"
T = 68.52'
L = 136.39'
PC= 704+93.50
PT= 706+29.88
e = 0.094'/'
Ls= 250'

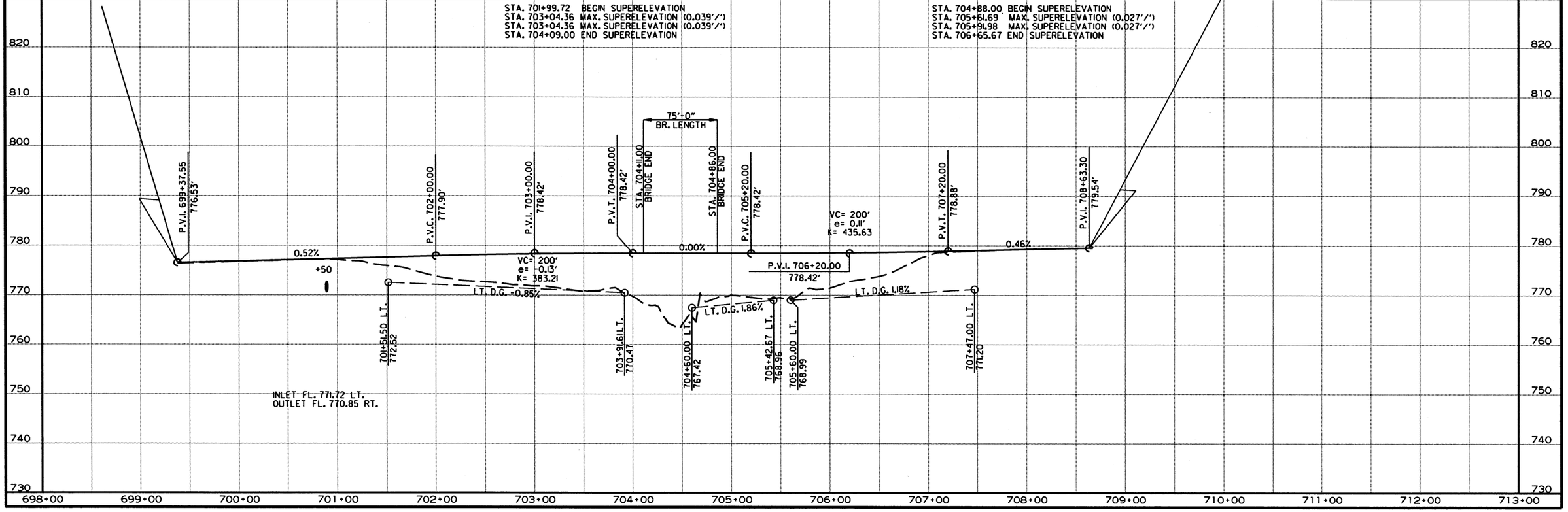
SITE 4 DETOUR
PI = 703+04.51
Δ = 10°31'24"RT.
D = 10°00'00"
T = 52.77'
L = 105.23'
PC= 702+51.74
PT= 703+56.98
e = 0.094'/'
Ls= 250'

DETOUR C.L. STA. 708+63.30=
CONST. C.L. STA. 291+16.10
END SITE 4

DETOUR SITE 4

STA. 701+99.72 BEGIN SUPERELEVATION
STA. 703+04.36 MAX. SUPERELEVATION (0.039'/')
STA. 703+04.36 MAX. SUPERELEVATION (0.039'/')
STA. 704+09.00 END SUPERELEVATION

STA. 704+88.00 BEGIN SUPERELEVATION
STA. 705+61.69 MAX. SUPERELEVATION (0.027'/')
STA. 705+91.98 MAX. SUPERELEVATION (0.027'/')
STA. 706+65.67 END SUPERELEVATION



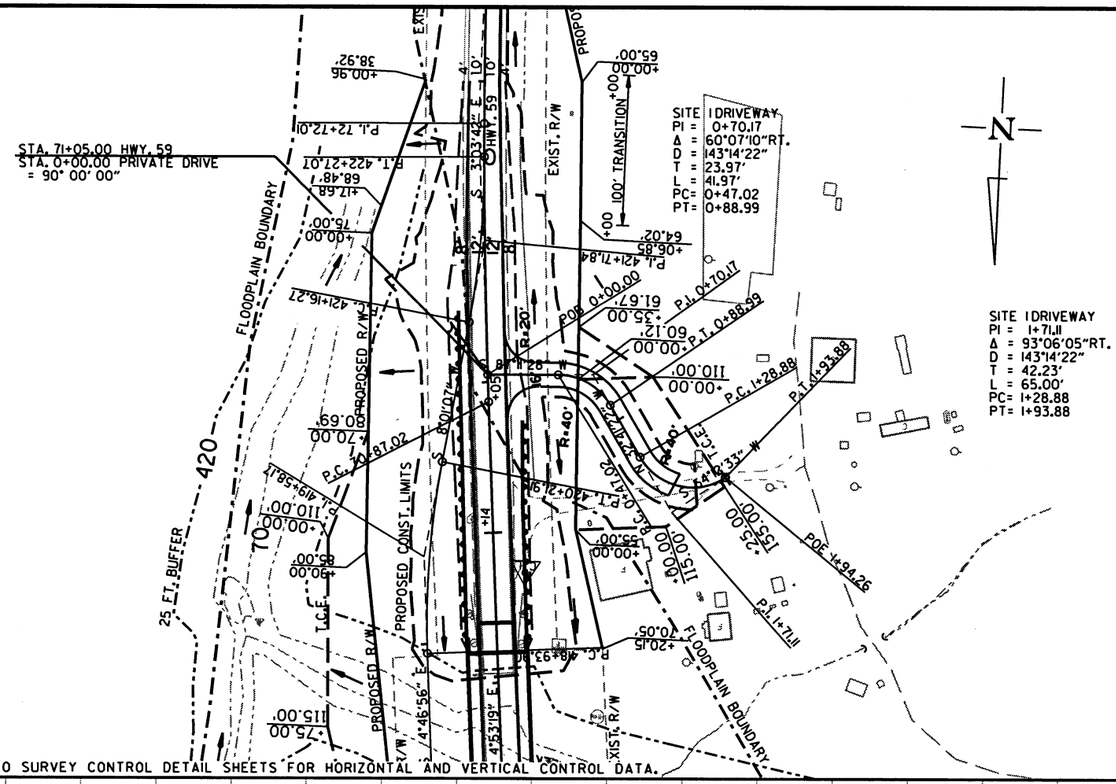
9/11/2019

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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.		040622	69	140

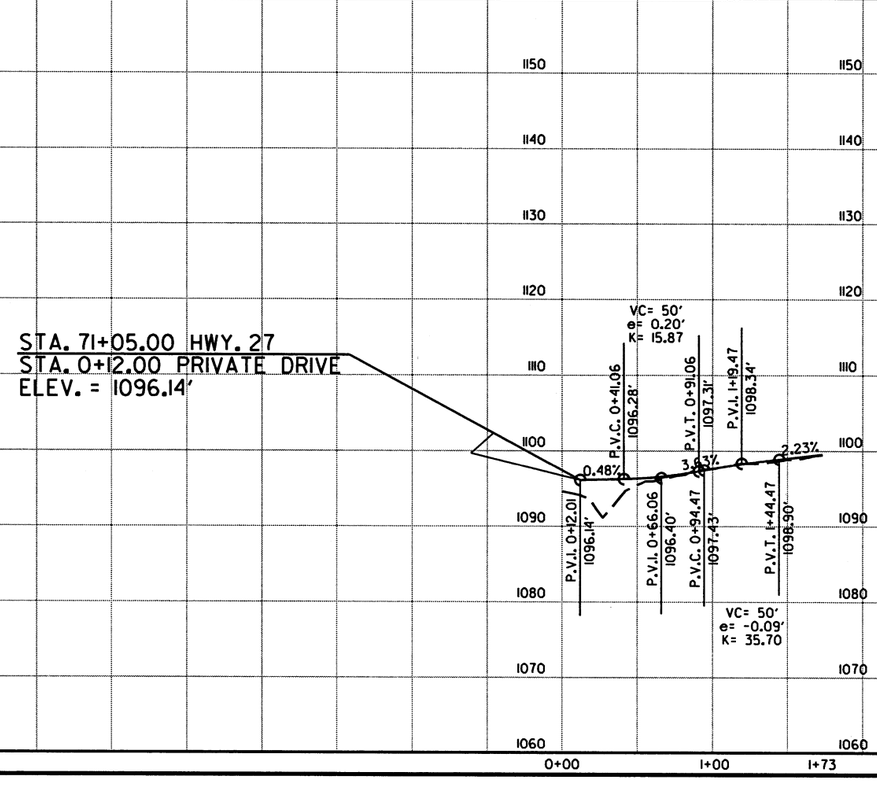
(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

SITE I - DRIVEWAY 71+05



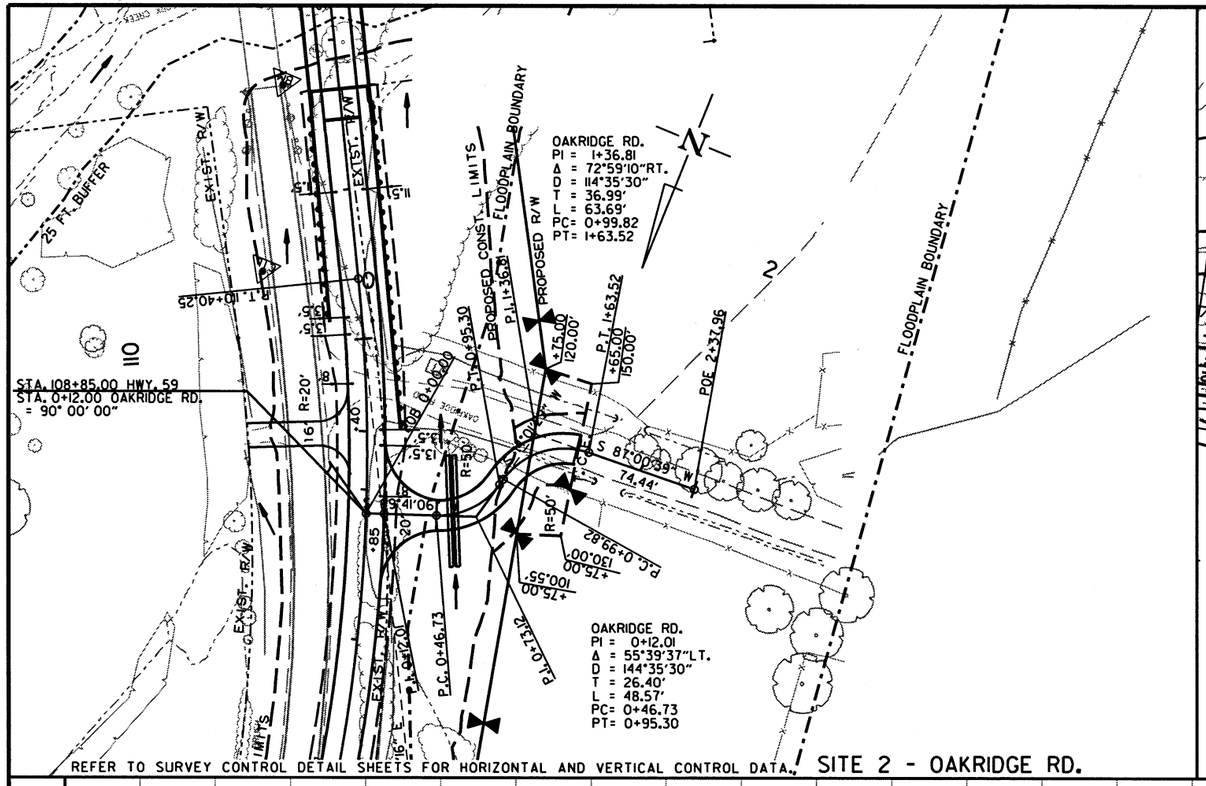
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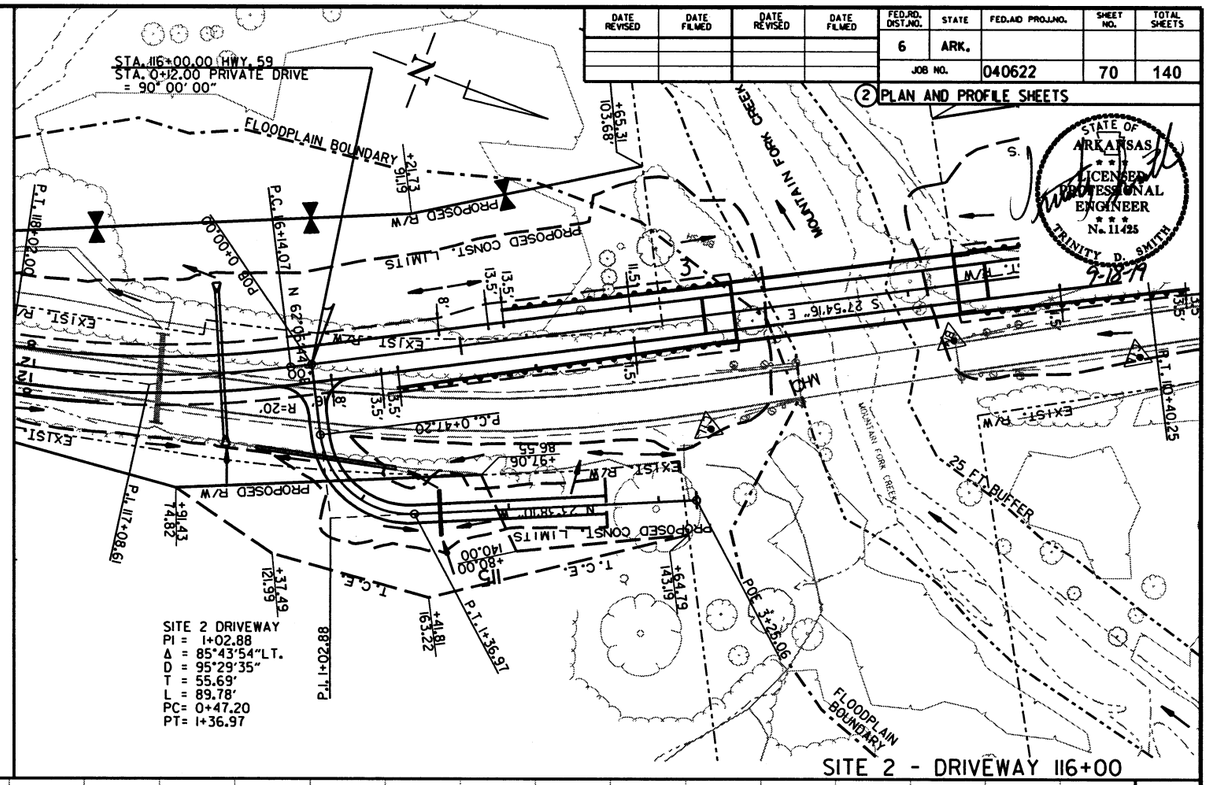
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	70	140

(2) PLAN AND PROFILE SHEETS

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TRINITY D. SMITH
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SITE 2 - OAKRIDGE RD.



SITE 2 - DRIVEWAY 116+00

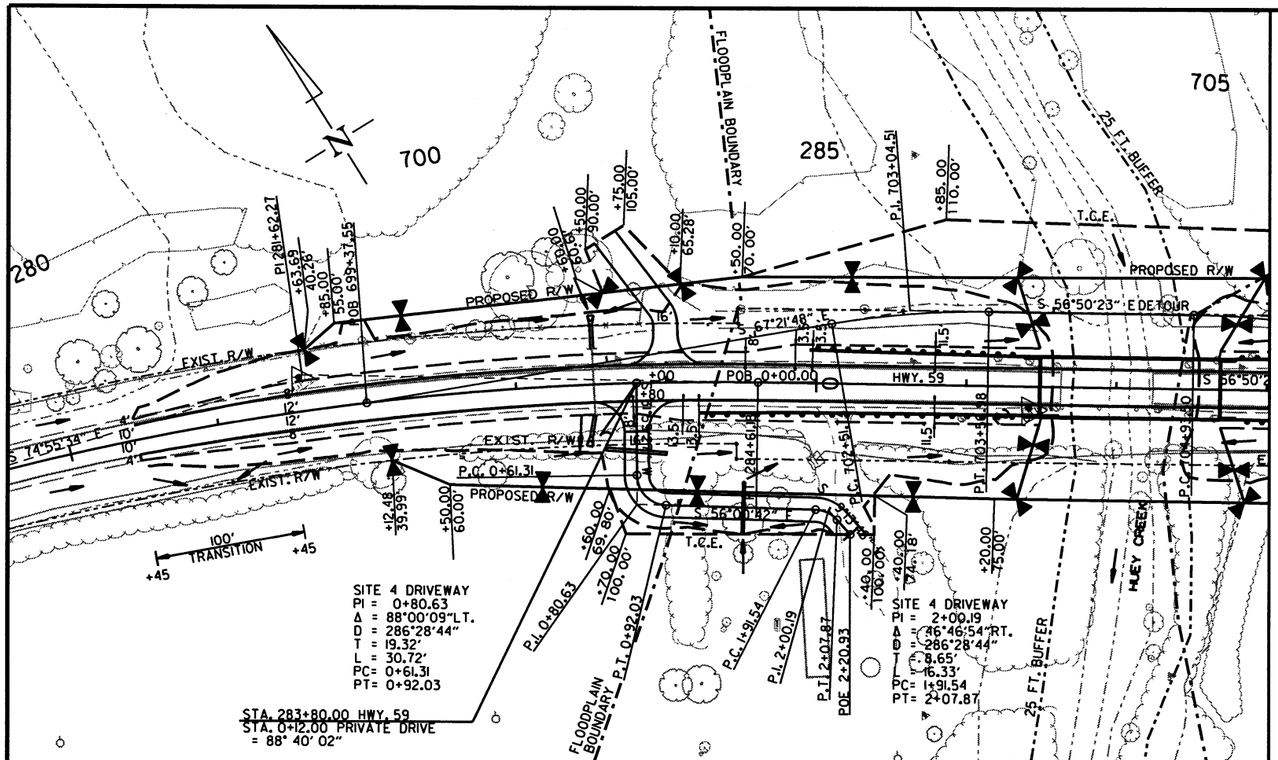
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				6	ARK.			
				JOB NO.		040622	71	140

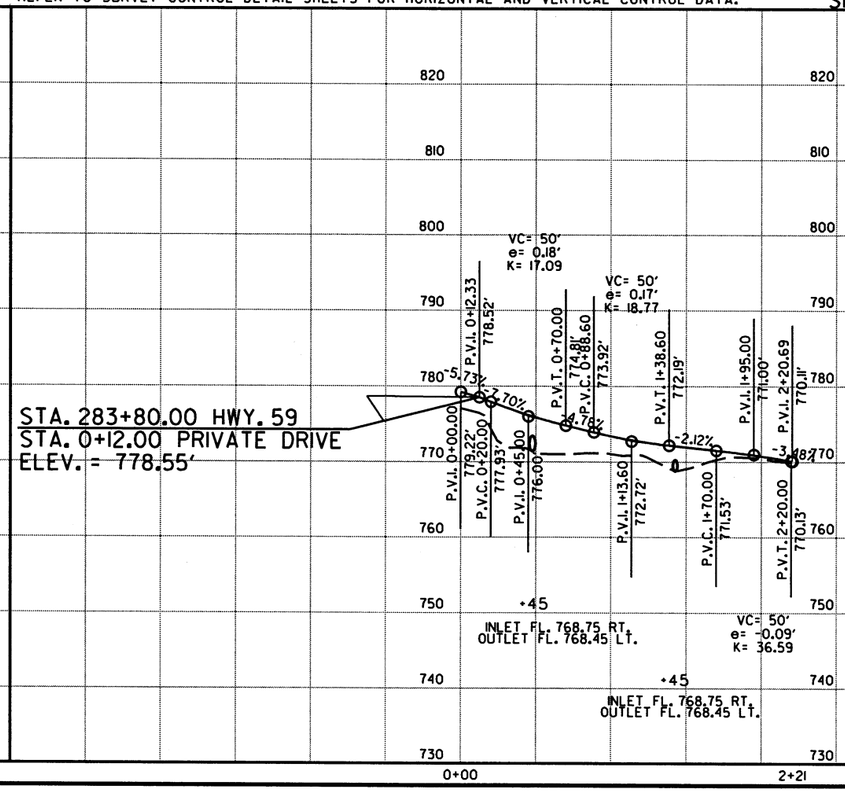
(2) PLAN AND PROFILE SHEETS

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TRINITY D. SMITH
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REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

SITE 4 - DRIVEWAY 283+80



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				6	ARK.			
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				① 07448 -		LAYOUT	- 60742	

For R/W and T.C.E. Data, See Rdwy. Plans.

Use Type C Approach Gutters ("W" = 8'-0") and Type CI Approach Slabs (width = 24'-0") at both ends of the bridge. See Std. Dwg. Nos. 55030C and 55040CI, respectively.

① Install 4"ø 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. 60758. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

The Contractor shall excavate the existing embankments as shown at both ends of bridge to Elev. 1090.0. Approx. 280 cu. yds. of excavation.

Toe of Optional IV:1.5H Fill Slope (typ.)

② See Special Provision Job No. 040622 "Shoring".

Temporary Bridge

Toe of Fill

C.L. Detour, see Rdwy. Plans

Ditch Cut, see Rdwy. Plans

Shoring (typ.) ②

Toe of Fill

IV:3H

15'-0" (typ.)

8'-0" Shldr.

1'-5" Para. Rail

PT Sta. 66+93.12

67+00

40'-0" Pavement

24'-0" Lanes

Top of Cut

Toe of Cut

68+00

2.0% Slope

40'-0" Clear Roadway

43'-2" out to out

69+00

Top of Cut

Tan. Dist. = 167.02'

S 4°53'19" E

C.L. Bridge & C.L. Construction

70+00

Approx. 0.2 mi. to Washington Co. Line

Boring Test Hole (typ.)

IV:2H

① 1096

Approx. 14.8 mi. to Jct. S.H. 220

Existing Bridge No. 02815

Sta. 68+85 35' Rt.

25°

U.G. Fiber Optic Cable

Level Cut to Elev. 1090.0 (typ. both ends of bridge)

Toe of Fill

Ditch Cut, see Rdwy. Plans

Place 3'-0" thick Foundation Protection Riprap on top of Filter Blanket at both ends of bridge as shown. See "Embankment Section" on Dwg. No. 60743. Top of Riprap Elev. 1092.5 or as shown.

LOW GAP HOLLOW CREEK

PLAN

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted, Section and Subsection in the plans refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition (2014) with 2015 interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SITE CLASS: B S_{D1}: 0.051

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL PILING: All end bent piling shall be HP14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 130 tons per pile and into the material designated as limestone on the boring legend. Minimum penetration shall be 15' below bottom of cap. Piling shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cutoff and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all end bent piling. Preboring shall be to a minimum depth of 5' into material designated as limestone on the boring legend, or to a minimum depth of 15' below the bottom of the cap, whichever is lower. Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of the remaining preboring shall be determined in the field by the Engineer. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of the cap, and the remaining 10' 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".

SPREAD FOOTINGS: Footings at Bents 2 & 3 shall be set a minimum of 2' into material designated as limestone on the boring legend. The top of the footings shall be set 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

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.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	60750
Intermediate Bents	60751 - 60752
Elastomeric Bearings	60753
119'-6" Integral Prestressed Concrete Girder Unit Type II	60754 - 60756 & 60758 - 60762
Steel H-Piling	55020

EXISTING BRIDGE: Existing Bridge No. 02815 (Log Mi. 0.18) is 90.0' long and 24.2' wide (22.0' clear roadway). The superstructure consists of five reinforced concrete slab spans supported by concrete column piers on spread footings. The existing bridge occupies the same location as the proposed new bridge. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the temporary bridge is open to traffic, the Contractor shall remove existing Bridge No. 02815, including existing riprap, in accordance with Section 205. Removal of existing riprap will not be paid for directly but shall be considered subsidiary to the item "Removal of Existing Bridge Structure (Site No. 1". All material from the existing bridge shall become the property of the Contractor.

TEMPORARY BRIDGE: Construct a minimum 90' long temporary bridge approximately 47' downstream with a minimum deck elevation of 1096.6. See Roadway Plans for actual detour grade and alignment. The temporary bridge shall have a minimum clear roadway width of 24', and a minimum live load capacity of HI5 in accordance with AASHTO Standard Specifications for Highway Bridges, 2002 Edition. See Section 603 and drawing numbers 55054 thru 55056 for standard temporary bridge details. If timber piling and pine timber are used on this temporary bridge structure, the materials shall be treated with a preservative in accordance with Subsection 817.04. A timber deck is not allowed.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	TOTAL DISCHARGE	③ NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	2,580	1089.8	1091.7
Base	100	3,000	1090.2	1092.2
Extreme	500	4,580	1091.4	1093.9
Overtopping	>500	-	-	-

③ Unconstricted water surface without structure or roadway approaches.

0100 Backwater Elev. for existing structure = 1092.5 ft.
Proposed Low Bridge Chord Elev. = 1094.93 ft.

Drainage area = 2.59 square miles
Historical H.W. Elev. = 1093.2 ft.

PVI Sta. 70+37.00 Elev. 1099.13
0.00%
-3.79%
L=230'
VERTICAL CURVE DATA
Theoretical Grade Along C.L. Const.
PVT Sta. 67+21.41 Elev. 1099.13

Total Length of Bridge = 120'-6"
6" 119'-6" Integral Prestressed Concrete Girder Unit Type II (39'-9", 40'-0", 39'-9") 6"
End of Girder End of Girder
Begin Bridge Sta. 67+99.75
End Bridge Sta. 69+20.25
Concrete Parapet Rail
PVC Sta. 69+22.00 Elev. 1099.13
Slope Intercept Sta. 67+91.00
Slope Intercept Sta. 69+29.00
Proposed Grade Line Along C.L. Bridge
Existing Ground Line Along C.L. Bridge
C.L. Deck to Low Concrete = 4'-2⅛"
C.L. Bent Sta. 68+40.00
Low Concrete to Des. H.W. = 3.2'
C.L. Bent Sta. 68+80.00
C.L. Deck to Low Seat of Cap = 4'-6¼" (typ. Bents 2 & 3)
Guard Rail See Rdwy. Plans
Int. Fix. Fix. Fix. Fix. Int.
17' Piles 16'-6" 16'-6" 17' Piles
Elev. 1078.11 Elev. 1078.11
050 Design H.W. Elev. = 1091.7
BRIDGE DECK IS IN LEVEL GRADE
C.L. DECK ELEV. 1099.13
Bent No. 1 2 3 4

Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Dwg. No. 60754 for additional information.

See Dwg. No. 60743 for Soil Borings.

ELEVATION

PRINT DATE: 9/9/2019

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
9/11/19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER LOW GAP HOLLOW CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

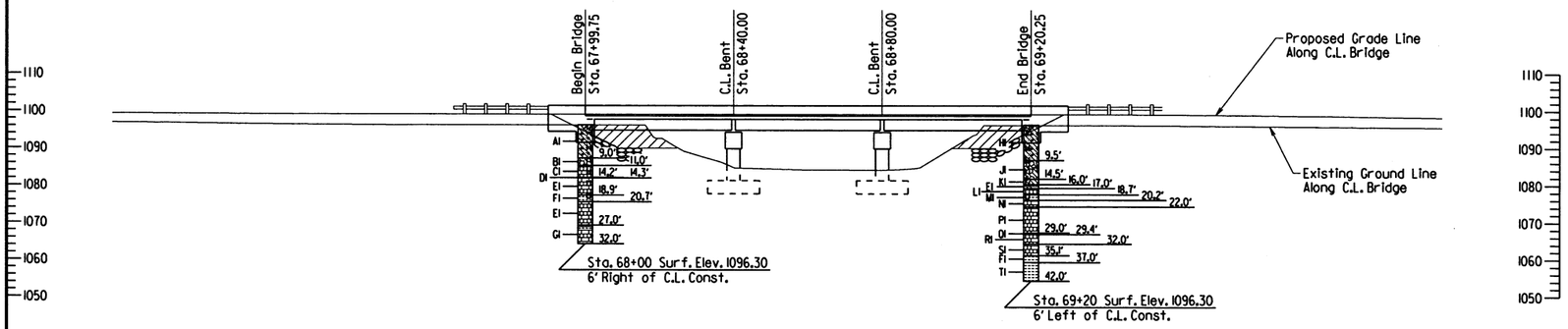
ROUTE 59 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: LJB DATE: 9-9-19
DESIGNED BY: LJB DATE: 5-2018
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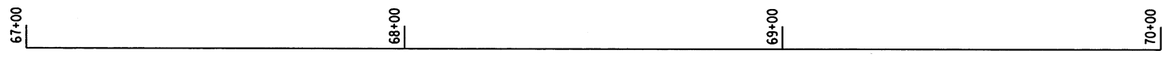
BRIDGE NO. 07448 DRAWING NO. 60742

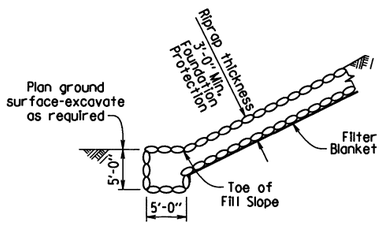
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				6	ARK.			
				JOB NO.		040622	73	140
				(1) 07448 -		LAYOUT		- 60743



Bent No. 1 2 3 4

ELEVATION OF SOIL BORINGS





EMBANKMENT SECTION

No Scale

BORING LEGEND

A1-Moist, Very Stiff, Brown Sandy Clay with Gravel
B1-Moist, Very Stiff, Brown Sandy Clay with Moist, Stiff, Brown Sandy Clay with Gravel and Cobbles
C1-LIMESTONE - Slightly Weathered, Moderately Hard, Gray
D1-Soil-Filled Cavity (14.2'-14.3')
E1-LIMESTONE - Unweathered, Moderately Hard, Gray
F1-SHALE - Weathered, Medium Hard, Dark Gray
G1-LIMESTONE WITH OCCASIONAL SHALE LAYERS - Unweathered, Moderately Hard, Gray
H1-Moist, Stiff, Brown, Sandy Clay with Gravel
J1-Moist, Hard, Brown Clay with Gravel and Cobbles
K1-Moist, Very Hard, Brown Clay with Gravel
L1-LIMESTONE - Weathered, Moderately Hard, Occasional Fractures, Gray
M1-SHALE - Highly Weathered to Weathered, Soft to Medium Hard, Dark Gray
N1-LIMESTONE - Unweathered, Hard, Dark Gray
P1-LIMESTONE - Unweathered, Hard, Occasional Fractures, Dark Gray
Q1-SHALE - Weathered, Moderately Hard, Dark Gray
R1-LIMESTONE - Unweathered, Hard, Gray
S1-LIMESTONE WITH FREQUENT SHALE SEAMS AND LAYERS - Unweathered, Hard, Gray
T1-SHALE - Weathered, Medium Hard, Occasional Fractures, Dark Gray

"N" VALUES

Sta. 68+00 - 6' Right of C.L. Const.
4. 5-5. 5, N=26
9. 5-10. 5, N=11

Sta. 69+20 - 6' Left of C.L. Const.
5. 0-6. 0, N=10
10. 0-11. 0, N=44
15. 0-16. 0, N=70

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-19
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER LOW GAP HOLLOW CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

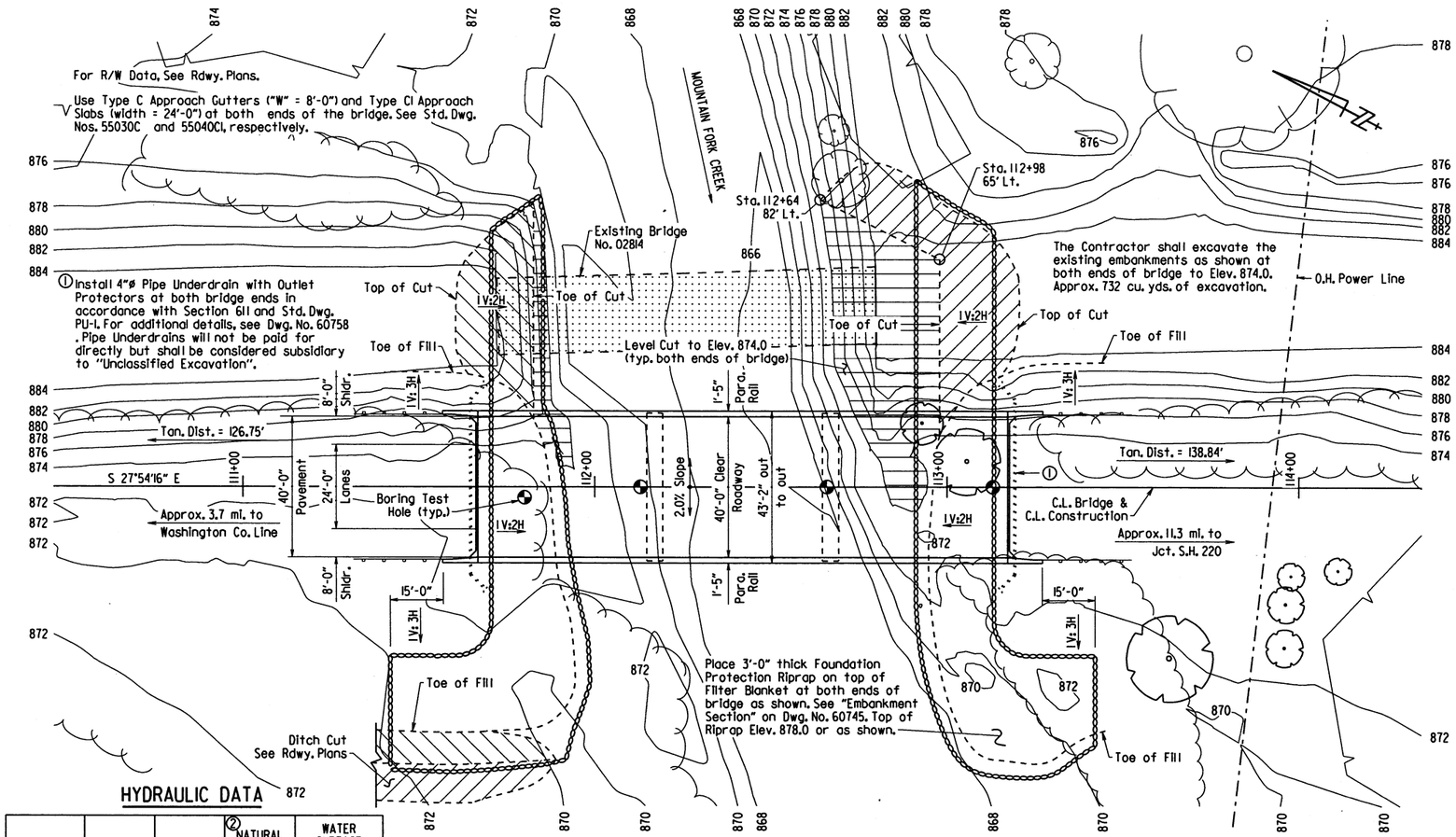
ROUTE 59 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 10-2018
CHECKED BY: LJB DATE: 5-30-19
DESIGNED BY: LJB DATE: 8/2018
FILENAME: b040622xl_ll.dgn
SCALE: 1" = 20'

BRIDGE NO. 07448 DRAWING NO. 60743

PRINT DATE: 5/30/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	74	140
				①	07449 -	LAYOUT		- 60744



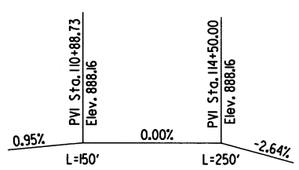
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	TOTAL DISCHARGE	② NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	5,170	874.8	877.1
Base	100	6,600	874.8	878.0
Extreme	500	9,860	877.8	881.2
Overtopping	>500	-	-	-

② Unconstricted water surface without structure or roadway approaches.

0100 Backwater Elev. for existing structure = 878.8 ft.
Proposed Low Bridge Chord Elev. = 883.96 ft.

Drainage area = 8.42 square miles
Historical H.W. Elev. = 876.0 ft.



Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Dwg. No. 60754 for additional information.

See Dwg. No. 60745 for Soil Borings.

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted, Section and Subsection in the plans refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition (2014) with 2015 Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SITE CLASS: B S_{DI}: 0.051

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL PILING: All end bent piling shall be HP 14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 130 tons per pile and into the material designated as shale on the boring legend. Minimum penetration shall be 10' below natural ground. Piling shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cutoff and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all end bent piling. Preboring shall be to a minimum depth of 5' into material designated as shale on the boring legend, or to a minimum depth of 10' below natural ground, whichever is lower. Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of the remaining preboring shall be determined in the field by the Engineer. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of the cap, and the remaining 10' 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".

SPREAD FOOTINGS: Footings at Bents 2 & 3 shall be set a minimum of 3' into material designated as shale on the boring legend. The top of the footings shall be set 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

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.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	60750
Intermediate Bents	60751 - 60752
Elastomeric Bearings	60753
149'-6" Integral Prestressed Concrete Girder Unit Type II	60754 - 60755, 60757 - 60760, & 60763 - 60764
Steel H-Piling	55020

EXISTING BRIDGE: Existing Bridge No. 02814 (Log Mi. 3.73) is 108.0' long and 24.0' wide (22.0' clear roadway). The superstructure consists of six reinforced concrete slab spans supported by concrete column piers on spread footings. The existing bridge is approximately 50' upstream from the proposed new bridge. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. 02814, including existing riprap, in accordance with Section 205. Removal of existing riprap will not be paid for directly but shall be considered subsidiary to the item "Removal of Existing Bridge Structure (Site No. 1)". All material from the existing bridge shall become the property of the Contractor except the following which shall become property of the State. The existing bridge name plate shall be delivered undamaged to the Bridge Division at the Arkansas Department of Transportation Headquarters. The name plate shall be mailed to P.O. Box 2261, Little Rock, AR, 72203.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
9-11-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER MOUTAIN FORK CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5

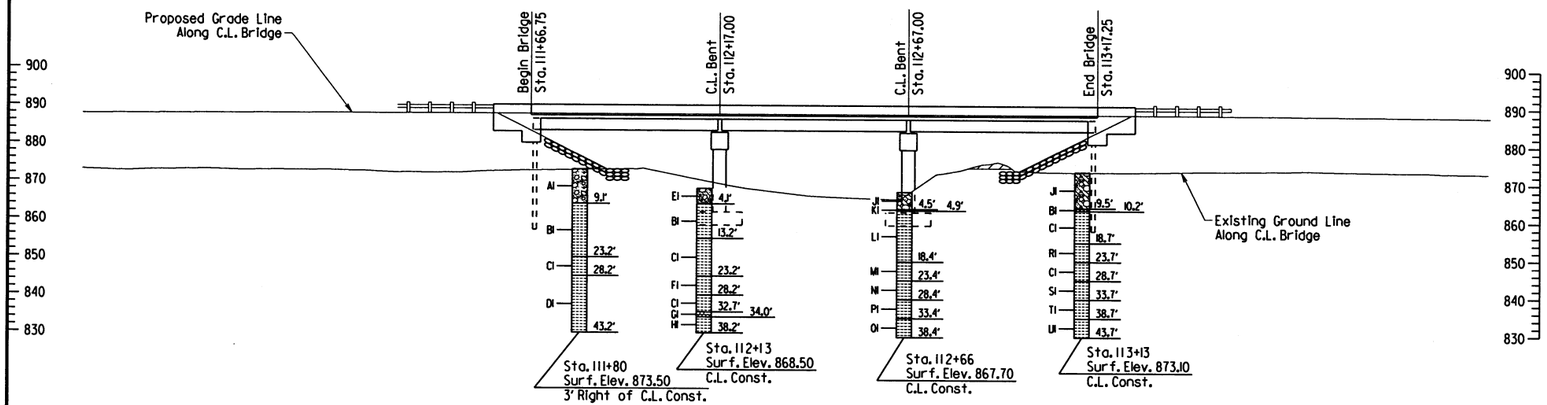
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: LJB DATE: 9-9-19
DESIGNED BY: LJB DATE: 5-2018
FILENAME: b040622x2_11.dgn
SCALE: 1" = 20'

BRIDGE NO. 07449 DRAWING NO. 60744

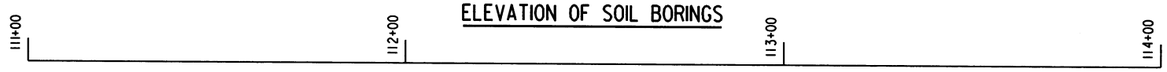
PRINT DATE: 9/9/2019

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				6	ARK.			
				JOB NO.		040622	75	140
				① 07449 -		LAYOUT		- 60745



Bent No. 1 2 3 4

ELEVATION OF SOIL BORINGS



BORING LEGEND

AI-Moist, Medium Dense, Brown Sand with Gravel and Cobbles
BI-SHALE - Weathered, Medium Hard, Dark Gray
CI-SHALE - Slightly Weathered, Medium Hard, Occasional Fractures, Dark Gray
DI-SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray
EI-Moist, Very Hard, Brown Sandy Clay with Gravel and Cobbles
FI-SHALE - Slightly Weathered, Medium Hard, Frequent Fractures, Dark Gray
GI-LIMESTONE WITH OCCASIONAL SHALE LAYERS - Slightly Weathered, Moderately Hard, Gray
HI-SHALE WITH OCCASIONAL LIMESTONE SEAMS AND LAYERS - Slightly Weathered, Medium Hard, Frequent Fractures, Dark Gray
JI-Moist, Medium Dense, Brown Gravel, Cobbles, and Boulders with Sandy Clay
KI-SHALE - Highly Weathered, Soft, Gray
LI-SHALE - Weathered, Medium Hard, Gray
MI-SHALE - Slightly Weathered, Medium Hard, Frequent Fractures, Occasional Calcite Seams, Gray
NI-SHALE WITH OCCASIONAL LIMESTONE PARTINGS AND SEAMS - Slightly Weathered, Medium Hard, Gray
PI-SHALE WITH OCCASIONAL LIMESTONE LAYERS AND SEAMS - Unweathered, Medium Hard, Gray
QI-SHALE WITH OCCASIONAL LIMESTONE PARTINGS AND SEAMS - Unweathered, Frequent Fractures, Gray
RI-SHALE - Slightly Weathered, Medium Hard, Occasional Fractures, Occasional Iron Concretions, Dark Gray
SI-SHALE WITH OCCASIONAL LIMESTONE SEAMS - Slightly Weathered, Hard, Occasional Fractures, Dark Gray
TI-SHALE WITH OCCASIONAL LIMESTONE SEAMS - Unweathered, Hard, Occasional Fractures, Dark Gray
UI-SHALE WITH OCCASIONAL LIMESTONE SEAMS AND LAYERS - Unweathered, Hard, Occasional Fractures, Dark Gray

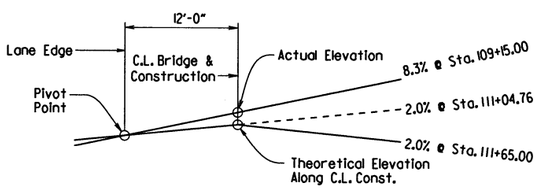
"N" VALUES

Sta. 111+80 - 3' Right of C.L. Const.
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9. 1-9. 5, N=60(5")

Sta. 112+13 - C.L. Const.
4. 5-4. 8, N=60(3")

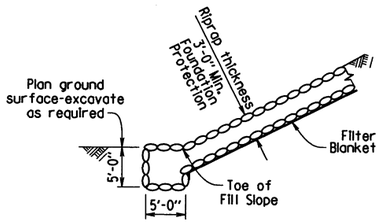
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4. 5-4. 9, N=60(5")

Sta. 113+13 - C.L. Const.
5. 0-6. 0, N=24
10. 0-10. 2, N=60(2")



CROSS SLOPE TRANSITION SKETCH

Looking Ahead
No Scale



EMBANKMENT SECTION

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-19
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER MOUTAIN FORK CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 10-2018
CHECKED BY: LJB DATE: 5-30-19
DESIGNED BY: LJB DATE: 8/2018
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SCALE: 1" = 20'

BRIDGE NO. 07449 DRAWING NO. 60745

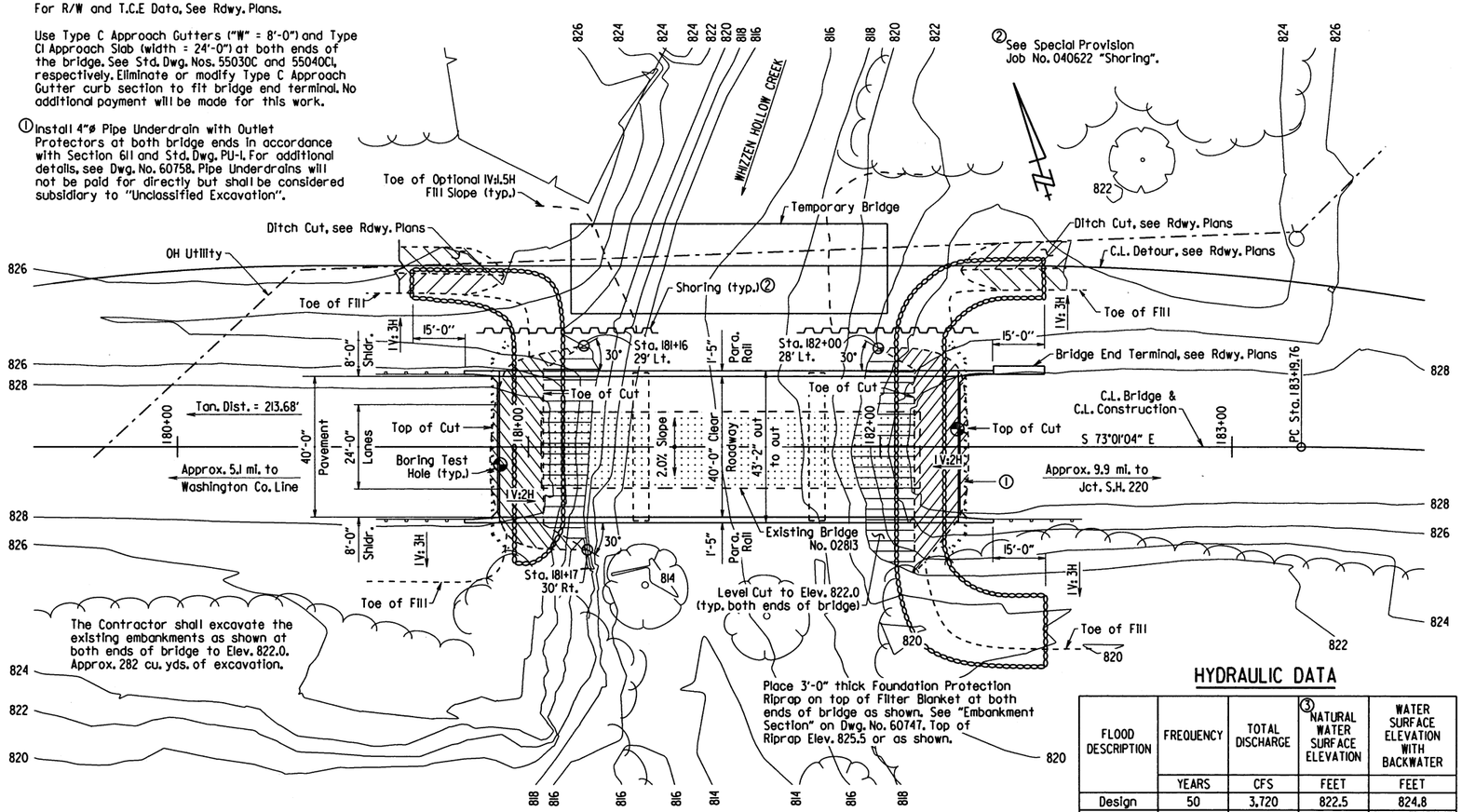
PRINT DATE: 5/30/2019

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				6	ARK.			
				JOB NO.		040622	76	140
				① 07450 -		LAYOUT		- 60746

For R/W and T.C.E Data, See Rdwy. Plans.

Use Type C Approach Gutters ("W" = 8'-0") and Type CI Approach Slab (width = 24'-0") at both ends of the bridge. See Std. Dwg. Nos. 55030C and 55040CI, respectively. Eliminate or modify Type C Approach Gutter curb section to fit bridge end terminal. No additional payment will be made for this work.

① Install 4"ø 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. 60758. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".



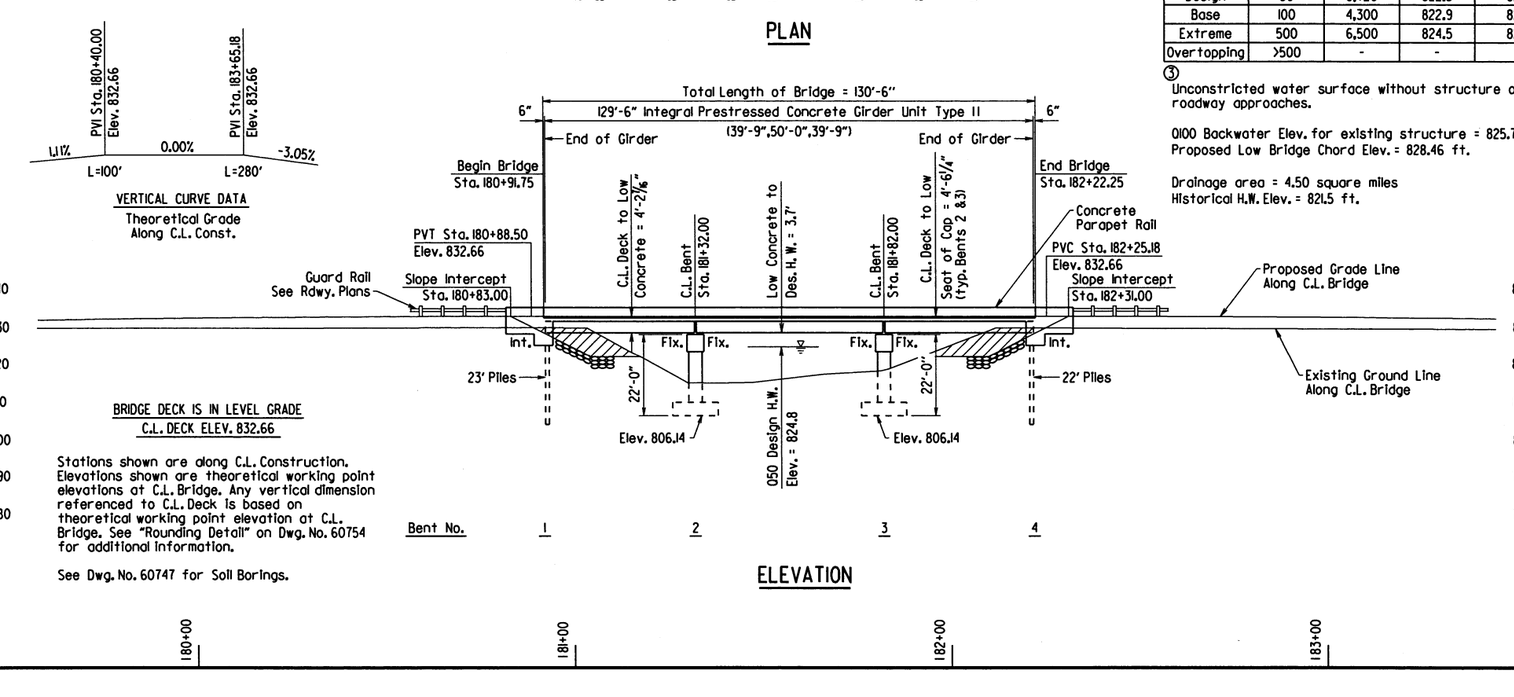
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	TOTAL DISCHARGE	③ NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	3,720	822.5	824.8
Base	100	4,300	822.9	825.4
Extreme	500	6,500	824.5	829.3
Overtopping	>500	-	-	-

③ Unconstricted water surface without structure or roadway approaches.

0100 Backwater Elev. for existing structure = 825.7 ft.
Proposed Low Bridge Chord Elev. = 828.46 ft.

Drainage area = 4.50 square miles
Historical H.W. Elev. = 821.5 ft.



Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Dwg. No. 60754 for additional information.

See Dwg. No. 60747 for Soil Borings.

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted, Section and Subsection in the plans refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition (2014) with 2015 Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SITE CLASS: B S_{D1}: 0.051

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL PILING: All end bent piling shall be HP14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 130 tons per pile and into the material designated as shale on the boring legend. Minimum penetration shall be 15' below bottom of cap. Piling shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cutoff and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all end bent piling. Preboring shall be to a minimum depth of 5' into material designated as shale on the boring legend, or to a minimum depth of 15' below the bottom of the cap, whichever is lower. Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of the remaining preboring shall be determined in the field by the Engineer. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of the cap, and the remaining 10' 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".

SPREAD FOOTINGS: Footings at Bents 2 & 3 shall be set a minimum of 3' into material designated as shale on the boring legend. The top of the footings shall be set 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

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.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	60750
Intermediate Bents	60751 - 60752
Elastomeric Bearings	60753
129'-6" Integral Prestressed Concrete Girder Unit Type II	60754 - 60760 & 60765 - 60766
Steel H-Piling	55020

EXISTING BRIDGE: Existing Bridge No. 02813 (Log Mi. 5.07) is 108.0' long and 24.0' wide (22.0' clear roadway). The superstructure consists of six concrete slab spans supported by concrete column piers on spread footings. The existing bridge occupies the same location as the proposed new bridge. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the temporary bridge is open to traffic, the Contractor shall remove existing Bridge No. 02813, including existing riprap, in accordance with Section 205. Removal of existing riprap will not be paid for directly but shall be considered subsidiary to the item "Removal of Existing Bridge Structure (Site No.)". All material from the existing bridge shall become the property of the Contractor.

TEMPORARY BRIDGE: Construct a minimum 90' long temporary bridge approximately 51' upstream with a minimum deck elevation of 830.13. See Roadway Plans for actual detour grade and alignment. The temporary bridge shall have a minimum clear roadway width of 24', and a minimum live load capacity of HS5 in accordance with AASHTO Standard Specifications for Highway Bridges, 2002 Edition. See Section 603 and drawing numbers 55054 thru 55056 for standard temporary bridge details. If timber piling and pine timber are used on this temporary bridge structure, the materials shall be treated with a preservative in accordance with Subsection 817.04. A timber deck is not allowed.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
9-11-19
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER WHIZZEN HOLLOW CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5

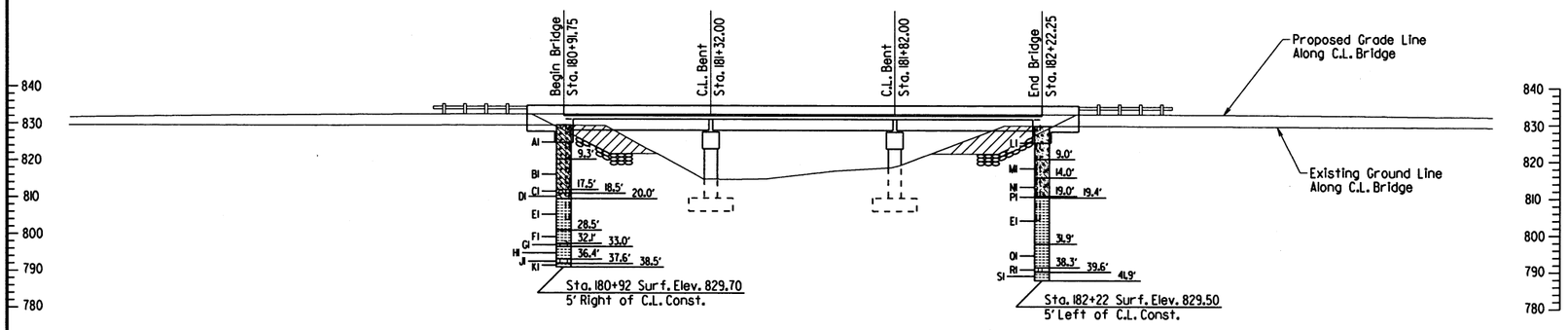
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: LJB DATE: 9-9-19
DESIGNED BY: LJB DATE: 3-2018
FILENAME: b040622x3_11.dgn
SCALE: 1" = 20'

BRIDGE NO. 07450 DRAWING NO. 60746

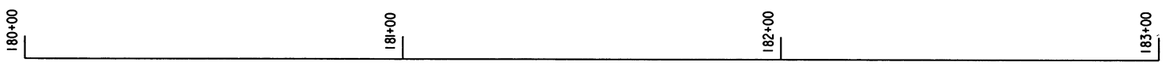
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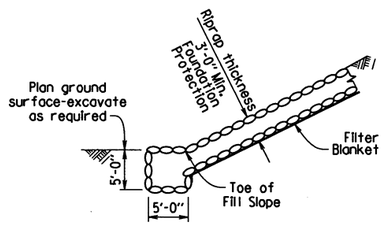
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				6	ARK.			
				JOB NO.		040622	77	140
				07450 -		LAYOUT		- 60747



Bent No. 1 2 3 4

ELEVATION OF SOIL BORINGS





EMBANKMENT SECTION

No Scale

BORING LEGEND

A1-Moist, Very Stiff, Brown Sandy Clay with Gravel
B1-Moist, Very Hard, Brown Sandy Clay with Gravel
C1-Boulder
D1-Cobbles
E1-SHALE - Weathered, Medium Hard, Dark Gray
F1-SHALE - Weathered with Highly Weathered Layers, Medium Hard with Soft Layers, Dark Gray
G1-SANDY LIMESTONE - Slightly Weathered, Moderately Hard, Gray
H1-SHALE - Weathered, Medium Hard, Occasional Concretions, Dark Gray
J1-SANDY LIMESTONE WITH FREQUENT SHALE LAYERS - Weathered, Moderately Hard, Gray
K1-SHALE - Slightly Weathered, Medium Hard, Dark Gray
L1-Dry, Medium Dense, Brown Gravel with Sand
M1-Moist, Dense, Sand with Clay and Gravel
N1-Moist, Very Dense, Sand with Clay and Gravel
P1-SHALE - Highly Weathered, Medium Hard, Dark Gray
O1-SHALE - Weathered, Medium Hard, Occasional Concretions and Pyrite Nodules, Dark Gray
R1-SANDY LIMESTONE WITH FREQUENT SHALE LAYERS - Slightly Weathered, Moderately Hard, Gray
S1-SHALE - Slightly Weathered, Medium Hard, Occasional Concretions, Dark Gray

"N" VALUES

Sta. 180+92 - 5' Right of C.L. Const.
4. 8-5. 8, N=20
9. 8-10. 8, N=69
14. 8-15. 5, N=77(8")

Sta. 182+22 - 5' Left of C.L. Const.
4. 5-5. 5, N=28
9. 5-10. 5, N=32
14. 5-15. 5, N=57
19. 0-19. 4, N=60(5")

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
6-3-19
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER WHIZZEN HOLLOW CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 10-2018
CHECKED BY: LJB DATE: 5-30-19
DESIGNED BY: LJB DATE: 8/2018
FILENAME: b040622x3_ll.dgn
SCALE: 1" = 20'

BRIDGE NO. 07450 DRAWING NO. 60747

PRINT DATE: 5/30/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	78	140
				① 07451 -		LAYOUT		- 60748

For R/W and T.C.E. Data, See Rdwy. Plans.

Use Type C Approach Gutters ("W" = 8'-0") and Type CI Approach Slabs (width = 24'-0") at both ends of the bridge. See Std. Dwg. Nos. 55030C and 55040CI, respectively.

① Install 4"ø 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. 60758. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

Toe of Optional 1V:1.5H Fill Slope (typ.)

HUEY CREEK

Ditch Cut, see Rdwy. Plans

Temporary Bridge

② See Special Provision Job No. 040622 "Shoring".

Ditch Cut, see Rdwy. Plans

Toe of Fill

C.L. Detour, see Rdwy. Plans

Toe of Fill

Sta. 286+79 30' Lt.

Sta. 287+26 37' Lt.

Shoring (typ.) ②

8'-0" Shldr.

1V:3H

30" (typ.)

1'-5" Para. Rail

Top pf Cut

Toe of Cut

Toe of Cut

Top of Cut

C.L. Bridge & C.L. Construction

Tan. Dist. = 187.82'

Tan. Dist. = 350.84'

S 56°50'23" E

286+00

288+00

289+00

40'-0" Pavement

24'-0" Lanes

40'-0" Clear Roadway

43'-2" out to out

2.0% Slope

Approx. 7.1 mi. to Washington Co. Line

Boring Test Hole (typ.)

1V:2H

Level Cut to Elev. 768.0 (typ. both ends of bridge)

Approx. 7.9 mi. to Jct. S.H. 220

Existing Bridge No. 02621

1'-5" Para. Rail

15'-0" (typ.)

Sta. 287+35 32' Rt.

Underground Utility

Toe of Fill

Toe of Fill

The Contractor shall excavate the existing embankments as shown at both ends of bridge to Elev. 768.0. Approx. 689 cu. yds. of excavation.

Place 3'-0" thick Foundation Protection Riprap on top of Filter Blanket at both ends of bridge as shown. See "Embankment Section" on Dwg. No. 60749. Top of Riprap Elev. 775.5 or as shown.

PLAN

PVI Sta. 285+12.51
Elev. 780.95
1.64%
0.00%
L=190'

PVI Sta. 288+50.00
Elev. 780.95
0.00%
-1.16%
L=130'

VERTICAL CURVE DATA

Theoretical Grade Along C.L. Const.

Total Length of Bridge = 120'-6"

6" 119'-6" Integral Prestressed Concrete Girder Unit Type II 6"

(39'-9",40'-0",39'-9")

End of Girder

End of Girder

Begin Bridge Sta. 286+48.75

End Bridge Sta. 287+69.25

Concrete Parapet Rail

C.L. Deck to Low Concrete = 4'-2⅛"

C.L. Bent Sta. 286+89.00

Low Concrete to Des. H.W. = 2.1'

C.L. Bent Sta. 287+29.00

C.L. Deck to Low Seat of Cap = 4'-6¼" (typ. Bents 2 & 3)

Slope Intercept Sta. 286+40.00

Slope Intercept Sta. 287+78.00

PVT Sta. 286+07.51 Elev. 780.95

PVC Sta. 287+85.00 Elev. 780.95

Proposed Grade Line Along C.L. Bridge

Guard Rail See Rdwy. Plans

Existing Ground Line Along C.L. Bridge

Int. Fix. Fix. Fix. Fix. Int.

17' Piles

22'-6"

22'-6"

20' Piles

Elev. 753.93

Elev. 753.93

050 Design H.W. Elev. = 774.7

BRIDGE DECK IS IN LEVEL GRADE

C.L. DECK ELEV. 780.95

Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Dwg. No. 60754 for additional information.

See Dwg. No. 60749 for Soil Borings.

Bent No. 1 2 3 4

ELEVATION

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	TOTAL DISCHARGE	③ NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	3,320	771.2	774.7
Base	100	3,840	771.3	775.5
Extreme	500	5,810	772.0	778.2
Overtopping	>500	-	-	-

③ Unconstricted water surface without structure or roadway approaches.

0100 Backwater Elev. for existing structure = 777.7 ft.
Proposed Low Bridge Chord Elev. = 776.75 ft.

Drainage area = 3.89 square miles
Historical H.W. Elev. = 771.2 ft.

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted, Section and Subsection in the plans refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition (2014) with 2015 Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SITE CLASS: B S_{D1}: 0.051

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi

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

STEEL PILING: All end bent piling shall be HP 14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 130 tons per pile and into the material designated as sandstone, limestone, or shale on the boring legend. Minimum penetration shall be 15' below bottom of cap. Piling shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cutoff and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all end bent piling. Preboring shall be to a minimum depth of 5' into material designated as sandstone, limestone, or shale on the boring legend, or to a minimum depth of 15' below the bottom of the cap, whichever is lower. Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of the remaining preboring shall be determined in the field by the Engineer. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of the cap, and the remaining 10' 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".

SPREAD FOOTINGS: Footings at Bents 2 & 3 shall be set a minimum of 3' into material designated as limestone, sandstone, or shale on the boring legend. The top of the footings shall be set 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

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.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	60750
Intermediate Bents	60751 - 60752
Elastomeric Bearings	60753
119'-6" Integral Prestressed Concrete Girder Unit Type II	60754 - 60756 & 60758 - 60762
Steel H-Piling	55020

EXISTING BRIDGE: Existing Bridge No. 02621 (Log Mi. 7.05) is 63.0' long and 26.0' wide (24.0' clear roadway). The superstructure consists of four steel beam spans supported by concrete wall piers on spread footings. The existing bridge occupies the same location as the proposed new bridge. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the temporary bridge is open to traffic, the Contractor shall remove existing Bridge No. 02621, including existing riprap, in accordance with Section 205. Removal of existing riprap will not be paid for directly but shall be considered subsidiary to the item "Removal of Existing Bridge Structure (Site No. 1". All material from the existing bridge shall become the property of the Contractor.

TEMPORARY BRIDGE: Construct a minimum 75' long temporary bridge approximately 49' upstream with a minimum deck elevation of 778.42. See Roadway Plans for actual detour grade and alignment. The temporary bridge shall have a minimum clear roadway width of 24', and a minimum live load capacity of HI5 in accordance with AASHTO Standard Specifications for Highway Bridges, 2002 Edition. See Section 603 and drawing numbers 55054 thru 55056 for standard temporary bridge details. If timber piling and pine timber are used on this temporary bridge structure, the materials shall be treated with a preservative in accordance with Subsection 817.04. A timber deck is not allowed.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
9-11-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER HUEY CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

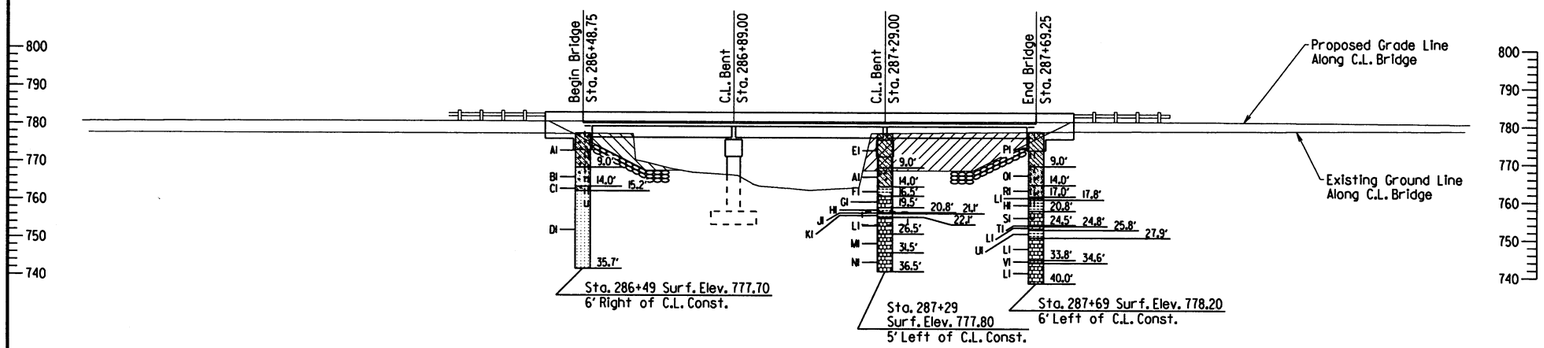
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DESIGNED BY: LJB DATE: 5-2018

BRIDGE NO. 07451 DRAWING NO. 60748

PRINT DATE: 9/9/2019

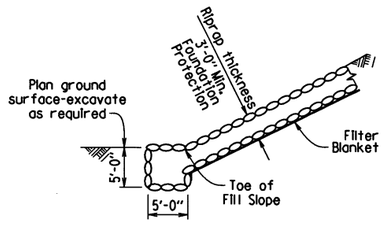
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				6	ARK.			
				JOB NO.		040622	79	140
				(1) 07451 -		LAYOUT		- 60749



Bent No. 1 2 3 4

ELEVATION OF SOIL BORINGS

285+00 286+00 287+00 288+00 289+00



EMBANKMENT SECTION

No Scale

BORING LEGEND

AI-Moist, Stiff, Brown Sandy Clay with Gravel
BI-Moist, Medium Dense, Brown Sand with Gravel
CI-Wet, Very Dense, Brown Gravel with Clay and Sand
DI-SANDSTONE - Unweathered, Well Cemented, Calcareous, Gray
EI-Moist, Stiff, Brown Sandy Clay
FI-SHALE - Highly Weathered, Medium Hard, Dark Gray
GI-LIMESTONE - Slightly Weathered, Moderately Hard, Gray
HI-SHALE - Slightly Weathered, Medium Hard, Calcareous, Dark Gray
JI-COAL
KI-SHALE WITH OCCASIONAL LIMESTONE LAYERS - Slightly Weathered, Medium Hard, Calcareous, Dark Gray
LI-LIMESTONE - Unweathered, Moderately Hard, Gray
MI-LIMESTONE WITH OCCASIONAL SHALE LAYERS - Unweathered, Moderately Hard, Gray
NI-LIMESTONE - Unweathered, Moderatly Hard, Occasional Fractures, Gray
PI-Moist, Very Stiff, Brown Sandy Clay
QI-Moist, Medium Dense, Gravel with Clay and Sand
RI-Wet, Dense, Gravel with Clay and Sand
SI-LIMESTONE WITH OCCASIONAL SHALE SEAMS - Unweathered, Moderately Hard, Gray
TI-COAL WITH OCCASIONAL SHALE LAYERS
UI-SHALE - Weathered, Medium Hard, Dark Gray
VI-LIMESTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Unweathered, Moderately Hard, Gray

Coal was encountered in the borings and may be encountered in greater amounts at other locations in the project area.

"N" VALUES

Sta. 286+49 - 6' Right of C.L. Const.
4. 5-5. 5, N=10
9. 5-10. 5, N=17
14. 5-15. 2, N=78(8")

Sta. 287+29 - 5' Left of C.L. Const.
4. 5-5. 5, N=13
9. 5-10. 5, N=13
14. 5-14. 7, N=60(2")

Sta. 287+69 - 6' Left of C.L. Const.
4. 5-5. 5, N=17
9. 5-10. 5, N=27
14. 5-15. 5, N=31

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-19
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 59 OVER HUEY CREEK
WASHINGTON CO. LINE-SOUTH STRS. & APPRS. (S)
CRAWFORD COUNTY

ROUTE 59 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

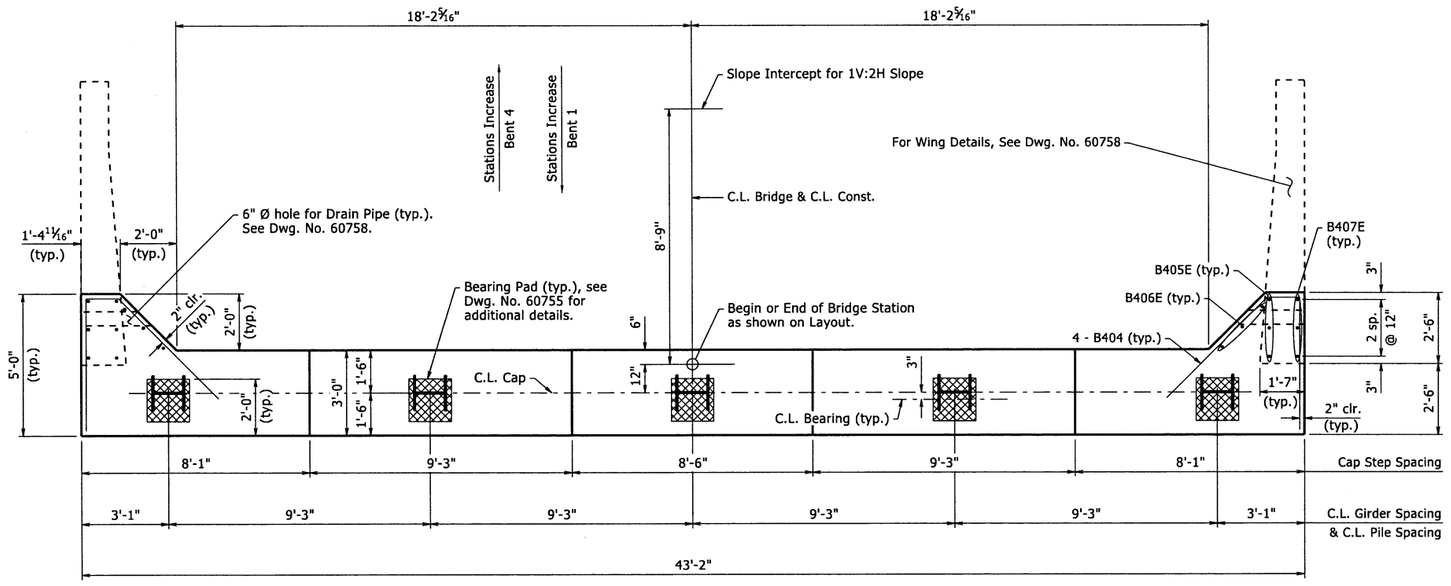
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SCALE: 1" = 20'

BRIDGE NO. 07451 DRAWING NO. 60749

PRINT DATE: 5/30/2019

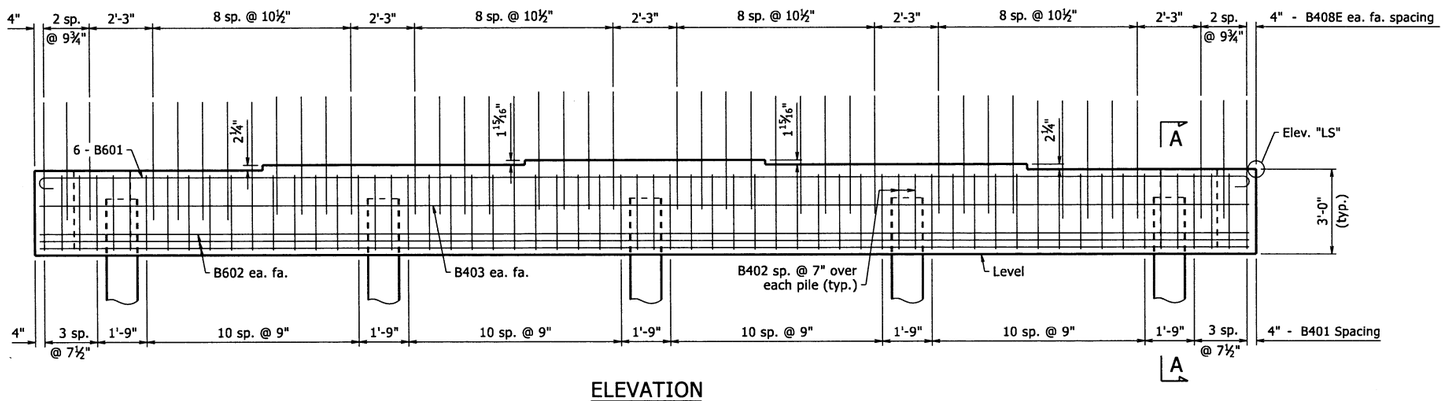
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				6	ARK.			
				JOB NO.		040622	80	140

① 07448,07449 07450,07451 - END BENTS - 60750



PLAN

3/8" = 1'-0"



ELEVATION

Looking Back - Bent 1
Looking Ahead - Bent 4
3/8" = 1'-0"

TABLE OF VARIABLES

Bridge No.	Bent No.	Elev. "LS"
07448	1 & 4	1094.84
07449	1 & 4	883.87
07450	1 & 4	828.37
07451	1 & 4	776.66

GENERAL NOTES

All concrete in end bent cap 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. 60755 for details.

For additional information, see Layout.

B405E, B406E, & B407E bars shall have a 2'-10" embedment into the cap.

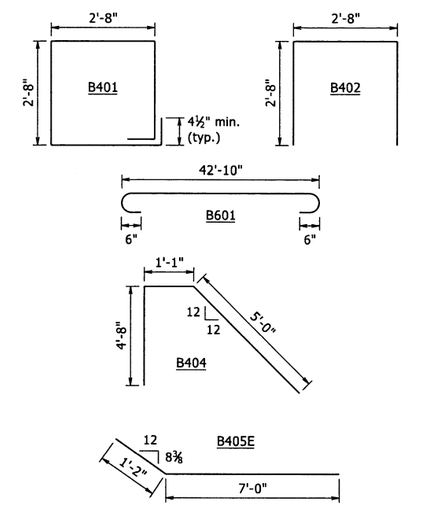
BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	52	11'-0"	2"
B402	10	7'-10"	2"
B403	2	42'-10"	Str.
B404	8	10'-8"	2"
B405E	6	8'-2"	2"
B406E	6	5'-3"	Str.
B407E	6	9'-3"	Str.
B408E	84	4'-2"	Str.
B601	6	44'-2"	4½"
B602	6	42'-10"	Str.

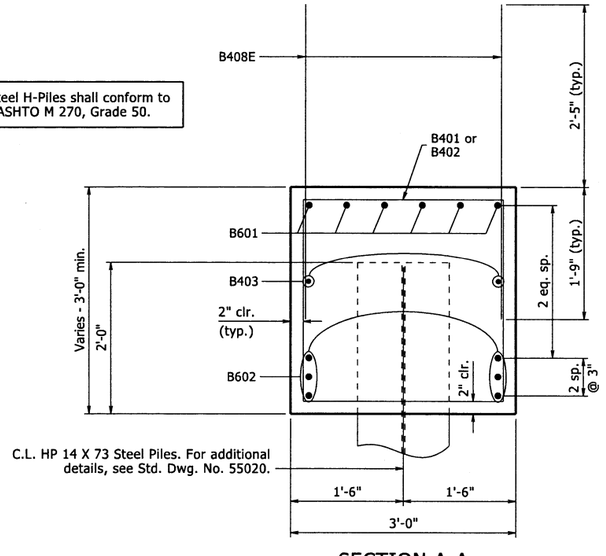
Bars with an "E" suffix are to be expoxy coated.

BENDING DIAGRAMS

(Dimensions are out to out of bars)



Steel H-Piles shall conform to AASHTO M 270, Grade 50.



SECTION A-A

1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
9-11-19
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF END BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

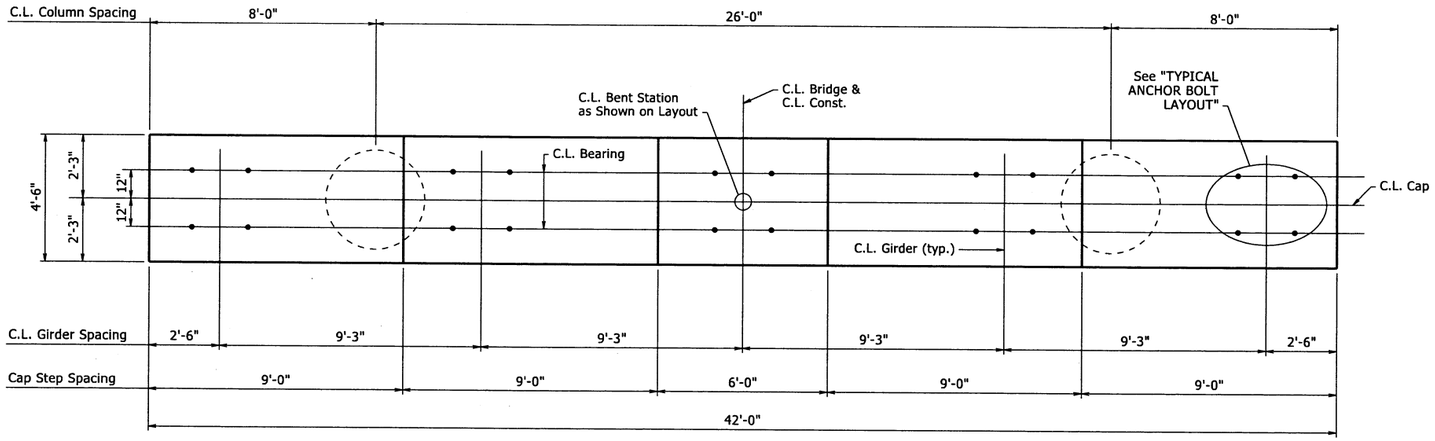
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CHECKED BY: NAC DATE: 9/9/19 SCALE: As Noted
DESIGNED BY: NAC DATE: 11/18

BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60750

PRINT DATE: 9/9/2019

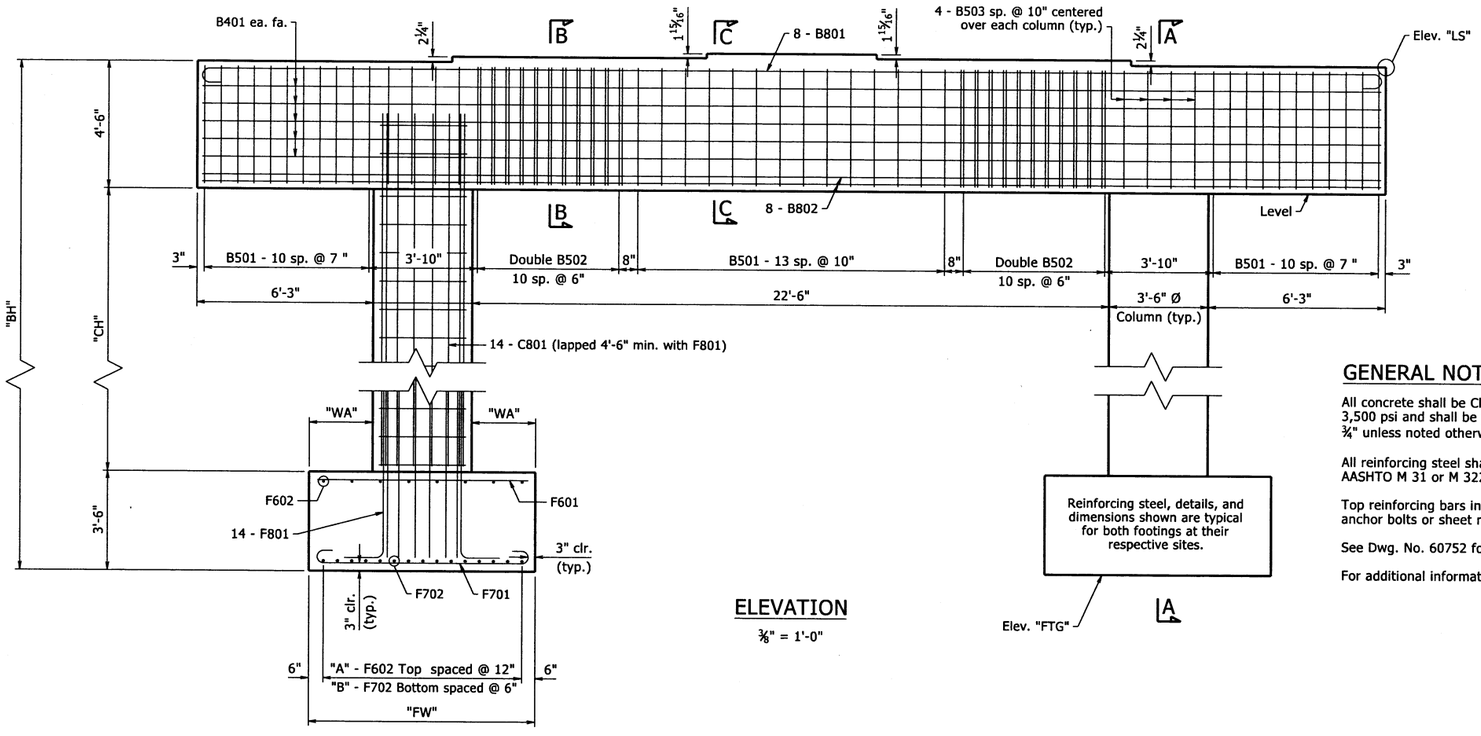
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				6	ARK.			
				JOB NO.		040622	81	140

(1) 07448,07449 - INTERMEDIATE BENTS - 60751
07450,07451



PLAN

$\frac{3}{8}$" = 1'-0"



ELEVATION

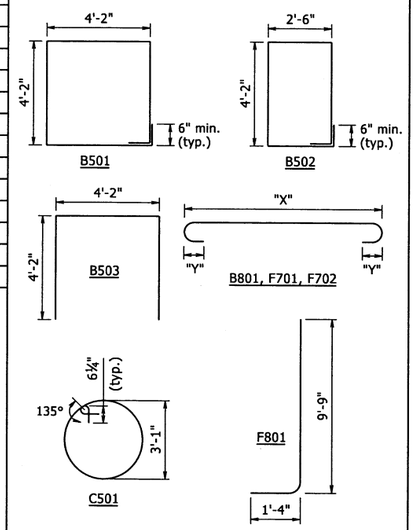
$\frac{3}{8}$" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	"X"	"Y"	PIN DIA.
B401	10	41'-8"	-	-	Str.
B501	36	17'-2"	-	-	2½"
B502	44	13'-10"	-	-	2½"
B503	8	12'-4"	-	-	2½"
B801	8	43'-6"	41'-8"	8"	6"
B802	16	41'-8"	-	-	Str.
C501	"CT"	11'-1"	-	-	3¾"
C801	28	"CL"	-	-	Str.
F601	"XT"	"XTL"	-	-	Str.
F602	"ZT"	"ZTL"	-	-	Str.
F701	"XB"	"XBL"	"BLX"	7"	5¼"
F702	"ZB"	"ZBL"	"BLZ"	7"	5¼"
F801	28	10'-11"	-	-	6"

BENDING DIAGRAMS

(Dimensions are out to out of bars)



GENERAL NOTES

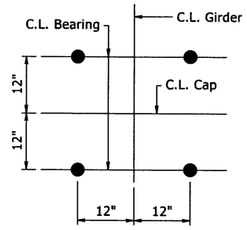
All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

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.

See Dwg. No. 60752 for "SECTION A-A", "SECTION B-B", and "SECTION C-C".

For additional information, see Layout.



For Details of Elastomeric Bearings, see Dwg. No. 60753.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

TABLE OF VARIABLES - PER BENT

LOCATION		GEOMETRY								C501		C801	F601			F602			F701				F702			
Bridge No.	Bent No.	"BH"	"CH"	"FW"	"WA"	"FL"	"LA"	Elev. "LS"	Elev. "FTG"	"E"	"CT"	"CL"	"C"	"XT"	"XTL"	"A"	"ZT"	"ZTL"	"D"	"XB"	"XBL"	"BLX"	"B"	"ZB"	"ZBL"	"BLZ"
07448	2 & 3	16'-6"	8'-6"	10'-0"	3'-3"	14'-0"	5'-3"	1094.61	1078.11	9	24	11'-4"	14	28	9'-6"	10	20	13'-6"	27	54	11'-2"	9'-6"	19	38	15'-2"	13'-6"
07449	2 & 3	24'-6"	16'-6"	8'-0"	2'-3"	12'-0"	4'-3"	883.64	859.14	17	40	19'-4"	12	24	7'-6"	8	16	11'-6"	23	46	9'-2"	7'-6"	15	30	13'-2"	11'-6"
07450	2 & 3	22'-0"	14'-0"	8'-0"	2'-3"	12'-0"	4'-3"	828.14	806.14	15	36	16'-10"	12	24	7'-6"	8	16	11'-6"	23	46	9'-2"	7'-6"	15	30	13'-2"	11'-6"
07451	2 & 3	22'-6"	14'-6"	8'-0"	2'-3"	12'-0"	4'-3"	776.43	753.93	15	36	17'-4"	12	24	7'-6"	8	16	11'-6"	23	46	9'-2"	7'-6"	15	30	13'-2"	11'-6"

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
6-3-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

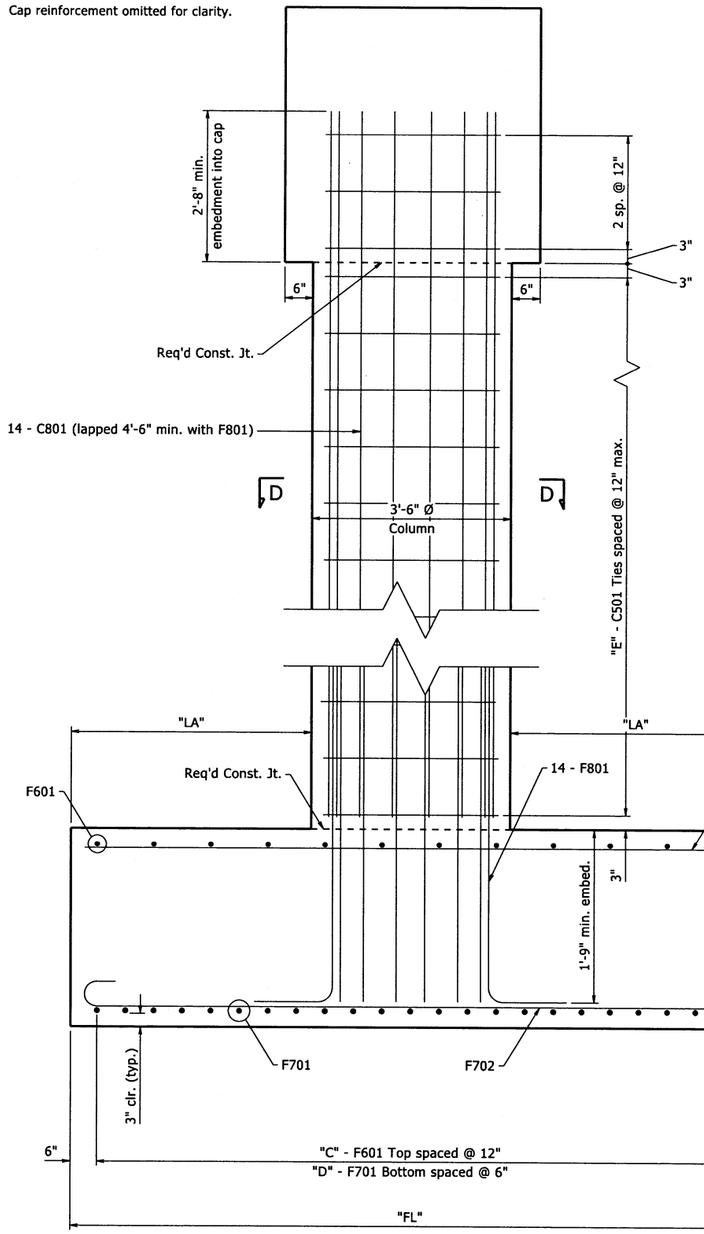
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CHECKED BY: WAC DATE: 6/3/19 SCALE: As Noted
DESIGNED BY: NAC DATE: 11-2018
BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60751

PRINT DATE: 6/3/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	82	140

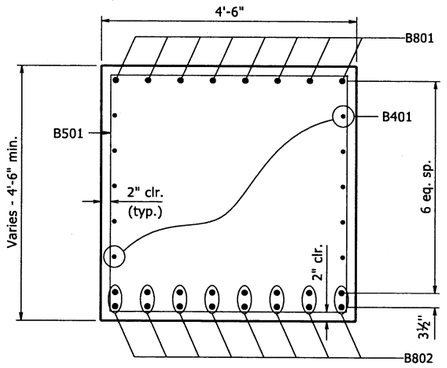
(1) 07448,07449 - INTERMEDIATE BENTS - 60752
07450,07451

Cap reinforcement omitted for clarity.



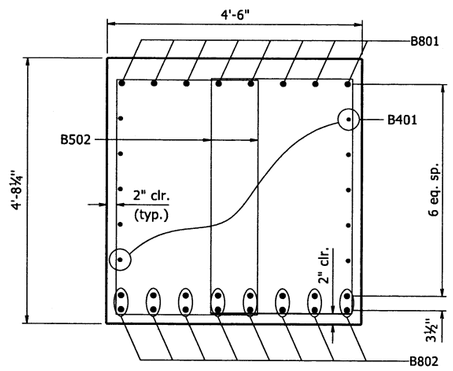
SECTION A-A

¾" = 1'-0"



SECTION C-C

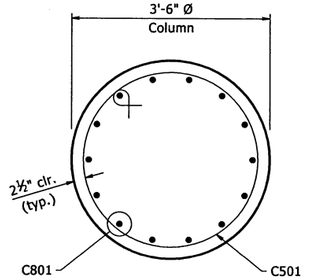
¾" = 1'-0"



SECTION B-B

¾" = 1'-0"

See Dwg. No. 60751 for "GENERAL NOTES", "BAR LIST - PER BENT", and "TABLE OF VARIABLES - PER BENT".



SECTION D-D

¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-19

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

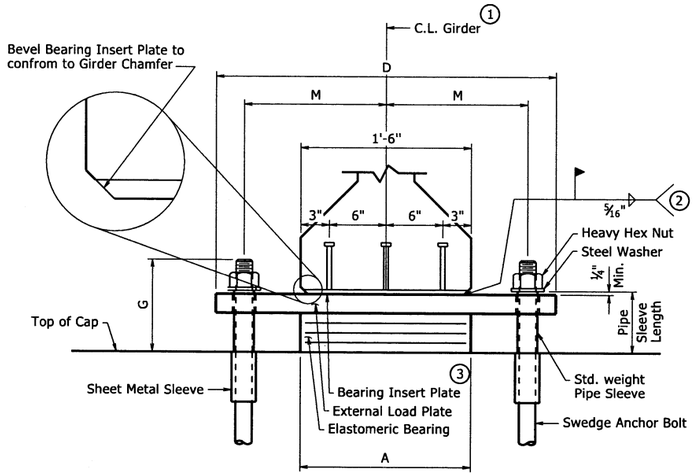
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CHECKED BY: WAC DATE: 6/3/19 SCALE: As Noted
DESIGNED BY: NAC DATE: 11-2018

BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60752

PRINT DATE: 6/3/2019

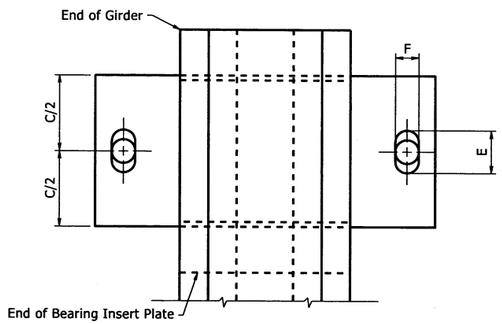
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	83	140

① 07448,07449 - ELASTO. BRNGS. - 60753
07450,07451



FRONT VIEW

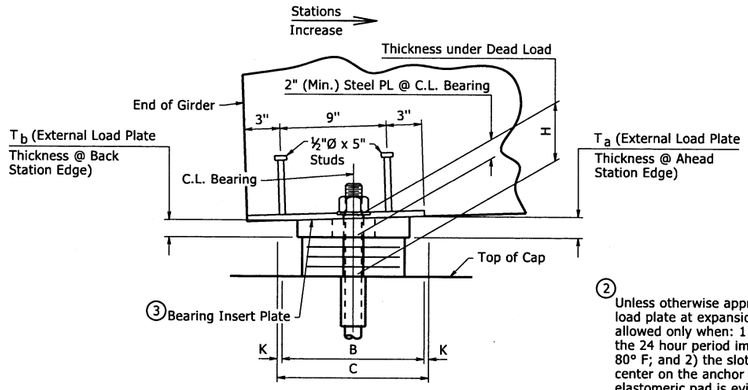
① C.L. Elastomeric Pad shall be aligned with C.L. Girder.



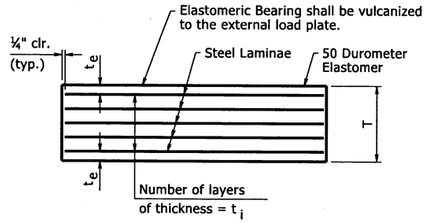
PLAN VIEW

The grade and the direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in the "Table of Fabricator Variables".

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



t_e = Thickness of elastomer cover on top and bottom of pad.

t_i = Thickness of elastomer between steel laminae.

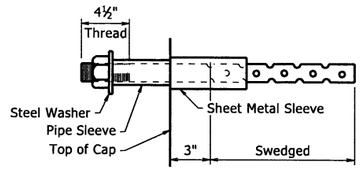
N = Number of elastomer layers of thickness ti.

ELASTOMERIC BEARING

② 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.

③ Bearing Insert Plate (M 270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders (Type II)".



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the 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 will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)".

TABLE OF FABRICATOR VARIABLES

④ Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION		BEARING TYPE	NO. of BEARINGS EACH BENT	④ MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD								EXTERNAL LOAD PLATE								ANCHOR BOLT				
	BENT NO(S).	GIRDER NO.				G	H	A	B	N	ti	te	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T_a	T_b	ANCHOR BOLT (Ø X L)	GRADE	PIPE SLEEVE SIZE (Ø X L)	SHEET METAL SLEEVE SIZE (Ø X L)	STEEL WASHER SIZE (O.D.)
07448	2 & 3	All	Fix.	10	123	7"	3¾"	18"	7"	2	½"	¼"	3 @ 12 Ga.	$1^{13}/_{16}$"	8"	30½"	3⅛"	3⅛"	½"	12"	2"	2"	2" x 29"	55	2½" x 4"	4" x 8"	3¾"
07449	2 & 3	All	Fix.	10	123	7"	3¾"	18"	7"	2	½"	¼"	3 @ 12 Ga.	$1^{13}/_{16}$"	8"	30½"	3⅛"	3⅛"	½"	12"	2"	2"	2" x 29"	55	2½" x 4"	4" x 8"	3¾"
07450	2 & 3	All	Fix.	10	123	7"	3¾"	18"	7"	2	½"	¼"	3 @ 12 Ga.	$1^{13}/_{16}$"	8"	30½"	3⅛"	3⅛"	½"	12"	2"	2"	2" x 29"	55	2½" x 4"	4" x 8"	3¾"
07451	2 & 3	All	Fix.	10	123	7"	3¾"	18"	7"	2	½"	¼"	3 @ 12 Ga.	$1^{13}/_{16}$"	8"	30½"	3⅛"	3⅛"	½"	12"	2"	2"	2" x 29"	55	2½" x 4"	4" x 8"	3¾"

GENERAL NOTES

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

External load plates shall conform to AASHTO M 270, Grade 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 and 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
6-3-19
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/23/19 FILENAME: b040622_e1.dgn
CHECKED BY: DBS DATE: 5/7/19 SCALE: None
DESIGNED BY: EOR DATE: 10/2018
BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60753

PRINT DATE: 5/30/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	84	140

(1) 07448,07449 - COMMON DETAILS - 60754
07450,07451

Slab Reinforcing:

Longitudinal: S402E Top and Bottom placed as shown
S601E and S602E Placed as shown, see "Half Reinforcing Plan and Slab Pouring Sequence", Dwg. Nos. 60762, 60764, and 60766.

Transverse: S501E @ 12" o.c. In top, S401E @ 12" o.c. In bottom — Alternate
S502E @ 12" o.c. bent up over girders —
S503E @ 6" In top of overhangs (bundled with No. 5 bars)

At the Contractor's option, two straight epoxy coated No. 5 bars, one placed in top and one placed in bottom, may be substituted for bar S502E. Payment will be based on the weight of bar S502E.

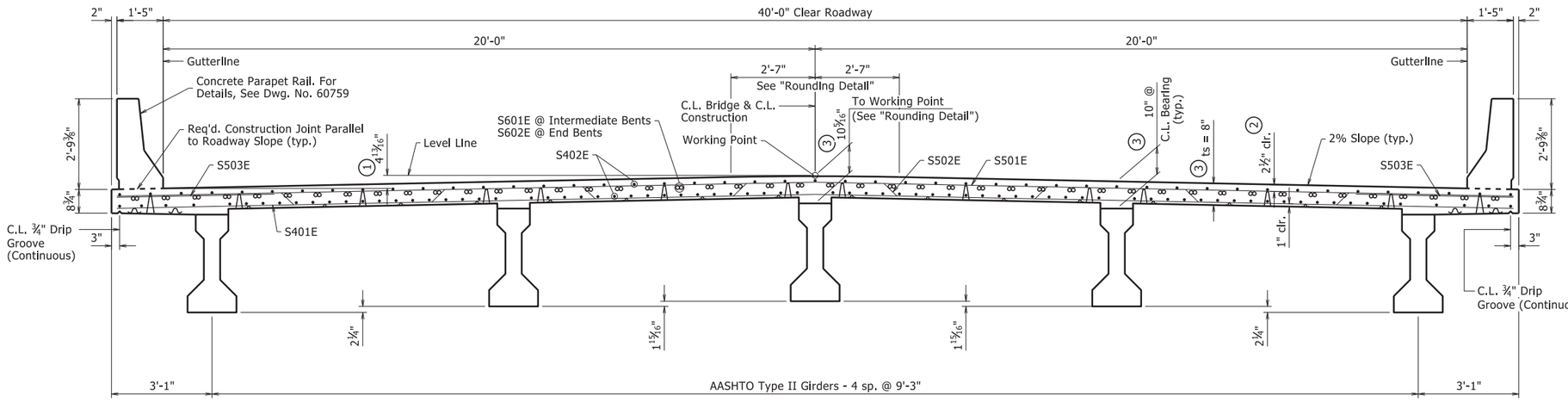
Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full-length lower runners directly on removable deck forms will not be allowed.

Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Roadway Face and Top of Concrete Parapet Rail.

(1) Working point to gutterline.

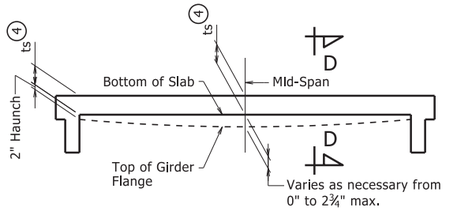
(2) Tolerance: Minus = ¼";
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".

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



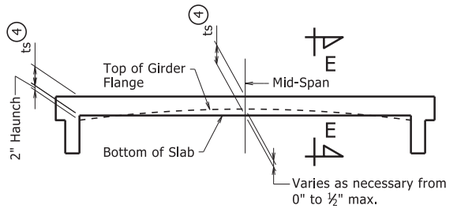
TYPICAL ROADWAY SECTION

½" = 1'-0"



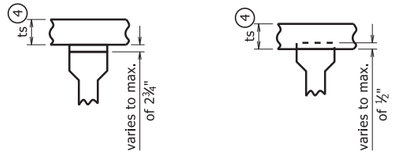
GIRDER ELEVATION

No Scale



GIRDER ELEVATION

No Scale



SECTION D-D

No Scale

SECTION E-E

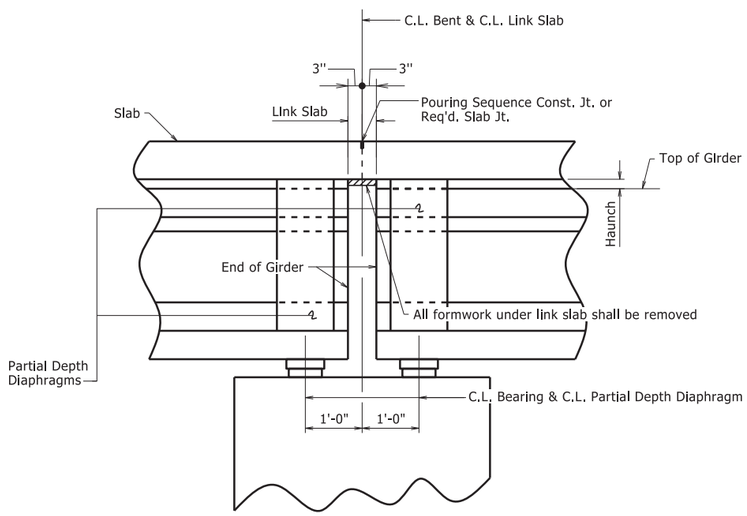
No Scale

ts = slab thickness as shown on superstructure details - See "Typical Roadway Section".

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

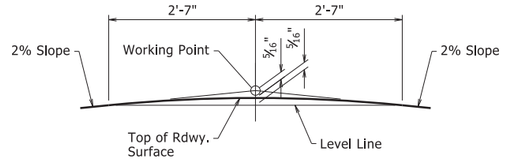
"Girder Elevation" sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



VIEW AT INTERMEDIATE BENT

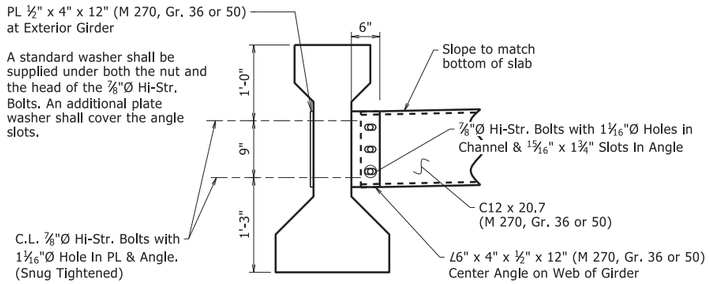
¾" = 1'-0"



Working Point Matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale



DETAILS OF STEEL DIAPHRAGM

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 Diaphragm". Payment will be based on concrete diaphragms.

All components of Steel Diaphragms (Permanent and Temporary) shall be galvanized.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:42 PM
BRIDGE ENGINEER

SHEET 1 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDER UNITS

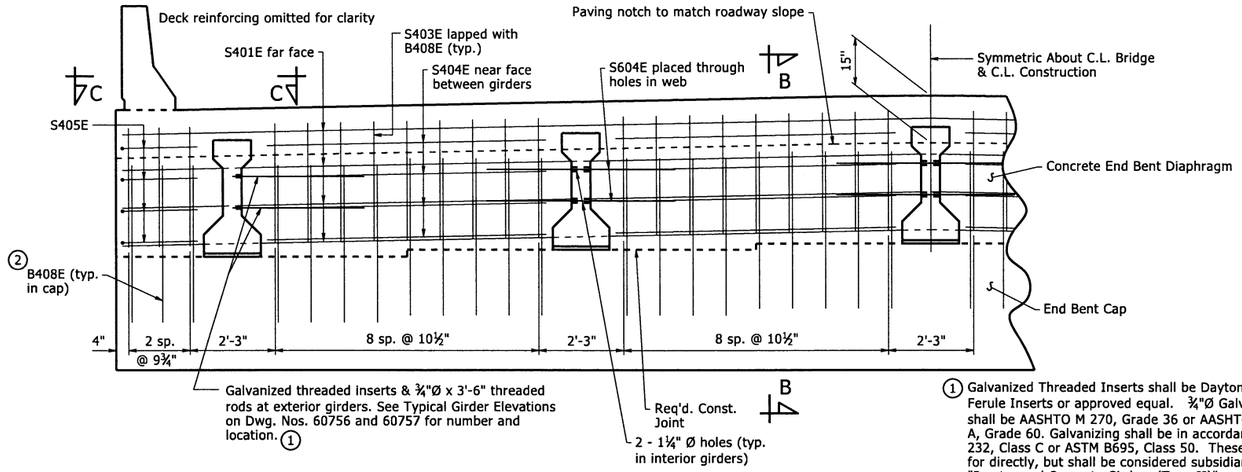
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19
CHECKED BY: DBS DATE: 5/10/19
DESIGNED BY: EOR DATE: 10/2018
FILENAME: b040622_s1.dgn
SCALE: As Noted
BRIDGE NO. 07448,07449, 07450,07451
DRAWING NO. 60754

PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	85	140

(1) 07448,07449 - COMMON DETAILS - 60755
07450,07451

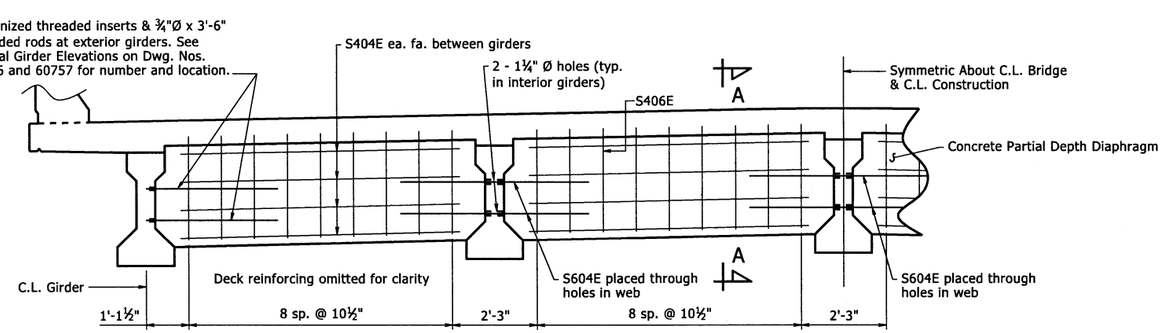


TYPICAL SECTION AT END BENT DIAPHRAGMS

Looking Back - Bent 1
Looking Ahead - Bent 4
½" = 1'-0"

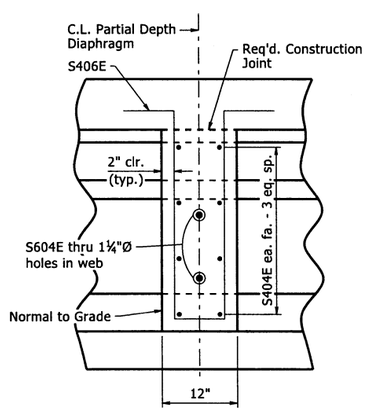
(1) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾"Ø Galvanized Threaded Rods shall be AASHTO M 270, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items 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. No. 60750 for reinforcing and additional details.



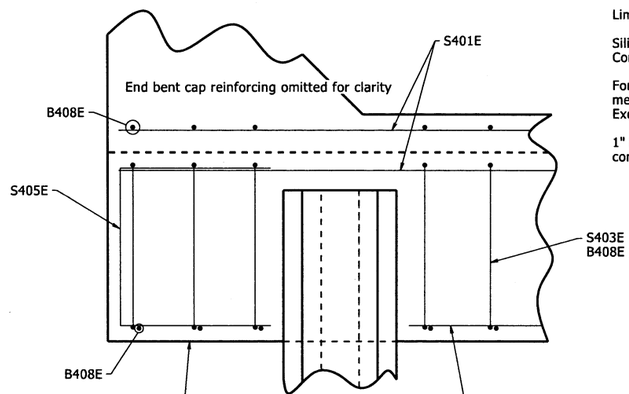
TYPICAL SECTION AT PARTIAL DEPTH DIAPHRAGMS

½" = 1'-0"



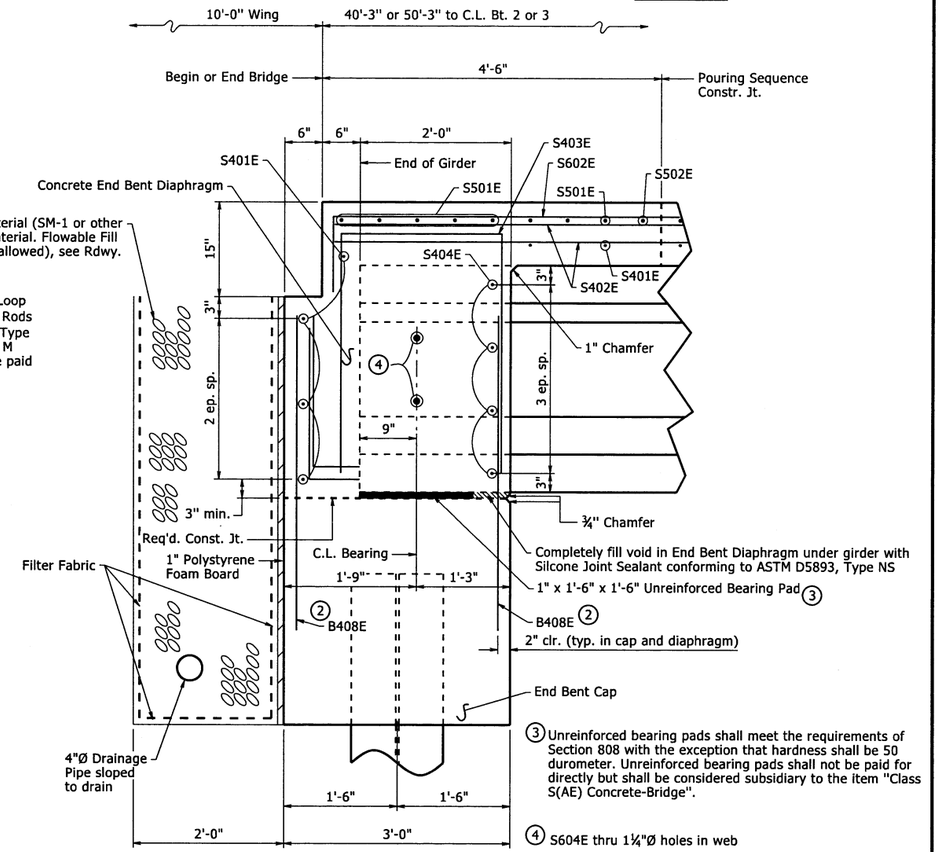
SECTION A-A

Shown at Midspan,
Diaphragms at Intermediate Bents Similar
1" = 1'-0"



SECTION C-C

1"=1'-0"



(3) 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".

(4) S604E thru 1¼"Ø holes in web

SECTION B-B

1" = 1'-0"

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

Silicone Joint Sealant 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 will 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9335
9-11-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDER UNITS

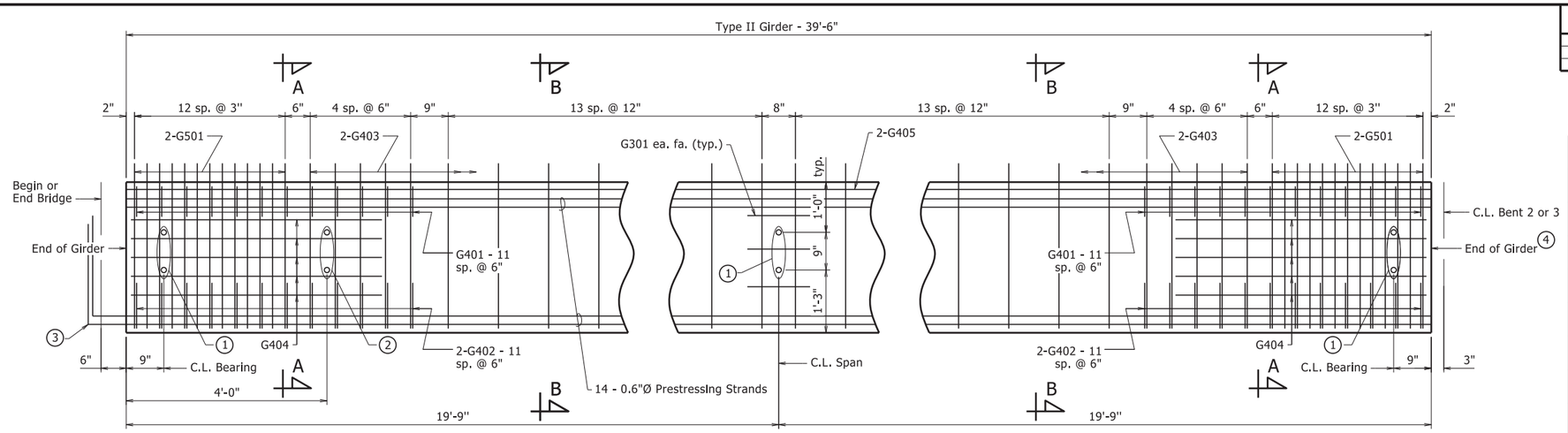
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19
CHECKED BY: DBS DATE: 9/9/19
DESIGNED BY: EOR DATE: 10/2018
FILENAME: b040622_s1.dgn
SCALE: As Noted
BRIDGE NO. 07448,07449, 07450,07451
DRAWING NO. 60755

PRINT DATE: 9/9/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	86	140

(1) 07448,07450, 07451 - COMMON DETAILS - 60756



TYPICAL GIRDER ELEVATION (TYPE II) - 39'-6"

Span 1 or 3 shown, Span 2 similar

¾" = 1'-0"

(1) Connection for Partial Depth Diaphragm: ¾" Ø Threaded Inserts at interior face of exterior girders or 1¼" Ø holes at interior girders. See Dwg. No. 60755 and Dwg. Nos. 60761 or 60765 for additional details.

(2) Connection for Temporary Steel Diaphragm: 1¼" Ø holes cast in web. See Dwg. No. 60754 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 resin coating, see "End of Girder View at Intermediate Bent".

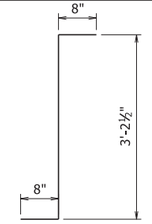
Dimensions are measured along girders.

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

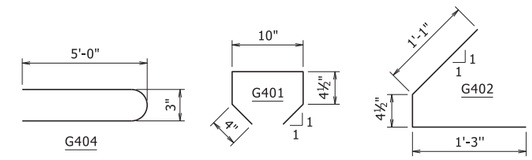
Prestressing strands shall be bonded along the entire length of the girder.

BAR LIST - PER GIRDER

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
G301	6	1'-3"	Str.	
G401	24	2'-1"	2"	
G402	48	2'-7"	2"	
G403	76	4'-4"	3"	
G404	10	10'-1"	2"	
G405	2	39'-4"	Str.	
G501	52	4'-3½"	3¾"	



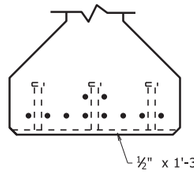
G403 & G501



All bars in Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type II)". See span drawings for bar list of span reinforcing.

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

At the Contractor's option, ⅜" Ø strands pulled to 2,000 lbs. min. may be substituted for bars G405.

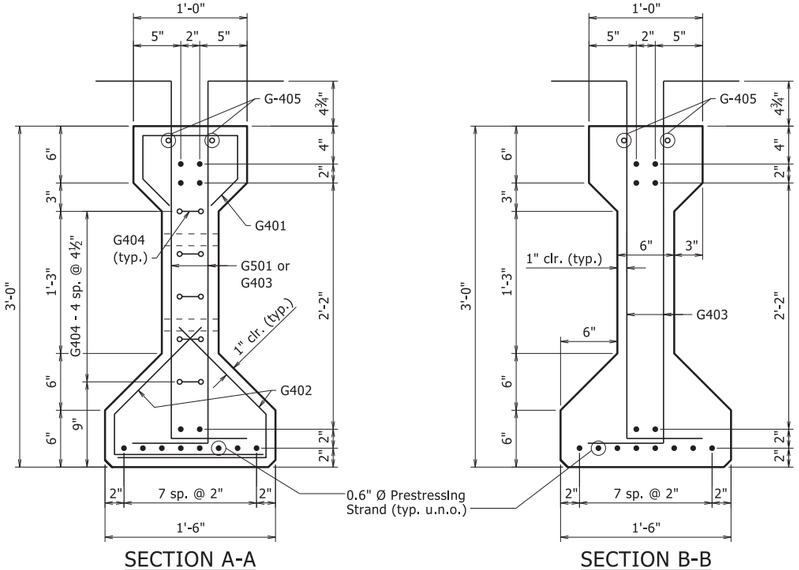


At intermediate bents only, saw cut or grind all strands flush with end of the girder. The ends of the girders and the cut-off strands shall be coated with a 1/16" min. thick coating of a QPL approved epoxy resin.

½" x 1'-3" x 1'-5½" Bearing Insert PL, see Dwg. No. 60753

END OF GIRDER VIEW AT INTERMEDIATE BENT

1½" = 1'-0"

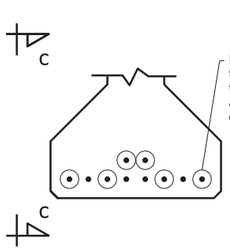


SECTION A-A

1½" = 1'-0"

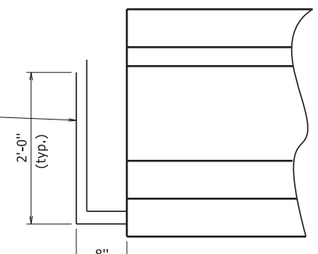
SECTION B-B

1½" = 1'-0"



END OF GIRDER VIEW AT END BENT

1½" = 1'-0"



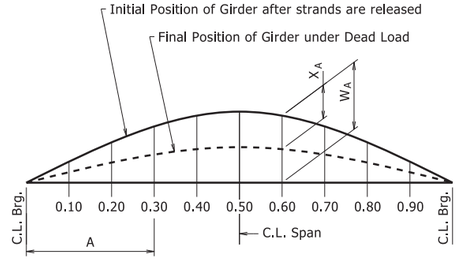
VIEW C-C

1" = 1'-0"

At end bent only, shop bend 6 bottom prestressing strands from end of girder 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 girder.

Span Pt.	Inches	
	W_A	X_A
0.00	0.000	0.000
0.10	0.169	0.061
0.20	0.299	0.124
0.30	0.389	0.175
0.40	0.442	0.207
0.50	0.459	0.218
0.60	0.442	0.207
0.70	0.389	0.175
0.80	0.299	0.124
0.90	0.169	0.061
1.00	0.000	0.000



"W_A" is camber of Girder (Prestress + Dead Load of girder @ 60 days after release)

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

CAMBER AND DEFLECTIONS (INCHES)

No Scale

"W_A" & "X_A" are based on the required minimum concrete strength and may vary from the dimension shown. "W_A" & "X_A" shall be measured along bottom of girders unless otherwise approved by the Engineer. See "Adjustment for Slab Thickness Tolerance" on Dwg. No. 60754 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:45 PM
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BRIDGE ENGINEER

SHEET 3 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

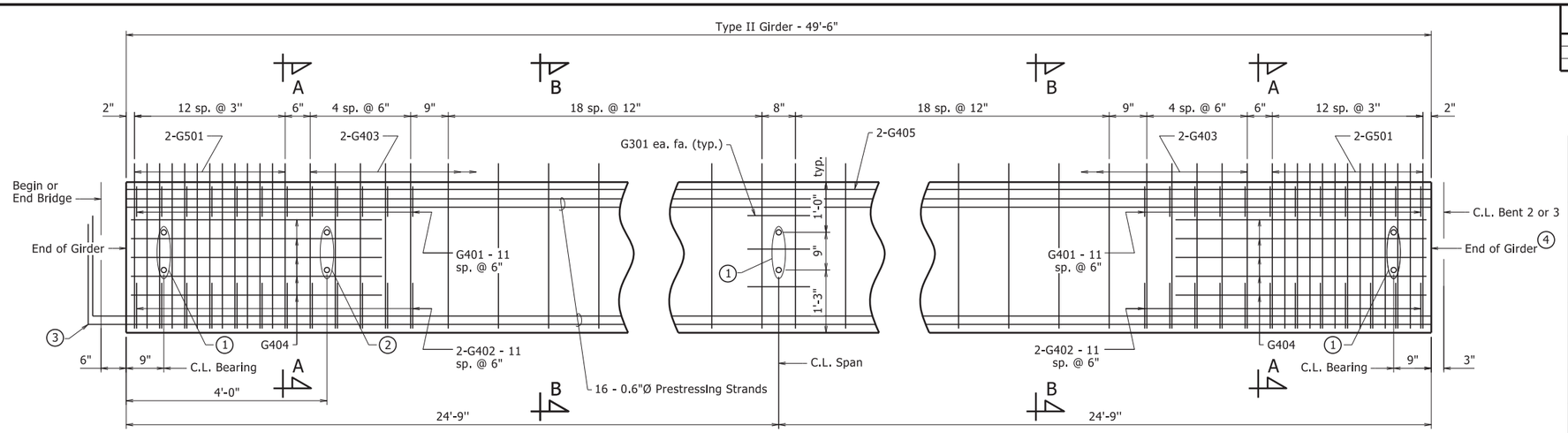
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CHECKED BY:	DBS	DATE: 4/14/2020	SCALE: As Noted
DESIGNED BY:	EOR	DATE: 10-2018	

BRIDGE NO. 07448,07450, 07451 DRAWING NO. 60756

PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	87	140

(1) 07449,07450 - COMMON DETAILS - 60757



TYPICAL GIRDER ELEVATION (TYPE II) - 49'-6"

Span 1 or 3 shown, Span 2 similar

¾" = 1'-0"

(1) Connection for Partial Depth Diaphragm: ¾" Ø Threaded Inserts at interior face of exterior girders or 1¼" Ø holes at interior girders. See Dwg. No. 60755 and Dwg. Nos. 60763 or 60765 for additional details.

(2) Connection for Temporary Steel Diaphragm: 1¼" Ø holes cast in web. See Dwg. No. 60754 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 resin coating, see "End of Girder View at Intermediate Bent".

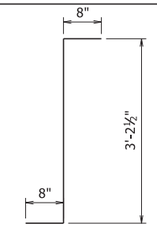
Dimensions are measured along girders.

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

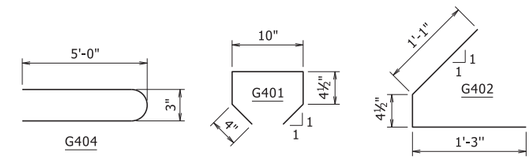
Prestressing strands shall be bonded along the entire length of the girder.

BAR LIST - PER GIRDER

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
G301	6	1'-3"	Str.	
G401	24	2'-1"	2"	
G402	48	2'-7"	2"	
G403	96	4'-4"	3"	
G404	10	10'-1"	2"	
G405	2	49'-4"	Str.	
G501	52	4'-3½"	3¾"	



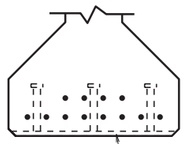
G403 & G501



All bars in Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type II)". See span drawings for bar list of span reinforcing.

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

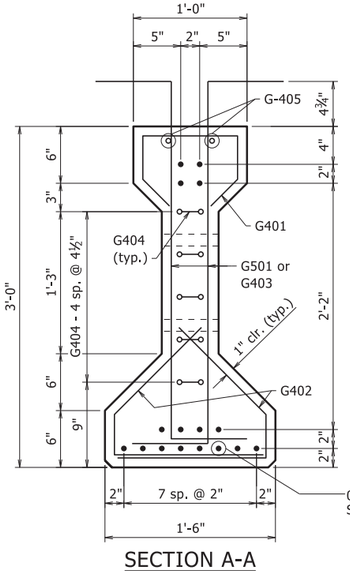
At the Contractor's option, ⅜" Ø strands pulled to 2,000 lbs. min. may be substituted for bars G405.



At intermediate bents only, saw cut or grind all strands flush with 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.

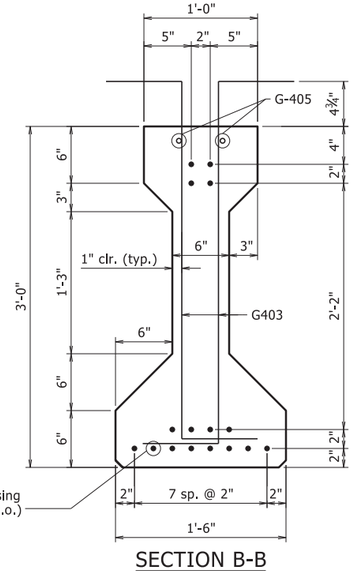
END OF GIRDER VIEW AT INTERMEDIATE BENT

1½" = 1'-0"



SECTION A-A

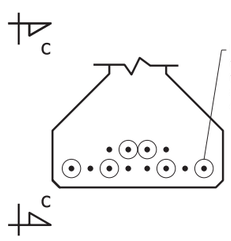
1½" = 1'-0"



0.6" Ø Prestressing Strand (typ. u.n.o.)

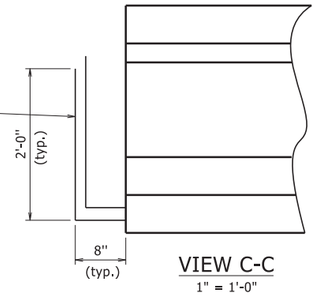
SECTION B-B

1½" = 1'-0"



END OF GIRDER VIEW AT END BENT

1½" = 1'-0"



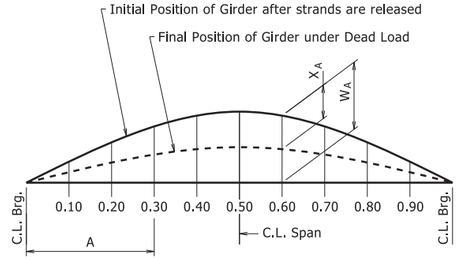
VIEW C-C

1" = 1'-0"

At end bent only, shop bend 6 bottom prestressing strands from end of girder 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 girder.

Span Pt.	Inches	
	W_A	X_A
0.00	0.000	0.000
0.10	0.334	0.156
0.20	0.585	0.312
0.30	0.758	0.434
0.40	0.859	0.513
0.50	0.891	0.540
0.60	0.859	0.513
0.70	0.758	0.434
0.80	0.585	0.312
0.90	0.334	0.156
1.00	0.000	0.000



"W_A" is camber of Girder (Prestress + Dead Load of girder @ 60 days after release)

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

CAMBER AND DEFLECTIONS (INCHES)

No Scale

"W_A" & "X_A" are based on the required minimum concrete strength and may vary from the dimension shown. "W_A" & "X_A" shall be measured along bottom of girders unless otherwise approved by the Engineer. See "Adjustment for Slab Thickness Tolerance" on Dwg. No. 60754 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:43 PM
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BRIDGE ENGINEER

SHEET 4 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

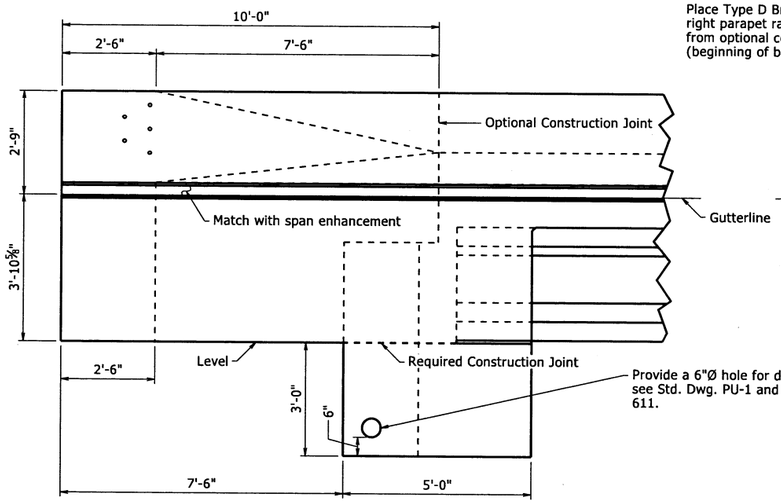
DRAWN BY:	LJB	DATE:	4/26/19	FILENAME:	b040622_s1.dgn
CHECKED BY:	DBS	DATE:	4/14/2020	SCALE:	As Noted
DESIGNED BY:	EOR	DATE:	10-2018		

BRIDGE NO. 07449,07450 DRAWING NO. 60757

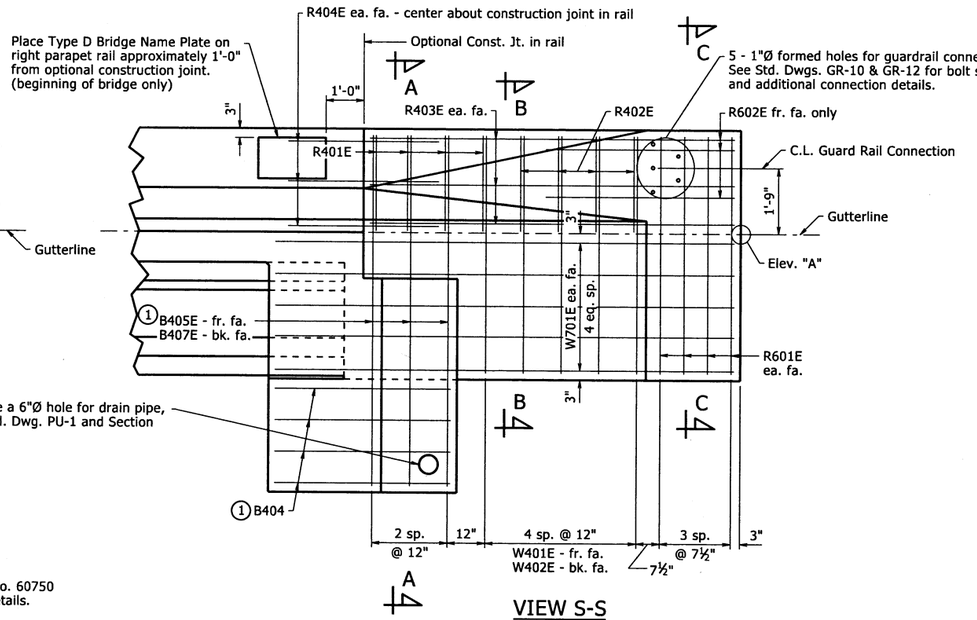
PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	88	140

(1) 07448,07449 - COMMON DETAILS - 60758
07450,07451



VIEW R-R
½" = 1'-0"



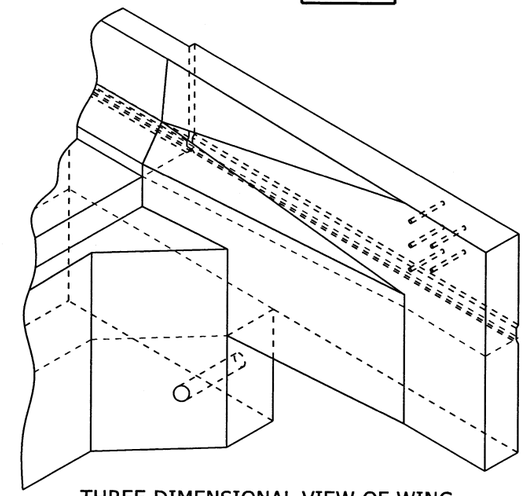
VIEW S-S
½" = 1'-0"

(1) See End Bent Details on Dwg. No. 60750 for reinforcing and additional details.

For location of "View R-R", "View S-S", and "Detail A", see "Half Reinforcing Plan and Slab Pouring Sequence", Dwg. Nos. 60762, 60764 , & 60766.

TABLE OF VARIABLES

Bridge No.	Elev. "A"
07448	1098.73
07449	887.76
07450	832.26
07451	780.55

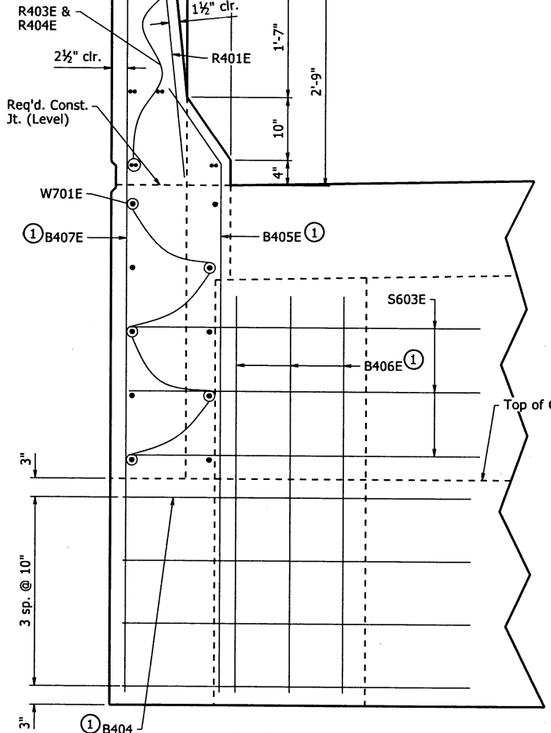


THREE DIMENSIONAL VIEW OF WING AND RAIL AT INTEGRAL END BENT
No Scale

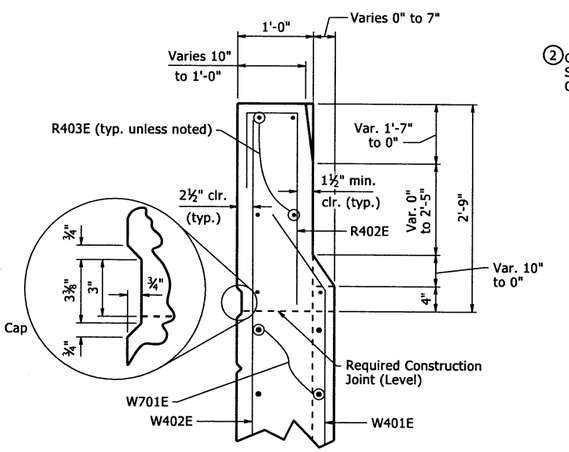
Modify the wing rail and connection detail above the gutterline as required by the manufacturer of the bridge end terminal. Reinforcing bars that are relocated or bent to fit the modified bridge rail should have minimum concrete cover.

(2) Connector Plate not required at location of bridge end terminal, unless required by manufacturer of the bridge end terminal.

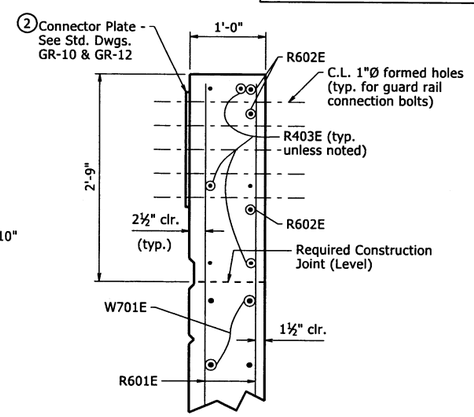
See Dwg. No. 60746 for location of bridge end terminal.



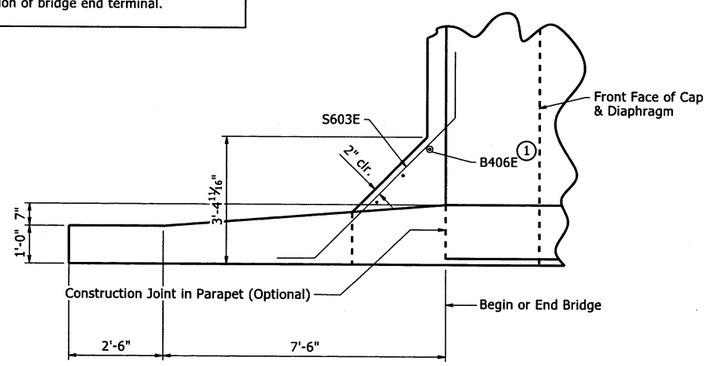
SECTION A-A
1" = 1'-0"



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



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



DETAIL A
½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
6-3-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDERS

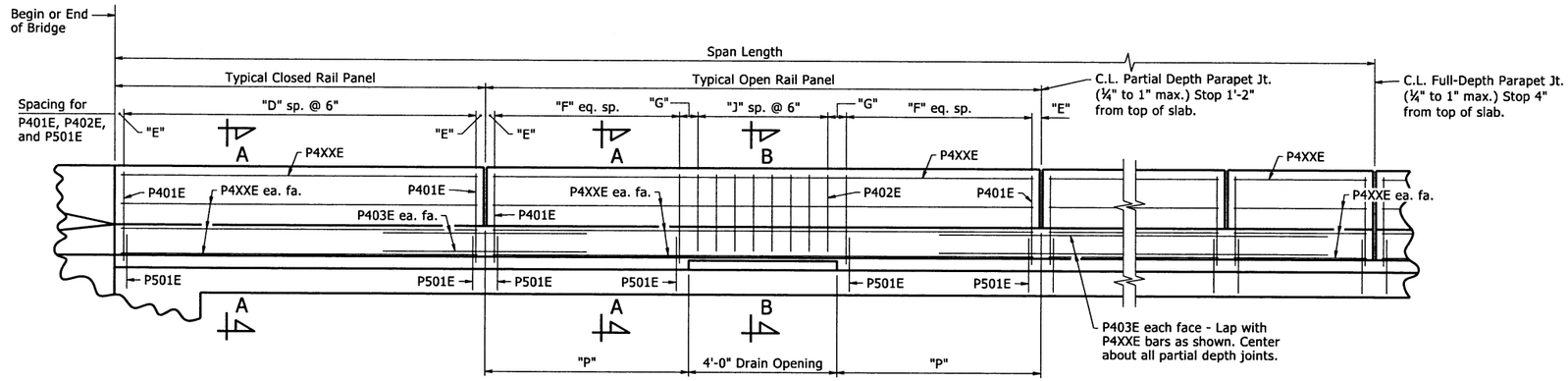
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19
CHECKED BY: DBS DATE: 5/10/19
DESIGNED BY: EOR DATE: 10/2018
FILENAME: b040622_s1.dgn
SCALE: As Noted
BRIDGE NO. 07448,07449, 07450,07451
DRAWING NO. 60758

PRINT DATE: 6/3/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	89	140

(1) 07448,07449 - COMMON DETAILS - 60759
07450,07451



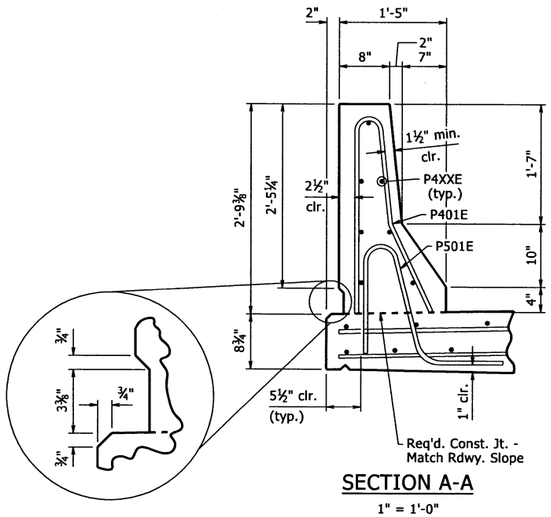
ELEVATION - CONCRETE PARAPET RAIL

½" = 1'-0"

For location of full and partial depth parapet joints, see Dwg. Nos. 60762, 60764, and 60766.

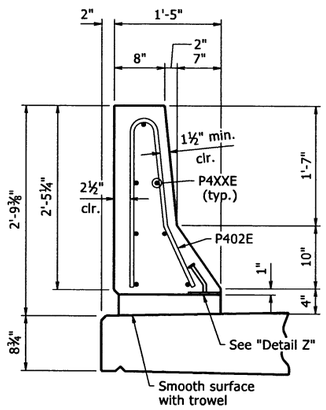
TABLE OF VARIABLES

Closed Rail Panels				Open Rail Panels						
Panel Length	"D"	"E"	P4XXE Bar	Panel Length	"E"	"F"	"G"	"J"	"P"	P4XXE Bar
10'-0"	19	3"	P404E	20'-0"	3"	15	6"	7	8'-0"	P405E
10'-3"	19	4½"	P406E	15'-0"	3"	10	6"	7	5'-6"	P407E



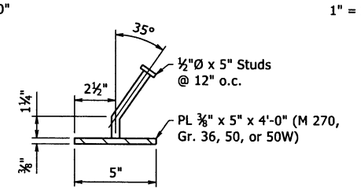
SECTION A-A

1" = 1'-0"



SECTION B-B

1" = 1'-0"

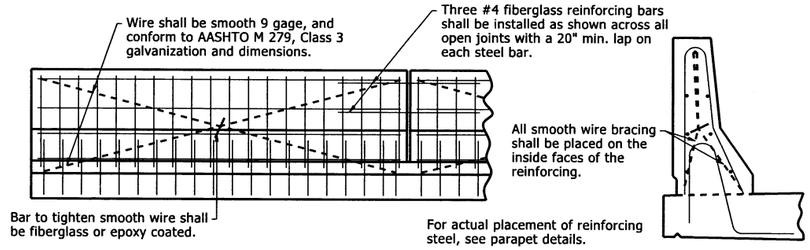


Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)".

The surfaces of the ⅜" plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M 270, Gr. 50W)".

DETAIL Z

No Scale



DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

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

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 Class 2 Rubbed Finish.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-19

BRIDGE ENGINEER

SHEET 6 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19 FILENAME: b040622_s1.dgn
CHECKED BY: DPS DATE: 5/10/19 SCALE: As Noted
DESIGNED BY: EOR DATE: 10/2018
BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60759

PRINT DATE: 6/3/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	90	140

(1) 07448,07449 - COMMON DETAILS - 60760
07450,07451

GENERAL NOTES

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be 0.6" 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 as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete 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 0.6"Ø strand shall be 43,950 lbs. 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 in into the girder. Field drilling of holes shall not be permitted.

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

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.

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.

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

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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

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.

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

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 be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL:

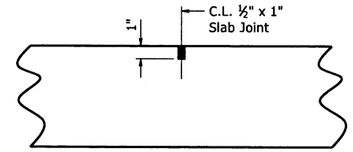
Structural steel shall be AASHTO M 270 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

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

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment, where applicable, will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

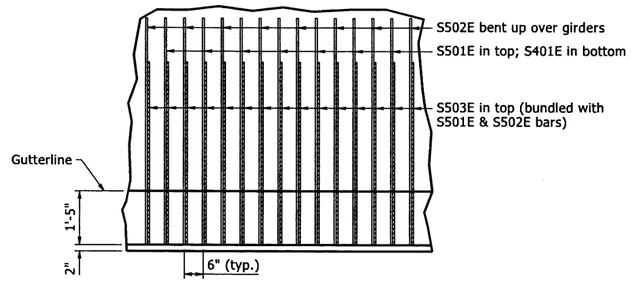
FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUTS(S) AND PLAN DETAILS.



TRANSVERSE 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. 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.



DETAIL B

½" = 1'-0"

For location of "Detail B", see "Half Reinforcing Plan and Slab Pouring Sequence", Dwg. Nos. 60762, 60764, & 60766.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-19
BRIDGE ENGINEER

SHEET 7 OF 7
COMMON DETAILS OF INTEGRAL PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

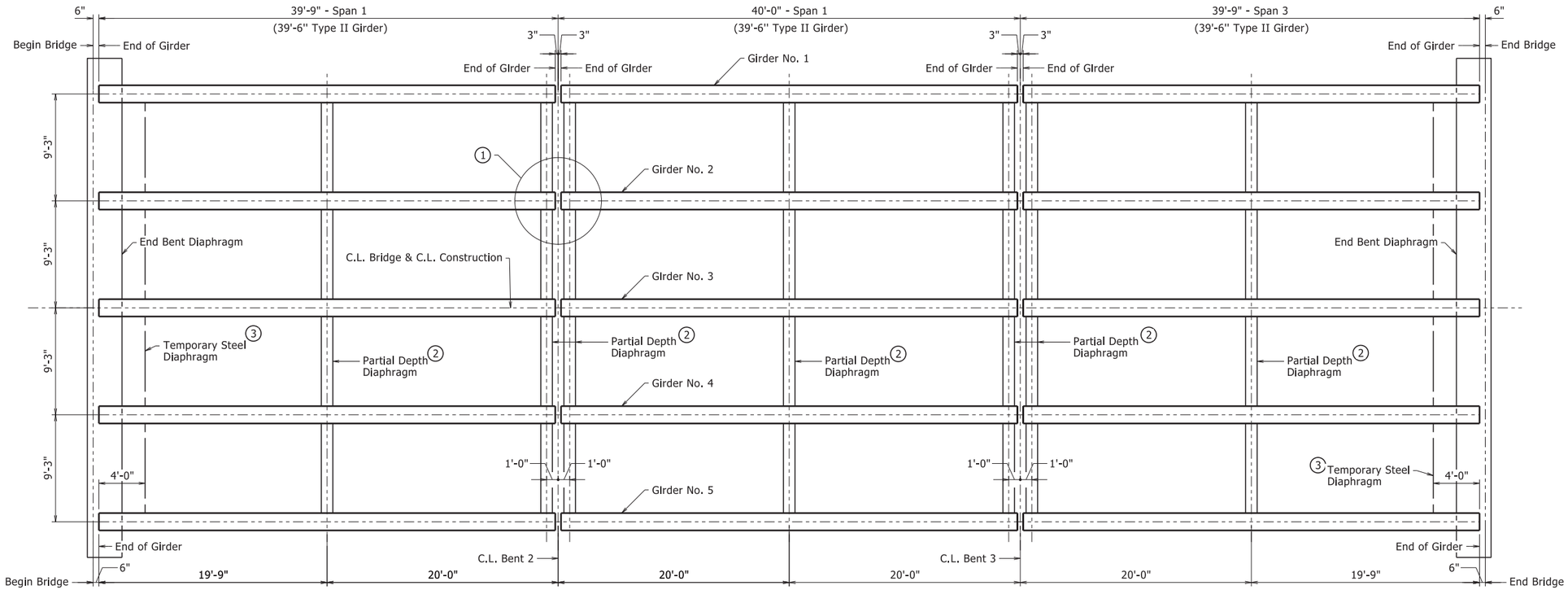
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: DBS DATE: 5/10/19 SCALE: No Scale
DESIGNED BY: EOR DATE: 6/2013

BRIDGE NO. 07448,07449, 07450,07451 DRAWING NO. 60760

PRINT DATE: 5/30/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		040622	91	140
				(1) 07448,07451 - 119'-6" UNIT - 60761				



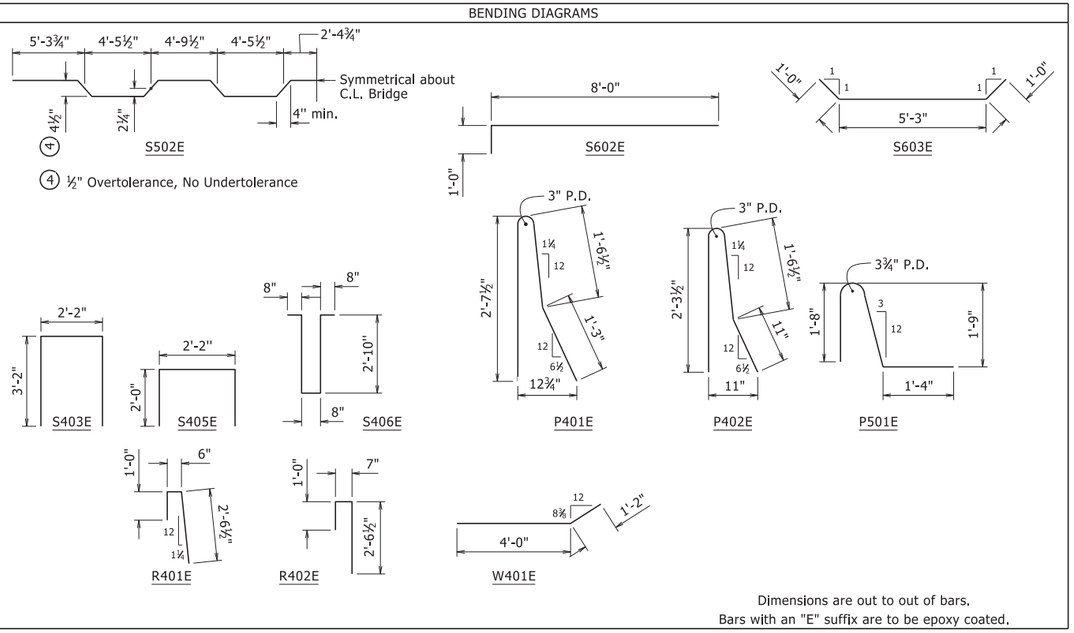
FRAMING PLAN

3/16" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	126	42'-10"	Str.
S402E	369	42'-0"	Str.
S403E	84	8'-4"	2"
S404E	256	7'-5"	Str.
S405E	16	6'-0"	2"
S406E	252	7'-4"	2"
S501E	126	42'-10"	Str.
S502E	115	43'-8"	3"
S503E	462	4'-10"	Str.
S601E	184	12'-0"	Str.
S602E	184	8'-10"	4½"
S603E	12	7'-3"	4½"
S604E	54	6'-0"	Str.
P401E	432	5'-6"	3"
P402E	48	4'-10"	3"
P403E	48	5'-6"	Str.
P404E	56	9'-8"	Str.
P405E	42	19'-8"	Str.
P406E	28	9'-11"	Str.
P501E	432	4'-10"	3¾"
R401E	16	3'-11"	2"
R402E	16	4'-0"	2"
R403E	24	9'-8"	Str.
R404E	24	4'-0"	Str.
R601E	32	6'-3"	Str.
R602E	12	5'-0"	Str.
W401E	20	5'-2"	2"
W402E	20	6'-3"	Str.
W701E	40	12'-2"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.

For details of End Bent Diaphragms & Partial Depth Diaphragms see Dwg. No. 60755.

(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 the partial depth diaphragms are poured. The ends of girders at end bents shall remain blocked until the temporary steel diaphragms are in place.

(2) For details of alternate steel diaphragm, see "Details of Steel Diaphragm" on Dwg. No. 60754.

(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" on Dwg. No. 60754.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:43 PM
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF 119'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

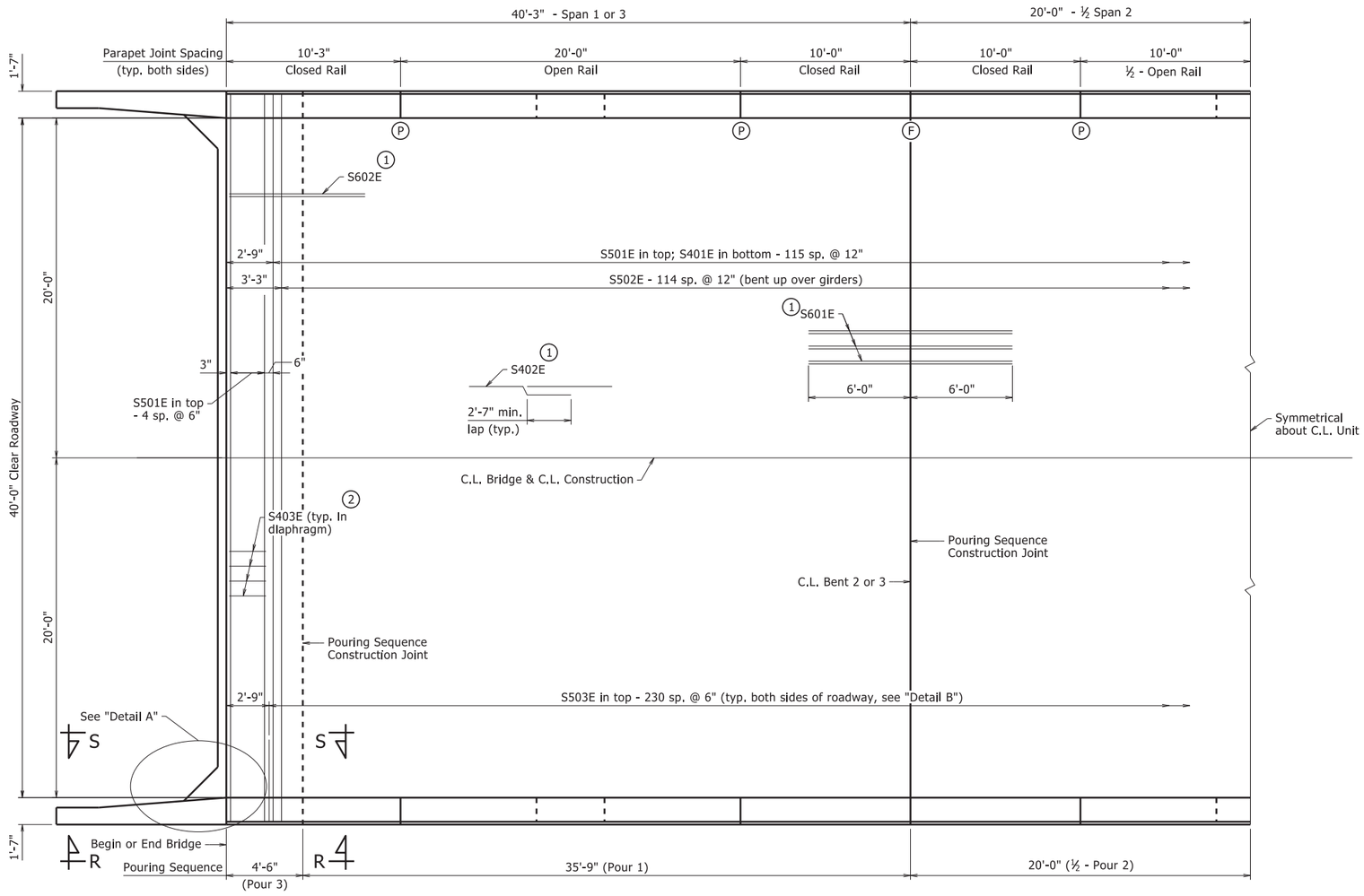
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19
CHECKED BY: DBS DATE: 5/10/19
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SCALE: As Noted

BRIDGE NO. 07448,07451 DRAWING NO. 60761

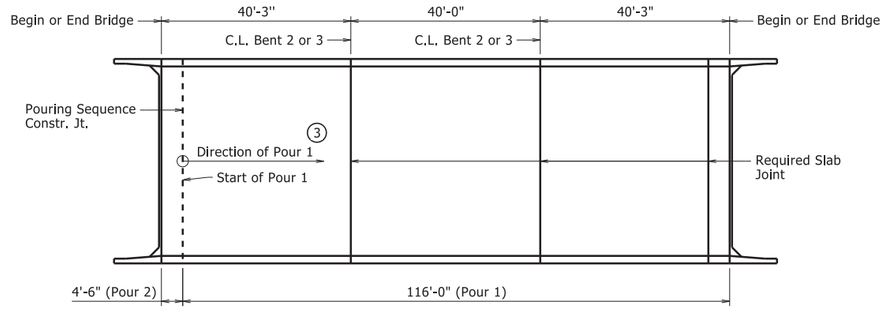
PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	92	140
				①	07448,07451 - 119'-6" UNIT - 60762			



HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

¼" = 1'-0"



③ Stay-in-place forms, if used, shall be installed in a manner that facilitates the direction of the Pour.

ALTERNATE POURING SEQUENCE

No Scale

① Placed as shown in "Typical Roadway Section", see Dwg. No. 60754.

② See Dwg. No. 60755 for more details of reinforcing in concrete end bent diaphragm.

Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 60759.

Rails and wings are included in span quantities.

For "Detail A", "View R-R" and "View S-S", see Dwg. No. 60758.

For "Detail B", "Transverse Slab Joint Detail", and General Notes, see Dwg. No. 60760.

For Bar List, see Dwg. No. 60761.

(P) Partial Depth Parapet Joint at this location

(F) Full Depth Parapet Joint at this location

Slab Pouring Sequence:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2), and all Pours (2) must be placed before Pours (3) can be placed.

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

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

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 adjacent pours. No deviation from the pouring sequences shown will be allowed.

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 the 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:43 PM
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF 119'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

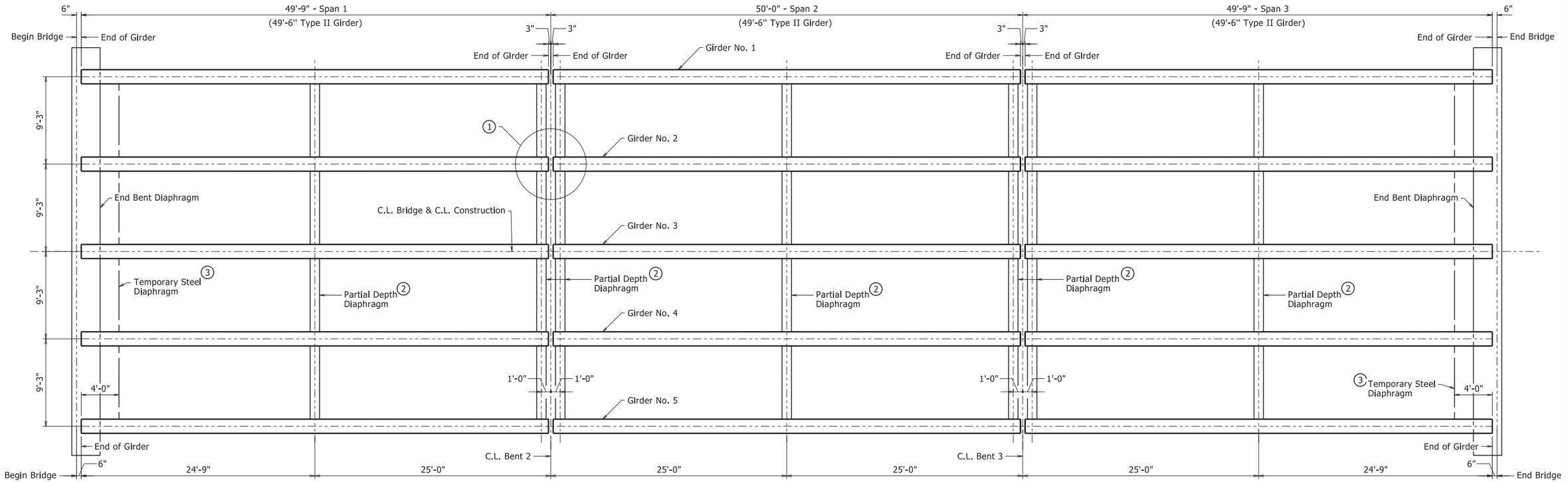
LITTLE ROCK, ARK.

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CHECKED BY:	DBS	DATE:	5/10/19	SCALE:	As Noted
DESIGNED BY:	EOR	DATE:	10/2018		

BRIDGE NO. 07448, 07451 DRAWING NO. 60762

PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		040622	93	140
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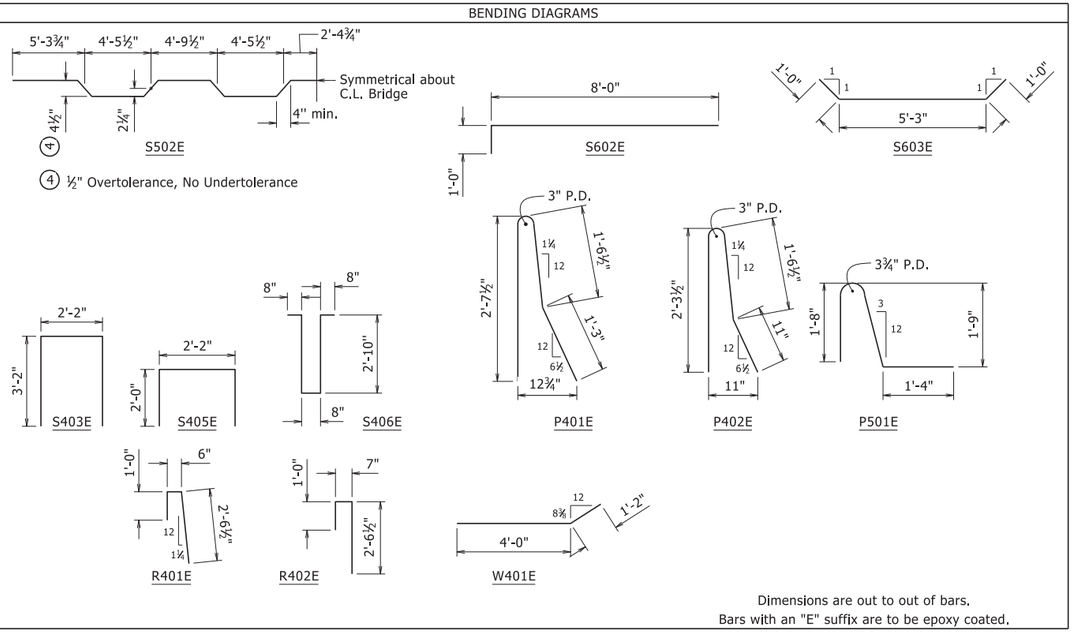
FRAMING PLAN

3/16" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
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S403E	84	8'-4"	2"
S404E	256	7'-5"	Str.
S405E	16	6'-0"	2"
S406E	252	7'-4"	2"
S501E	156	42'-10"	Str.
S502E	145	43'-8"	3"
S503E	582	4'-10"	Str.
S601E	184	12'-0"	Str.
S602E	184	8'-10"	4½"
S603E	12	7'-3"	4½"
S604E	54	6'-0"	Str.
P401E	504	5'-6"	3"
P402E	96	4'-10"	3"
P403E	72	5'-6"	Str.
P404E	56	9'-8"	Str.
P406E	28	9'-11"	Str.
P407E	84	14'-8"	Str.
P501E	504	4'-10"	3¾"
R401E	16	3'-11"	2"
R402E	16	4'-0"	2"
R403E	24	9'-8"	Str.
R404E	24	4'-0"	Str.
R601E	32	6'-3"	Str.
R602E	12	5'-0"	Str.
W401E	20	5'-2"	2"
W402E	20	6'-3"	Str.
W701E	40	12'-2"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.

For details of End Bent Diaphragms & Partial Depth Diaphragms see Dwg. No. 60755.

(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 the partial depth diaphragms are poured. The ends of girders at end bents shall remain blocked until the temporary steel diaphragms are in place.

(2) For details of alternate steel diaphragm, see "Details of Steel Diaphragm" on Dwg. No. 60754.

(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" on Dwg. No. 60754.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:44 PM
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BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF 149'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

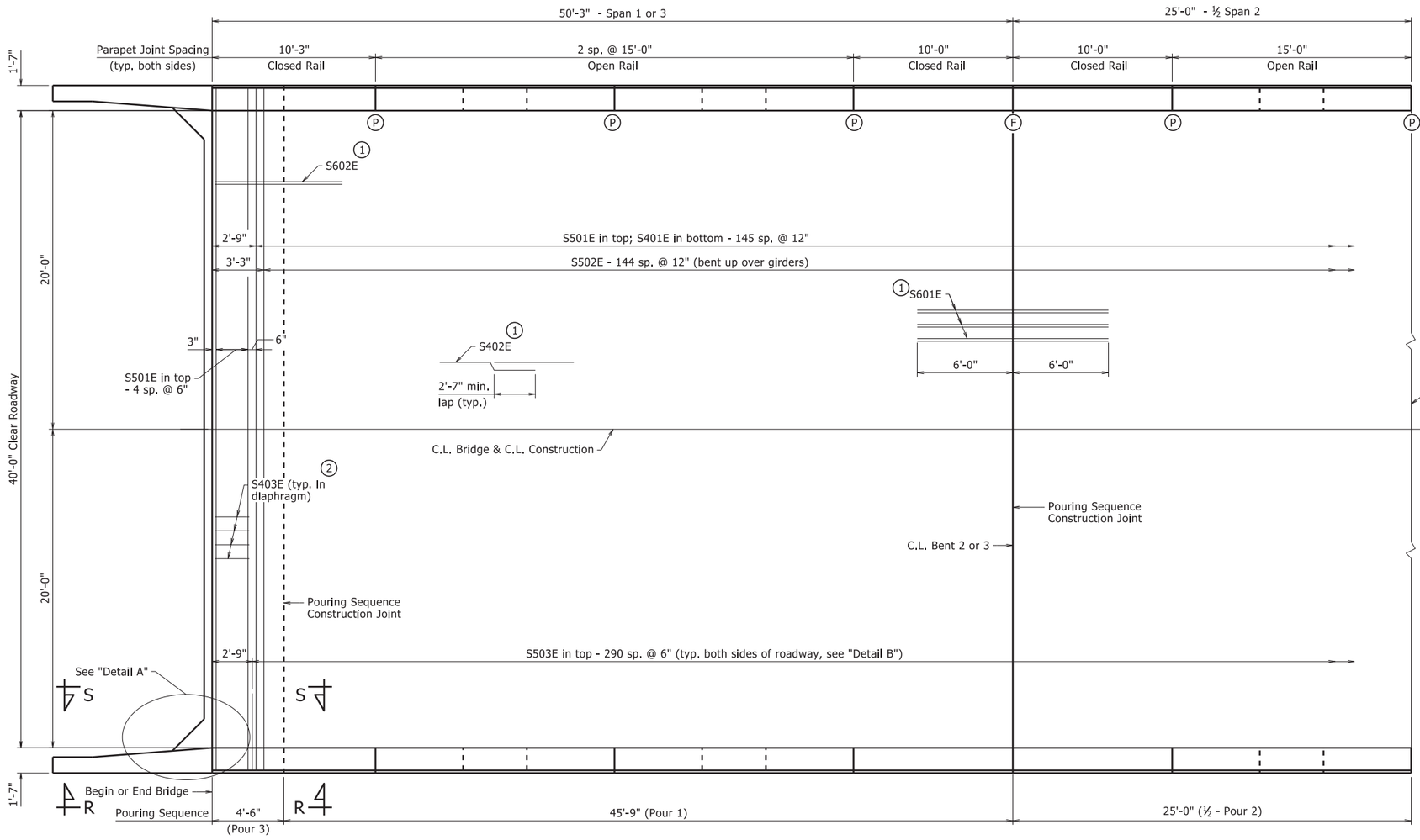
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19
CHECKED BY: DBS DATE: 5/10/19
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FILENAME: b040622_s1.dgn
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BRIDGE NO. 07449 DRAWING NO. 60763

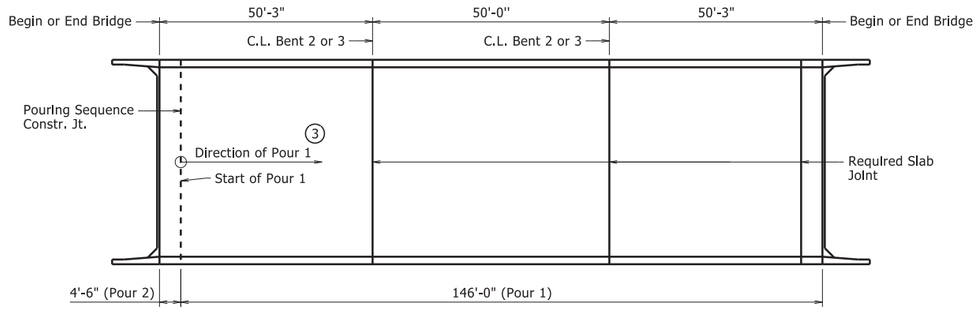
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	94	140
				1 07449		- 149'-6" UNIT -		60764



HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

¼" = 1'-0"



3 Stay-in-place forms, if used, shall be installed in a manner that facilitates the direction of the Pour.

ALTERNATE POURING SEQUENCE

No Scale

1 Placed as shown in "Typical Roadway Section", see Dwg. No. 60754.

2 See Dwg. No. 60755 for more details of reinforcing in concrete end bent diaphragm.

Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 60759.

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

For "Detail A", "View R-R" and "View S-S", see Dwg. No. 60758.

For "Detail B", "Transverse Slab Joint Detail", and General Notes, see Dwg. No. 60760.

For Bar List, see Dwg. No. 60763.

(P) Partial Depth Parapet Joint at this location

(F) Full Depth Parapet Joint at this location

Slab Pouring Sequence:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2), and all Pours (2) must be placed before Pours (3) can be placed.

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

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

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 adjacent pours. No deviation from the pouring sequences shown will be allowed.

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 the 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF 149'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

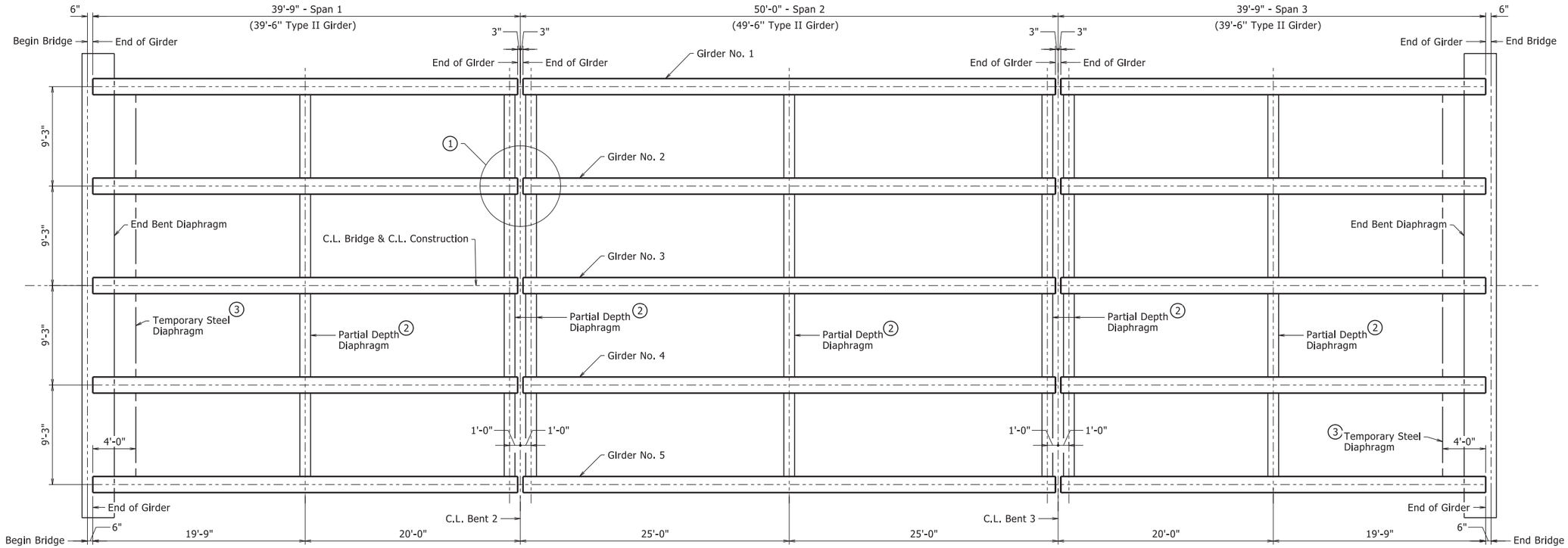
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 1/18/19 FILENAME: b040622_s1.dgn
CHECKED BY: DBS DATE: 5/10/19 SCALE: As Noted
DESIGNED BY: EOR DATE: 10/2018

BRIDGE NO. 07449 DRAWING NO. 60764

PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	95	140
				07450		- 129'-6" UNIT -		60765



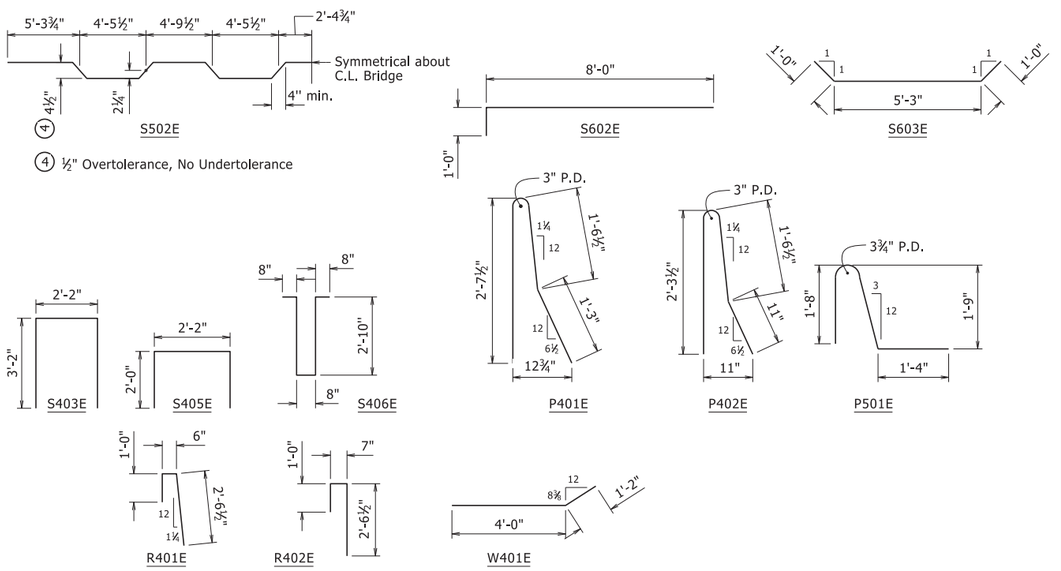
FRAMING PLAN

3/16" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	134	42'-10"	Str.
S402E	369	45'-3"	Str.
S403E	84	8'-4"	2"
S404E	256	7'-5"	Str.
S405E	16	6'-0"	2"
S406E	252	7'-4"	2"
S501E	136	42'-10"	Str.
S502E	125	43'-8"	3"
S503E	502	4'-10"	Str.
S601E	184	12'-0"	Str.
S602E	184	8'-10"	4½"
S603E	12	7'-3"	4½"
S604E	54	6'-0"	Str.
P401E	456	5'-6"	3"
P402E	64	4'-10"	3"
P403E	56	5'-6"	Str.
P404E	56	9'-8"	Str.
P405E	28	19'-8"	Str.
P406E	28	9'-11"	Str.
P407E	28	14'-8"	Str.
P501E	456	4'-10"	3¾"
R401E	16	3'-11"	2"
R402E	16	4'-0"	2"
R403E	24	9'-8"	Str.
R404E	24	4'-0"	Str.
R601E	32	6'-3"	Str.
R602E	12	5'-0"	Str.
W401E	20	5'-2"	2"
W402E	20	6'-3"	Str.
W701E	40	12'-2"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.

For details of End Bent Diaphragms & Partial Depth Diaphragms see Dwg. No. 60755.

(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 the partial depth diaphragms are poured. The ends of girders at end bents shall remain blocked until the temporary steel diaphragms are in place.

(2) For details of alternate steel diaphragm, see "Details of Steel Diaphragm" on Dwg. No. 60754.

(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" on Dwg. No. 60754.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

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BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF 129'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

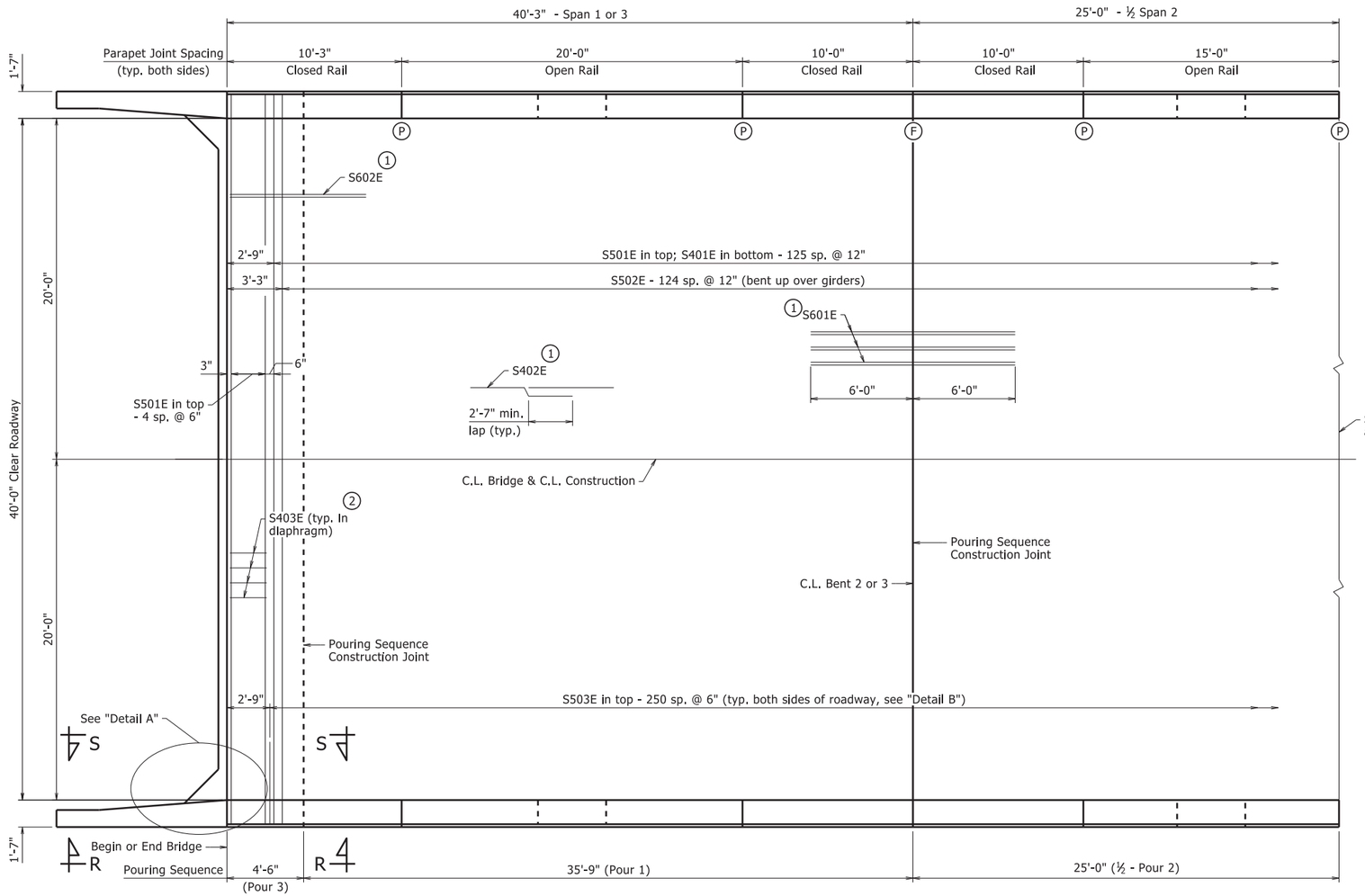
LITTLE ROCK, ARK.

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CHECKED BY: DBS DATE: 5/10/19
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SCALE: As Noted

BRIDGE NO. 07450 DRAWING NO. 60765

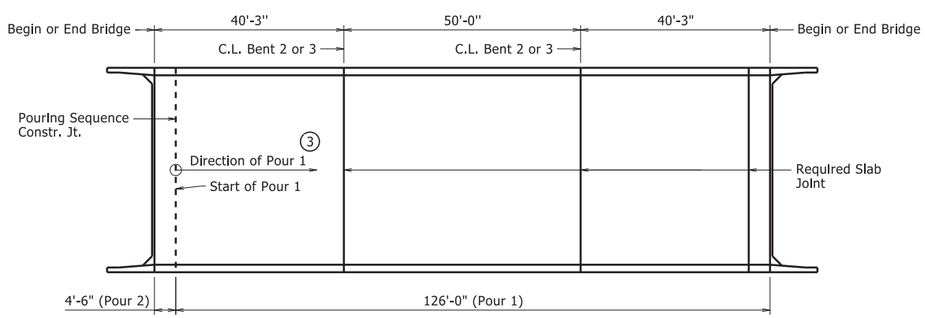
PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-17-2020				6	ARK.			
				JOB NO.		040622	96	140
				07450		- 129'-6" UNIT -		60766



HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

¼" = 1'-0"



③ Stay-in-place forms, if used, shall be installed in a manner that facilitates the direction of the Pour.

ALTERNATE POURING SEQUENCE

No Scale

① Placed as shown in "Typical Roadway Section", see Dwg. No. 60754.

② See Dwg. No. 60755 for more details of reinforcing in concrete end bent diaphragm.

Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 60759.

Rails and wings are included in span quantities.

For "Detail A", "View R-R" and "View S-S", see Dwg. No. 60758.

For "Detail B", "Transverse Slab Joint Detail", and General Notes, see Dwg. No. 60760.

For Bar List, see Dwg. No. 60765.

Ⓟ Partial Depth Parapet Joint at this location

Ⓕ Full Depth Parapet Joint at this location

Slab Pouring Sequence:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2), and all Pours (2) must be placed before Pours (3) can be placed.

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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 the 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Apr 21 2020 3:44 PM
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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF 129'-6" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

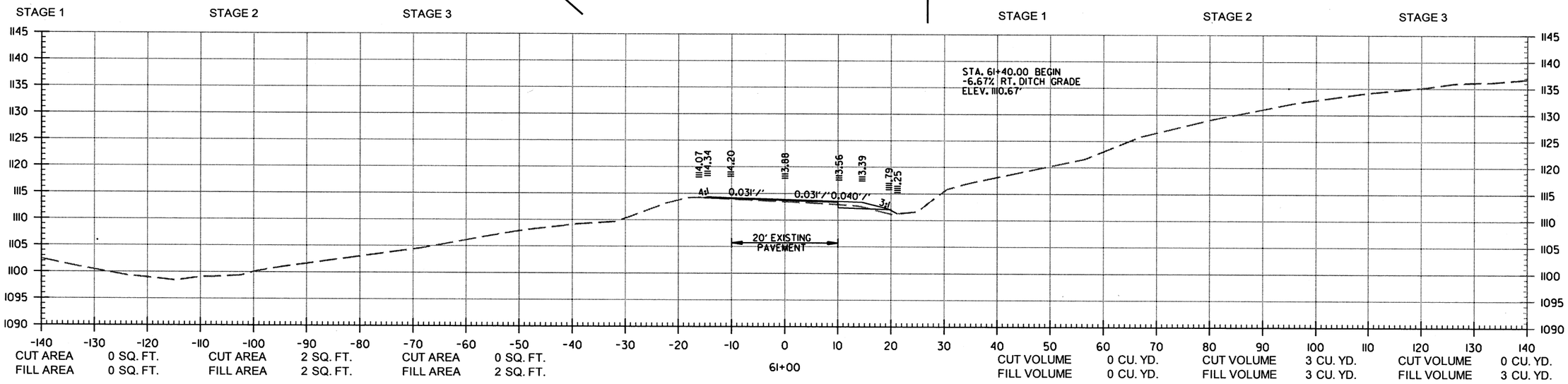
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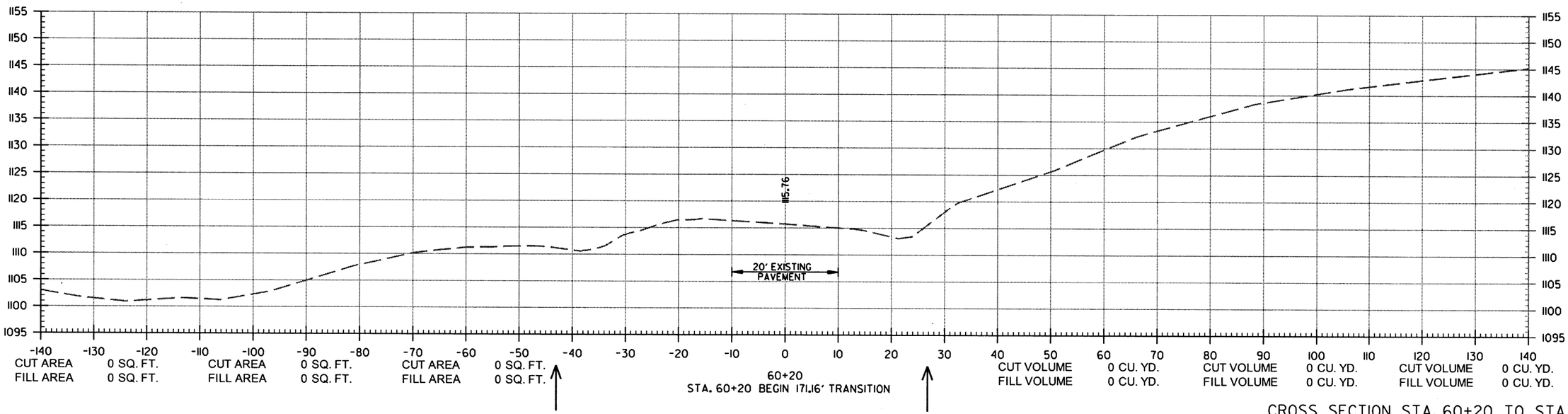
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PRINT DATE: 4/21/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	97	140

(2) CROSS SECTIONS





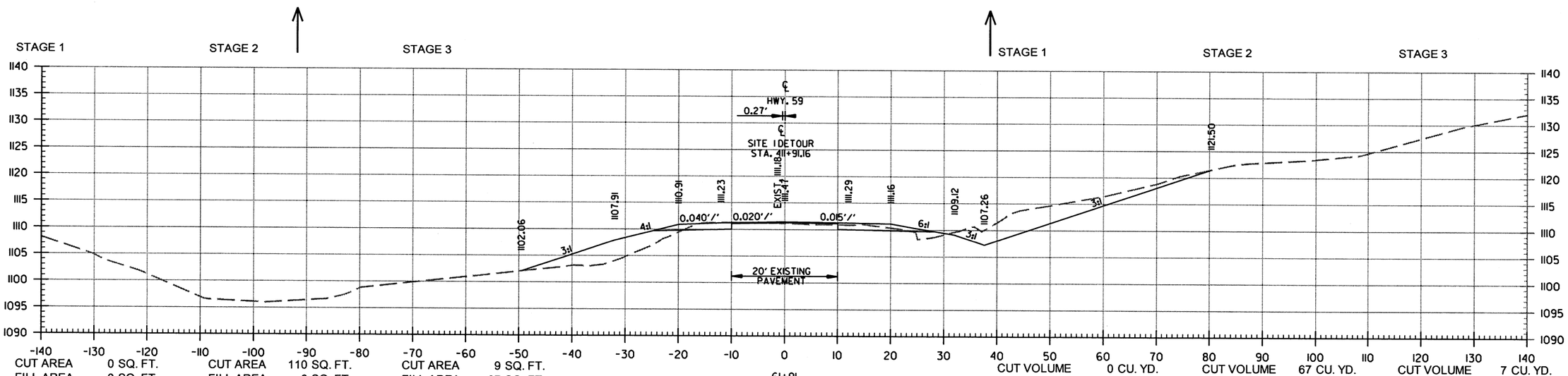
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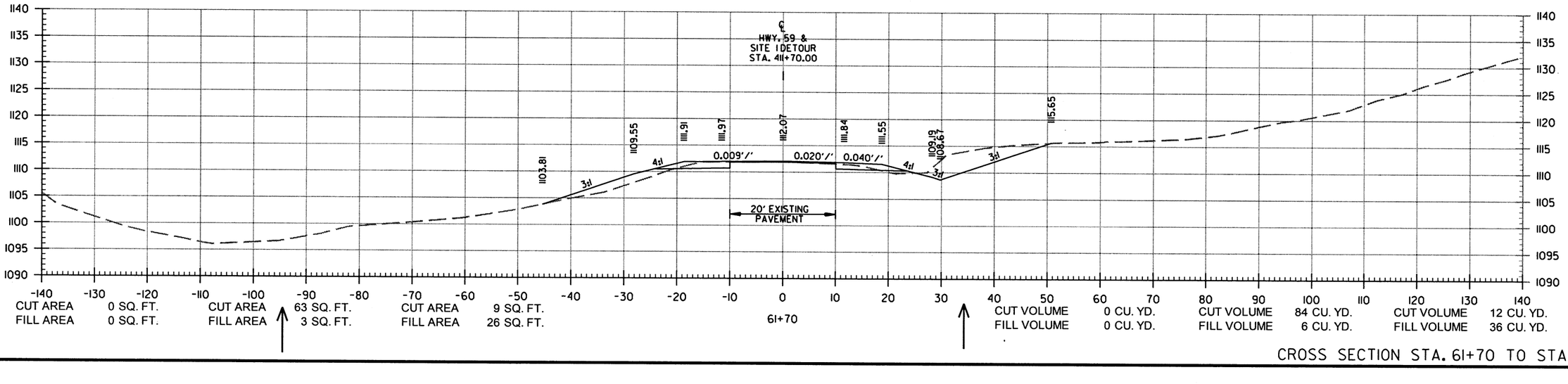
9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		040622	98	140

(2) CROSS SECTIONS





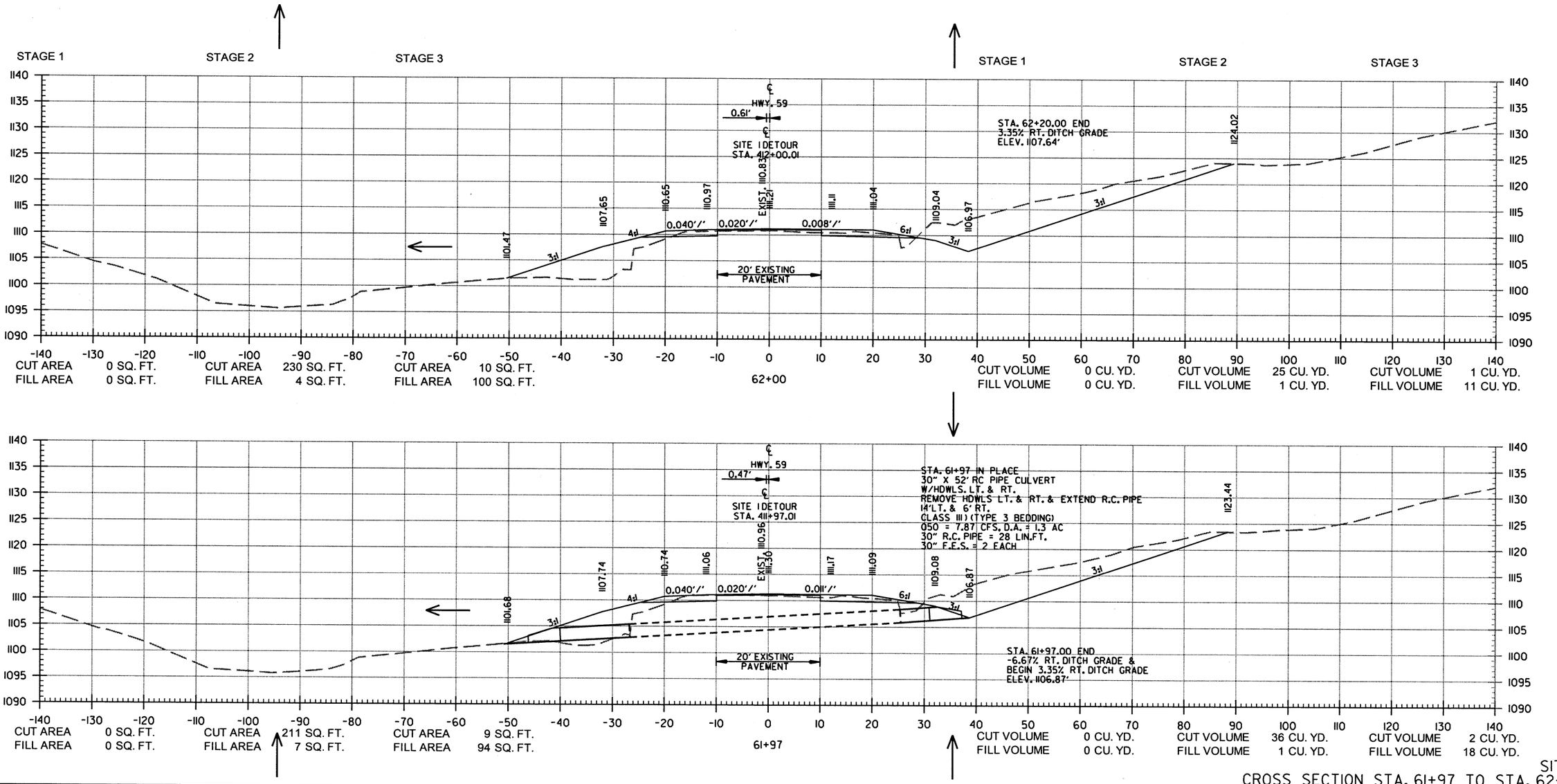
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9/10/2019

R040622.DGN

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(2) CROSS SECTIONS



9/10/2019

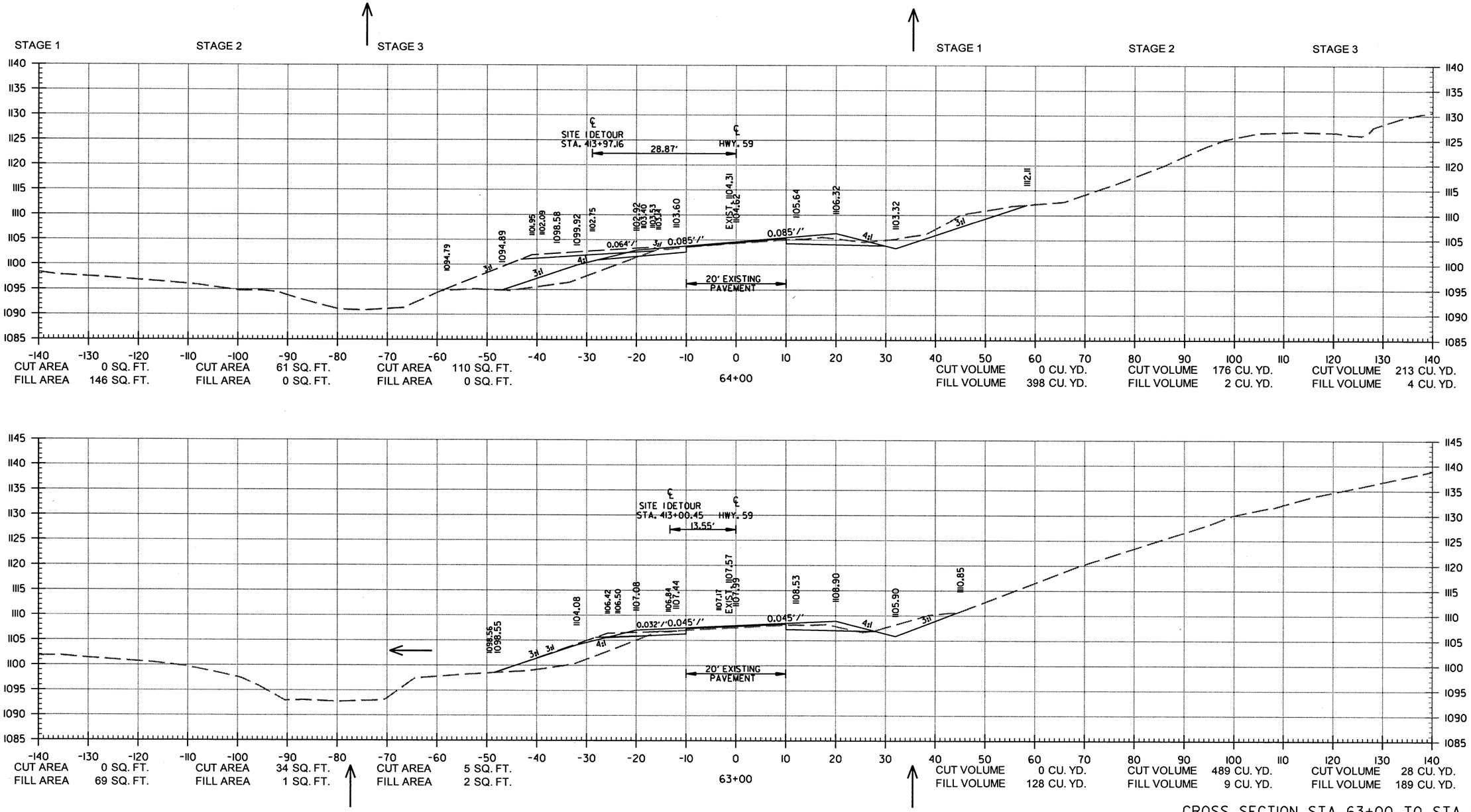
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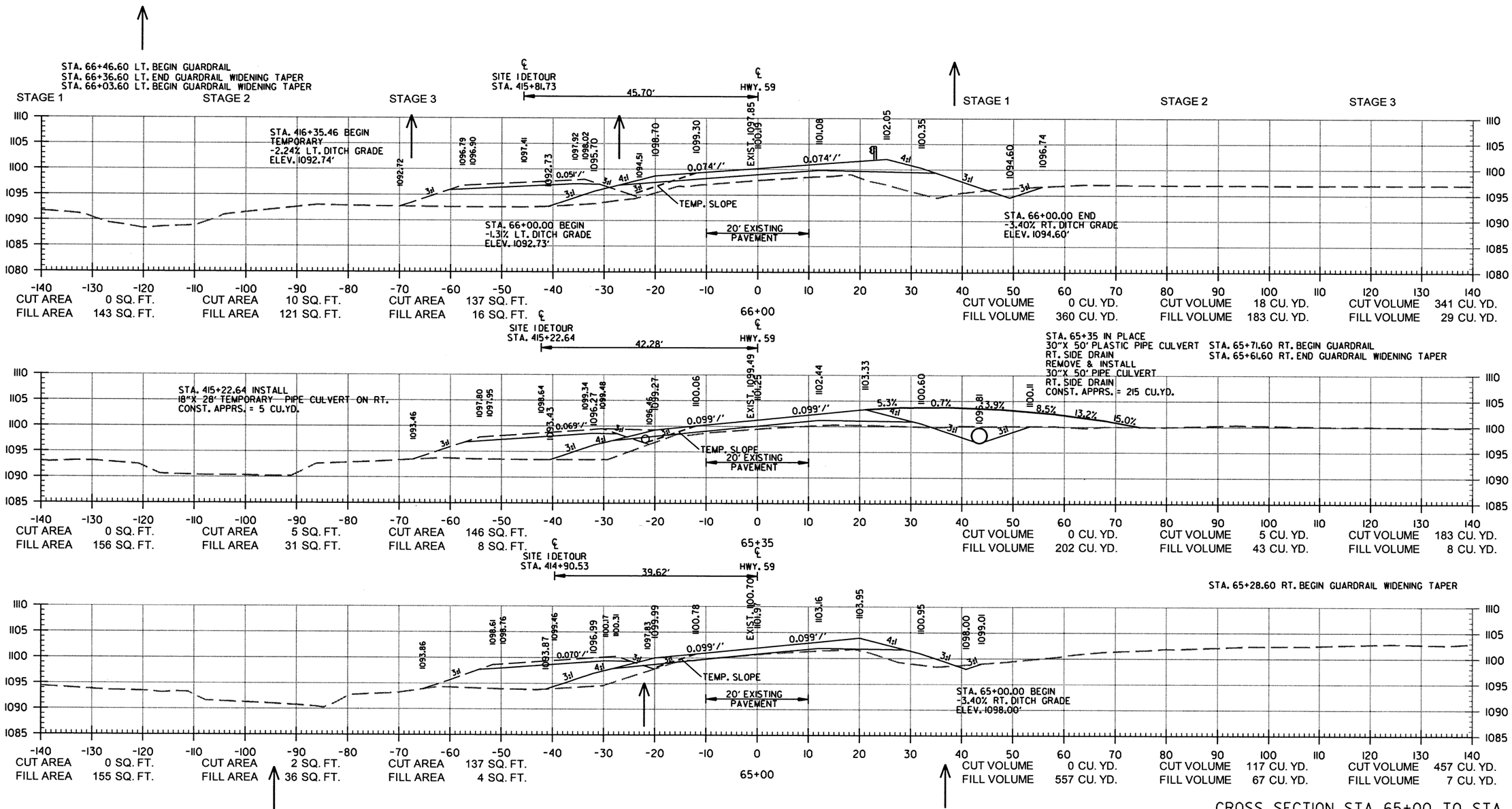
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9/10/2019

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				6	ARK.			
				JOB NO.		040622	101	140

(2) CROSS SECTIONS



9/10/2019

R040622.DGN

SITE I
CROSS SECTION STA. 65+00 TO STA. 66+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	102	140

(2) CROSS SECTIONS

STAGE 1		STAGE 2		STAGE 3	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

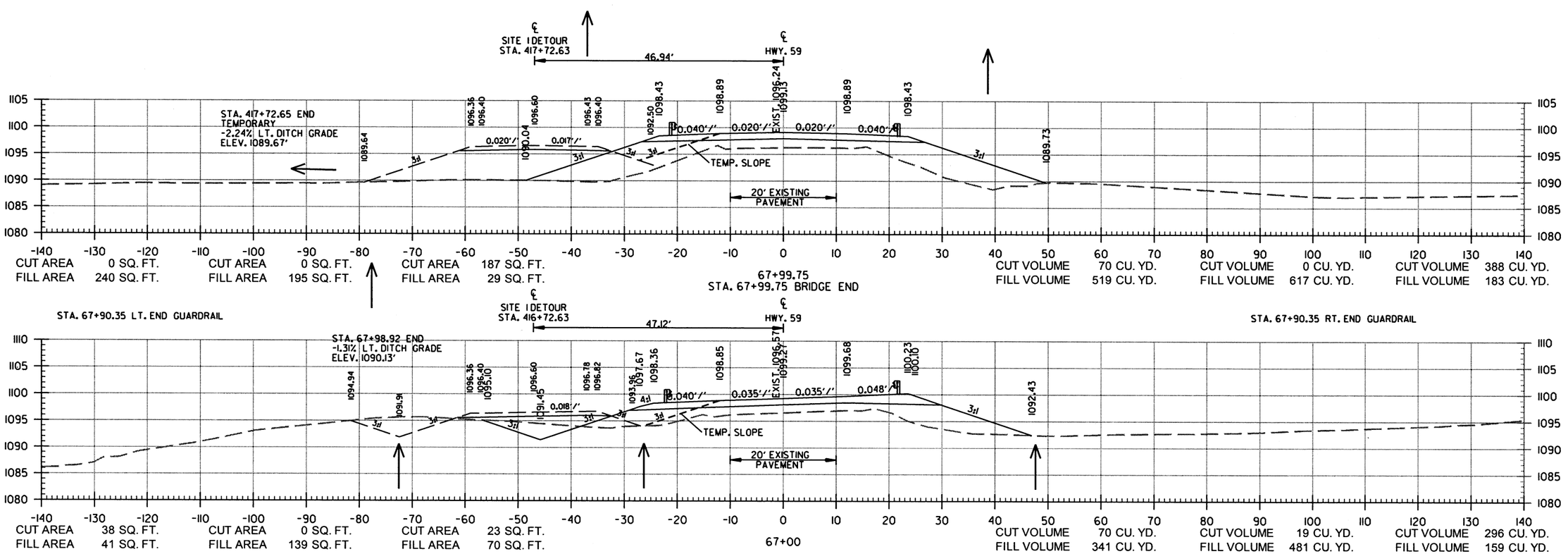
STA. 69+09 TOE OF SLOPE

STAGE 1		STAGE 2		STAGE 3	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STA. 68+22 TOE OF SLOPE

CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	99 CU. YD.	FILL VOLUME	80 CU. YD.	FILL VOLUME	12 CU. YD.



CUT AREA	187 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	29 SQ. FT.	FILL AREA	195 SQ. FT.	FILL AREA	240 SQ. FT.

CUT VOLUME	70 CU. YD.	CUT VOLUME	0 CU. YD.	CUT VOLUME	388 CU. YD.
FILL VOLUME	519 CU. YD.	FILL VOLUME	617 CU. YD.	FILL VOLUME	183 CU. YD.

CUT AREA	23 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	38 SQ. FT.
FILL AREA	70 SQ. FT.	FILL AREA	139 SQ. FT.	FILL AREA	41 SQ. FT.

CUT VOLUME	70 CU. YD.	CUT VOLUME	19 CU. YD.	CUT VOLUME	296 CU. YD.
FILL VOLUME	341 CU. YD.	FILL VOLUME	481 CU. YD.	FILL VOLUME	159 CU. YD.

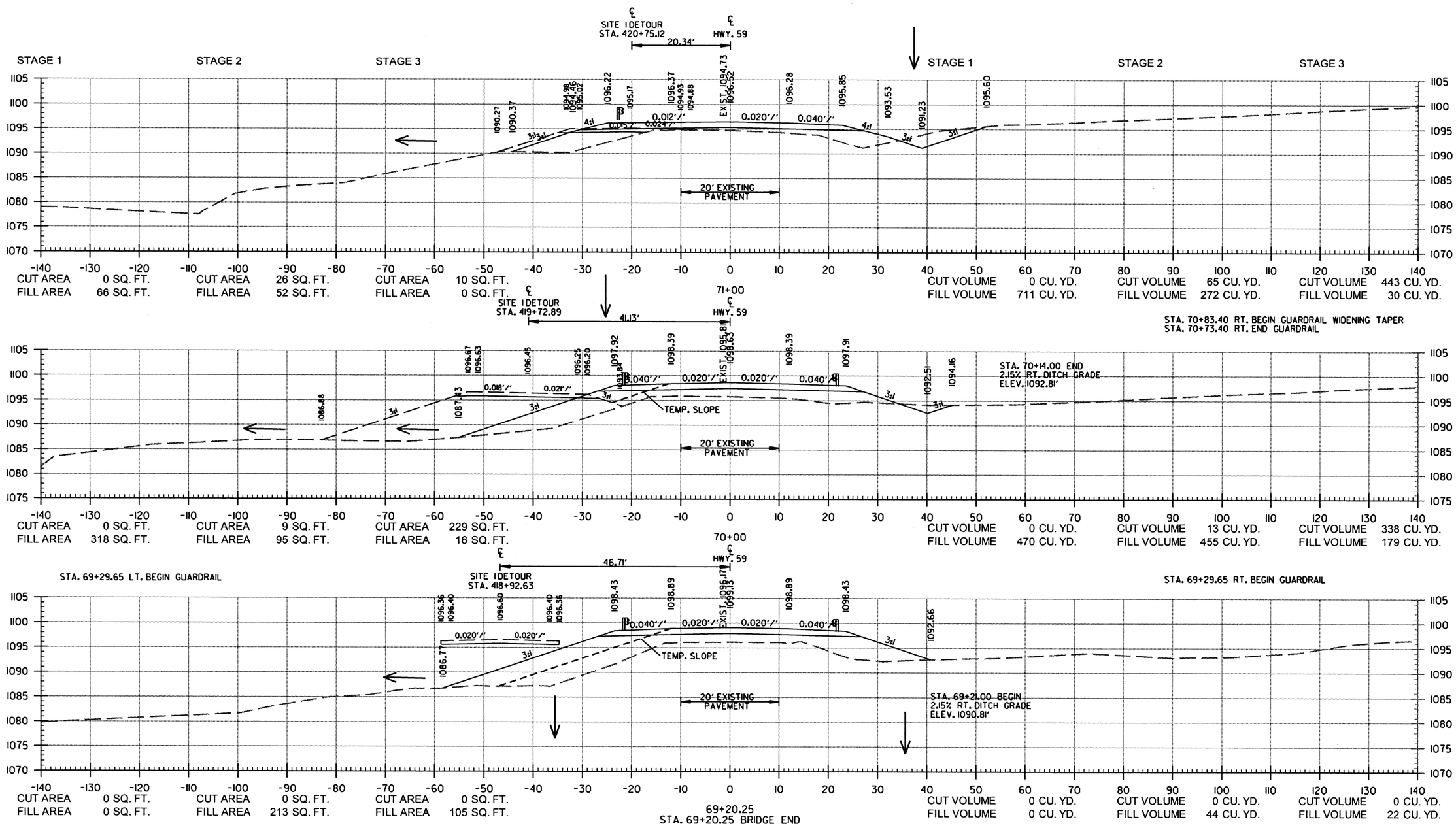
9/10/2019

R040622.DGN

SITE I
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				6	ARK.			
				JOB NO.		040622	103	140

(2) CROSS SECTIONS



9/10/2019

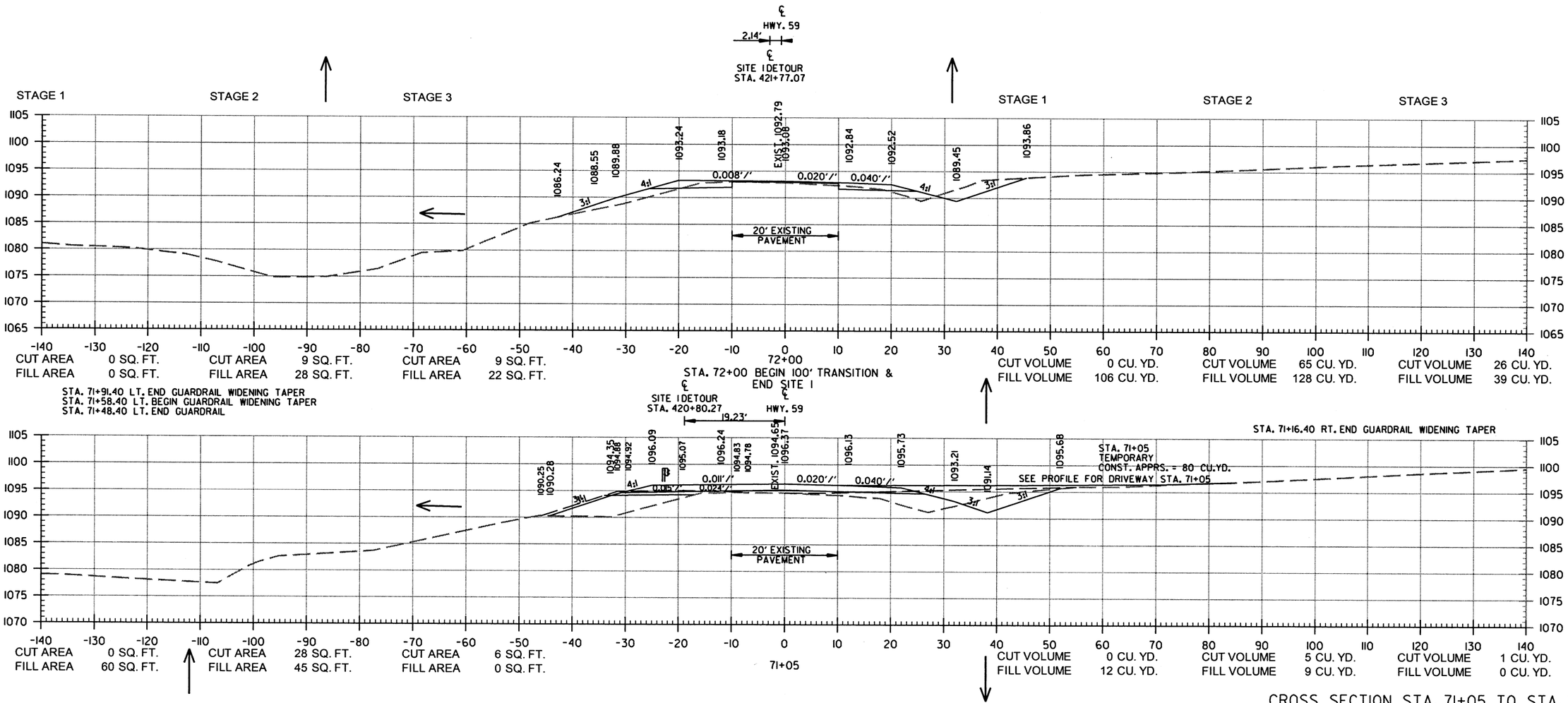
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SITE I

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(2) CROSS SECTIONS



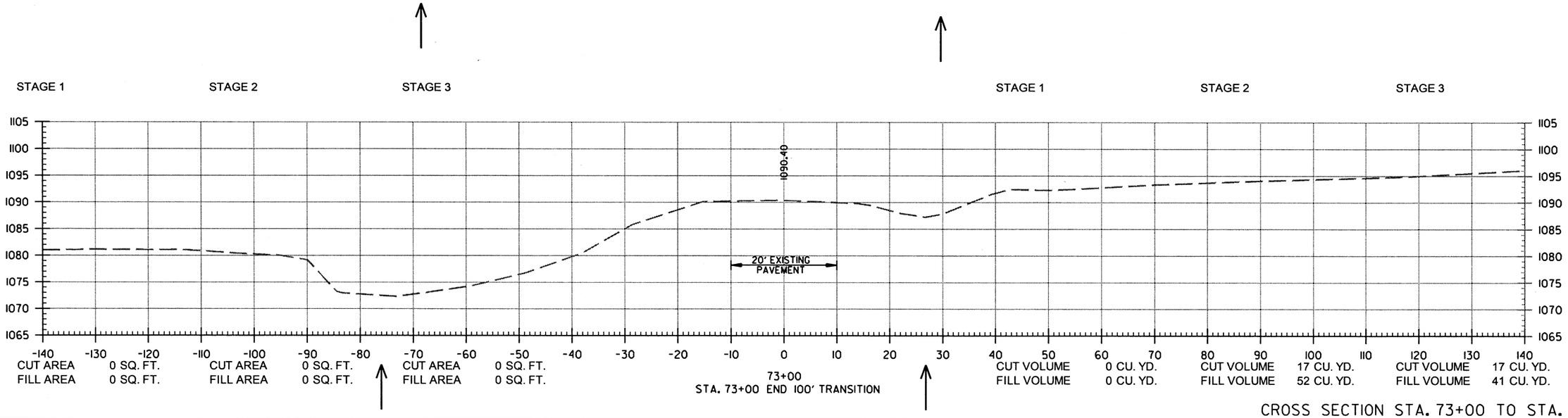
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9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	105	140

(2) CROSS SECTIONS



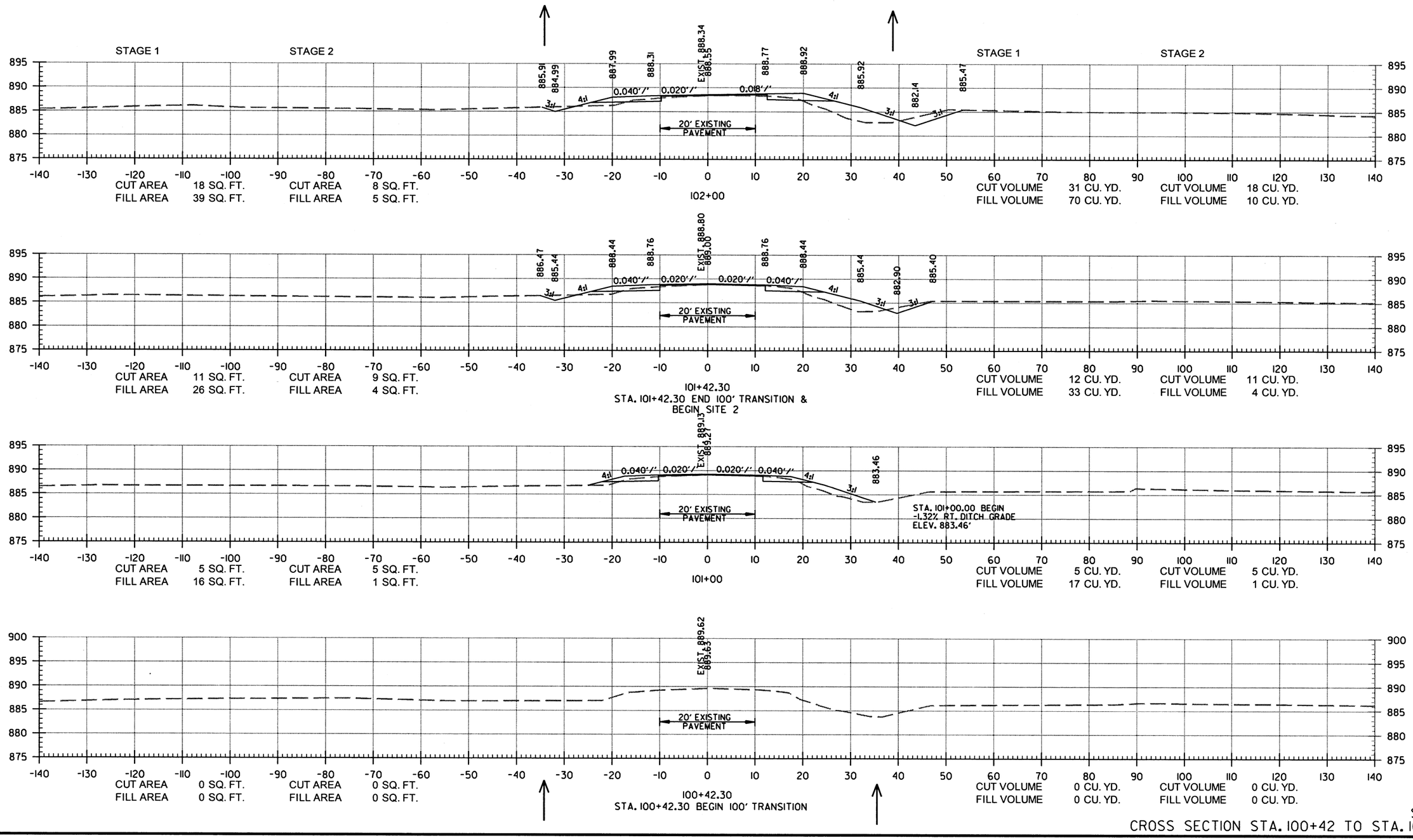
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9/10/2019

R040622.DGN

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				JOB NO.		040622	106	140

(2) CROSS SECTIONS



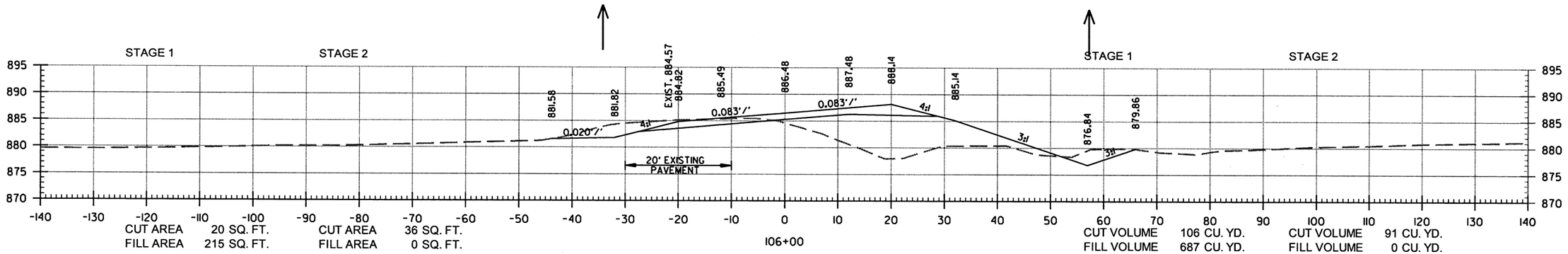
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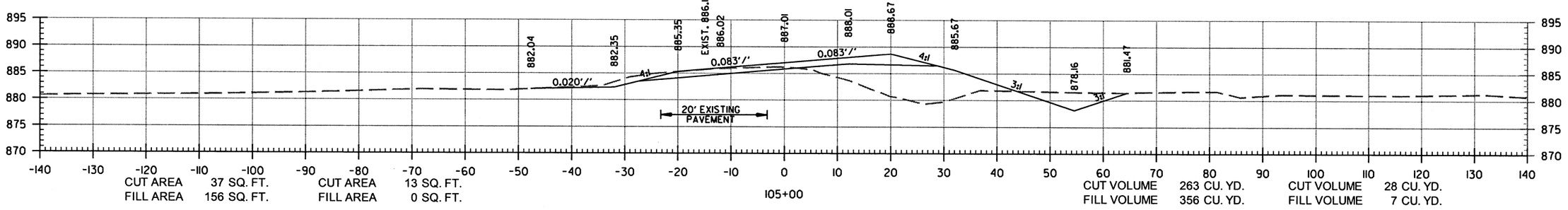
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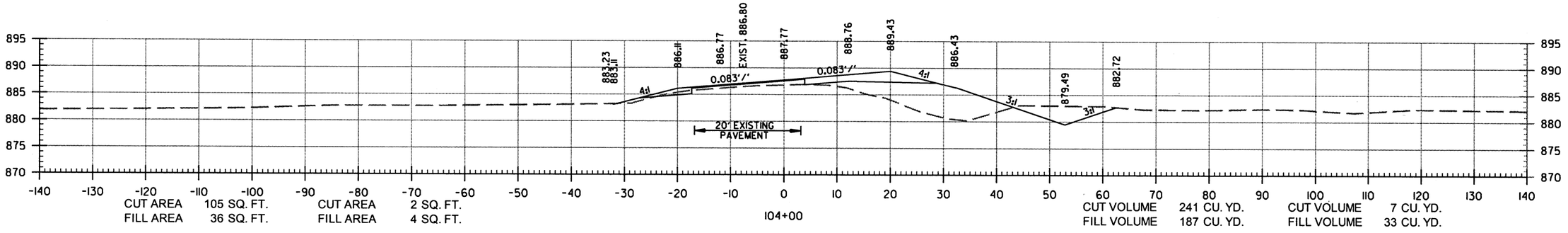
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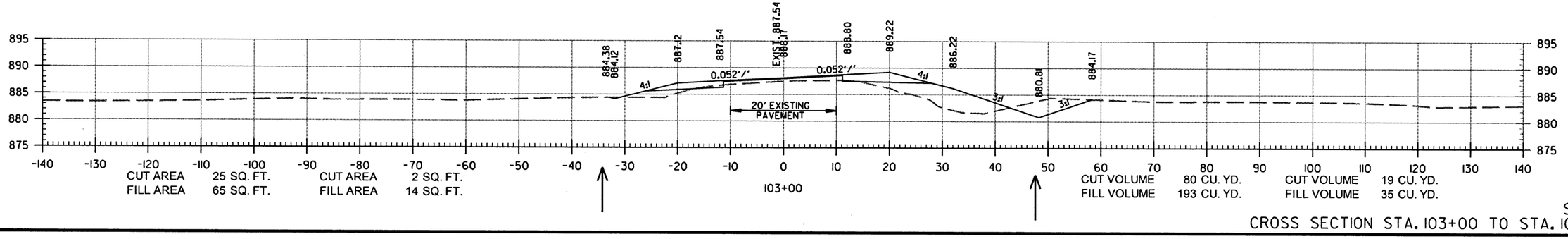
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(2) CROSS SECTIONS









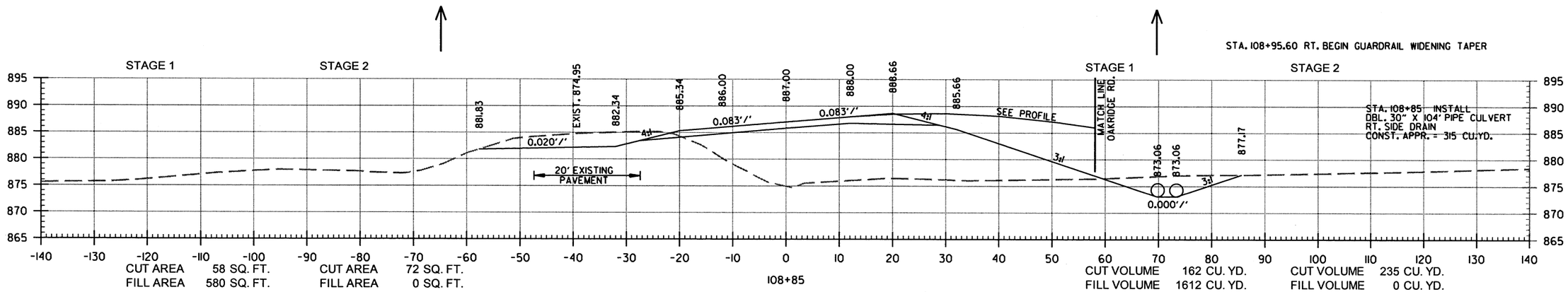
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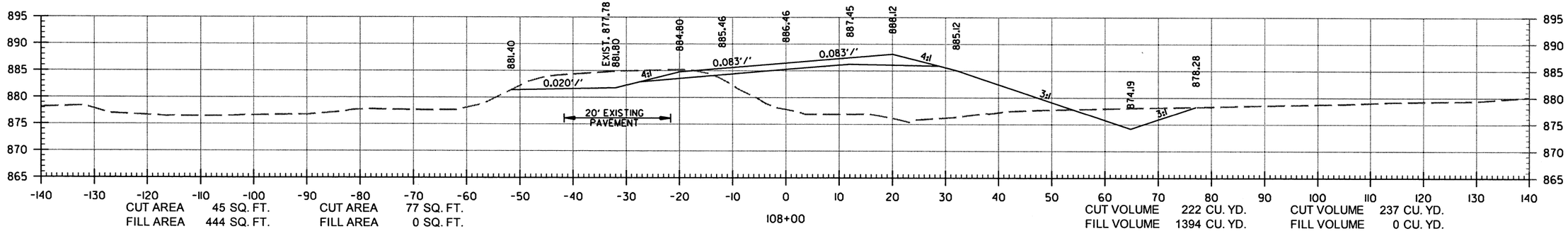
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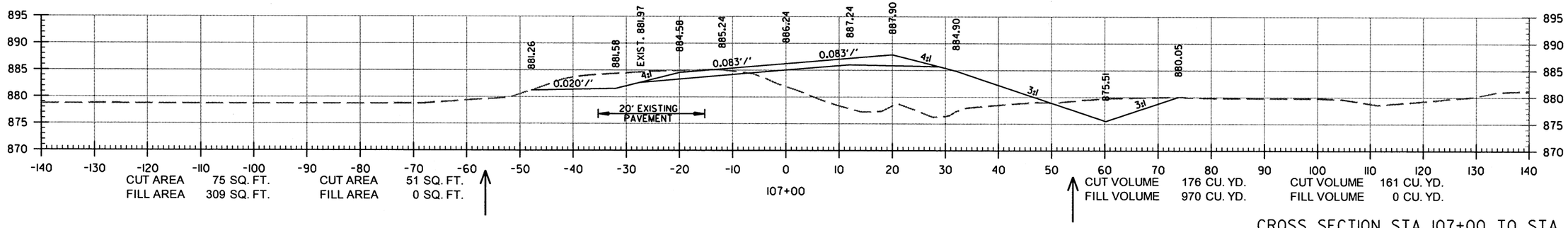
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				JOB NO.		040622	108	140

(2) CROSS SECTIONS







9/10/2019

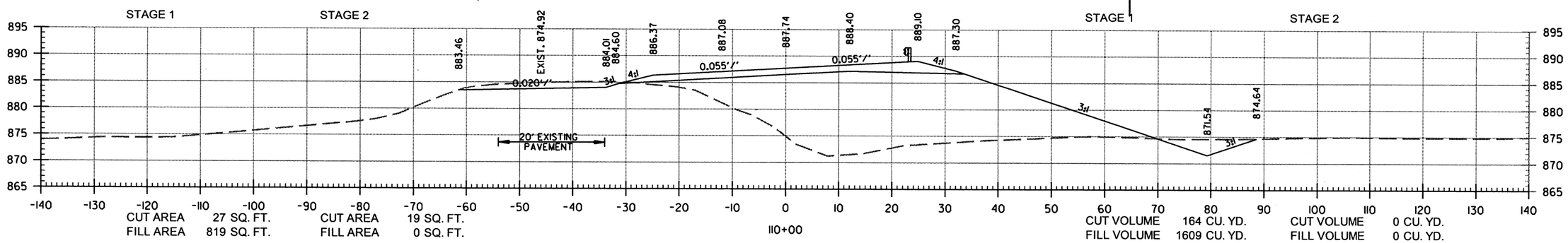
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SITE 2
CROSS SECTION STA. 107+00 TO STA. 108+85

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				JOB NO.		040622	109	140

(2) CROSS SECTIONS

STA. 110+13.60 LT. BEGIN GUARDRAIL
STA. 110+03.60 LT. END GUARDRAIL WIDENING TAPER

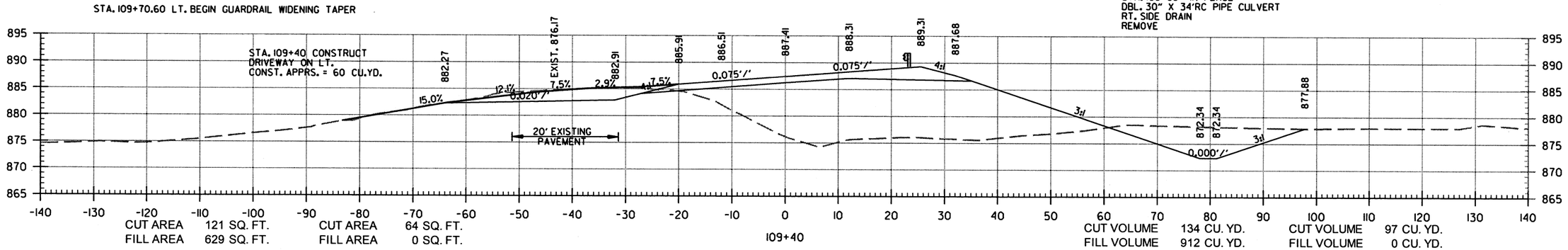


CUT AREA 27 SQ. FT. FILL AREA 819 SQ. FT.
CUT AREA 19 SQ. FT. FILL AREA 0 SQ. FT.
CUT VOLUME 164 CU. YD. FILL VOLUME 1609 CU. YD.
CUT VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.

STA. 109+70.60 LT. BEGIN GUARDRAIL WIDENING TAPER

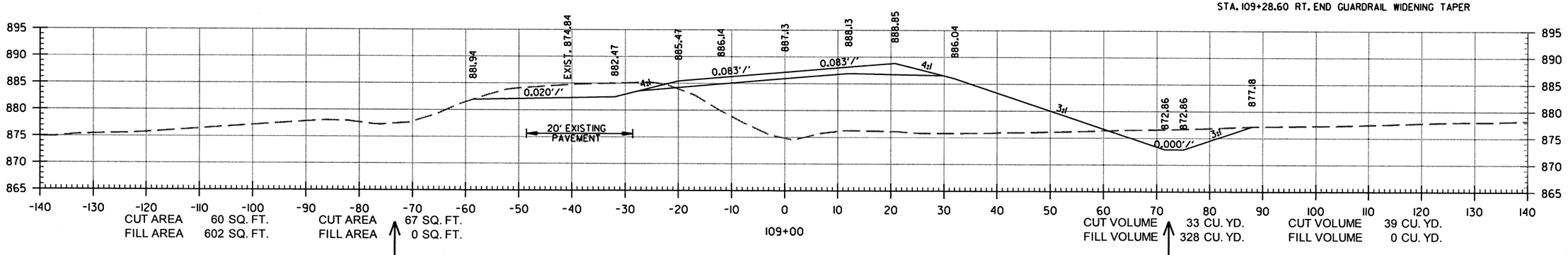
STA. 109+40 CONSTRUCT DRIVEWAY ON LT. CONST. APPRS. = 60 CU.YD.

STA. 109+68 IN PLACE DBL. 30" X 34"RC PIPE CULVERT RT. SIDE DRAIN REMOVE



CUT AREA 121 SQ. FT. FILL AREA 629 SQ. FT.
CUT AREA 64 SQ. FT. FILL AREA 0 SQ. FT.
CUT VOLUME 134 CU. YD. FILL VOLUME 912 CU. YD.
CUT VOLUME 97 CU. YD. FILL VOLUME 0 CU. YD.

STA. 109+38.60 RT. BEGIN GUARDRAIL
STA. 109+28.60 RT. END GUARDRAIL WIDENING TAPER



CUT AREA 60 SQ. FT. FILL AREA 602 SQ. FT.
CUT AREA 67 SQ. FT. FILL AREA 0 SQ. FT.
CUT VOLUME 33 CU. YD. FILL VOLUME 328 CU. YD.
CUT VOLUME 39 CU. YD. FILL VOLUME 0 CU. YD.

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SITE 2
CROSS SECTION STA. 109+00 TO STA. 110+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	110	140

(2) CROSS SECTIONS

STA. 112+96 TOE OF SLOPE

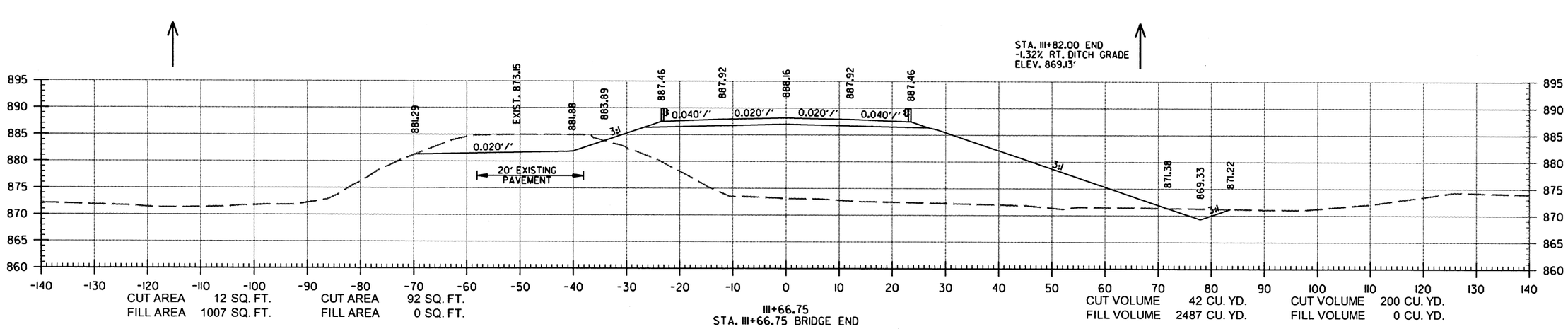
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

STA. 111+80 TOE OF SLOPE

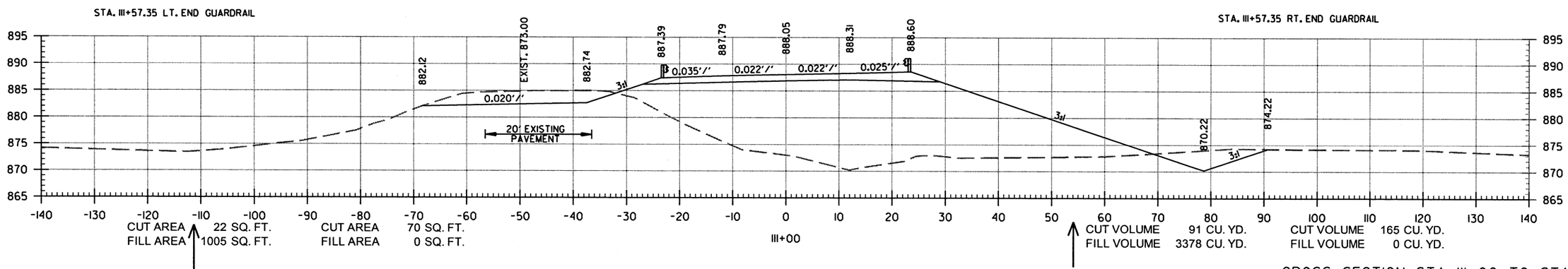
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

CUT VOLUME	3 CU. YD.	CUT VOLUME	23 CU. YD.
FILL VOLUME	247 CU. YD.	FILL VOLUME	0 CU. YD.



CUT AREA	12 SQ. FT.	CUT AREA	92 SQ. FT.
FILL AREA	1007 SQ. FT.	FILL AREA	0 SQ. FT.

CUT VOLUME	42 CU. YD.	CUT VOLUME	200 CU. YD.
FILL VOLUME	2487 CU. YD.	FILL VOLUME	0 CU. YD.



CUT AREA	22 SQ. FT.	CUT AREA	70 SQ. FT.
FILL AREA	1005 SQ. FT.	FILL AREA	0 SQ. FT.

CUT VOLUME	91 CU. YD.	CUT VOLUME	165 CU. YD.
FILL VOLUME	3378 CU. YD.	FILL VOLUME	0 CU. YD.

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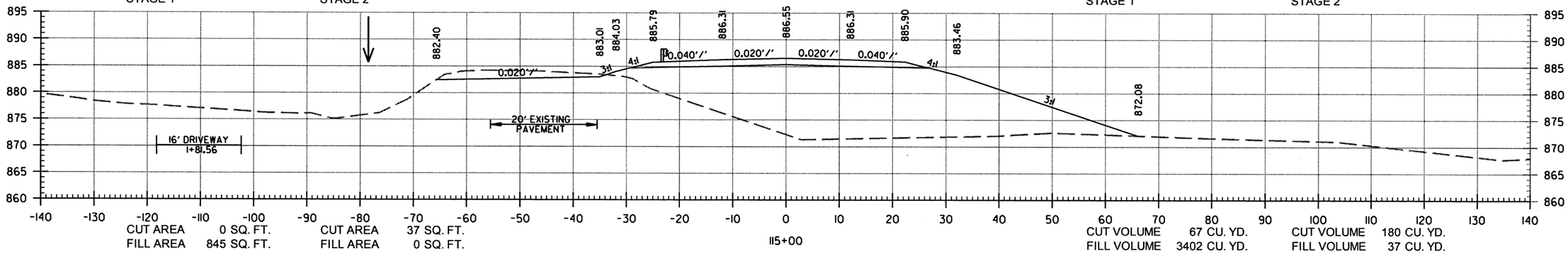
SITE 2
CROSS SECTION STA. 111+00 TO STA. 111+67

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.		040622	111	140

(2) CROSS SECTIONS

STA. 115+88.40 LT. END GUARDRAIL WIDENING TAPER
STA. 115+55.40 LT. BEGIN GUARDRAIL WIDENING TAPER
STA. 115+45.40 LT. END GUARDRAIL

STAGE 1 STAGE 2



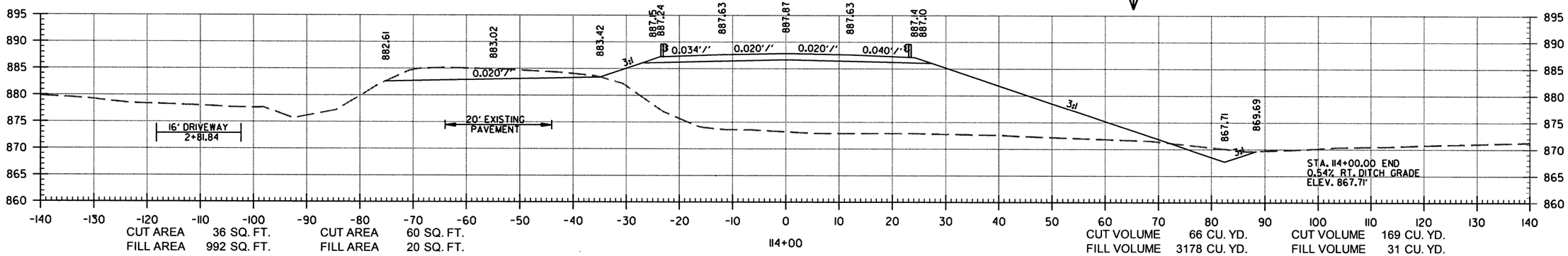
CUT AREA 0 SQ. FT. CUT AREA 37 SQ. FT.
FILL AREA 845 SQ. FT. FILL AREA 0 SQ. FT.

STA. 115+13.40 RT. END GUARDRAIL WIDENING TAPER

STAGE 1 STAGE 2

CUT VOLUME 67 CU. YD. CUT VOLUME 180 CU. YD.
FILL VOLUME 3402 CU. YD. FILL VOLUME 37 CU. YD.

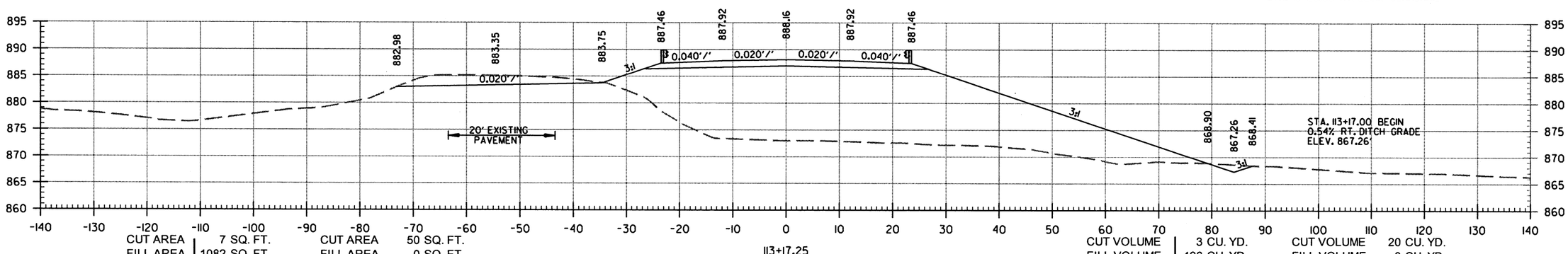
STA. 114+80.40 RT. BEGIN GUARDRAIL WIDENING TAPER
STA. 114+70.40 RT. END GUARDRAIL



CUT AREA 36 SQ. FT. CUT AREA 60 SQ. FT.
FILL AREA 992 SQ. FT. FILL AREA 20 SQ. FT.

CUT VOLUME 66 CU. YD. CUT VOLUME 169 CU. YD.
FILL VOLUME 3178 CU. YD. FILL VOLUME 31 CU. YD.

STA. 113+26.65 LT. BEGIN GUARDRAIL



CUT AREA 7 SQ. FT. CUT AREA 50 SQ. FT.
FILL AREA 1082 SQ. FT. FILL AREA 0 SQ. FT.

STA. 113+26.65 RT. BEGIN GUARDRAIL

CUT VOLUME 3 CU. YD. CUT VOLUME 20 CU. YD.
FILL VOLUME 426 CU. YD. FILL VOLUME 0 CU. YD.

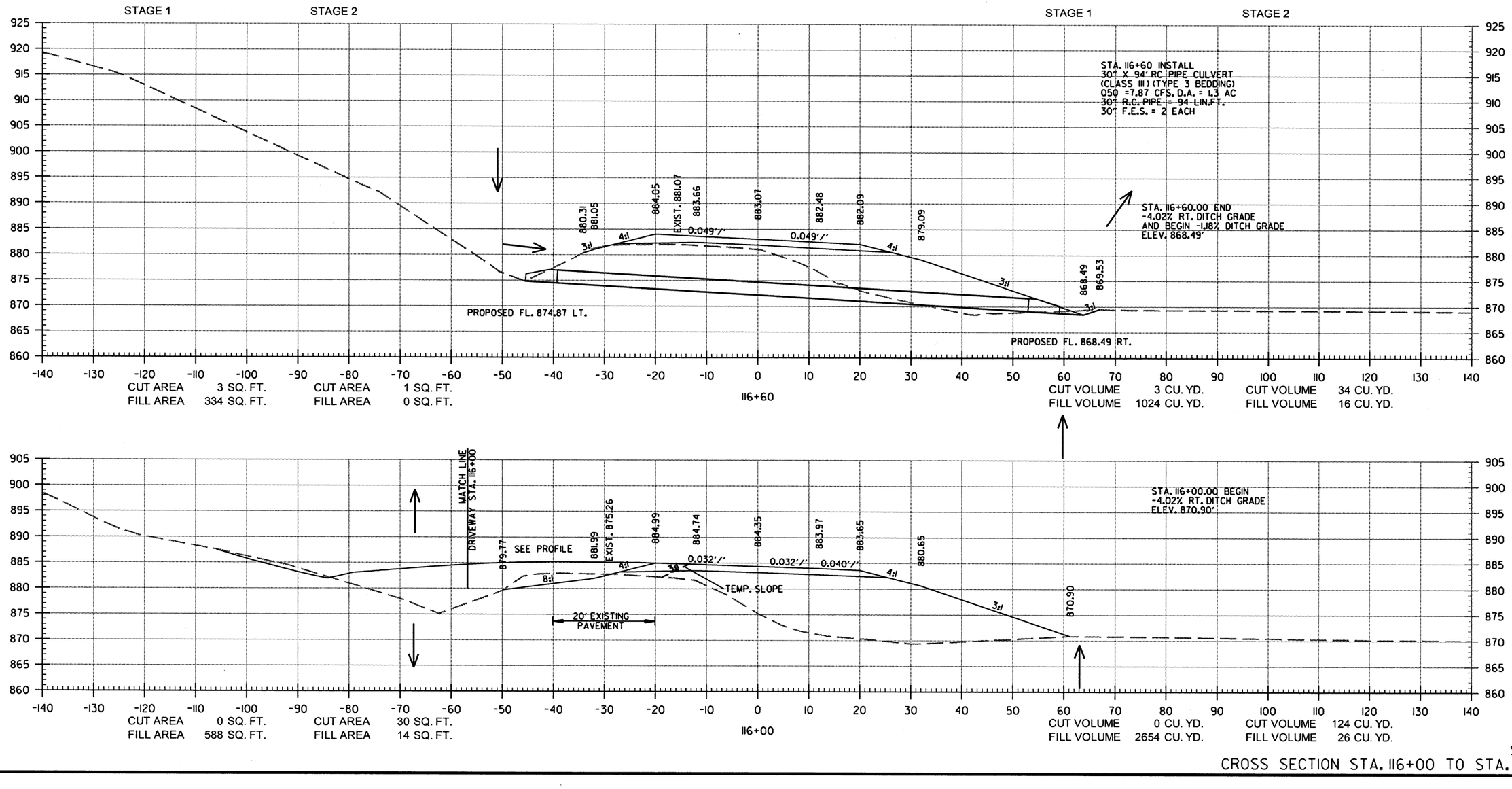
9/10/2019

R040622.DGN

SITE 2
CROSS SECTION STA. 113+17 TO STA. 115+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	112	140

(2) CROSS SECTIONS



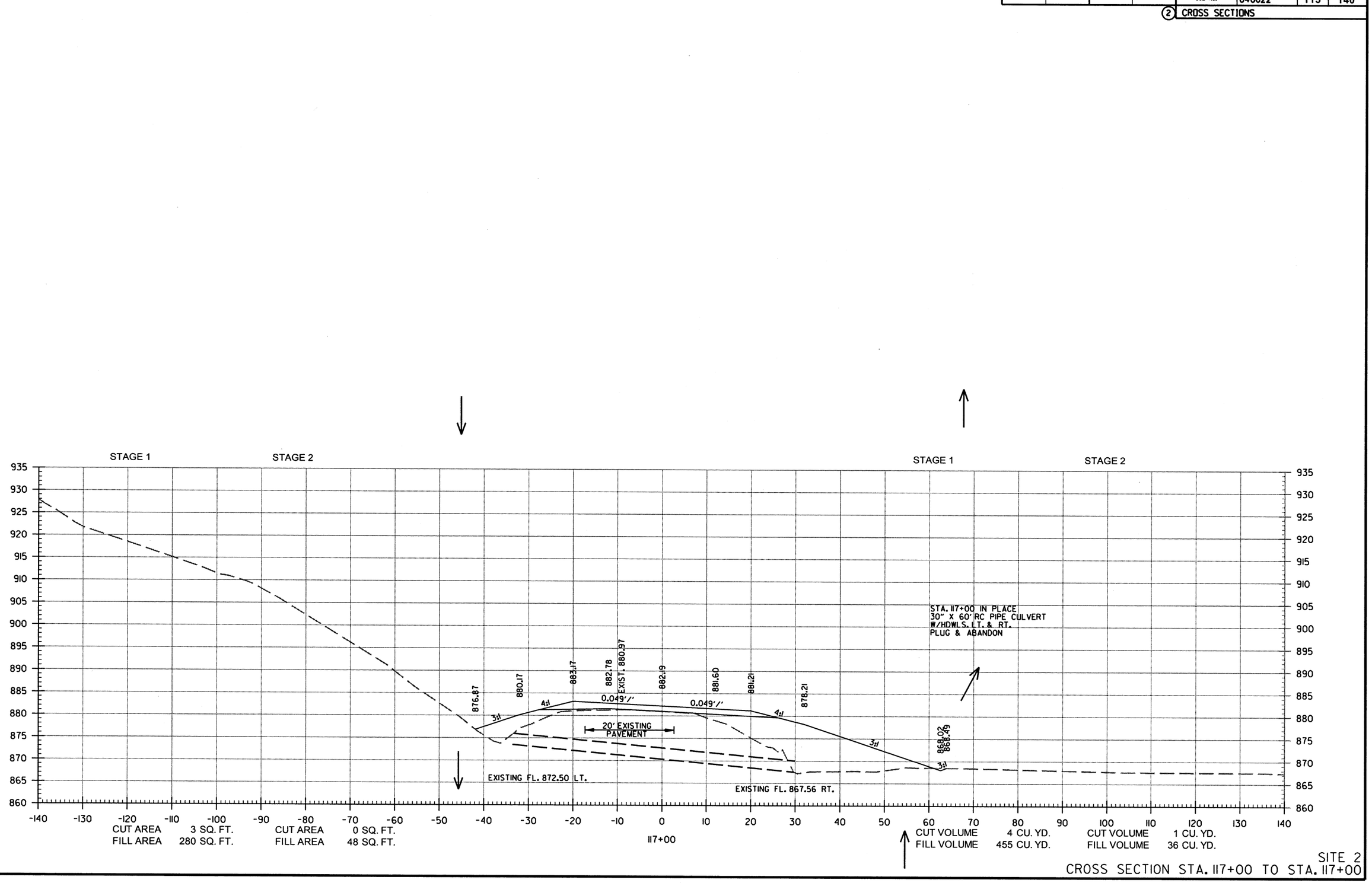
9/10/2019

R040622.DGN

SITE 2
CROSS SECTION STA. 116+00 TO STA. 116+60

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	113	140

(2) CROSS SECTIONS



SITE 2
CROSS SECTION STA. 117+00 TO STA. 117+00

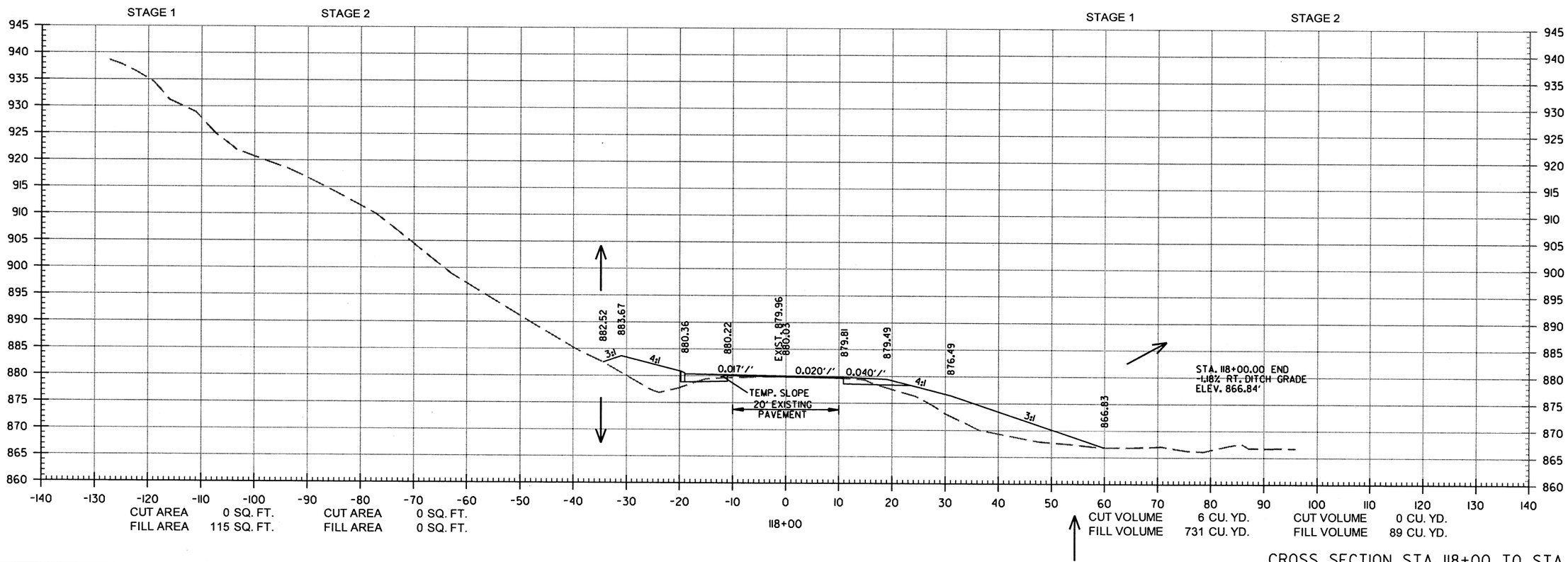
9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	114	140

(2) CROSS SECTIONS

STA. 118+02 END SITE 2 & BEGIN 100' TRANSITION



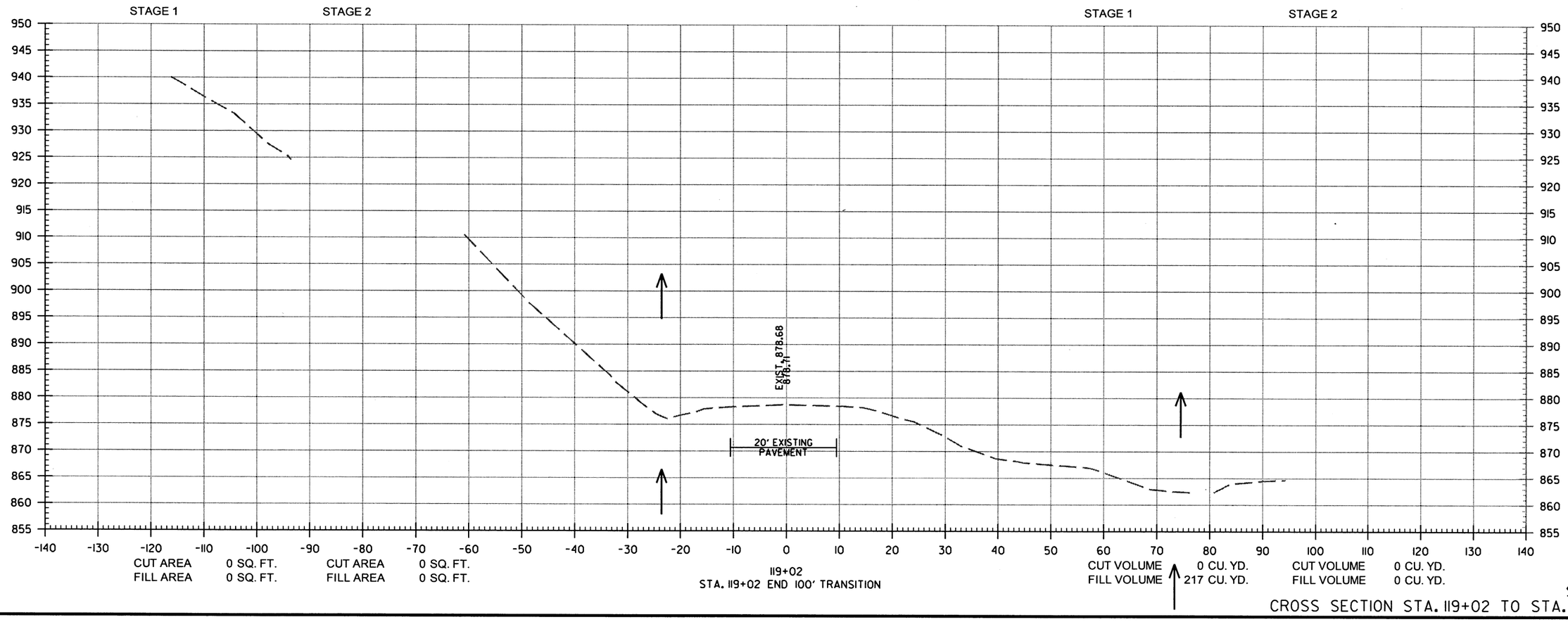
SITE 2
CROSS SECTION STA. 118+00 TO STA. 118+00

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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.		040622	115	140

(2) CROSS SECTIONS



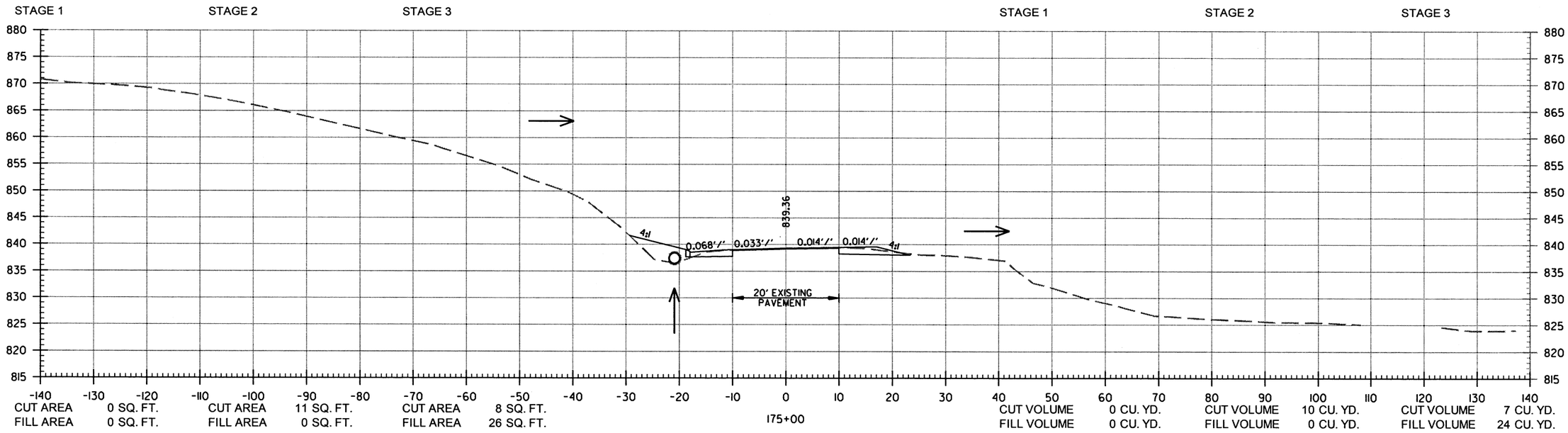
SITE 2
CROSS SECTION STA. 119+02 TO STA. 119+02

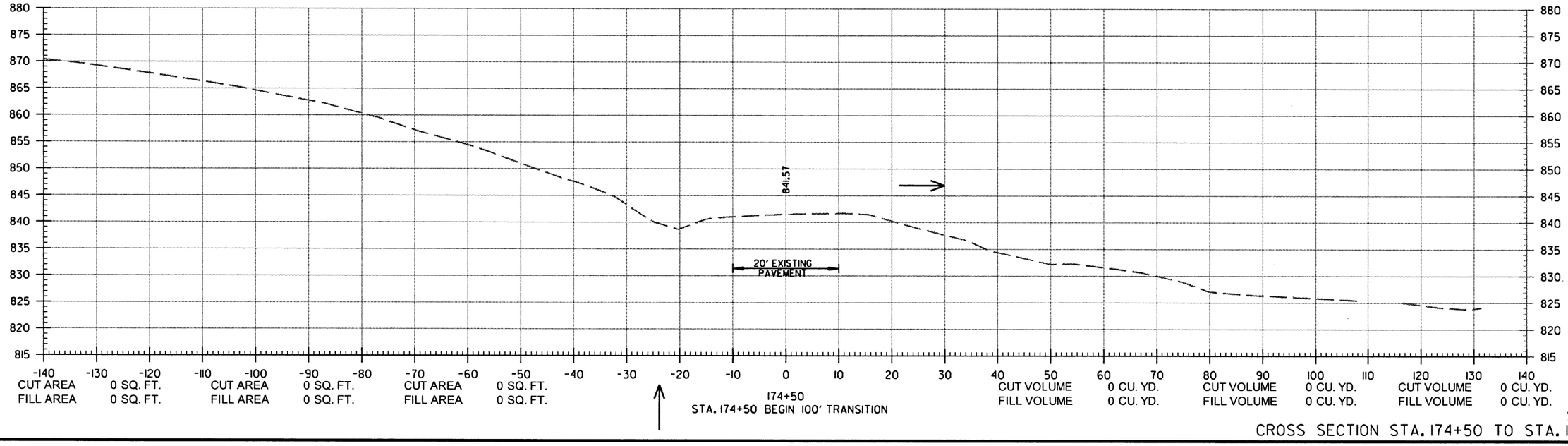
9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	116	140

(2) CROSS SECTIONS





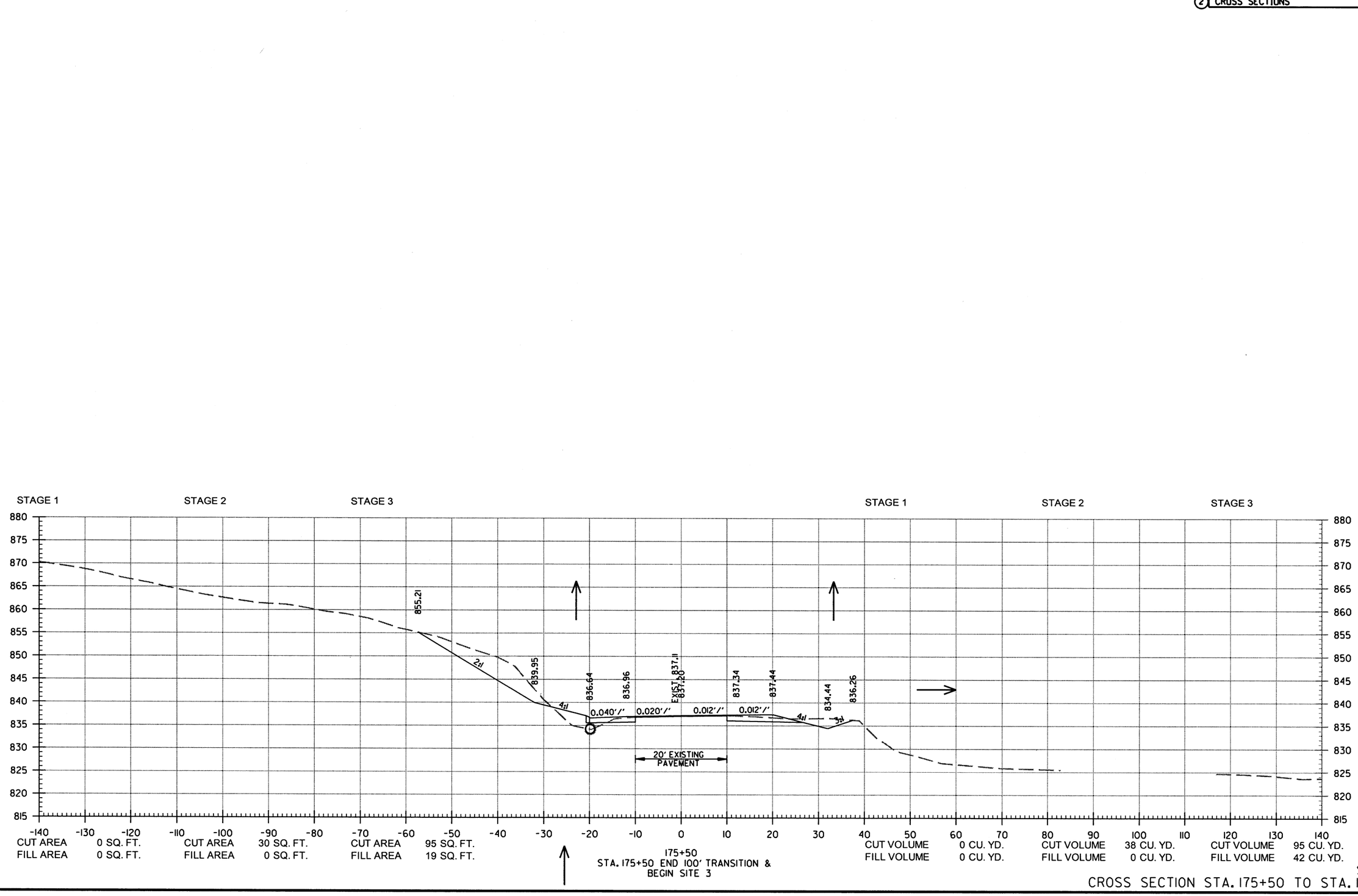
SITE 3
CROSS SECTION STA. 174+50 TO STA. 175+00

9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	117	140

(2) CROSS SECTIONS



SITE 3
CROSS SECTION STA. 175+50 TO STA. 175+50

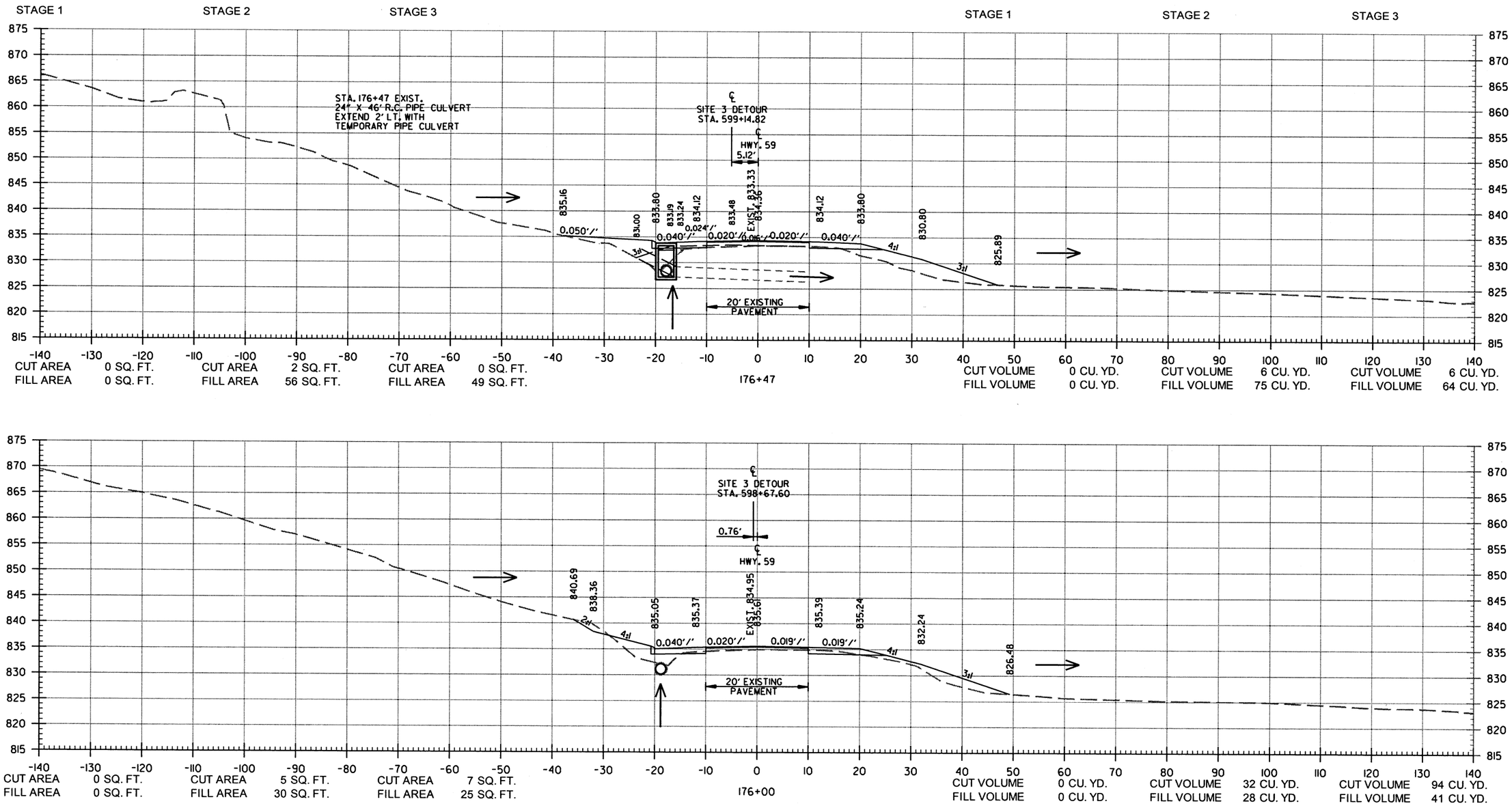
9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	118	140

(2) CROSS SECTIONS

STA. 176+47 CONST.
DI ON LT. H = 6'-7"
24" X 147' R.C. INLET PIPE CULVERT (CLASS V) (TYPE 3 BEDDING) W/FES
TYPE ST = 3'-0" X 3'-0"
CONNECT TO EXIST. R.C. PIPE CULVERT
@ STA. 176+47 LT.
AND REMOVE 3' LT. EXIST. R.C. PIPE CULVERT
EXTEND 12' RT.
24" R.C. PIPE (CLASS III)
(TYPE 3 BEDDING) = 16 LIN. FT.



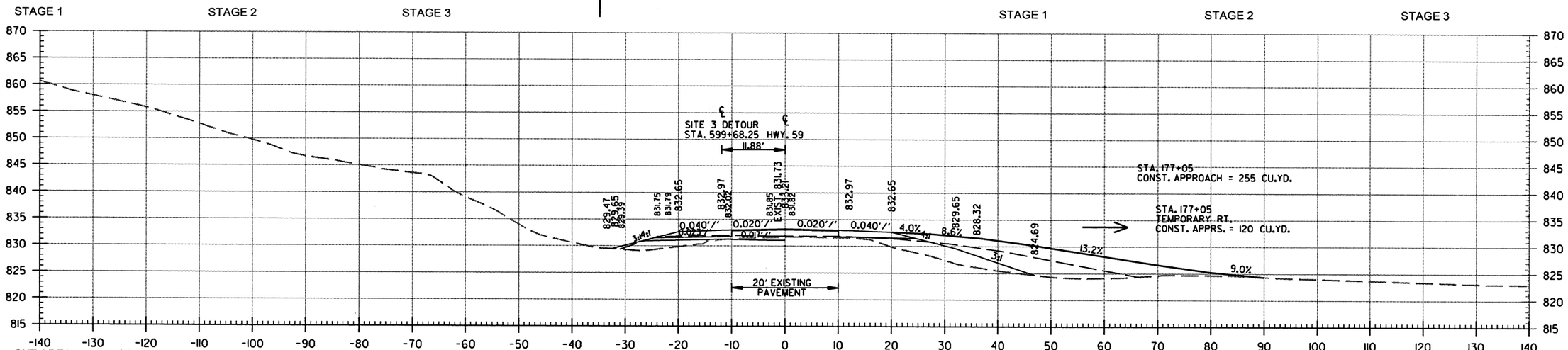
9/10/2019

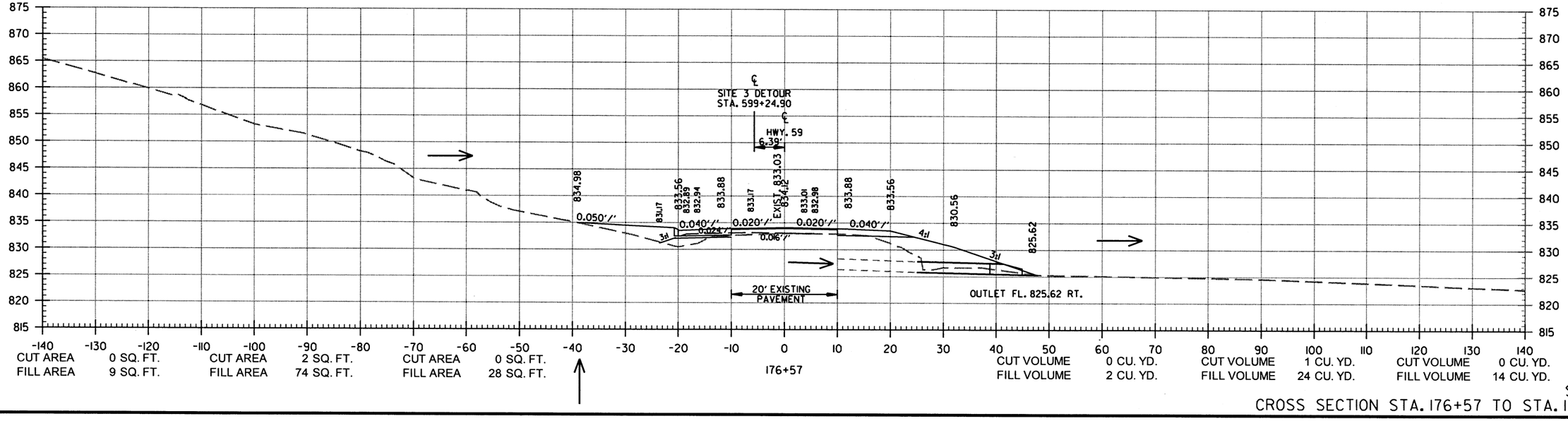
R040622.DGN

SITE 3
CROSS SECTION STA. 176+00 TO STA. 176+47

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.		040622	119	140

(2) CROSS SECTIONS





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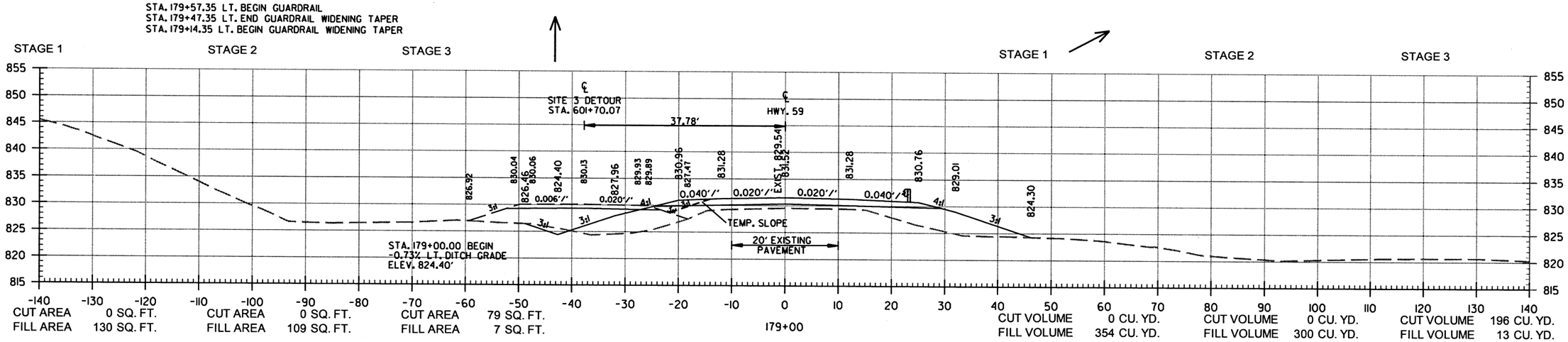
R040622.DGN

SITE 3
CROSS SECTION STA. 176+57 TO STA. 177+00

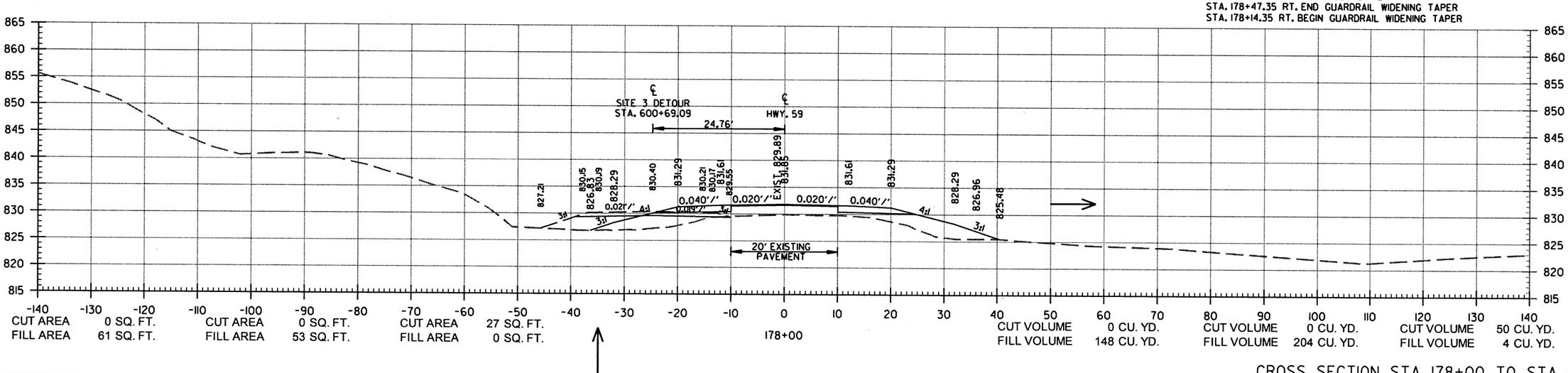
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	120	140

(2) CROSS SECTIONS

STA. 179+57.35 LT. BEGIN GUARDRAIL
STA. 179+47.35 LT. END GUARDRAIL WIDENING TAPER
STA. 179+14.35 LT. BEGIN GUARDRAIL WIDENING TAPER



STA. 178+57.35 RT. BEGIN GUARDRAIL
STA. 178+47.35 RT. END GUARDRAIL WIDENING TAPER
STA. 178+14.35 RT. BEGIN GUARDRAIL WIDENING TAPER



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SITE 3
CROSS SECTION STA. 178+00 TO STA. 179+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	121	140

(2) CROSS SECTIONS

STAGE 1		STAGE 2		STAGE 3	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

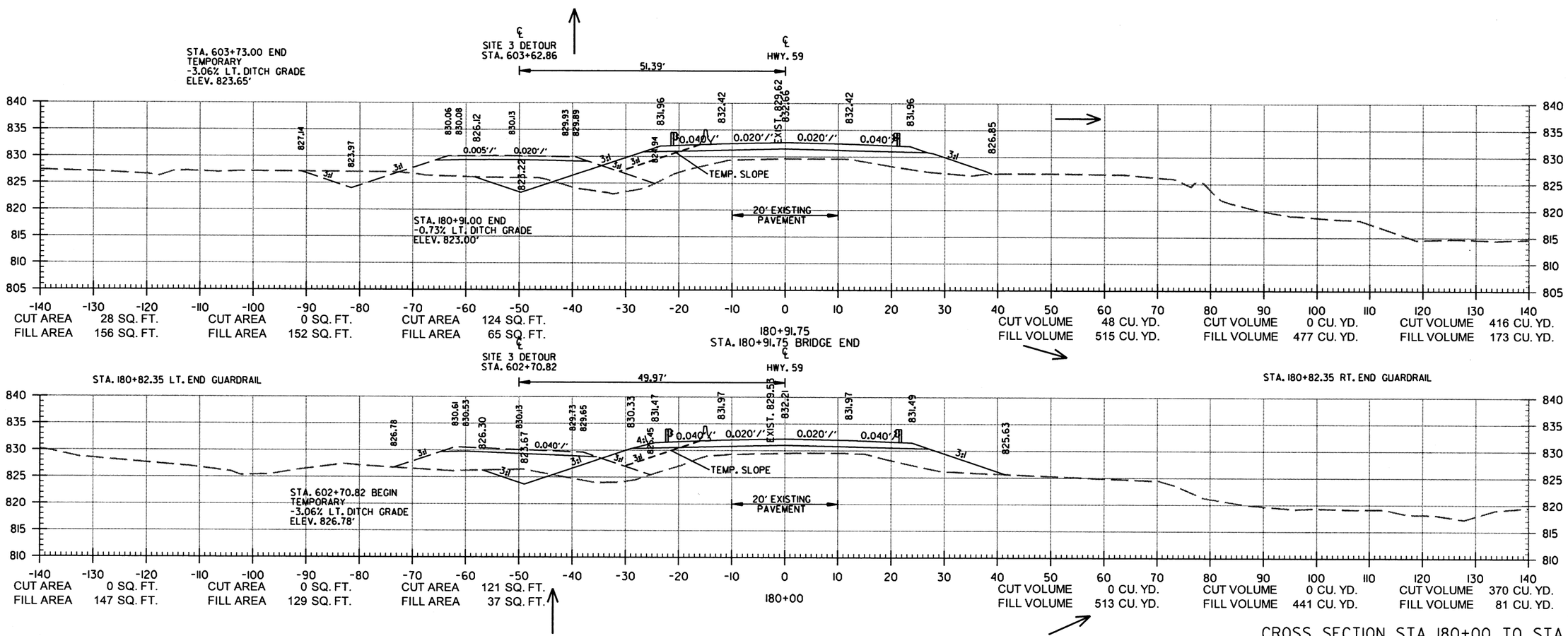
STA. 182+08 TOE OF SLOPE

STAGE 1		STAGE 2		STAGE 3	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

STAGE 1		STAGE 2		STAGE 3	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STA. 181+04 TOE OF SLOPE

STAGE 1		STAGE 2		STAGE 3	
CUT VOLUME	6 CU. YD.	CUT VOLUME	0 CU. YD.	CUT VOLUME	28 CU. YD.
FILL VOLUME	35 CU. YD.	FILL VOLUME	34 CU. YD.	FILL VOLUME	15 CU. YD.



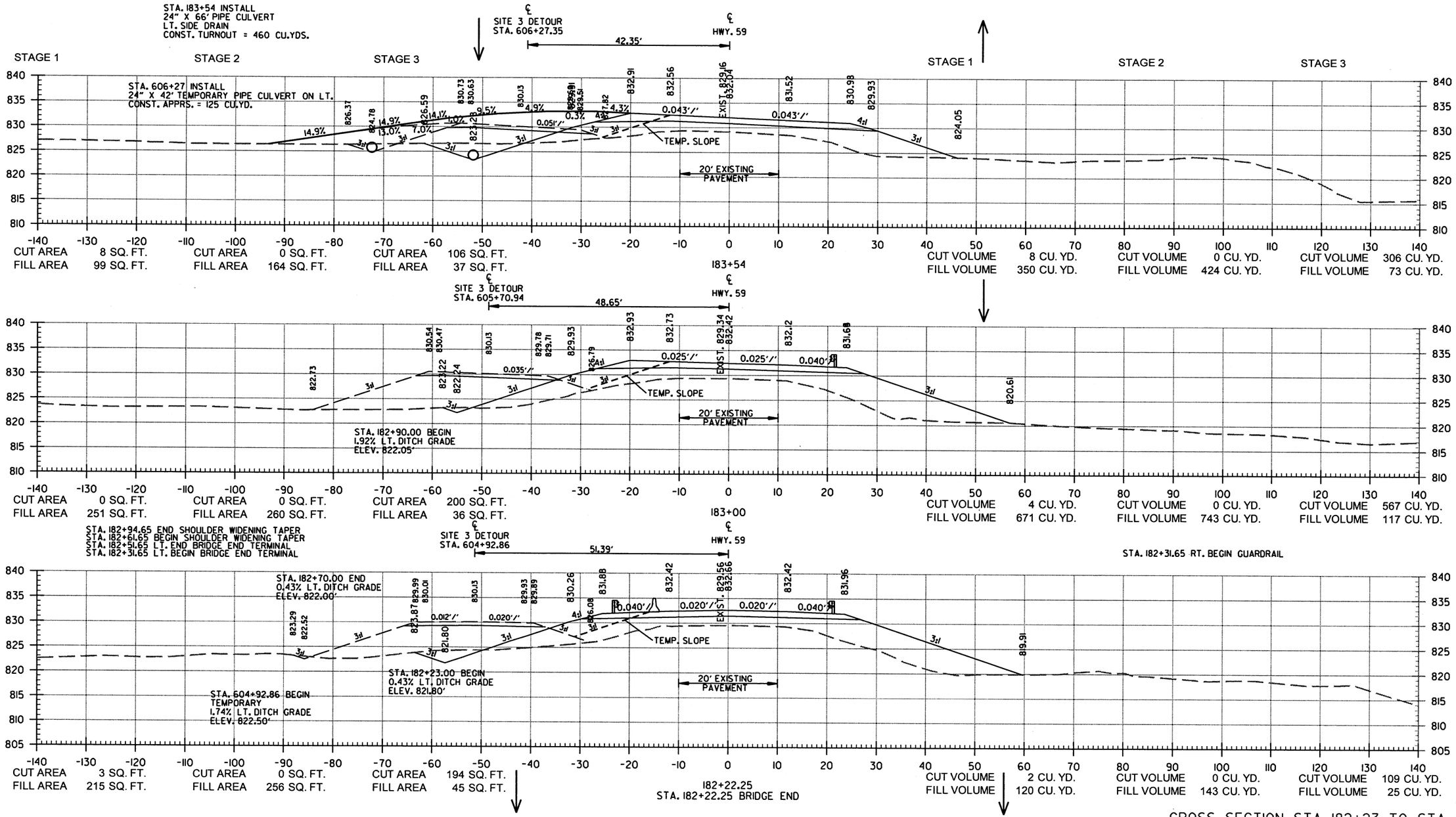
SITE 3
CROSS SECTION STA. 180+00 TO STA. 180+91

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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.		040622	122	140

(2) CROSS SECTIONS



9/10/2019

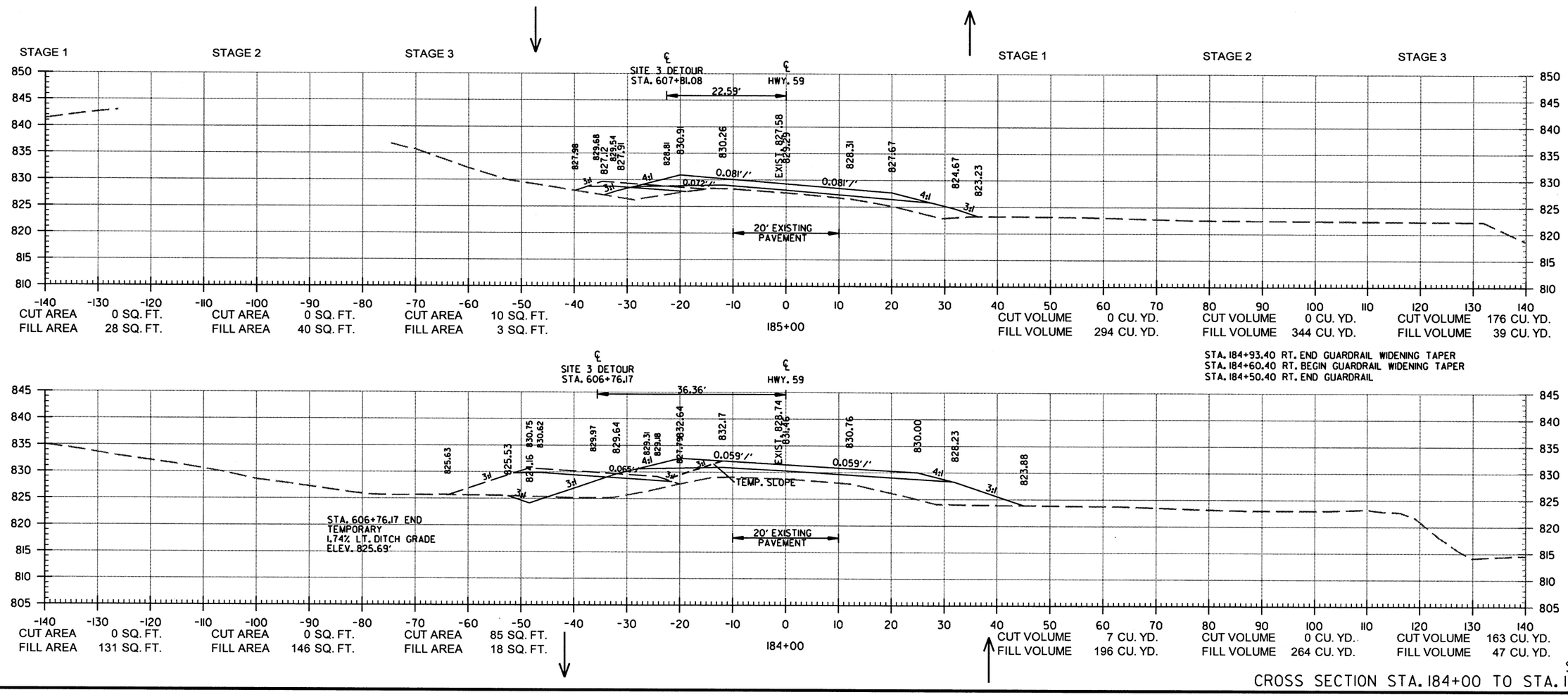
R040622.DGN

SITE 3
CROSS SECTION STA. 182+23 TO STA. 183+54

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.		040622	123	140

(2) CROSS SECTIONS



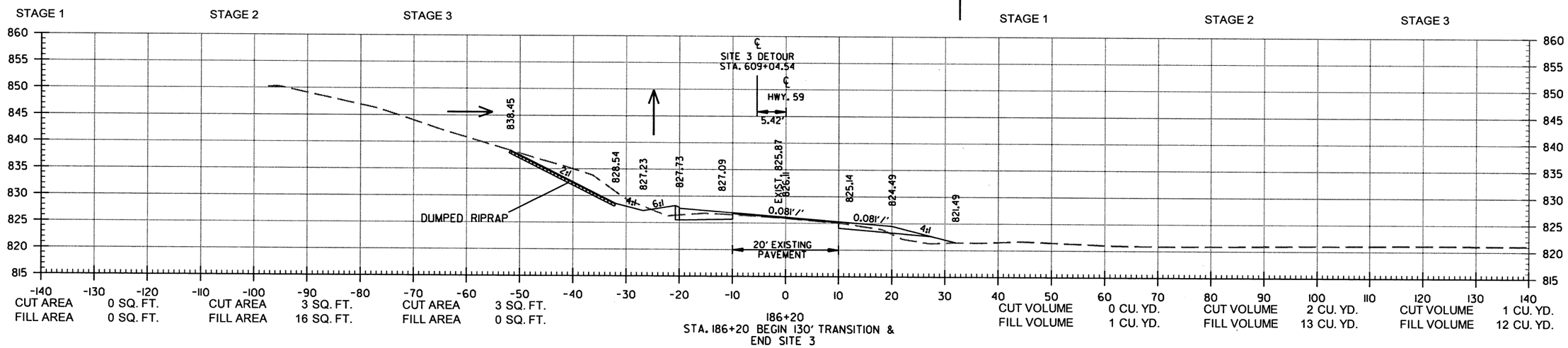
9/10/2019

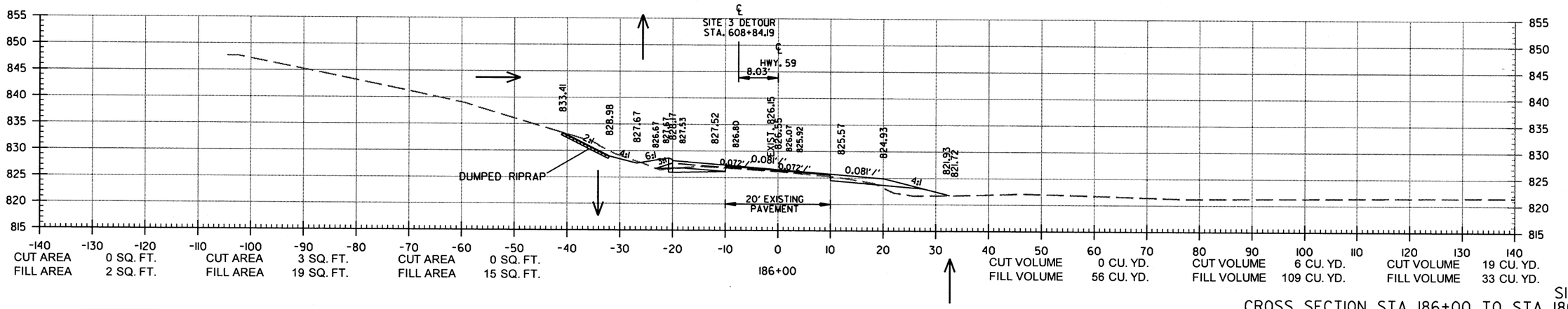
R040622.DGN

SITE 3
CROSS SECTION STA. 184+00 TO STA. 185+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	124	140

(2) CROSS SECTIONS





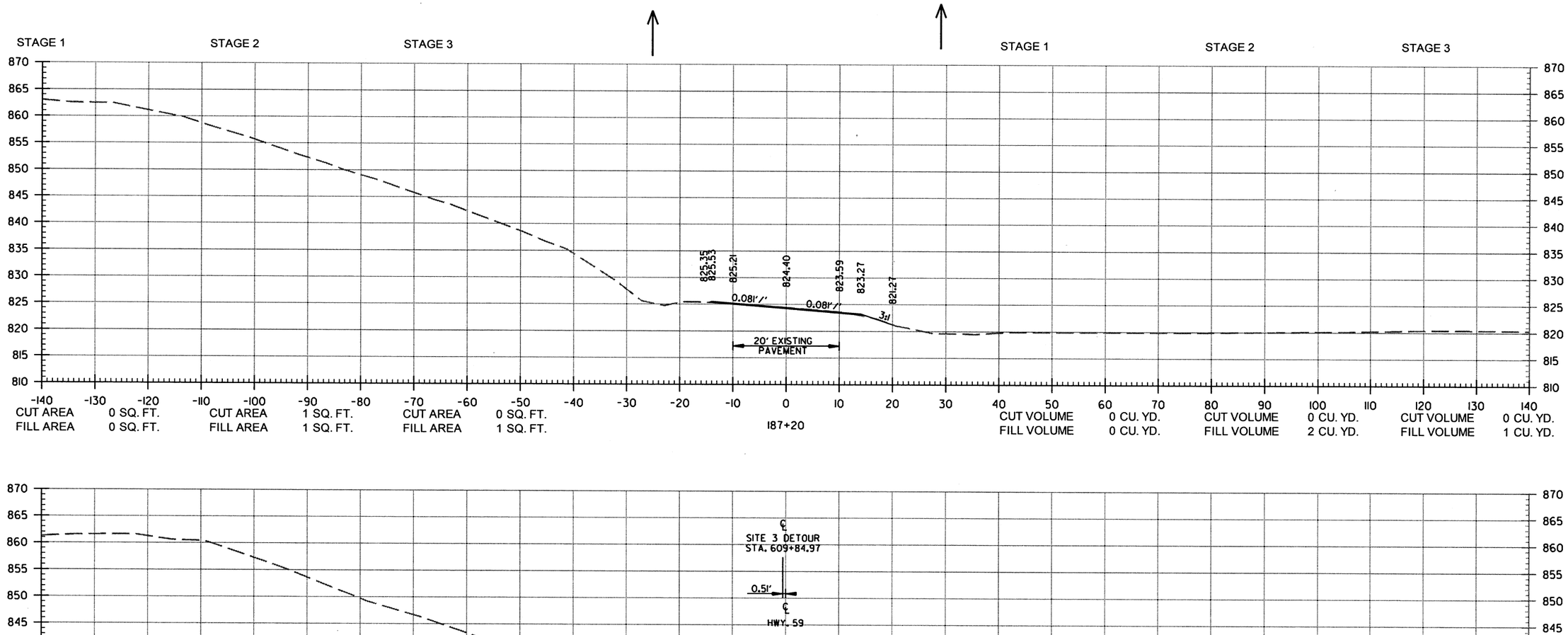
SITE 3
CROSS SECTION STA. 186+00 TO STA. 186+20

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R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	125	140

(2) CROSS SECTIONS



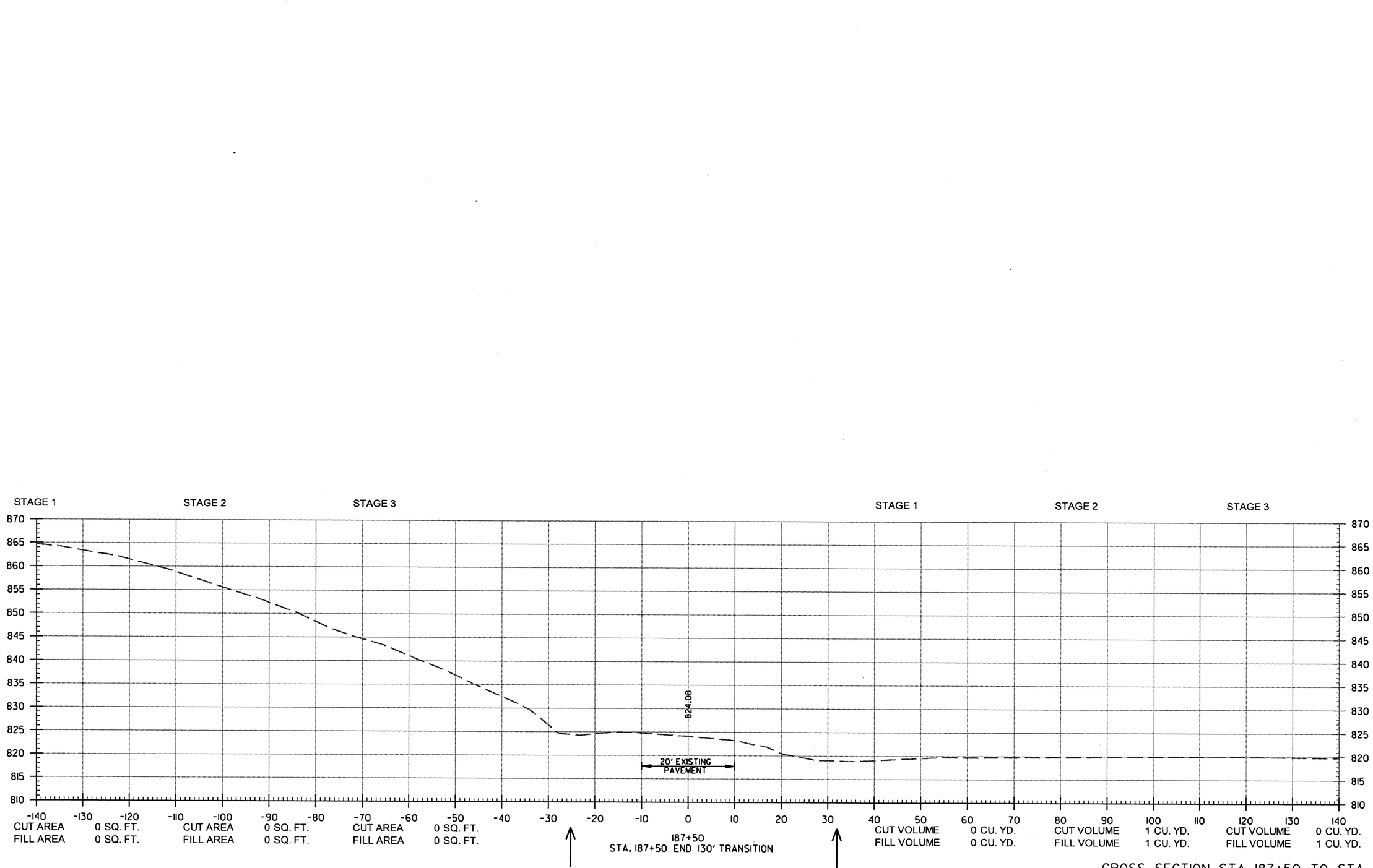
SITE 3
CROSS SECTION STA. 187+00 TO STA. 187+20

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R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	126	140

(2) CROSS SECTIONS



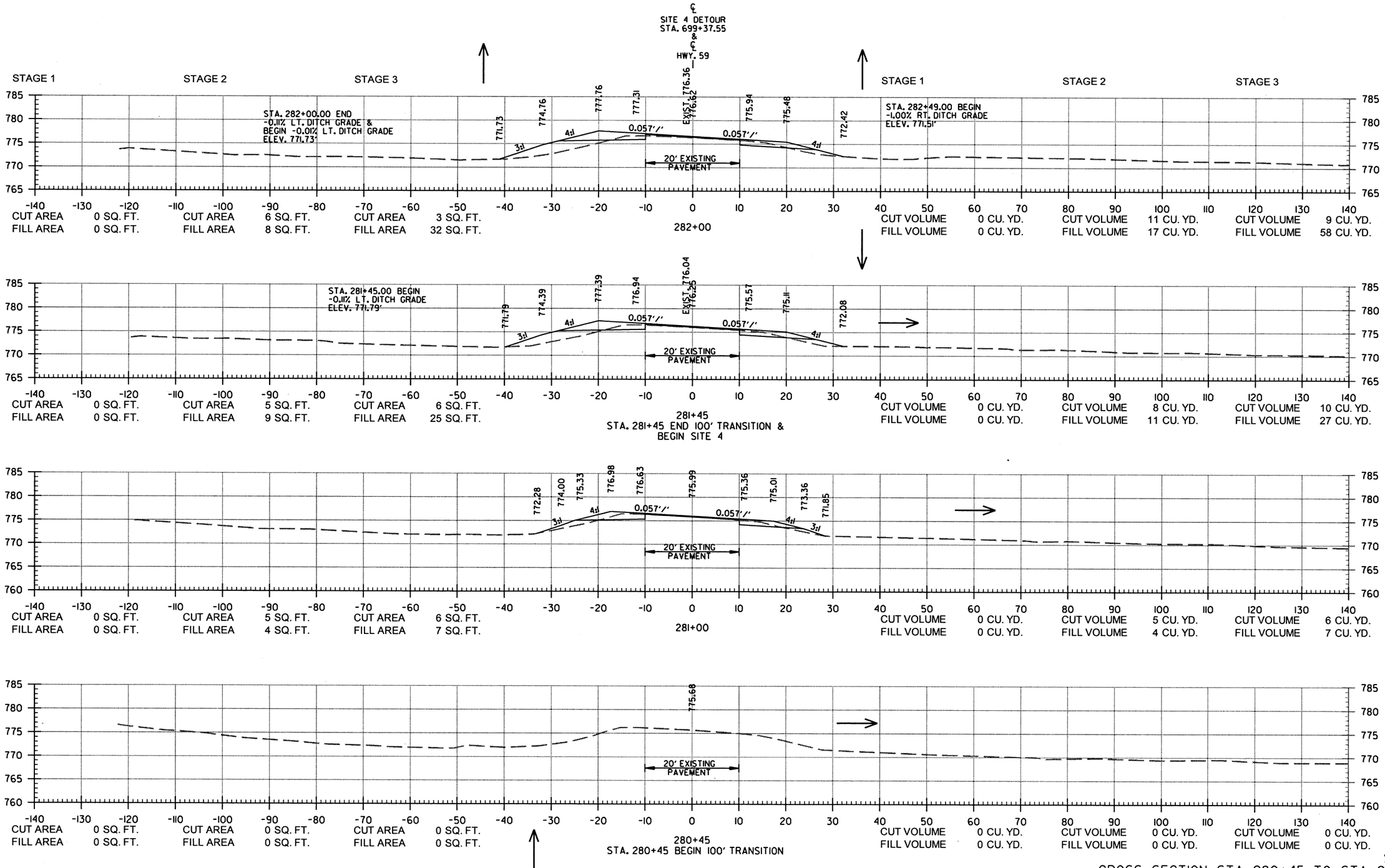
SITE 3
CROSS SECTION STA. 187+50 TO STA. 187+50

9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	127	140

(2) CROSS SECTIONS



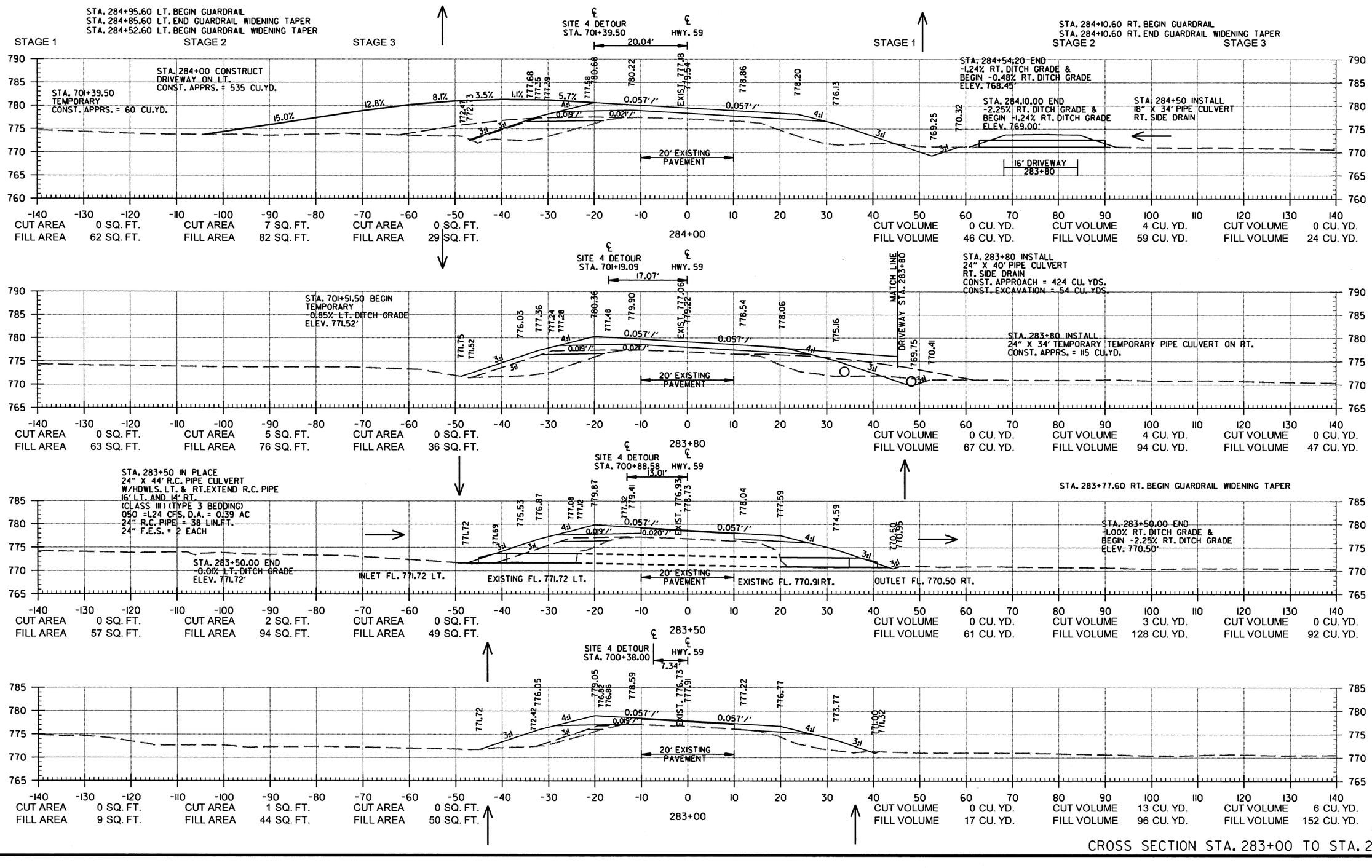
9/10/2019

R040622.DGN

SITE 4
CROSS SECTION STA. 280+45 TO STA. 282+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	128	140

(2) CROSS SECTIONS



9/10/2019

R040622.DGN

SITE 4
CROSS SECTION STA. 283+00 TO STA. 284+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	129	140

(2) CROSS SECTIONS

STA. 287+25 TOE OF SLOPE

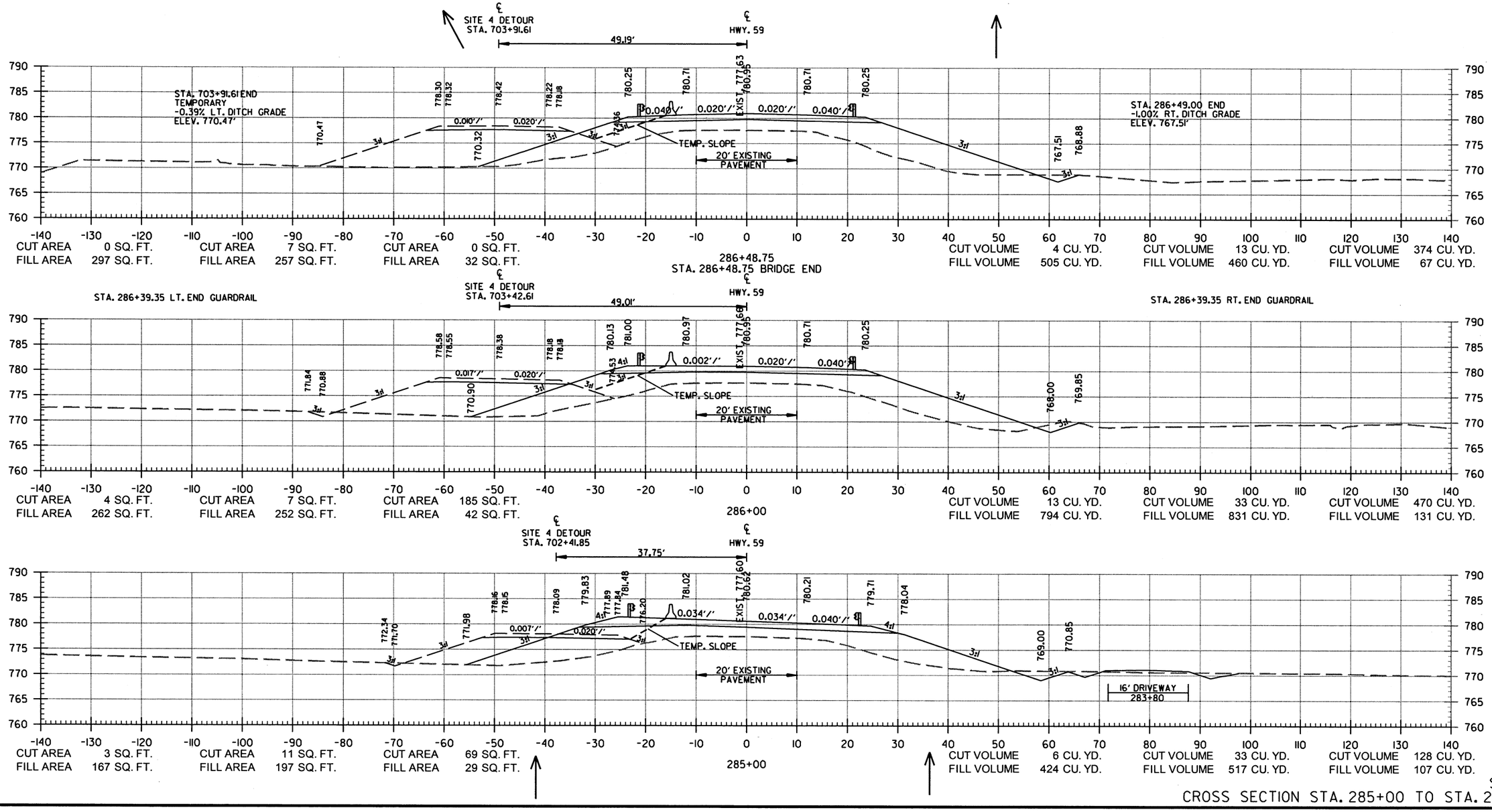
STAGE 1		STAGE 2		STAGE 3	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2		STAGE 3	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

STA. 286+75 TOE OF SLOPE

CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

CUT VOLUME	0 CU. YD.	CUT VOLUME	3 CU. YD.	CUT VOLUME	111 CU. YD.
FILL VOLUME	144 CU. YD.	FILL VOLUME	125 CU. YD.	FILL VOLUME	16 CU. YD.



CUT AREA	0 SQ. FT.	CUT AREA	7 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	297 SQ. FT.	FILL AREA	257 SQ. FT.	FILL AREA	32 SQ. FT.

CUT VOLUME	4 CU. YD.	CUT VOLUME	13 CU. YD.	CUT VOLUME	374 CU. YD.
FILL VOLUME	505 CU. YD.	FILL VOLUME	460 CU. YD.	FILL VOLUME	67 CU. YD.

CUT AREA	4 SQ. FT.	CUT AREA	7 SQ. FT.	CUT AREA	185 SQ. FT.
FILL AREA	262 SQ. FT.	FILL AREA	252 SQ. FT.	FILL AREA	42 SQ. FT.

CUT VOLUME	13 CU. YD.	CUT VOLUME	33 CU. YD.	CUT VOLUME	470 CU. YD.
FILL VOLUME	794 CU. YD.	FILL VOLUME	831 CU. YD.	FILL VOLUME	131 CU. YD.

CUT AREA	3 SQ. FT.	CUT AREA	11 SQ. FT.	CUT AREA	69 SQ. FT.
FILL AREA	167 SQ. FT.	FILL AREA	197 SQ. FT.	FILL AREA	29 SQ. FT.

CUT VOLUME	6 CU. YD.	CUT VOLUME	33 CU. YD.	CUT VOLUME	128 CU. YD.
FILL VOLUME	424 CU. YD.	FILL VOLUME	517 CU. YD.	FILL VOLUME	107 CU. YD.

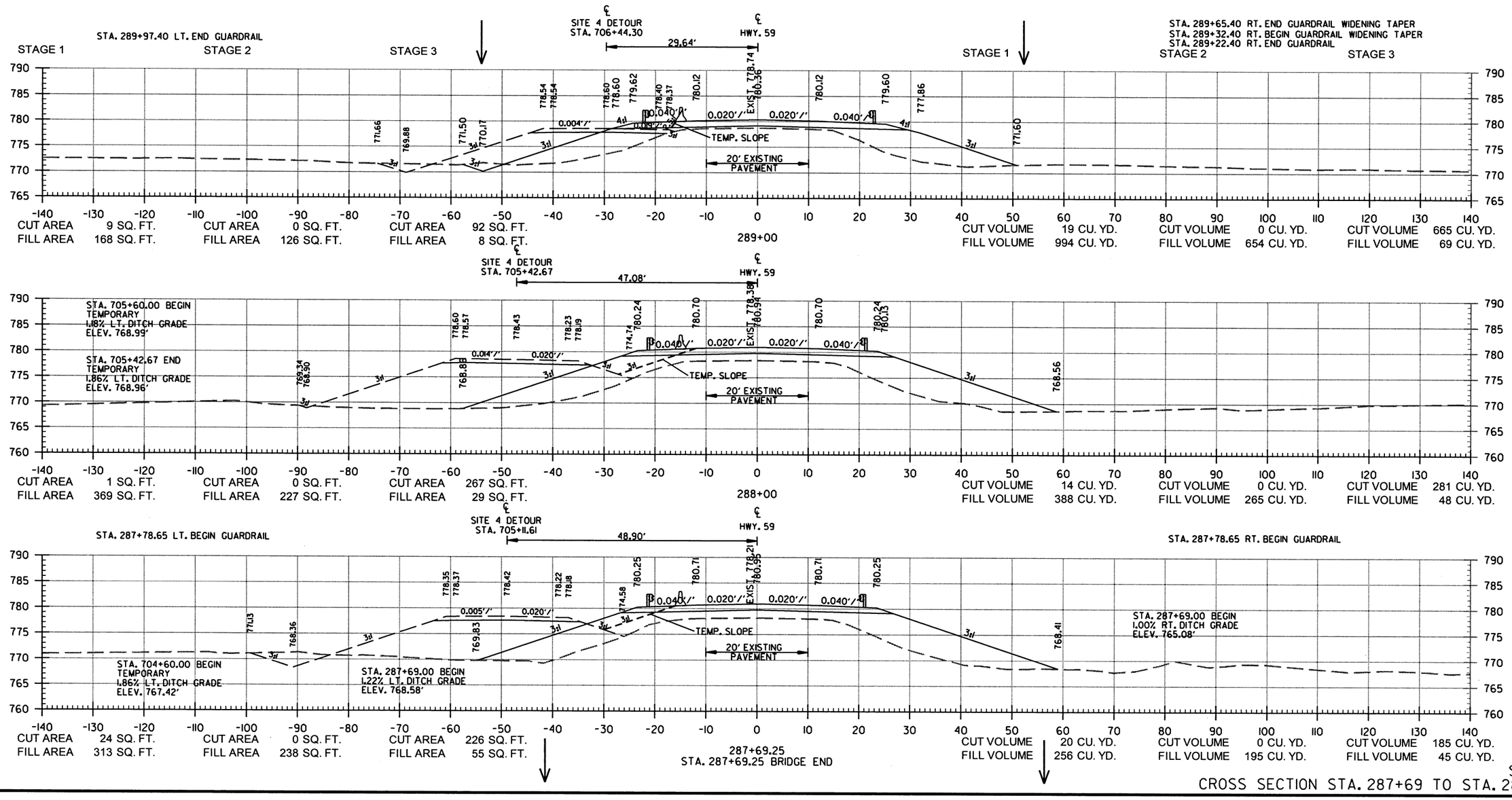
9/10/2019

R040622.DGN

SITE 4
CROSS SECTION STA. 285+00 TO STA. 286+49

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.		040622	130	140

(2) CROSS SECTIONS



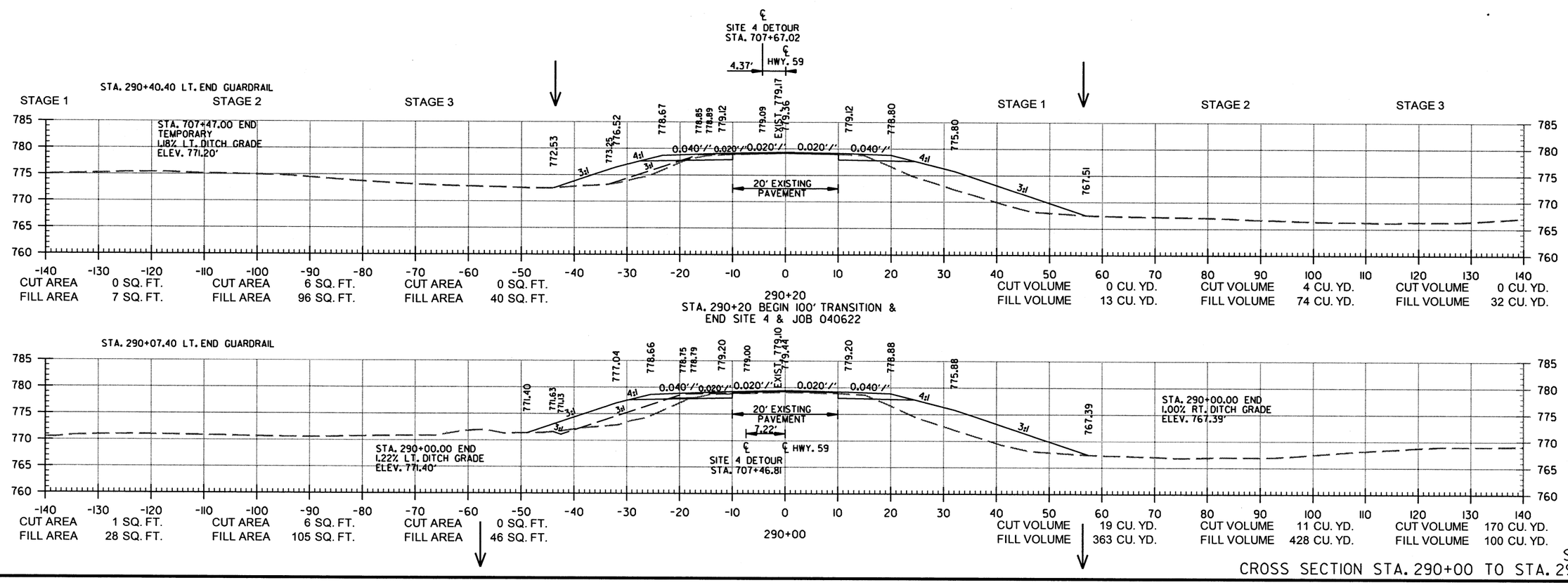
9/10/2019

R040622.DGN

SITE 4
CROSS SECTION STA. 287+69 TO STA. 289+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	131	140

(2) CROSS SECTIONS



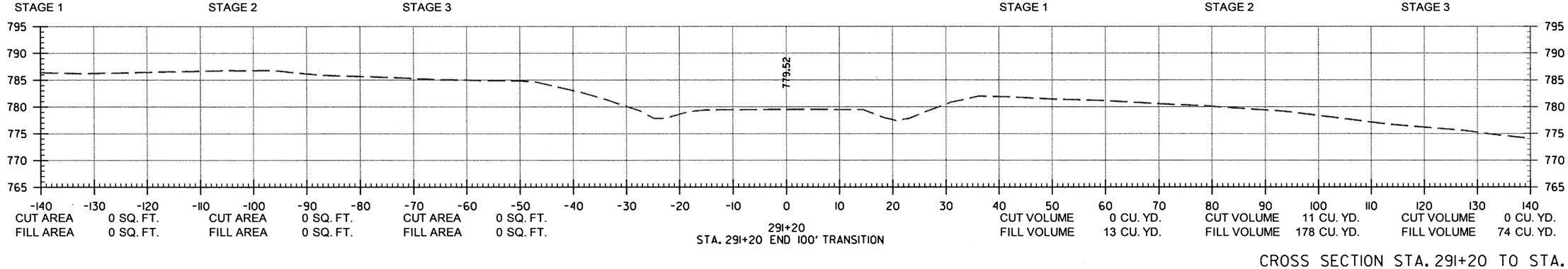
9/10/2019

R040622.DGN

SITE 4
CROSS SECTION STA. 290+00 TO STA. 290+20

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.		040622	132	140

(2) CROSS SECTIONS



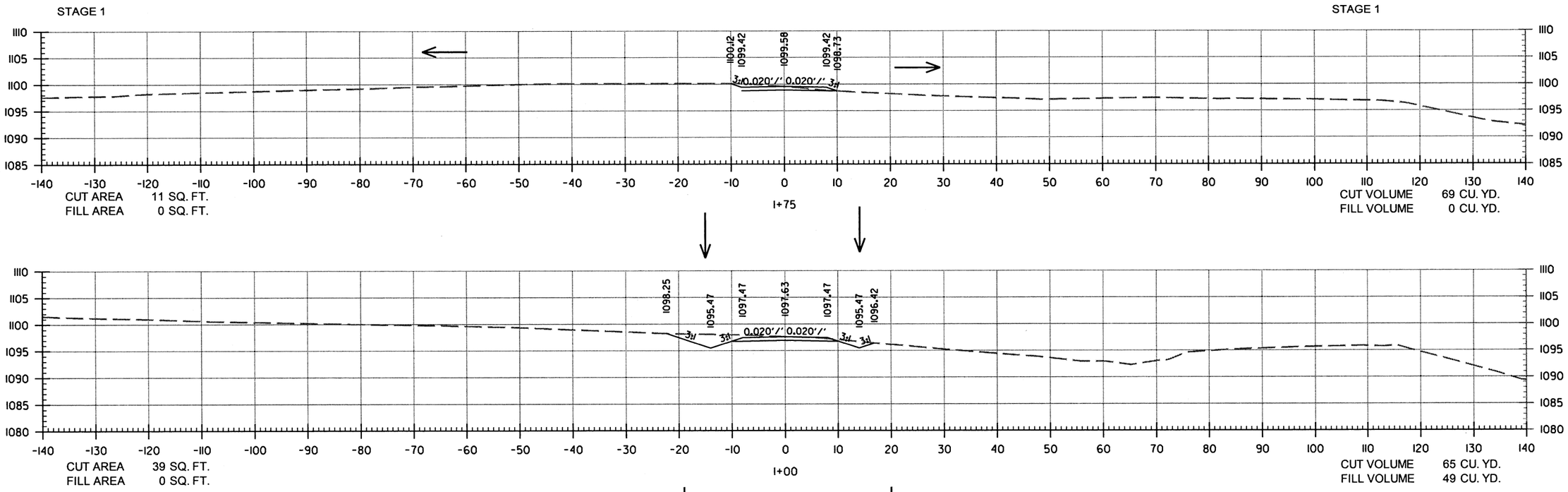
SITE 4
CROSS SECTION STA. 291+20 TO STA. 291+20

9/10/2019

R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	133	140

(2) CROSS SECTIONS



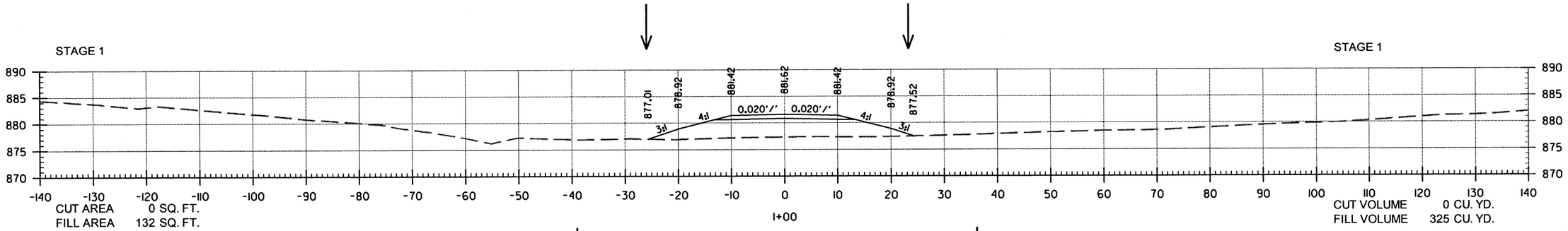
9/10/2019

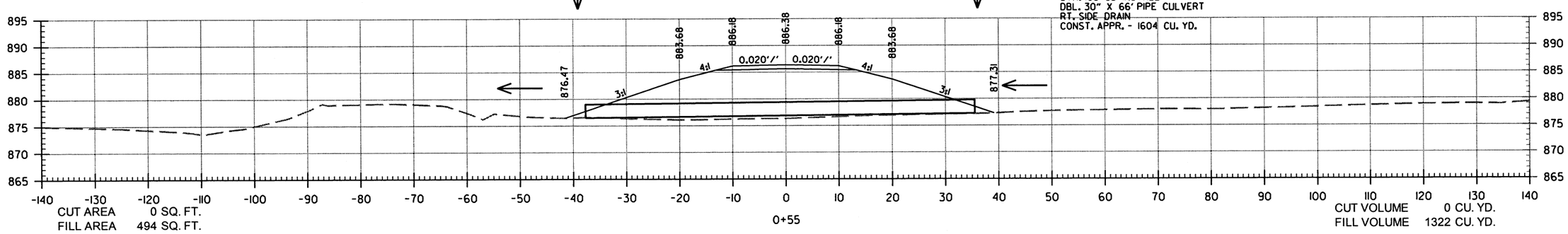
R040622.DGN

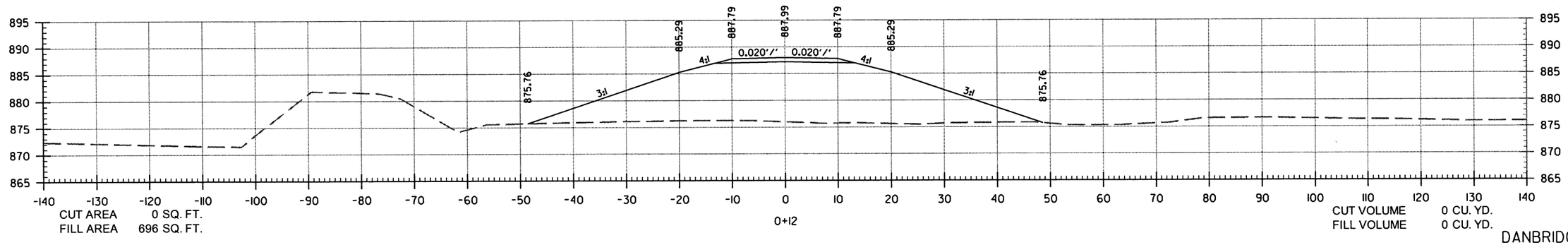
SITE 1 - DRIVEWAY
CROSS SECTION STA. 0+12 TO STA. 1+75

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.		040622	134	140

(2) CROSS SECTIONS







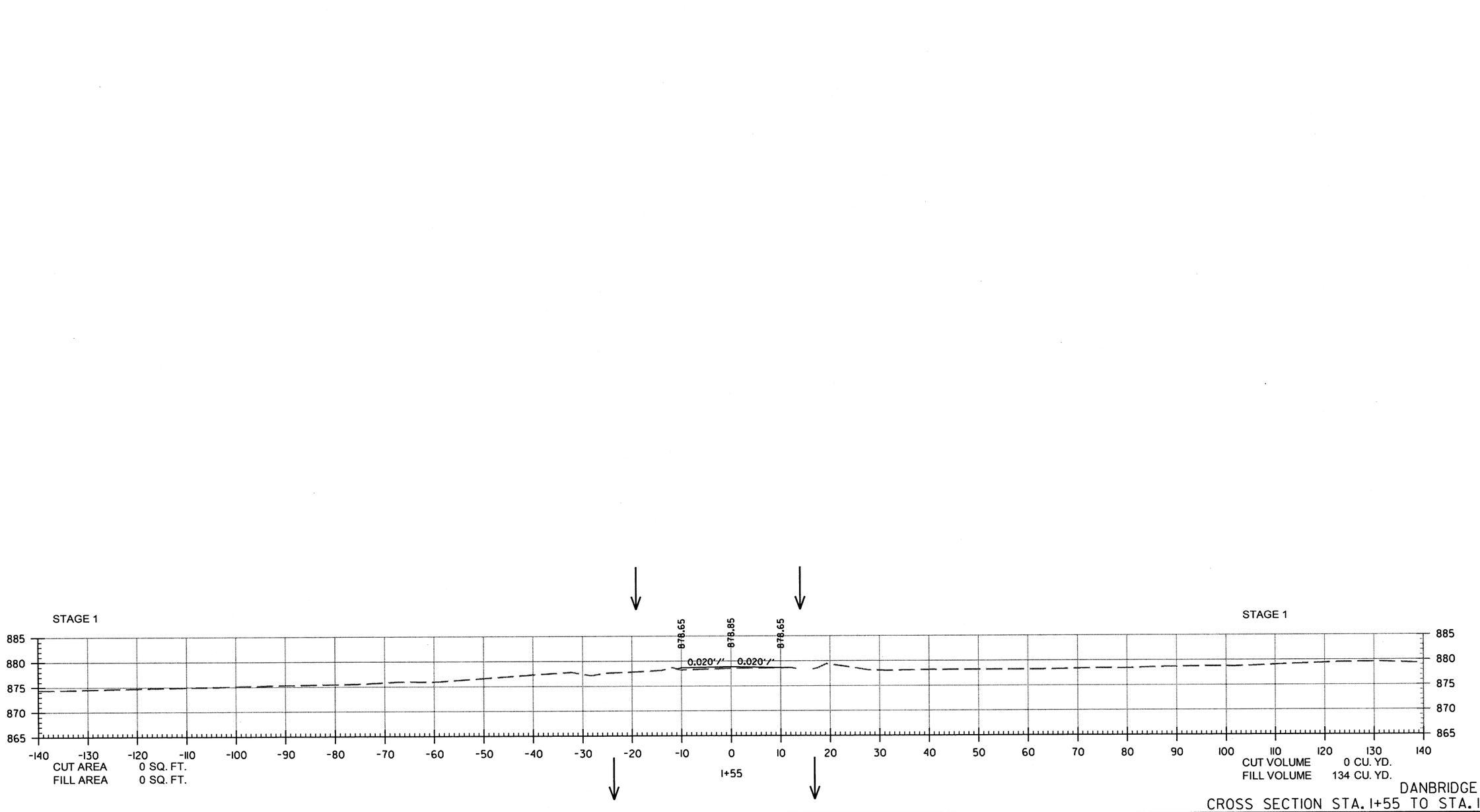
9/10/2019

R040622.DGN

DANBRIDGE RD.
CROSS SECTION STA. 0+12 TO STA. 1+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	135	140

(2) CROSS SECTIONS



DANBRIDGE RD.
CROSS SECTION STA. 1+55 TO STA. 1+55

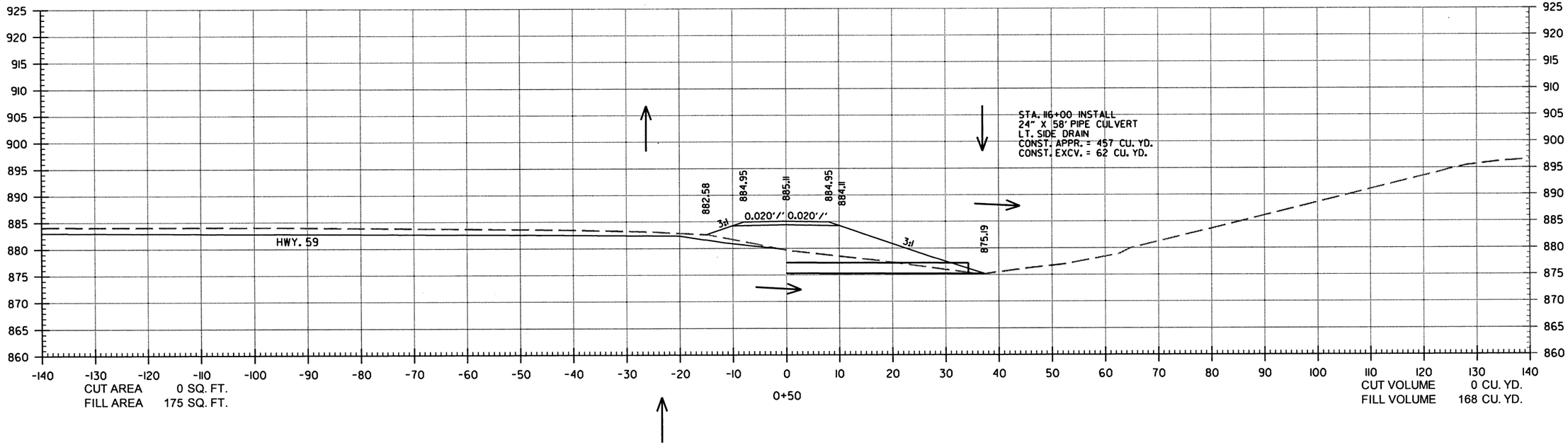
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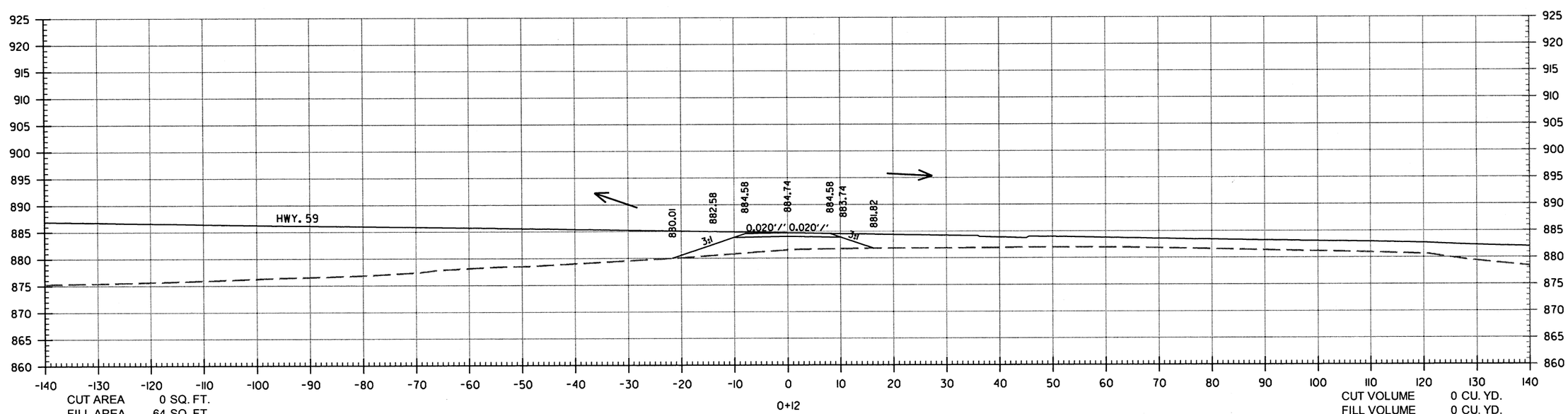
R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	136	140

(2) CROSS SECTIONS

STAGE 1





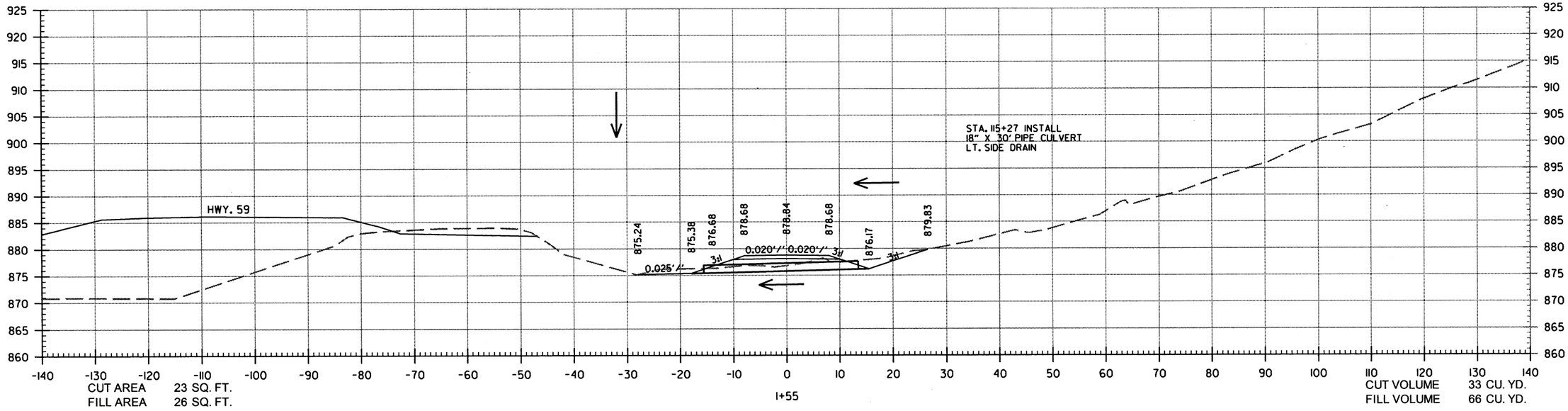
SITE 2 - DRIVEWAY
CROSS SECTION STA. 0+12 TO STA. 0+50

tw39665 9/10/2019
R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	137	140

(2) CROSS SECTIONS

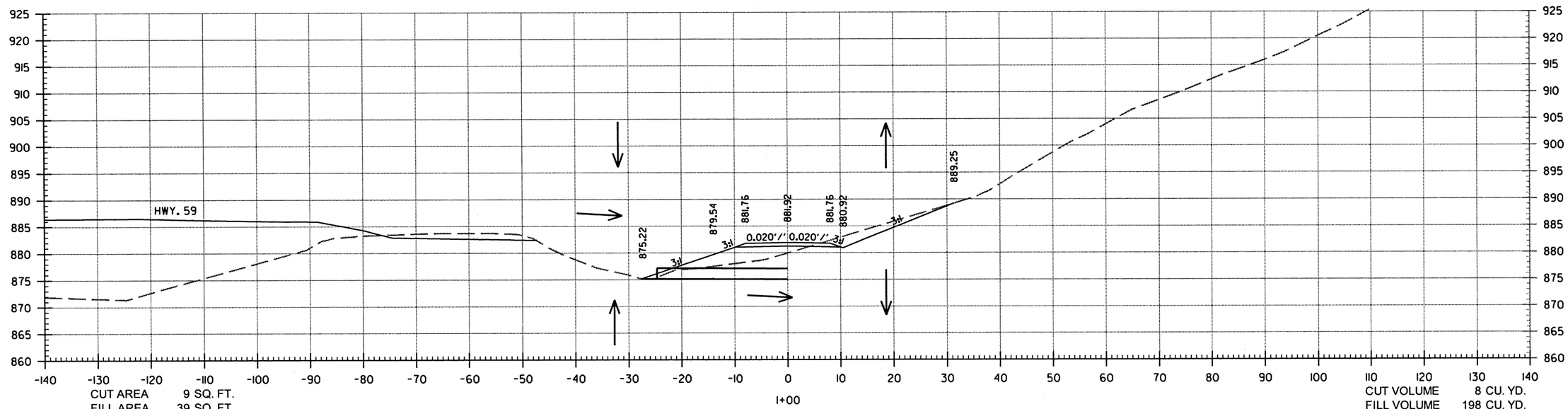
STAGE 1



CUT AREA 23 SQ. FT.
FILL AREA 26 SQ. FT.

1+55

CUT VOLUME 33 CU. YD.
FILL VOLUME 66 CU. YD.



CUT AREA 9 SQ. FT.
FILL AREA 39 SQ. FT.

1+00

CUT VOLUME 8 CU. YD.
FILL VOLUME 198 CU. YD.

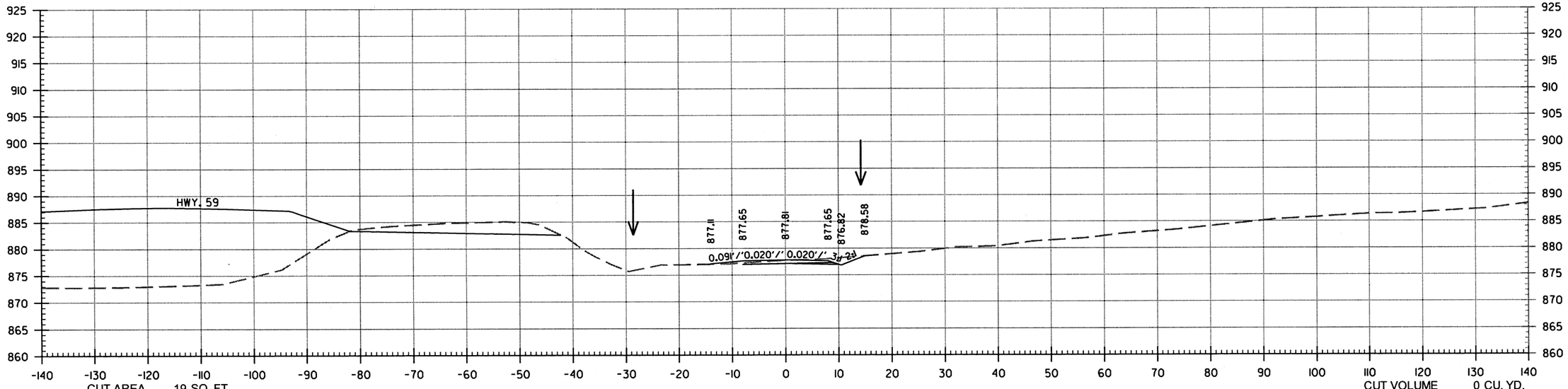
SITE 2 - DRIVEWAY
CROSS SECTION STA. 1+00 TO STA. 1+55

tw39665 9/10/2019
R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	138	140

(2) CROSS SECTIONS

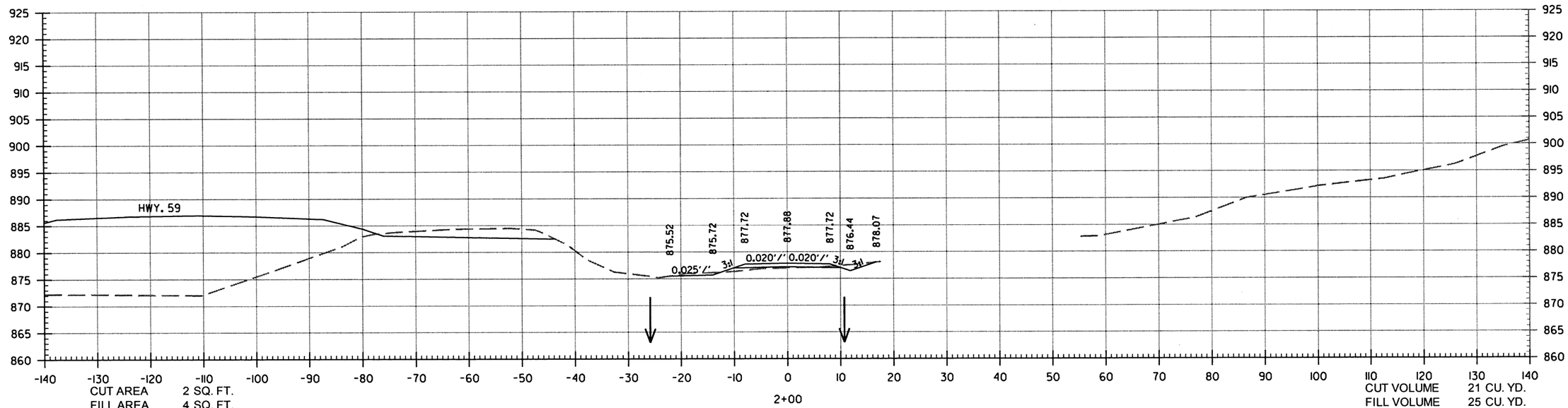
STAGE 1



CUT AREA 19 SQ. FT.
FILL AREA 0 SQ. FT.

2+65

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.



CUT AREA 2 SQ. FT.
FILL AREA 4 SQ. FT.

2+00

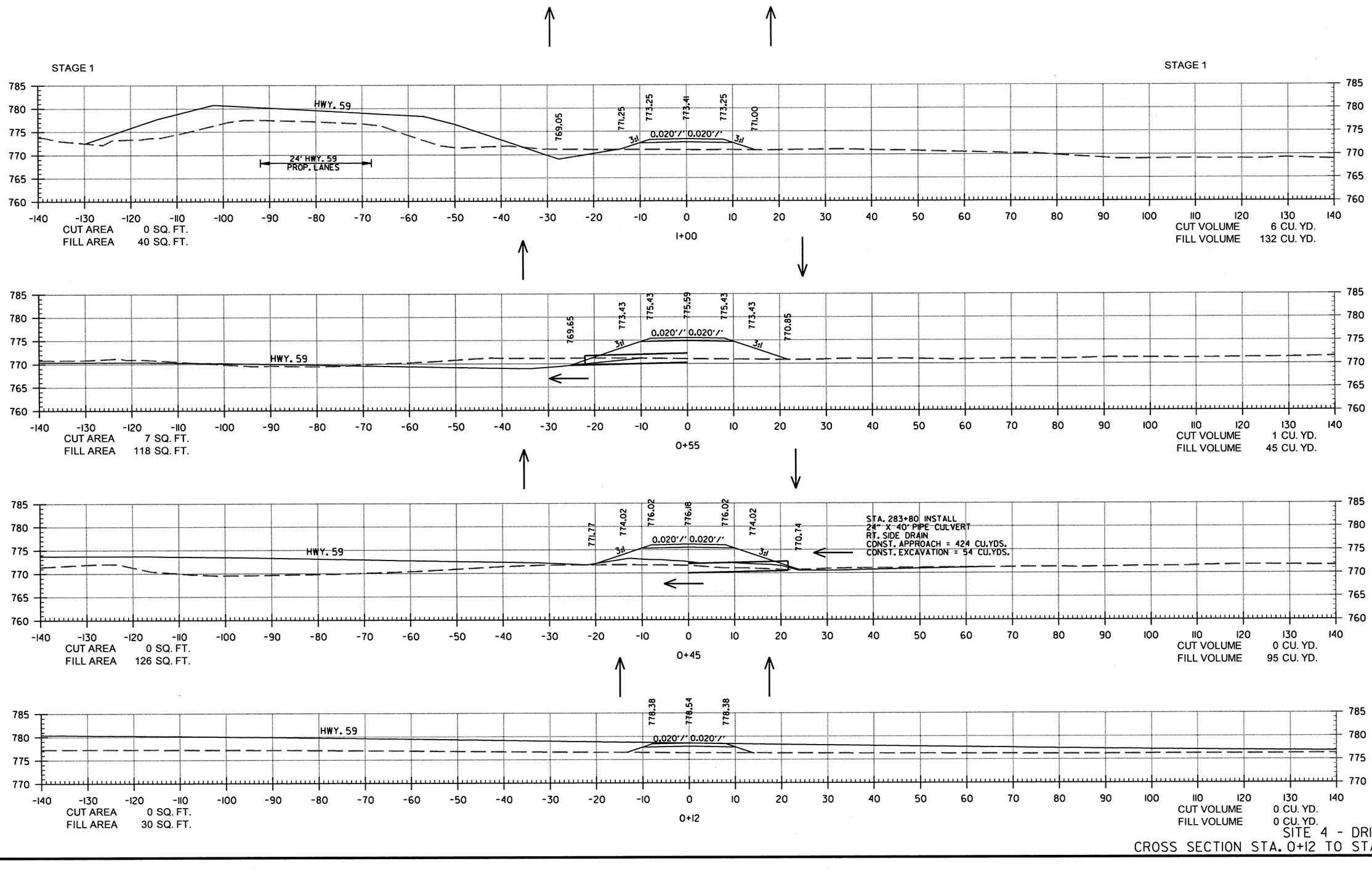
CUT VOLUME 21 CU. YD.
FILL VOLUME 25 CU. YD.

SITE 2 - DRIVEWAY
CROSS SECTION STA. 2+00 TO STA. 2+65

tw39665 9/10/2019
R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	139	140

(2) CROSS SECTIONS

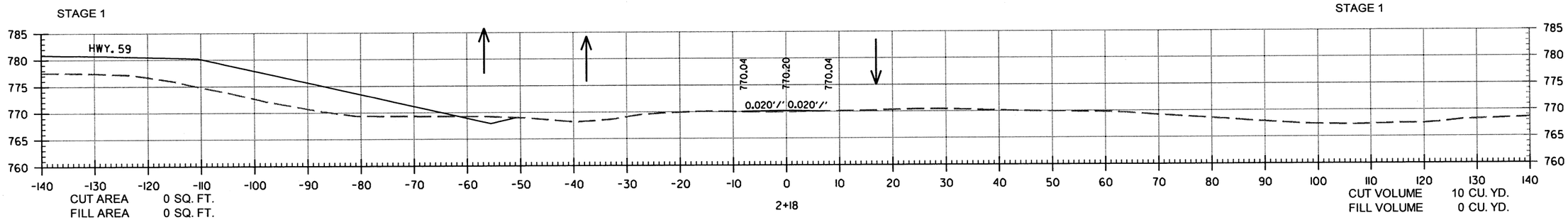


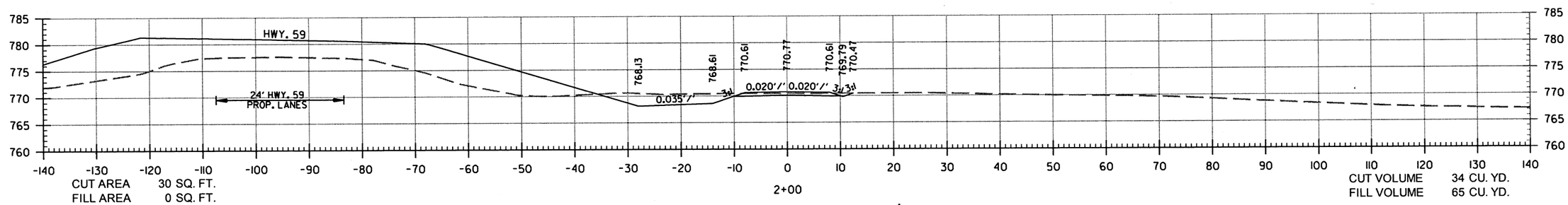
SITE 4 - DRIVEWAY
CROSS SECTION STA. 0+12 TO STA. 1+00

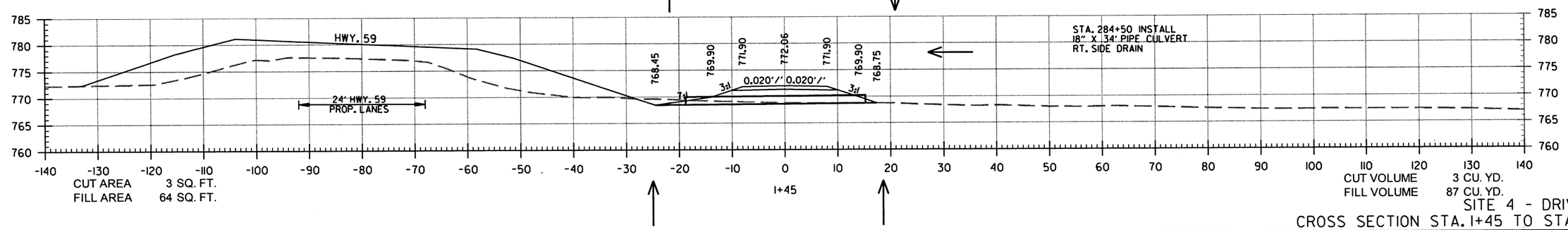
lw39665 9/10/2019
R040622.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040622	140	140

(2) CROSS SECTIONS





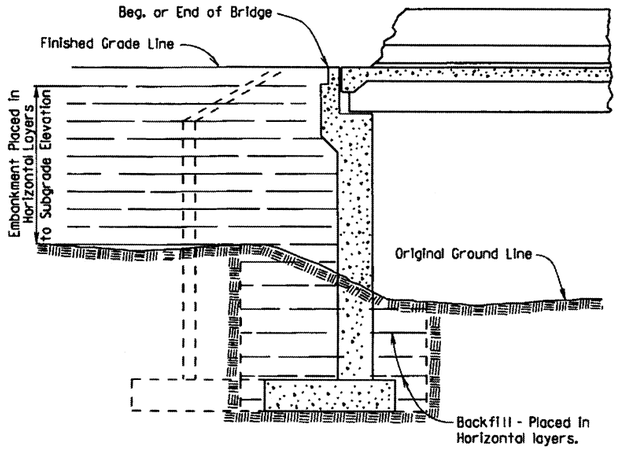


SITE 4 - DRIVEWAY
CROSS SECTION STA. 1+45 TO STA. 2+18

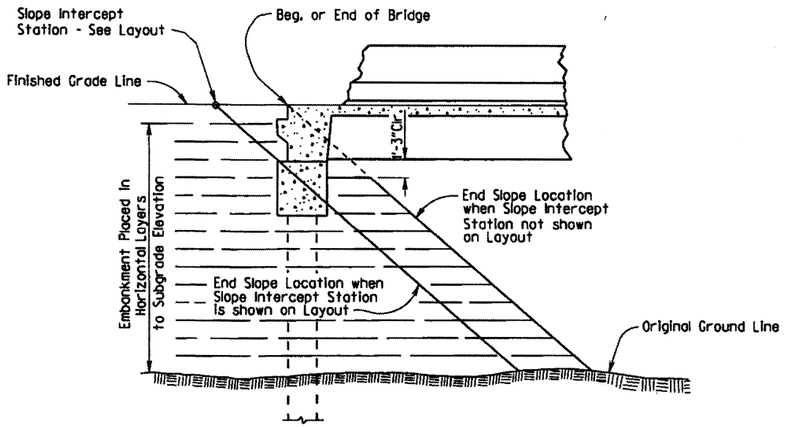
lw39665 9/10/2019
R040622.DGN

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.				

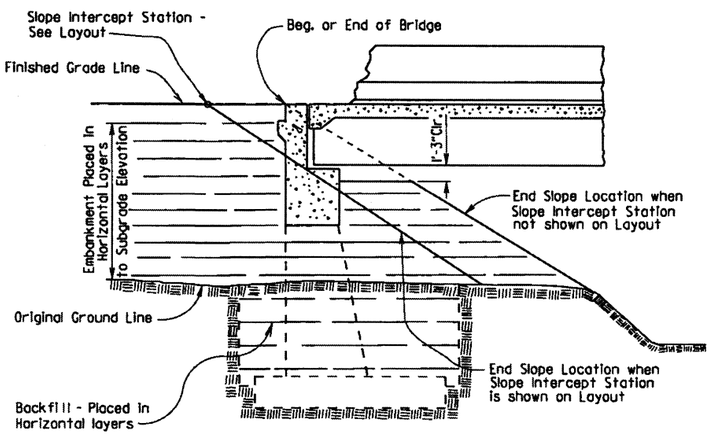
(1) EMBANKMENT & BACKFILL 55000



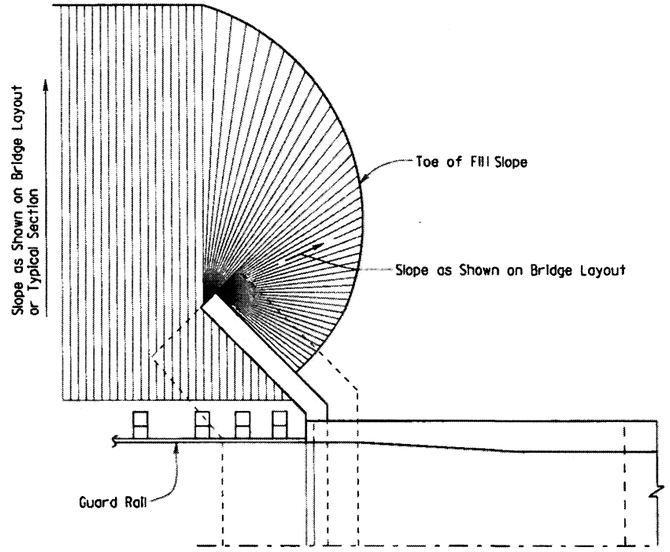
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



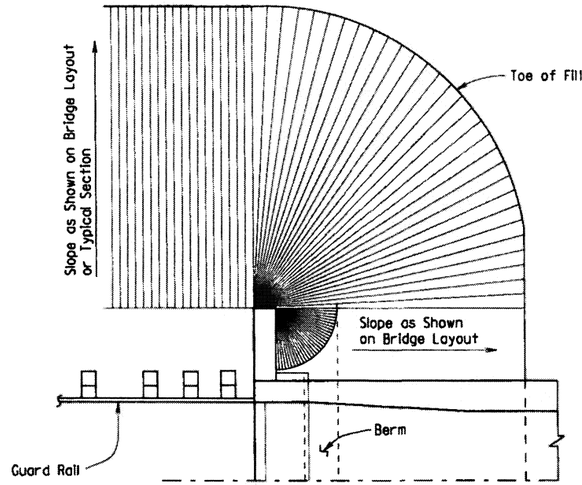
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



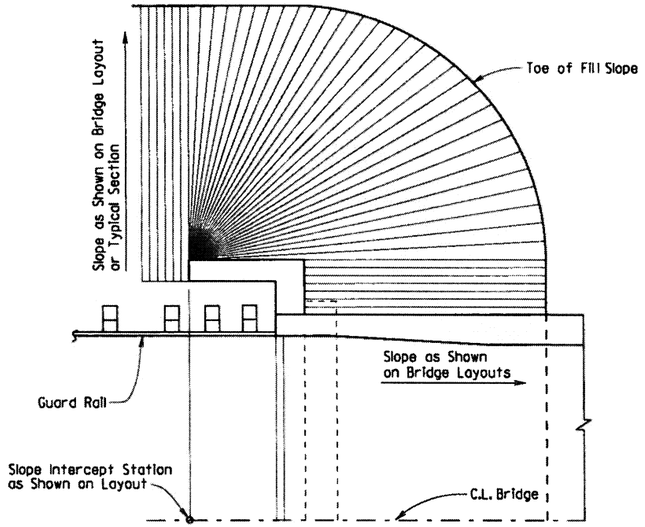
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



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

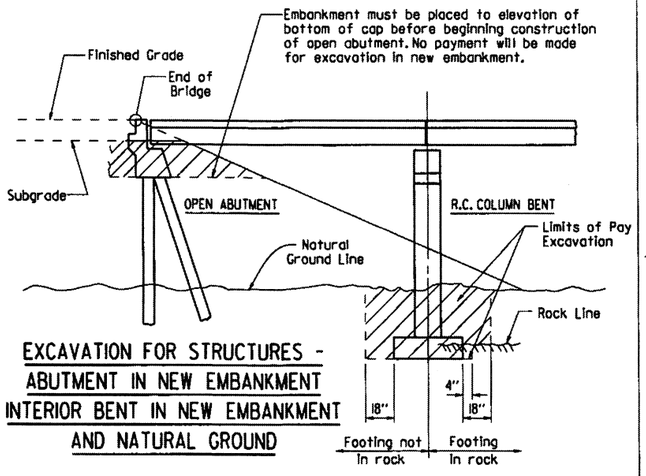
LITTLE ROCK, ARK.

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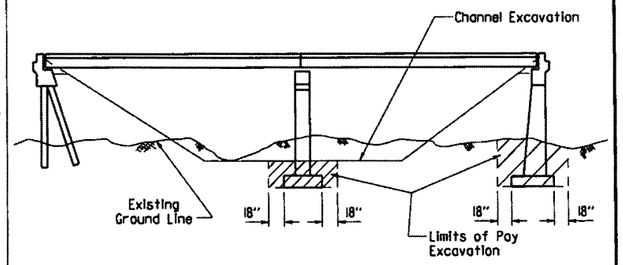
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DESIGNED BY: STD. DATE: -

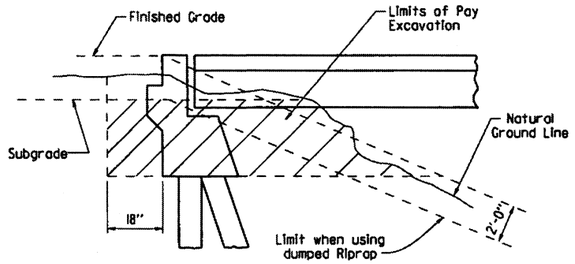
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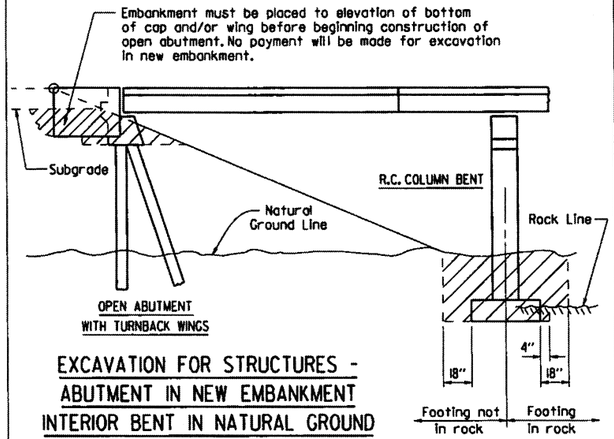
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



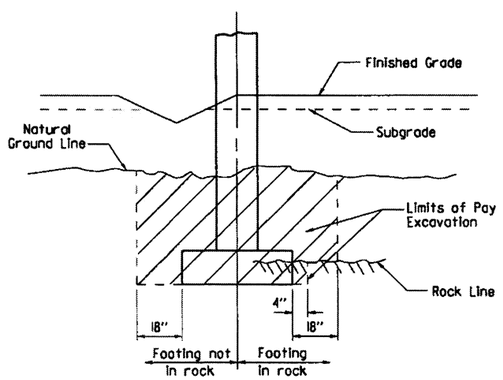
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



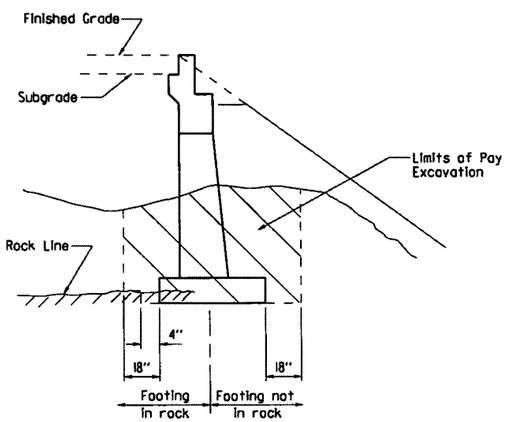
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



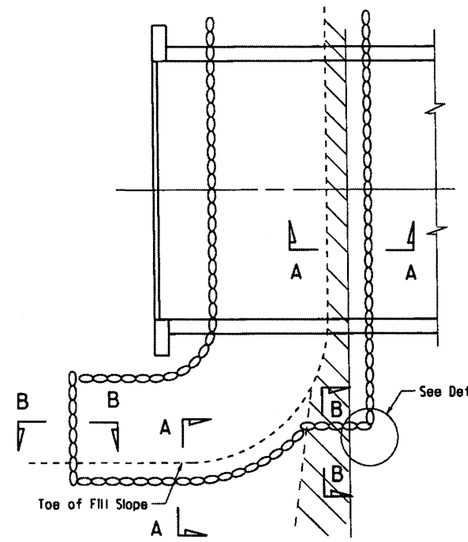
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



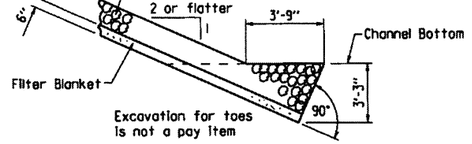
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

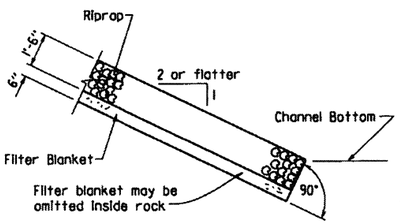


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



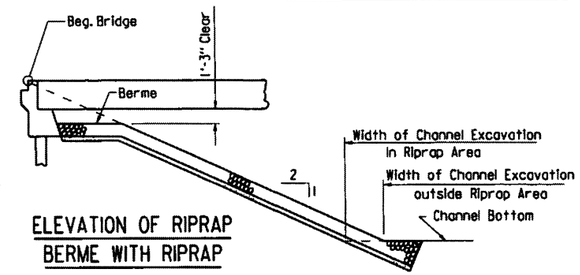
SECTION A-A

(Toe Excavation in Rock)

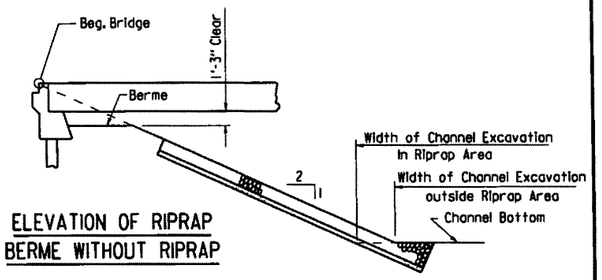
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

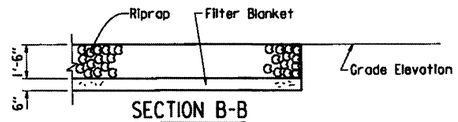
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



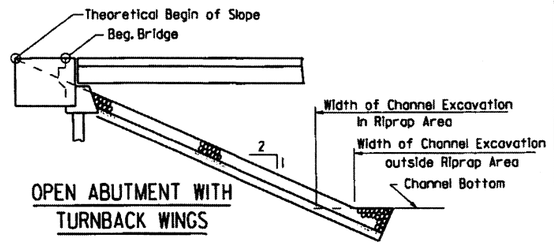
ELEVATION OF RIPRAP BERME WITH RIPRAP



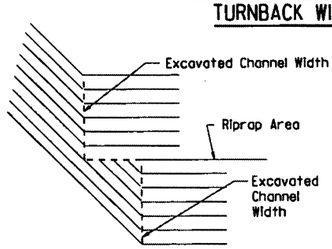
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

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

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

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

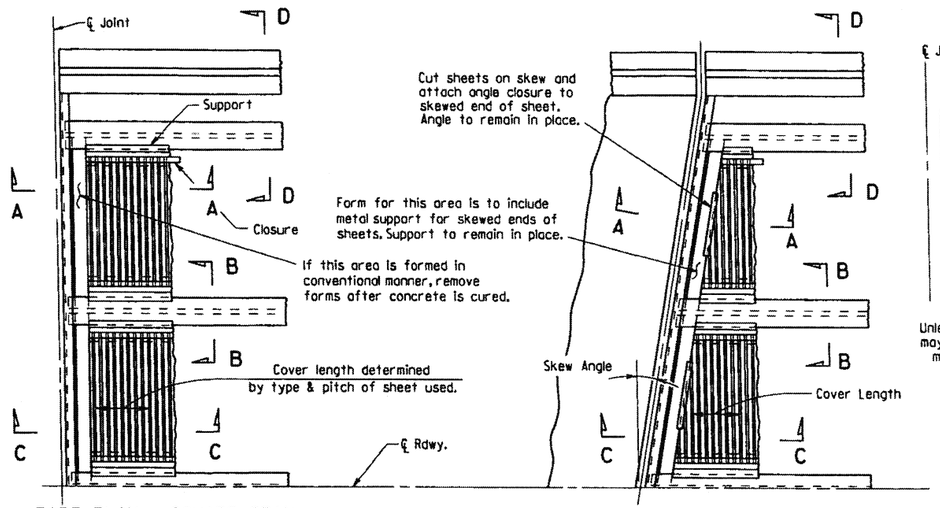
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b5500l.dgn

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

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

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

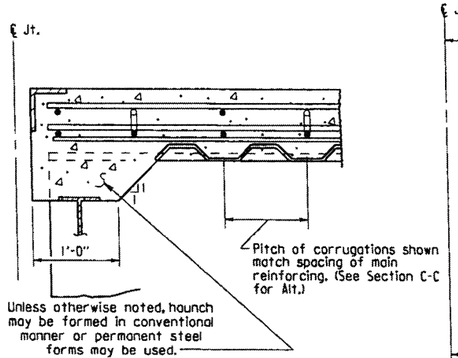


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

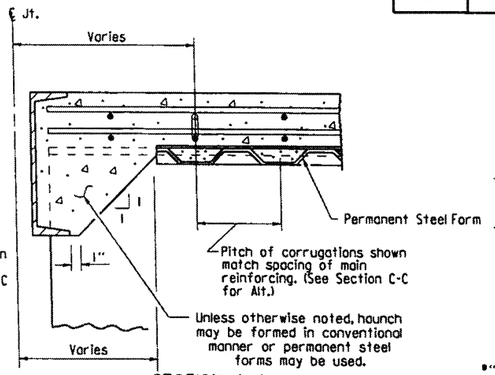
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



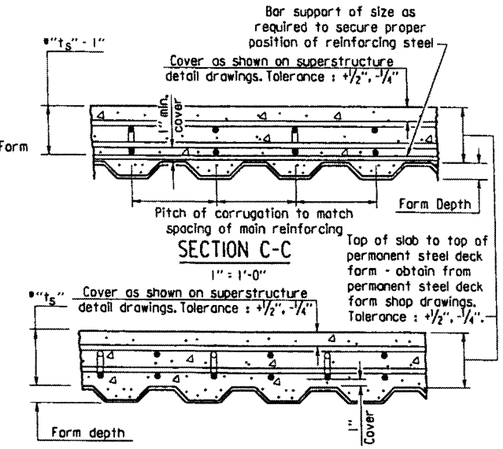
SECTION A-A

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



SECTION A-A

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

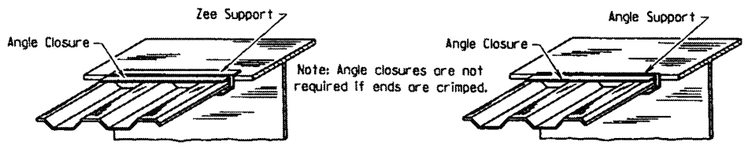


SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

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



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_S = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

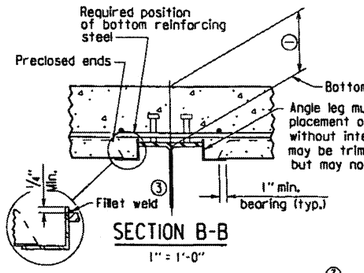
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

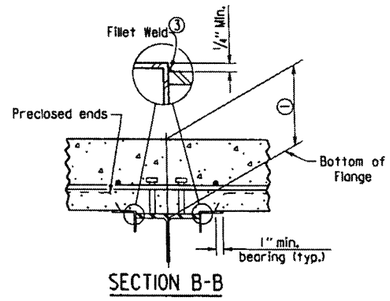
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.



SECTION B-B

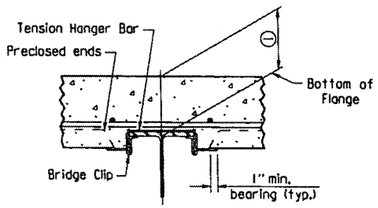
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

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



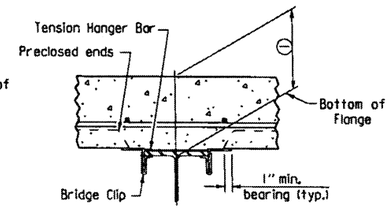
SECTION B-B

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



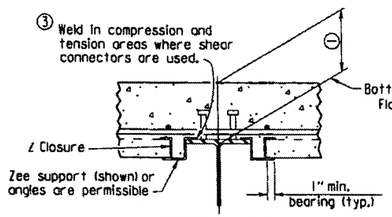
SECTION B-B

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



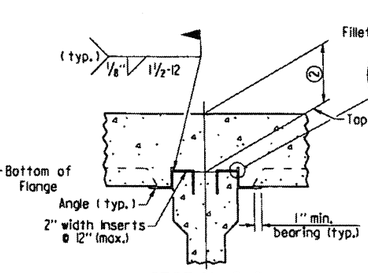
SECTION B-B

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



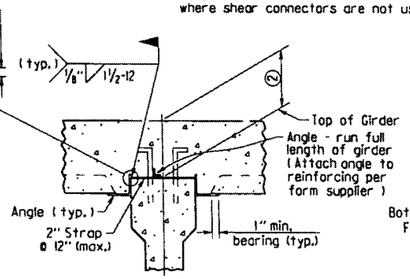
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



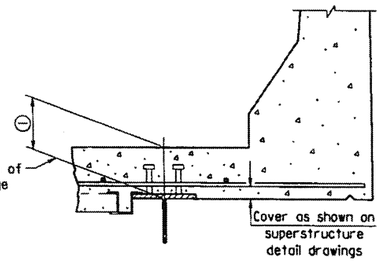
SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by insert cast in girder)



SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Strap)



SECTION D-D

1" = 1'-0"
Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KMY, Ck'd. by BEF, 3/24/16.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55005.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NONE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55005

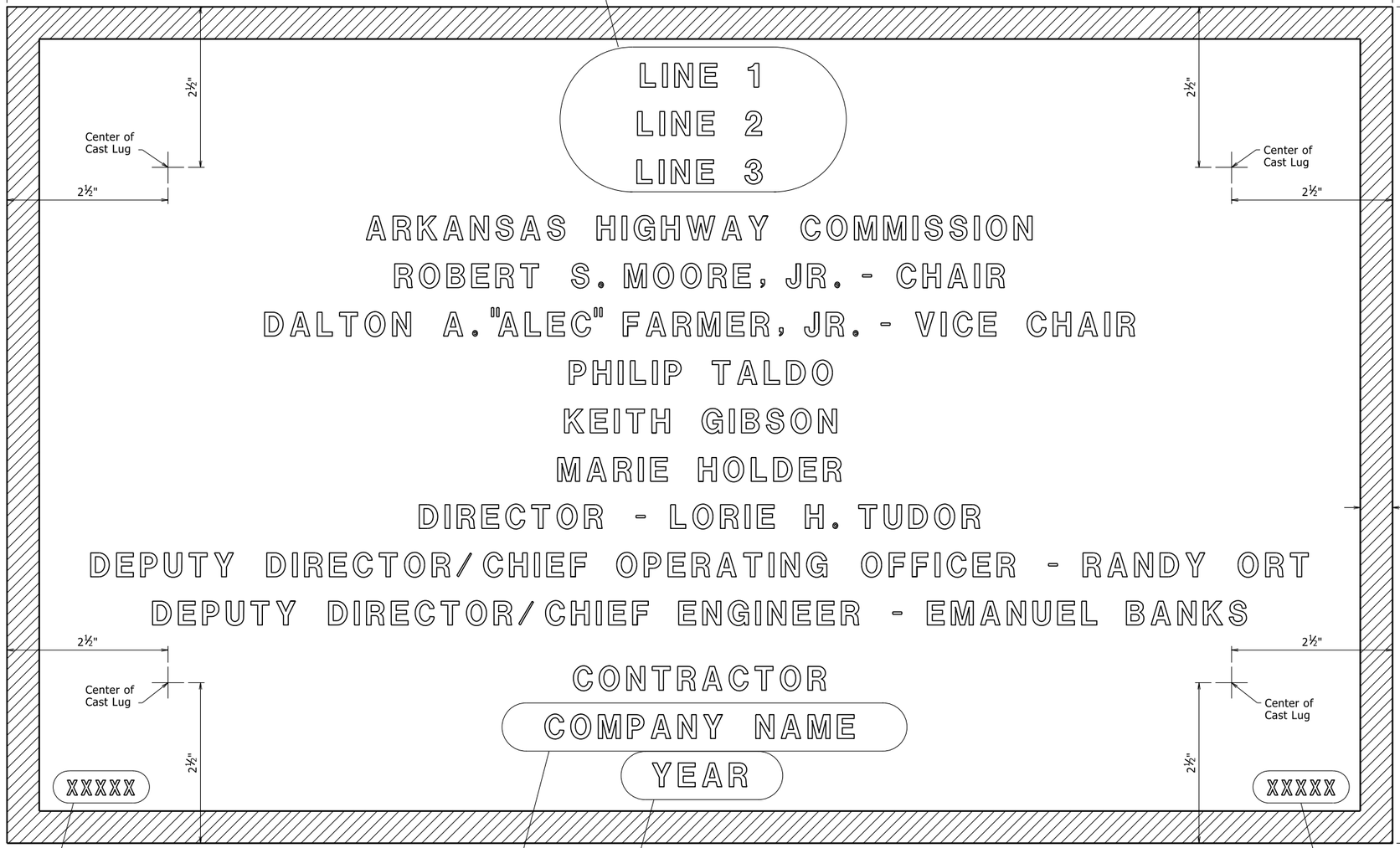
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-1-14		1-15-19	
1-14-15		3-24-2020	
1-17-17			

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	



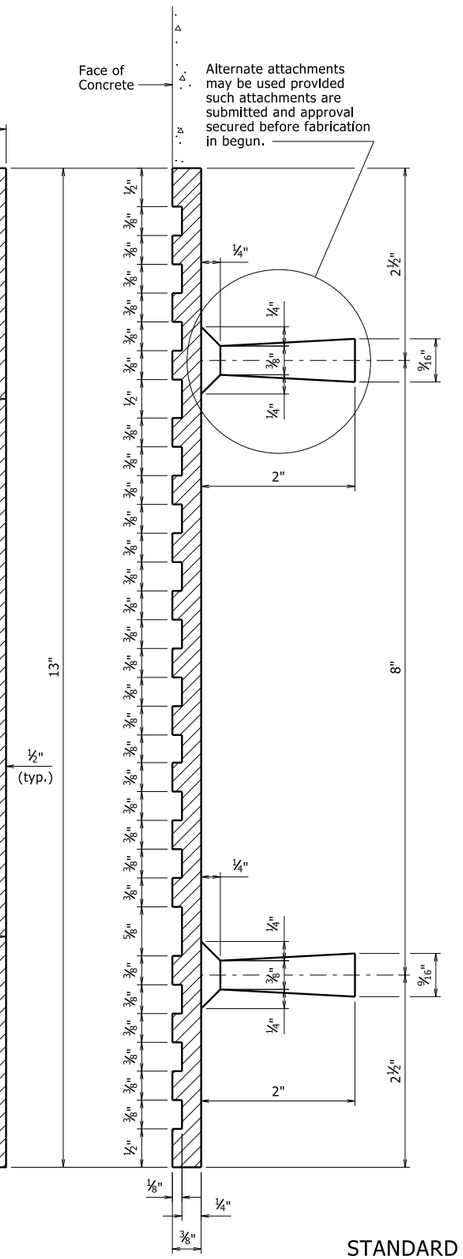
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

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

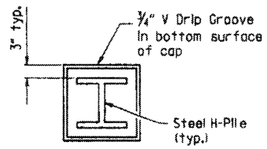
GENERAL NOTES FOR STEEL H-PILES:

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

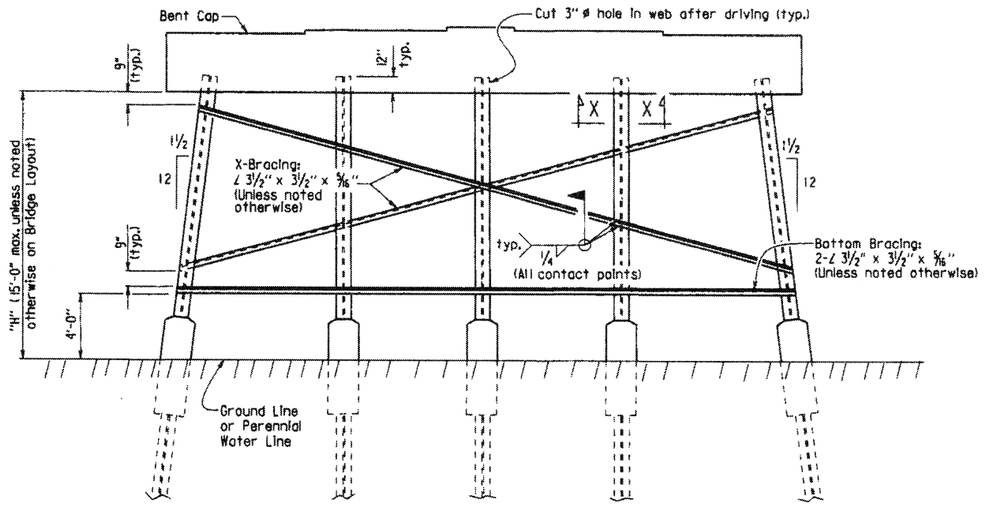
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

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.

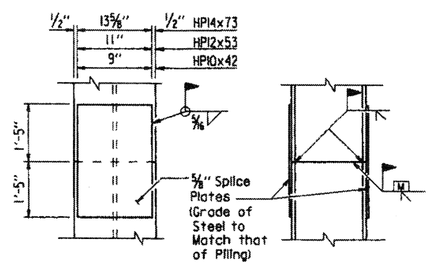
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

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)



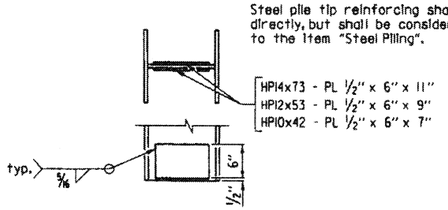
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

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:

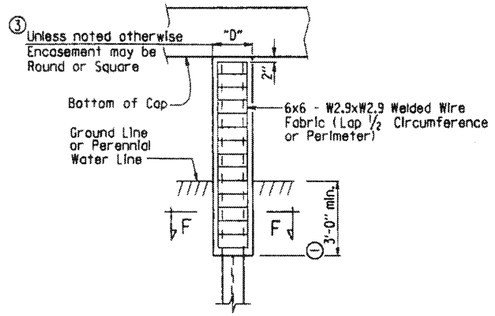
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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.

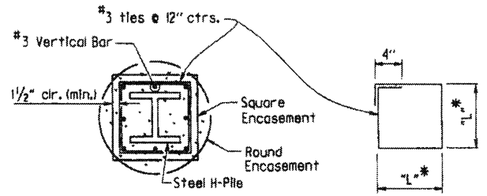
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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)

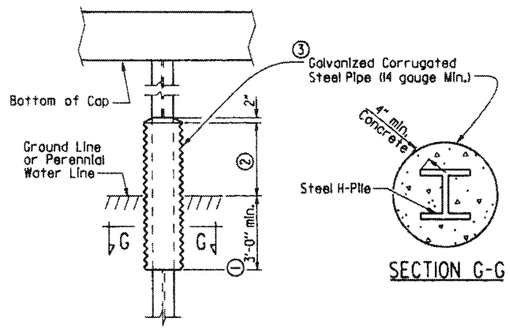


SECTION F-F

*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

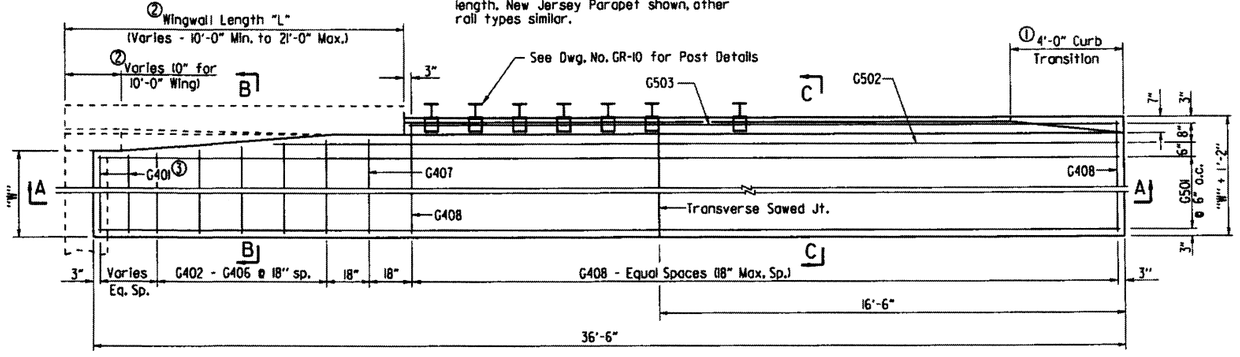
ARKANSAS STATE HIGHWAY COMMISSION

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

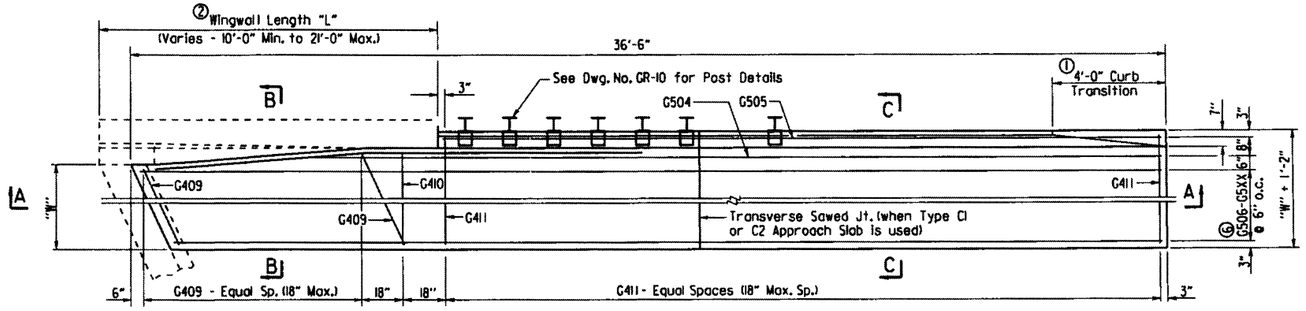
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				① TYPE C GUTTERS			55030C	

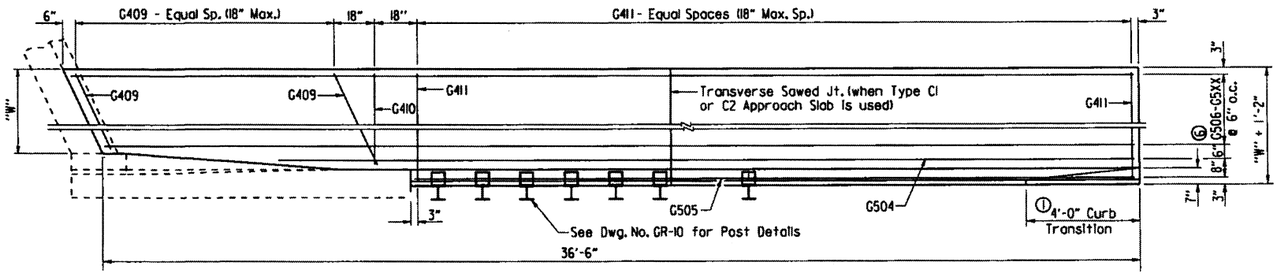


HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

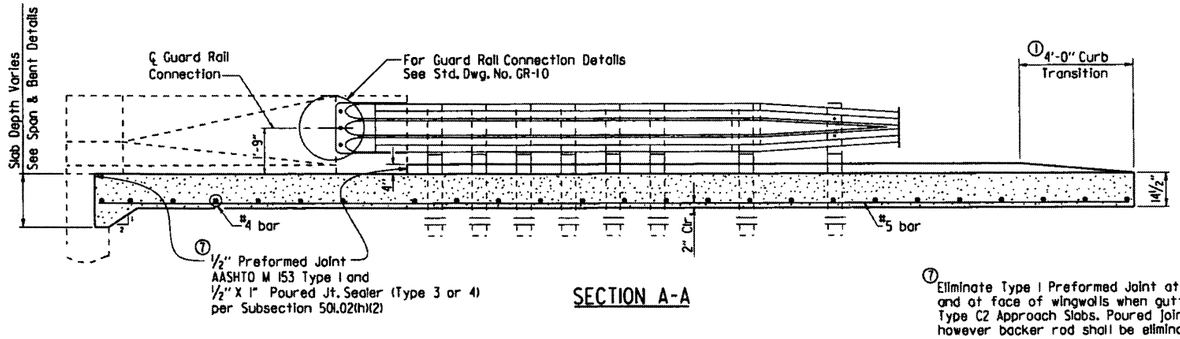
②See End Bent Details for actual wingwall length. New Jersey Parapet shown, other rail types similar.

③Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.





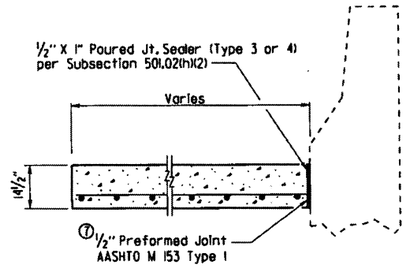
PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



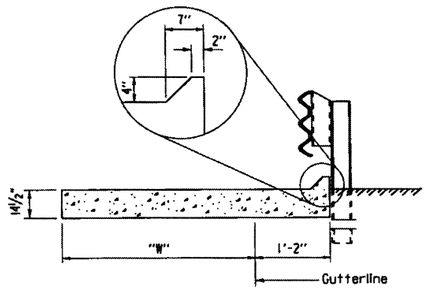
SECTION A-A

①Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

BAR LIST FOR ONE TYPE C GUTTER

	Mark	No. Req'd. for Width "W" 4'-0"	6'-0"	8'-0"	10'-0"	Length
Square Bridge	G401	④	④	④	④	"W"- 4"
	G402-G406	1 each	1 each	1 each	1 each	"W"-3" to "W"+2"
	G407	1	1	1	1	"W"+3"
	G408	④	④	④	④	"W"+ 10"
	G501	8	12	16	20	36'-2"
	G502	1	1	1	1	(41'-11") - "L"
	G503	1	1	1	1	(37'-2") - "L"
Skewed Bridge	G409	④	④	④	④	⑤
	G410	1	1	1	1	"W"+3"
	G411	④	④	④	④	"W"+ 10"
	G504	1	1	1	1	⑤
	G505	1	1	1	1	⑤
	G506 - G5XX ⑥	1 each	1 each	1 each	1 each	⑤

④No. Req'd. varies with Skew and Wingwall Length.

⑤Bar Lengths vary with Skew and Wingwall Length.

⑥G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'
G525 for "W" = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	445	8.30
6	630	11.55
8	810	14.80
10	995	18.10

Quantities are based on "L" = 10'-0".

Note:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

⑦Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

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

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

STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: ½" = 1'-0" or As Shown
DESIGNED BY: STD. DATE:

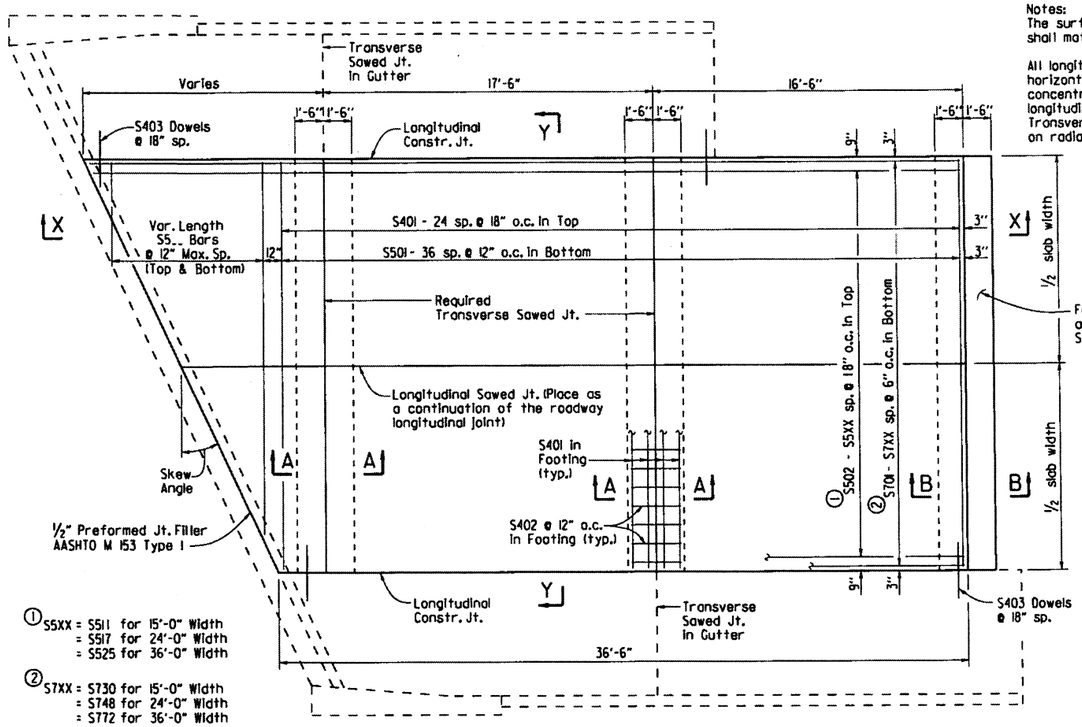
DRAWING NO. 55030C

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

1 TYPE CI APPROACH SLAB 55040CI

Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

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

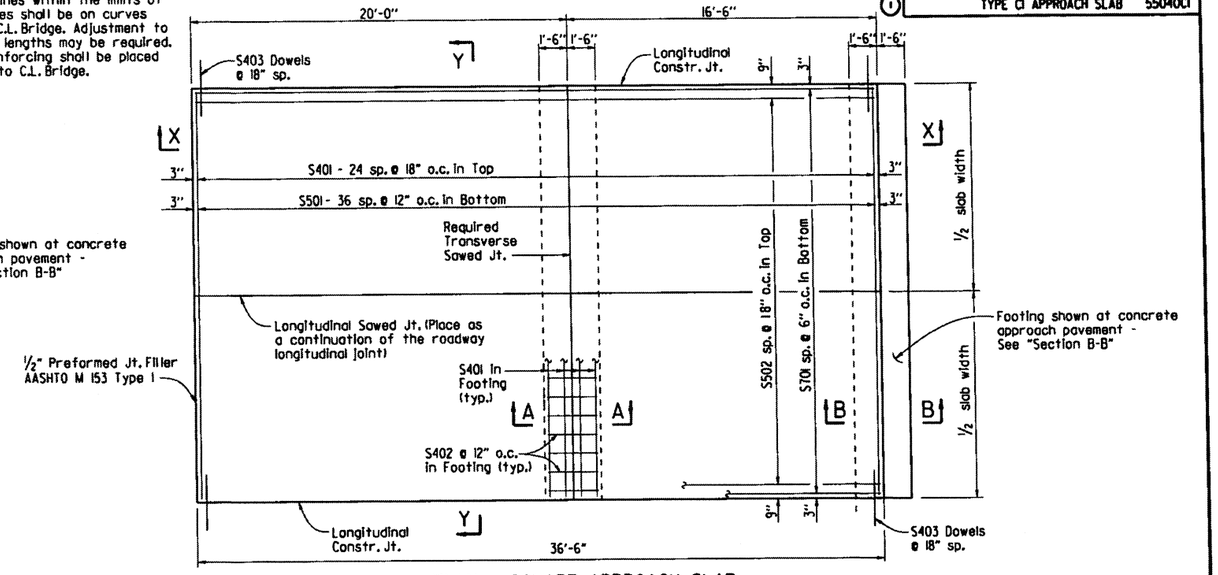


① S5XX = S511 for 15'-0" Width
= S517 for 24'-0" Width
= S525 for 36'-0" Width

② S7XX = S730 for 15'-0" Width
= S748 for 24'-0" Width
= S772 for 36'-0" Width

PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

1/4" = 1'-0"



PLAN - SQUARE APPROACH SLAB

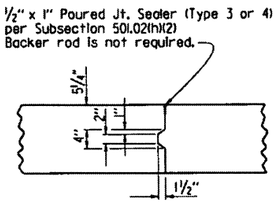
1/4" = 1'-0"

BAR LIST

(Square & Skewed Approach Slabs)

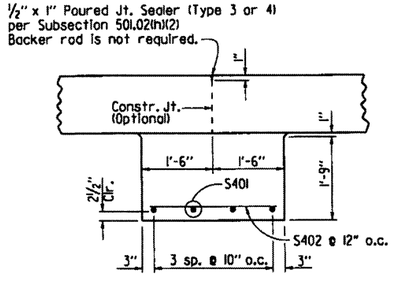
	Mark	Square No. Req'd.	Square Length	Skewed No. Req'd.	Skewed Length
15'-0" Slab Width	S401	33	14'-8"	37	14'-8"
	S402	30	2'-8"	45	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	14'-8"	37	14'-8"
	S502	10	36'-2"	—	—
	S502 - S511	—	—	1 Ea.	36.1' + 0.75'(tan skew angle) to 36.1' + 14.25'(tan skew angle)
	S5..	—	—	2 Ea.	14.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	30	36'-2"	—	—
	S701 - S730	—	—	1 Ea.	36.1' + 0.25'(tan skew angle) to 36.1' + 14.75'(tan skew angle)
24'-0" Slab Width	S401	33	23'-8"	37	23'-8"
	S402	48	2'-8"	72	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	23'-8"	37	23'-8"
	S502	16	36'-2"	—	—
	S502 - S517	—	—	1 Ea.	36.1' + 0.75'(tan skew angle) to 36.1' + 23.25'(tan skew angle)
	S5..	—	—	2 Ea.	23.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	48	36'-2"	—	—
	S701 - S748	—	—	1 Ea.	36.1' + 0.25'(tan skew angle) to 36.1' + 23.75'(tan skew angle)
36'-0" Slab Width	S401	33	35'-8"	37	35'-8"
	S402	72	2'-8"	108	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	35'-8"	37	35'-8"
	S502	24	36'-2"	—	—
	S502 - S525	—	—	1 Ea.	36.1' + 0.75'(tan skew angle) to 36.1' + 35.25'(tan skew angle)
	S5..	—	—	2 Ea.	35.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	72	36'-2"	—	—
	S701 - S772	—	—	1 Ea.	36.1' + 0.25'(tan skew angle) to 36.1' + 35.75'(tan skew angle)

* Varies with skew angle



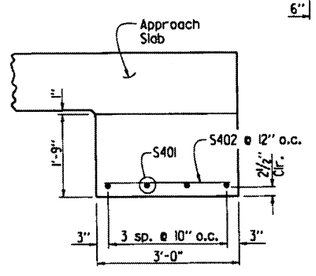
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"



SECTION A-A

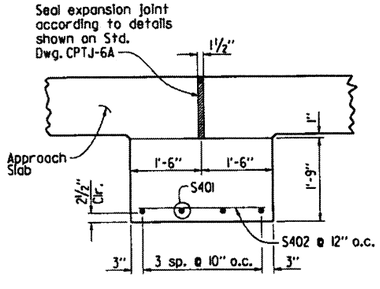
N.T.S.



SECTION B-B

AT ASPHALT APPROACH PAVEMENT

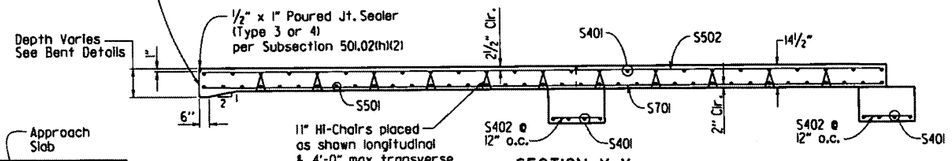
N.T.S.



SECTION B-B

AT CONCRETE APPROACH PAVEMENT

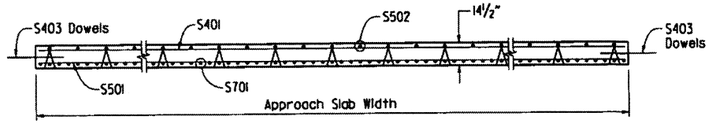
N.T.S.



SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" = 1'-0"



SECTION Y-Y

N.T.S.

TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
15'-0"	3640	30.75
24'-0"	5775	49.15
36'-0"	8620	73.75

GENERAL NOTES

This drawing shall be used for Approach Slabs in Seismic Performance Zone 1 and for the maximum skew angles shown below:

15'-0" Slab Width: Maximum Skew Angle = 50°
24'-0" Slab Width: Maximum Skew Angle = 40°
36'-0" Slab Width: Maximum Skew Angle = 30°

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

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

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

STANDARD DETAILS FOR TYPE CI APPROACH SLAB

ARKANSAS STATE HIGHWAY COMMISSION

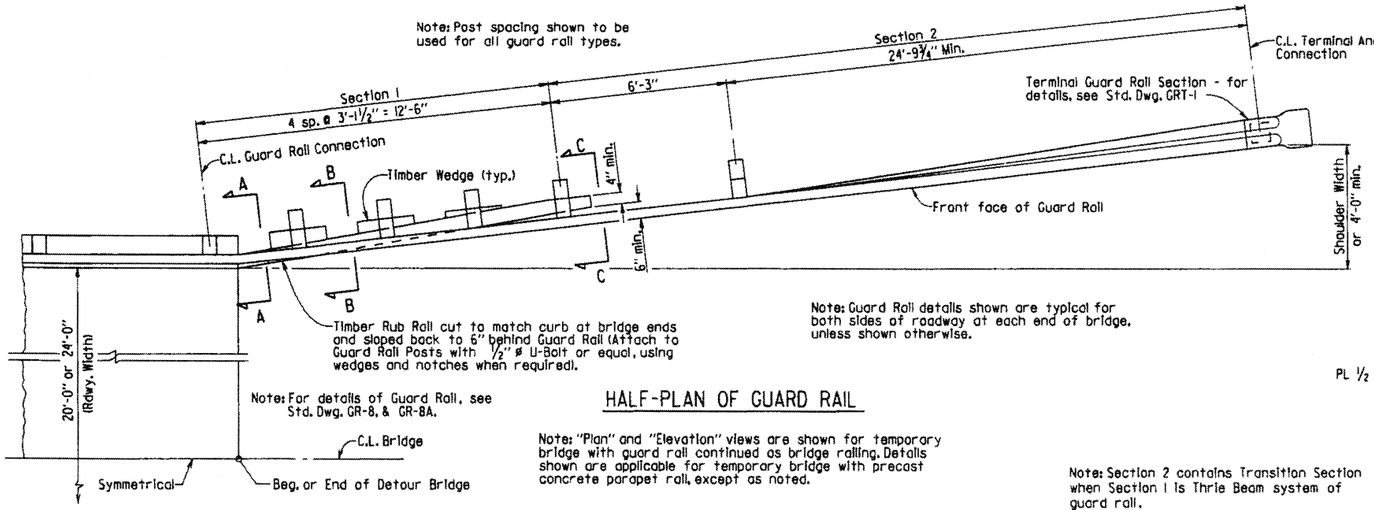
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040ci.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

DRAWING NO. 55040CI

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		TEMP. BRIDGE 55054		

Note: Post spacing shown to be used for all guard rail types.



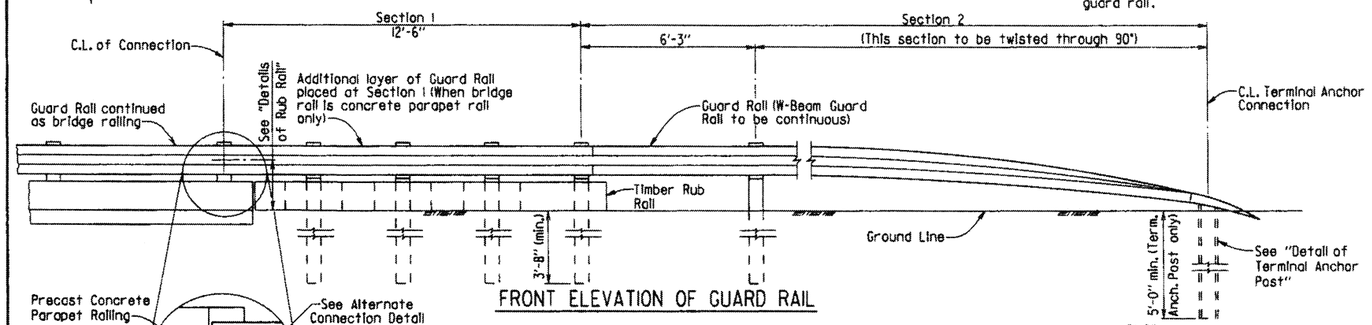
Note: For details of Guard Rail, see Std. Dwg. GR-8, & GR-8A.

HALF-PLAN OF GUARD RAIL

Note: Guard Rail details shown are typical for both sides of roadway at each end of bridge, unless shown otherwise.

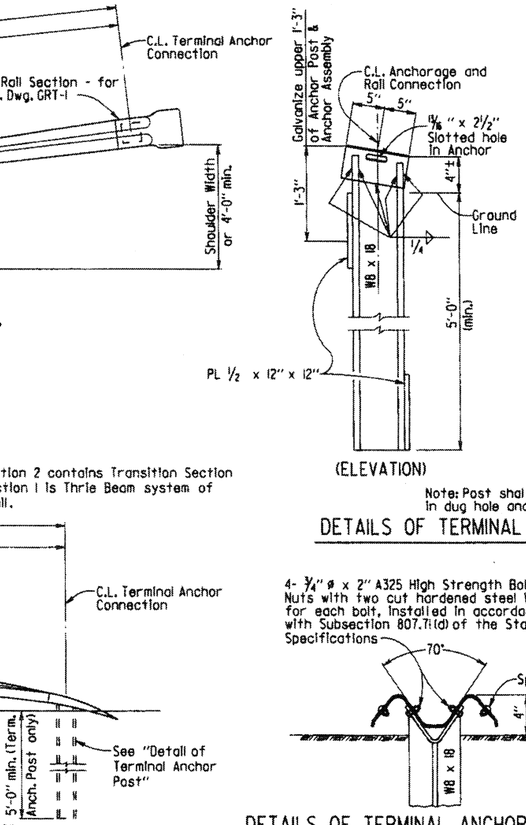
Note: "Plan" and "Elevation" views are shown for temporary bridge with guard rail continued as bridge railing. Details shown are applicable for temporary bridge with precast concrete parapet rail, except as noted.

Note: Section 2 contains Transition Section when Section 1 is Thrie Beam system of guard rail.



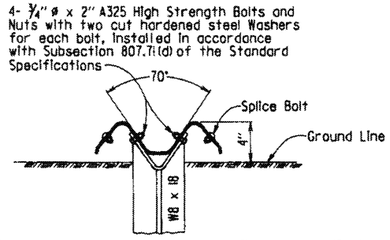
FRONT ELEVATION OF GUARD RAIL

Note: For details of Thrie Beam system of guard rail, see Std. Dwg. GR-10 & GR-10A. Thrie Beam rail and five bolt connection as shown on GR-10 are required when precast rail has five cast holes for guard rail connection.



Note: Post shall be driven or set in dug hole and compacted.

DETAILS OF TERMINAL ANCHOR POST



DETAILS OF TERMINAL ANCHOR CONNECTION

GENERAL NOTES

Bridge End Protection is required on both sides of roadway at both ends of temporary bridge. The end protection system shall consist of a minimum of two end sections (Section 1 and Section 2). If additional guard rail is used, it shall be placed in Section 2 and shall have a maximum post spacing of 6'-3".

If W-Beam Guard Rail is also used as Bridge Rail, it shall be continuous from terminal anchor post to terminal anchor post with splices as shown on Std. Drwg. GR-8.

A doubled guard rail beam section (One W-Beam Rail section or one Thrie Beam Rail section nested inside the other) shall be required for Section 1 if the guard rail is not continued as bridge rail, but connects directly to a precast concrete parapet bridge rail end.

Rub rails shown in Section 1 are representative of members required to transition the curb or wheel guard section to a minimum distance behind the face of guard rail.

Timber rub rail, regardless of species, must be of equal or better strength than no. 2 southern pine or douglas fir, graded by the standard grading rules. All timber widths and thicknesses are shown as nominal.

Except as noted, bolts shall conform to the requirements of ASTM A 307 and minimum dimensions as shown. Malleable or cast iron washers to be used under all bolt heads and nuts bearing on timber. High strength bolts shall conform to Section 807.

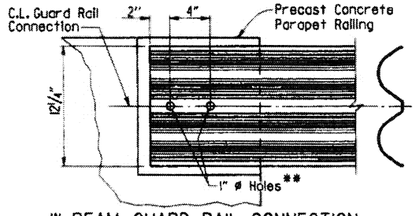
Guard rail as described in Subsection 617.01 of the Standard Specifications and these plans shall be constructed in accordance with Subsection 617.03. Subsection 617.02 is modified to allow the use of materials consistent with the requirements of Section 603.

Payment: The bridge end protection system completed and accepted will not be paid for directly, but shall be included in the contract unit price bid per linear foot for temporary bridge structure, which price shall be full compensation for furnishing materials and erecting guard rail, line posts, blockouts, rub rails, terminal anchor posts, etc.; and for all labor, tools, equipment and incidentals necessary to complete the work.

GUARD RAIL CONNECTION COMBINATIONS

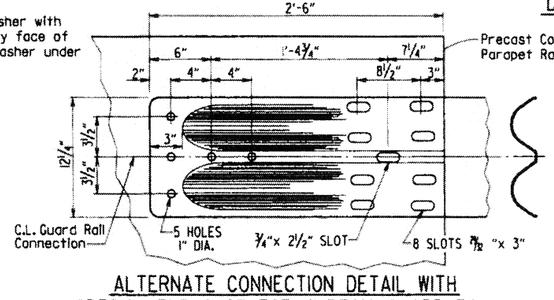
BRIDGE RAIL TYPE	GUARD RAIL AND CONNECTION TYPE
Guard Rail continued as bridge railing	W-Beam Guard Rail. See Std. Drwg. GR-8 for splice details.
Concrete Parapet with 12½" x 14" x 3⅜" notch and two cast in holes	W-Beam Guard Rail fastened with two high-strength bolts as shown; blunt end on guard rail. Guard Rail doubled at Section 1.
Concrete Parapet with Concrete Insert Anchor assembly (4-Bolt embedded Anchor) flush with rail face	W-Beam Guard Rail fastened with four high-strength bolts; Special End Shoe. Guard Rail doubled at Section 1.
Concrete Parapet with 5 cast in holes	Thrie Beam Guard Rail; five high-strength through bolts with back-up plate; special end shoe as shown on Std. Dwg. GR-10. Guard Rail doubled at Section 1. Section 2 contains transitional rail and W-Beam Guard Rail.

** Two ¾" ø H.S. Bolts are required. Use 7" x 2½" x ⅜" washer with two ⅞" ø holes against back of parapet and on roadway face of guard rail (Bend to fit guard rail) with 1½" o.d. steel washer under heads and nuts (Clipped to 1⅝" x 1½" at nuts).



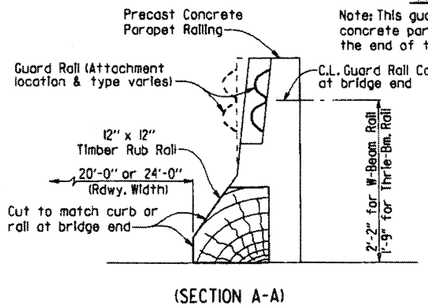
W-BEAM GUARD RAIL CONNECTION AT CONCRETE PARAPET RAIL

Note: This guard rail connection will only be allowed on precast concrete parapet rail units with a 12½" x 14" x 3⅜" notch at the end of the unit for connection of guard rails.

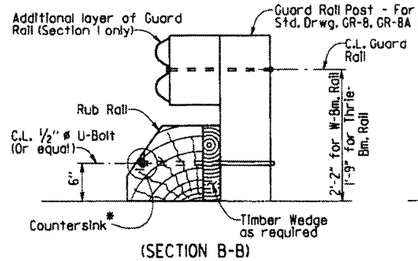


ALTERNATE CONNECTION DETAIL WITH SPECIAL END SHOE FOR W-BEAM GUARD RAIL CONNECTION AT CONCRETE PARAPET RAIL

Note: Special End Shoe and four ⅞" ø x 2½" H.S. Bolts are required when concrete insert anchor assembly is present in precast rail unit.

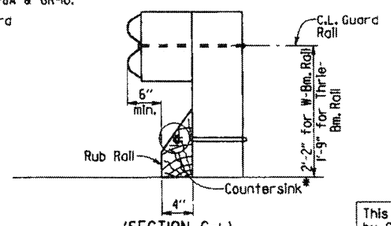


(SECTION A-A)



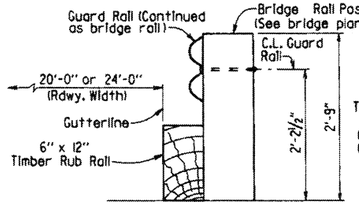
(SECTION B-B)

DETAILS OF RUB RAIL (CONC. PARAPET BRIDGE RAIL)

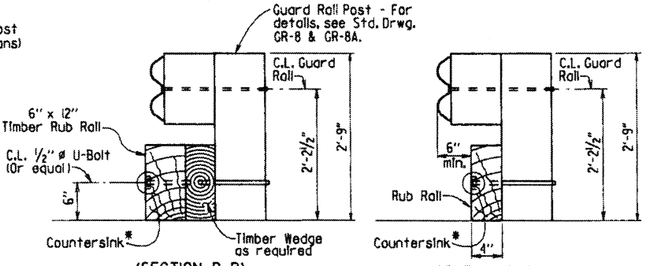


(SECTION C-C)

* U-Bolt Assembly, or equal, shall not project beyond rdwy. face of Rub Rail at any location.



(SECTION A-A)



(SECTION B-B)

(SECTION C-C)

DETAILS OF RUB RAIL (CONTINUOUS W-BEAM RAIL)

This document was originally issued and sealed by Carl J. Fuselier, PE No. 7510, on April 17, 2014. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

STANDARD DETAILS FOR TEMPORARY BRIDGE STRUCTURE BRIDGE END PROTECTION SYSTEM

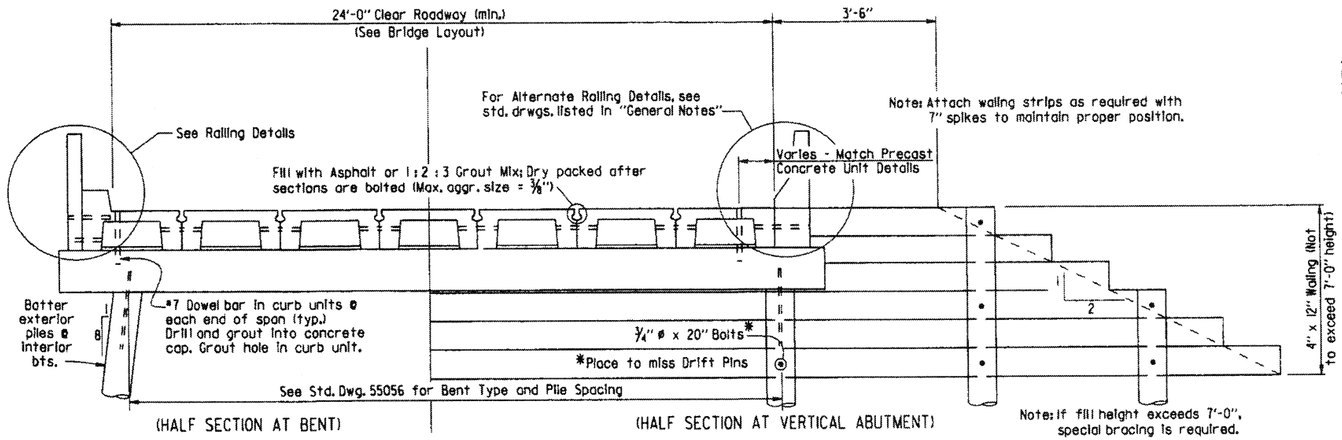
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

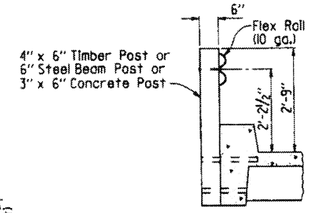
LITTLE ROCK, ARK.

DRAWN BY:	JYP	DATE:	4-17-14	FILENAME:	b55054.dgn
CHECKED BY:	AMS	DATE:	4-17-14	SCALE:	No Scale
DESIGNED BY:	STD.	DATE:	—		

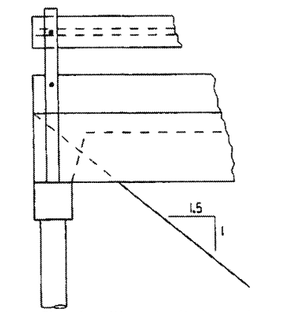
DRAWING NO. 55054



TYPICAL ROADWAY SECTION

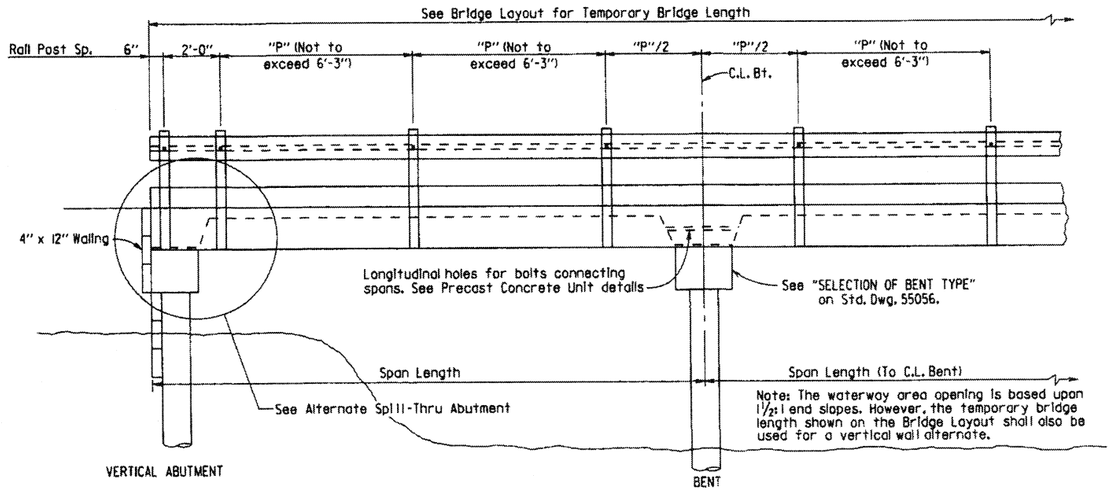


RAILING DETAILS

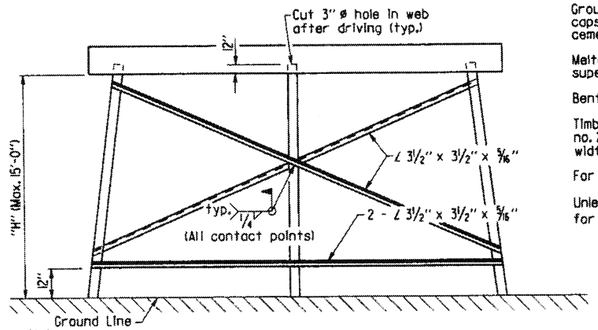


Note: Piles for Alternate Abutment to be driven after embankment is in place.

ALTERNATE SPILL-THRU ABUTMENT



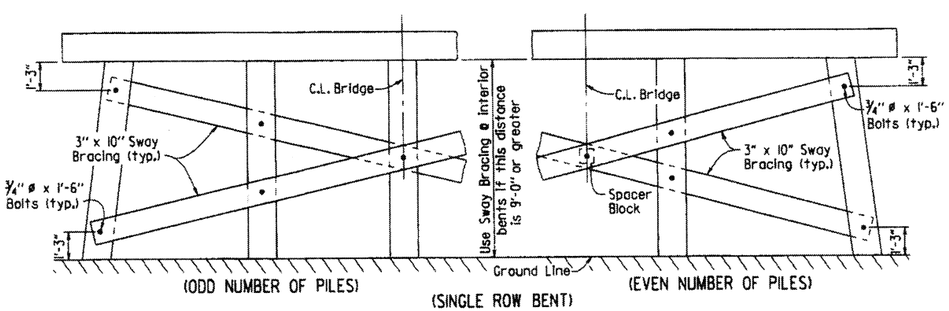
LONGITUDINAL SECTION

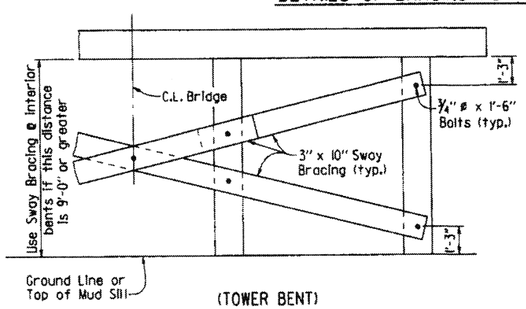


Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment for any bracing required shall be considered incidental to Item 603 "Temporary Bridge Structure".

Omit bottom bracing when "H" is less than 10'. Omit all bracing when "H" is less than 5'. When "H" exceeds 15', additional X-bracing is required to provide a maximum unbraced pile length of 14'.

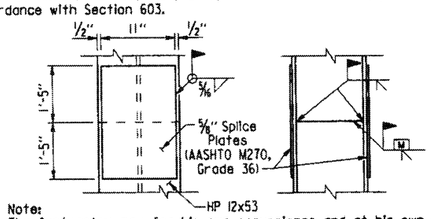
DETAILS OF BRACING FOR STEEL PILES





DETAILS OF SWAY BRACING FOR TIMBER PILES

Note: Sway Bracing, if required, shall be used on both lines of piles for Tower Bents.



Note:
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft. A proprietary steel pile splicer sufficient to develop the full strength of the section may be substituted for the details shown. Pile splicers shall be installed in accordance with manufacturer's recommendations.

PILE SPLICE DETAIL

SHEET 1 OF 2

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		TEMP. BRIDGE	55055	

GENERAL NOTES

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 2002 Edition, with current interim specifications.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable special provisions and supplemental specifications.

SEISMIC PERFORMANCE ZONE: 1

DESIGN LIVE LOADS: H 15-44 (No Overload).

DESIGN DEAD LOADS: 50 lbs. per cu. ft. for lumber
150 lbs. per cu. ft. for concrete

Precast Concrete Units shall comply with the requirements of AHTD standard drawings and special provisions. Drawings for old style units are within the drawing series 5291 thru 5307 and 14800 thru 14899. New style units (Current Design) are within the drawing series 15190 thru 15400.

Load Factor Design is used for the new style precast concrete units. Allowable Stress Design is used for the old style precast concrete units and timber components. The allowable unit stresses used assume normal duration of loading for stress grades of sawn lumber and are as follows:

fb=1200 psi
fv=85 psi

Concrete shall be Class S with a minimum 28 day compressive strength f'c = 3500 psi unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Structural Steel shall be AASHTO M 270, Grade 36 unless otherwise noted.

Timber piling shall comply with Section 818 of the Standard Specifications and shall be driven to a minimum bearing capacity of 20 tons per pile. Steel piling shall be HP12x53 and shall be driven to a minimum bearing capacity of 44 tons per pile.

Malleable or cast iron washers shall be used under all bolt heads and nuts bearing on timber. Standard washers shall be provided under all bolt heads and nuts in connection with concrete.

Bolts shall conform to the requirements of ASTM A 307. ASTM A 307 Threaded Rods may be used in lieu of bolts. Minimum dimensions are shown for bolts, dowels, and drift pins.

Grout placed around Drift Pins in piles shall be allowed to cure for 72 hours before caps are used to support the superstructure. Grout to consist of one part portland cement to two parts sand.

Melted sulfur may be used in lieu of grout placed around drift pins. The superstructure may be placed as soon as the sulfur has hardened.

Bent caps to be handled from points approximately 5' from the ends.

Timber material, regardless of species, must be of equal or better strength than no. 2 southern pine or douglas fir, graded by the standard grading rules. All timber widths and thicknesses are shown as nominal.

For additional notes concerning "Bridge End Protection System", see Std. Dwg. 55054.

Unless otherwise noted, the Temporary Bridge Structure shall comply with and be paid for in accordance with Section 603.

This document was originally issued and sealed by Carl J. Fuselier, PE No. 7510, on April 17, 2014. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

STANDARD DETAILS FOR TEMPORARY BRIDGE STRUCTURE PRECAST CONCRETE SPANS 24' ROADWAY WIDTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

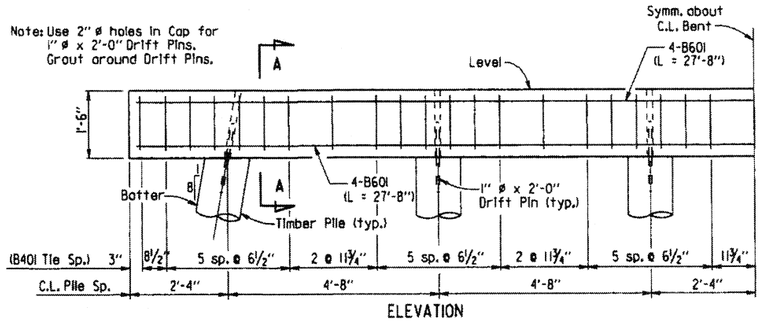
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 4-17-14 FILENAME: b55055.dgn
CHECKED BY: AMS DATE: 4-17-14 SCALE: No Scale
DESIGNED BY: STD. DATE: —

DRAWING NO. 55055

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	TEMP. BRIDGE		55056	

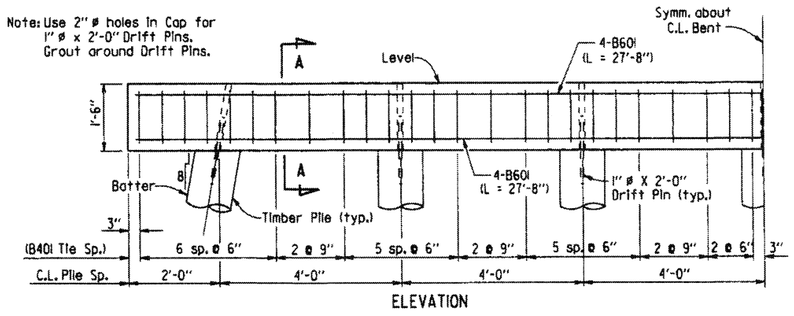
Note: Reinforcing steel in cap shall be placed to not interfere with dowel bars.



ELEVATION

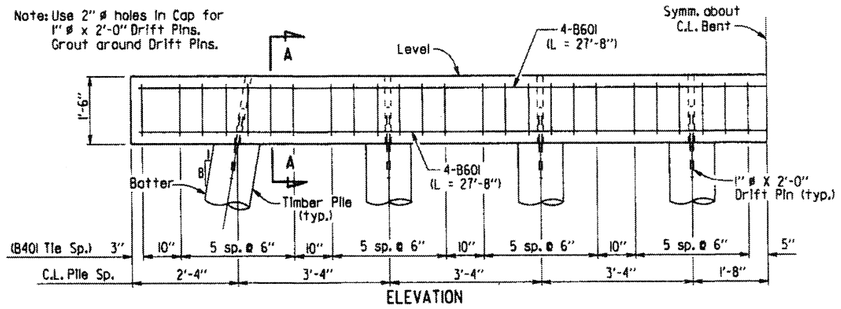
PRECAST CAP & TIMBER PILES
("S1" + "S2" ≤ 38')

"S" = Span Length



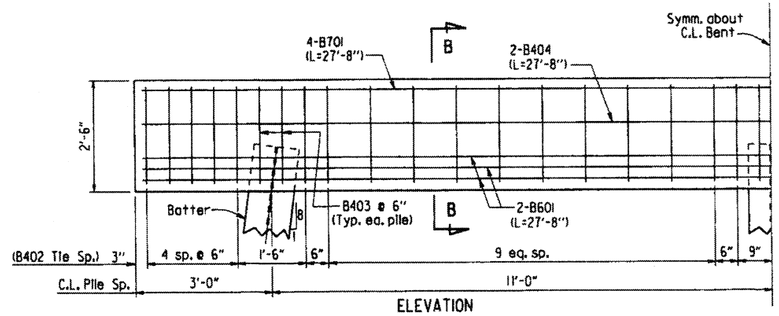
ELEVATION

PRECAST CAP & TIMBER PILES
(38' < "S1" + "S2" ≤ 50')



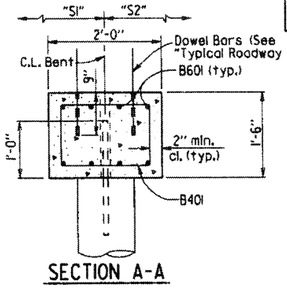
ELEVATION

PRECAST CAP & TIMBER PILES
(50' < "S1" + "S2" ≤ 62')



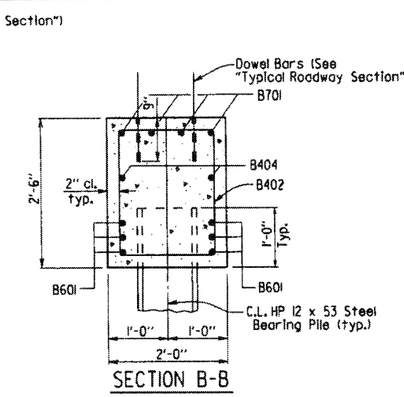
ELEVATION

CAST IN PLACE CAP & HP 12X53 PILES

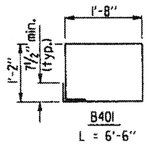


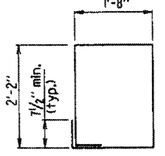
SECTION A-A

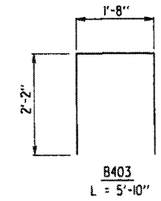
NOTE: THE ENDS OF ALL PRECAST SPANS SHALL BE FIXED TO THE CAP USING 1 DOWEL BAR IN EACH OF THE CURB UNITS.

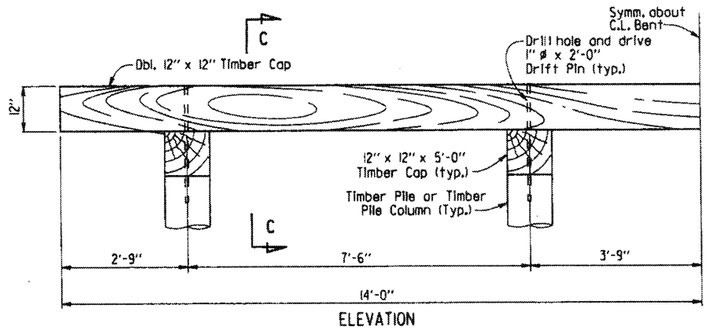


SECTION B-B



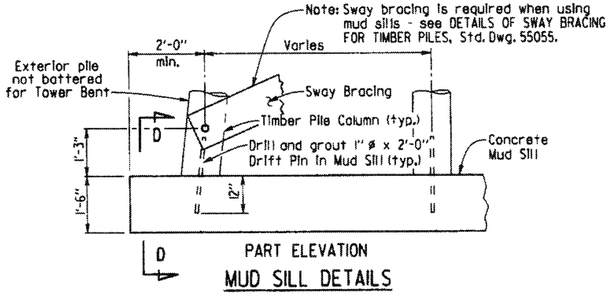






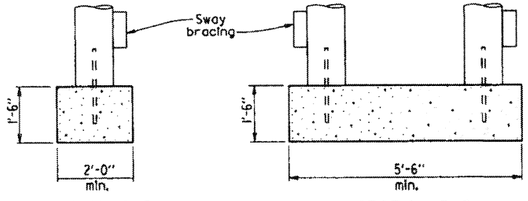
ELEVATION

TOWER BENT - TIMBER CAP & PILES



PART ELEVATION

MUD SILL DETAILS



SECTION D-D
(When bottom of cap to top of mud sill is 10' or less)

SECTION D-D
(When bottom of cap to top of mud sill is greater than 10')

SELECTION OF BENT TYPES

These temporary bridge drawings provide the following bent types:
- Driven timber piles with precast concrete cap.
- Driven steel HP 12x53 piles with cast in place concrete cap.
- Tower bent with driven timber piles and timber cap.
- Mud sill with timber pile columns and precast concrete cap.
- Tower bent with mud sill and timber pile columns and timber cap.

Guidelines to be used in determining the appropriate bent type are:

1) Driven piles may be used at intermediate bents if a pile penetration of at least 15' below the ground line can be obtained. At end bents, a pile penetration of at least 5' below the bottom of cap is required. Pile penetration measurements at end bents can include embankment, but fill material may not be placed around intermediate bent piles in order to meet the 15' requirement.

2) If driven timber piles are used at intermediate bents and the distance from the bottom of cap to ground line exceeds 15' at any intermediate bent, tower bents must be used at the minimum rate of one tower bent for every 160' of total bridge length. Tower bent(s), when required, shall be placed at the bent location(s) having the greatest distance from bottom of cap to ground line.

3) If piles cannot be practically driven at a bent, mud sills shall be used. All soft and yielding material shall be removed from the bearing area before placing the sill concrete.

4) Timber piles shall be used as columns in mud sills. The column spacing shall be the same as that used for driven timber pile bents for the appropriate span lengths involved.

5) If a mud sill is to be used and the distance from the bottom of cap to ground line is more than 10', a tower bent with mud sill must be used at that location.

6) A timber cap may be used only if tower bents are used.

SECTION C-C

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2

STANDARD DETAILS FOR TEMPORARY BRIDGE STRUCTURE PRECAST CONCRETE SPANS 24' ROADWAY WIDTH

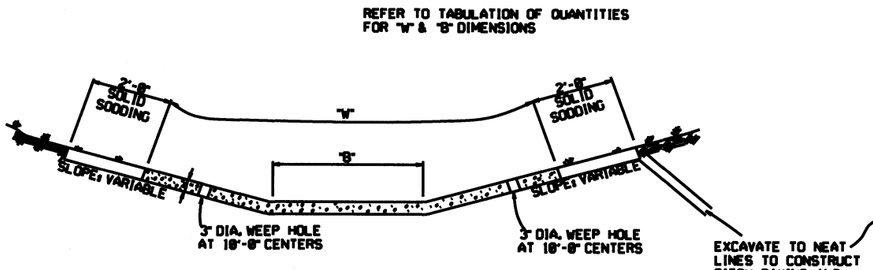
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

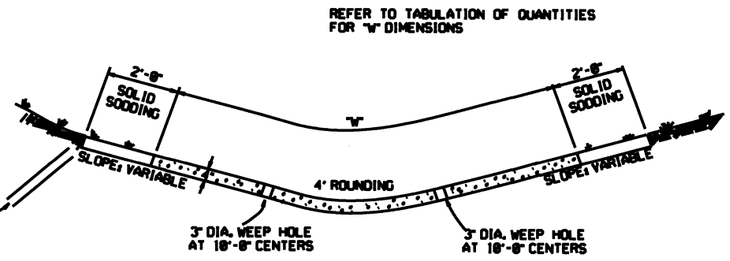
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 4-17-14 FILENAME: b55055.dgn
CHECKED BY: AMS DATE: 4-17-14 SCALE: No Scale
DESIGNED BY: STD. DATE: —

DRAWING NO. 55056

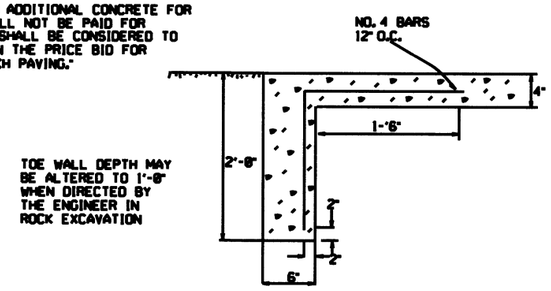


TYPE A

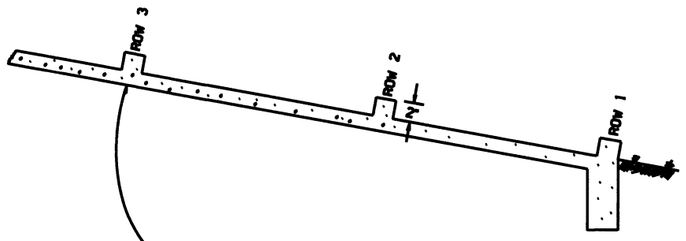


TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."

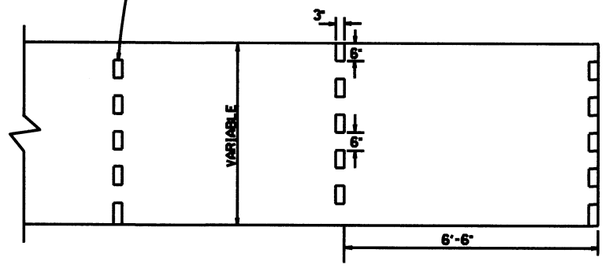


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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.

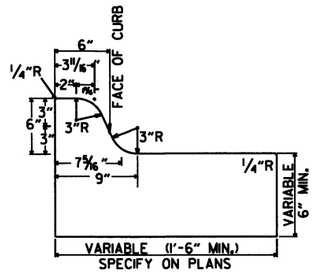
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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	
10-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	663-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-6-87	MODIFIED NOTE ON ENERGY DISS.	642-1-6-87
11-1-86	ADDED NOTE TO ENERGY DISS.	488-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED	
	TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

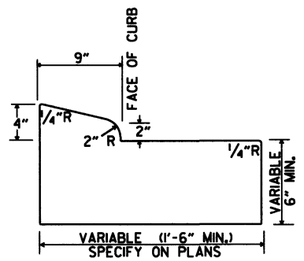
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

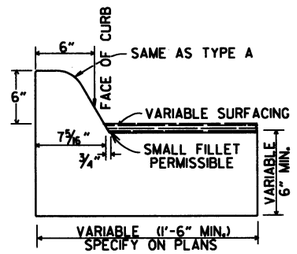
STANDARD DRAWING CDP-1



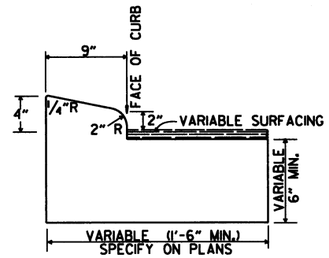
TYPE A



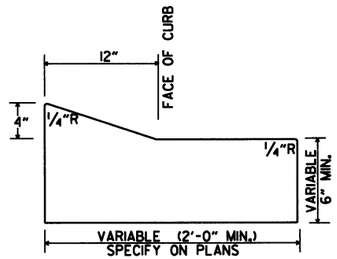
TYPE B-1



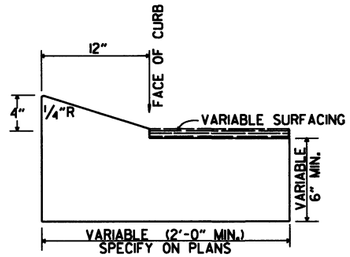
TYPE C



TYPE B-2

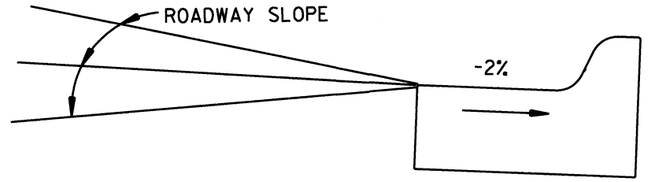


TYPE E-1



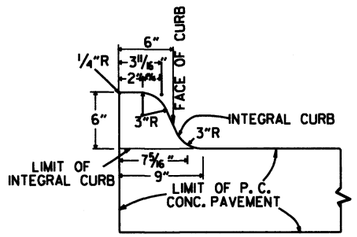
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

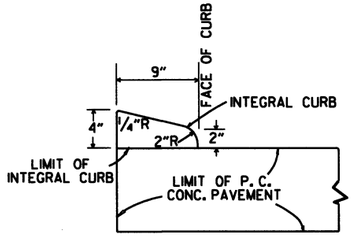


DETAIL OF GUTTER SLOPE

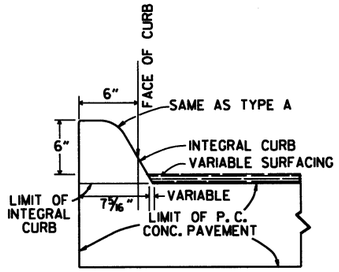
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

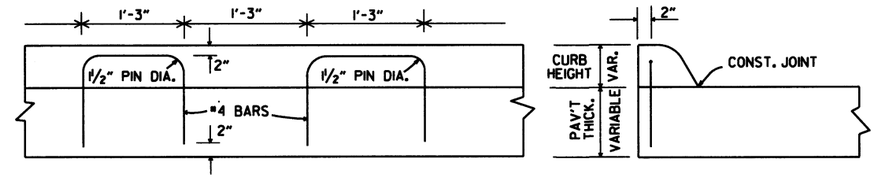


TYPE B

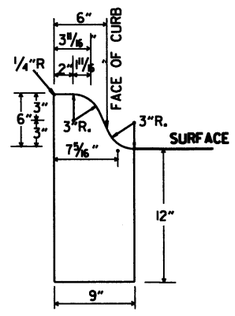


TYPE C

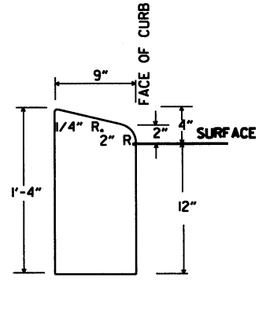
INTEGRAL CURB



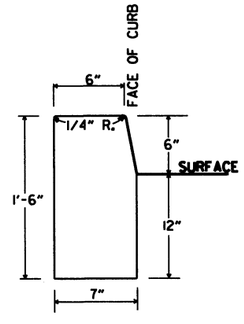
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



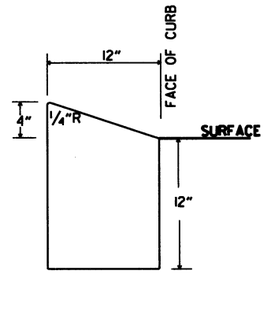
TYPE A



TYPE B

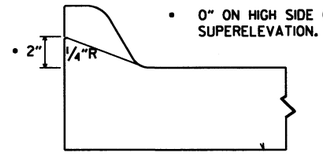


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

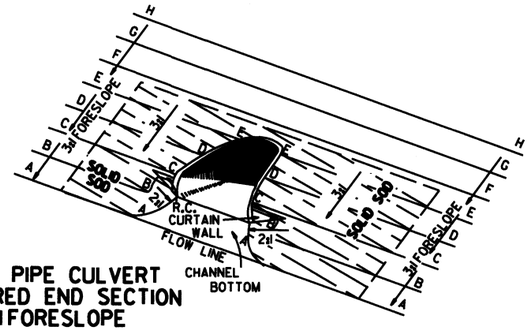
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-15-01	REVISED CONCRETE CURB TYPE B	
11-18-96	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	502-10-2-72

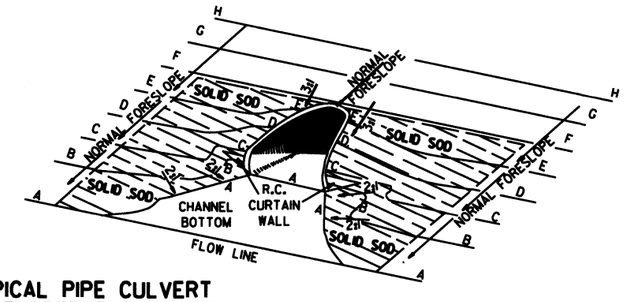
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

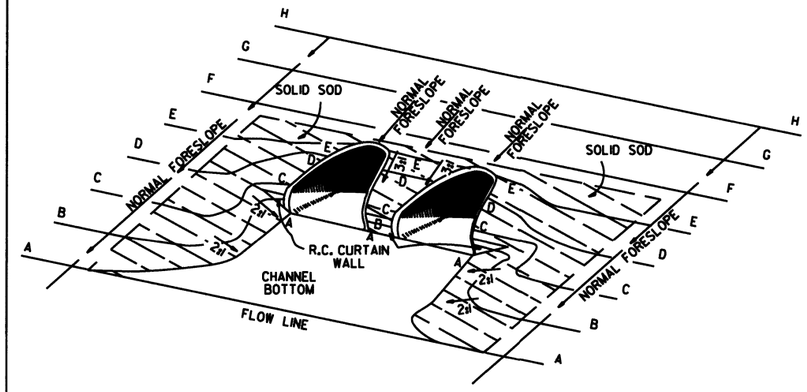
STANDARD DRAWING CG-1



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

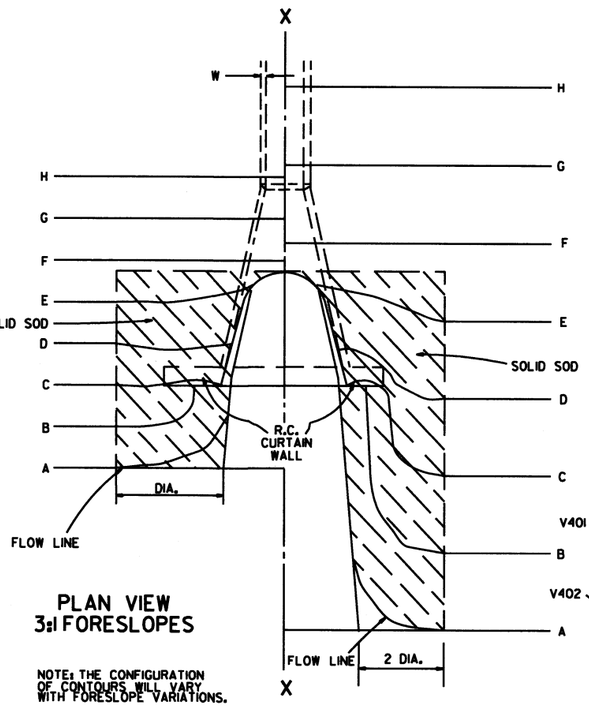
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	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

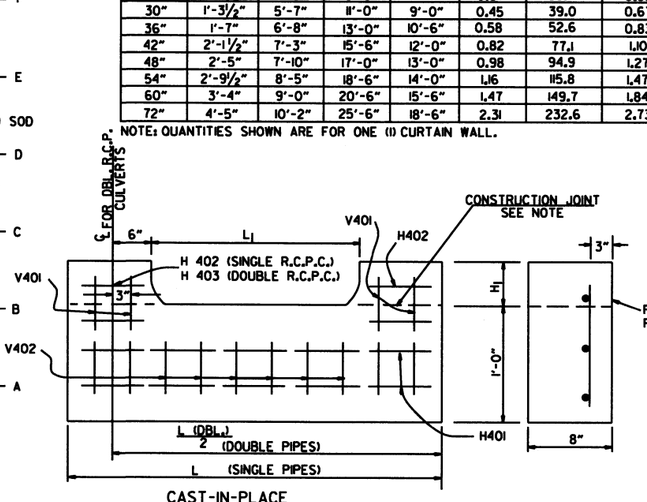
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

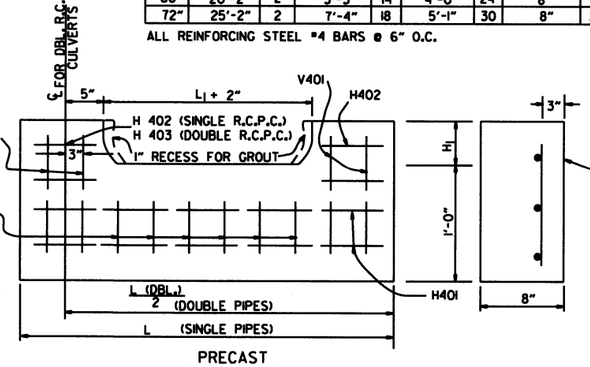
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

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.

R.C. CURTAIN WALL DETAILS

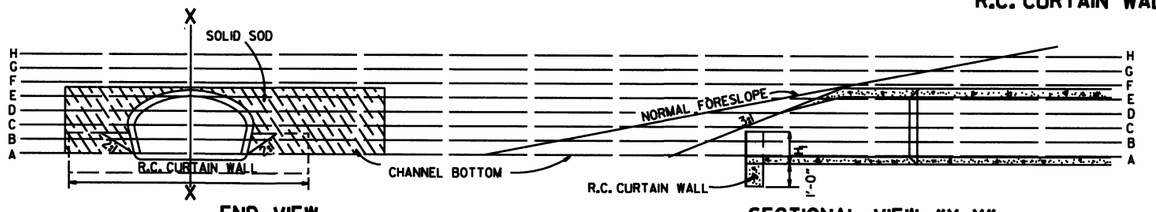
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	SINGLE R.C.P.C. 4:1	SINGLE R.C.P.C. 6:1	DOUBLE R.C.P.C. 3:1	DOUBLE R.C.P.C. 4:1	DOUBLE R.C.P.C. 6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11- 1-94	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	

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FLARED END SECTION

STANDARD DRAWING FES-1

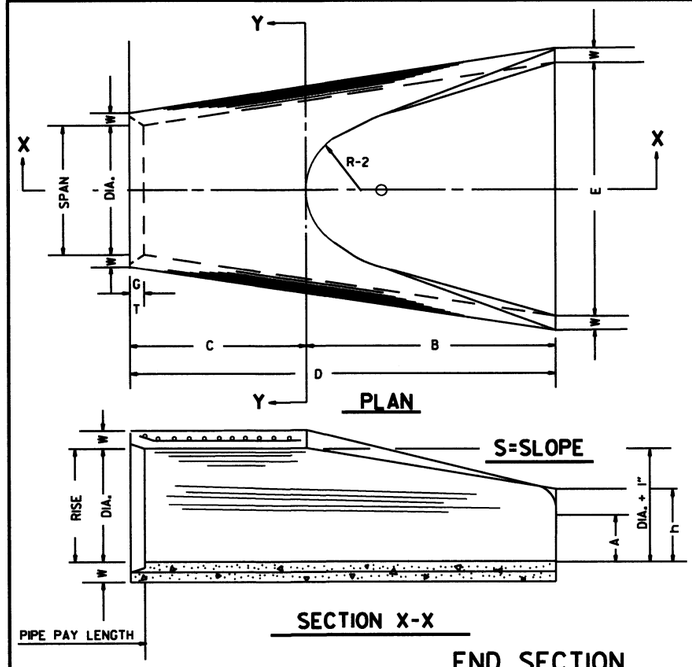
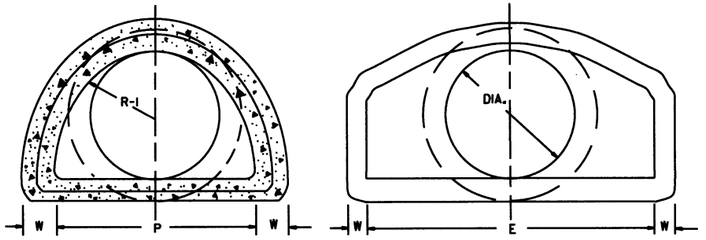


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33⅜"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7⅜"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¼"	8'-1¾"	6'-0"	3:1	37"	41⅝"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36⅝"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77⅝"	38⅝"	24"	5"	13250	4'-6"



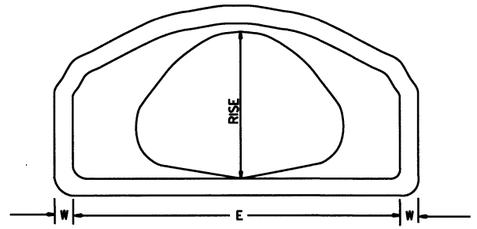
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

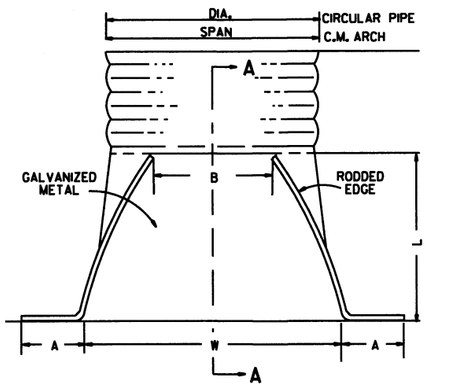
ARCH PIPE

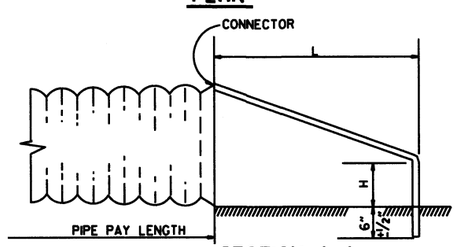
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅝"	20"	3"	2½:1
36	43¾	44	26⅞	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2½:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2½:1

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

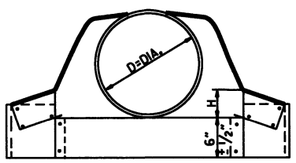


END VIEW
CONCRETE ARCH PIPE

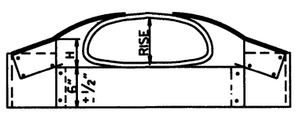




NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE



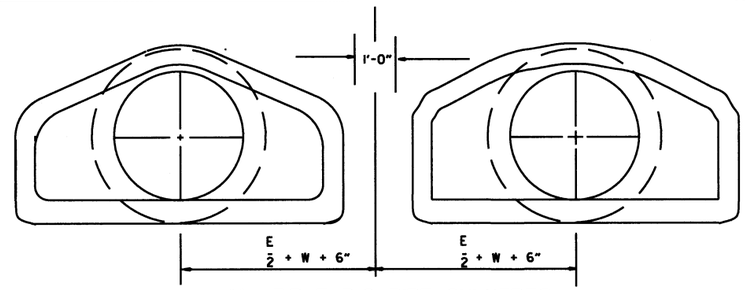
C.M. ARCH PIPE

CIRCULAR PIPE

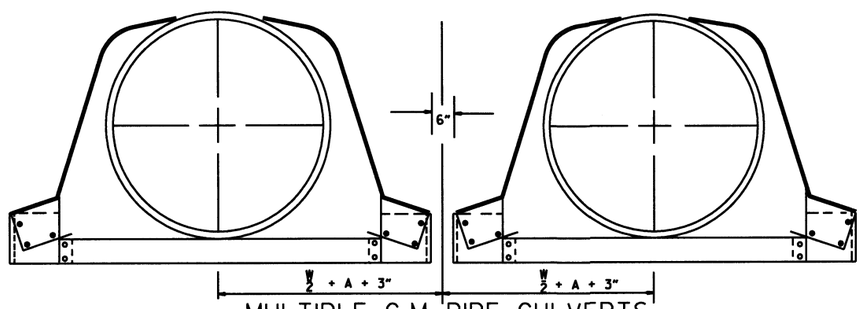
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

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	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

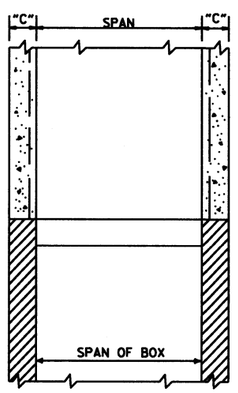
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

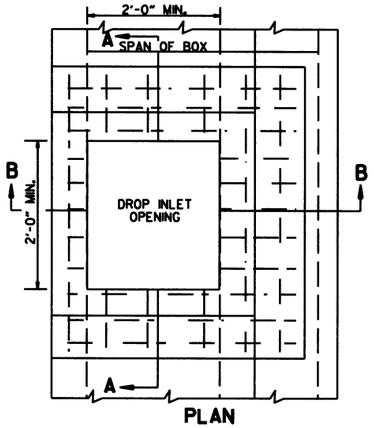
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

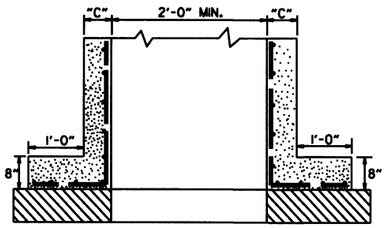
STANDARD DRAWING FES-2



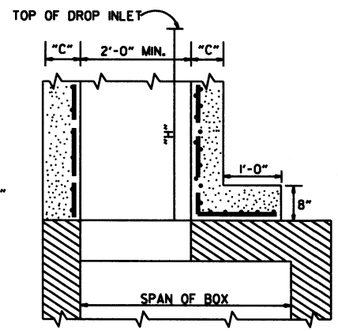
SECTION B-B



PLAN

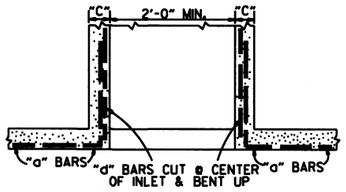


SECTION A-A

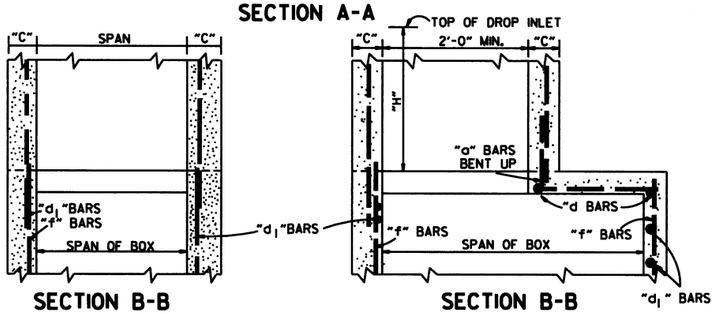


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



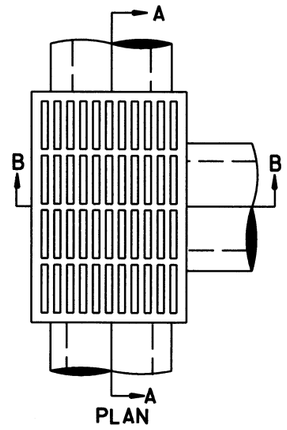
SECTION A-A



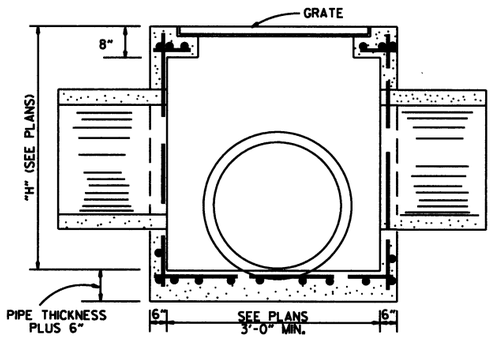
SECTION B-B SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

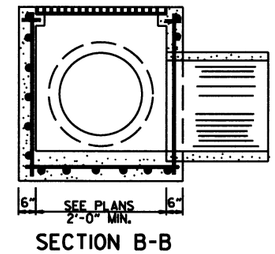
NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



PLAN



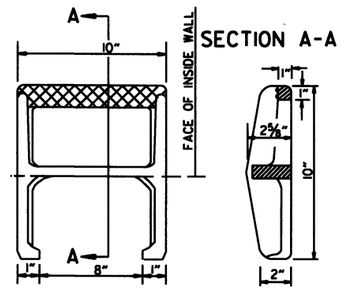
SECTION A-A



NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

SECTION B-B

DROP INLET (TYPE E)

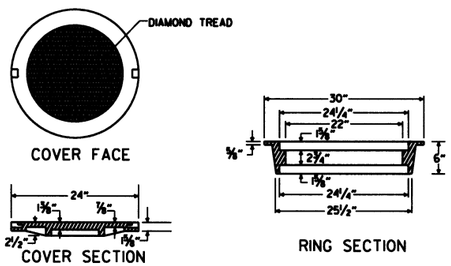


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

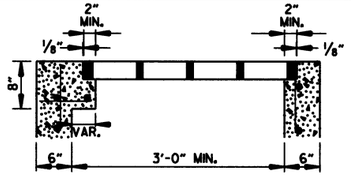
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

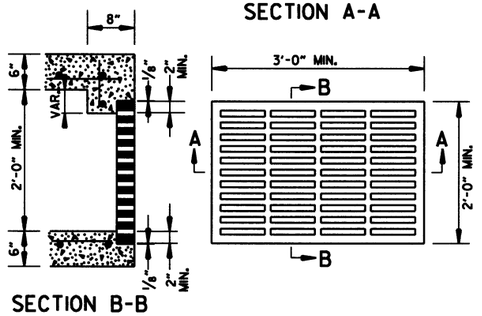


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



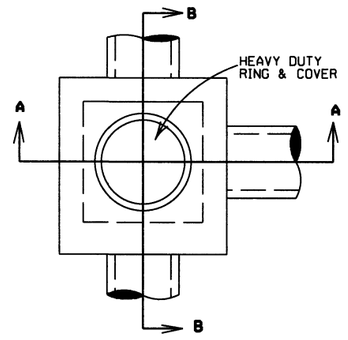
SECTION A-A



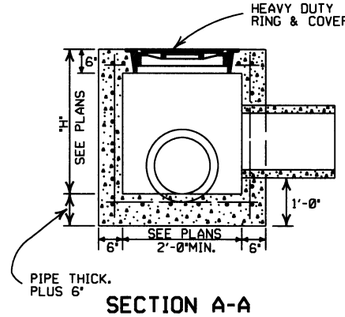
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

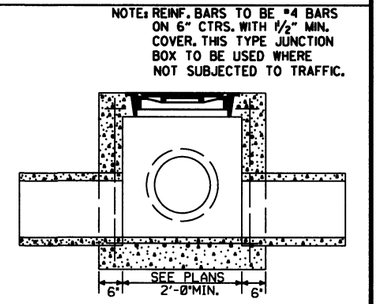
GRATE FOR TYPE E DROP INLET



PLAN

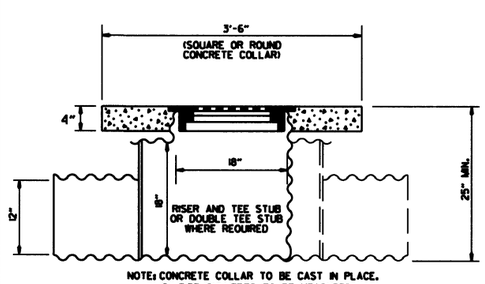


SECTION A-A

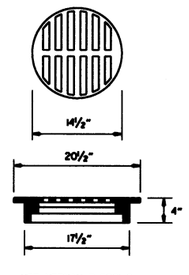


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

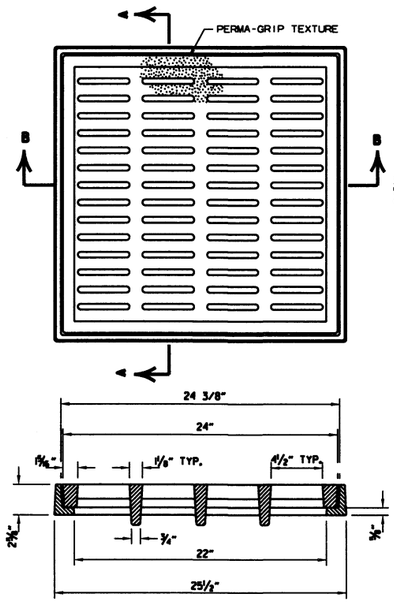
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

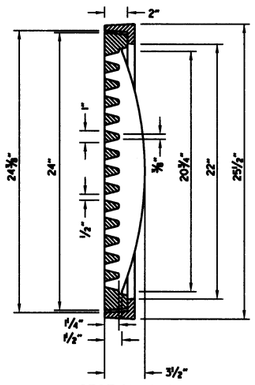
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9



SECTION B-B

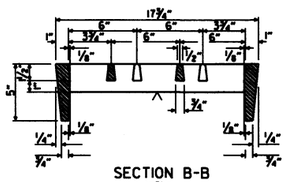


SECTION A-A

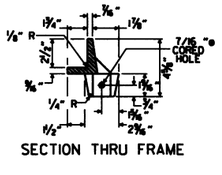
DETAILS OF PEDESTRIAN GRATE AND FRAME

GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

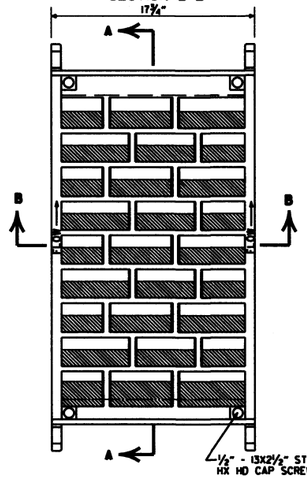
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/4" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 218 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

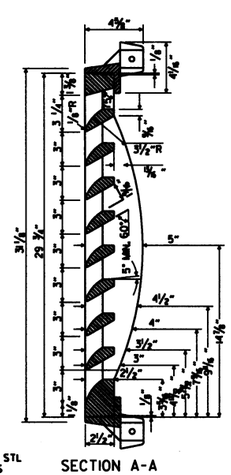


SECTION B-B



SECTION THRU FRAME



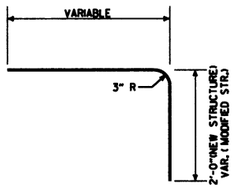


SECTION A-A

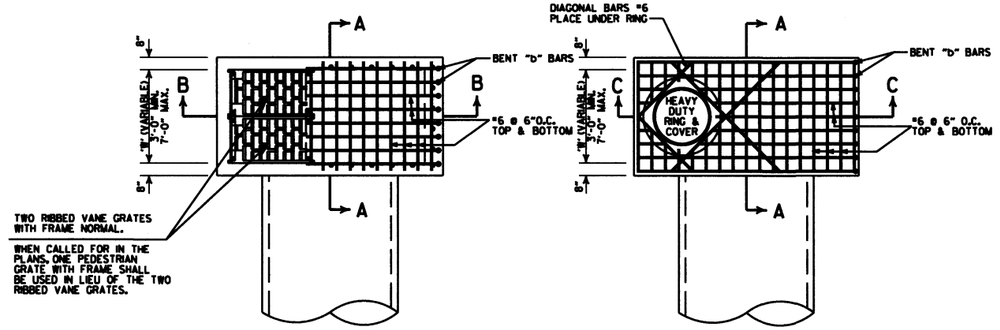
DETAILS OF RIBBED VANE GRATE AND FRAME

GENERAL NOTES (RIBBED VANE GRATE & FRAME)

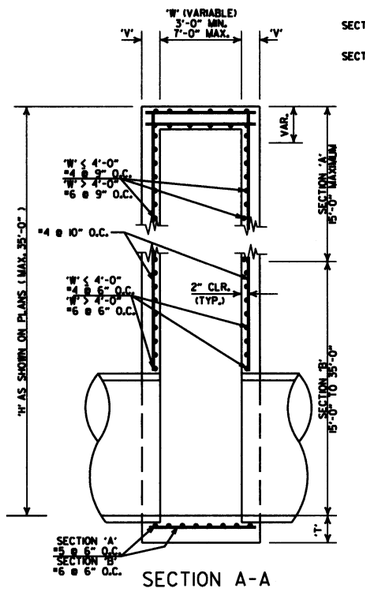
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



DETAIL OF BENT "b" BAR

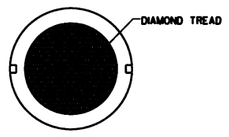


SECTION 'A' 'V' = 8"
SECTION 'B' (H≤4'-0") 'V' = 8"
SECTION 'B' (H>4'-0") 'V' = 10"

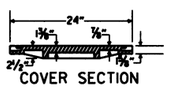


SECTION A-A

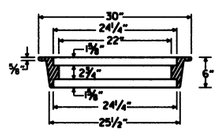
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



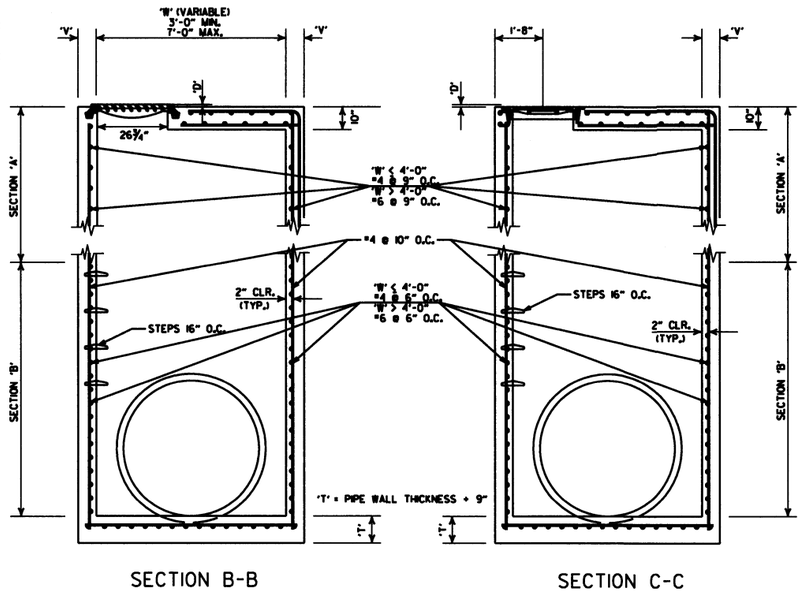
COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.



SECTION B-B SECTION C-C

DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

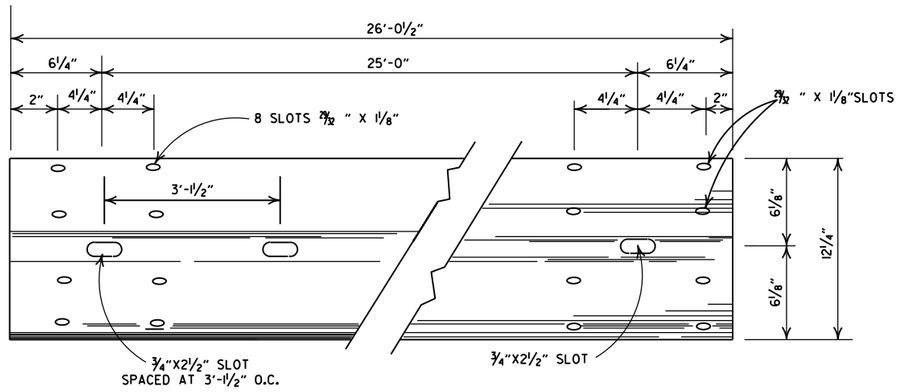
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

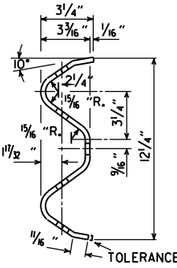
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

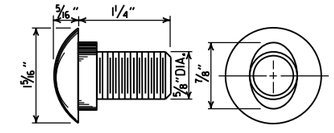
STANDARD DRAWING FPC-9S



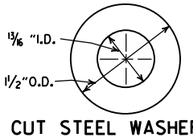


DETAILS OF W-BEAM GUARDRAIL

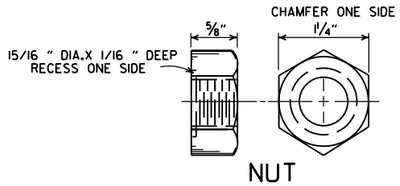
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



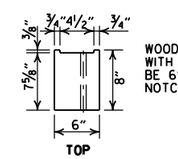
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



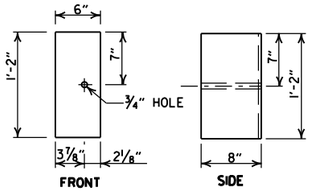
CUT STEEL WASHER



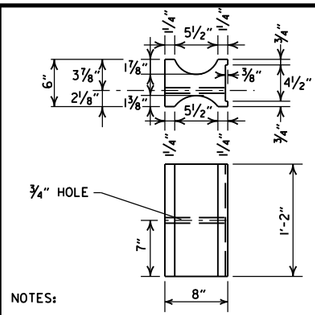
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"xl'-2" WITH NO NOTCH REQUIRED.



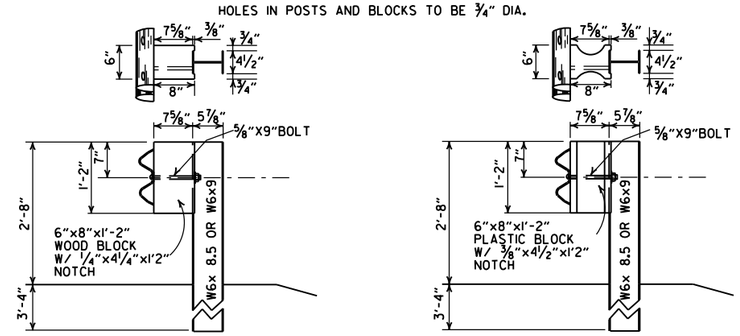
WOOD BLOCKOUT (W-BEAM)



NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

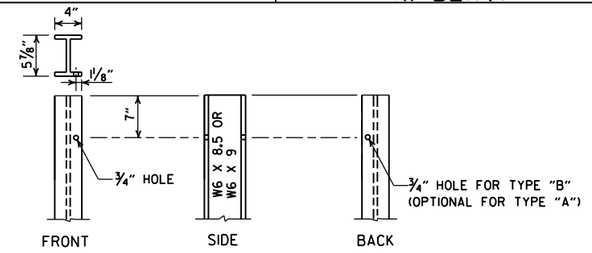
PLASTIC BLOCKOUT (W-BEAM)



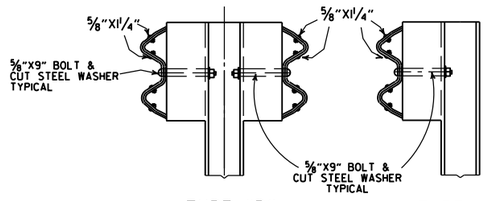
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

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

USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

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

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

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

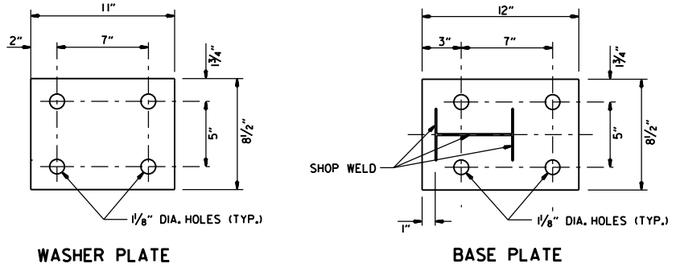
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARDRAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST ,ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

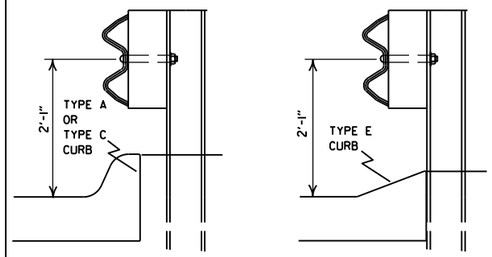
STANDARD DRAWING GR-6



WASHER PLATE

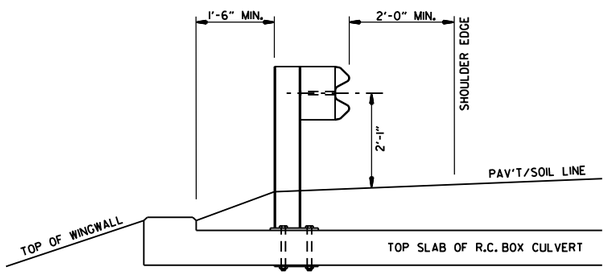
BASE PLATE

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

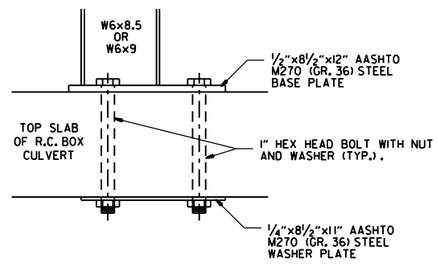


DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

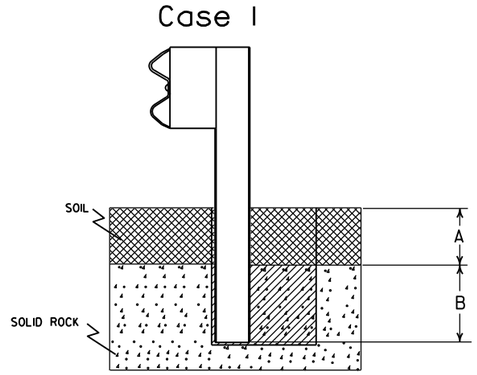
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A

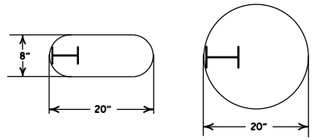


DETAIL OF CONNECTION



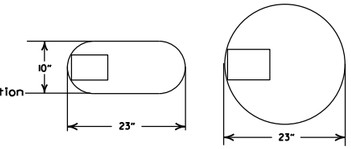
Plan View Steel Posts

Either hole configuration acceptable



Plan View Wood Posts

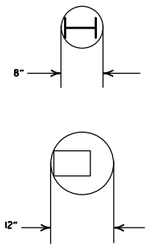
Either hole configuration acceptable



Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Zone A:
Backfill according to Section 617.03(a).

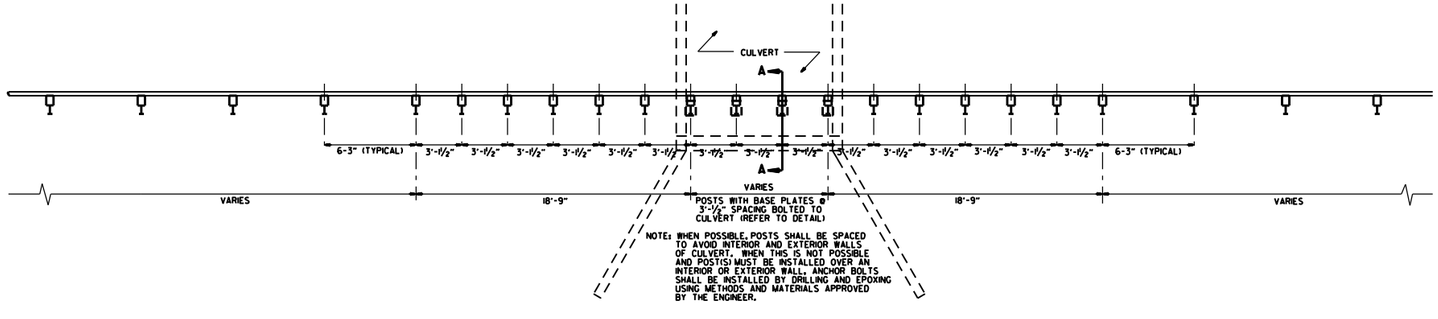
Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.



Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DWG. GR-6.

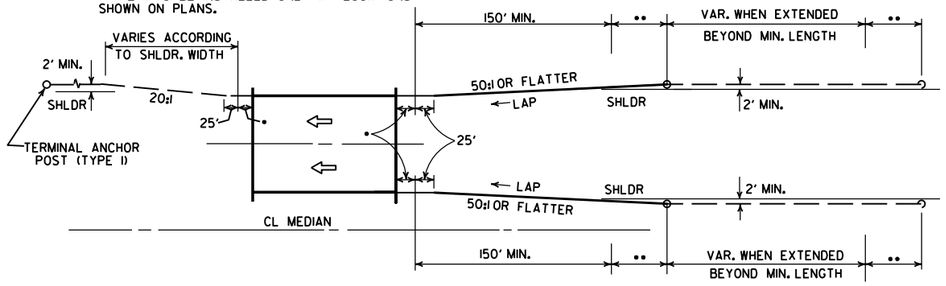
DATE	REVISION	FILMED
11-07-19	RENUMBERED, RENAMED, REVISED REFERENCE	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
04-12-07	REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

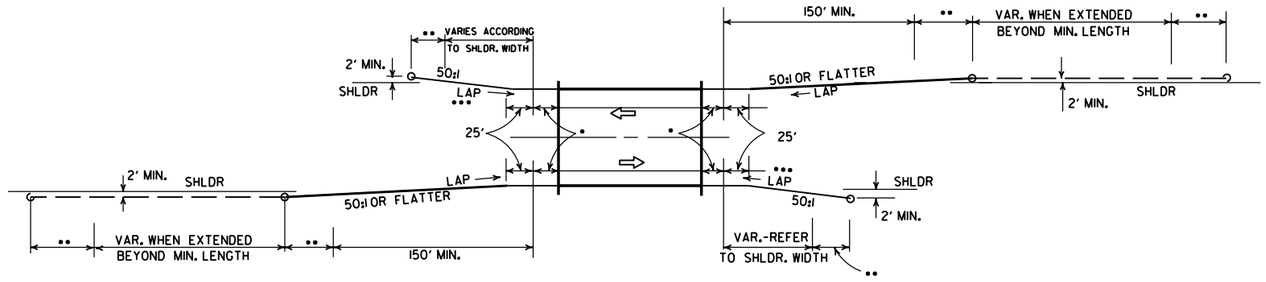
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

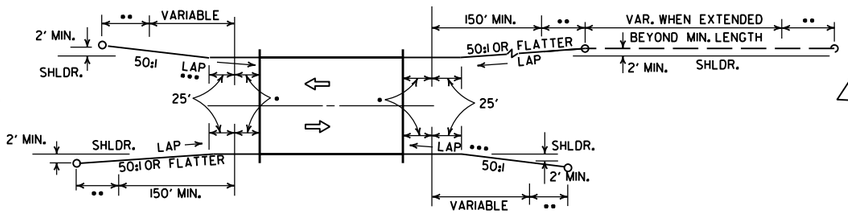
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

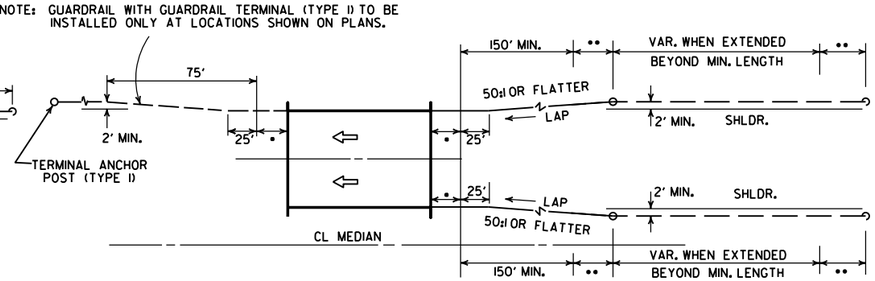
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

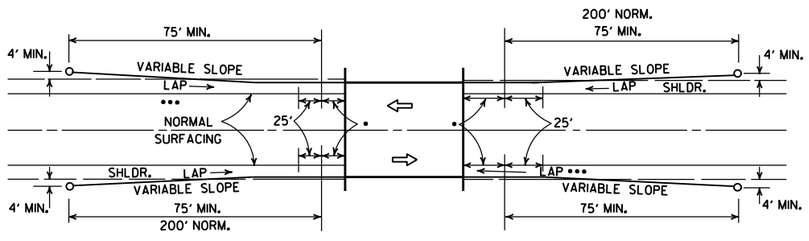
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

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



METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

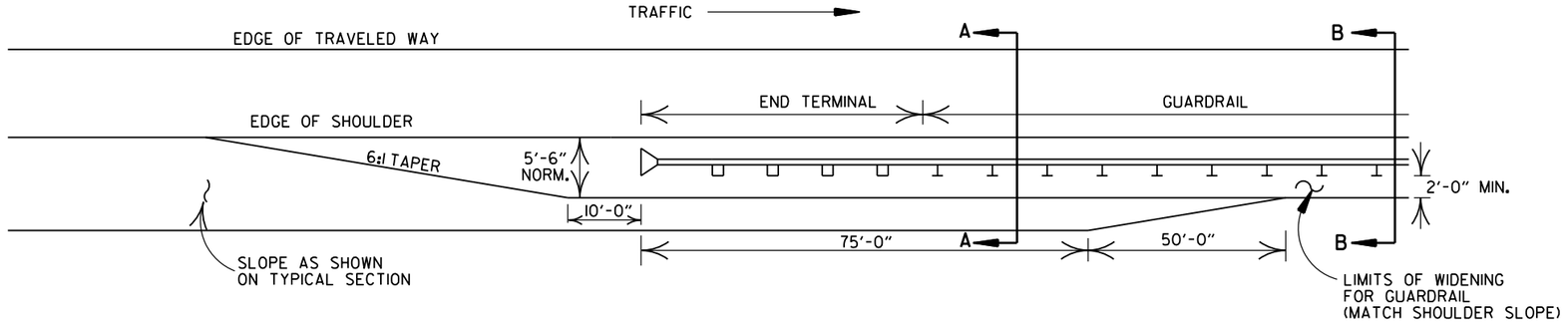
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

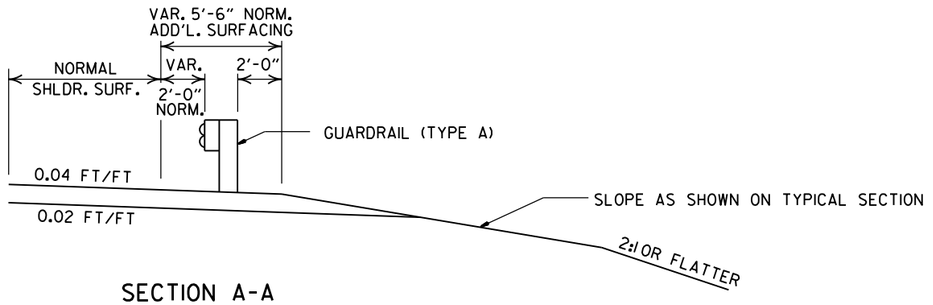
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

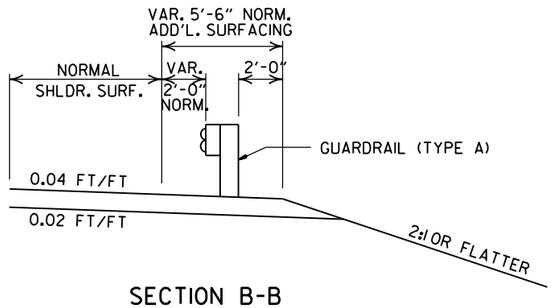
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



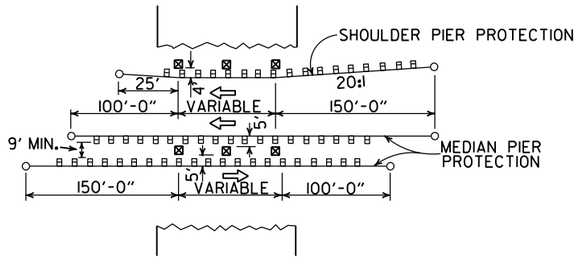


SECTION A-A



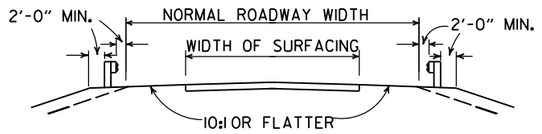
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

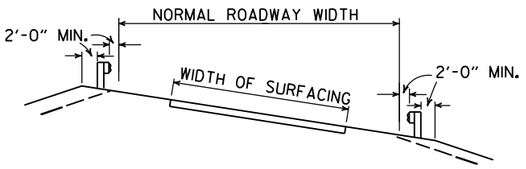


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

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



SECTION ON TANGENT



SECTION ON CURVE

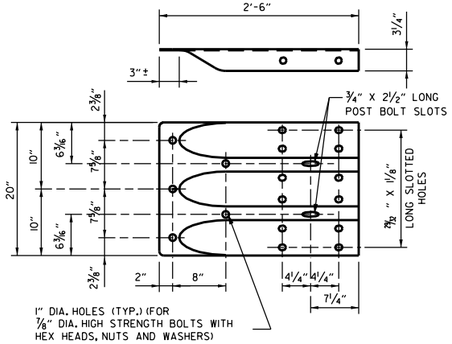
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

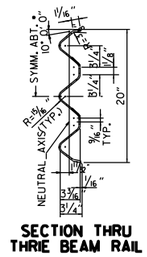
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

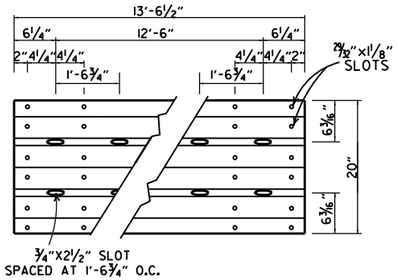
STANDARD DRAWING GR-9



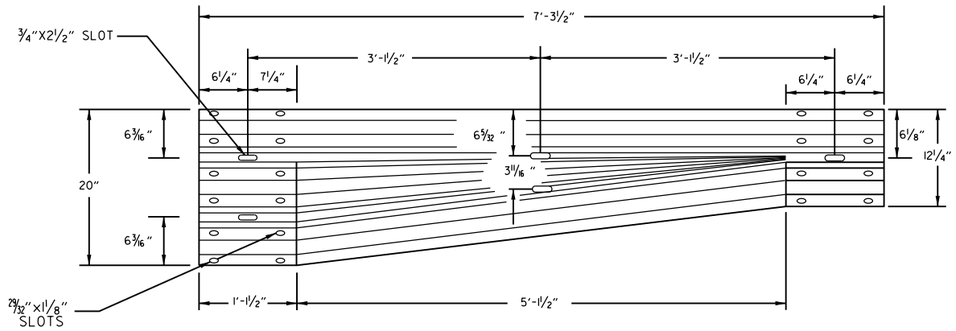
SPECIAL END SHOE



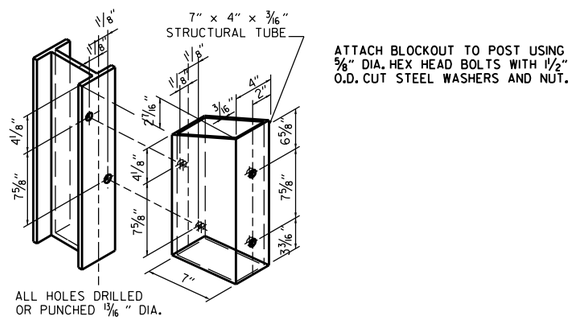
SECTION THRU THRIE BEAM RAIL



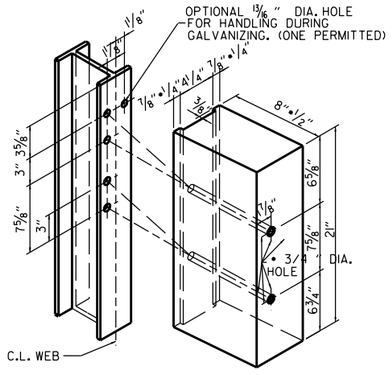
THRIE BEAM RAIL



TRANSITION SECTION



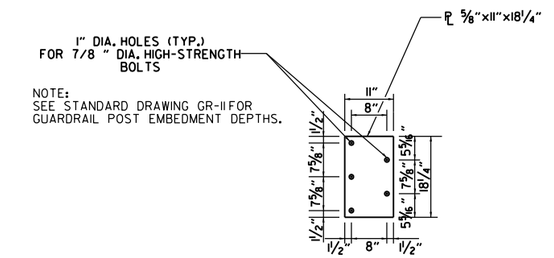
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

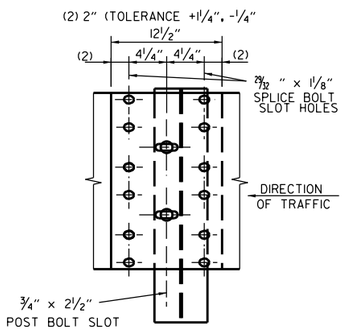
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

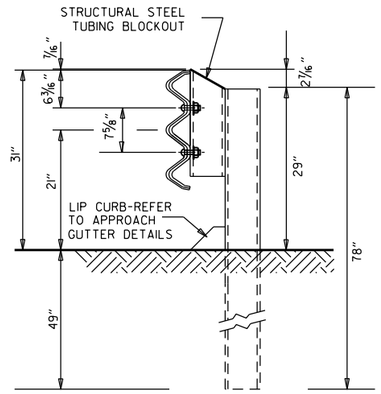
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

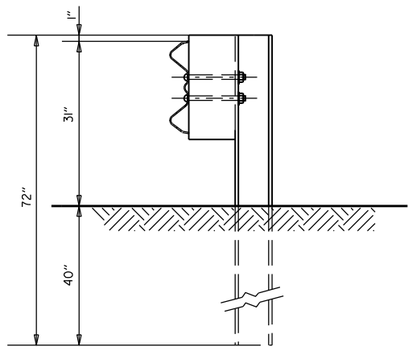
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

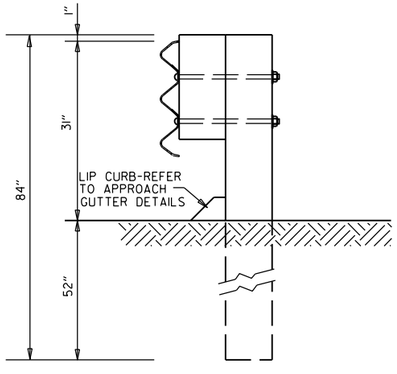
STANDARD DRAWING GR-10



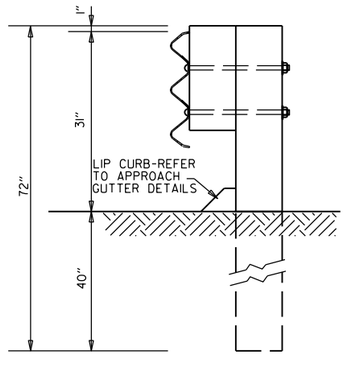
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



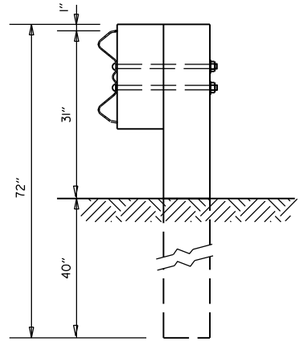
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



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

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

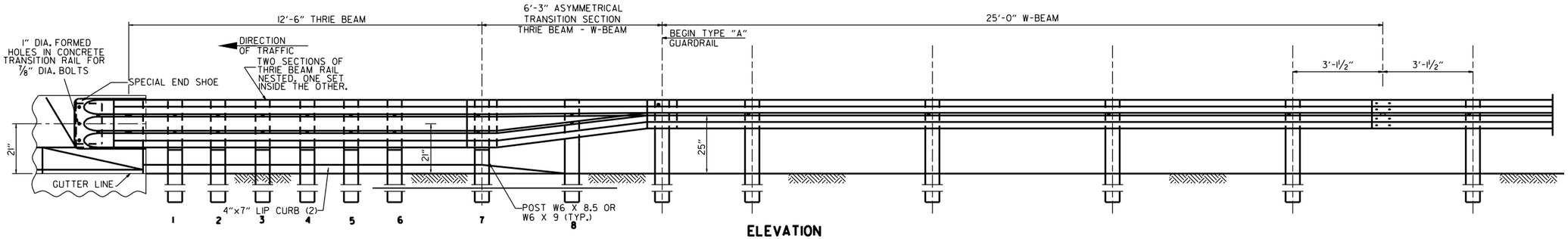
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

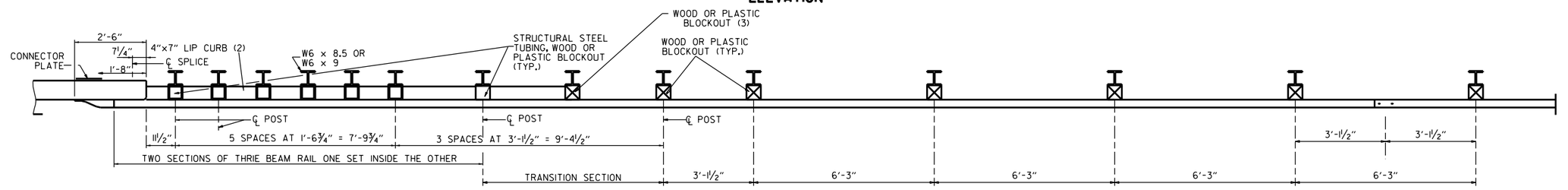
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

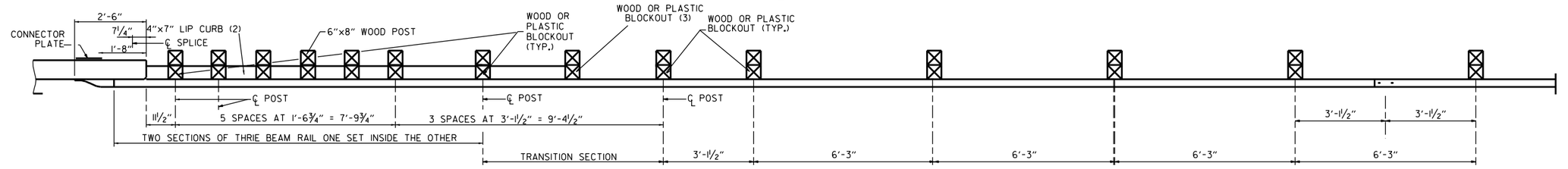
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

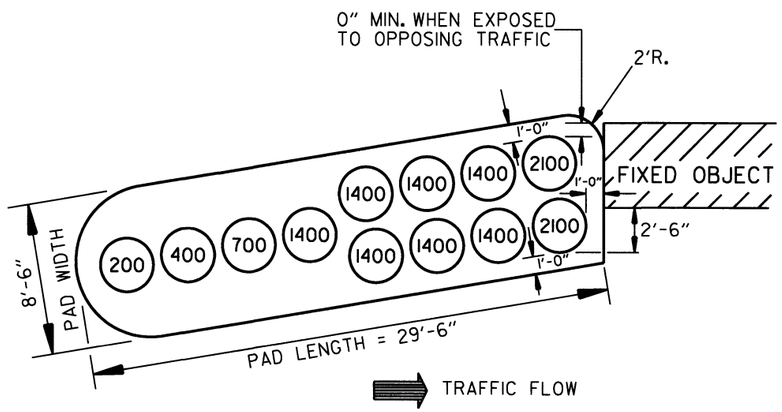
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

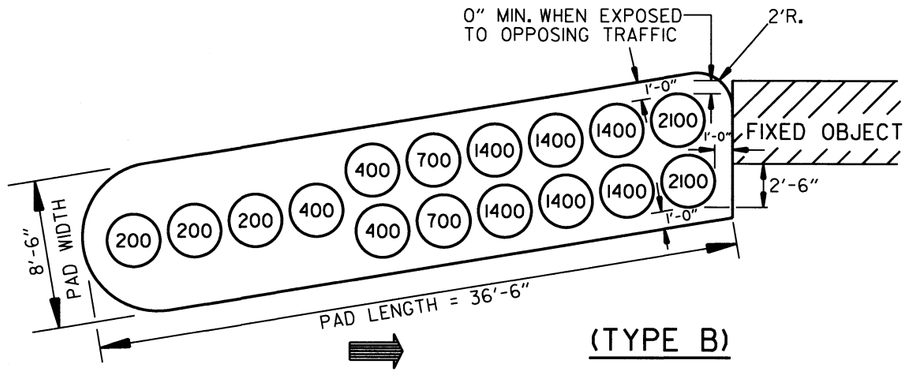
GUARDRAIL DETAILS

STANDARD DRAWING GR-12



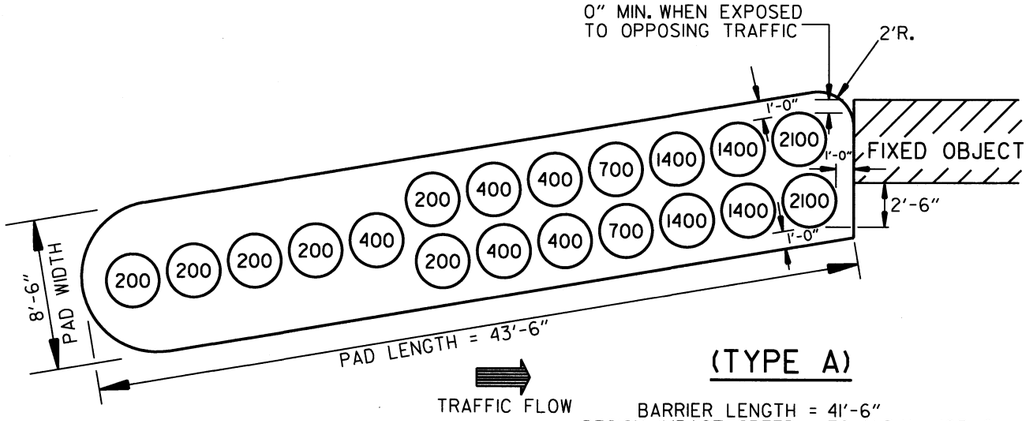
(TYPE C)

BARRIER LENGTH = 27'-6"
DESIGN IMPACT SPEED = 50 M.P.H.= 73.3 fps



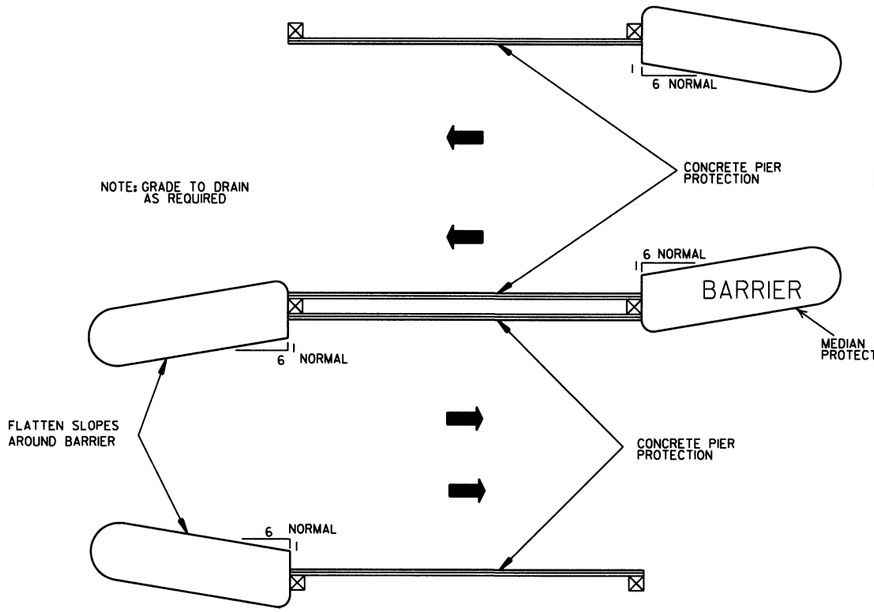
(TYPE B)

BARRIER LENGTH = 34'-6"
DESIGN IMPACT SPEED = 60 M.P.H.= 88 fps

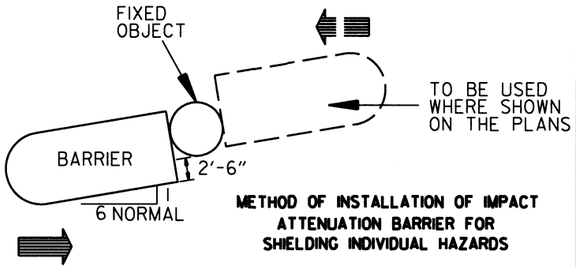


(TYPE A)

BARRIER LENGTH = 41'-6"
DESIGN IMPACT SPEED = 70 M.P.H.= 103 fps



METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR PIER PROTECTION



METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR SHIELDING INDIVIDUAL HAZARDS

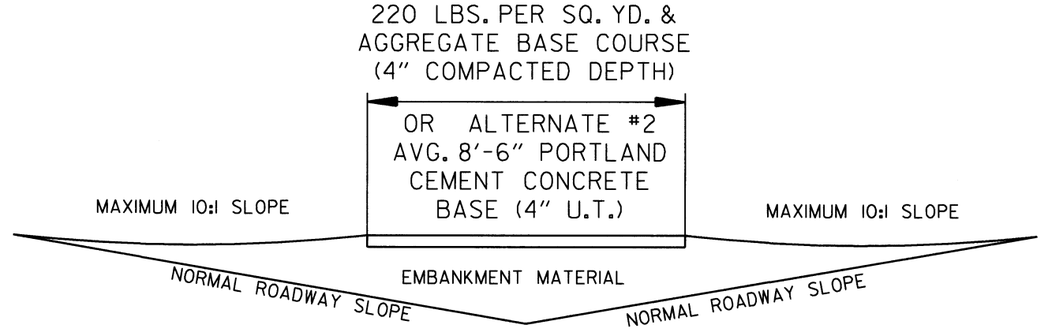
APPROXIMATE QUANTITIES PER PAD

TYPE	ALTERNATE #1		ALTERNATE #2
	AGGR. BASE COURSE	A.C.H.M. SURFACE COURSE	P.C.CONC. BASE (4"U.T.)
	TONS	TONS	SQ.YDS.
A	9.7	4.6	41.6
B	8.1	3.8	34.9
C	6.6	3.1	28.3

NOTE: APPROXIMATE QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR IMPACT ATTENUATION BARRIER.

GENERAL NOTES

1. DIMENSIONS SHOWN ARE TO TOP OF PLASTIC MODULES.
2. SPACING BETWEEN PLASTIC MODULES SHALL NOT EXCEED 6" AT THE TOP.
3. PLASTIC MODULES SHALL MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



DETAIL OF BARRIER PAD

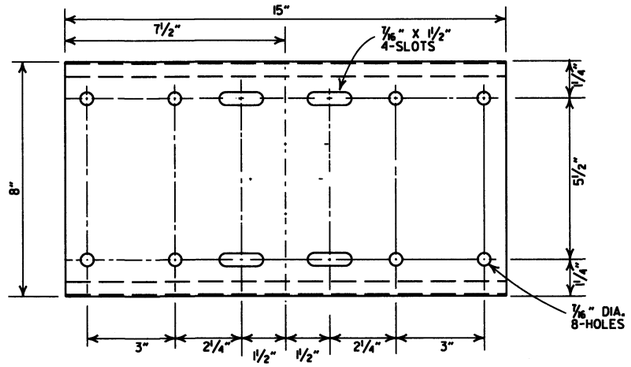
NOTE: BARRIER PAD TO BE SKEWED TOWARD ONCOMING TRAFFIC A MAXIMUM OF 6:1 WITH 6:1 BEING NORMAL

DATE	REVISION	DATE FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-29-07	REVISED TY. A & TY. C ARRAYS	
11-19-98	REVISED FIXED OBJECT	
11-18-98	REV. NOTES & TYPE A MOD. WTS.	
10-18-96	REDRAWN	
7-15-88	CONFORMED TO 1988 SPECS	
7-29-87	REDRAWN	

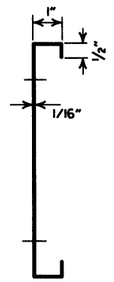
ARKANSAS STATE HIGHWAY COMMISSION

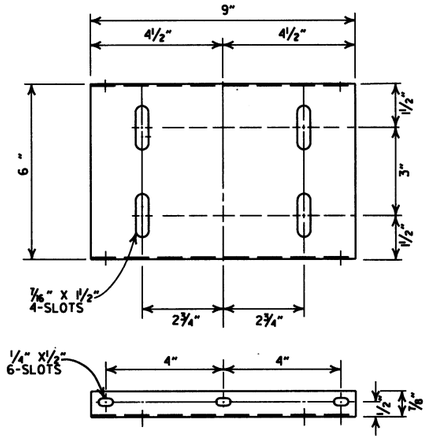
IMPACT ATTENUATION BARRIER

STANDARD DRAWING IB-1

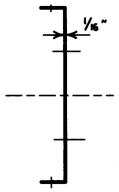


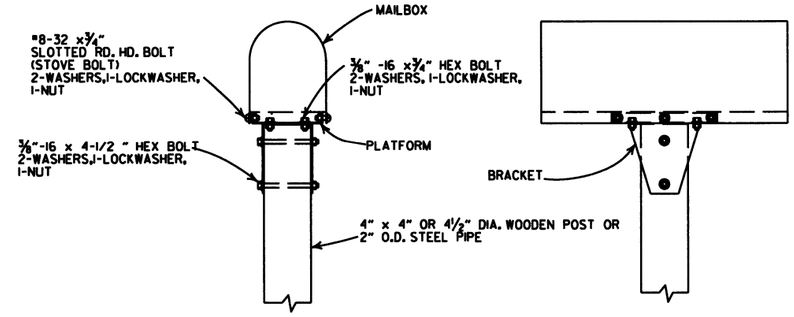
SHELF



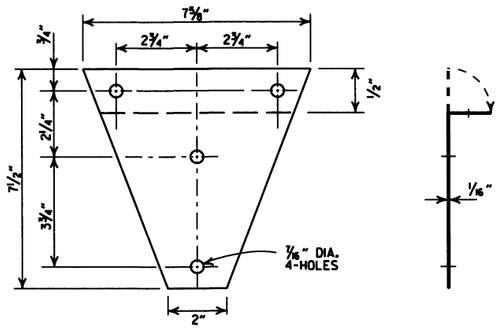


PLATFORM

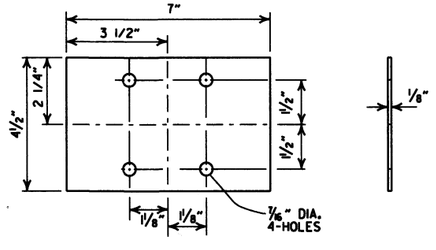




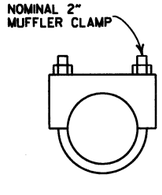
SINGLE INSTALLATION



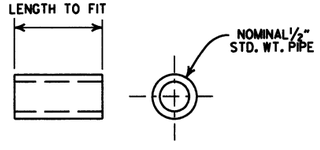
BRACKET



ANTI-TWIST PLATE



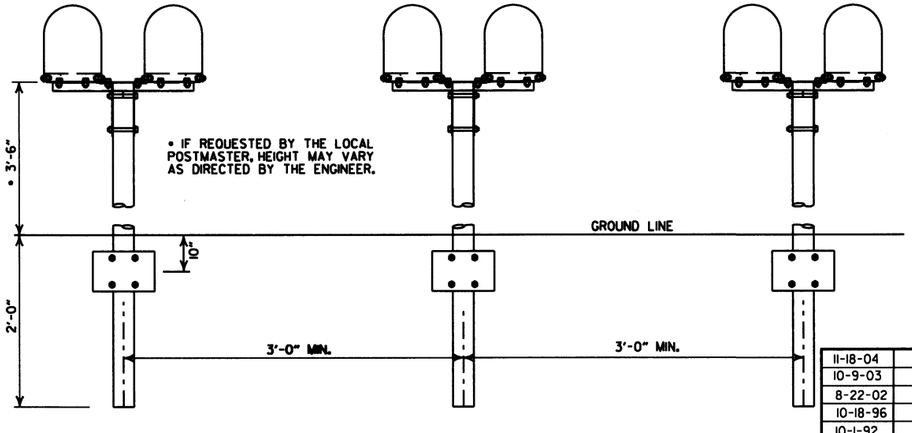
CLAMP



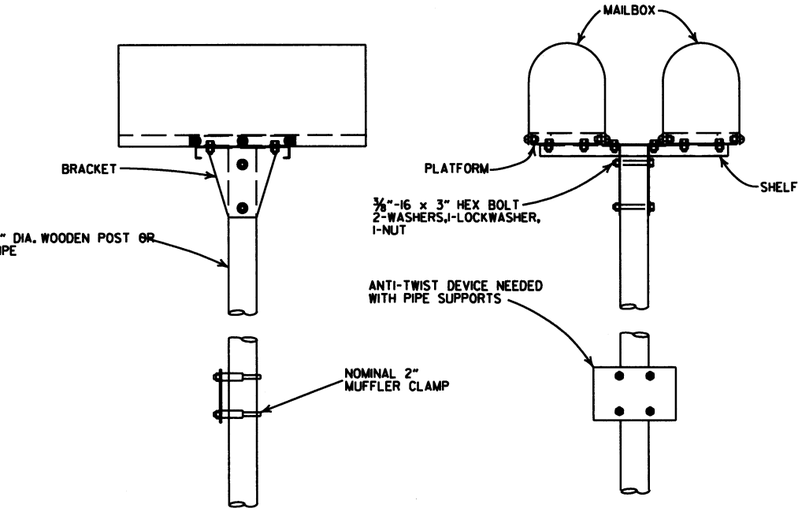
SPACER

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 AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



SPACING FOR MULTIPLE POST INSTALLATION



DOUBLE 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	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅞	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

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

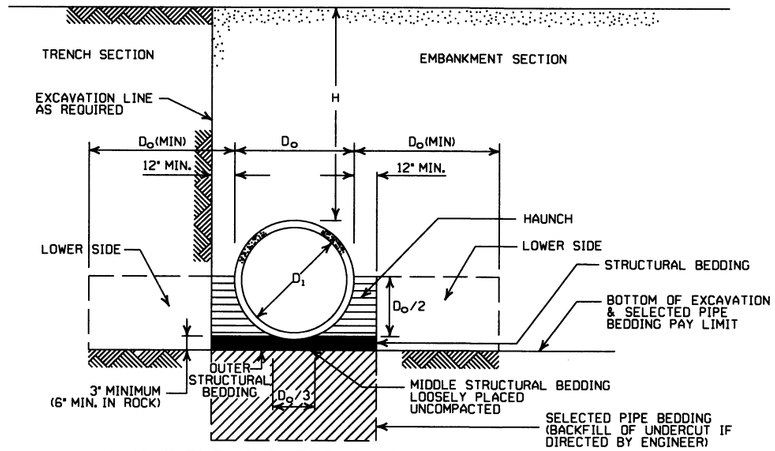
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
▨ = UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

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

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

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

CORRUGATED ALUMINUM PIPE (ROUND)

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

CONSTRUCTION SEQUENCE

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

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

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

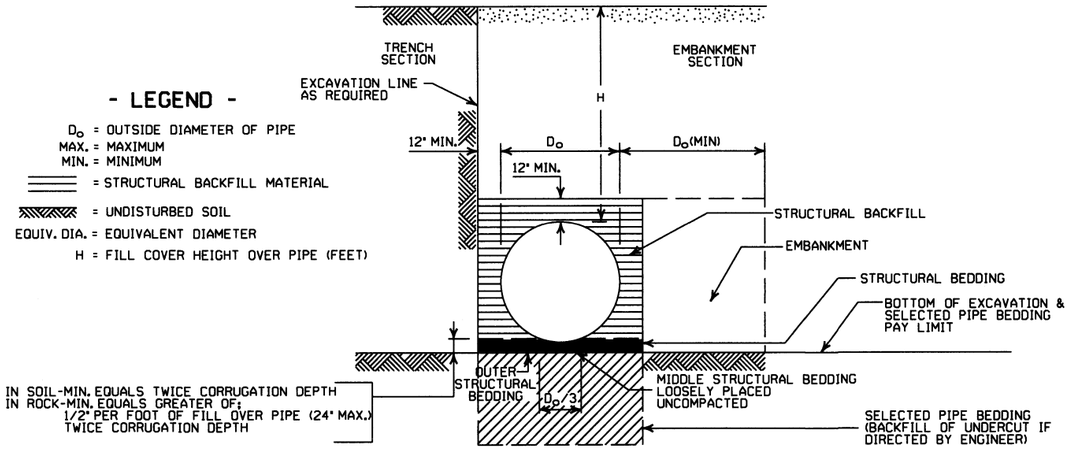
METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL					ALUMINUM				
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION		INSTALLATION			INSTALLATION		INSTALLATION	
				TYPE 1		TYPE 1			TYPE 1		TYPE 1	
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
15	17x13	3	0.064	2		15		0.060	2		15	
18	21x15	3	0.064	2		15		0.060	2		15	
21	24x18	3	0.064	2.25		15		0.060	2.25		15	
24	28x20	3	0.064	2.5		15		0.075	2.5		15	
30	35x24	3	0.079	3		12		0.075	3		12	
36	42x29	3½	0.079	3		12		0.105	3		12	
42	49x33	4	0.079	3		12		0.105	3		12	
48	57x38	5	0.109	3		13		0.135	3		13	
54	64x43	6	0.109	3		14		0.135	3		14	
60	71x47	7	0.138	3		15		0.164	3		15	
66	77x52	8	0.168	3		15						
72	83x57	9	0.168	3		15						
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM									
				INSTALLATION		INSTALLATION						
				TYPE 2	TYPE 1	TYPE 2	TYPE 1					
36	40x31	5	0.079	3	2	12	15					
42	46x36	6	0.079	3	2	13	15					
48	53x41	7	0.079	3	2	13	15					
54	60x46	8	0.079	3	2	13	15					
60	66x51	9	0.079	3	2	13	15					
66	73x55	12	0.079	3	2	15	15					
72	81x59	14	0.079	3	2	15	15					
78	87x63	14	0.079	3	2	15	15					
84	95x67	16	0.109	3	2	15	15					
90	103x71	16	0.109	3	2	15	15					
96	112x75	18	0.109	3	2	15	15					
102	117x79	18	0.109	3	2	15	15					
108	128x83	18	0.138	3	2	15	15					

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

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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 1 INCH. 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

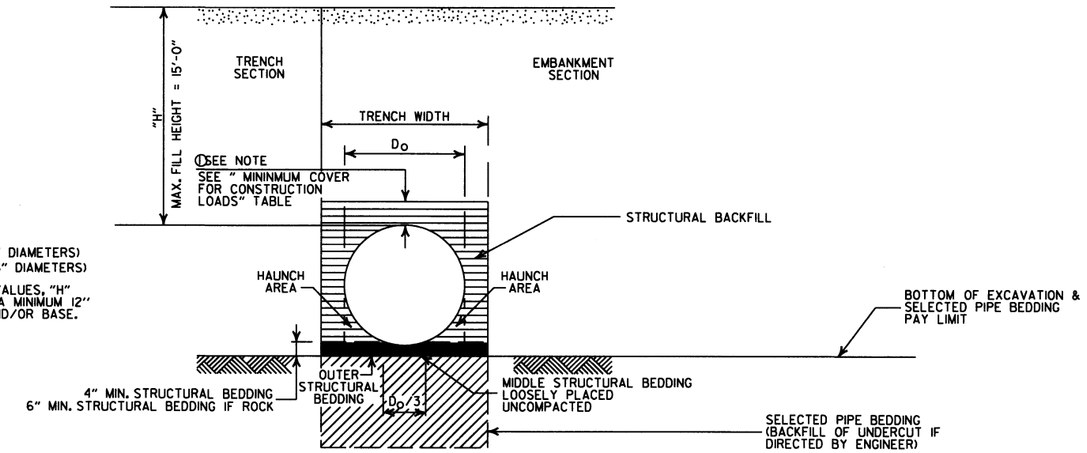
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

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.



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.

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.

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 CONFROM 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.)
Ø = 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 1 INCH. 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"

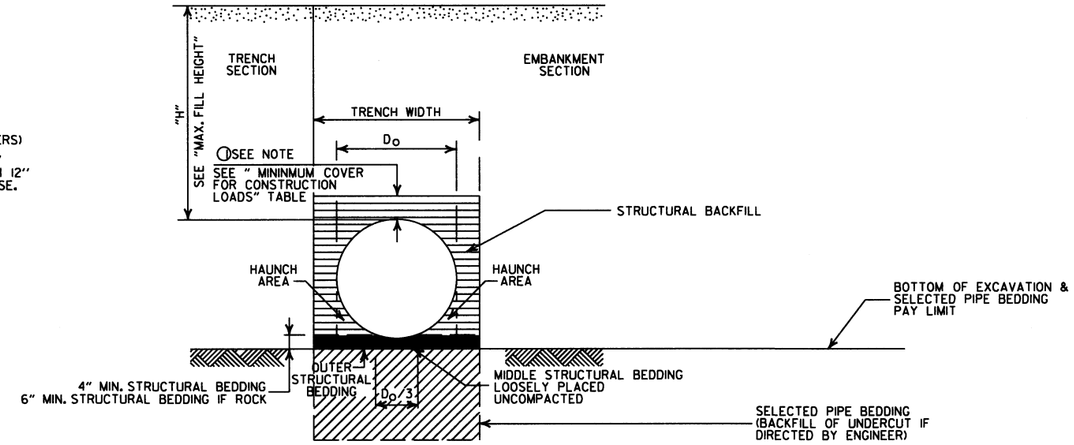
MULTIPLE INSTALLATION OF PVC PIPES

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.



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.

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.

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 CONFROM 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. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

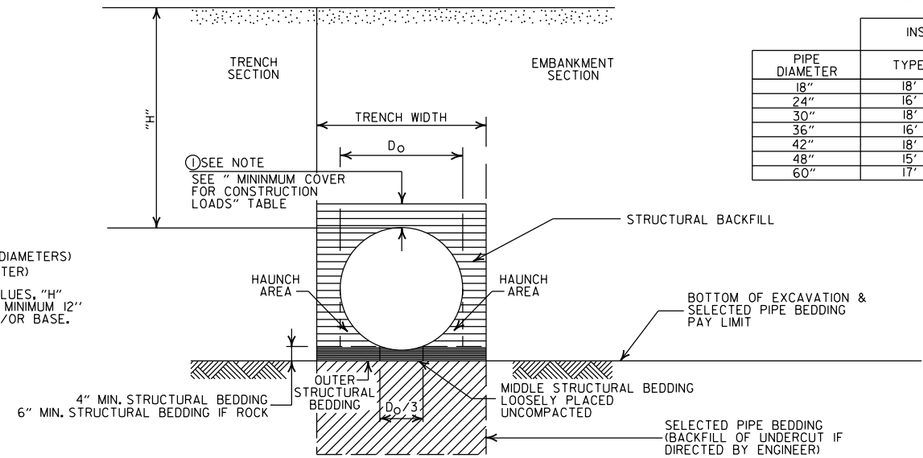
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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

MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'



MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S, INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

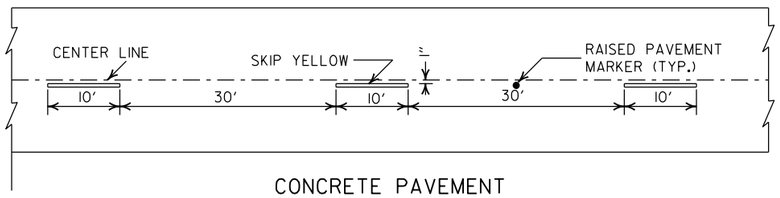
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

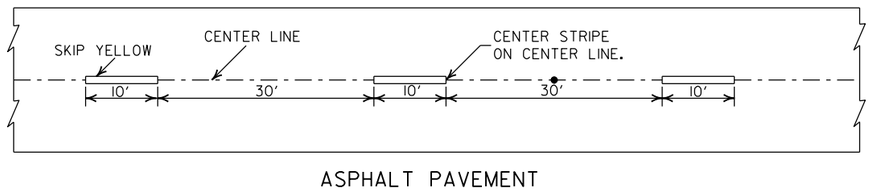
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

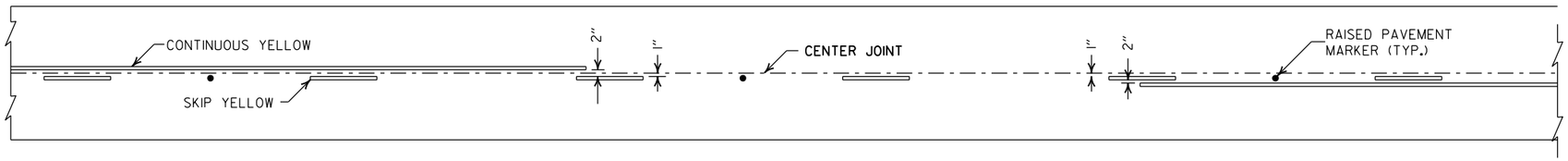


CONCRETE PAVEMENT

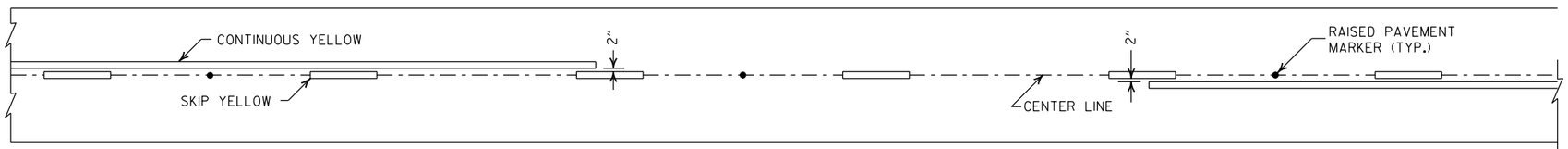


ASPHALT PAVEMENT

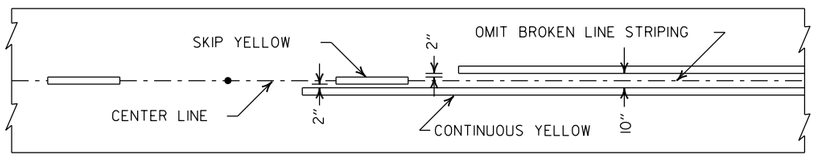
BROKEN LINE STRIPING



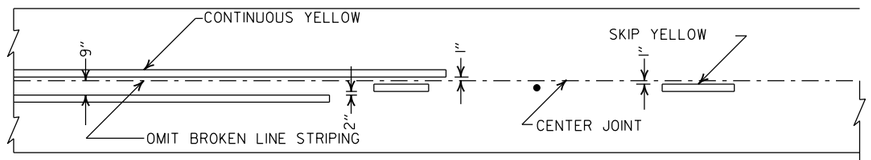
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

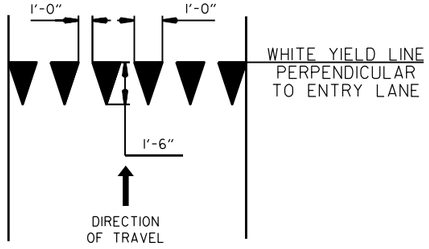


ASPHALT PAVEMENT

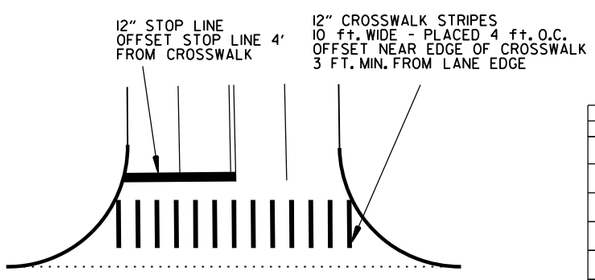


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

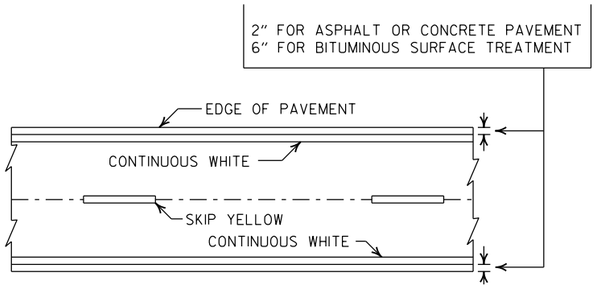


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

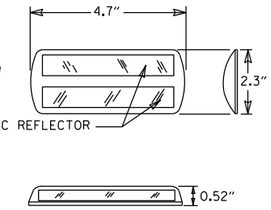
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

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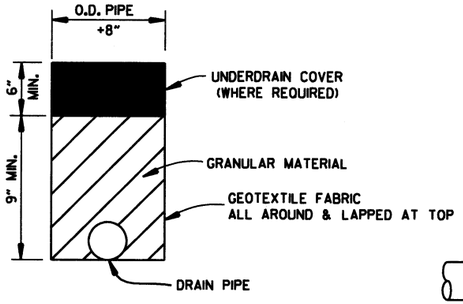
PAVEMENT MARKING DETAILS

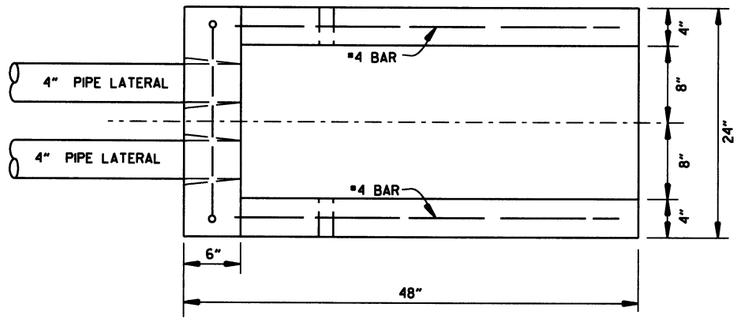
STANDARD DRAWING PM-1

NOTE:

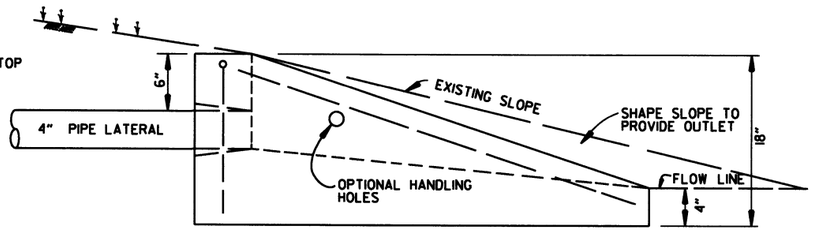
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

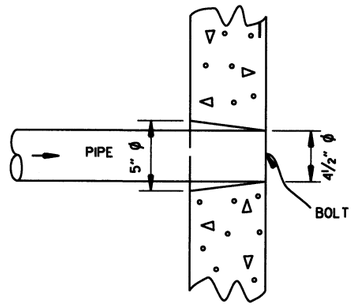




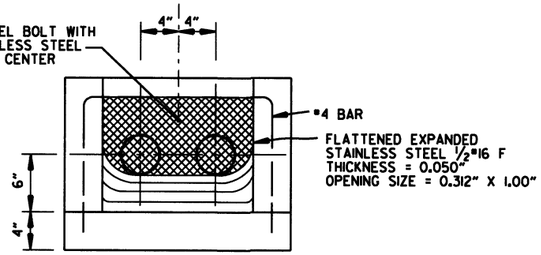
PLAN VIEW



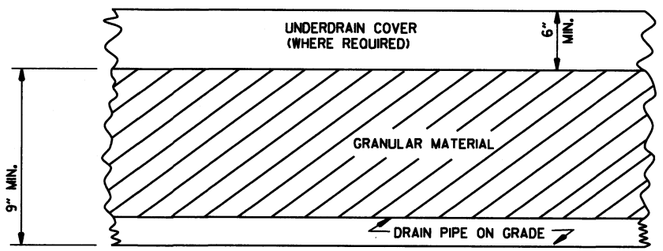
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

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

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

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

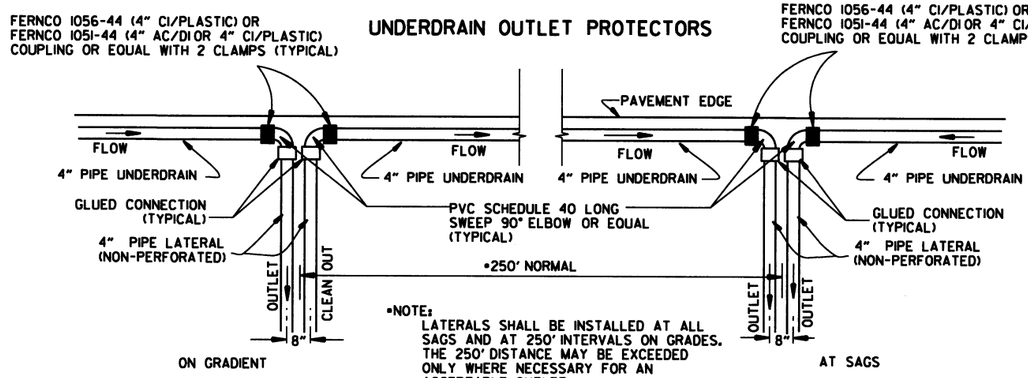
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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

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

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

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139	300	0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257	300	D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300	D MAX = 13° 45'																			
14° 00'	0.080	180		0.094	222																								
15° 00'	0.082	184		0.096	226																								
16° 00'	0.086	191		0.098	230																								
17° 00'	0.088	194		0.100	234																								
18° 00'	0.090	198	250	D MAX = 19° 30'																									
19° 00'	0.092	202																											
20° 00'	0.094	205																											
21° 00'	0.096	209																											
22° 00'	0.096	209																											
23° 00'	0.098	212																											
24° 00'	0.098	212																											
25° 00'	0.100	216																											
D MAX = 28° 30'																													

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)

GENERAL NOTES

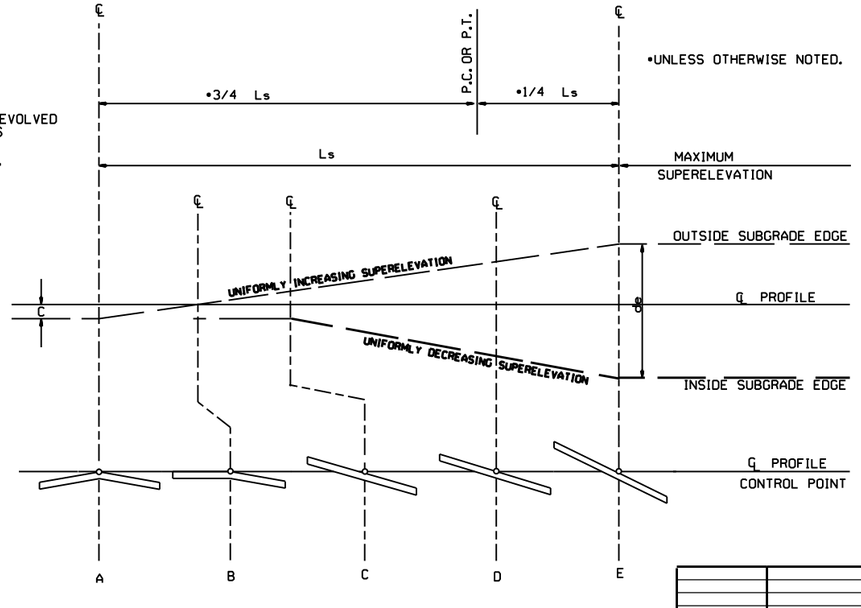
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

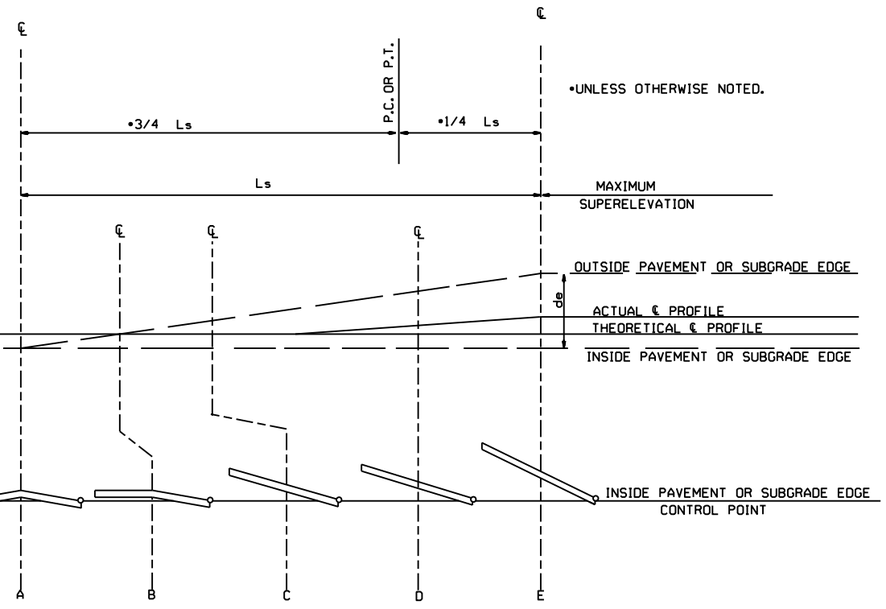
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

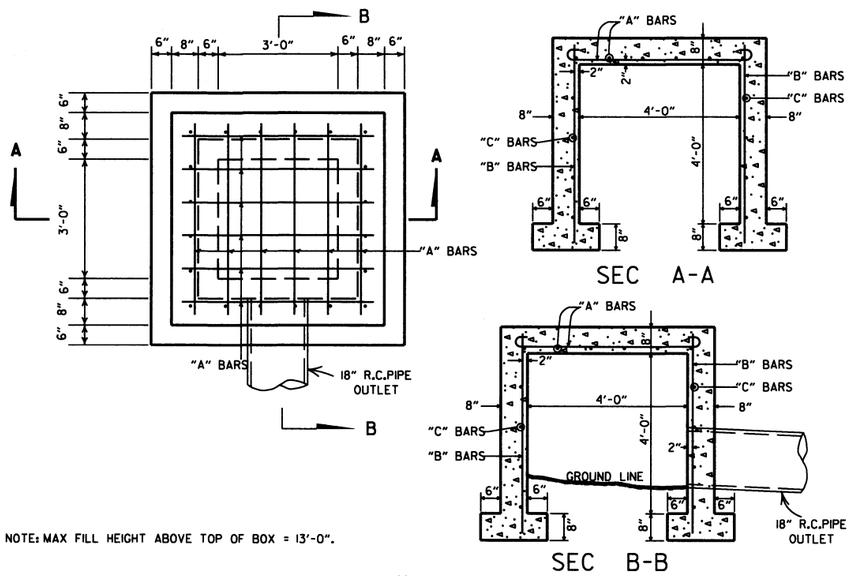
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE FILLMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

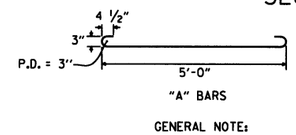


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



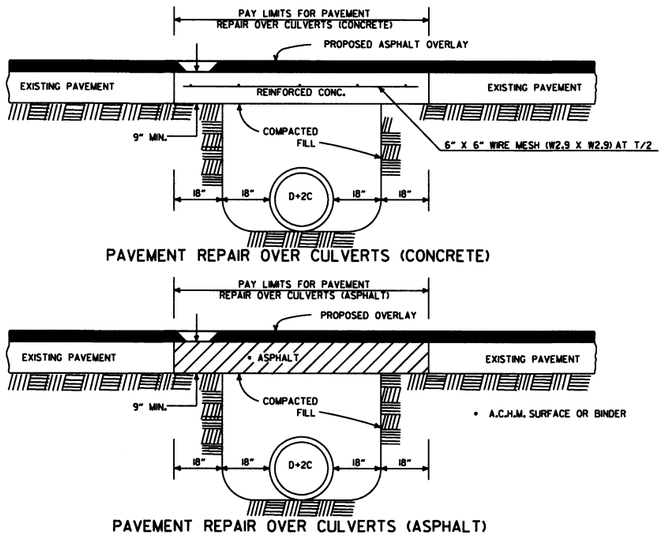
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX

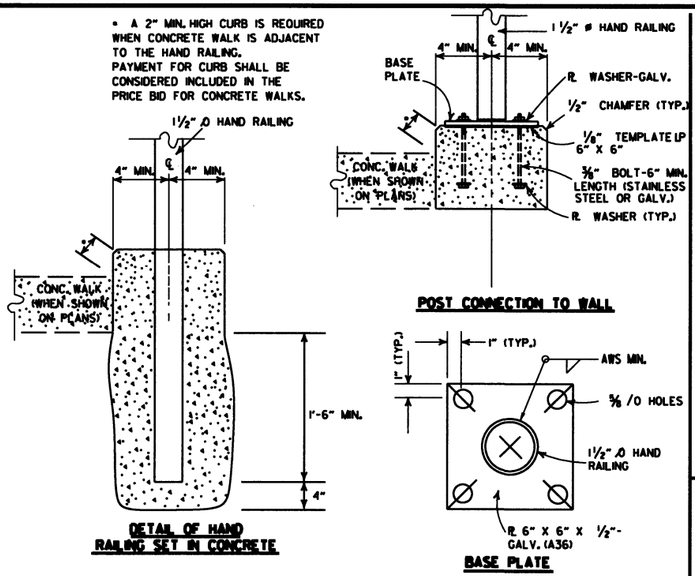


PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

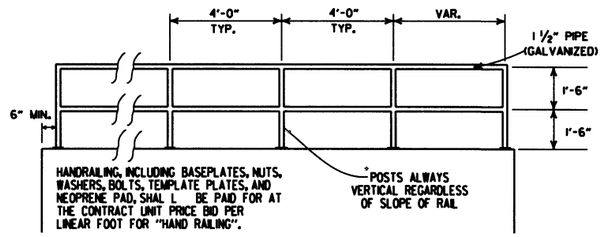
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

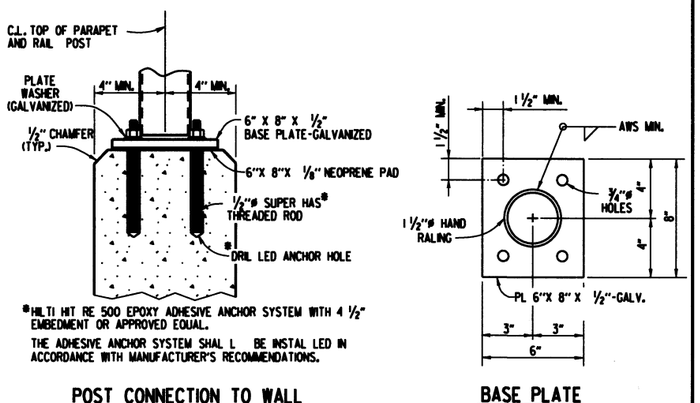
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



POST CONNECTION DETAILS

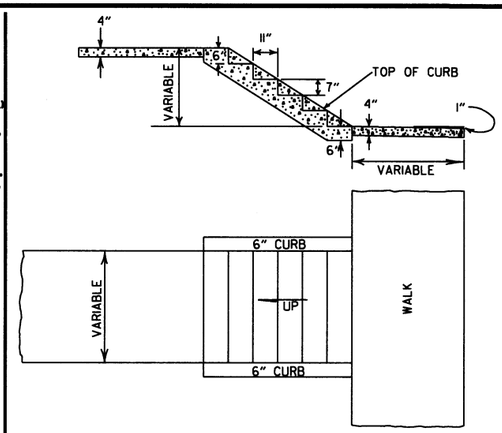


HAND RAILING SHALL CONFORM TO SECTION 633.



DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS. DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

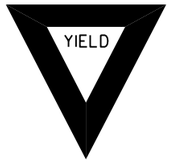
STANDARD DRAWING SI-1

R1-1



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

R1-2



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

R2-1



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

W3-5



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

W3-5a



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

R4-1



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

R4-2



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

R5-1



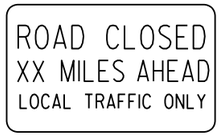
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



48"X30"

R11-3A



60"X30"

R11-4



60"X30"

W21-5a



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

W1-1



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

W1-2



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

W1-3



STD. 48"X48"

W1-4



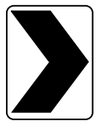
STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



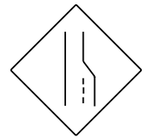
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



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

W9-2



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

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



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

W8-9



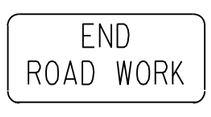
STD. 36"X36"
FWY. 48"X48"

G20-1



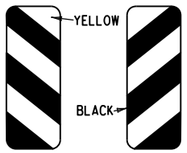
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



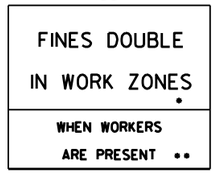
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

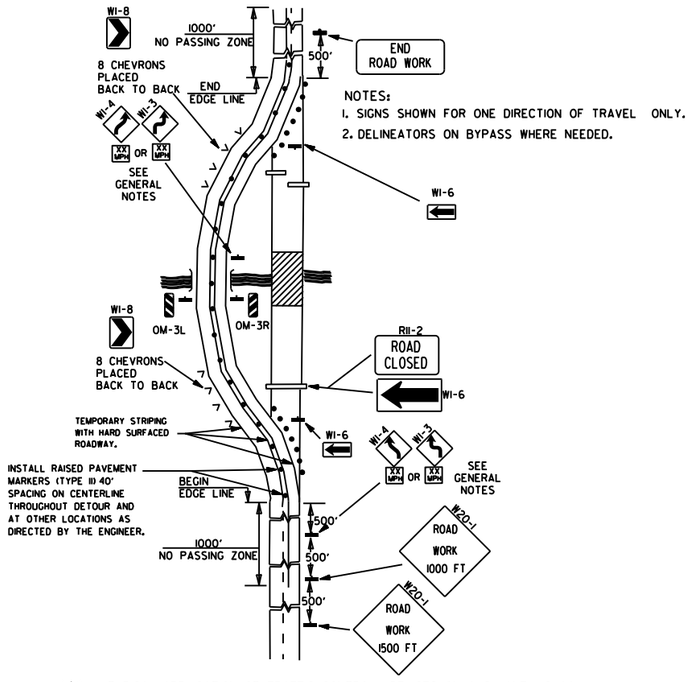
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

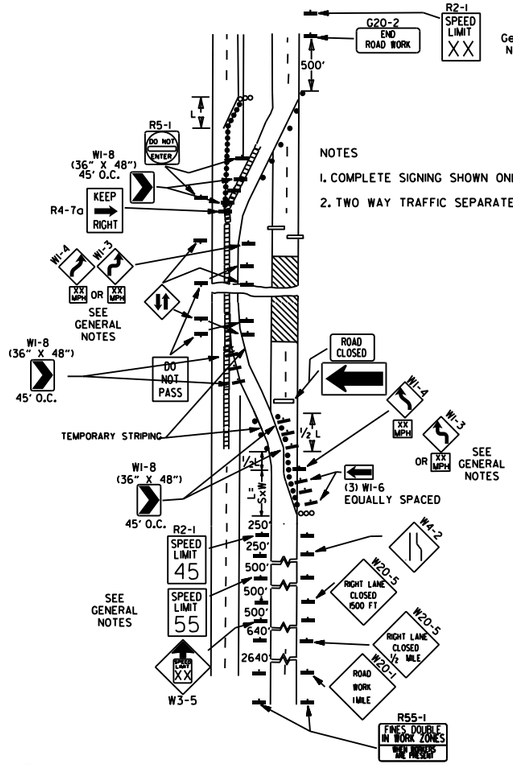
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



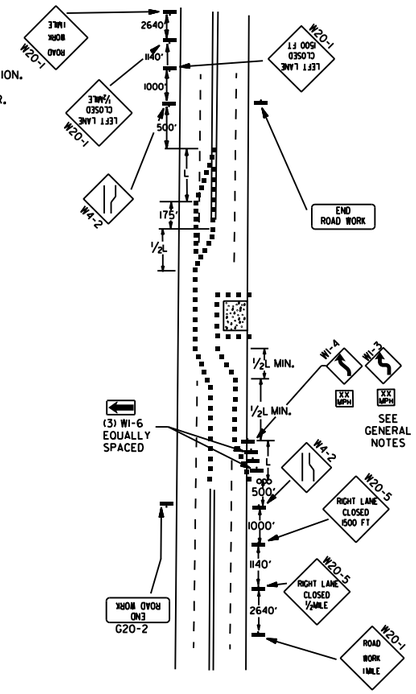
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

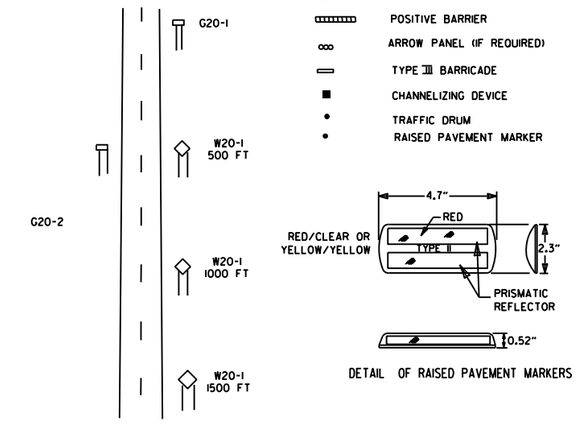


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

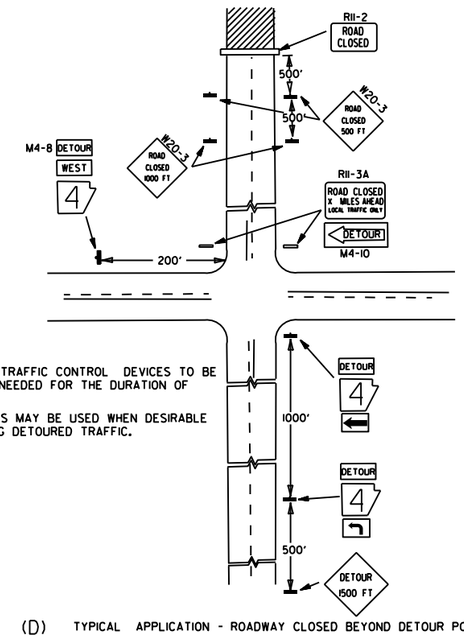
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

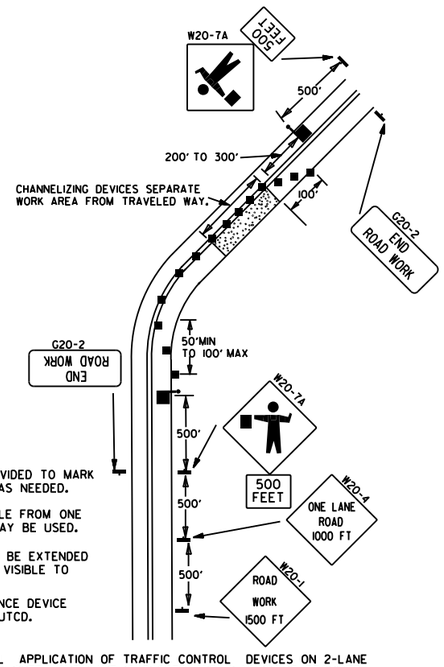
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



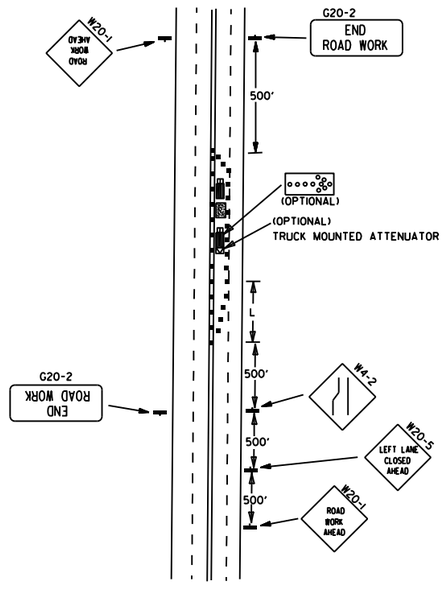
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



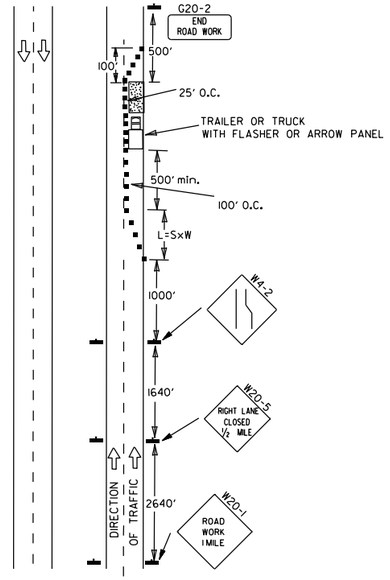
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

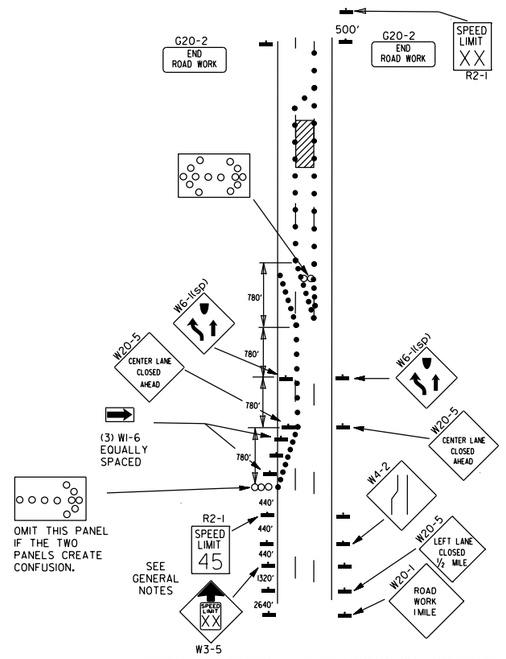
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

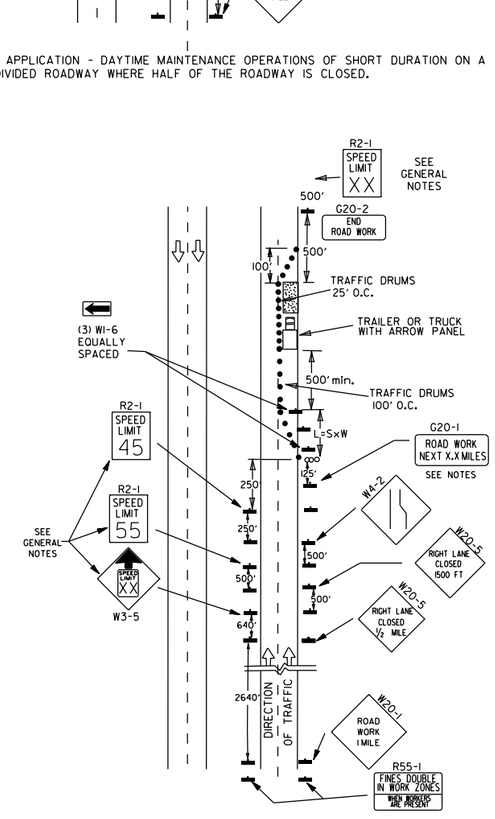
STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.



(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

KEY:

ooo ARROW PANEL (IF REQUIRED)

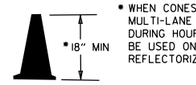
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

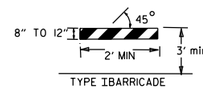
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

CHANNELIZING DEVICES

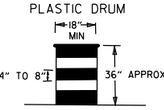


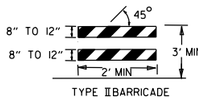
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

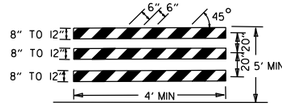
CONES



PLASTIC DRUM

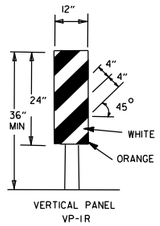




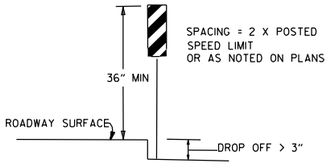


TYPE III BARRICADE

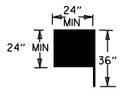
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



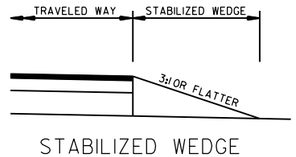
VERTICAL PANEL PLACEMENT



FLAG

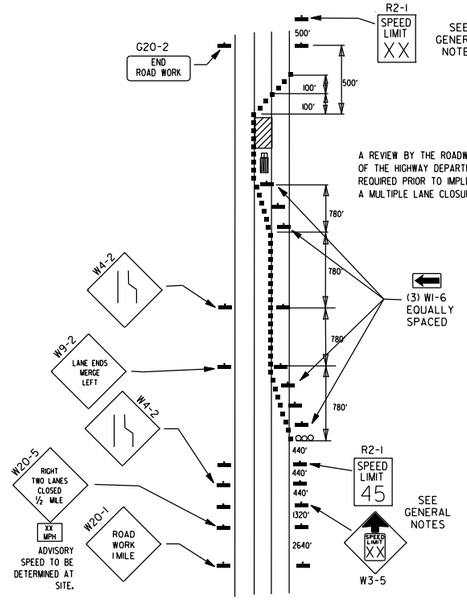


FLAG SHALL BE OF GOOD GRADE RED MATERIAL



STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL ≤ 45 MPH	TRAFFIC CONTROL > 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

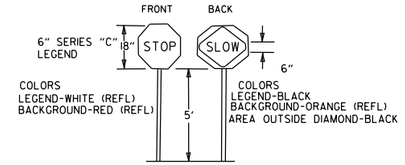
INTERSTATE AND NON-INTERSTATE

FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

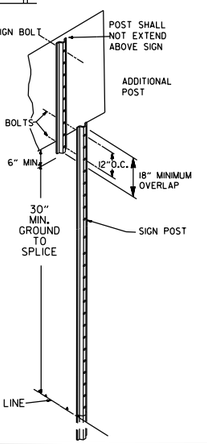
GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE



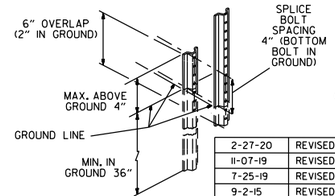
DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

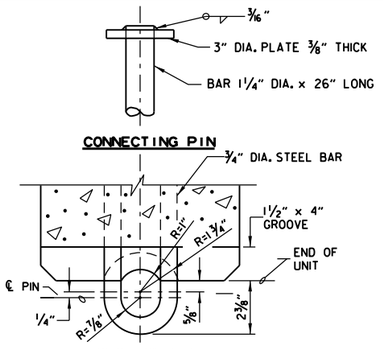
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

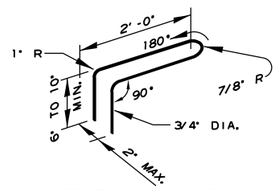
REINFORCING BAR TABLE PER BARRIER UNIT

MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

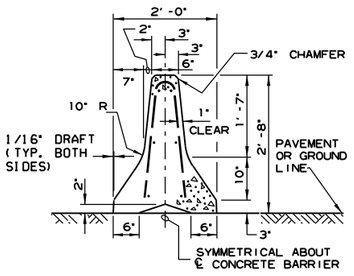


SECTION E-E

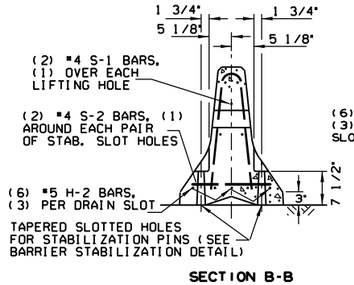
CONNECTION DETAILS



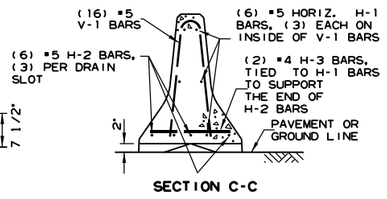
CONNECTION LOOP



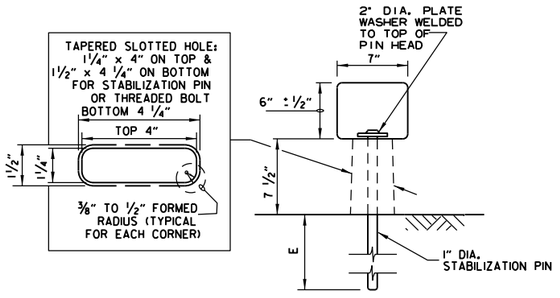
SECTION A-A



SECTION B-B



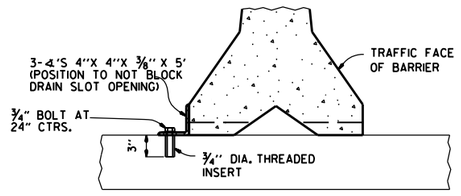
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

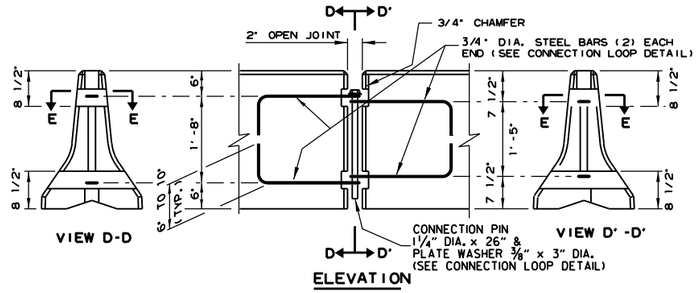
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



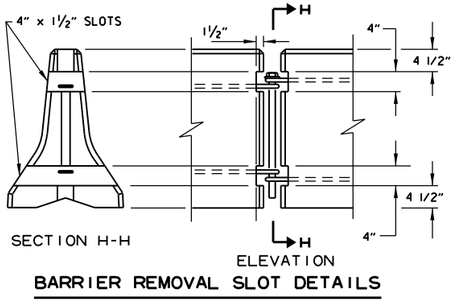
NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL

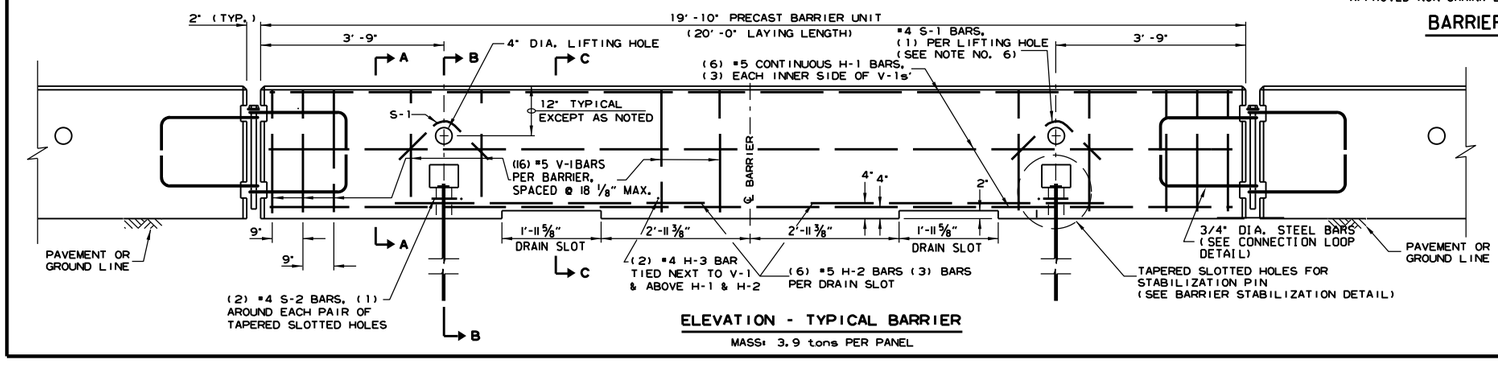
BRIDGE DECKS



ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

GENERAL NOTES

(1) THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

(2) MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

(3) OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

(4) DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

(5) ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

(6) A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

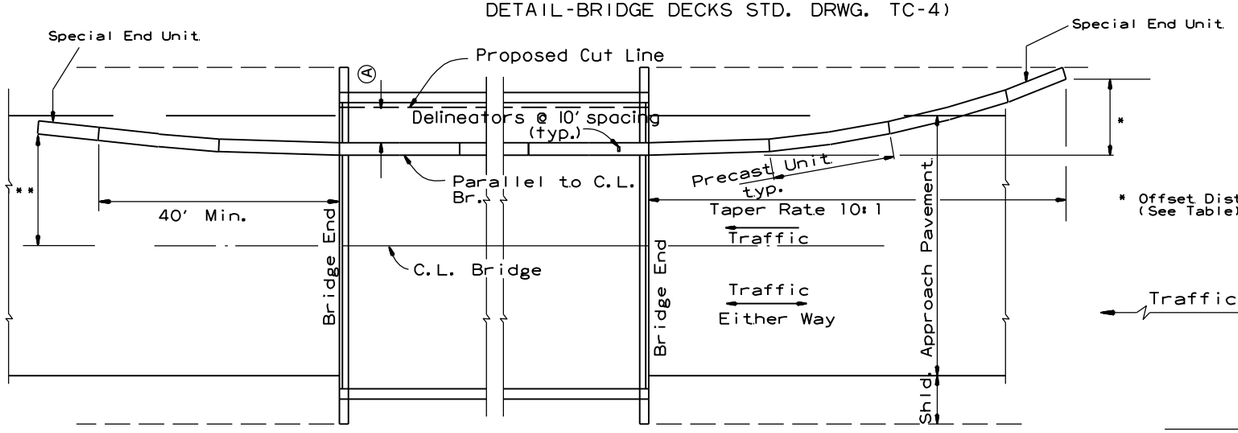
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

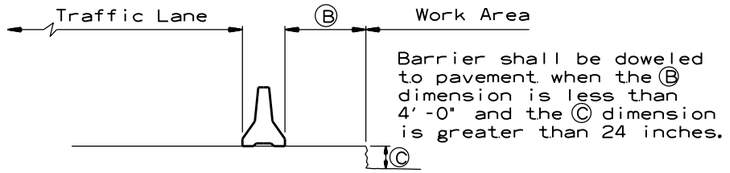
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

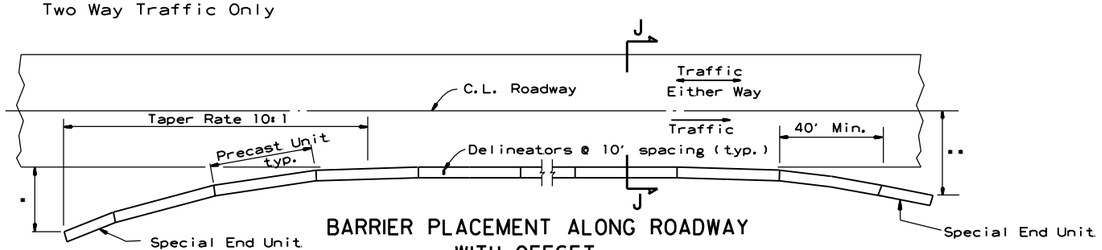


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

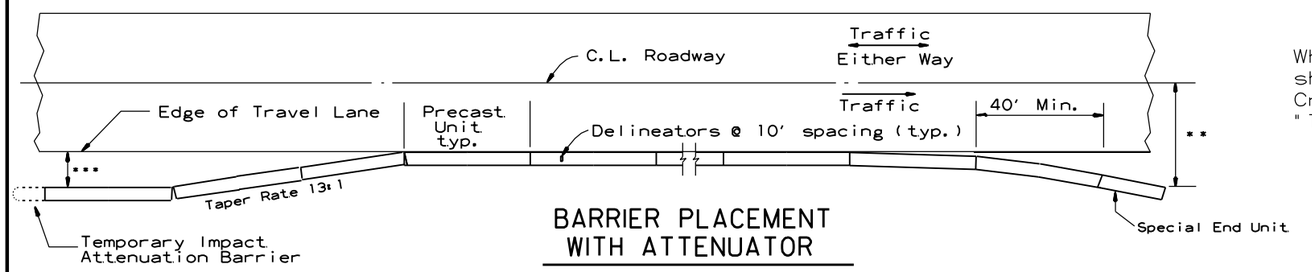
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

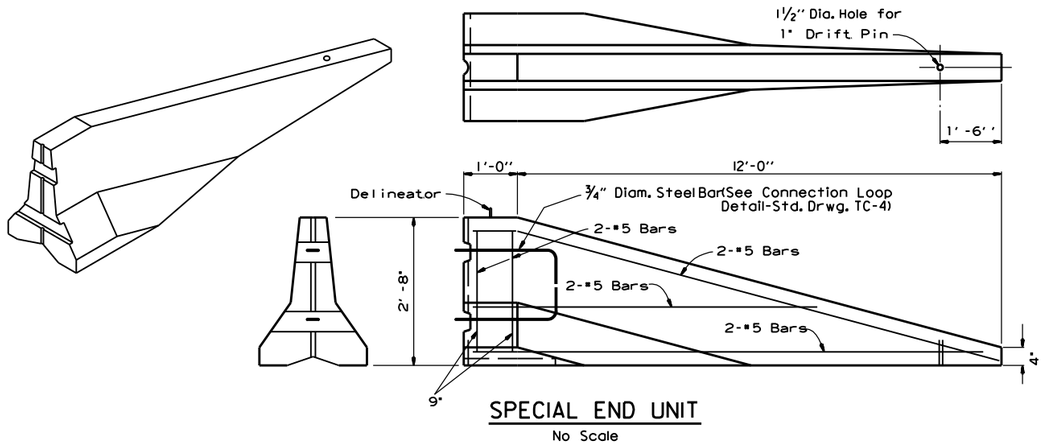


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

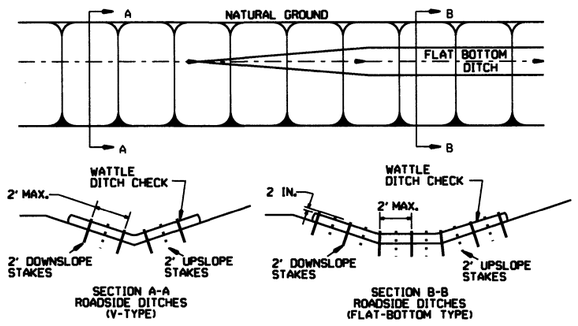
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

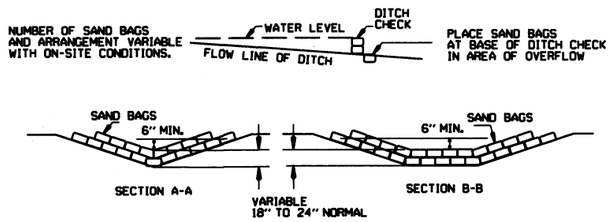
STANDARD DRAWING TC-5

GENERAL NOTES

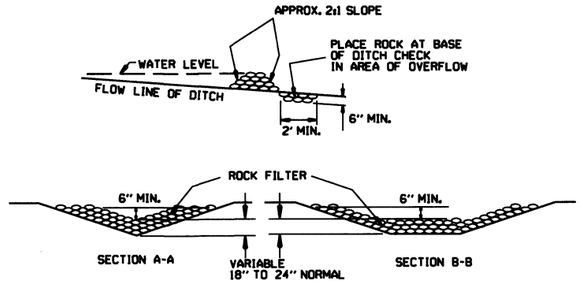
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

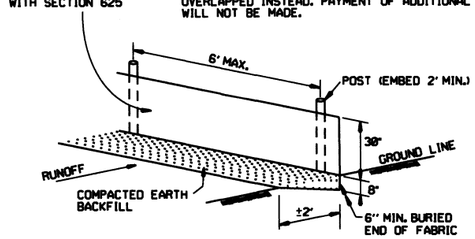


ROCK DITCH CHECK (E-6)

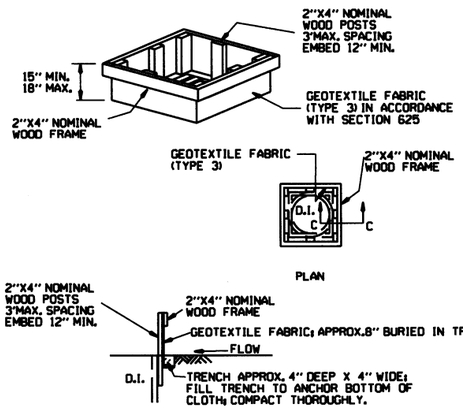
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

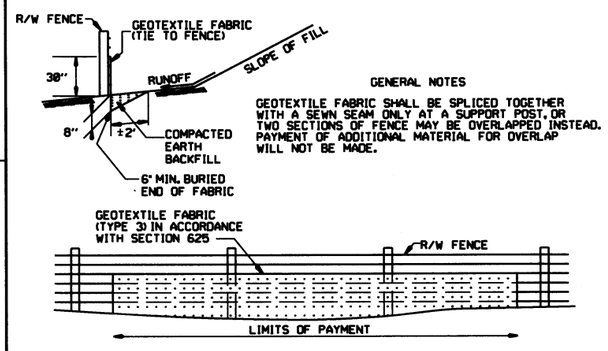
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

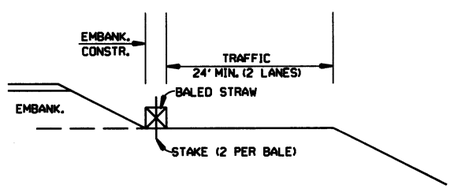
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

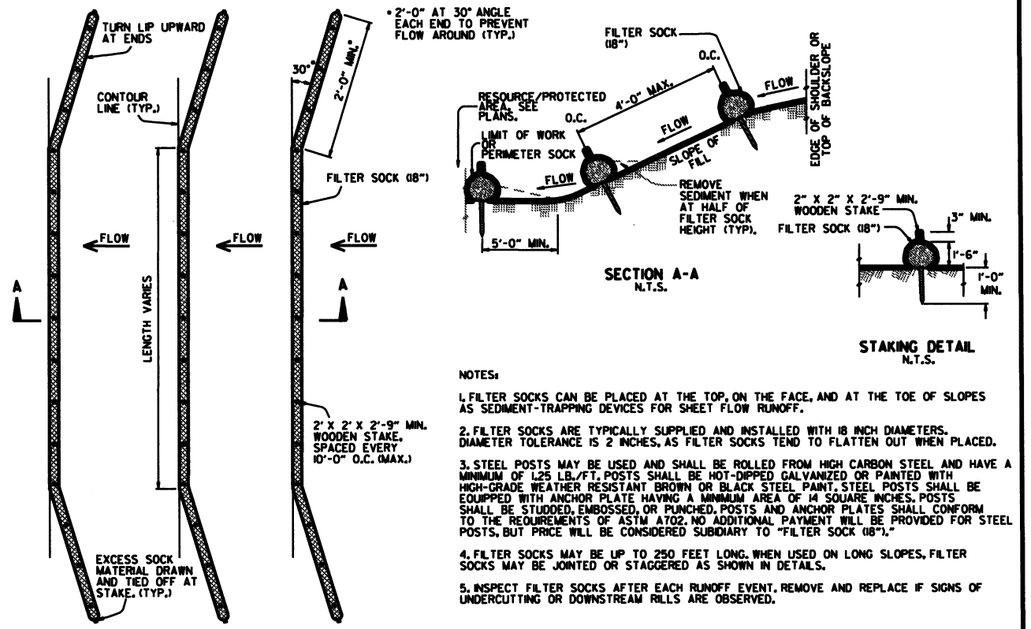
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

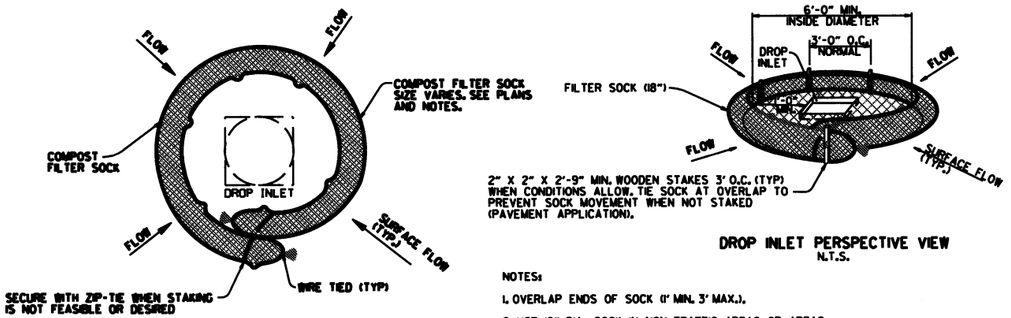
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

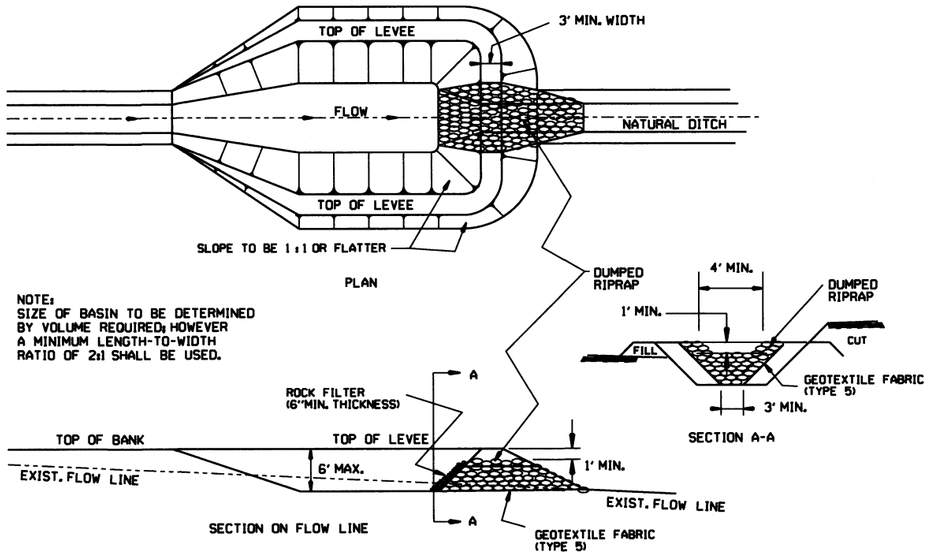
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 8; 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

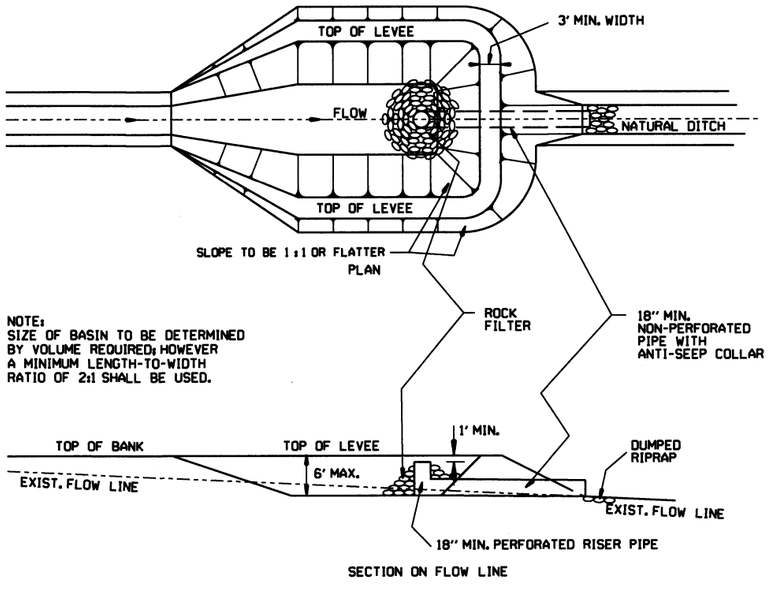
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

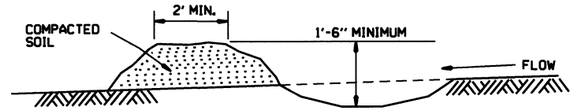
STANDARD DRAWING TEC-1



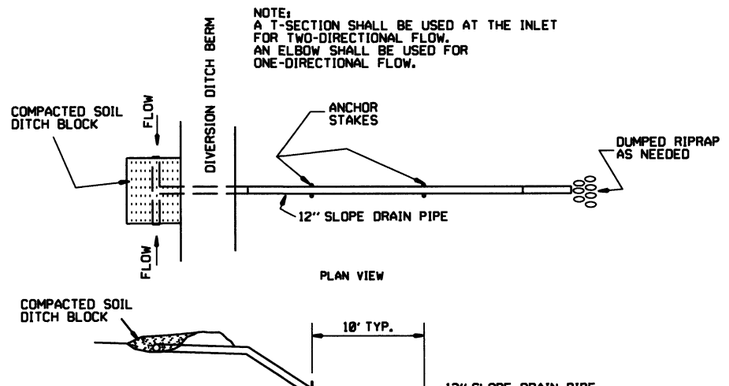
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



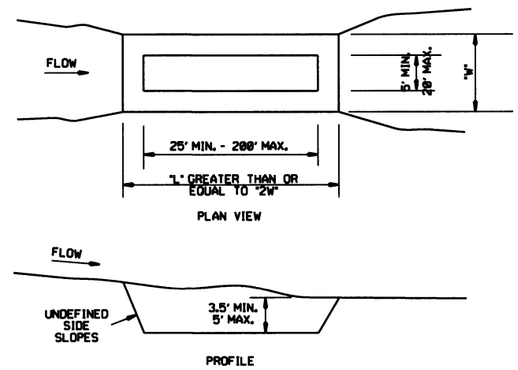
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

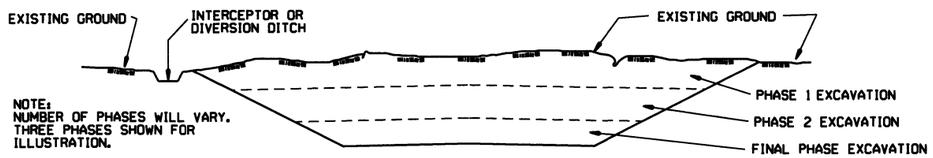
STANDARD DRAWING TEC-2

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



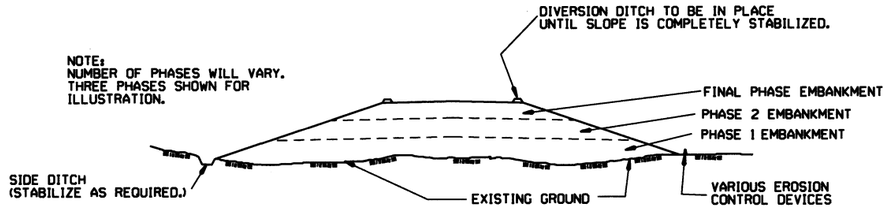
GENERAL NOTE

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

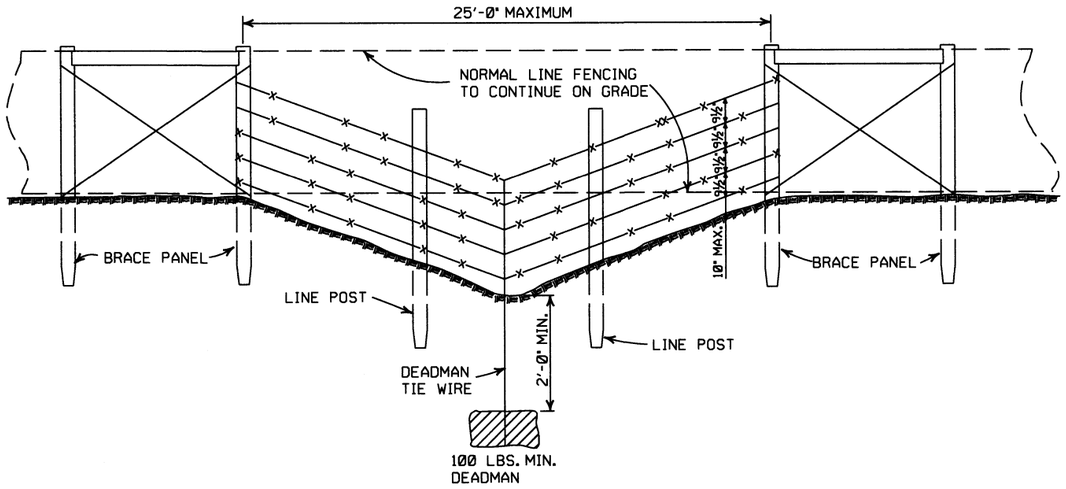
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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.

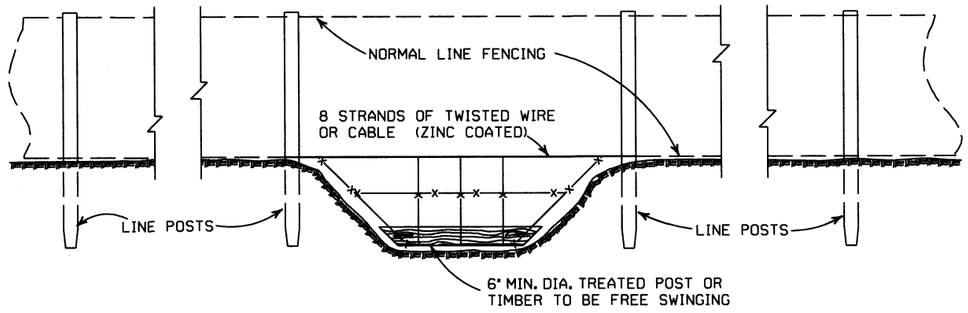
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

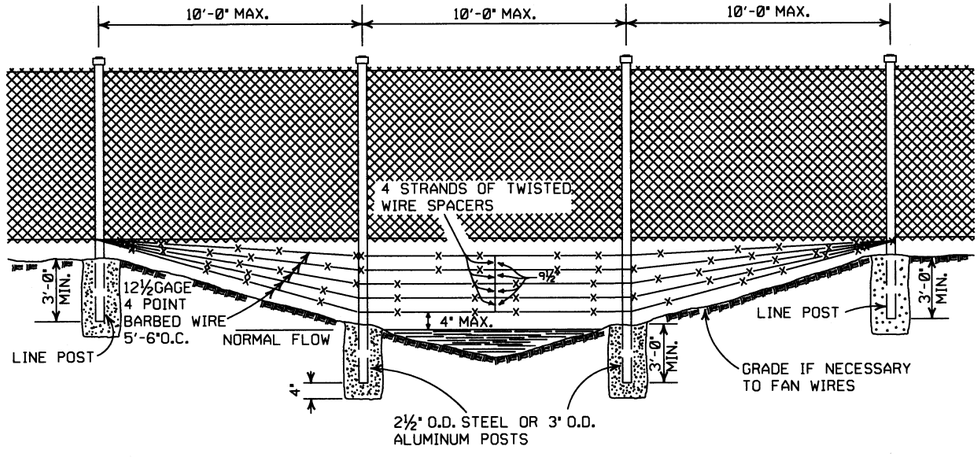
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

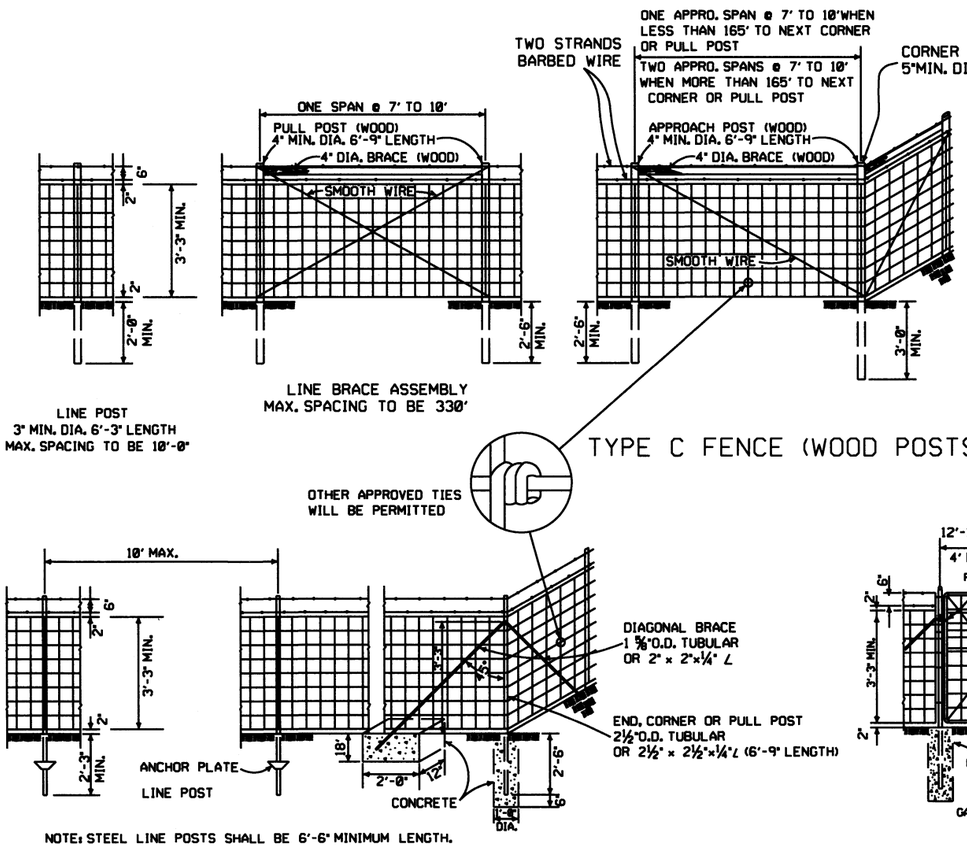
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	FILMED
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

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.

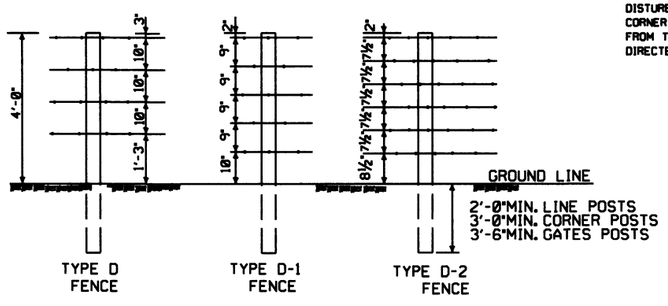
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 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.

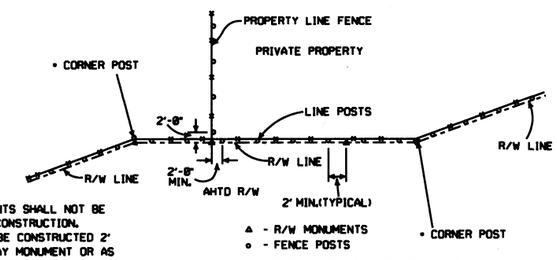
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

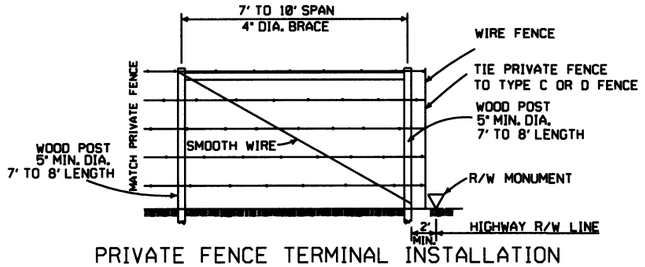


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

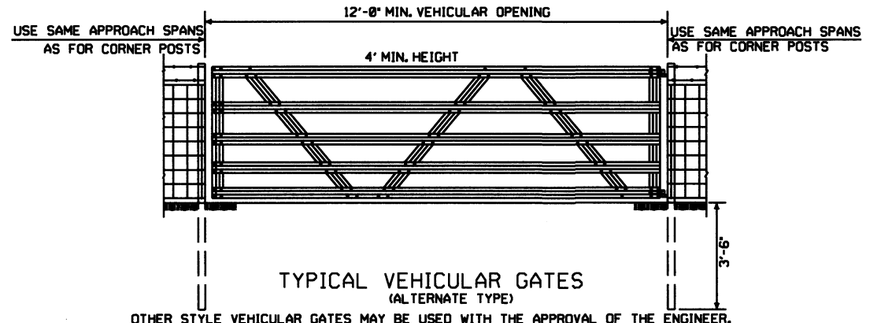


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION
WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4