DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	1	244
				(2)	HWY. 25 RELOCATION (I-40-NORTH) (S)			

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

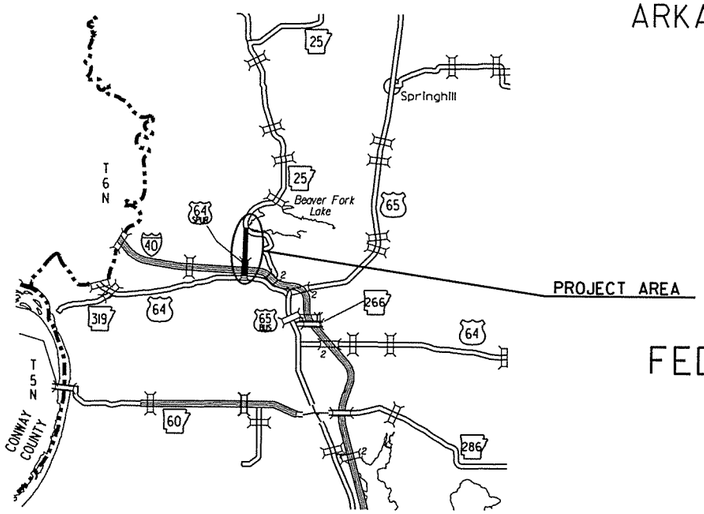
HWY. 25 RELOCATION
(I-40-NORTH) (S)

FAULKNER COUNTY

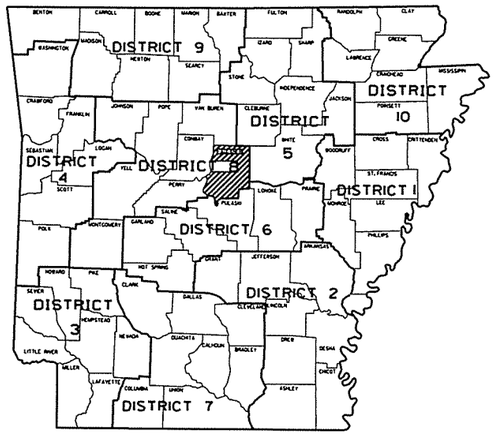
ROUTE 25 SECTION 0

FEDERAL AID PROJ. STP-STPA-STPC-STPF-9095(27)

JOB 080397



VICINITY MAP



ARK. HWY. DIST. NO. 8

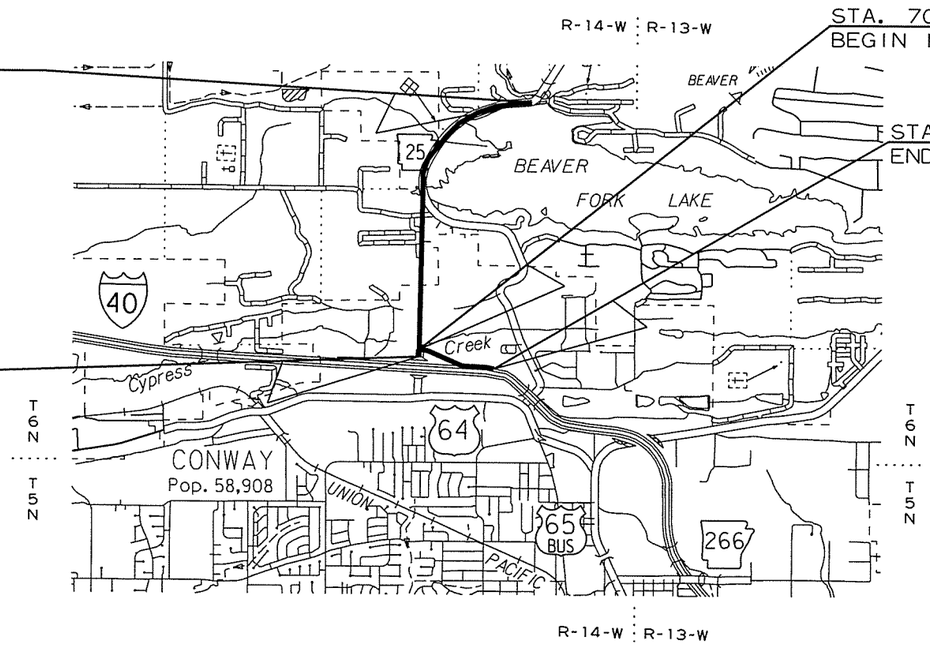
NOT TO SCALE

STA. 210+00.00
END JOB 080397
LOG MILE 2.94

STA. 99+97.14
BEGIN JOB 080397

STA. 7002+29.83
BEGIN I-40 WB. RAMP B

STA. 7026+80.93
END I-40 WB. RAMP B



N

DESIGN TRAFFIC DATA	
DESIGN YEAR	2035
2015 ADT	6500
2035 ADT	9000
2035 DHV	990
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	45 MPH

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7636
M.E. BANKS

10-30-15

DEPUTY DIRECTOR
AND CHIEF ENGINEER

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LONGITUDE	N 92°27'36"	N 92°27'33"	N 92°26'49"
LATITUDE	W 35°07'10"	W 35°08'04"	W 35°08'36"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	11002.86	FEET	OR	2.084	MILES
NET	ROADWAY	11002.86	"		2.084	MILES
NET	BRIDGES	0.00	"		0.000	MILES
NET	PROJECT	11002.86	"		2.084	MILES

P.E. JOB 080397

10/26/2015

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(2) INDEX OF SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

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2	INDEX OF SHEETS			
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11 - 25	SPECIAL DETAILS			
26 - 36	TEMPORARY EROSION CONTROL DETAILS			
37 - 59	MAINTENANCE OF TRAFFIC DETAILS			
60 - 66	PERMANENT PAVEMENT MARKING DETAILS			
67 - 74	QUANTITIES			
75 - 76	SUMMARY OF QUANTITIES AND REVISIONS			
77 - 86	SURVEY CONTROL DETAILS			
87	SOIL LOG			
88 - 101	PLAN AND PROFILE SHEETS			
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103	SIGNING QUANTITIES			
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126	DETAILS OF TYPE SPECIAL APPROACH SLAB	07055	51218	
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128	DETAILS FOR 64' STEEL OVERHEAD SIGN STRUCTURES (SHEET 2 OF 5)	OH-040-23-23	57609	
129	DETAILS FOR 64' STEEL OVERHEAD SIGN STRUCTURES (SHEET 3 OF 5)	OH-040-23-23	57610	
130	DETAILS FOR 64' STEEL OVERHEAD SIGN STRUCTURES (SHEET 4 OF 5)	OH-040-23-23	57611	
131	DETAILS FOR 64' STEEL OVERHEAD SIGN STRUCTURES (SHEET 5 OF 5)	OH-040-23-23	57612	
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133	CURBING DETAILS		CG-1	11-29-07
134	DETAILS OF DRIVEWAYS & ISLANDS		DR-1	2-27-14
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137	DETAILS OF DROP INLETS (TYPE C)		FPC-9E	8-22-02
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139	DETAILS OF DROP INLETS AND SPILLWAY OUTLET		FPC-9N	7-02-98
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143	GUARD RAIL DETAILS		GR-9	4-17-08
144	GUARD RAIL DETAILS		GR-9A	4-17-08
145	GUARD RAIL DETAILS		GR-10A	7-14-10
146	GUARD RAIL DETAILS		GRT-1	7-14-10
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164	DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS		SHS-4	9-12-13
165	DETAILS OF GUIDE SIGN PANELS		SHS-5	9-12-13
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182	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X003-1	5-10-66
183	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-100X-X1	10-10-62
184 - 244	CROSS SECTIONS			

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

10/26/2015

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				6	ARK.			
				JOB NO.		080397	3	244
				(2) GOVERN. SPECS. AND GENERAL NOTES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - TRAINING PROGRAM - JOB 080397
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
108-1_____	LIQUIDATED DAMAGES
400-1_____	TACK COATS
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
JOB 080397__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 080397__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080397__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080397__	CLEARING AND GRUBBING
JOB 080397__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 080397__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 080397__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 080397__	EXTENSION FOR PIPE CULVERTS
JOB 080397__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080397__	HIGH PERFORMANCE PAVEMENT MARKING
JOB 080397__	MAINTENANCE OF TRAFFIC
JOB 080397__	MANDATORY ELECTRONIC CONTRACT
JOB 080397__	NESTING SITES OF MIGRATORY BIRDS
JOB 080397__	OFF-SITE RESTRAINING CONDITIONS FOR BATS
JOB 080397__	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT
JOB 080397__	PARTNERING REQUIREMENTS
JOB 080397__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 080397__	PLASTIC PIPE
JOB 080397__	RUMBLE STRIPES
JOB 080397__	SHORING FOR CULVERTS
JOB 080397__	SOIL STABILIZATION
JOB 080397__	SPECIAL CLEARING REQUIREMENTS
JOB 080397__	SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS
JOB 080397__	STEEL SIGN STRUCTURES
JOB 080397__	STORM WATER POLLUTION PREVENTION PLAN
JOB 080397__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080397__	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 080397__	UTILITY ADJUSTMENTS
JOB 080397__	VALUE ENGINEERING
JOB 080397__	WARM MIX ASPHALT

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 INSURE 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. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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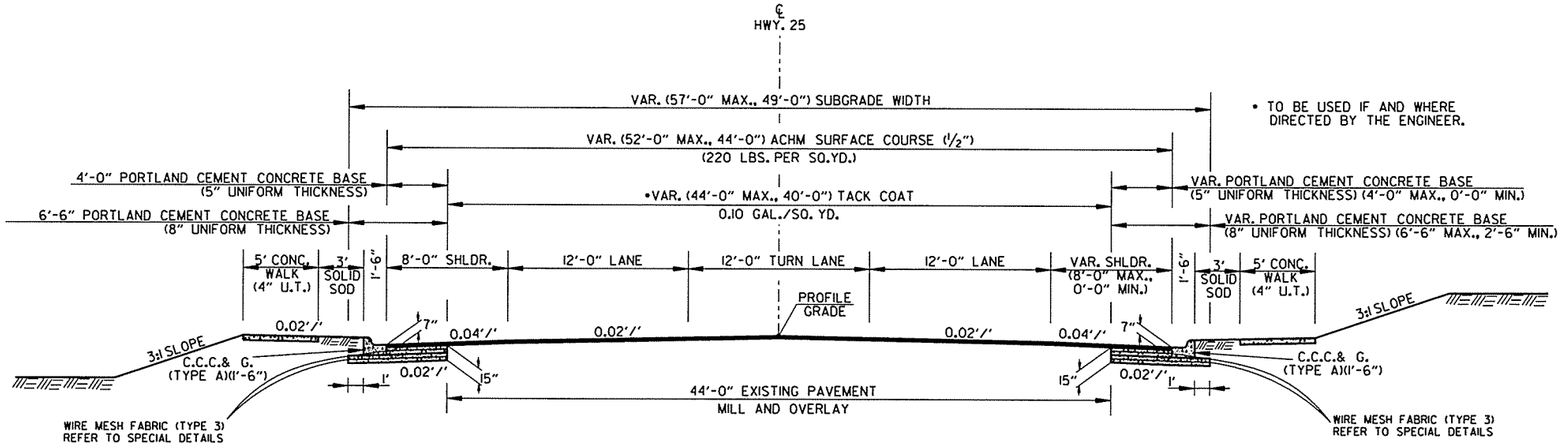
				6	ARK.			
				JOB NO.		080397	4	244

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



HWY. 25-MILL AND OVERLAY
C.C.C. & G. LT. & RT.
STA. 100+33.64 TO STA. 102+68.95

NOTES:

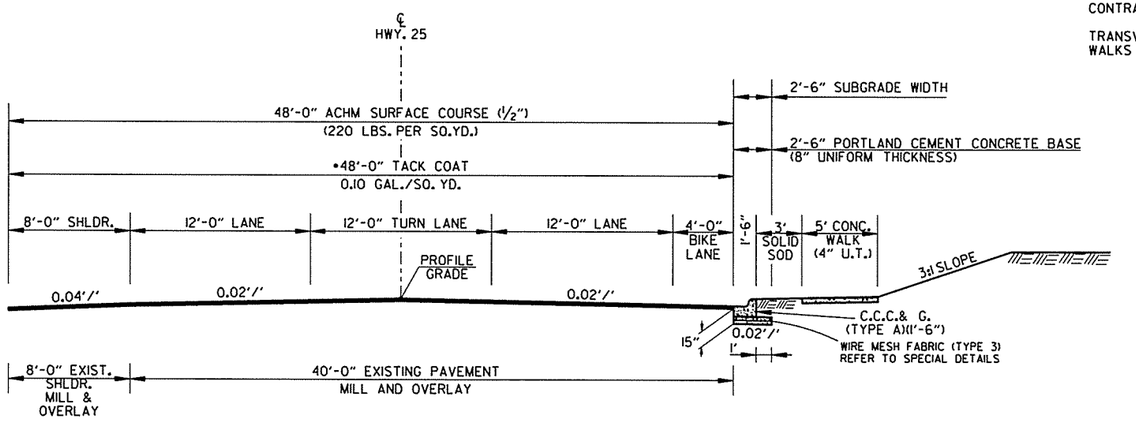
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPRVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.



HWY. 25-MILL AND OVERLAY
C.C.C. & G. RT.
STA. 102+68.95 TO STA. 104+60.22

10/26/2015

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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

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REGISTERED PROFESSIONAL ENGINEER
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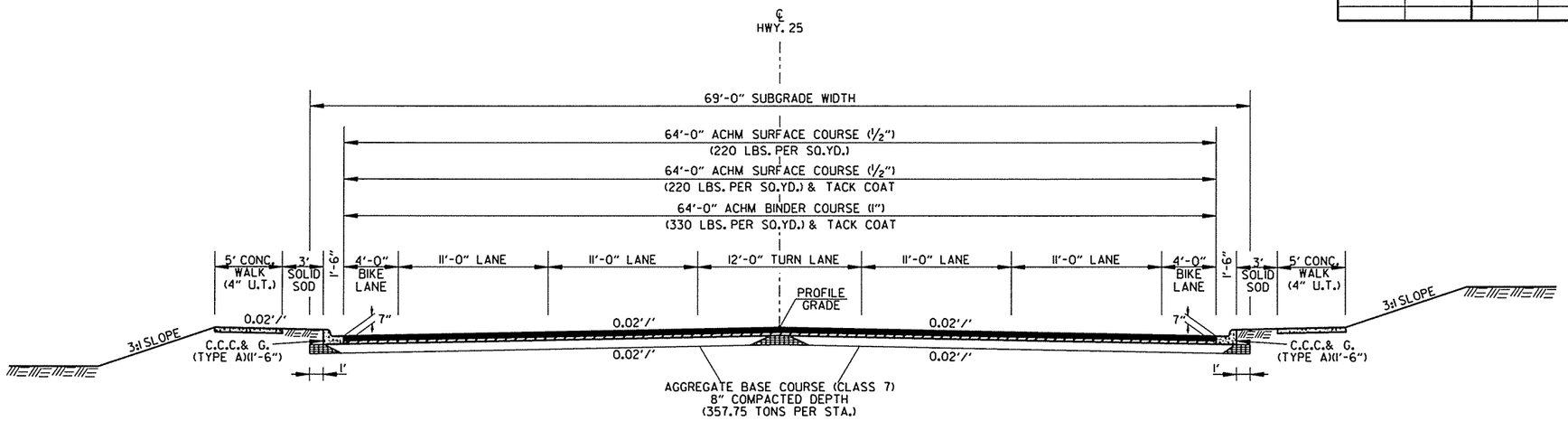
TRINITY D. SMITH
10-29-15



HWY. 25-FULL DEPTH
C.C.C. & G. LT. & RT.
STA. 104+60.22 TO STA. 122+65.12
STA. 145+26.60 TO STA. 149+99.07

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.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPRVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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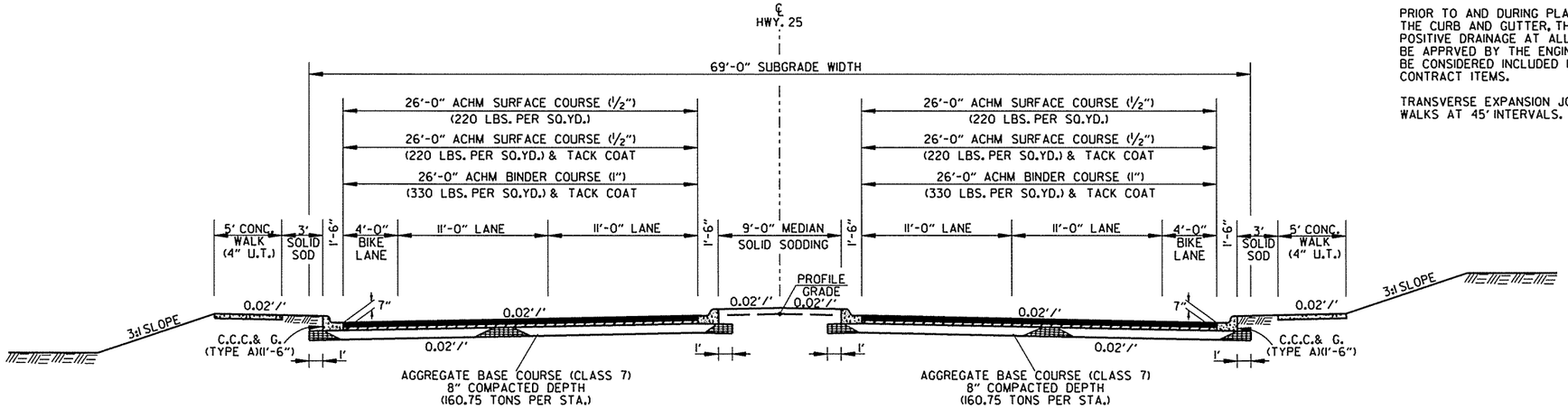

HWY. 25-FULL DEPTH
C.C.C. & G. LT. & RT. WITH RAISED MEDIAN
STA. 122+65.12 TO STA. 145+26.60

10/26/2015

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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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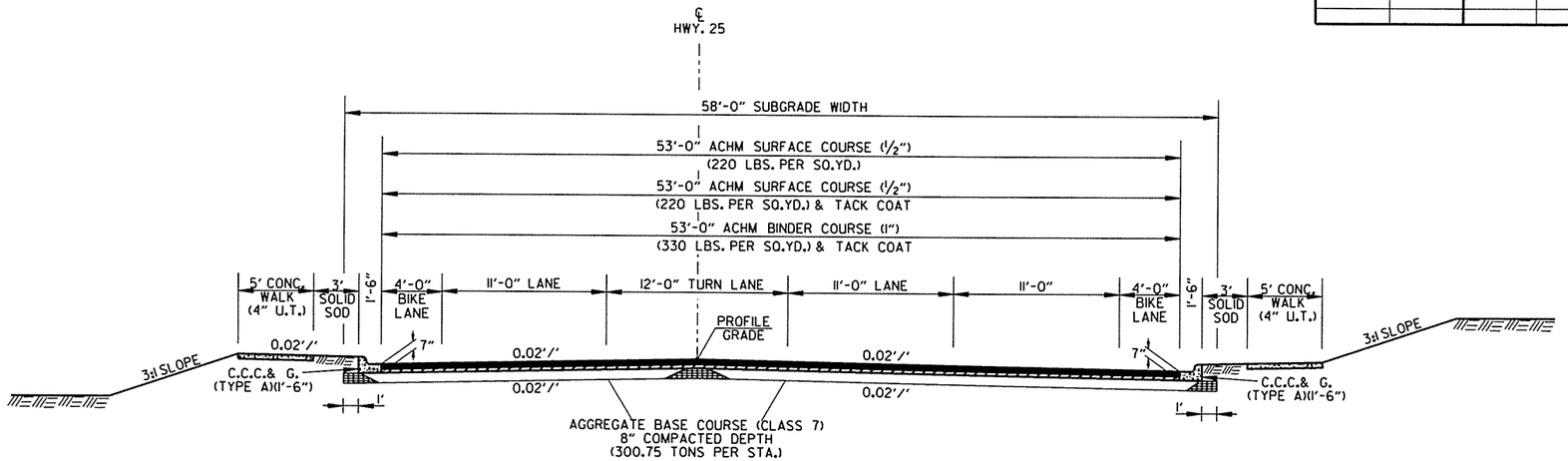
No. 11425
TRINITY D. SMITH
10-29-15



HWY. 25-FULL DEPTH
C.C.C. & G. LT. & RT.
STA. 149+99.07 TO STA. 151+55.96

NOTES:

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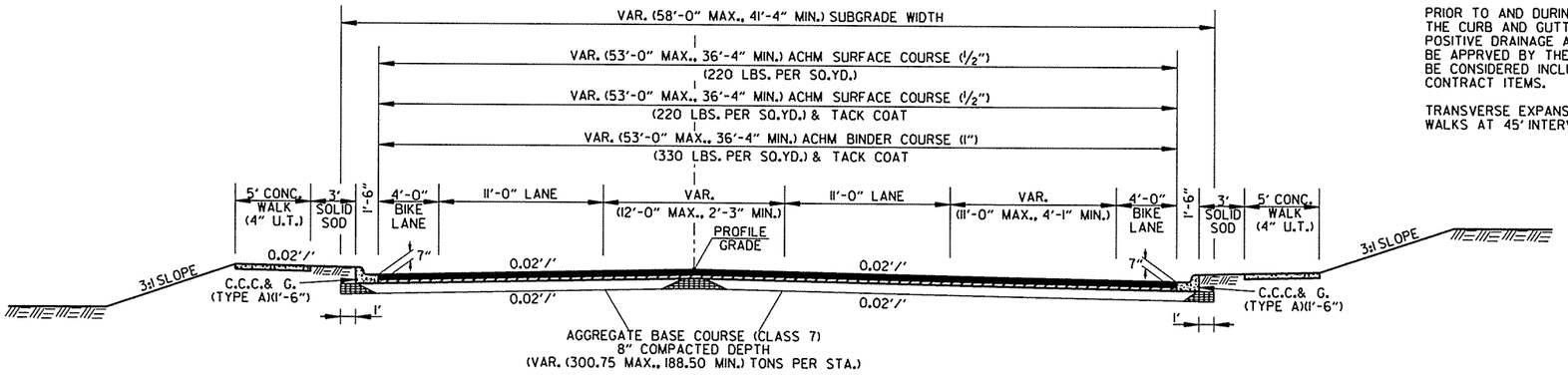
TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.



HWY. 25-FULL DEPTH
C.C.C. & G. LT. & RT.
STA. 151+55.96 TO STA. 156+20.73

10/26/2015

R080397.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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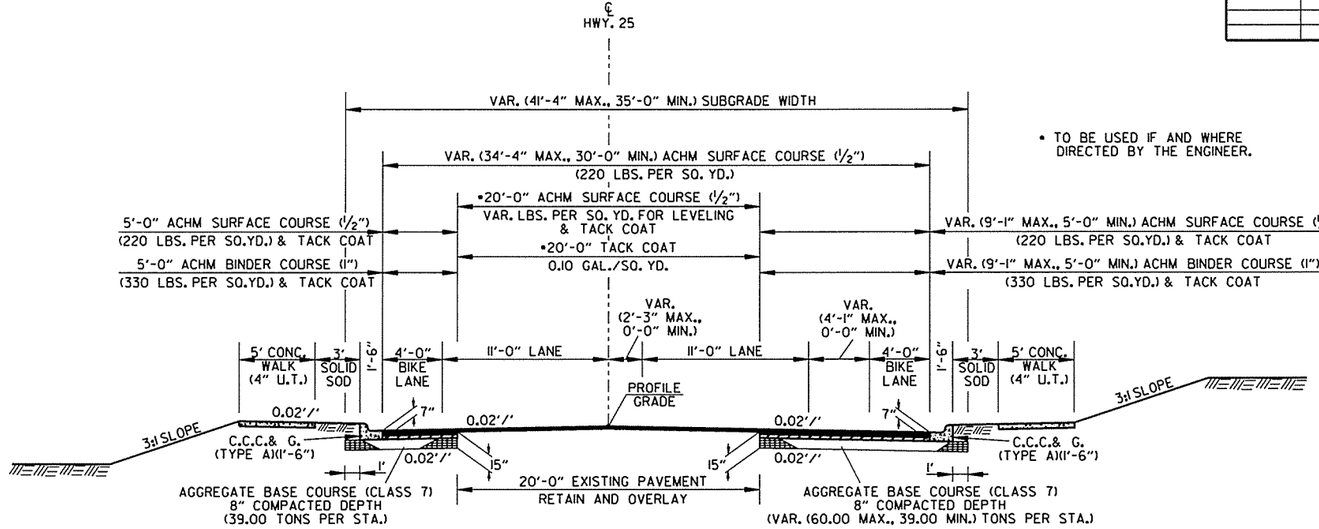
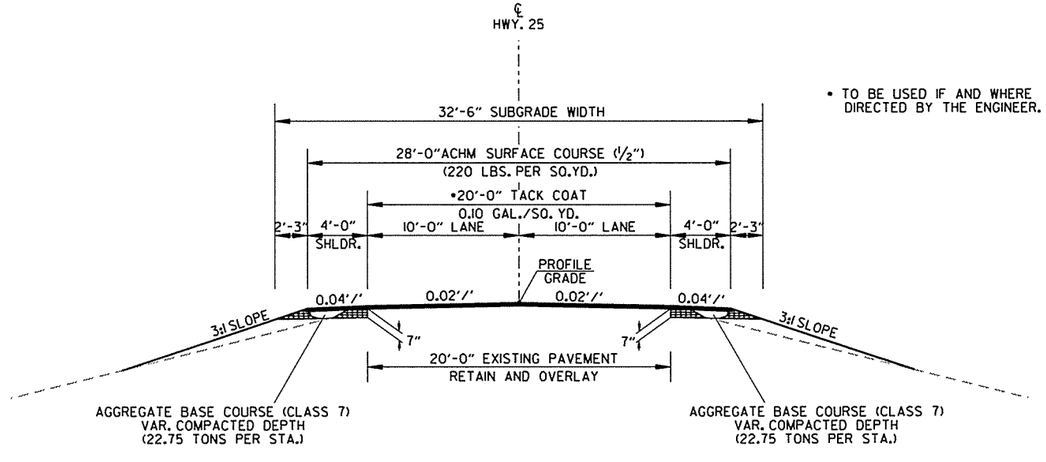
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

HWY. 25-FULL DEPTH
C.C.C. & G. LT. & RT.
STA. 156+20.73 TO STA. 158+97.86



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

HWY. 25-FULL DEPTH
OPEN SHOULDER
STA. 158+97.86 TO STA. 210+00.00

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 PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPRVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

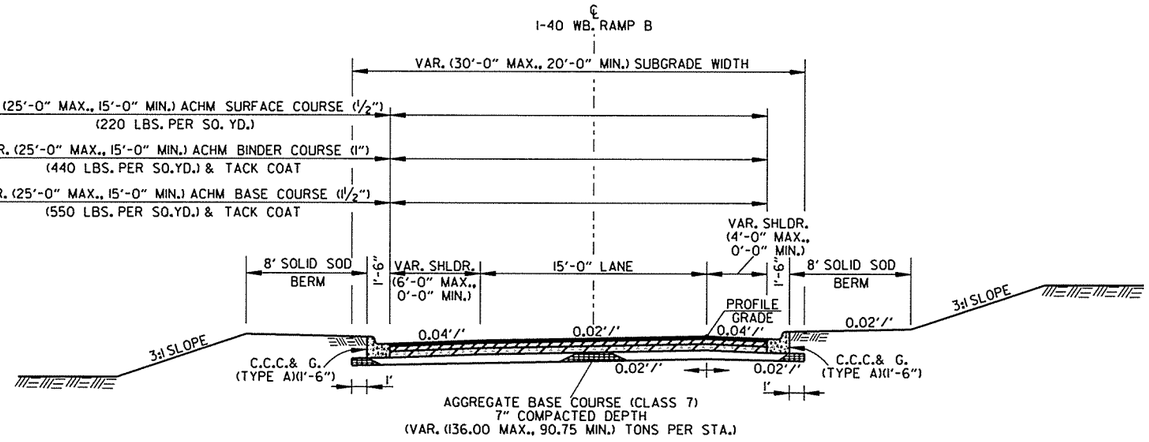
10/26/2015

R080397.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.		080397	8	244

(2) TYPICAL SECTIONS OF IMPROVEMENT



RAMP 3-FULL DEPTH
C.C.C. & G.
STA. 7002+33.76 TO STA. 7005+32.30

NOTES:

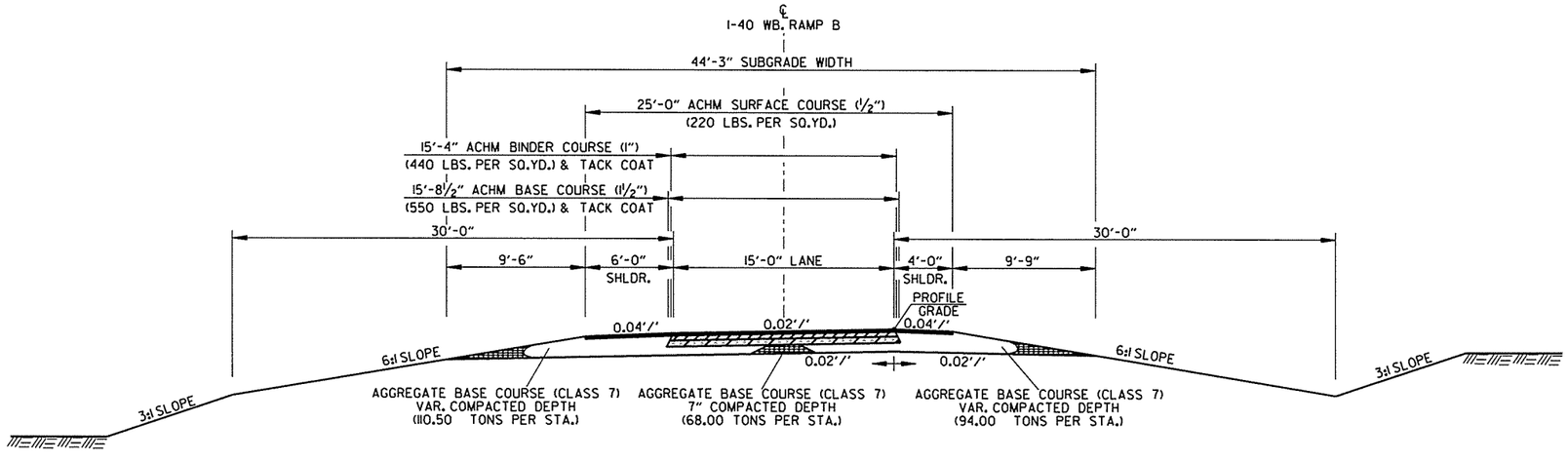
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPRVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



RAMP 3-FULL DEPTH
OPEN SHOULDER
STA. 7005+32.30 TO STA. 7017+77.47

10/26/2015

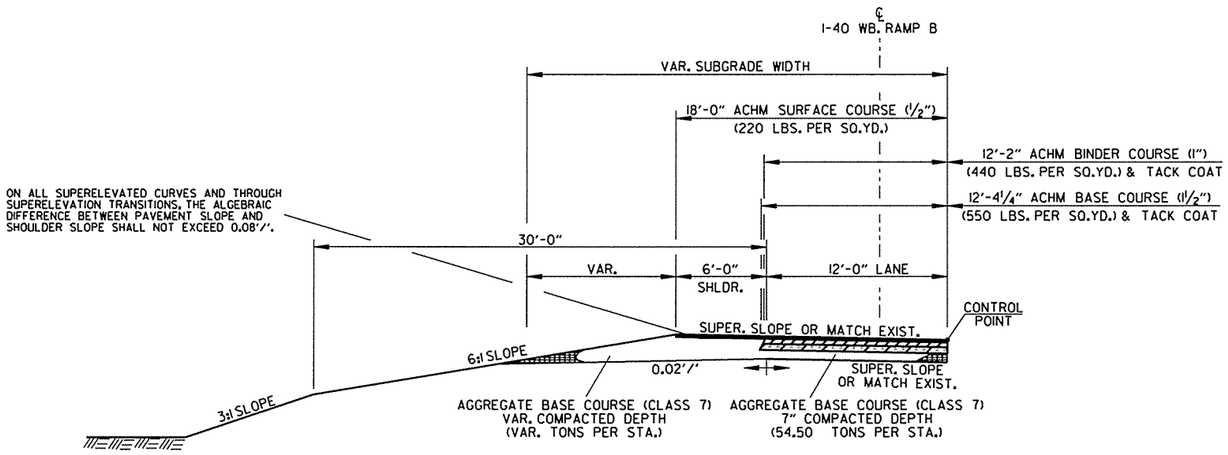
R080397.DGN

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.		080397	9	244

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



DECELERATION LANE
FULL DEPTH

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.

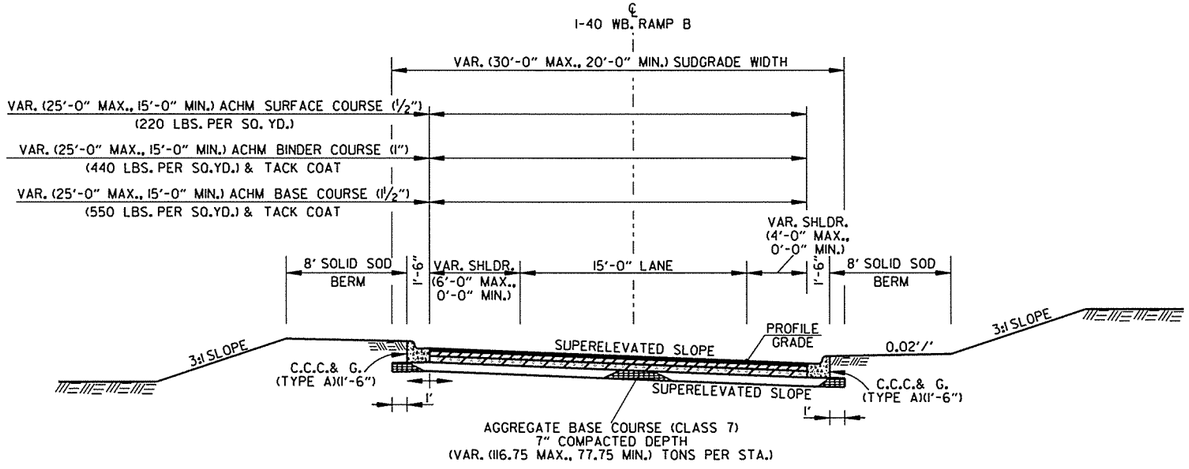
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPRVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



RAMP 3-SUPERELEVATED SECTION
C.C.C. & G.

10/26/2015

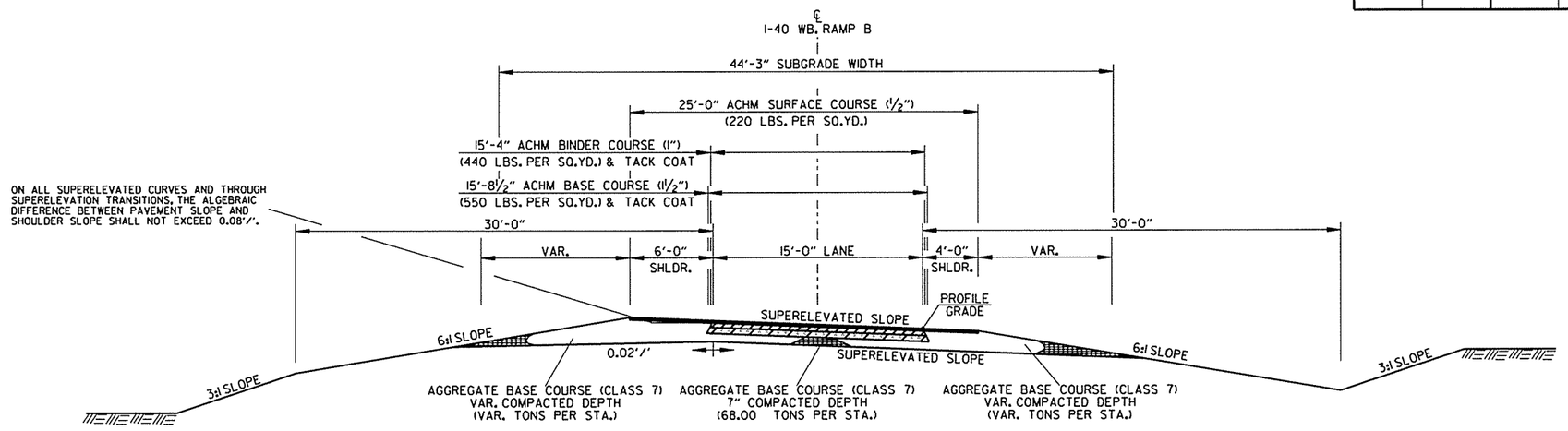
R080397.DGN

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.		080397	10	244

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



RAMP 3-SUPERELEVATED SLOPE
OPEN SHOULDER

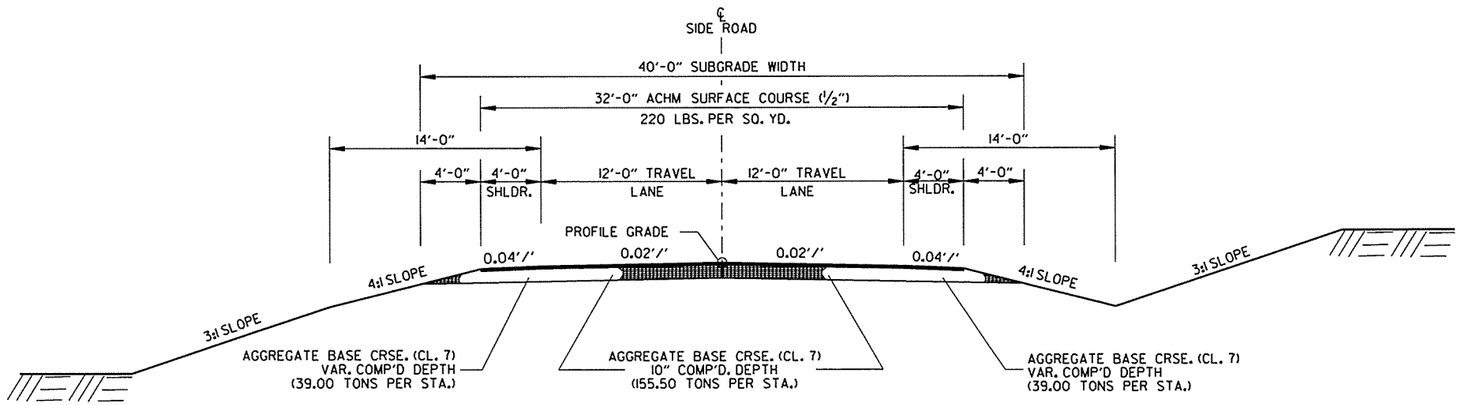
NOTES:

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.

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



SIDE ROADS
TYPICAL SECTION OF IMPROVEMENT

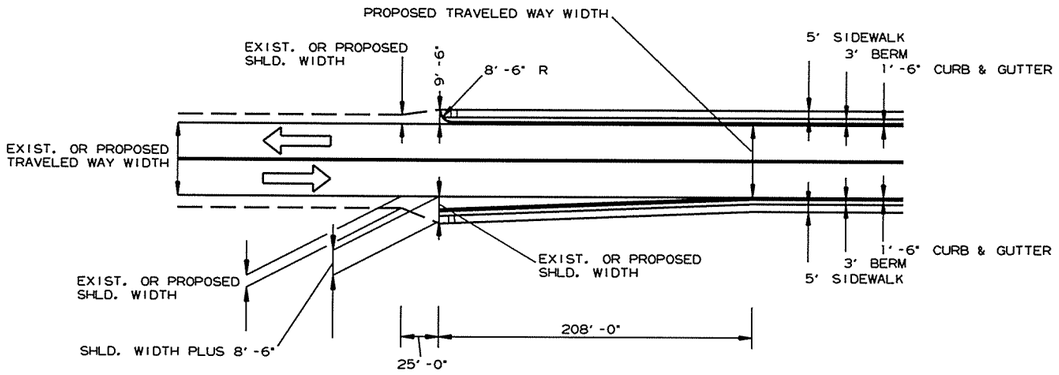
10/26/2015

R080397.DGN

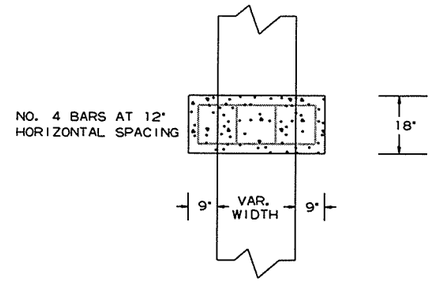
TYPICAL SECTIONS OF IMPROVEMENT

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.		080397	11	244

(2) SPECIAL DETAILS

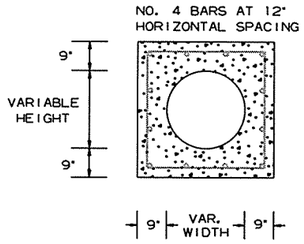


TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

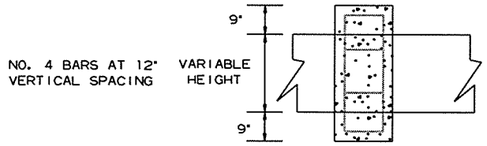


TOP VIEW

MIN 3" COVER

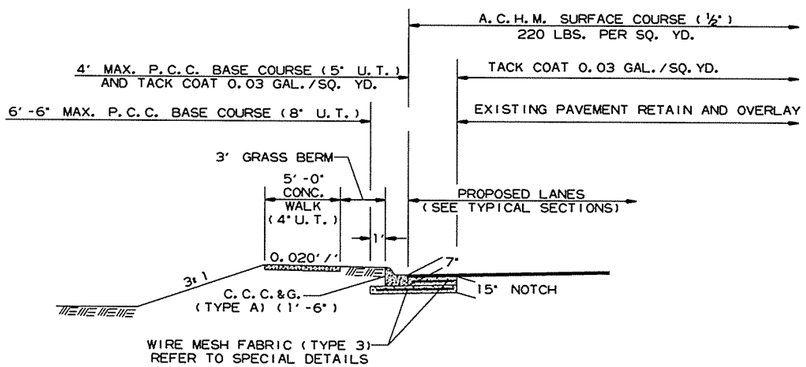


FRONT VIEW



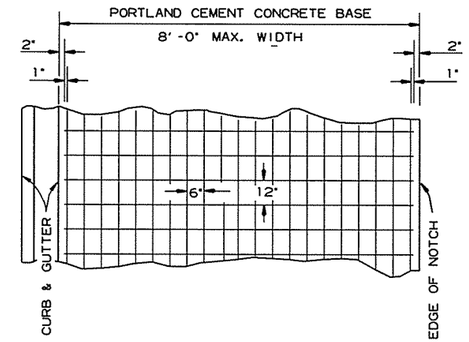
SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL



P.C.C. BASE WIDENING DETAIL

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



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

NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (5" OR 8" U.T.)

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

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-29-15

8/11/2015

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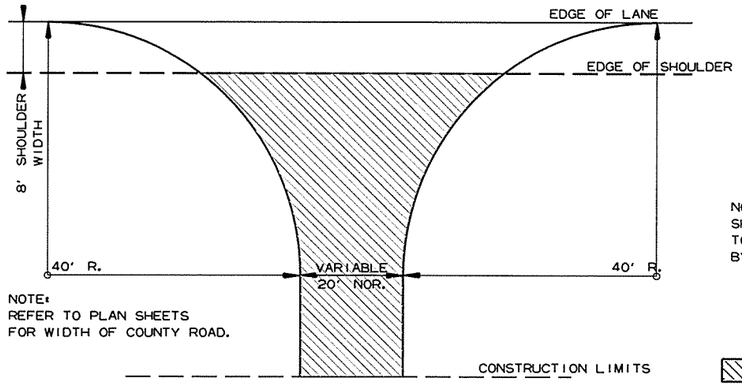
				6	ARK.			
				JOB NO.		080397	12	244

(2) SPECIAL DETAILS

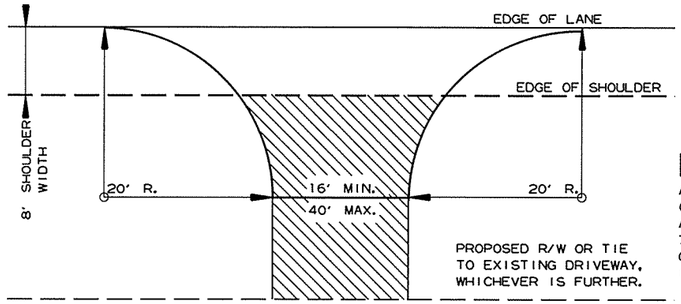


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

A. C. H. M. 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.

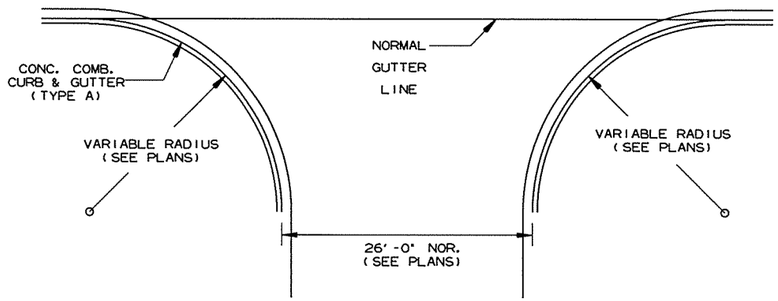
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



A. C. H. M. 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.

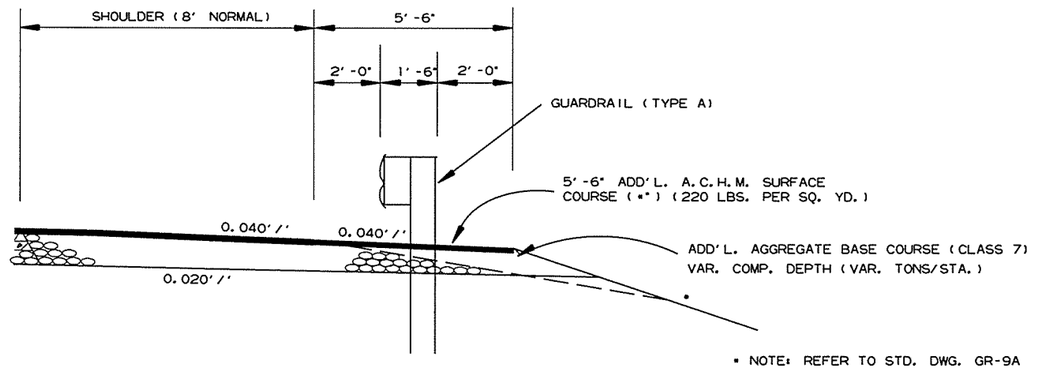
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)



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

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



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

WIDENING FOR GUARDRAIL

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

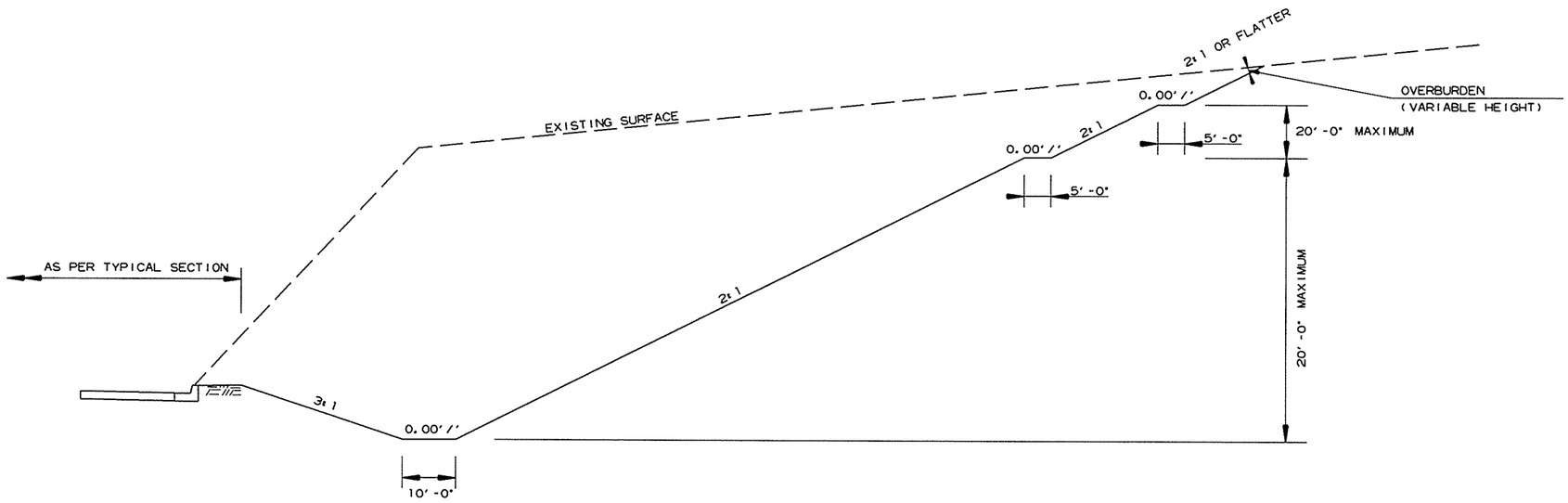
8/11/2015

R080397.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.		080397	13	244

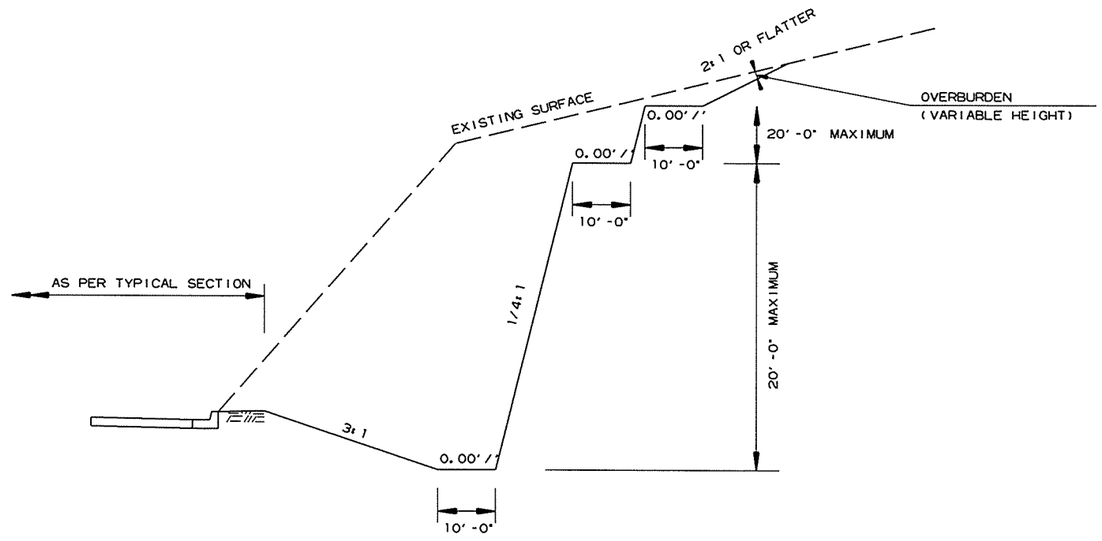
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



DETAIL FOR BENCHING IN SHALE

STA. 122+00 TO STA. 124+00
STA. 140+00 TO STA. 145+00



DETAIL FOR BENCHING IN SOLID ROCK

STA. 124+00 TO STA. 140+00

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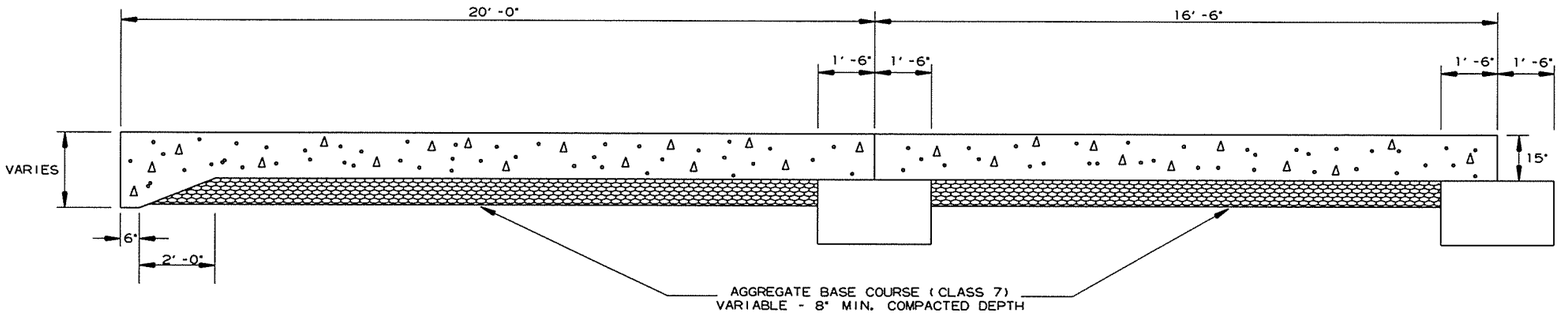
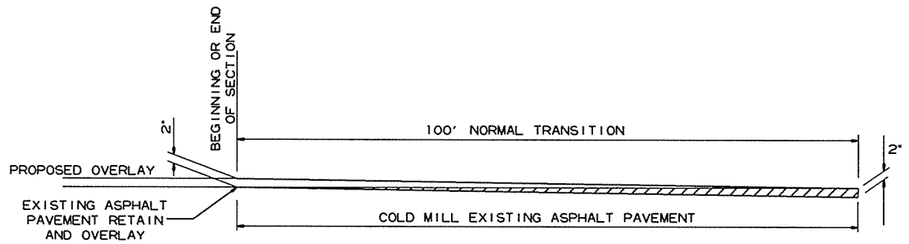
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	14	244

(2) SPECIAL DETAILS

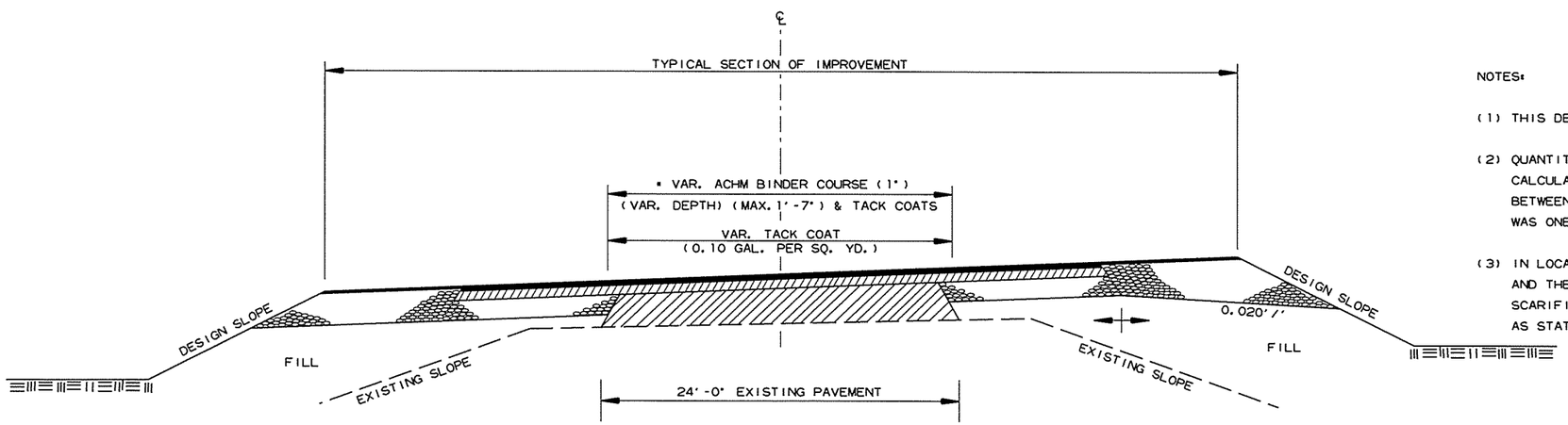
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



SECTION OF APPROACH SLAB



DETAIL FOR TRANSITIONS



* 7" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH A.C.H.M. BINDER COURSE (1")

METHOD OF RAISING GRADE

NOTES:

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

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

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

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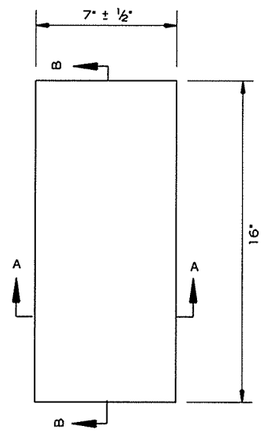
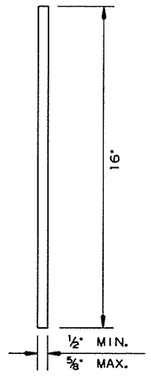
				6	ARK.			
				JOB NO.		080397	15	244

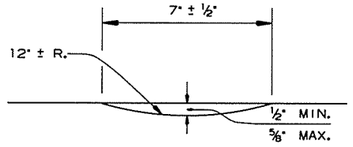
(2) SPECIAL DETAILS



PLAN

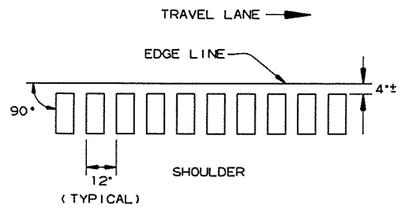


SECTION B-B



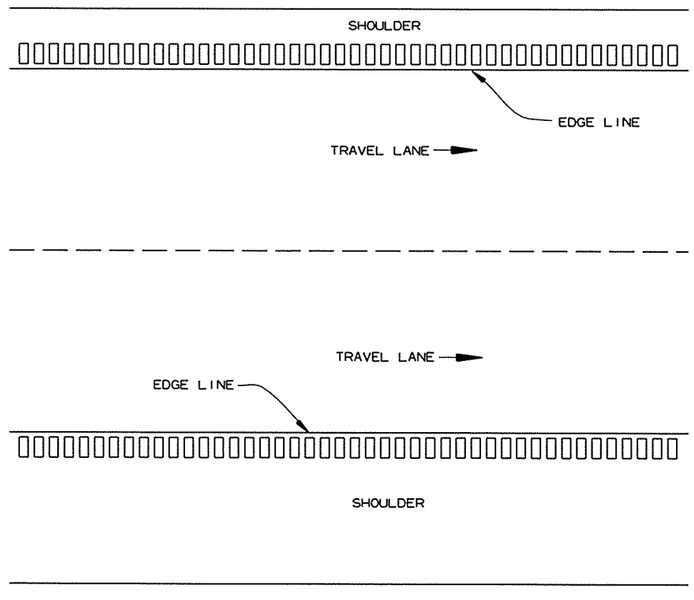
SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS

LEFT OR RIGHT SHOULDER



PLAN VIEW

I-40 WESTBOUND

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE.
2. THE ½" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

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SPECIAL DETAILS

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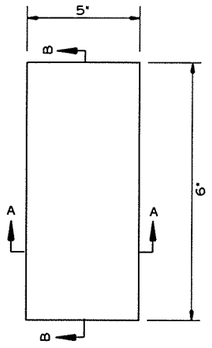
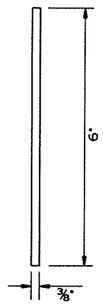
				JOB NO.		080397	16	244

(2) SPECIAL DETAILS

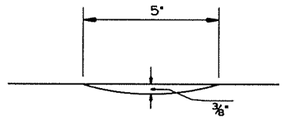
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



PLAN

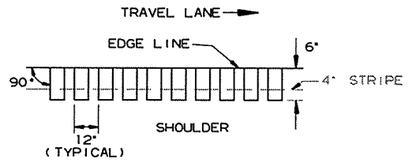


SECTION B-B

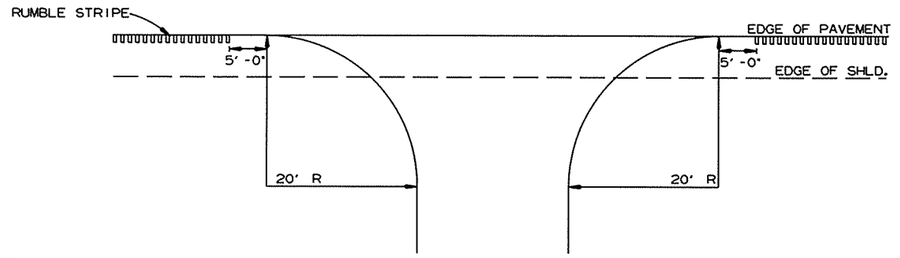


SECTION A-A

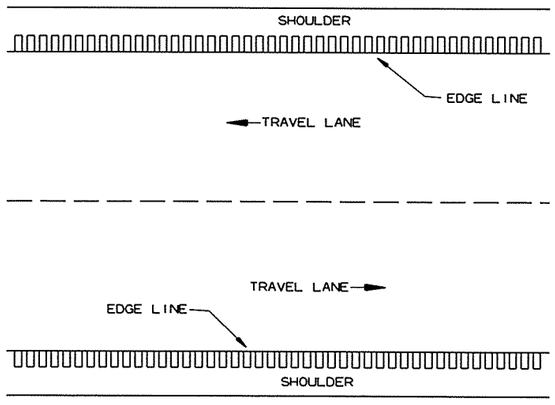
DETAILS OF RUMBLE STRIPE



LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



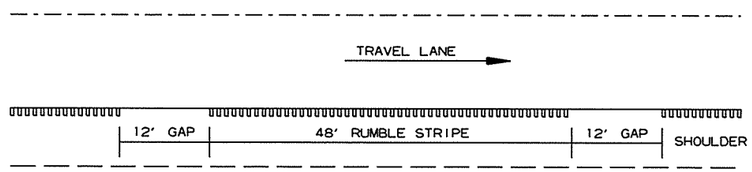
DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

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



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

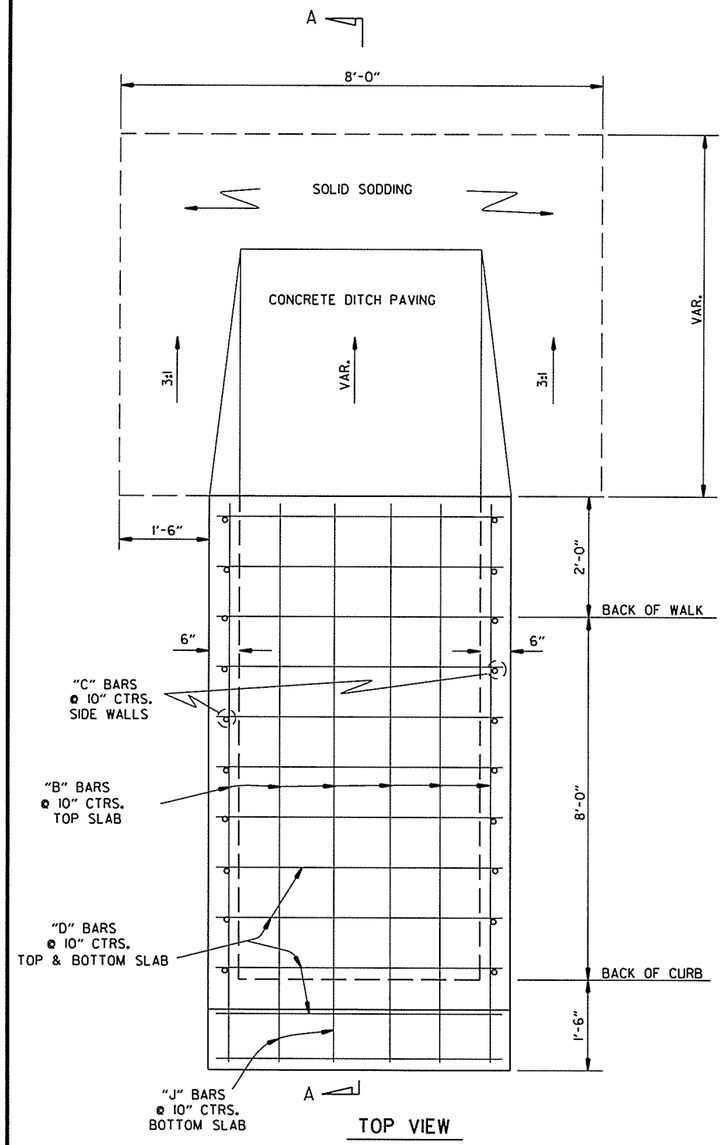
DETAIL FOR GAP PATTERN RUMBLE STRIPE

8/11/2015

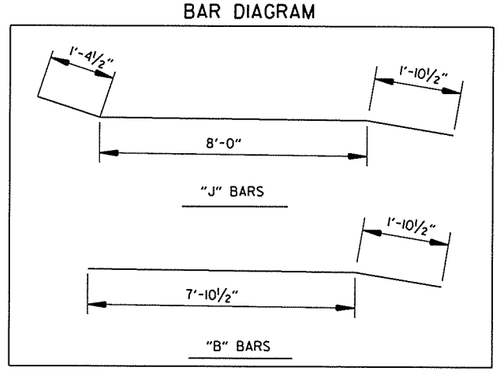
R080397.DGN

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.		080397	17	244

(2) SPECIAL DETAILS

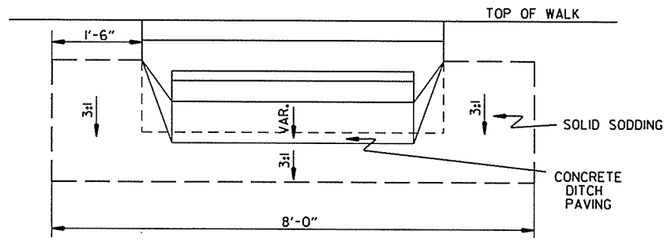


TOP VIEW

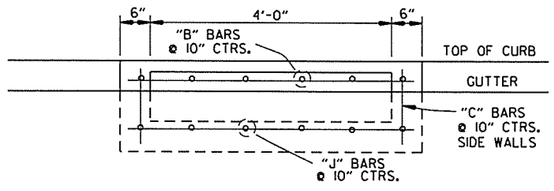


CLASS A CONC.	REINF. STEEL-RDWY. GRADE 60
CU. YDS.	POUND
2.53	207

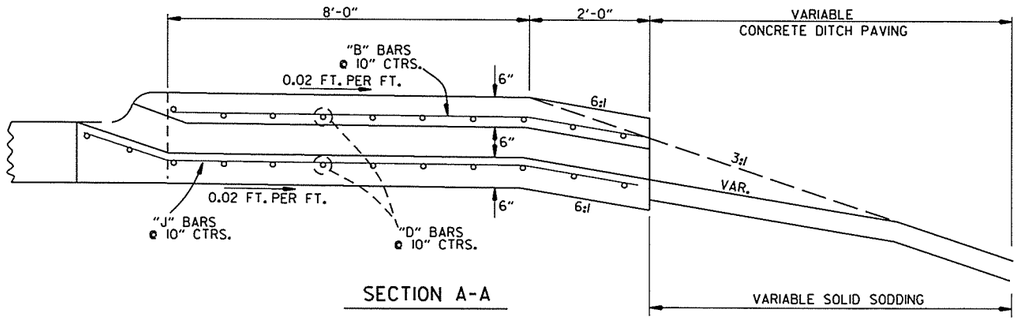
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)



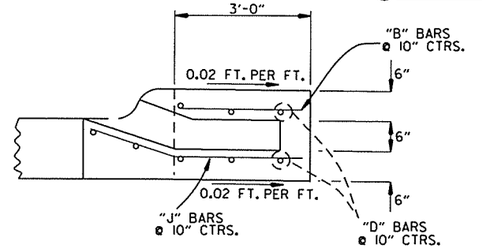
BACK VIEW



FRONT VIEW

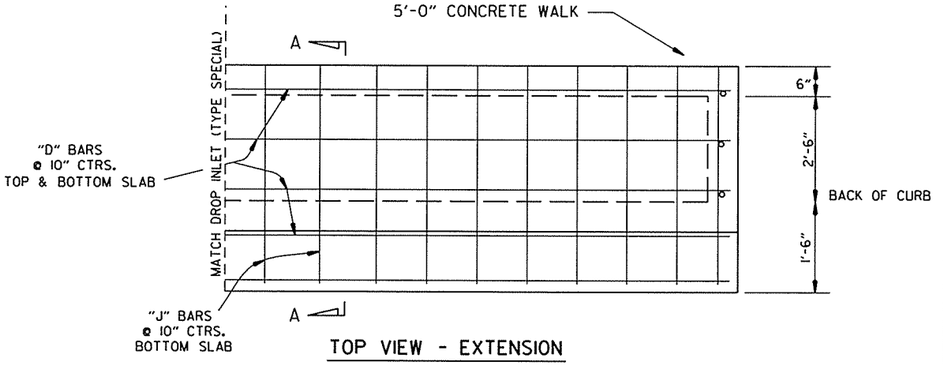


SECTION A-A

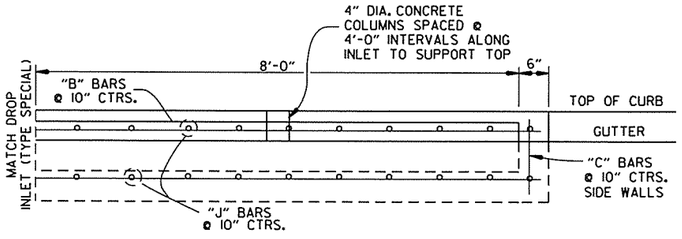


SECTION A-A - EXTENSION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



TOP VIEW - EXTENSION



FRONT VIEW - EXTENSION

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
3. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
4. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
5. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
6. CONCRETE DITCH PAVING & SOLID SODDING SHALL BE PAID FOR SEPARATELY.
7. CONSTRUCT EXTENSIONS UPSTREAM OF DROP INLET UNLESS OTHERWISE SPECIFIED.

DROP INLET (TYPE SPECIAL)

SPECIAL DETAILS

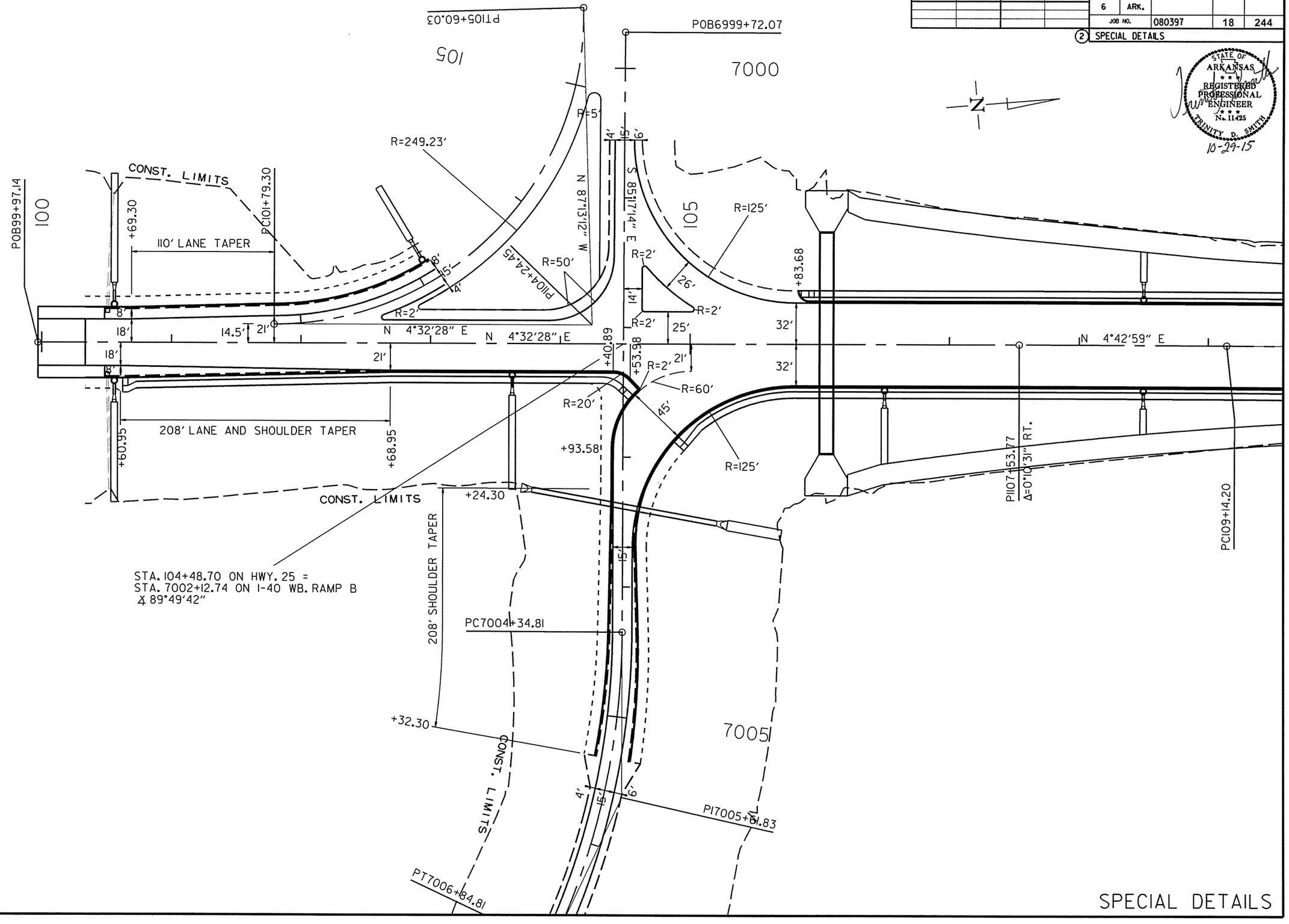
8/11/2015

R080397.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.		080397	18	244

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



SPECIAL DETAILS

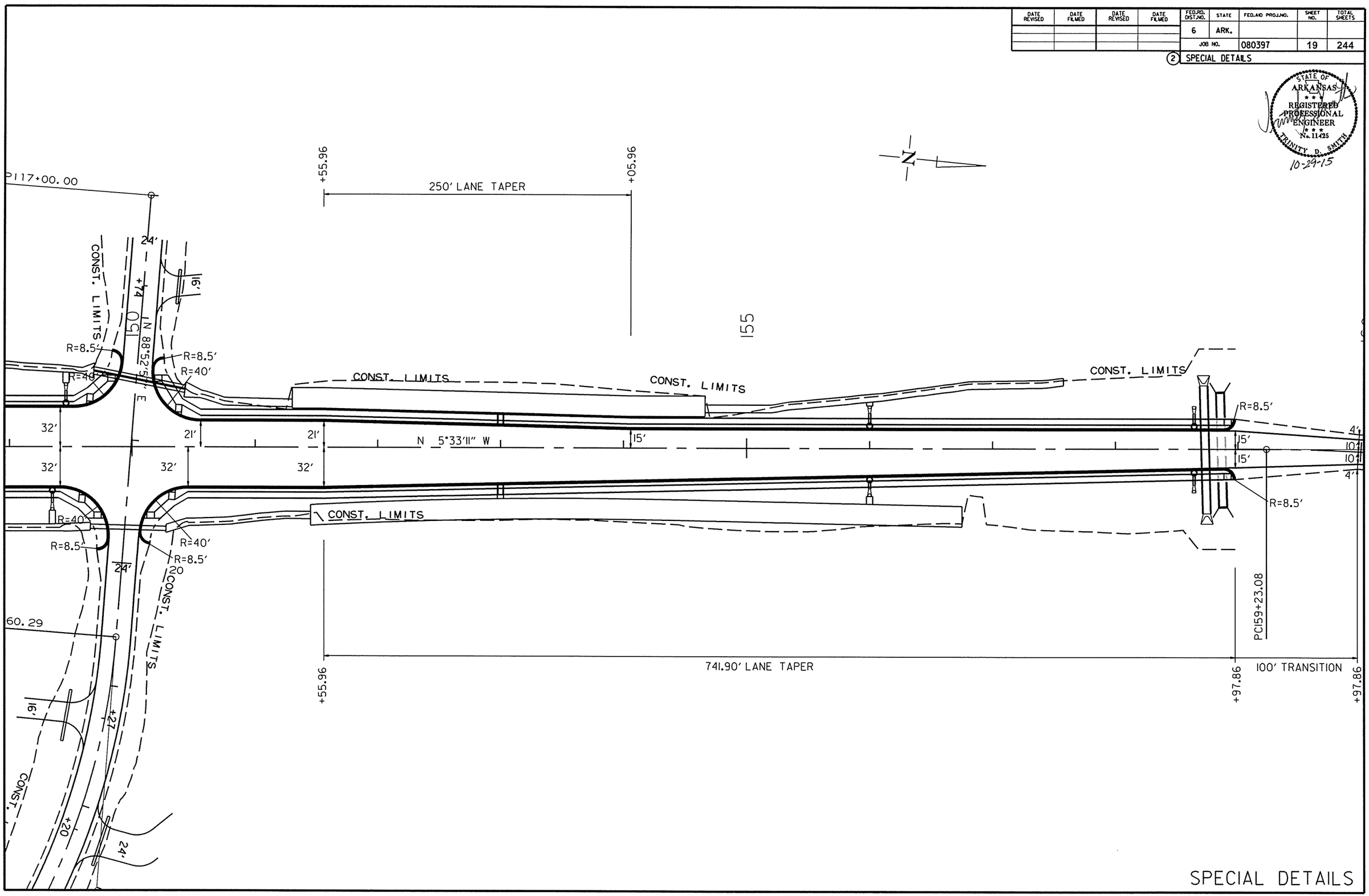
8/11/2015

R080397.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.		080397	19	244

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



8/11/2015

R080397.DGN

SPECIAL DETAILS

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.		080397	20	244

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
8-11-15

TABULAR DATA BY: BHS DATE: 8/10/2015
CHECKED BY: CWY DATE: 8/11/15

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
11'-4"	8'-0"	0'-9"	0'-8"	0	2:1	10'-0"	2'-0"	8'-10"	2'-8"	30	30	3'-2"	4'-7"	4'-7"	1'-7 1/2"	1'-7 1/2"	14'-0"	14'-0"	17'-3 3/8"	17'-3 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
8.46	884

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	14	L	Min 3'-11"	4	12	5	L 5'-1"	-	-	-	L -	4	18	6	Min	4	18	4	13'-8"	4	18	10	L Min 5'-3"		4	8	18'-1"	4	18	10	Min	4	18	2	Min	4	2	14'-10"	4	2	16'-1"	6	12	8	L 3'-4"		442
					Max 11'-1"												4'-9"								Max 11'-3"								2'-8"				16'-9"											
				X	Min 0'-9"				X 1'-8"				X -				Max					X	18	10	X Min 2'-4"								Max				Max							X 1'-8"		
					Max 2'-2"																				Max 2'-4"																						
				Y	Min 3'-3"				Y 3'-6"				Y -				11'-7"					Y	3	0	Y Min 3'-0"								4'-1"				16'-9"											
					Max 9'-0"																				Max 9'-0"																						
WING B	4	12	14	L	Min 3'-11"	4	12	5	L 5'-1"	-	-	-	L -	4	18	6	Min	4	18	4	13'-8"	4	18	10	L Min 5'-3"		4	8	18'-1"	4	18	10	Min	4	18	2	Min	4	2	14'-10"	4	2	16'-1"	6	12	8	L 3'-4"		442
					Max 11'-1"												4'-9"								Max 11'-3"								2'-8"				16'-9"											
				X	Min 0'-9"				X 1'-8"				X -				Max					X	18	10	X Min 2'-4"								Max				Max							X 1'-8"		
					Max 2'-2"																				Max 2'-4"																						
				Y	Min 3'-3"				Y 3'-6"				Y -				11'-7"					Y	3	0	Y Min 3'-0"								4'-1"				16'-9"											
					Max 9'-0"																				Max 9'-0"																						

This drowing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 2 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF SINGLE-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACEING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	"k1", "k2" & "h" SIZE	"k1", "k2" & "h" NO. REQ'D	"k1", "k2" & "h" LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH			Max				Max							Max			Max			LONG	k1			
																																		k2			
														Min				Min							Min			Min			SHORT				
																															h			Y

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

INLET SLOPE SECTION(S)

	R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF.STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
	D	S	H	T	B	C	OW	OH	SL																						
A	10	10	8	9.5	9.5	8	11'-4"	9'-7"	12.00	6	5.5	26	11'-0"	6	4.5	32	11'-0"	5	5	56	9'-3"	4	11	12	4	11	12	4	12	16
B	15	10	8	11	11	9	11'-6"	9'-10"	6.00	7	6	12	11'-2"	6	4	18	11'-2"	6	6	24	9'-6"	4	10	13	4	10	13	4	12	16
C	20	10	8	12.5	12.5	10	11'-8"	10'-1"	6.00	7	5	14	11'-4"	8	6	12	11'-4"	8	10	14	9'-9"	4	8.5	16	4	8.5	16	4	11	18

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D
3"	33	4	0'-8"	1'-8"	13

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)	② ADTL. REINF. PER LONG. LAP LOCATION	ADDITIONAL CONCRETE FOR HDWL	TOTAL ADDITIONAL REINF. FOR HDWL
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	CU. YDS.	LBS.
1.06	153	47	0.10	48
1.23	181	49		
1.39	212	58		

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

	R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
	D	S	H	T	B	C	OW	OH	SL																						
D	25	10	8	13	14	10.5	11'-9"	10'-3"	122.00	4	12	122	11'-5"	8	6	244	11'-5"	6	4.5	650	9'-11"	4	8.5	16	5	12	11	4	10	20

CLASS "S" CONCRETE	REINFORCING STEEL (Gr. 60)	③ ADTL. REINF. PER LONG. LAP LOCATION(S)
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.
1.50	184	67

③ MID-SECTION BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft -344.0 ft

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 106+05

SPECIAL DETAILS

Ver. 1.1.4 106+05.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.		080397	21	244

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
8-11-15

TABULAR DATA BY: BHS DATE: 8/10/2015
CHECKED BY: KWY DATE: 8/11/15

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
11'-4"	8'-0"	0'-9"	0'-8"	0	2:1	10'-0"	2'-0"	8'-10"	2'-8"	30	30	3'-2"	4'-7"	4'-7"	1'-7 1/2"	1'-7 1/2"	14'-0"	14'-0"	17'-3 3/8"	17'-3 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
8.97	884

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1	F1
WING A	4	12	14	L	Min	3'-11"
					Max	11'-1"
				X	Min	0'-9"
					Max	2'-2"
				Y	Min	3'-3"
					Max	9'-0"
WING B	4	12	14	L	Min	3'-11"
					Max	11'-1"
				X	Min	0'-9"
					Max	2'-2"
				Y	Min	3'-3"
					Max	9'-0"

WING	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F2	F2
WING A	4	12	5	L	X	5'-1"
				X		1'-8"
				Y		3'-6"
WING B	4	12	5	L	X	5'-1"
				X		1'-8"
				Y		3'-6"

WING	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F3
WING A	-	-	-	L	-
				X	-
				Y	-
WING B	-	-	-	L	-
				X	-
				Y	-

WING	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F4
WING A	4	18	6	Min	
					4'-9"
				Max	
					11'-7"
WING B	4	18	6	Min	
					4'-9"
				Max	
					11'-7"

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	18	4	13'-8"
WING B	4	18	4	13'-8"

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6	F6
WING A	4	18	10	L	Min	5'-3"
					Max	11'-3"
				X	Min	2'-4"
					Max	2'-4"
				Y	Min	3'-0"
					Max	9'-0"
WING B	4	18	10	L	Min	5'-3"
					Max	11'-3"
				X	Min	2'-4"
					Max	2'-4"
				Y	Min	3'-0"
					Max	9'-0"

WING	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS
WING A	4	8	18'-1"
WING B	4	8	18'-1"

WING	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8
WING A	4	18	10	Min	
					2'-8"
				Max	
					4'-1"
WING B	4	18	10	Min	
					2'-8"
				Max	
					4'-1"

WING	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS
WING A	4	18	2	Min
				16'-9"
				Max
				16'-9"
WING B	4	18	2	Min
				16'-9"
				Max
				16'-9"

WING	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS
WING A	4	2	14'-10"
WING B	4	2	14'-10"

WING	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS
WING A	4	2	16'-1"
WING B	4	2	16'-1"

WING	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	F12	REINF. STEEL QTY. PER WING (LBS)
WING A	6	12	8	L	3'-4"	442
				X	1'-8"	
WING B	6	12	8	L	3'-4"	442
				X	1'-8"	

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH

TOP SLAB REINFORCING STEEL "a" SIZE	SPACING	LENGTHS VARY	NO. REQ'D
		Max	
		Min	

BOTTOM SLAB REINFORCING STEEL "b" SIZE	SPACING	LENGTHS VARY	NO. REQ'D
		Max	
		Min	

SIDE WALL REINFORCING STEEL "f" SIZE	SPACING	NO. REQ'D	LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	SPACING	NO. REQ'D	LENGTHS VARY
			Max
			Min

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	SPACING	NO. REQ'D	LENGTHS VARY
			Max
			Min

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	SPACING	NO. REQ'D	LENGTH
			LONG
			SHORT

HDWL "k1", "k2" & "h" BAR	SIZE	NO. REQ'D	LENGTH
k1			
k2			
h			Y

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR. 60) (Includes HDWL) LBS.

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
A	10	10	8	9.5	9.5	8	11'-4"	9'-7"	12.00
B	15	10	8	11	11	9	11'-6"	9'-10"	6.00
C	20	10	8	12.5	12.5	10	11'-8"	10'-1"	6.00

TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH
6	5.5	26	11'-0"
7	6	12	11'-2"
7	5	14	11'-4"

BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH
6	4.5	32	11'-0"
6	4	18	11'-2"
8	6	12	11'-4"

SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
5	5	56	9'-3"
6	6	24	9'-6"
8	10	14	9'-9"

TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	11	12
4	10	13
4	8.5	16

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	11	12
4	10	13
4	8.5	16

SIDE WALL DISTRIBUTION REINF.STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	16
4	12	16
4	11	18

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D
3"	33	4	0'-8"	1'-8"	13

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
1.06	153	47	0.10	48
1.23	181	49		
1.39	212	58		

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

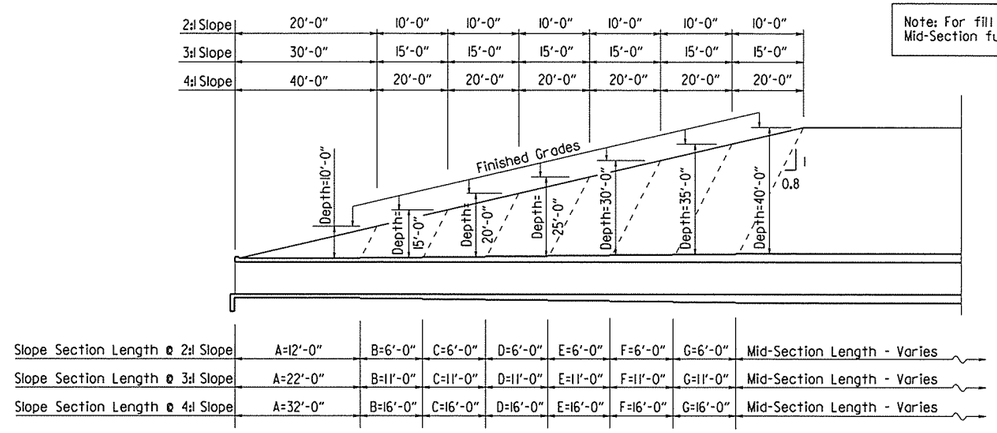
SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 106+05

SPECIAL DETAILS

Ver. LJ14 106+05.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.		080397	22	249

(1) SPECIAL DETAILS

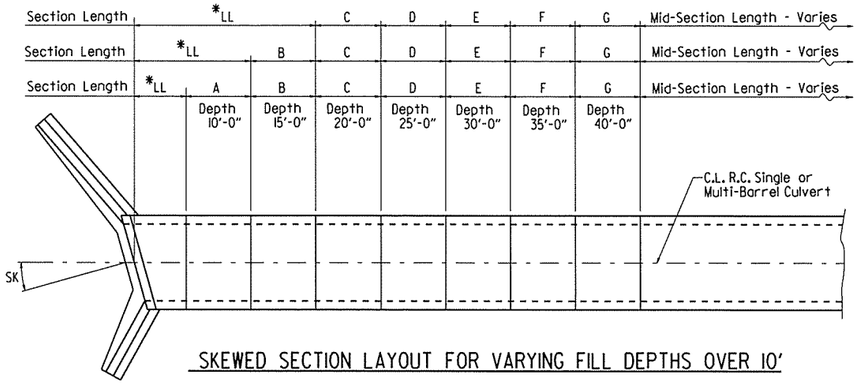


Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

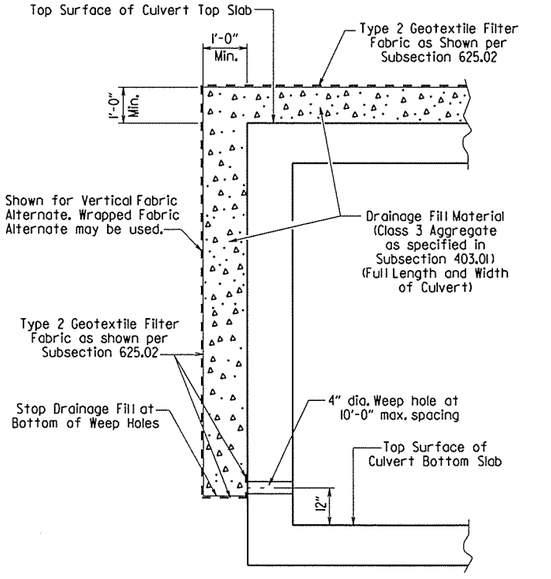
Lengths for Non-Skewed Boxes

*LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.



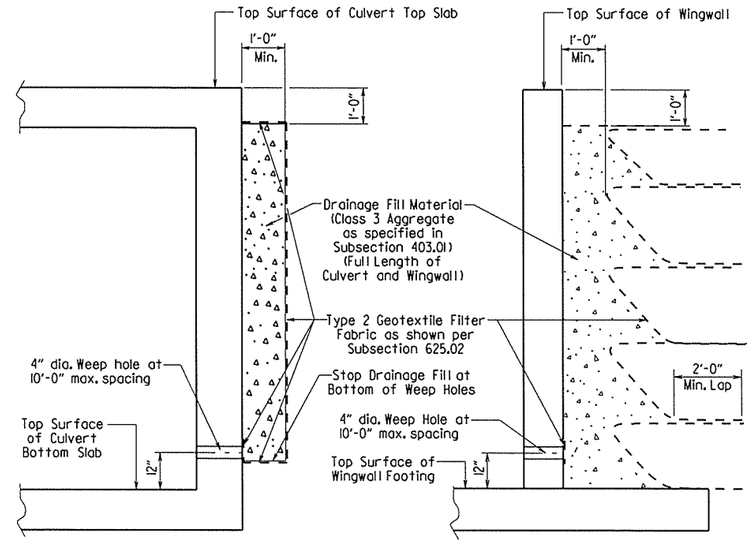
SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-11-15



CULVERT DRAINAGE DETAIL FOR ROCK FILL

This detail shall be used when rock fill is specified for embankment construction.



VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

WINGWALL & CULVERT DRAINAGE DETAIL

GENERAL NOTES:

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.

Excavation and backfilling shall be in accordance with the requirements of Section 801.

Membrane Waterproofing shall conform to the requirements of Section 815. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.

Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.

Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise. All longitudinal construction joints shall be submitted to the Engineer for approval.

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.

When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class S Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

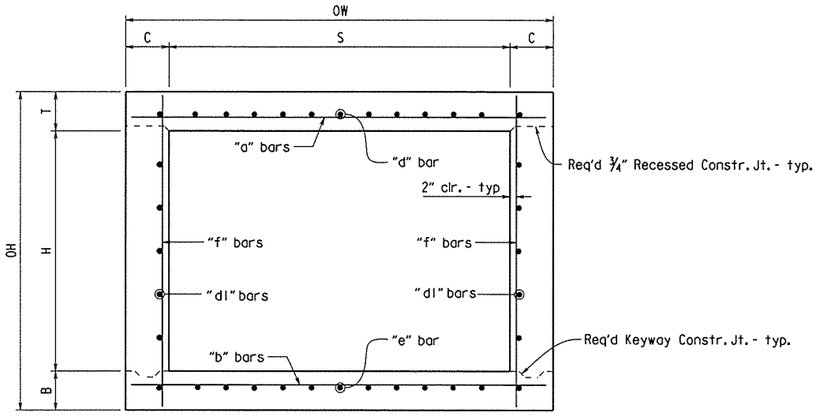
SPECIAL DETAILS

V 1.14 Culvert-General.dgn

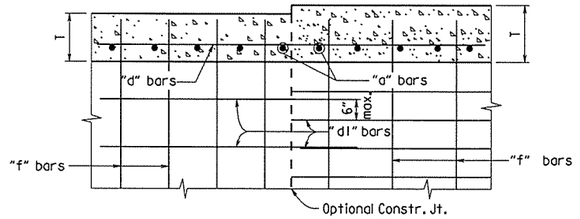
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	23	244

(1) SPECIAL DETAILS

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



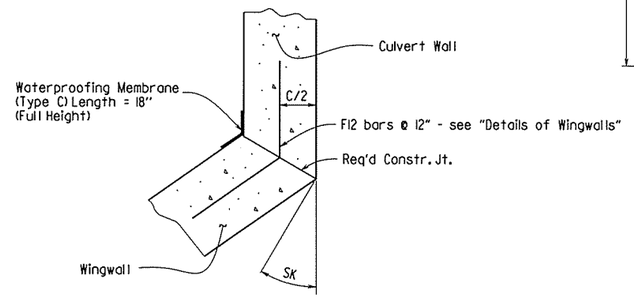
TYPICAL SECTION M-M



Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

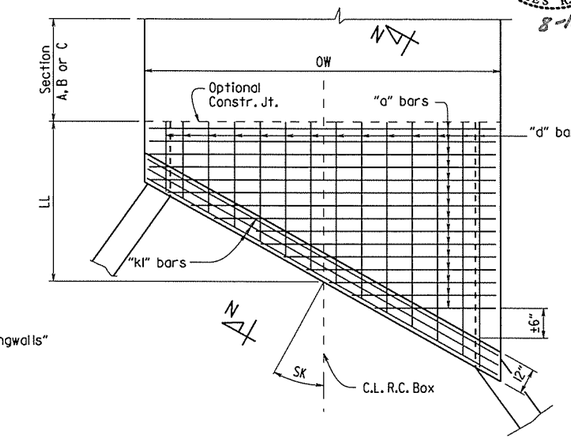
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

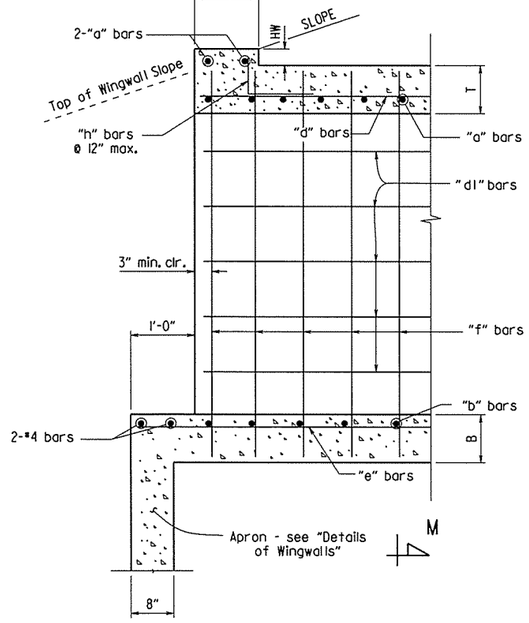


WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.

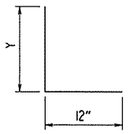


TOP SLAB REINFORCEMENT

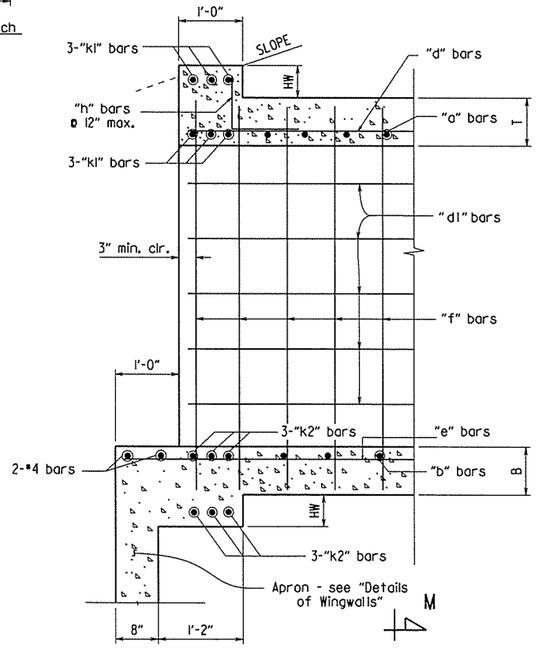


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

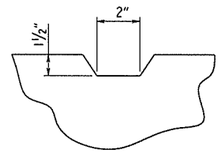


"h" bars sketch



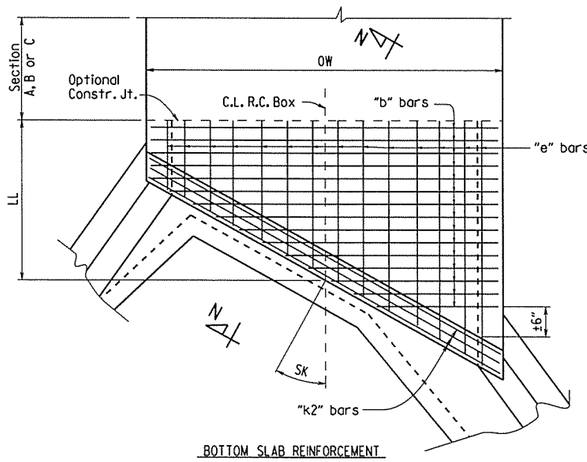
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
8-11-15

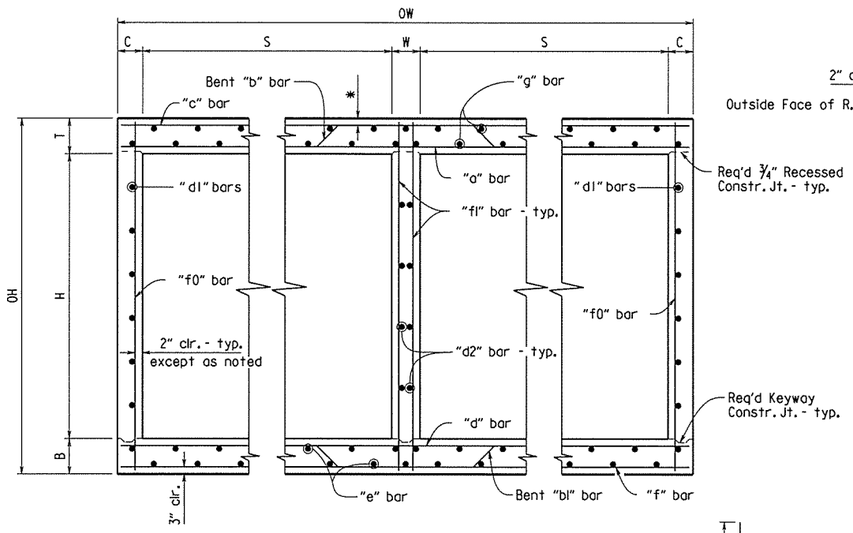
Culvert-General.dgn

DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	24	244

(1) SPECIAL DETAILS

*2" clr. for fill depth (D) greater than 2 ft.
2½" clr. for fill depth (D) equal to or less than 2 ft.

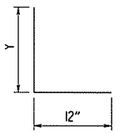
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



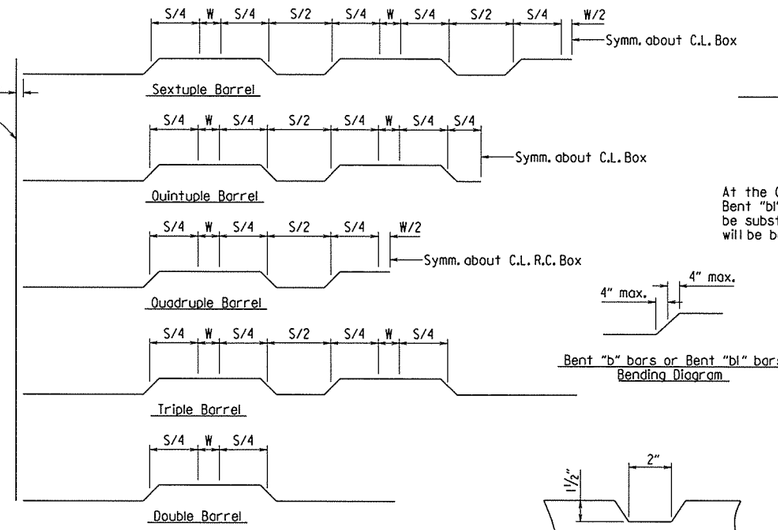
TYPICAL SECTION M-M

Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

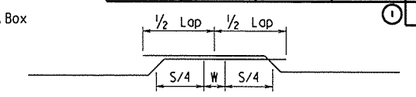
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



Bent "b" bars or Bent "bl" bars sketch



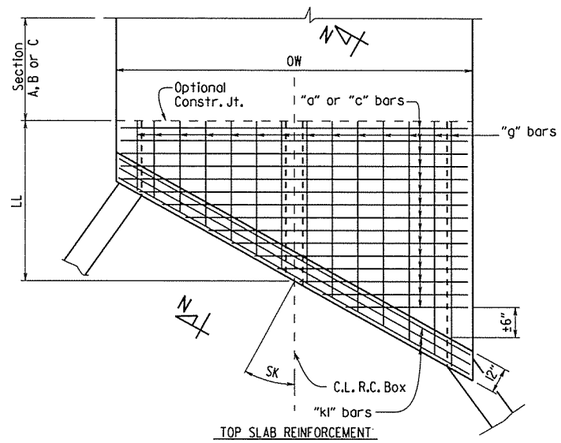
Lap Detail
For Bent "b" bars and Bent "bl" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.

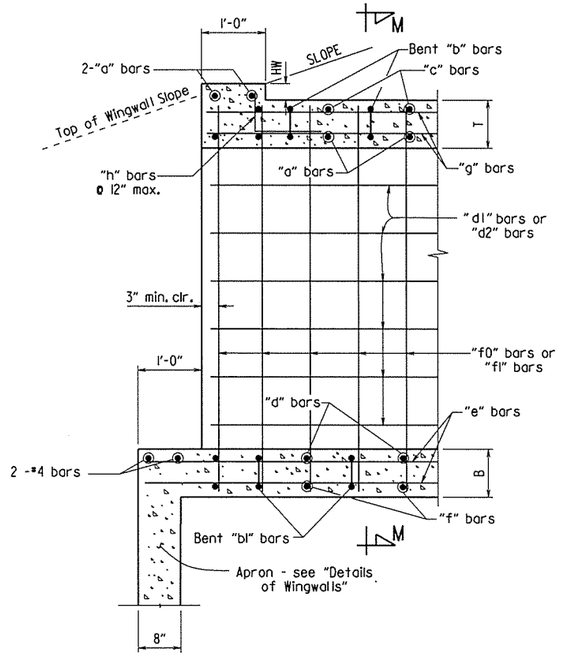
Bent "b" bars or Bent "bl" bars
Bending Diagram

TYPICAL KEYWAY DETAIL

(All Construction Joints)

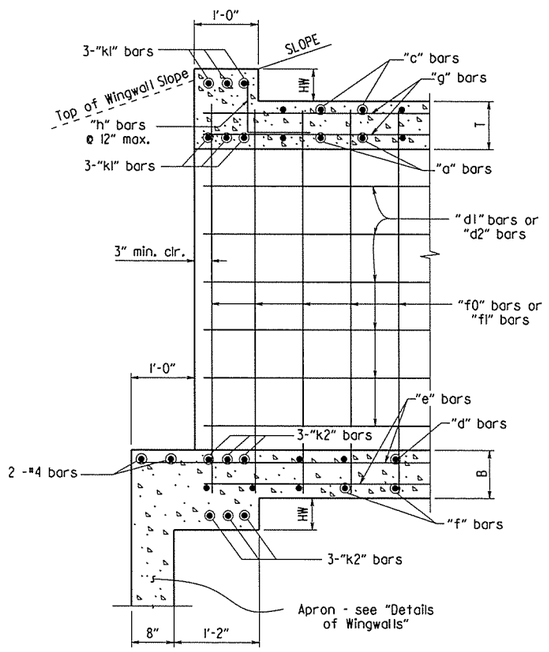


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



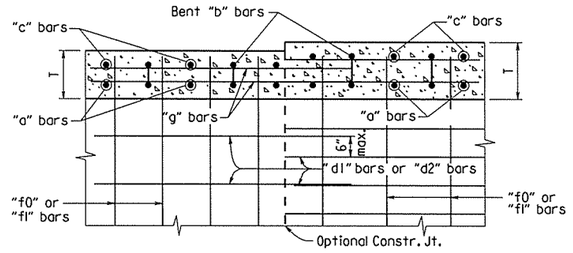
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

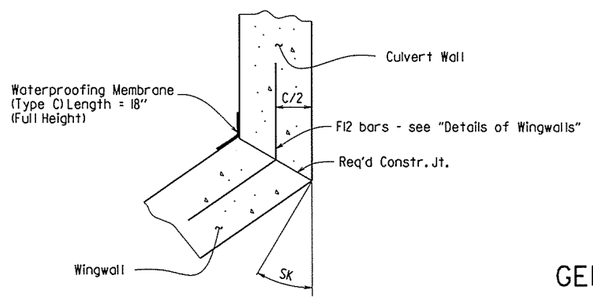
(Skewed Ends)



Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

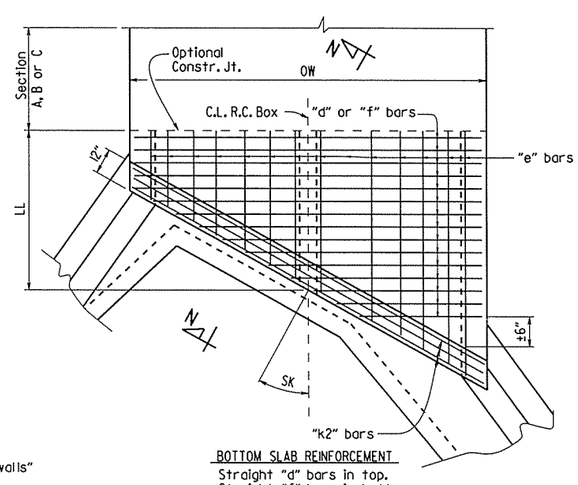
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.



BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

SKEWED END SECTION DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
8-11-15

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

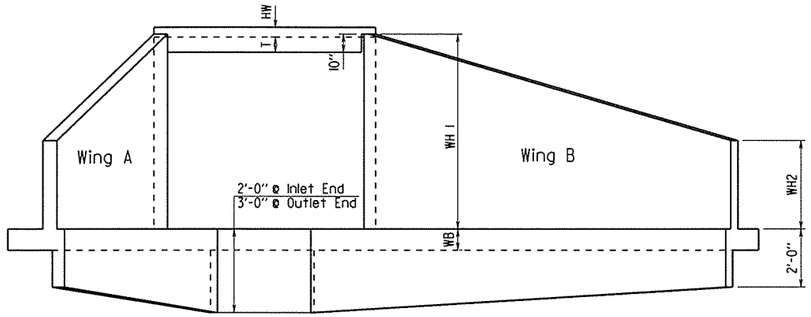
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

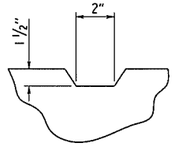
Culvert-General.dgn

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.		080397	25	244

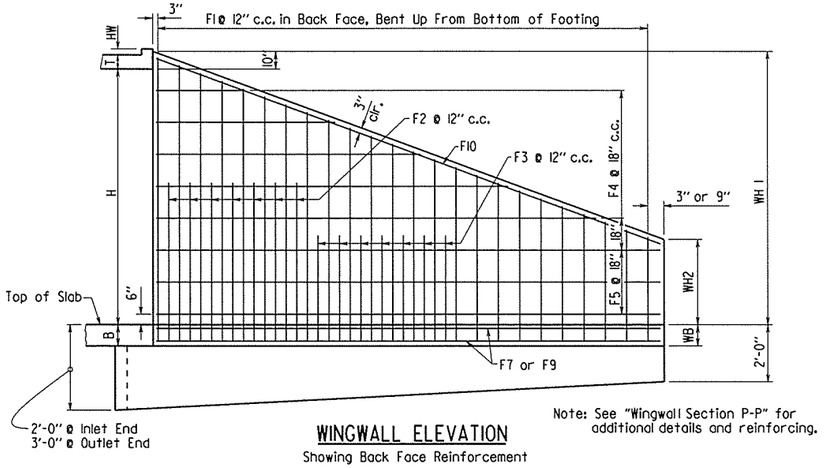
1 SPECIAL DETAILS



END ELEVATION
Flared Wingwalls Shown



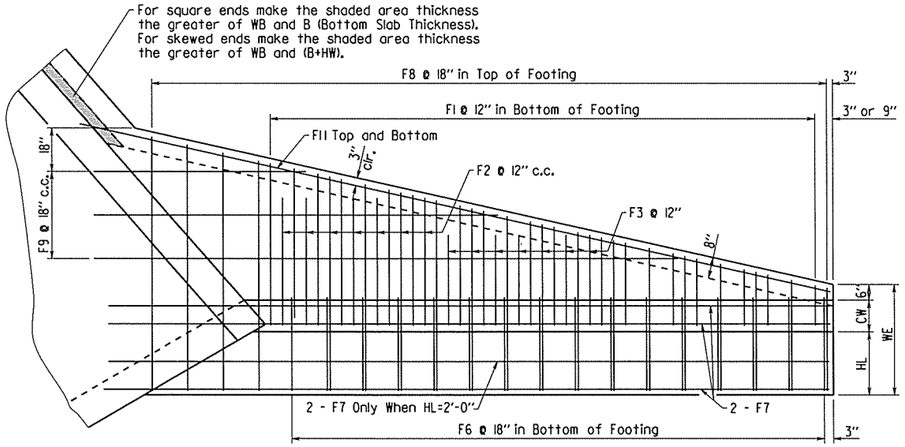
TYPICAL KEYWAY DETAIL
All Construction Joints



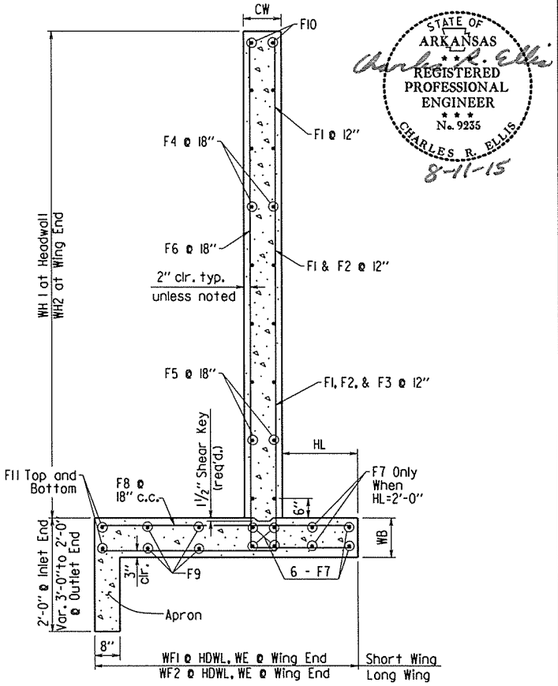
WINGWALL ELEVATION
Showing Back Face Reinforcement

Note: See "Wingwall Section P-P" for additional details and reinforcing.

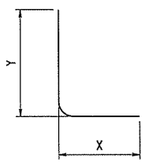
PART PLAN - FLARED WINGWALLS



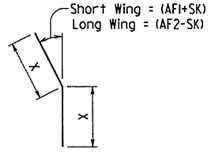
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



WINGWALL SECTION P-P

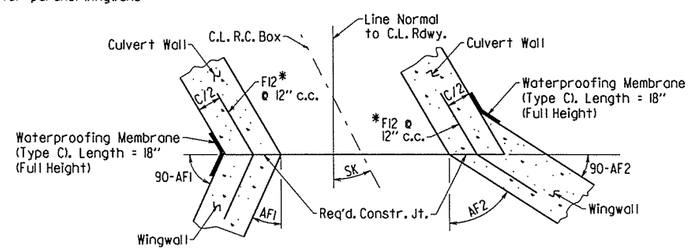


F1, F2, F3, & F6 BARS

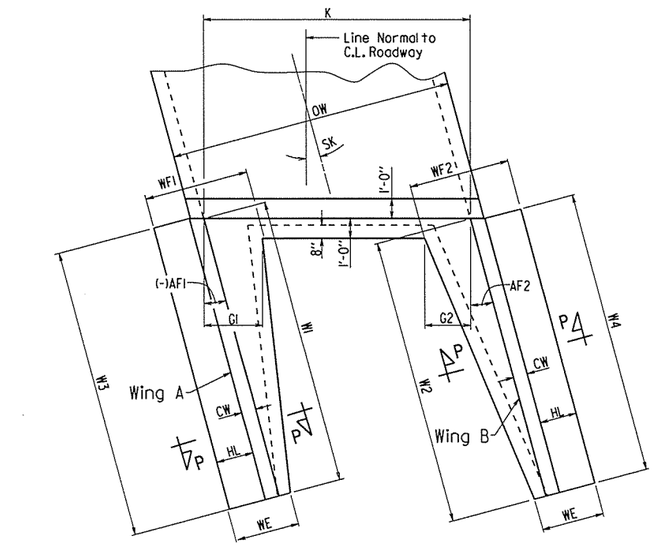


*F12 BAR

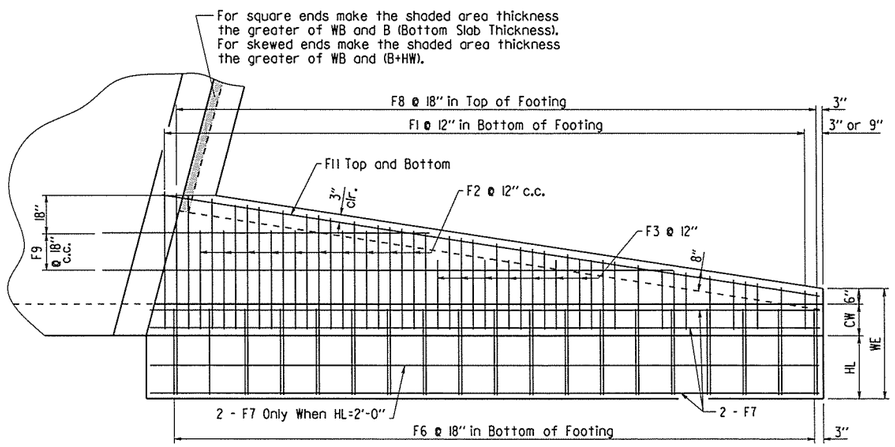
*F12 is a straight bar for parallel wingwalls



CONSTRUCTION JOINTS
Flared Wingwalls Shown



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS

Culvert-General.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.		080397	26	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

STA. 99+97.14
BEGIN JOB 080397

P.O.B. 99+97.14
P.C. 101+79.30
P.I. 105+60.03
P.O.B. 6999+72.07
P.C. 104+24.15
N 87°13'12" W
S 85°14'42" E
N 4°32'28" E
N 4°42'59" E
N 9°22'36" E
N 88°44'15" E
C.L. RAMP 3A
C.L. RAMP 3/4
C.L. HWY. 25
C.L. BLANEY HILL RD.
BEGIN PROP. C/A
EXIST. ROW & C/A
EXISTING ROW & C/A
CONST. LIMITS
PROP. ROW. C/A. & FENCE
PROP. ROW
E-11 L=135'
E-14 20000 CU.FT.
E-14 18424 CU.FT.
P.I. 103+53.77 Δ=0°10'31" RT.
P.I. 115+35.58
P.I. 125+09.76
P.I. 126+25.05
END PROP. C/A
PROP. ROW C/A
PROP. ROW & FENCE
CONST. LIMITS TO CC
24'
16'
105
100
110
115
120
125
130
7000

LEGEND

- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- E-14 = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

10/26/2015

R080397.DGN

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.		080397	27	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
[illegible]
10-29-15

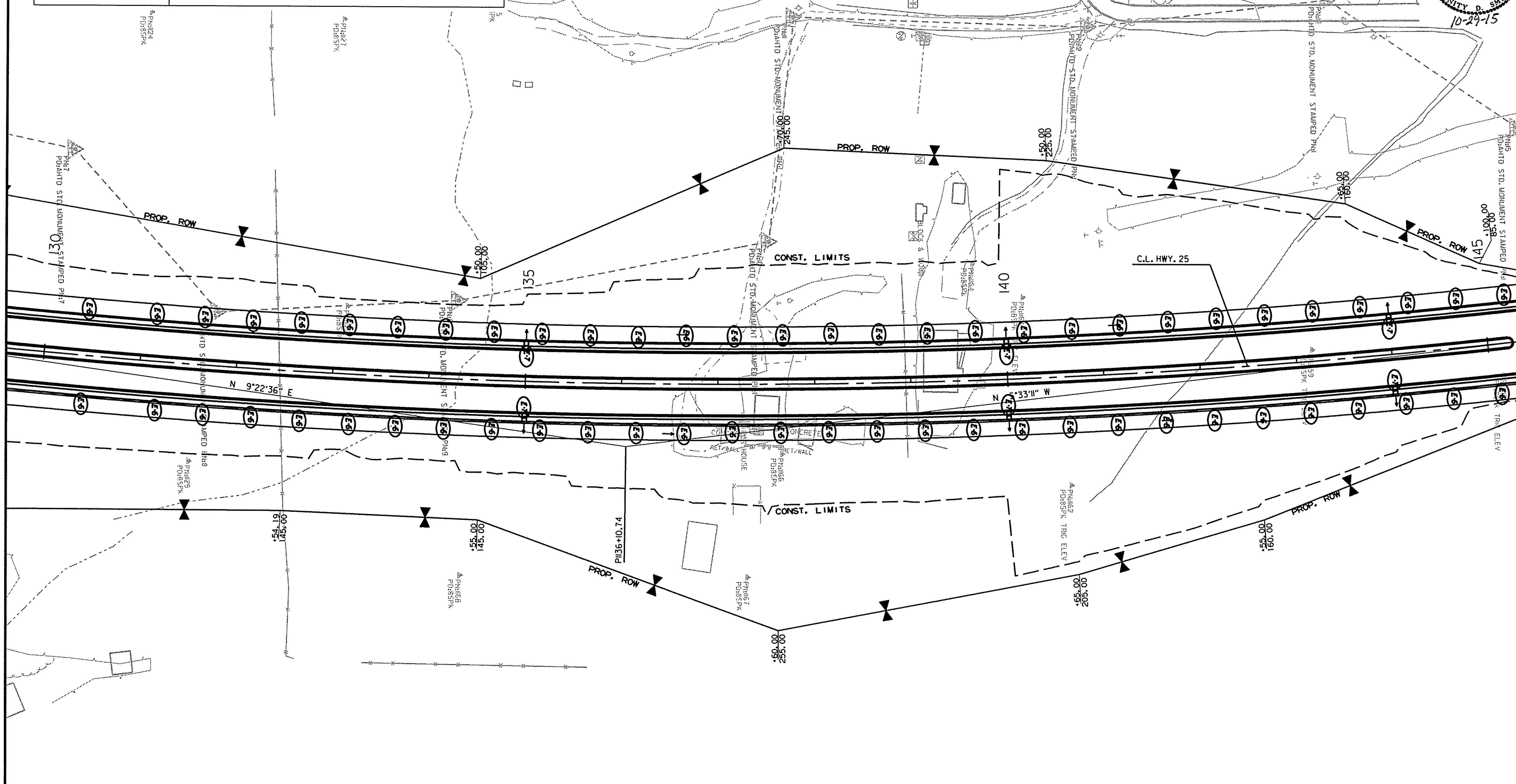
REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



STAGE I
TEMPORARY EROSION CONTROL DETAILS

10/26/2015
R080397.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.		080397	28	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-22-15

P117+00.00
+16.75 25.45
+33.46 49.29
+25.20 24.54
+34 46.61
+43.97 24.29
+43.86 46.74
+44.20 25.71
+43.75 45.01
+06.41 88.44
+50.00 85.00
+35.57 60.20
+42.24 82.76
+33.63 41.56
82.19C
PT146+00.39
+70.61 65.00
+38.00 77.00
+55.38 70.01
+22.00 72.00
+80.19 56.80
+69.53 58.69
+21.20 84.20
+02.67 86.22
75.91
+16.55 86.98
+28.90 55.90
38.41
PC159+23.08
PC20+60.29
+78.82 58.00
+58.91 85.57
P122+63.91
PT24+51.57
+90.86 60.66
+93.85 28.70
+59.23
N 5°33'11" W
N 88°52'E
C.L. FRIENDSHIP RD.
C.L. HWY. 25
PROP. ROW
CONST. LIMITS
EXISTING ROW
PAVED PARKING
CONCRETE
PAVED
E-14 20000 CU.FT.
E-11 L-5110
24" PLANT MIX
20' CONST. LI
15'
+27
+20
18" LOW PRO 20' 2% CMP
STAMPED PNH
ARKANSAS STD. MONUMENT STAMPED PNH
ARKANSAS PIN 5/8" CHAIN LINK GATES
ARKANSAS PIN 5/8" PK
ARKANSAS PIN 5/8" PK TRI ELEV
145
155
160

LEGEND

E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE
E-14	= SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

STAGE I
TEMPORARY EROSION CONTROL DETAILS

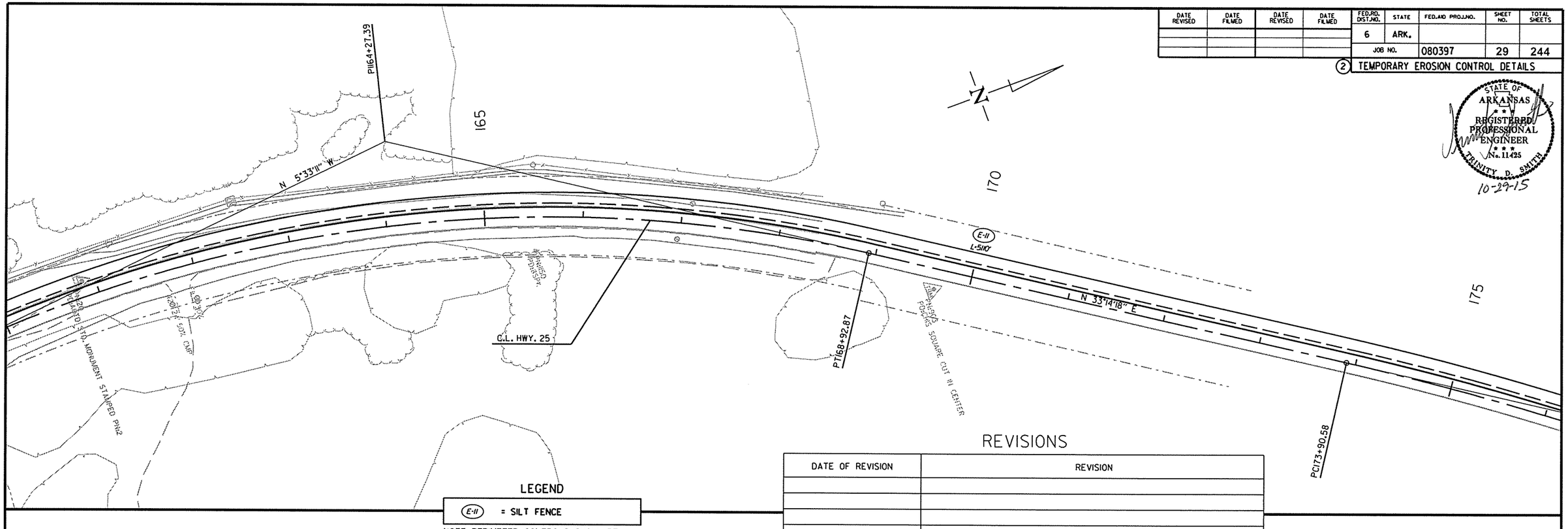
10/26/2015

R080397.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.		080397	29	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-11 = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

10/26/2015

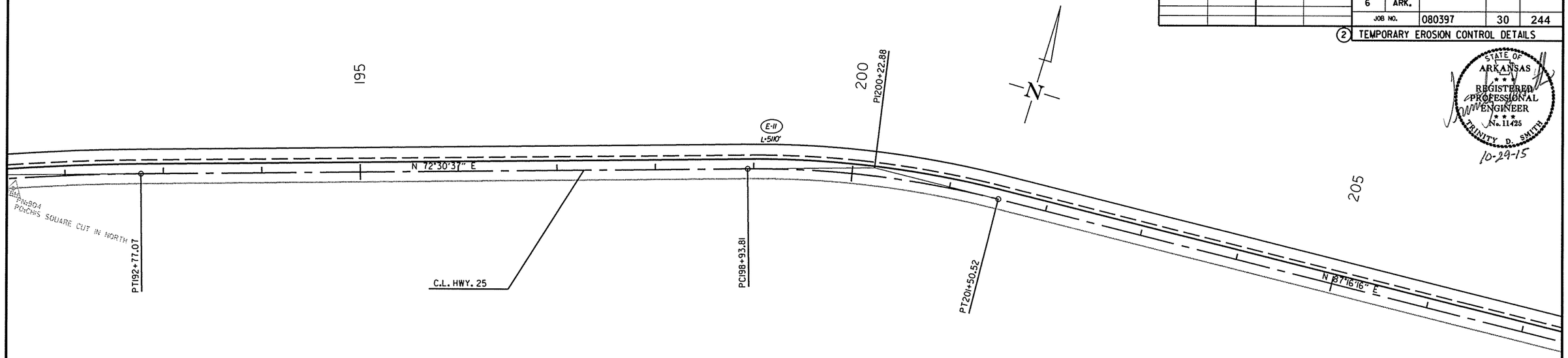
R080397.DGN

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.		080397	30	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



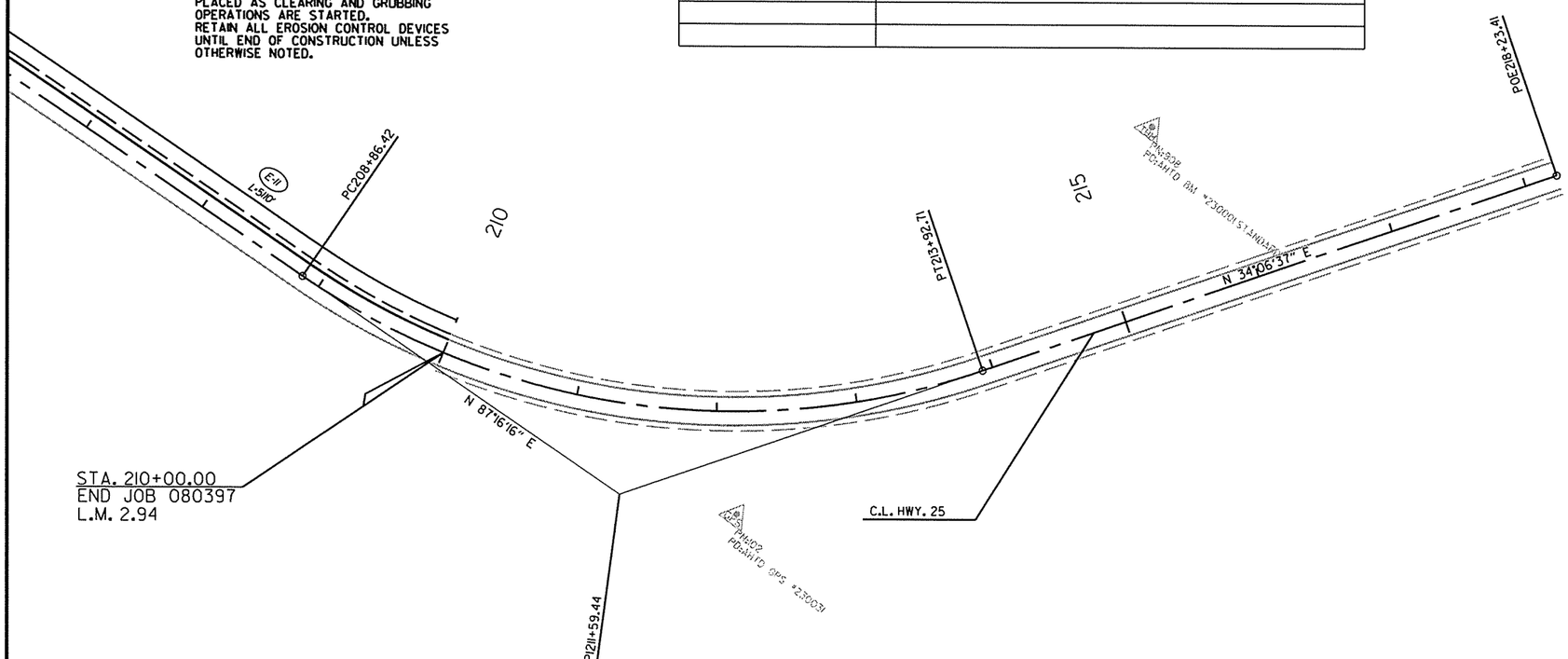
REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-II = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



10/26/2015

R080397.DGN

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.		080397	31	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

LEGEND

- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

EXISTING ROW & C/A
CONST. LIMITS
C.L. RAMP 3/4
C.L. HWY. 25
C.L. RAMP 3A
C.L. I-40
POND
PARKING
DROP INLET
NOSE
STA. 7026+80.93
END I-40 WB. RAMP B CONST.
S 85°17'14" E
S 60°17'14" E
S 84°16'33" E
S 44°53'14" E
S 44°31'31" E
N 4°32'28" E
PI7005+00.83
PC7006+34.81
PT7006+84.81
PC7015+07.84
PT7020+40.93
PC7022+24.44
PC7022+311.81
PI7017+78.35
PI7029+31.37
PI7029+47.36
+11.54
116.19'
L=240'

10/26/2015

R080397.DGN

STAGE I
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080397	32	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

C.L. HWY. 25

C.L. BLANEY HILL RD.

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

CONST. LIMITS

PROP. ROW

PROP. FENCE

PROP. C/A

N 19°22'36" E

S 85°22'23" E

N 88°44'45" E

S 89°58'43" E

PC0·85.68 +90.00 41.45

PT4·21.75

PC9·64.84

PT12·19.96

P12·53.87

P110·92.41

P115+35.36

PNH5 PD:8SPK

PNH2 PD:8SPK

PNH4 PD:8SPK

PNH25 PD:8SPK

PD:8SPK HUB TOP PLUM TO CC

PD:OLD LINE FROM JOB #050223

FND. STD. MONUMENT STAMPED PLS

POND

CONCRETE

PAVED

10/26/2015

R080397.DGN

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.		080397	33	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

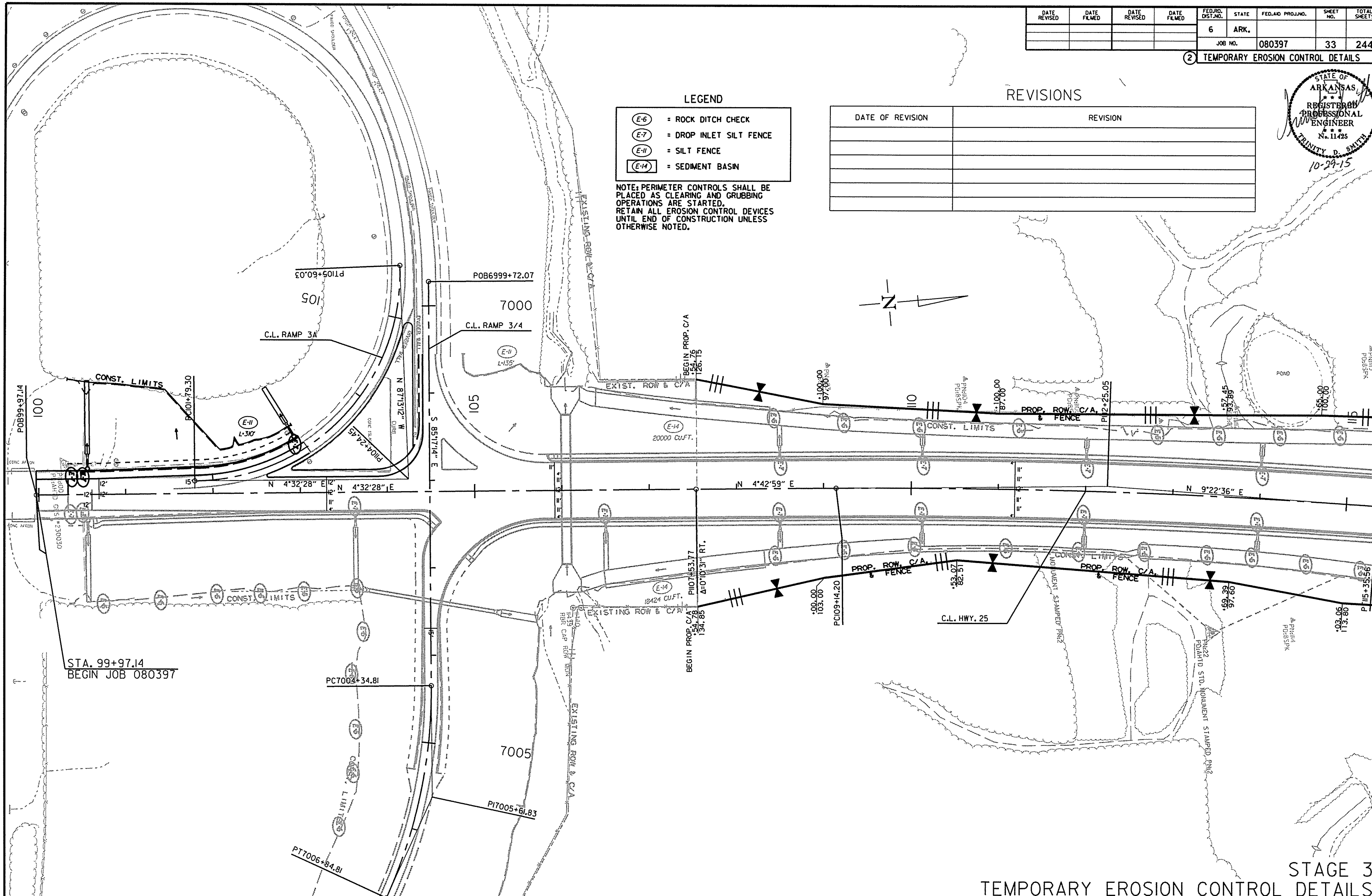
LEGEND

(E-6)	= ROCK DITCH CHECK
(E-7)	= DROP INLET SILT FENCE
(E-11)	= SILT FENCE
(E-14)	= SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION



STAGE 3
TEMPORARY EROSION CONTROL DETAILS

10/26/2015
R080397.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.		080397	34	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

STA. 17+59.17
BEGIN FRIENDSHIP RD. CONST.

P117+00.00

C.L. HWY. 25

C.L. FRIENDSHIP RD.

PROP. ROW

CONST. LIMITS

EXISTING ROW

PAVED PARKING

CONCRETE

PAVED

N 5°33'11" W

20000 CU.FT.

PC20+60.29

P122+63.91

PT124+51.57

STA. 23+89.85
BEGIN FRIENDSHIP RD. CONST.

PC159+23.08

LEGEND

E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE
E-14	= SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

10/26/2015

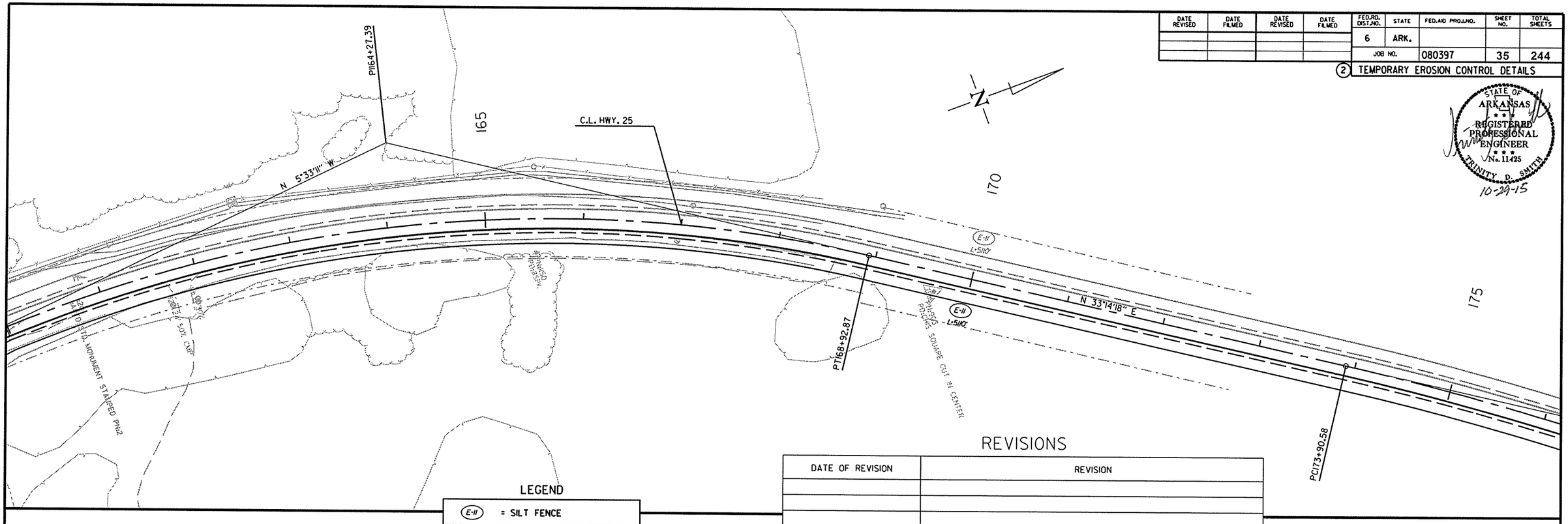
R080397.DGN

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.		080397	35	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



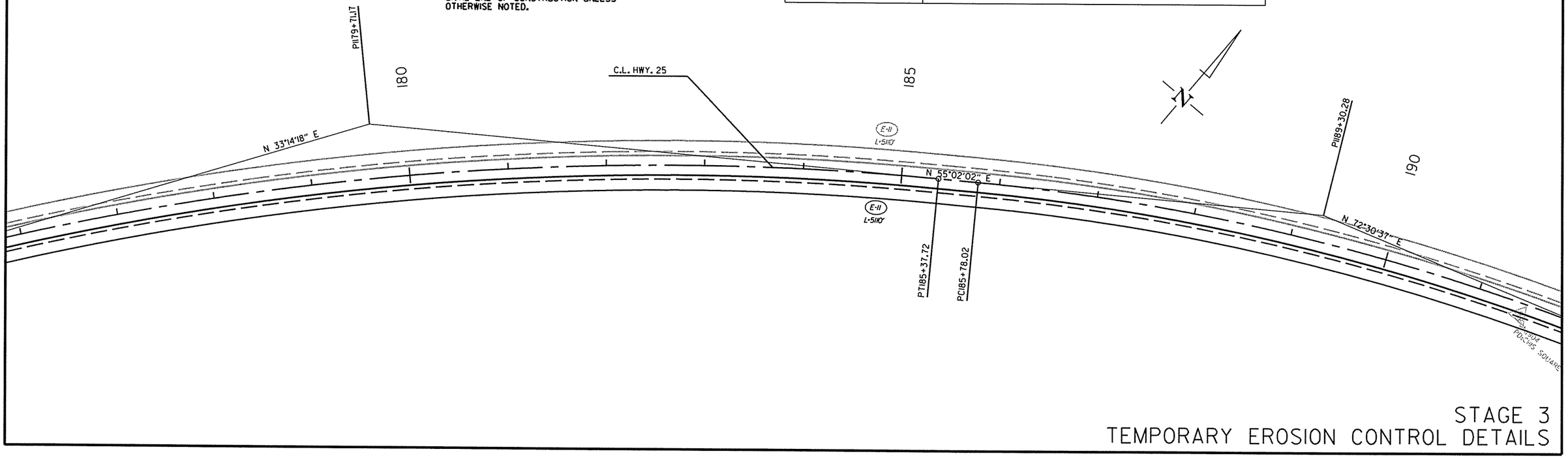
LEGEND

(E-II) = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION



10/26/2015

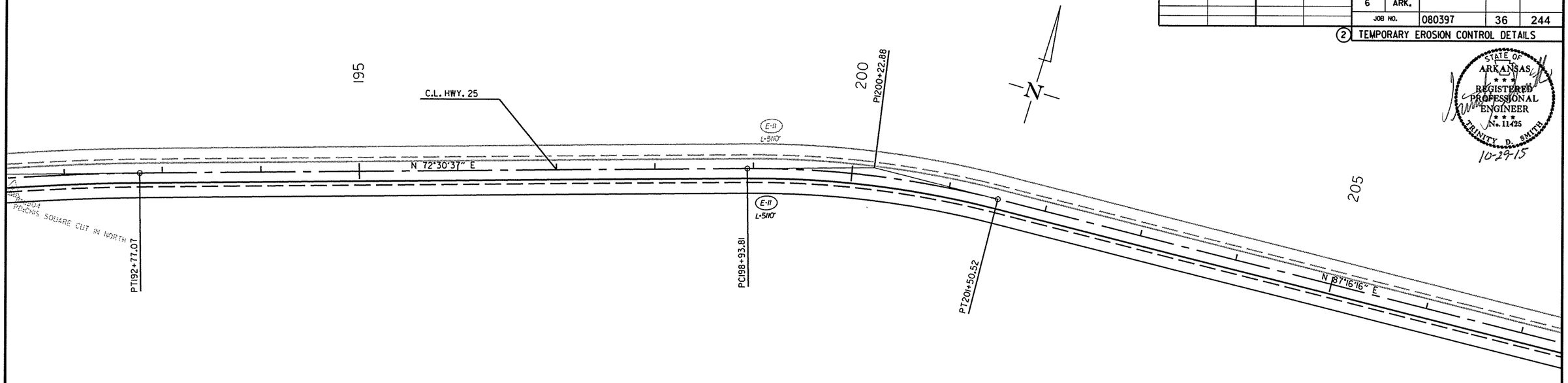
R080397.DGN

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.		080397	36	244

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



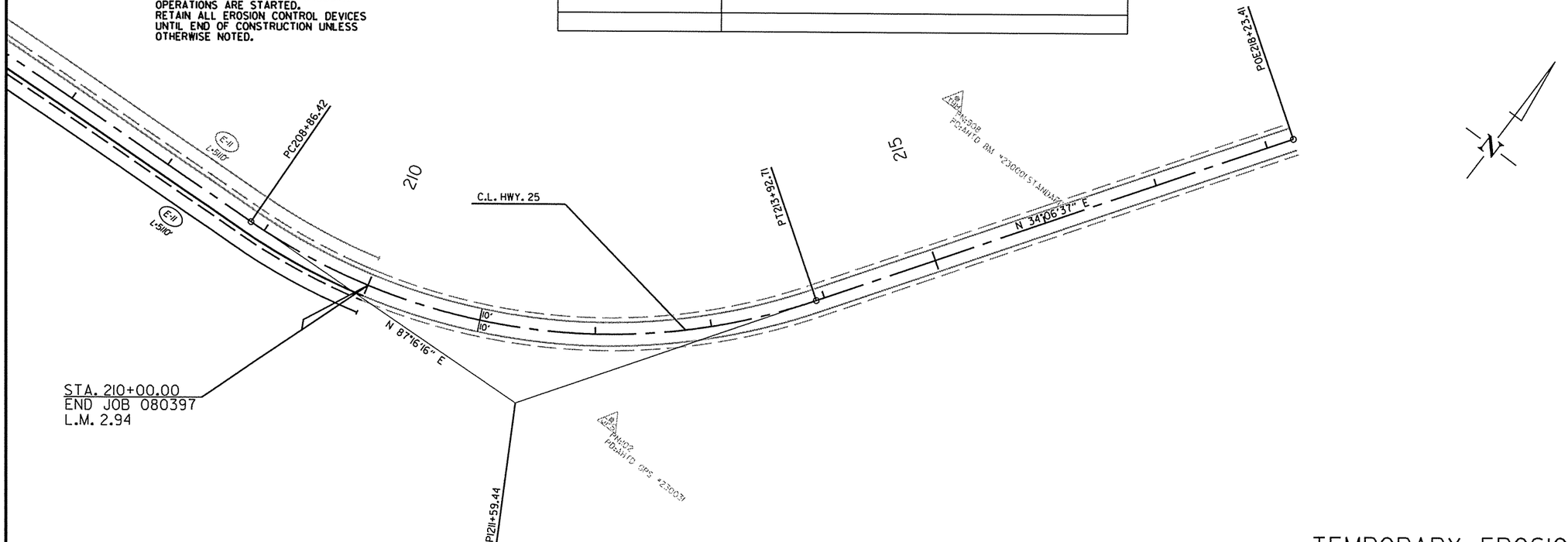
REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-II = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



10/26/2015

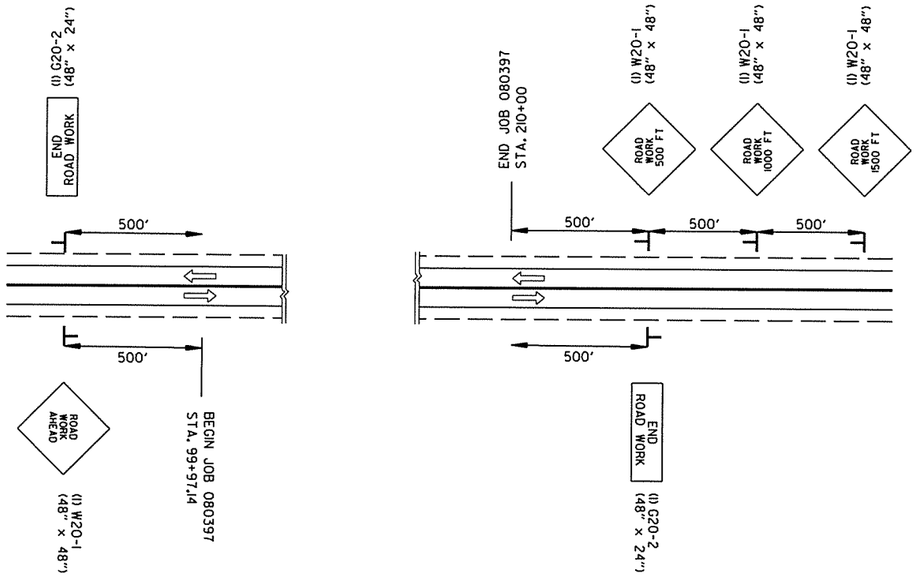
R080397.DGN

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

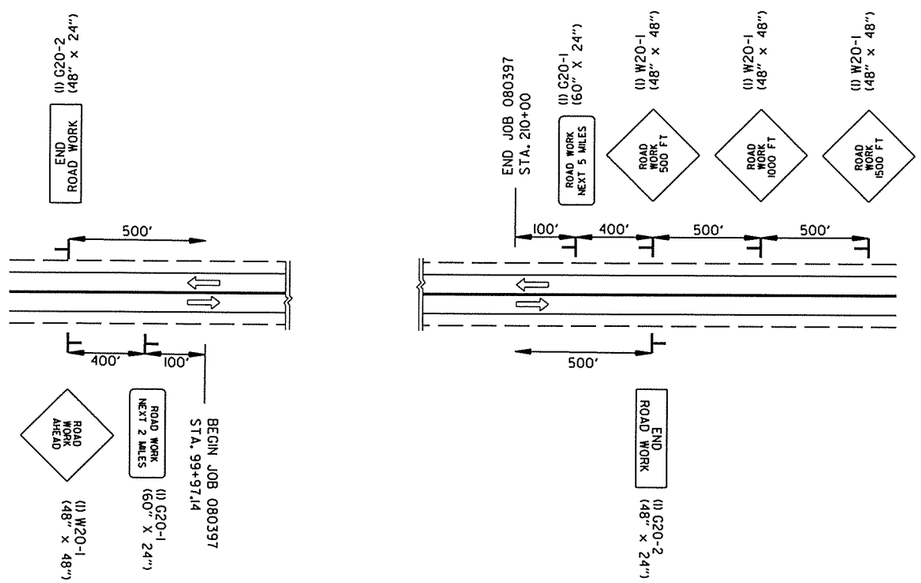
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	37	244

(2) MAINTENANCE OF TRAFFIC DETAILS

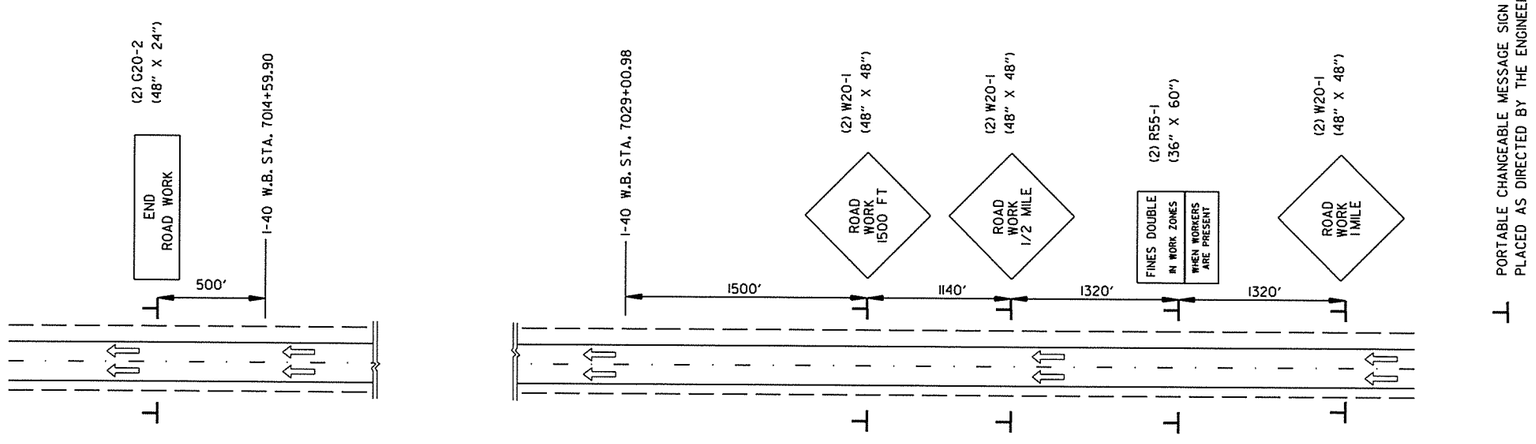
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



ADVANCE WARNING HWY. 25 (STAGE 1& 2)



ADVANCE WARNING HWY. 25 (STAGE 3)



ADVANCE WARNING I-40 (STAGE 1& 2)

10/26/2015

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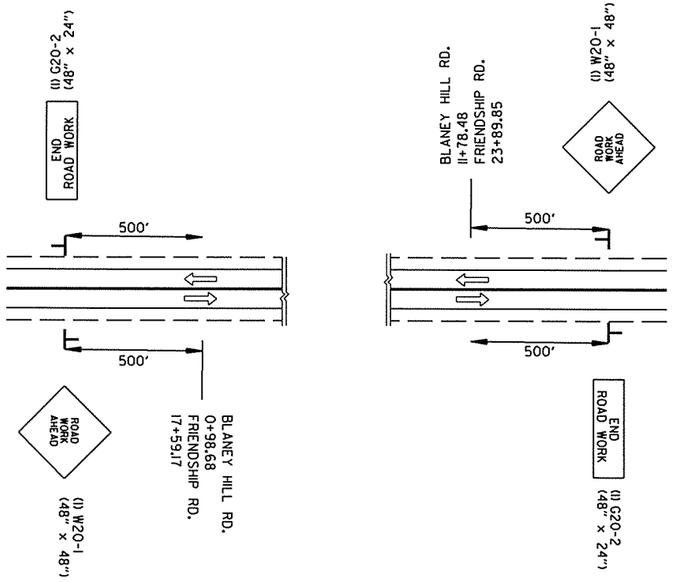
ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

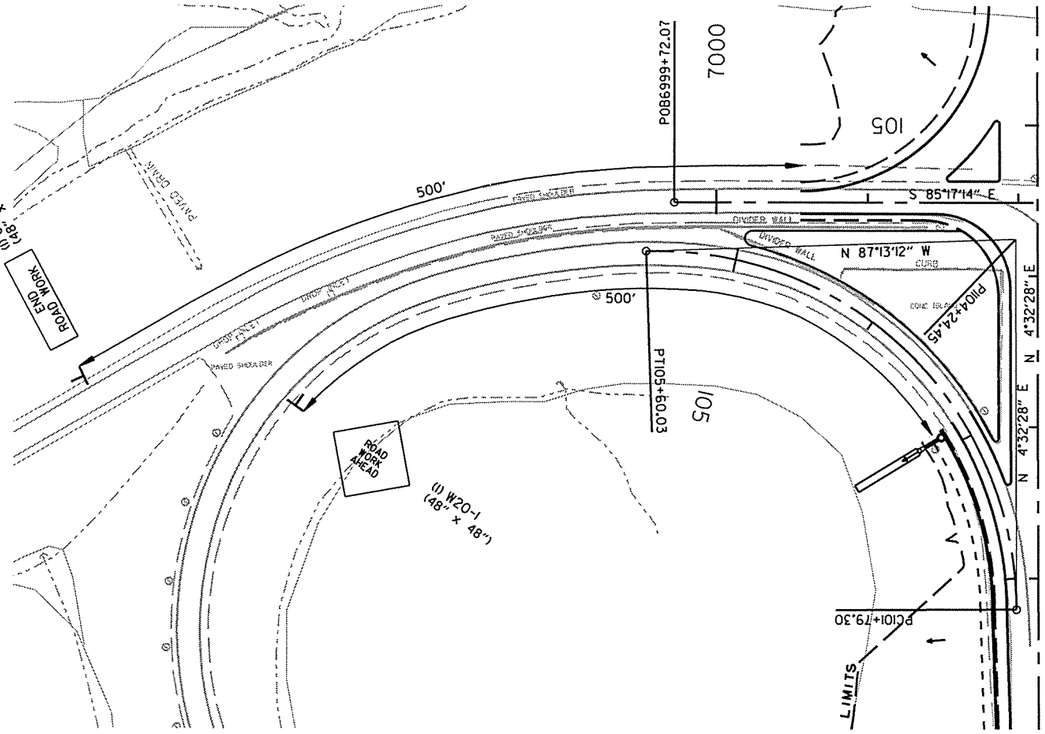
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	38	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



ADVANCE WARNING SIDE ROADS (ALL STAGES)



ADVANCE WARNING RAMPS (ALL STAGES)

10/26/2015

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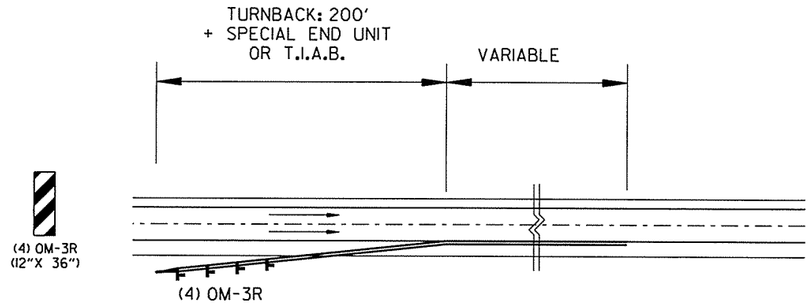
ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

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.		080397	39	244

(2) MAINTENANCE OF TRAFFIC DETAILS

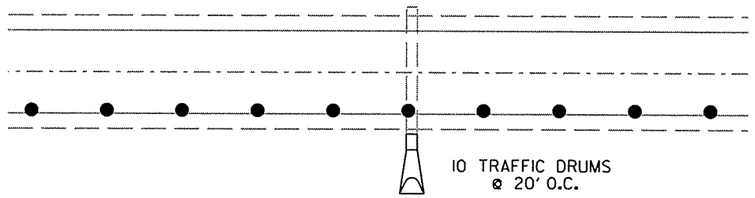


REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.

NOTE: OM-3R SIGNS SHALL BE EQUALLY SPACED ALONG P.C.C.B. TURNBACK.

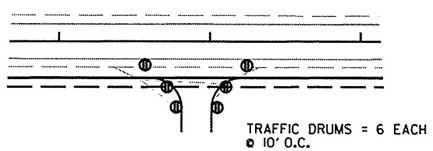
DETAIL OF OBJECT MARKERS AT PRECAST CONCRETE BARRIER TURNBACKS

SHOULDER CLOSED	(5) RSP-1 (48" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(2) R4-1 (24" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
BUMP	(4) W8-1 (30" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



TRAFFIC DRUMS AND SIGNS ON EXISTING SHOULDER FOR EXTENDING/CONSTRUCTING PIPE CULVERTS LT. AND RT.

STA. 158+87



DRIVEWAY/TRAFFIC DRUM DETAIL

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS. INSTALL END ROAD WORK SIGNS AT THE END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAILS. INSTALL ROAD WORK AHEAD (W20-1) SIGN ON RAMPS AS SHOWN ON THE ADVANCE WARNING DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS, PRECAST CONCRETE BARRIERS, BARRICADES, VERTICAL PANELS, AND TRAFFIC DRUMS AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT DRAINAGE STRUCTURES AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RT. OF HWY. 25 FROM STA. 99+97.14 TO STA. 104+60.22, LT. AND RT. OF HWY. 25 FROM STA. 104+60.22 TO STA. 153+80.00, AND LT. OF HWY. 25 FROM STA. 153+80.00 TO STA. 210+00.00 AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RAMP 3 FROM HWY. 25 CONNECTION TO STA. 7016+00.00, CONSTRUCT RAMP 3 EMBANKMENT FROM STA. 7016+00.00 TO STA. 7026+40.93 AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT GUARDRAIL WIDENING AND OVERHEAD SIGN STRUCTURE FOOTING AND INSTALL GUARDRAIL RT. OF I-40 WESTBOUND AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

INSTALL CONSTRUCTION PAVEMENT MARKINGS, BARRICADES, AND TRAFFIC DRUMS AND INSTALL/RELOCATE PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT I-40 W.B. TRAFFIC AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RAMP 3 AND DECCELERATION LANE FROM STA. 7016+00.00 TO STA. 7026+40.93.

CONSTRUCT OVERHEAD SIGN STRUCTURE FOOTING AND INSTALL GUARDRAIL AND OVERHEAD SIGN STRUCTURE LT. OF DECCELERATION AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

INSTALL ADVANCE WARNING SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS, BARRICADES, VERTICAL PANELS, AND TRAFFIC DRUMS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

EXTEND R.C. BOX CULVERT AT STA. 158+87 RT. OF HWY. 25 AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT FINAL PORTIONS OF HWY. 25: LT. FROM STA. 99+97.14 TO STA. 104+60.22 AND RT. FROM STA. 153+80.00 TO STA. 210+00.00 AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF A.C.H.M. AND PLACE PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

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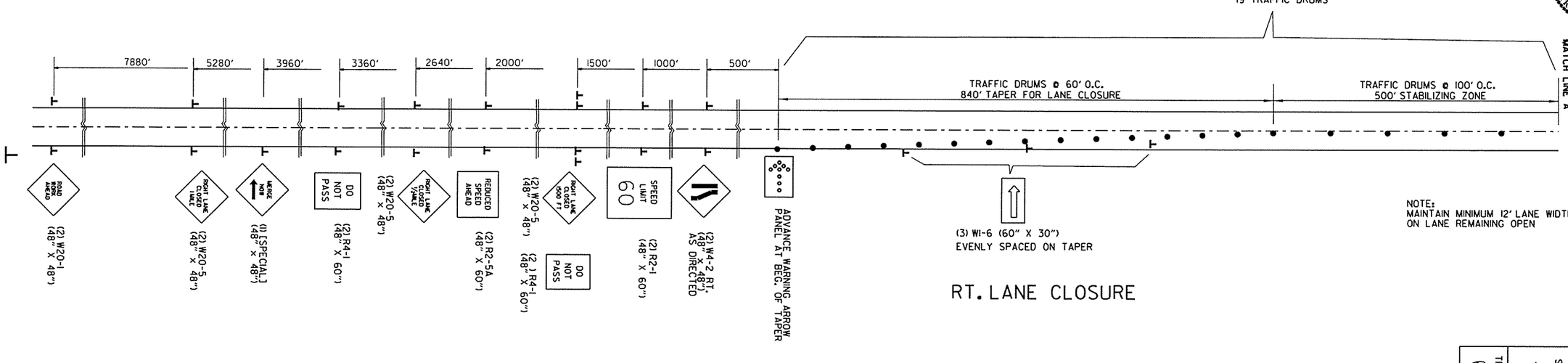
MAINTENANCE OF TRAFFIC DETAILS

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.		080397	40	244

(2) MAINTENANCE OF TRAFFIC DETAILS

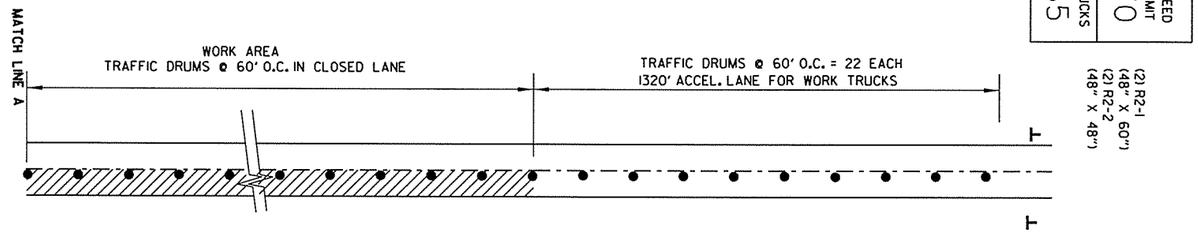
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

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

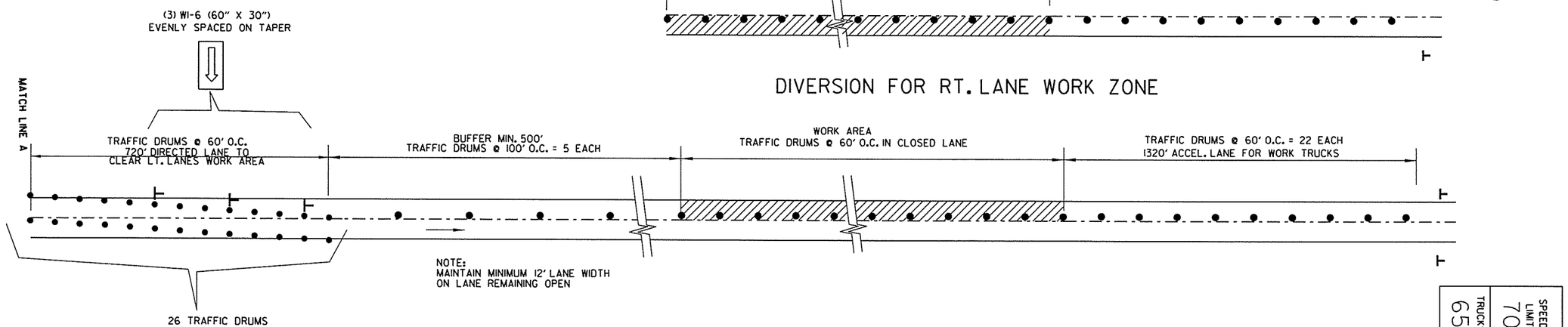


RT. LANE CLOSURE

SPEED LIMIT SIGNS ARE ALSO PROVIDED FOR PLACEMENT PAST ENTRANCE RAMPS WITHIN THE WORK ZONE.



DIVERSION FOR RT. LANE WORK ZONE



DIVERSION FOR LT. LANE WORK ZONE

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LANE CLOSURE (I-40)
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.		080397	41	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
10-29-15

= WORK AREA

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" WHITE REMOVEABLE CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW REMOVEABLE CONSTRUCTION PAVEMENT MARKING

(8) TRAFFIC DRUMS @ 30' O.C.

(19) TRAFFIC DRUMS @ 30' O.C.

50' LANE TAPER

250' LANE TAPER

POB99+97.14

PC101+79.30

PI104+24.45

+33.64

+83.64

+47.14

+97.14

N 8°13'12" W

S 85°17'14" E

N 4°32'28" E

N 4°42'59" E

105

100

BEGIN PROP. C/A 124+26.76

PI107+53.77 Δ=0°10'31" RT.

+100.00

CONC APRON

DROP INLET

RIPRAP

RIVER WALL

CURB

PNH102 PD385PK

PNH107 PD385PK

PNH100 PD385PK

PNH107 PD385PK

PNH102 PD385PK

PNH107 PD385PK

STAGE IA

STAGE IB

STAGE IC

MAINTENANCE OF TRAFFIC DETAILS

10/26/2015

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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.		080397	42	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
10-29-15

4" WHITE CONSTRUCTION PAVEMENT MARKING
4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING
4" YELLOW CONSTRUCTION PAVEMENT MARKING
C.L. I-40 WB. RAMP A
C.L. I-40 WB. RAMP B
C.L. HWY. 25
C.L. BLANEY HILL RD.
POB6999+72.07
POB99+97.14
PTI05+60.03
PCI01+79.30
PI104+24.45
N 87°13'12" W
S 85°11'42" E
N 4°32'28" E
N 4°42'59" E
N 9°22'36" E
N 88°44'45" E
(13) VERTICAL PANELS @ 50' O.C.
(45) TRAFFIC DRUMS @ 50' O.C.
CONST. LIMITS
EXIST. ROW & C/A
EXISTING ROW & C/A
PROP. ROW, C/A, & FENCE
PROP. ROW
BEGIN PROP. C/A
END PROP. C/A
PI107+53.77
Δ=0°16'31" RT.
PCI09+14.20
PI115+35.56
PCI26+09.76
STA. 99+97.14
BEGIN JOB 080397
ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
STAGE I
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.		080397	43	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

PROP. ROW
CONST. LIMITS
C.L. HWY. 25
N 9°22'36" E
N 5°33'11" W
PI 136+10.74
CONCRETE RETWALL
CONCRETE HOUSE
PROP. STD. MONUMENT STAMPED PNH
PROP. STD. MONUMENT STAMPED PNH7
PROP. STD. MONUMENT STAMPED PNH8
PROP. STD. MONUMENT STAMPED PNH9
PROP. STD. MONUMENT STAMPED PNH5
TRAV ELEV
130
135
140
145
•50.00 105.00
•70.00 245.00
•50.00 225.00
•55.00 180.00
•100.00 85.00
•54.19 145.00
•55.00 145.00
•60.00 255.00
•55.00 160.00
•65.00 205.00

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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.		080397	44	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

STA. 17+59.17
BEGIN FRIENDSHIP RD. CONST.

ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

(22) TRAFFIC DRUMS @ 50' O.C.

ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

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

(110) VERTICAL PANELS @ 50' O.C.

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

(15) TRAFFIC DRUMS @ 50' O.C.

C.L. HWY. 25

C.L. FRIENDSHIP RD.

STA. 23+89.85
BEGIN FRIENDSHIP RD. CONST.

EXISTING ROW
PROP. ROW
CONST. LIMITS
N 5°33'11" W
PC20+60.29
PT24+51.57
P122+63.91
PC159+23.08
CONCRETE
PAVED
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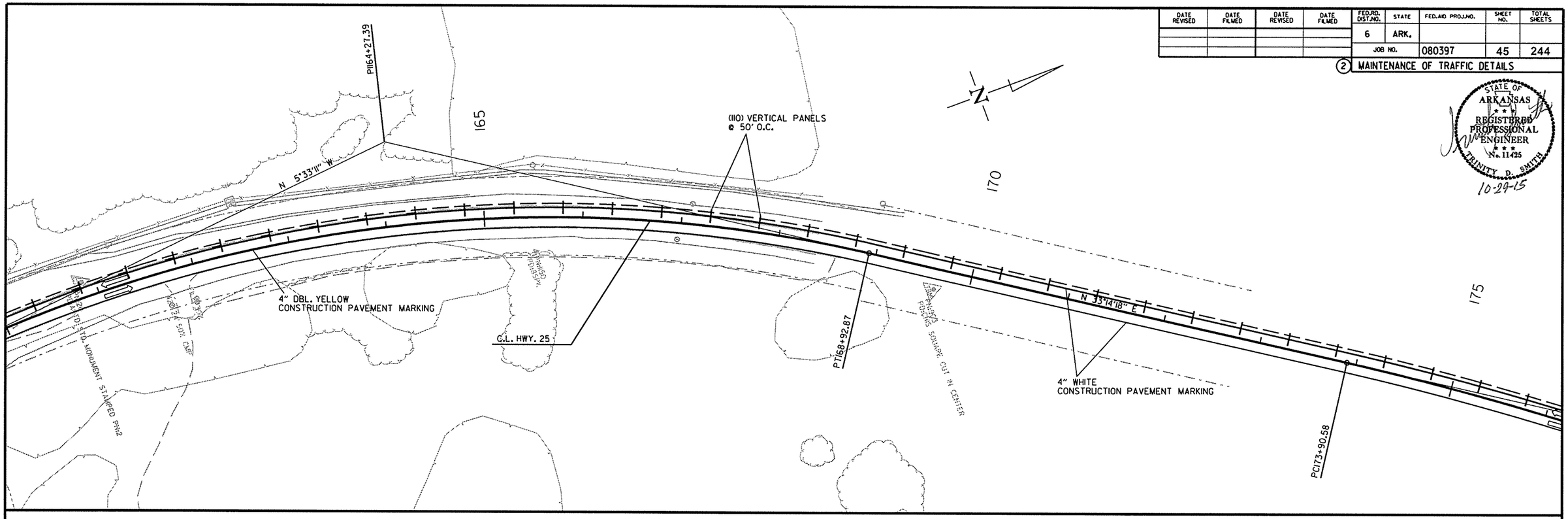
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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.		080397	45	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



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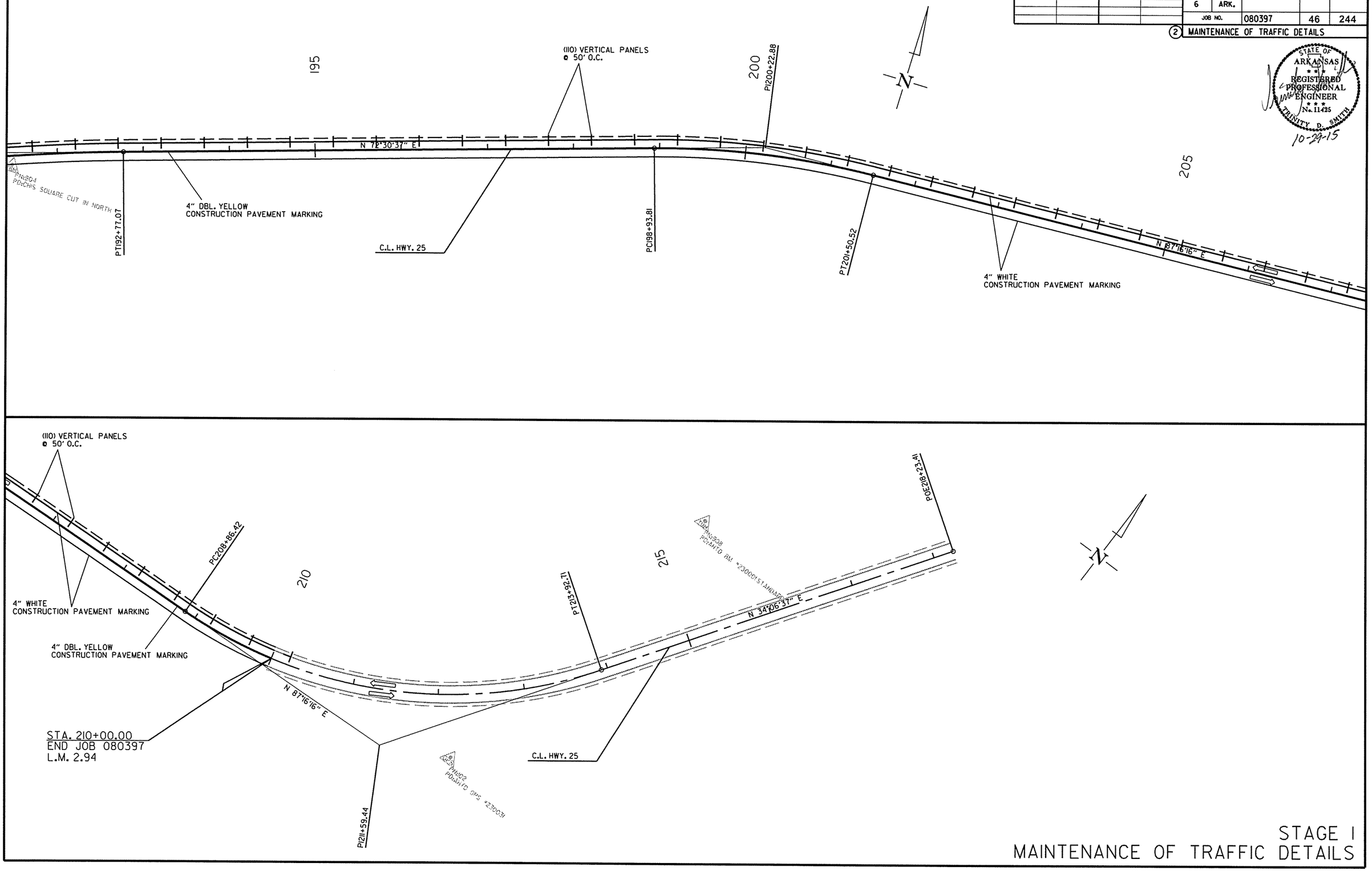
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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.		080397	46	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



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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.		080397	47	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

EXISTING ROW & C/A
ROW MON
REBAR&CAP ROW BDY PLS 1201
7005
PI7005+51.83
PNH31 PD:8SPK
PNH32 PD:8SPK
CONST. LIMITS
C.L. I-40 WB. RAMP B
PNH33 PD:8SPK
PNH34 PD:8SPK
PNH35 PD:8SPK
PNH36 PD:8SPK
PNH37 PD:8SPK
PNH38 PD:8SPK
PNH39 PD:8SPK
PNH40 PD:8SPK
PNH41 PD:8SPK
PNH42 PD:8SPK
7010
7015
PC7004+34.81
PT7006+84.81
PC7015+07.84
S 60°17'14" E
CONST. LIMITS
CONST. LIMITS
CONST. LIMITS
EXISTING ROW & C/A
S 60°17'14" E
S 54°19'

N

POND
PARKING
PI7029+31.37
PI7029+47.36
7030
S 44°53'14" E
S 44°31'31" E
DROP INLET
DROP INLET
7020
7025
EXISTING ROW & C/A
CONST. LIMITS
FURNISH AND INSTALL 1160' P.C.C.B. + (1) SPECIAL END UNIT
STA. 7026+80.93
END I-40 WB. RAMP B CONST.
+00.33
93' P.C.C.B TAPER
+93.93
18'
10'
18'
C.L. I-40 WB. RAMP B
NOSE +11.37
7.50'
S 64°16'55" E
S 60°17'14" E
PI7020+40.93
PC7022+24.44
FURNISH AND INSTALL 480' P.C.C.B. + (1) SPECIAL END UNIT
193' P.C.C.B TAPER
+78.34
+71.34
PI7017+78.35
NOSE +11.54
116.19'
S 85°17'14" E
C.L. I-40
PC7022+37.81

N

STAGE I
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.		080397	48	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

N

ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

C.L. BLANEY HILL RD.

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

C.L. HWY. 25

CONST. LIMITS
PROP. ROW
FENCE
C/A
PAVED
CONCRETE
POND

PC0+85.68
PT4+21.75
P12+53.87
PC9+64.84
PT12+19.96
P11+35.56
PT10+92.41

N 9°22'36" E
S 85°22'23" E
N 88°44'45" E
S 89°58'43" E

(45) TRAFFIC DRUMS @ 50' O.C.

PN:25 PD:AUTO CAD. MONUMENT STAMPED PNZ
PN:26 PD:OLD CONCRETE MONUMENT STAMPED PN3
PN:27 PD:8SPK
PN:28 PD:8SPK
PN:29 PD:8SPK
PN:111 PD:8SPK
PN:113 PD:8SPK
PN:114 PD:8SPK
PN:115 PD:8SPK HUB TO PLUM TO CC
PN:121 PD:8SPK

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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.		080397	49	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

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

P0B6999+72.07
P1105+60.03
C.L. I-40 WB. RAMP B
C.L. I-40 WB. RAMP A
C.L. HWY. 25
P0B6999+97.14
PC1101+79.30
P1104+24.45
N 21°13'18" W
S 85°17'44" E
N 4°32'28" E
N 4°32'28" E
N 4°42'59" E
N 9°22'36" E
BEGIN PROP. C/A
EXIST. ROW & C/A
PROP. ROW & FENCE
CONST. LIMITS
P1112+25.05
P1115+35.56
P1107+53.77
Δ=0°10'31" RT.
BEGIN PROP. C/A
EXIST. ROW & C/A
PC1109+14.20
EXISTING ROW & C/A
CONST. LIMITS
STA. 99+97.14
BEGIN JOB 080397
(4) TRAFFIC DRUMS @ 50' O.C.
PC7004+34.81
P17005+61.83
PT7006+84.81
EXISTING ROW & C/A
CONST. LIMITS
MONUMENT STAMPED PN2
PN22 PD.ARTD STD.
PN24 PD.ISSPK
POND
105
100
110
115
7000
7005

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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.		080397	50	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

N

ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

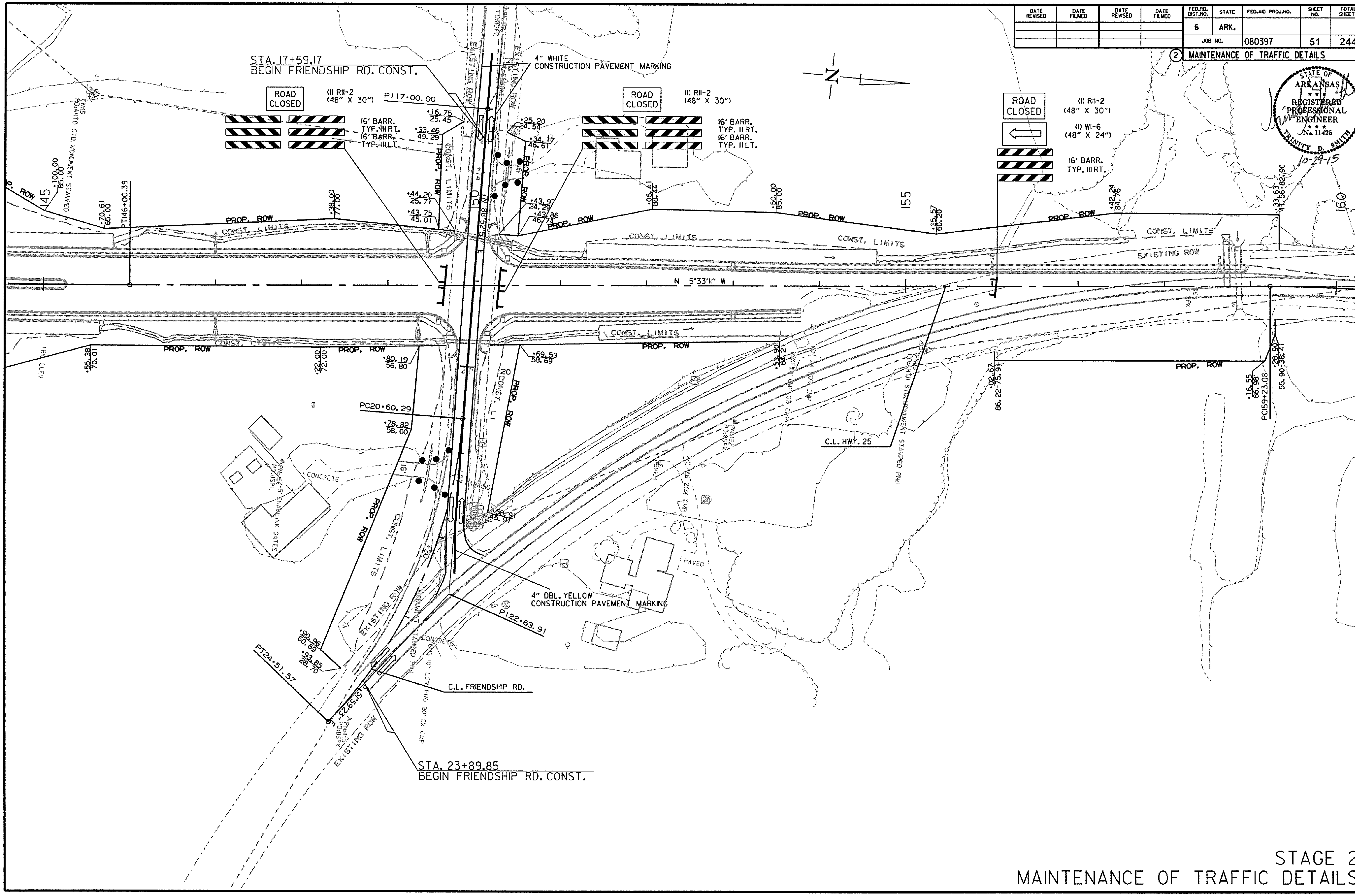
C.L. BLANEY HILL RD.
C.L. HWY. 25
N 9°22'36" E
S 85°22'23" E
N 88°44'45" E
S 89°58'43" E
PROP. ROW
CONST. LIMITS
PC0+85.68
PT4+21.75
P12+53.87
PC9+64.84
PT12+19.96
P110+92.41
P115+35.56
PN:III3 PD:8SPK
PN:III4 PD:8SPK
PN:22 PD:AHTD STD. MONUMENT STAMPED PN:2
POND
CONCRETE
PAVED
END PROP. C/A
FENCE
4" WHITE CONSTRUCTION PAVEMENT MARKING
4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

10/26/2015
R080397.DGN

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.		080397	51	244

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

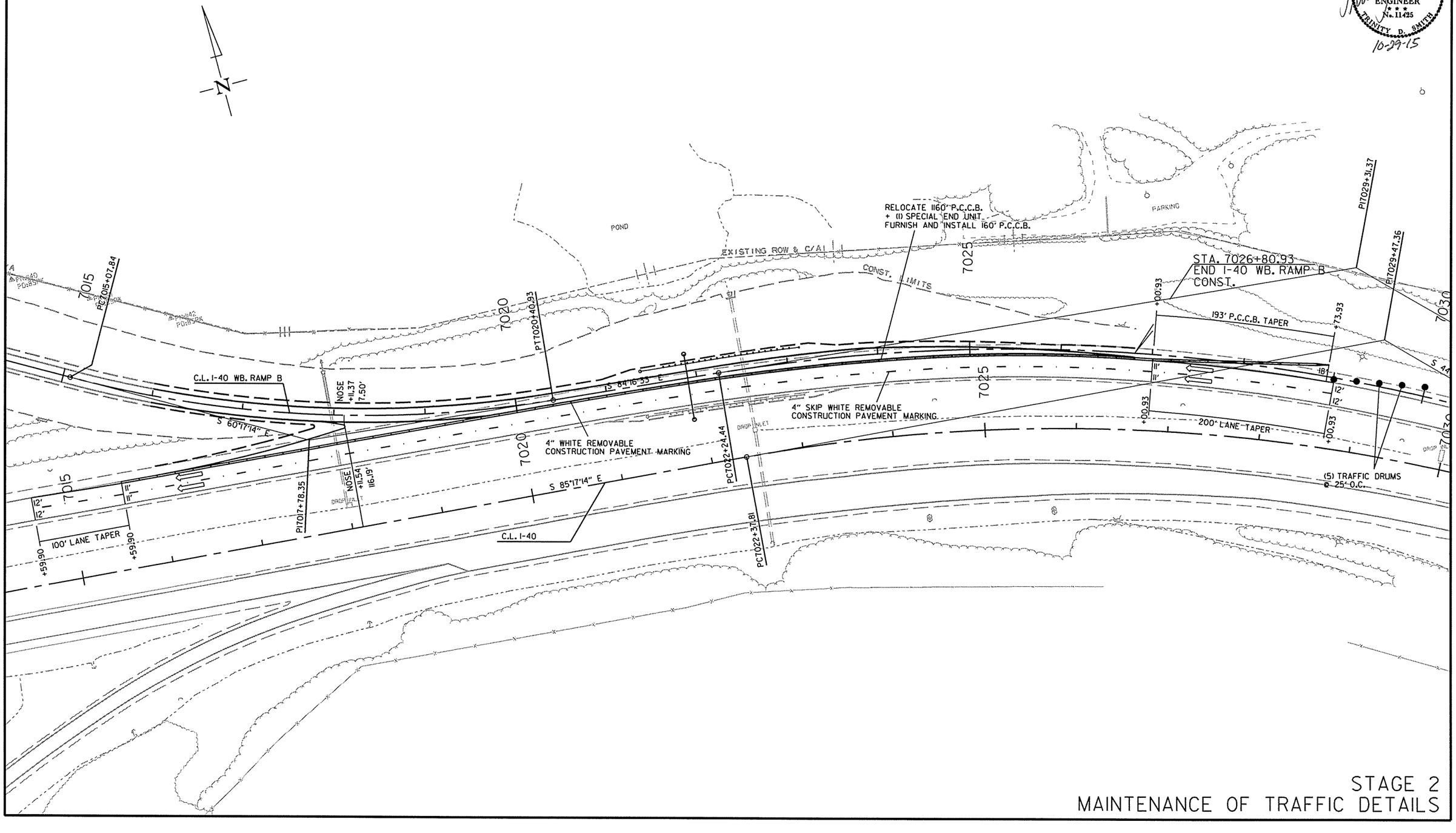
10/26/2015

R080397.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.		080397	52	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



10/26/2015

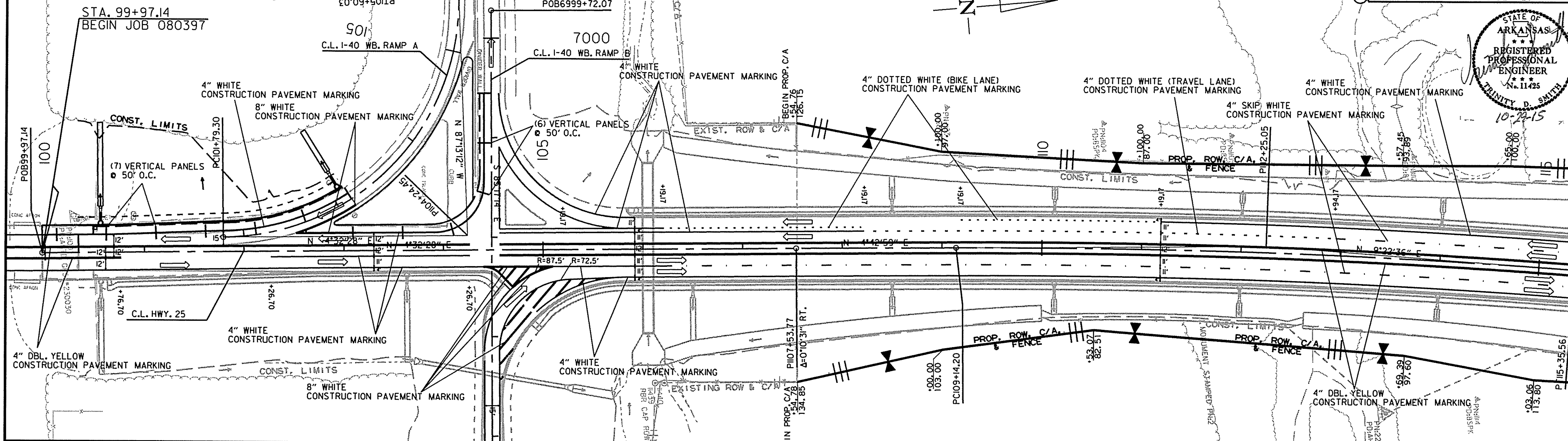
R080397.DGN

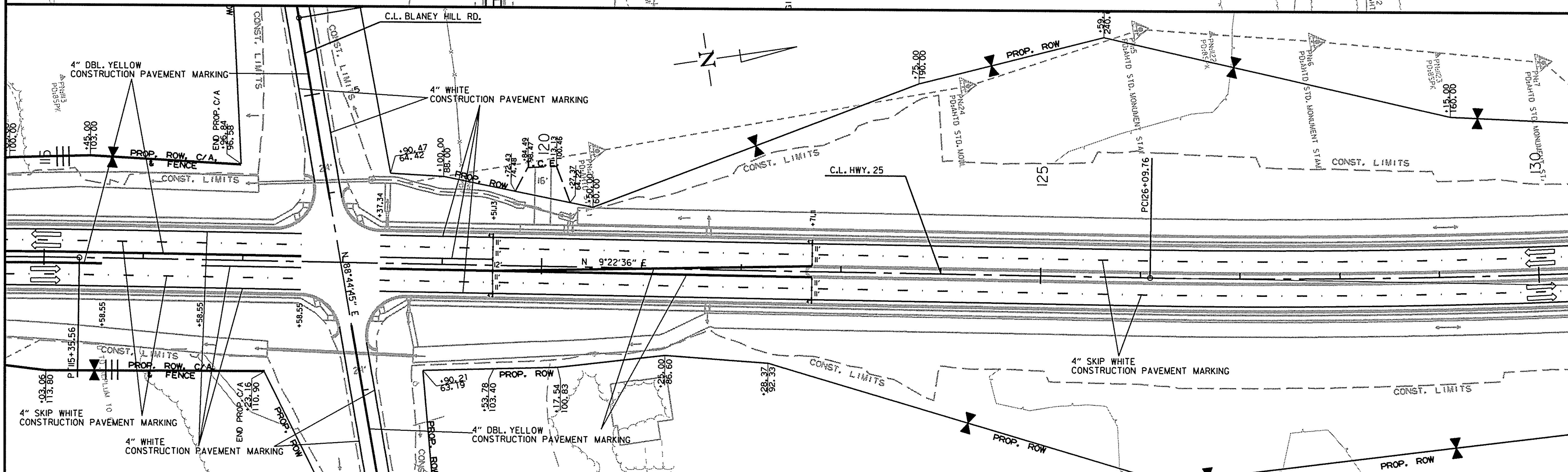
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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.		080397	53	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-29-15





STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

10/26/2015

R080397.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.		080397	54	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-28-15

POND

PNH24 PD1425PK

PNH25 PD1425PK

PNH27 PD1425PK

PNH2 PD1+HTD STD. MONUMENT STAMPED PNH

PNH5 PD1+HTD STD. MONUMENT STAMPED PNH

PNH7 PD1+HTD STD. MONUMENT STAMPED PNH

PROP. ROW

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

4" DOTTED WHITE (TRAVEL LANE) CONSTRUCTION PAVEMENT MARKING

4" DOTTED WHITE (BIKE LANE) CONSTRUCTION PAVEMENT MARKING

CONST. LIMITS

C.L. HWY. 25

N 9°22'36" E

N 5°33'11" W

PI136+10.74

PNH66 PD1425PK

PNH67 PD1425PK

TRN ELEV

+130.00 105.00

+135.00

+140.00

+59.00 225.00

+70.00 245.00

+95.00 180.00

+100.00 85.00

+145.00

+71.50

+52.50

+54.19 145.00

+55.00 145.00

+60.00 255.00

+65.00 205.00

+55.00 160.00

10/26/2015

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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.		080397	55	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-19-15

STA. 17+59.17
BEGIN FRIENDSHIP RD. CONST.

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

4" DOTTED WHITE (TRAVEL LANE) CONSTRUCTION PAVEMENT MARKING

4" DOTTED WHITE (BIKE LANE) CONSTRUCTION PAVEMENT MARKING

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

(6) TRAFFIC DRUMS @ 50' O.C.

(108) VERTICAL PANELS @ 50' O.C.

C.L. FRIENDSHIP RD.

C.L. HWY. 25

STA. 23+89.85
BEGIN FRIENDSHIP RD. CONST.

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

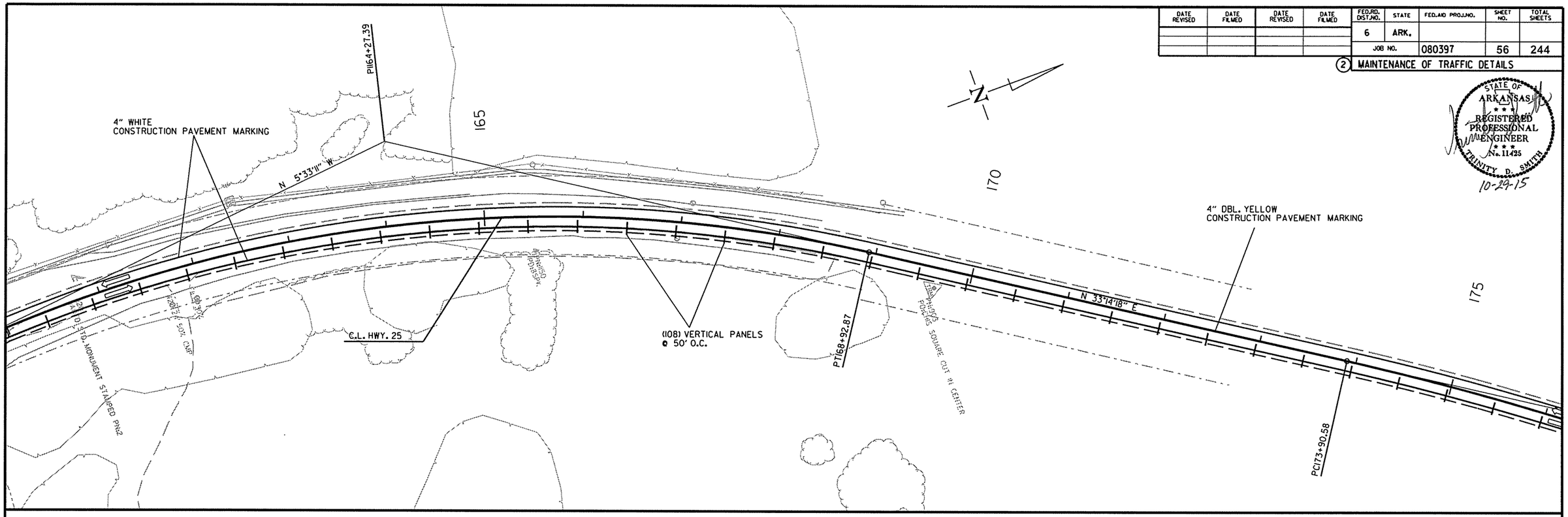
10/26/2015

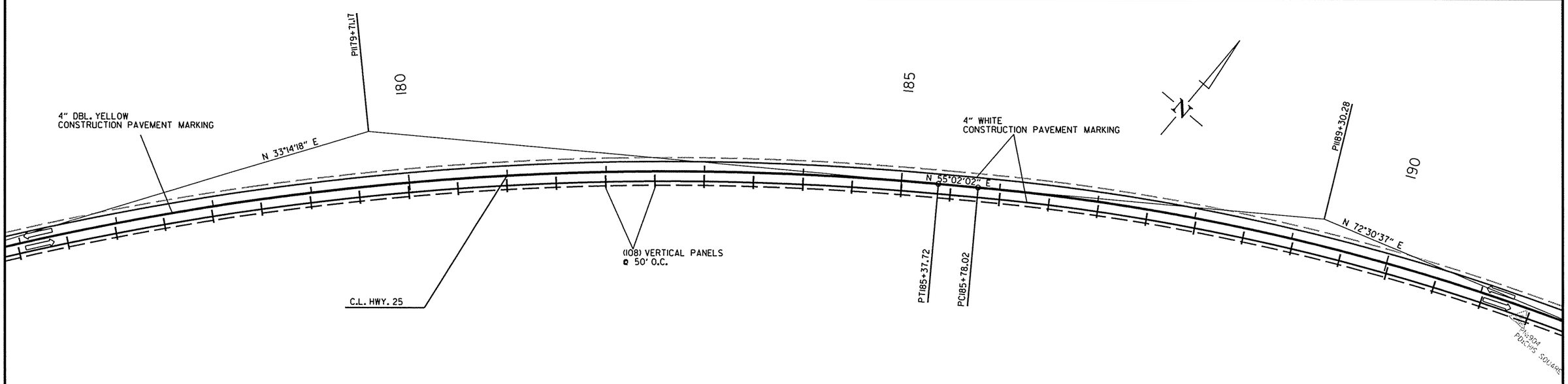
R080397.DGN

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.		080397	56	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15





STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

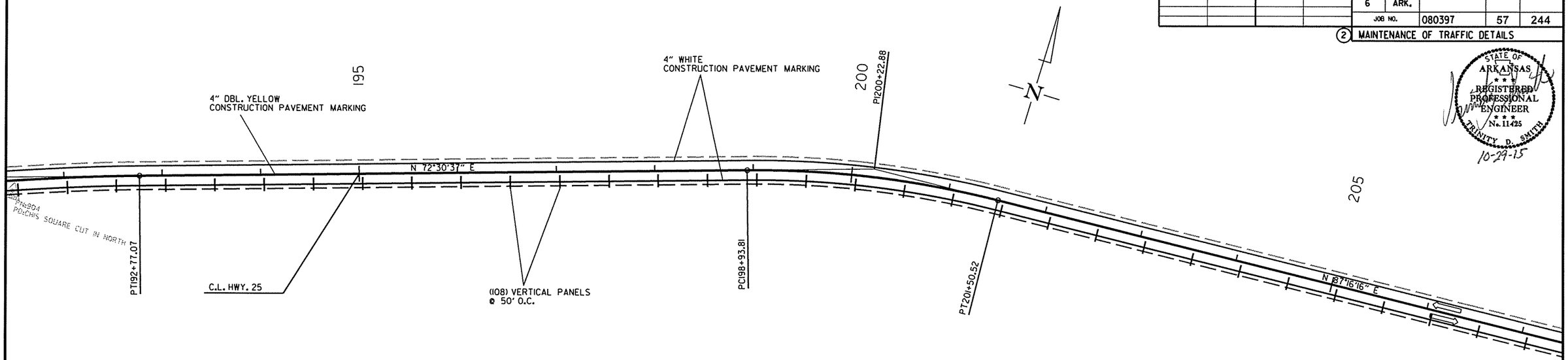
10/26/2015

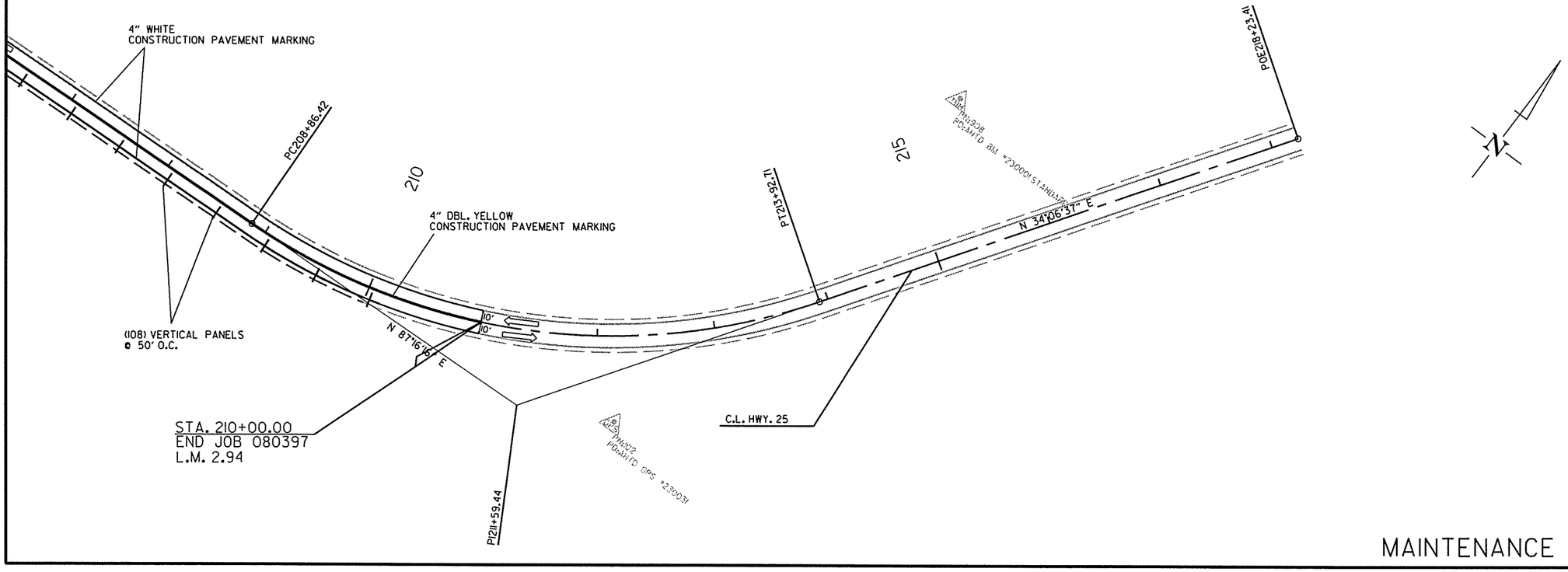
R080397.DGN

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.		080397	57	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15





10/26/2015

R080397.DGN

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.		080397	58	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

EXISTING ROW & C/A
ROW MON
7005
PI 7005+61.83
REBAR&CAP ROW BDY PLS 1291
CONST. LIMITS
C.L. I-40 WB. RAMP B
PC 7004+34.81
PT 7006+84.81
4" WHITE CONSTRUCTION PAVEMENT MARKING
4" YELLOW CONSTRUCTION PAVEMENT MARKING
S 60°17'14" E
7010
7015
PC 7015+07.84
4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING
8" WHITE CONSTRUCTION PAVEMENT MARKING
NOSE +11.37 7.50'
15'
S 60°17'14" E
NOSE +11.54 116.19'
PI 7017+78.35
90°69'
4" YELLOW CONSTRUCTION PAVEMENT MARKING
4" WHITE CONSTRUCTION PAVEMENT MARKING
8" WHITE CONSTRUCTION PAVEMENT MARKING
8" DOTTED WHITE (TRAVEL LANE) CONSTRUCTION PAVEMENT MARKING
PT 7020+40.93
7020
7025
POND
PARKING
DROP INLET
S 84°16'33" E
4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING
PC 7022+24.44
S 85°17'14" E
C.L. I-40
PC 7022+37.81
26°08'
PI 7029+31.37
PI 7029+47.36
STA. 7026+80.93
END I-40 WB. RAMP B CONST.
86°00'

10/26/2015

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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.		080397	59	244

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

N

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

C.L. BLANEY HILL RD.

C.L. HWY. 25

N 9°22'36" E

S 85°22'23" E

N 88°44'45" E

S 89°58'43" E

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

4" DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

4" WHITE CONSTRUCTION PAVEMENT MARKING

4" SKIP WHITE CONSTRUCTION PAVEMENT MARKING

PROP. ROW

CONST. LIMITS

PROP. R/W & FENCE

C/A

PAVED

CONCRETE

POND

PC0+85.68
PT4+21.75
PI2+53.87
PI5+35.56
PC9+64.84
PI10+92.41
PT12+19.96
PI10+92.41

PN:000
PD:AIID

PN:III3
PD:8SPK

PN:III4
PD:8SPK

10/26/2015

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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.		080397	60	244

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

8'
2'
4" DOTTED WHITE (BIKE LANE)
THERMOPLASTIC PAVEMENT MARKING
12'
3'
4" DOTTED WHITE (TRAVEL LANE)
THERMOPLASTIC PAVEMENT MARKING

STA. 99+97.14
BEGIN JOB 080397
POB6999+72.07
7000
105
C.L. I-40 WB. RAMP A
C.L. I-40 WB. RAMP B
P1105+60.03
P1104+24.45
N 87°13'12" W
S 85°17'48" E
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING
4" WHITE THERMOPLASTIC PAVEMENT MARKING
8" WHITE HIGH PERFORMANCE PAVEMENT MARKING
4" WHITE THERMOPLASTIC PAVEMENT MARKING
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING
4" DOTTED WHITE (BIKE LANE) THERMOPLASTIC PAVEMENT MARKING
4" DOTTED WHITE (TRAVEL LANE) THERMOPLASTIC PAVEMENT MARKING
BEGIN PROP. C/A
EXIST. ROW & C/A
CONST. LIMITS
PROP. ROW, C/A, & FENCE
C.L. HWY. 25
POB99+97.14
100
110
PI12+25.05
+47.59
+53.64
+76.70
+26.70
+19.17
N 1°32'28" E
N 1°42'59" E
R=87.5'
R=72.5'
4" DBL. YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
4" WHITE THERMOPLASTIC PAVEMENT MARKING
8" WHITE HIGH PERFORMANCE PAVEMENT MARKING
4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING
4" WHITE THERMOPLASTIC PAVEMENT MARKING
EXISTING ROW & C/A
PI107+53.77
Δ=0°10'31" RT.
PC109+14.20
4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.
4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
7005

LEGEND
= THERMOPLASTIC PAVEMENT MARKING (ARROW)
= THERMOPLASTIC PAVEMENT MARKING (WORD)
= THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)

C.L. BLANEY HILL RD.
4" DBL. YELLOW REFLECTORIZED PAINT PAVEMENT MARKING
4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
4" WHITE REFLECTORIZED PAINT PAVEMENT MARKING
4" WHITE THERMOPLASTIC PAVEMENT MARKING
END PROP. C/A
PROP. ROW
CONST. LIMITS
N 9°22'36" E
N 88°44'45" E
PI115+35.56
4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.
4" WHITE THERMOPLASTIC PAVEMENT MARKING
END PROP. C/A
4" WHITE REFLECTORIZED PAINT PAVEMENT MARKING
4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.
4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.
4" DBL. YELLOW REFLECTORIZED PAINT PAVEMENT MARKING
120
125
PC126+09.76

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PERMANENT PAVEMENT MARKING 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.		080397	61	244

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

LEGEND

= THERMOPLASTIC PAVEMENT MARKING (ARROW)
= THERMOPLASTIC PAVEMENT MARKING (WORD)
= THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)

8'
2'
4" DOTTED WHITE (BIKE LANE)
THERMOPLASTIC PAVEMENT MARKING

12'
3'
4" DOTTED WHITE (TRAVEL LANE)
THERMOPLASTIC PAVEMENT MARKING

N

+15.00
160.00
CONST. LIMITS
PROP. ROW
130
4" WHITE
THERMOPLASTIC PAVEMENT MARKING
+50.00
165.00
135
+70.00
245.00
PROP. ROW
+50.00
225.00
CONST. LIMITS
140
C.L. HWY. 25
4" SKIP WHITE
THERMOPLASTIC PAVEMENT MARKING
& RAISED PAVEMENT MARKERS
(TYPE III(WHITE/RED) SPACED 80' O.C.
N 9°22'36" E
N 5°33'11" W
+77.50
CONST. LIMITS
4" DOTTED WHITE (TRAVEL LANE)
THERMOPLASTIC PAVEMENT MARKING
PROP. ROW
+54.19
145.00
+55.00
145.00
PI 136+10.74
CONST. LIMITS
PROP. ROW
+55.00
160.00
+65.00
205.00
+60.00
255.00

10/26/2015
R080397.DGN

PERMANENT PAVEMENT MARKING DETAILS

NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS AS DIRECTED BY THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	62	244

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-27-15

STA. 17+59.17
BEGIN FRIENDSHIP RD. CONST.

P117+00.00

4" YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

4" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 40' O.C.

4" WHITE THERMOPLASTIC PAVEMENT MARKING

4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.

4" DOTTED WHITE (TRAVEL LANE) THERMOPLASTIC PAVEMENT MARKING

4" DOTTED WHITE (BIKE LANE) THERMOPLASTIC PAVEMENT MARKING

PC20+60.29

4" WHITE THERMOPLASTIC PAVEMENT MARKING

4" WHITE THERMOPLASTIC PAVEMENT MARKING

4" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

4" YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

P122+63.91

PT24+51.57

C.L. FRIENDSHIP RD.

C.L. HWY. 25

STA. 23+89.85
BEGIN FRIENDSHIP RD. CONST.

PROP. ROW
CONST. LIMITS
EXISTING ROW
EXIST.
N 5°33'11" W
N 75°25'88" E

4" DOTTED WHITE (BIKE LANE) THERMOPLASTIC PAVEMENT MARKING

4" DOTTED WHITE (TRAVEL LANE) THERMOPLASTIC PAVEMENT MARKING

LEGEND

= THERMOPLASTIC PAVEMENT MARKING (ARROW)
= THERMOPLASTIC PAVEMENT MARKING (WORD)
= THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)

10/26/2015

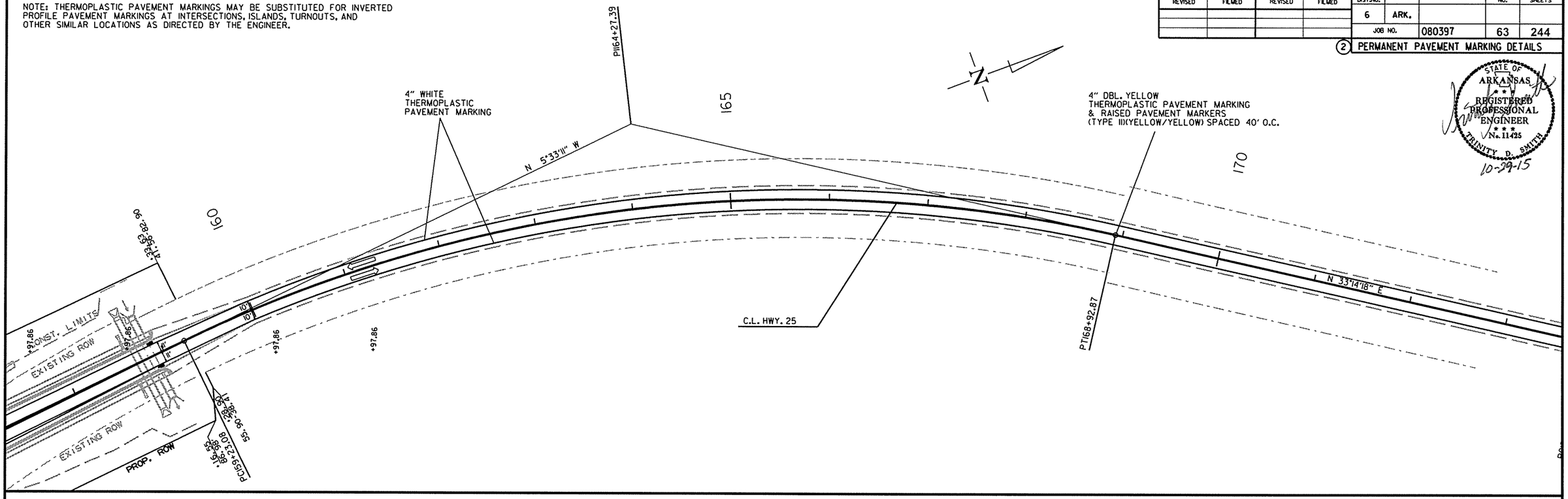
R080397.DGN

PERMANENT PAVEMENT MARKING 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.		080397	63	244

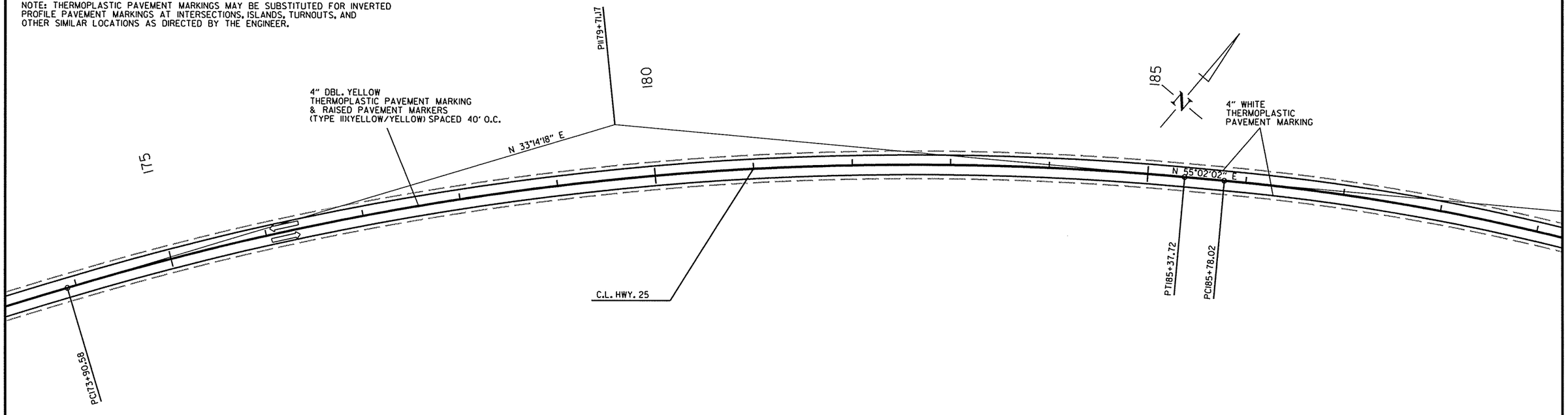
(2) PERMANENT PAVEMENT MARKING DETAILS

NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS AS DIRECTED BY THE ENGINEER.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS AS DIRECTED BY THE ENGINEER.



10/26/2015

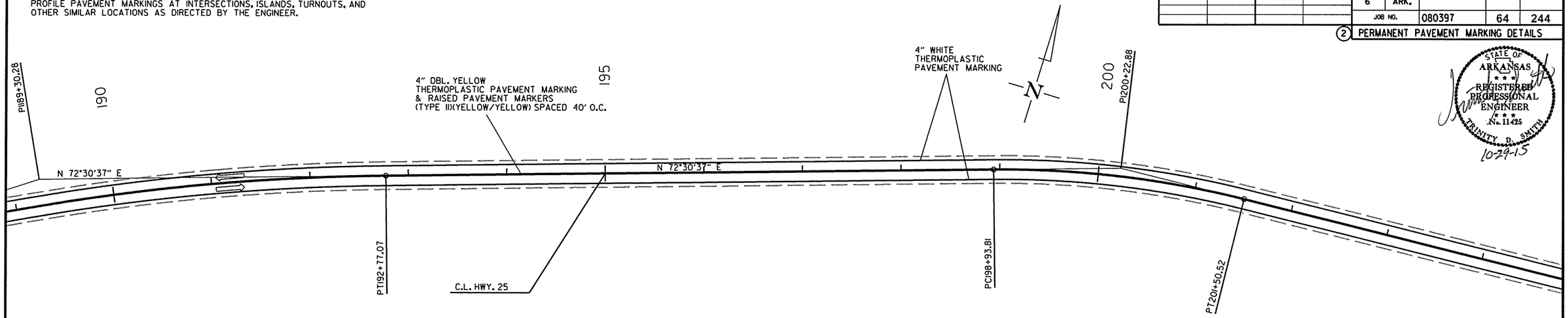
R080397.DGN

PERMANENT PAVEMENT MARKING DETAILS

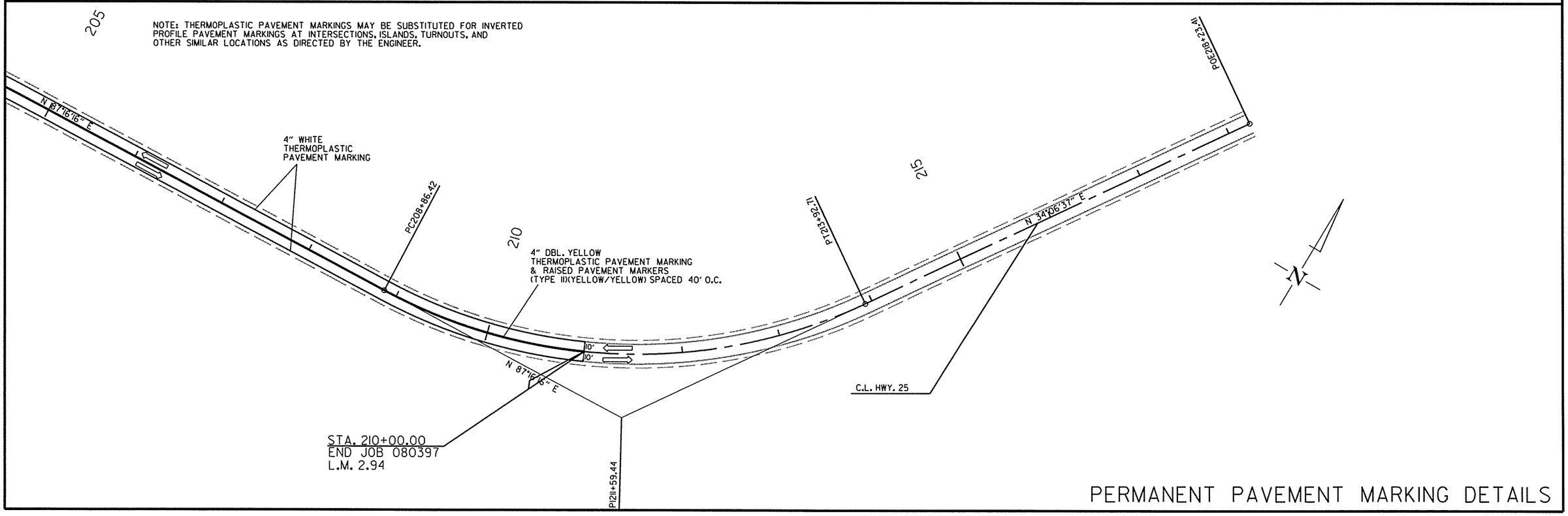
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	64	244

(2) PERMANENT PAVEMENT MARKING DETAILS

NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS AS DIRECTED BY THE ENGINEER.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15



10/26/2015

R080397.DGN

PERMANENT PAVEMENT MARKING 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.		080397	65	244

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

EXISTING ROW & C/A
CONST. LIMITS
7005
PI7005+61.83
7010
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING
C.L. I-40 WB. RAMP B
15'
PC7004+34.81
PT7006+84.81
S 60°17'14" E
4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING
7015
PC7015+07.84
8" WHITE HIGH PERFORMANCE PAVEMENT MARKING
4" WHITE (SKIP LINE) HIGH PERFORMANCE PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE III(WHITE/RED) SPACED 40' O.C.
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING
NOSE +11.37 7.50'
54'
19'

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING
8" WHITE HIGH PERFORMANCE PAVEMENT MARKING
NOSE +11.54 116.19'
P17017+78.35
+59.90
7020
+90.68
PT7020+40.93
+40.93
340' DECELERATION LANE
300' LANE TAPER
+80.93
7025
8" DOTTED WHITE (TRAVEL LANE) HIGH PERFORMANCE PAVEMENT MARKING
S 84°16'33" E
4" WHITE (SKIP LINE) HIGH PERFORMANCE PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE III(WHITE/RED) SPACED 40' O.C.
PC7022+24.44
S 85°17'14" E
C.L. I-40
PC7022+37.81
PI7029+31.37
PI7029+47.36
STA. 7026+80.93
END I-40 WB. RAMP B CONST.
86'00'

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PERMANENT PAVEMENT MARKING 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.		080397	66	244

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

N

LEGEND

= THERMOPLASTIC PAVEMENT MARKING (ARROW)
= THERMOPLASTIC PAVEMENT MARKING (WORD)
= THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

C.L. BLANEY HILL RD.

C.L. HWY. 25

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.

4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.

4" WHITE THERMOPLASTIC PAVEMENT MARKING

4" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

4" YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

4" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) SPACED 80' O.C.

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) SPACED 80' O.C.

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PERMANENT PAVEMENT MARKING 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.		080397	67	244

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	LANE CLOSURE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	ADVANCE WARNING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN
												RIGHT	LEFT				
			LIN. FT. - EACH					NO.	SQ. FT.	EACH				LIN. FT.		DAY	WEEK
W20-1	ROAD WORK 1500 FT.	48"x48"		3	3	1	3	3	48.0								
W20-1	ROAD WORK 1000 FT.	48"x48"		1	1	1	1	1	16.0								
W20-1	ROAD WORK 500 FT.	48"x48"		1	1	1	1	1	16.0								
W20-1	ROAD WORK 1 MILE	48"x48"		2	2		2	2	32.0								
W20-1	ROAD WORK 1/2 MILE	48"x48"		2	2		2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	6	6	6	6	6	96.0								
W20-1	RIGHT LANE CLOSED 1 MILE	48"x48"	2				2	2	32.0								
W20-1	RIGHT LANE CLOSED 1/2 MILE	48"x48"	2				2	2	32.0								
W20-1	RIGHT LANE CLOSED 1500 FT.	48"x48"	2				2	2	32.0								
G20-2	END ROAD WORK	48"x24"		10	10	8	10	10	80.0								
G20-1	ROAD WORK NEXT 5 MILES	60"x24"				2	2	2	20.0								
R11-2	ROAD CLOSED	48"x30"		6	6	1	6	6	60.0								
OM-3R	OBJECT MARKER	12"x36"		4	4		4	4	12.0								
W1-6	LARGE ARROW	48"x24"		1	1	1	1	1	8.0								
R4-1	DO NOT PASS	24"x30"		2	2	2	2	2	10.0								
RSP-1	SHOULDER CLOSED	48"x30"		5	5	5	5	5	50.0								
W8-1	BUMP	30"x30"		4	4	4	4	4	25.0								
R55-1	FINES DOUBLE IN WORK ZONES	36"x60"		2	2		2	2	30.0								
SPECIAL	MERGE NOW W/ARROW GRAPHIC (RIGHT)	48"x48"	1				1	1	16.0								
R4-1	DO NOT PASS	48"x60"	4				4	4	80.0								
R3-5	REDUCED SPEED AHEAD	48"x48"	2				2	2	32.0								
R2-1	SPEED LIMIT 60 MPH	48"x60"	2				2	2	40.0								
R2-1	SPEED LIMIT 70 MPH	48"x60"	2				2	2	40.0								
W1-6	LARGE ARROW	60"x30"	6				6	6	75.0								
	VERTICAL PANELS			124		127	127			127							
	TRAFFIC DRUMS		115	140	27	52	140				140						
	TYPE III BARRICADE-RT. (16')			6	6	1	6					96					
	TYPE III BARRICADE-LT. (16')			5	5		5						80				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1666			1666							1666			
	RELOCATING PRECAST CONCRETE BARRIER				1333		1333								1333		
	ADVANCE WARNING ARROW PANEL		1				1									7	
	PORTABLE CHANGEABLE MESSAGE SIGN		1	1	1		1										88
TOTALS:									**914.0**	**127**	**140**	**96**	**80**	**1666**	**1333**	**7**	**88**

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

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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.		080397	68	244

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING				REFLECTORIZED PAINT PAVEMENT MARKING		HIGH PERFORMANCE CONTRAST PAVEMENT MARKING		HIGH PERFORMANCE PAVEMENT MARKING			
								TYPE II		4"		WORDS	ARROWS	BIKE EMBLEMS	4"		4"		4"		8"
	LIN. FT. - EACH				LIN. FT.		LIN. FT.	(WHITE/RED)	(YEL/YEL)	WHITE	YELLOW				WHITE	YELLOW	WHITE	YELLOW	WHITE	WHITE (SKIP LINE)	YELLOW	WHITE
								EACH		LIN. FT.		EACH			LIN. FT.		LIN. FT.		LIN. FT.			
REMOVAL OF PERMANENT PAVEMENT MARKINGS		7555			7555																
CONSTRUCTION PAVEMENT MARKINGS	27648	7555	59680			94883															
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	3300	1797					5097														
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				354				354													
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				226					226												
THERMOPLASTIC PAVEMENT MARKING WHITE (4")				24845						24845											
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")				21256							21256										
THERMOPLASTIC PAVEMENT MARKING WORDS				12								12									
THERMOPLASTIC PAVEMENT MARKING ARROWS				12									12								
THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)				40										40							
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")				3706											3706						
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")				3783												3783					
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")				572													572				
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")				1144														1144			
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")				4521															4521		
HIGH PERFORMANCE PAVEMENT MARKING (SKIP LINE) WHITE (4")				359																359	
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")				1362																	1362
HIGH PERFORMANCE PAVEMENT MARKING WHITE (8)				1141																	1141
TOTALS:					**7555**	**94883**	**5097**	**354**	**226**	**24845**	**21256**	**12**	**12**	**40**	**3706**	**3783**	**572**	**1144**	**4521**	**359**	**1362**	**1141**

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

NOTE: THE 4" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS AS DIRECTED BY THE ENGINEER.

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

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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.		080397	69	244

(2) QUANTITIES

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
105+00	158+00	HWY. 25-LT. & RT.	53	53
7003+00	7018+00	RAMP 3-LT. & RT.	15	15
7018+00	7027+00	RAMP 3-LT.	9	9
0+00.00	6+00	BLANEY HILL RD.-LT. & RT.	6	6
7+00	12+00	BLANEY HILL RD.-LT. & RT.	5	5
17+00	24+00	FRIENDSHIP RD.-LT. & RT.	7	7
TOTALS:			95	95

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
17+73	FRIENDSHIP RD.-LT. 16"X24' CM PIPE	1
19+35	FRIENDSHIP RD.-36"X30' CM PIPE	1
TOTAL:		2

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

FENCING

STATION	STATION	LOCATION	WIRE FENCE	
			(TYPE A)	(TYPE C)
			LIN. FT.	
107+55	116+97	HWY. 25-LT.	953	
107+54	117+23	HWY. 25-RT.	968	
122+00	145+00	HWY. 25-LT.		2346
122+00	145+00	HWY. 25-RT.		2402
TOTALS:			1921	4748

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	PRECAST CONCRETE BARRIER WALL LEFT IN PLACE	RETAINING WALLS	CONCRETE SLABS	CONCRETE ISLANDS	SIGN FOUNDATIONS	GUARDRAIL	SEPTIC SYSTEM	BUILDINGS	SIGNS
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	EACH	LIN. FT.	EACH	EACH	EACH
99+98	102+51	HWY. 25-LT.						250			
99+97	101+27	HWY. 25-RT.						125			
103+25	104+04	HWY. 25-LT.				10					
103+82	104+32	HWY. 25-LT.	100								
104+63		HWY. 25-LT.						50			
120+58		HWY. 25-RT.								1	
120+90		HWY. 25-RT.								1	
136+80		HWY. 25-RT.			167						
137+50		HWY. 25							1	1	
137+50		HWY. 25								1	
139+05		HWY. 25-LT.								1	
139+30		HWY. 25							1	1	
139+30		HWY. 25-LT.								1	
139+45		HWY. 25-LT.								1	
139+55		HWY. 25-LT.		60							
21+55		FRIENDSHIP RD.-LT.					4				2
21+65		FRIENDSHIP RD.-LT.					2				1
21+70		FRIENDSHIP RD.-LT.					1				1
TOTALS:			100	60	167	10	7	425	2	8	4

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
104+18	HWY. 25-LT.	C	396
TOTAL:			396

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
106+05	WINGWALL OF R.C. BOX CULVERT	1
158+87	WINGWALL OF R.C. BOX CULVERT	1
TOTAL:		2

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20")	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
											(E-1)	(E-5)	(E-6)	(E-7)	(E-11)	(E-14)		
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING													15455			572
ENTIRE	PROJECT	STAGE 1						32.34	32.34	659.7			588	682	8325	2164	2164	2694
ENTIRE	PROJECT	STAGE 3	22.23	44.46	22.23	2267.5	22.23	2.79	2.79	56.9			12	110	5420	741	741	950
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			5.56	11.12	5.56	567.1	5.56	8.78	8.78	179.1	450	1100	150	198	7300	726	726	1154
TOTALS:			27.79	55.58	27.79	2834.6	27.79	43.91	43.91	895.7	450	1100	750	990	36500	3631	3631	5370

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
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION
DROP INLET SILT FENCE.....22 LIN. FT./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.

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

10/26/2015

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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
11-10-15				6	ARK.			
				JOB NO.		080397	70	244

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-12-15

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	STP-STPA-STPC-9095(27)		STP-STPA-STPF-9095(27)				
			UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	TOPSOIL FURNISHED AND PLACED	PRESPLITTING	* SOIL STABILIZATION
			CU. YD.					SQ. YD.	TON
99+97.14	158+97.86	HWY. 25			672367	117570		16781	
122+66.62	145+25.11	HWY. 25-MEDIAN					251		
158+97.86	210+00.00	HWY. 25			206	1638			
ENTIRE	PROJECT	RAMP 3	451	73564					
ENTIRE	PROJECT	APPROACHES			20	265			
ENTIRE	PROJECT	BLANEY HILL RD.			857	14748			
ENTIRE	PROJECT	FRIENDSHIP RD.			1278	1064			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE							50
		DIRECTED BY THE ENGINEER							
TOTALS:			451	73564	674728	135285	251	16781	50

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	"B"	CONC. DITCH PAVING (TYPE A)	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	M. GAL.
100+56.00		HWY. 25-LT.	84.20	5.00			46.78	37.42	0.47
100+56.00		HWY. 25-RT.	76.72	5.00			42.62	34.10	0.43
103+09.00		RAMP 3A	47.58	5.00			26.43	21.15	0.27
103+63.00		HWY. 25-RT.	45.96	5.00			25.53	20.43	0.26
105+88.66	106+21.34	HWY. 25-LT.	32.68	16.32	10.00	59.26		14.52	0.18
105+88.66	106+21.34	HWY. 25-RT.	32.68	16.32	10.00	59.26		14.52	0.18
106+21.34	117+14.83	HWY. 25-LT.	1093.49	16.32	10.00	1982.86		486.00	6.12
106+21.34	109+99.84	HWY. 25-RT.	378.50	16.32	10.00	686.35		168.22	2.12
106+50.00		HWY. 25-RT.	42.92	5.00			23.84	19.08	0.24
108+50.00		HWY. 25-LT.	23.25	5.00			12.92	10.33	0.13
108+50.00		HWY. 25-RT.	19.57	5.00			10.87	8.70	0.11
109+99.84	112+65.00	HWY. 25-RT.	265.16	6.32			186.20	117.85	1.48
110+12.64		HWY. 25-LT.	12.70	5.00			7.06	5.64	0.07
110+12.64		HWY. 25-RT.	15.39	5.00			8.55	6.84	0.09
112+00.00		HWY. 25-LT.	10.45	5.00			5.81	4.64	0.06
112+00.00		HWY. 25-RT.	14.84	5.00			8.24	6.60	0.08
112+65.00	117+26.13	HWY. 25-RT.	461.13	16.32	10.00	836.18		204.95	2.58
114+00.00		HWY. 25-LT.	14.90	5.00			8.28	6.62	0.08
114+00.00		HWY. 25-RT.	12.27	5.00			6.82	5.45	0.07
118+25.56	119+82.01	HWY. 25-LT.	156.45	6.32			109.86	69.53	0.88
118+44.00		HWY. 25-LT.	28.51	5.00			15.84	12.67	0.16
118+67.00		HWY. 25-RT.	35.45	5.00			19.69	15.76	0.20
118+72.36	145+65.24	HWY. 25-RT.	2692.88	16.32	10.00	4883.09		1196.84	15.08
120+16.88	120+35.00	HWY. 25-LT.	18.12	6.32			12.72	8.05	0.10
120+28.00		HWY. 25-LT.	4.02	5.00			2.23	1.79	0.02
120+35.00	145+80.65	HWY. 25-LT.	2545.65	16.32	10.00	4616.11		1131.40	14.26
121+67.00		HWY. 25-LT.	1.34	5.00			0.74	0.60	0.01
121+67.00		HWY. 25-RT.	2.19	5.00			1.22	0.97	0.01
135+00.00		HWY. 25-LT.	1.38	5.00			0.77	0.61	0.01
135+00.00		HWY. 25-RT.	1.88	5.00			1.04	0.84	0.01
140+00.00		HWY. 25-LT.	1.38	5.00			0.77	0.61	0.01
140+00.00		HWY. 25-RT.	1.88	5.00			1.04	0.84	0.01
144+00.00		HWY. 25-LT.	1.43	5.00			0.79	0.64	0.01
144+00.00		HWY. 25-RT.	1.87	5.00			1.04	0.83	0.01
145+65.24	149+66.08	HWY. 25-RT.	400.84	6.32			281.48	178.15	2.24
145+80.65	149+58.85	HWY. 25-LT.	378.20	6.32			265.58	168.09	2.12
147+00.00		HWY. 25-LT.	0.92	5.00			0.51	0.41	0.01
147+00.00		HWY. 25-RT.	6.65	5.00			3.69	2.96	0.04
149+35.00		HWY. 25-RT.	11.09	5.00			6.16	4.93	0.06
149+46.00		HWY. 25-LT.	8.79	5.00			4.88	3.91	0.05
149+58.85	149+68.70	HWY. 25-LT.	9.85	10.32	4.00	11.29		4.38	0.06
150+27.81	151+45.00	HWY. 25-RT.	117.19	6.32			82.29	52.08	0.66
150+42.41	150+55.33	HWY. 25-LT.	12.92	10.32	4.00	14.81		5.74	0.07
150+55.33	151+30.00	HWY. 25-LT.	74.67	6.32			52.43	33.19	0.42
151+30.00	154+66.08	HWY. 25-LT.	336.08	16.32	10.00	609.43		149.37	1.88
151+45.00	156+75.00	HWY. 25-RT.	530.00	16.32	10.00	961.07		235.56	2.97
153+00.00		HWY. 25-LT.	1.13	5.00			0.63	0.50	0.01
153+00.00		HWY. 25-RT.	3.26	5.00			1.81	1.45	0.02
156+00.00		HWY. 25-LT.	3.04	5.00			1.69	1.35	0.02
156+00.00		HWY. 25-RT.	6.52	5.00			3.62	2.90	0.04
154+66.08	157+57.51	HWY. 25-LT.	291.43	6.32			204.65	129.52	1.63
7003+37.87		RAMP 3A-LT.	42.16	8.00			37.48	18.74	0.24
TOTALS:						14719.71	1534.60	4628.27	58.34

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

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
100+34	102+99	HWY. 25-LT.	272
100+34	104+41	HWY. 25-RT.	466
104+64	117+97	HWY. 25-RT.	1394
105+83	117+71	HWY. 25-LT.	1240
117+98	149+92	HWY. 25-LT.	3249
118+25	149+80	HWY. 25-RT.	3248
122+65	145+27	HWY. 25-MEDIAN LT.	2281
122+65	145+27	HWY. 25-MEDIAN RT.	2281
150+06	158+98	HWY. 25-RT.	932
150+16	158+98	HWY. 25-LT.	928
7003+24	7005+32	RAMP 3-LT.	208
7003+24	7005+32	RAMP 3-RT.	208
TOTAL:			16707

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 2	TYPE 3
		SQ.YD.	
100+64	HWY. 25-RT.		2.9
105+91	HWY. 25-LT.		4.3
117+50	HWY. 25-LT.	24.5	
117+75	HWY. 25-RT.	31.1	
118+19	HWY. 25-LT.	26.1	
118+44	HWY. 25-RT.	19.0	
149+41	HWY. 25-RT.	28.9	
149+53	HWY. 25-LT.	28.9	
150+46	HWY. 25-RT.	28.9	
150+56	HWY. 25-LT.	36.0	
158+89	HWY. 25-LT.		4.0
158+89	HWY. 25-RT.		4.0
7002+54	RAMP 3-LT.		3.3
7002+86	RAMP 3-RT.		2.9
TOTALS:		223.4	21.4

SOLID SODDING

STATION	STATION	LOCATION	LENGTH	SOLID SODDING	WATER
			LIN. FT.	SQ.YD.	M.GAL.
100+34	103+00	HWY. 25-LT.	266	239	3.01
100+34	100+51	HWY. 25-RT.	17	17	0.21
100+61	104+36	HWY. 25-RT.	434	96	1.21
104+76	117+75	HWY. 25-RT.	1324	294	3.70
105+91	117+50	HWY. 25-LT.	1159	258	3.25
118+19	119+78	HWY. 25-LT.	159	35	0.44
118+44	149+50	HWY. 25-RT.	3106	690	8.69
120+22	149+61	HWY. 25-LT.	2939	653	8.23
122+67	145+25	HWY. 25-MEDIAN	2258	2258	28.45
149+50	149+80	HWY. 25-RT.	30	42	0.53
149+61	149+91	HWY. 25-LT.	30	37	0.47
7003+20	7005+32	RAMP 3-LT.	212	188	2.37
7003+20	7005+32	RAMP 3-RT.	212	188	2.37
TOTALS:				4995	62.93

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

MAILBOXES

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

11/10/2015

R080397.DGN

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.		080397	71	244

(2) QUANTITIES

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
99+97.14	100+33.64	HWY. 25		89.90	10993	57.75
99+97.14	100+33.64	HWY. 25-LT. SIDE	10.45		569	
99+97.14	100+33.64	HWY. 25-RT. SIDE	10.45		569	
TOTALS:			20.90	89.90	12131	57.75

NOTE: USE T =15" FOR 8' SHOULDER.

SELECTED PIPE BEDDING

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

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

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
158+87	HWY. 25	13.17	20	6.5
TOTAL:				6.5

AVG. DEPTH = 8"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	30"	72"	(CLASS IV) 42"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	42"	72"	DROP INLETS TYPE MO	SPECIAL	EXT. 4'	8'	MODIFYING DROP INLETS	SIDE DRAIN 24"	SIDE DRAIN 30"	SIDE DRAIN 42"	NON-METALLIC CONDUIT (3")	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.					EACH										LIN. FT.							CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
100+51.00	HWY. 25-LT. MODIFYING D.I.															1													FPC-9N, FPC-9S
100+51.00	HWY. 25-RT. MODIFYING D.I.															1													FPC-9N, FPC-9S
100+56.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	8					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
100+56.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	8					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
103+09.00	I-40 WB. RAMP A-RT. D.I. W/ PIPE OUTLET	10					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
103+63.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	8					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
106+50.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	6					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
108+50.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	6					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
108+50.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	6					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
106+05.00	HWY. 25-10'X8'X170' R.C. BOX. CULVERT																				10	8	170	257.51	33209	107	24	0.30	SPECIAL DETAILS, RCB-1, RCB-2, RCB-3
110+12.64	HWY. 25-LT. D.I. W/ PIPE OUTLET	6					1					1		2													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
110+12.64	HWY. 25-RT. D.I. W/ PIPE OUTLET	8					1					1		2													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
112+00.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	6					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
112+00.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	10					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
114+00.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	6					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
114+00.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	6					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
118+44.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	10					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
118+67.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	6					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
120+28.00	HWY. 25-LT. D.I.												1		1												1	0.01	SPECIAL DETAILS
121+67.00	HWY. 25-LT. D.I.												1		1												1	0.01	SPECIAL DETAILS
121+67.00	HWY. 25-RT. D.I.												1		1												1	0.01	SPECIAL DETAILS
135+00.00	HWY. 25-LT. D.I.												1		1												1	0.01	SPECIAL DETAILS
135+00.00	HWY. 25-RT. D.I.												1		1												1	0.01	SPECIAL DETAILS
140+00.00	HWY. 25-LT. D.I.												1		1												1	0.01	SPECIAL DETAILS
140+00.00	HWY. 25-RT. D.I.												1		1												1	0.01	SPECIAL DETAILS
144+00.00	HWY. 25-LT. D.I.												1		1												1	0.01	SPECIAL DETAILS
144+00.00	HWY. 25-RT. D.I.												1		1												1	0.01	SPECIAL DETAILS
147+00.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	6					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
147+00.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	10					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
149+35.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	10					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
149+46.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	10					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
153+00.00	HWY. 25-LT. D.I.												1	1													1	0.01	SPECIAL DETAILS
153+00.00	HWY. 25-RT. D.I.												1	1													1	0.01	SPECIAL DETAILS
156+00.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	10					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
156+00.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	6					1					1		1													5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
158+64.00	HWY. 25-LT. D.I. W/ PIPE OUTLET	10					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
158+64.00	HWY. 25-RT. D.I. W/ PIPE OUTLET	10					1					1			1												5	0.06	FES-1, FES-2,FPC-9E, FPC-9M, PCC-1
158+87.00	HWY. 25-EXTEND R.C. BOX CULVERT AND ADD 72"X106' R.C. PIPE CULVERT				106						2										6	8	40	54.84	4861	33	152	1.92	R-100X-X1, W-X003-1, FES-1, FES-2, RCB-1, RCB-2, RCB-3
7003+38.00	I-40 WB. RAMP B-42"X145' R.C. PIPE CULVERT (10° LT. FWD. SKEW)					146				2																	46	0.58	FES-1, FES-2, PCC-1
7017+86.00	I-40 WB. RAMP B-EXTEND R.C. PIPE CULVERT (10° RT. FWD. SKEW)		40					1																			8	0.10	FES-1, FES-2, PCC-1
7022+49.00	I-40 WB. RAMP B-EXTEND R.C. PIPE CULVERT			2					1																				
5+88.00	BLANEY HILL RD.-LT. SIDE DRAIN																	112											PCC-1, PCM-1, PCP-1, PCP-2
7+62.00	BLANEY HILL RD.-RT. SIDE DRAIN																148												PCC-1, PCM-1, PCP-1, PCP-2
18+50.00	FRIENDSHIP RD.-DBL. LT. SIDE DRAIN																	152											PCC-1, PCM-1, PCP-1, PCP-2
19+71.00	FRIENDSHIP RD.-RT. SIDE DRAIN																		62										PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT	TO BE USED IF AND WHERE																			200									
	DIRECTED BY THE ENGINEER.																												
TOTALS:		182	40	2	106	146	23	1	1	2	2	23	11	15	21	2	148	264	62	200				312.35	38070	140	356	4.39	

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.

10/29/2015

R080397.DGN

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.		080397	72	244

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			6500	26
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			6500	26

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

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
100+63	104+50	HWY. 25-RT.	391	217
104+92	117+75	HWY. 25-RT.	1274	708
105+91	117+50	HWY. 25-LT.	1159	644
118+19	119+78	HWY. 25-LT.	159	88
118+44	149+41	HWY. 25-RT.	3097	1721
120+22	149+53	HWY. 25-LT.	2931	1628
150+46	158+89	HWY. 25-RT.	843	468
150+56	158+89	HWY. 25-LT.	833	463
TOTALS:				5937

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
									18"	24"	
			FEET	STATION	STATION	SQ. YD.	TON	TON	LIN. FT.		
120+00	LT.	HWY. 25	16	119+78	120+22	215.95	23.75	88.18		34	PCC-1, PCM-1, PCP-1, PCP-2
9+74	LT.	BLANEY HILL RD.	16			70.56	7.76	28.81	28		PCC-1, PCM-1, PCP-1, PCP-2
17+74	LT.	FRIENDSHIP RD.	16			68.12	7.49	27.82	28		PCC-1, PCM-1, PCP-1, PCP-2
21+27	RT.	FRIENDSHIP RD.	16			102.36	11.26	41.80	28		PCC-1, PCM-1, PCP-1, PCP-2
22+20	LT.	FRIENDSHIP RD.	24			153.82	16.92	62.81	36		PCC-1, PCM-1, PCP-1, PCP-2
23+00	LT.	FRIENDSHIP RD.	16			72.42	7.97	29.57	28		PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT TEMPORARY DRIVES								60.00			
TOTALS:						683.23	75.15	338.99	148	34	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

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

** FOR INFORMATION ONLY

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+33.64	104+60.22	MAIN LANES	36.00	1706.32
158+97.86	159+97.86	MAIN LANES	20.00	222.22
TOTAL:				1928.54

NOTE: AVERAGE MILLING DEPTH 1".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50
DIRECTED BY THE ENGINEER	
TOTAL:	50

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

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
7015+99	7026+61	I-40 WB.	1062
TOTAL:			1062

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

RUMBLE STRIPES

STATION	STATION	LOCATION	* RUMBLE STRIPES
			LIN.FT.
158+98	210+00	HWY. 25-LT. & RT.	8163
TOTAL:			8163

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50	100
DIRECTED BY THE ENGINEER		
TOTALS:	50	100

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

10/26/2015

R080397.DGN

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.		080397	73	244

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

BASE AND SURFACING - HWY. 25 - STP-STPA-STPF-9095(27)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							PORTLAND CEMENT CONCRETE BASE				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
						(0.10 GAL. PER SQ. YD.)			(0.03 GAL. PER SQ. YD.)				5" UNIFORM THICKNESS		8" UNIFORM THICKNESS												
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLON	AVG. WID.	SQ.YD.	AVG. WID.	SQ.YD.	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	TOTAL PG 64-22	TOTAL PG 76-22
			FEET			FEET			FEET				FEET		FEET		FEET			TON	FEET			TON	FEET			TON	TON	TON
MAIN LANES-HWY. 25																														
100+33.64	100+48.64	HWY. 25-MILL AND OVERLAY, C.C.C. & G. LT. & RT.	15.00			36.00	60.00	6.00				6.00													35.00	58.33	220.00	6.42		6.42
100+48.64	100+60.95	HWY. 25-MILL AND OVERLAY, C.C.C. & G. LT. & RT.	12.31			44.00	60.18	6.02				6.02	8.00	10.94	13.00	17.78									52.00	71.12	220.00	7.82		7.82
100+60.95	100+69.30	HWY. 25-MILL AND OVERLAY, C.C.C. & G. LT. & RT.	8.35			44.00	40.82	4.08				4.08	7.78	7.22	12.78	11.86									51.90	48.15	220.00	5.30		5.30
100+69.30	101+79.30	HWY. 25-MILL AND OVERLAY, C.C.C. & G. LT. & RT.	110.00			44.00	537.78	53.78				53.78	5.89	71.99	10.89	133.10									52.03	635.92	220.00	69.95		69.95
101+79.30	102+68.95	HWY. 25-MILL AND OVERLAY, C.C.C. & G. LT. & RT.	89.65			44.00	438.29	43.83				43.83	4.00	39.84	9.00	89.65									49.58	493.87	220.00	54.33		54.33
102+68.95	104+60.22	HWY. 25-MILL AND OVERLAY, C.C.C. & G. RT.	191.27			44.00	935.10	93.51				93.51			2.50	53.13									48.00	1020.11	220.00	112.21		112.21
104+60.22	122+65.12	HWY. 25-FULL DEPTH, C.C.C. & G. LT. & RT.	1804.90	357.75	6457.03				128.00	25669.69	770.09	770.09					64.00	12834.84	330.00	2117.75	64.00	12834.84	220.00	1411.83	64.00	12834.84	220.00	1411.83	1411.83	1411.83
122+65.12	145+26.60	HWY. 25-FULL DEPTH, C.C.C. & G. LT. & RT. AND RAISED MEDIAN	2261.48	321.50	7270.66				104.00	26132.66	783.98	783.98					52.00	13066.33	330.00	2155.94	52.00	13066.33	220.00	1437.30	52.00	13066.33	220.00	1437.30	1437.30	1437.30
145+26.60	149+99.07	HWY. 25-FULL DEPTH, C.C.C. & G. LT. & RT.	472.47	357.75	1690.26				128.00	6719.57	201.59	201.59					64.00	3359.79	330.00	554.37	64.00	3359.79	220.00	369.58	64.00	3359.79	220.00	369.58	369.58	369.58
149+99.07	151+55.96	HWY. 25-FULL DEPTH, C.C.C. & G. LT. & RT.	156.89	300.75	471.85				106.00	1847.82	55.43	55.43					53.00	923.91	330.00	152.45	53.00	923.91	220.00	101.63	53.00	923.91	220.00	101.63	101.63	101.63
151+55.96	154+05.96	HWY. 25-FULL DEPTH, C.C.C. & G. LT. & RT.	250.00	270.25	675.63				94.28	2618.89	78.57	78.57					47.14	1309.44	330.00	216.06	47.14	1309.44	220.00	144.04	47.14	1309.44	220.00	144.04	144.04	144.04
154+05.96	156+20.73	HWY. 25-FULL DEPTH, C.C.C. & G. LT. & RT.	214.77	227.25	488.06				77.62	1852.27	55.57	55.57					38.81	926.14	330.00	152.81	38.81	926.14	220.00	101.88	38.81	926.14	220.00	101.88	101.88	101.88
156+20.73	156+43.85	HWY. 25-NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	23.12	VAR.	43.86	VAR.	5.14	0.51	VAR.	175.10	5.25	5.76					VAR.	87.55	330.00	14.45	VAR.	87.55	220.00	9.63	36.09	92.71	220.00	10.20	9.63	10.20
156+43.85	157+79.61	HWY. 25-NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	135.76	VAR.	164.07	VAR.	202.98	20.30	VAR.	627.76	18.83	39.13			2.50	37.71	VAR.	313.88	330.00	51.79	VAR.	313.88	220.00	34.53	34.27	516.94	220.00	56.86	34.53	56.86
157+79.61	158+97.86	HWY. 25-NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	118.25	VAR.	61.58	20.00	262.78	26.28	VAR.	198.24	5.95	32.23					VAR.	99.12	330.00	16.35	VAR.	99.12	220.00	10.90	31.36	412.04	220.00	45.32	10.90	45.32
158+97.86	159+97.86	HWY. 25-TRANSITION	100.00	156.25	156.25	20.00	222.22	22.22				22.22													34.00	377.78	220.00	41.56		41.56
159+97.86	210+00.00	HWY. 25-OVERLAY	5002.14	45.50	2275.97	20.00	11115.87	1111.59				1111.59													26.00	15562.21	220.00	1711.84		1711.84
210+00.00	211+00.00	HWY. 25-TRANSITION	100.00	22.75	22.75	20.00	222.22	22.22				22.22													24.00	266.67	220.00	29.33		29.33
-0+01.32	0+98.68	BLANEY HILL RD.	100.00	116.75	116.75																				26.00	288.89	220.00	31.78		31.78
0+98.68	5+53.69	BLANEY HILL RD.	455.01	233.50	1062.45																				32.00	1617.81	220.00	177.96		177.96
5+53.69	6+37.65	BLANEY HILL RD.	83.96	VAR.	237.95																				VAR.	354.82	220.00	39.03		39.03
7+02.77	7+86.73	BLANEY HILL RD.	83.96	VAR.	237.95																				VAR.	353.86	220.00	38.92		38.92
7+86.73	11+78.48	BLANEY HILL RD.	391.75	233.50	914.74																				32.00	1392.89	220.00	153.22		153.22
11+78.48	12+78.48	BLANEY HILL RD.	100.00	116.75	116.75																				10.00	111.11	220.00	12.22		12.22
16+35.49	17+35.49	FRIENDSHIP RD.	100.00	116.75	116.75																				26.00	288.89	220.00	31.78		31.78
17+35.49	18+03.57	FRIENDSHIP RD.	68.08	233.50	158.97																				32.00	242.06	220.00	26.63		26.63
18+03.57	18+80.00	FRIENDSHIP RD.	76.43	VAR.	214.81																									
19+36.02	20+15.00	FRIENDSHIP RD.	78.98	VAR.	219.62																				VAR.	363.14	220.00	39.95		39.95
20+15.00	23+89.85	FRIENDSHIP RD.	374.85	233.50	875.27																				32.00	1332.80	220.00	146.61		146.61
23+89.85	24+89.85	FRIENDSHIP RD.	100.00	116.75	116.75																				10.00	111.11	220.00	12.22		12.22
ADDITIONAL FOR LEVELING																														
156+43.85	159+97.86	HWY. 25	354.01			22.00	865.36	86.54				86.54									22.00	865.36	VAR.	238.30				238.30	
1+50.00	3+50.00	BLANEY HILL RD.	200.00			22.00	488.89	48.89				48.89									22.00	488.89	VAR.	53.58				53.58	
9+50.00	10+50.00	BLANEY HILL RD.	100.00			22.00	244.44	24.44				24.44									22.00	244.44	VAR.	58.10				58.10	
17+35.00	17+95.00	FRIENDSHIP RD.	60.00			22.00	146.67	14.67				14.67									22.00	146.67	VAR.	38.27				38.27	
20+50.00	21+50.00	FRIENDSHIP RD.	100.00			22.00	244.44	24.44				24.44									22.00	244.44	VAR.	34.77				34.77	
TOTALS:					24166.73		16093.18	1609.32		65842.00	1975.26	3584.58		129.99		343.23		32921.00		5431.97		34910.80		4044.34		58433.68		6427.72	4044.34	6427.72

BASIS OF ESTIMATE:
PG 76-22:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
PG 64-22:
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

10/26/2015

R080397.DGN

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.		080397	74	244

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

BASE AND SURFACING - I-40 WB. RAMP A & B - STP-STPA-STPC-9095(27)

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")			
						(0.10 GAL. PER SQ. YD.)			(0.03 GAL. PER SQ. YD.)															
			FEET	TON / STATION	TON	TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL GALLON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 76-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 76-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 76-22 TON
MAIN LANES-RAMPS																								
7000+55.34	7001+94.91	RAMP B	139.57	VAR.	316.61	19.00	294.65	29.47	VAR.	445.45	13.36	42.83					VAR.	445.45	495.00	110.25	VAR.	984.60	220.00	108.31
7002+33.76	7005+32.30	RAMP B	298.54	VAR.	413.90				VAR.	996.13	29.88	29.88	VAR.	996.13	550.00	273.94	VAR.	996.13	440.00	219.15	VAR.	996.13	220.00	109.57
7005+32.30	7017+77.47	RAMP B	1245.17	272.50	3393.09				31.04	4294.45	128.83	128.83	15.71	2173.51	550.00	597.72	15.33	2120.94	440.00	466.61	25.00	3458.81	220.00	380.47
7017+77.47	7020+40.93	RAMP B	263.46	VAR.	632.82				VAR.	721.09	21.63	21.63	VAR.	741.49	550.00	203.91	VAR.	721.09	440.00	158.64	VAR.	702.95	220.00	77.32
7020+40.93	7023+80.93	RAMP B-DECELERATION LANE	340.00	165.00	561.00				24.52	926.31	27.79	27.79	12.35	466.56	550.00	128.30	12.17	459.76	440.00	101.15	18.00	680.00	220.00	74.80
7023+80.93	7026+80.93	RAMP B-TAPER	300.00	VAR.	325.25				12.27	409.00	12.27	12.27	6.18	206.00	550.00	56.65	6.09	203.00	440.00	44.66	VAR.	450.58	220.00	49.56
101+79.30	103+14.06	RAMP A	134.76	40.75	54.91	19.00	284.49	28.45	16.00	239.57	7.19	35.64					8.00	119.79	495.00	29.65	VAR.	291.28	220.00	32.04
ADDITIONAL FOR SUPERELEVATION																								
7005+32.30	7005+59.81	SUPERELEVATION TRANSITION	27.51	65.38	17.99																			
7005+59.81	7006+22.31	MAXIMUM SUPERELEVATION	62.50	130.75	81.72																			
7006+22.31	7008+72.31	SUPERELEVATION TRANSITION	250.00	65.38	163.45																			
7012+82.84	7015+82.84	SUPERELEVATION TRANSITION	300.00	72.63	217.89																			
7015+82.84	7017+80.75	MAXIMUM SUPERELEVATION	197.91	145.25	287.46																			
7017+80.75	7020+80.75	SUPERELEVATION TRANSITION	300.00	19.00	57.00																			
7020+80.75	7021+17.48	SUPERELEVATION TRANSITION	36.73	57.00	20.94																			
7021+17.48	7023+24.44	SUPERELEVATION TRANSITION	206.96	57.00	117.97																			
7023+24.44	7026+80.93	SUPERELEVATION TRANSITION	356.49	114.00	406.40																			
TOTALS:					**7068.40**		**579.14**	**57.92**		**8032.00**	**240.95**	**298.87**		**4583.69**		**1260.52**		**5066.16**		**1130.11**		**7564.35**		**832.07**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.1% MIN. AGGR.....3.9% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

10/26/2015

R080397.DGN

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY			UNIT
		STP-STPA-STPF-9095(27)	STP-STPA-STPC-9095(27)	TOTAL	
SP & 201	CLEARING	95		95	STATION
SP & 201	GRUBBING	95		95	STATION
202	REMOVAL AND DISPOSAL OF PRECAST CONCRETE BARRIER WALL LEFT IN PLACE	100		100	LIN. FT.
202	REMOVAL AND DISPOSAL OF RETAINING WALLS	60		60	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE SLABS	167		167	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	10		10	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	7		7	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	2		2	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	425		425	LIN. FT.
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM	2		2	EACH
202	REMOVAL AND DISPOSAL OF BUILDINGS	8		8	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	9		9	EACH
210	UNCLASSIFIED EXCAVATION	674728	451	675179	CU. YD.
210	COMPACTED EMBANKMENT	135285	73564	208849	CU. YD.
SP & 210	SOIL STABILIZATION	50		50	TON
210	PRESPLITTING	16781		16781	SQ. YD.
303	AGGREGATE BASE COURSE (CLASS 7)	24563	7208	31771	TON
309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)	130		130	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (8" UNIFORM THICKNESS)	343		343	SQ. YD.
SS & 401	TACK COAT	3685	299	3984	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		1212	1212	TON
SP & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")		49	49	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	5188	1080	6268	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	244		244	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")		50	50	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	9991	821	10812	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	222		222	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	334	45	379	TON
412	COLD MILLING ASPHALT PAVEMENT	1929		1929	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	50		50	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY	50		50	TON
504	APPROACH SLABS	89.90		89.90	CU. YD.
504	APPROACH GUTTERS	20.90		20.90	CU. YD.
601	MOBILIZATION	1.00		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1		1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00		1.00	LUMP SUM
SS & 604	SIGNS	914		914	SQ. FT.
SS & 604	BARRICADES	176		176	LIN. FT.
SS & 604	TRAFFIC DRUMS	140		140	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1666		1666	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	1333		1333	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	94883		94883	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	5097		5097	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	7555		7555	LIN. FT.
604	ADVANCE WARNING ARROW PANEL	7		7	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	88		88	WEEK
SS & 604	VERTICAL PANELS	127		127	EACH
605	CONCRETE DITCH PAVING (TYPE A)	14720		14720	SQ. YD.
605	CONCRETE DITCH PAVING (TYPE B)	1535		1535	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	182		182	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	40		40	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	2		2	LIN. FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	146		146	LIN. FT.
606	72" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	106		106	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	148		148	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	182		182	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN	264		264	LIN. FT.
SP, SS, & 606	42" SIDE DRAIN	62		62	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	23		23	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1		1	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1		1	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2		2	EACH
606	72" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2		2	EACH
606	SELECTED PIPE BEDDING	100		100	CU. YD.
609	DROP INLETS (TYPE MO)	23		23	EACH
609	DROP INLETS (TYPE SPECIAL)	11		11	EACH
609	DROP INLET EXTENSIONS (4')	15		15	EACH
609	DROP INLET EXTENSIONS (8')	21		21	EACH
611	UNDERDRAIN OUTLET PROTECTORS	26		26	EACH
611	4" PIPE UNDERDRAINS	6500		6500	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	6.5		6.5	CU. YD.
617	GUARDRAIL (TYPE A)		350	350	LIN. FT.
617	TERMINAL ANCHOR POSTS (TYPE 1)		2	2	EACH
617	GUARDRAIL TERMINAL (TYPE 2)		2	2	EACH
619	WIRE FENCE (TYPE A)	1921		1921	LIN. FT.
619	WIRE FENCE (TYPE C)	4748		4748	LIN. FT.
620	LIME	56		56	TON
620	SEEDING	27.79		27.79	ACRE
SS & 620	MULCH COVER	71.70		71.70	ACRE
620	WATER	3856.0		3856.0	M.GAL.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
11-10-15				6	ARK.			
				JOB NO.		080397	75	244

(2) SUMMARY OF QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-12-15

11/10/2015

R080397.DGN

SUMMARY OF QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
11-10-15				6	ARK.			
				JOB NO.		080397	76	244

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-12-15

SUMMARY OF QUANTITIES (BOX 2 OF 2)

	ITEM NUMBER	ITEM		QUANTITY			UNIT
				STP-STPA-STPF-9095(27)	STP-STPA-STPC-9095(27)	TOTAL	
	621	TEMPORARY SEEDING		43.91		43.91	ACRE
	621	SILT FENCE		36500		36500	LIN. FT.
	621	SAND BAG DITCH CHECKS		1100		1100	BAG
	621	DROP INLET SILT FENCE		990		990	LIN. FT.
	621	SEDIMENT BASIN		3631		3631	CU. YD.
	621	OBLITERATION OF SEDIMENT BASIN		3631		3631	CU. YD.
	621	SEDIMENT REMOVAL AND DISPOSAL		5370		5370	CU. YD.
	621	ROCK DITCH CHECKS		750		750	CU. YD.
	621	WATTLE (20")		450		450	LIN. FT.
	623	SECOND SEEDING APPLICATION		27.79		27.79	ACRE
	624	SOLID SODDING		9979		9979	SQ. YD.
	628	TOPSOIL FURNISHED AND PLACED		251		251	CU. YD.
	632	CONCRETE ISLAND		396		396	SQ. YD.
	633	CONCRETE WALKS		5937		5937	SQ. YD.
	634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		16707		16707	LIN. FT.
	635	ROADWAY CONSTRUCTION CONTROL		1.00		1.00	LUMP SUM
	637	MAILBOXES		5		5	EACH
	637	MAILBOX SUPPORTS (SINGLE)		3		3	EACH
	637	MAILBOX SUPPORTS (DOUBLE)		1		1	EACH
	640	MODIFYING DROP INLETS		2		2	EACH
	641	WHEELCHAIR RAMPS (TYPE 2)		223		223	SQ. YD.
	641	WHEELCHAIR RAMPS (TYPE 3)		21		21	SQ. YD.
	642	RUMBLE STRIPS IN ASPHALT SHOULDERS		1062		1062	LIN. FT.
	710	NON-METALLIC CONDUIT (3")		200		200	LIN. FT.
	718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")		3706		3706	LIN. FT.
	718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		3783		3783	LIN. FT.
	719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		24845		24845	LIN. FT.
	719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		21256		21256	LIN. FT.
	719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		12		12	EACH
	719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		12		12	EACH
	719	THERMOPLASTIC PAVEMENT MARKING (BIKE EMBLEMS)		40		40	EACH
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	4521		4521	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	4521		4521	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING (SKIP LINE) WHITE (4")	(ALTERNATE NO. 1)	359		359	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE (SKIP LINE) WHITE (4")	(ALTERNATE NO. 2)	359		359	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (8")	(ALTERNATE NO. 1)	1141		1141	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE WHITE (8")	(ALTERNATE NO. 2)	1141		1141	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	1362		1362	LIN. FT.
*	SP	HIGH PERFORMANCE MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	1362		1362	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	572		572	LIN. FT.
*	SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	572		572	LIN. FT.
*	SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	1144		1144	LIN. FT.
*	SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	1144		1144	LIN. FT.
	721	RAISED PAVEMENT MARKERS (TYPE II)		580		580	EACH
	725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)			635	635	SQ. FT.
	725	GUIDE SIGN-OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)			789	789	SQ. FT.
	726	STANDARD SIGN			1029	1029	SQ. FT.
	727	EXIT NUMBER PANEL (TYPE A)			24	24	SQ. FT.
	727	EXIT NUMBER PANEL (TYPE B)			79	79	SQ. FT.
	727	EXIT NUMBER PANEL (TYPE C)			35	35	SQ. FT.
	730	BREAKAWAY SIGN SUPPORT (TYPE G-2)			3262	3262	POUND
	801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		140		140	CU. YD.
	802	CLASS S CONCRETE-ROADWAY		312.35		312.35	CU. YD.
	804	REINFORCING STEEL-ROADWAY (GRADE 60)		50201		50201	POUND
	SP	RUMBLE STRIPES		8163		8163	LIN. FT.
	SP	STEEL OVERHEAD SIGN STRUCTURE (OH-040-23-23)			1	1	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)			23	23	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)			3	3	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)			11	11	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-2)			6	6	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-4)			1	1	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-5)			6	6	EACH
	SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-6)			6	6	EACH

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
11/10/2015	REVISED "UNCLASSIFIED EXCAVATION" QUANTITY AND "COMPACTED EMBANKMENT" QUANTITY.	70, 75, 76

11/10/2015

R080397.DGN

SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES
Project Name: 080397
Date: 4/4/2014
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS *230030-230030A, & 230031-230031A*
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	286926.4889	0.0153	1174865.3045	0.0141	369.00	0.004	CTL	PD:AHTD STD. MONUMENT STAMPED PN:1
2	287619.7066	0.0288	1174915.5895	0.0285	346.02	0.012	CTL	PD:AHTD STD. MONUMENT STAMPED PN:2
3	288223.0991	0.0271	1174928.4763	0.0268	374.16	0.011	CTL	PD:AHTD STD. MONUMENT STAMPED PN:3
5	289066.0174	0.0186	1174880.3577	0.0190	520.96	0.010	CTL	PD:AHTD STD. MONUMENT STAMPED PN:5
6	289239.6277	0.0229	1174918.4925	0.0231	506.84	0.010	CTL	PD:AHTD STD. MONUMENT STAMPED PN:6
7	289461.6573	0.0144	1174972.1512	0.0193	489.99	0.010	CTL	PD:AHTD STD. MONUMENT STAMPED PN:7
8	289607.1456	0.0154	1175143.6435	0.0210	482.10	0.010	CTL	PD:AHTD STD. MONUMENT STAMPED PN:8
9	289856.7304	0.0150	1175136.5800	0.0182	445.60	0.010	CTL	PD:AHTD STD. MONUMENT STAMPED PN:9
10	290178.9278	0.0192	1175081.6605	0.0182	486.83	0.009	CTL	PD:AHTD STD. MONUMENT STAMPED PN:10
11	290208.8905	0.0241	1174848.9971	0.0226	475.97	0.009	CTL	PD:AHTD STD. MONUMENT STAMPED PN:11
12	290514.2385	0.0176	1174865.2337	0.0169	444.28	0.009	CTL	PD:AHTD STD. MONUMENT STAMPED PN:12
13	290516.3774	0.0382	1174367.1749	0.0304	447.59	0.009	CTL	PD:AHTD STD. MONUMENT STAMPED PN:13
14	290763.0508	0.0252	1174842.0461	0.0238	407.22	0.008	CTL	PD:AHTD STD. MONUMENT STAMPED PN:14
15	290957.9404	0.0232	1174978.4060	0.0238	372.80	0.009	CTL	PD:AHTD STD. MONUMENT STAMPED PN:15
16	291428.3970	0.0247	1174999.9350	0.0232	321.20	0.007	CTL	PD:AHTD STD. MONUMENT STAMPED PN:16
17	291384.3613	0.0180	1174308.3663	0.0167	331.54	0.008	CTL	PD:AHTD STD. MONUMENT STAMPED PN:17
18	291409.3397	0.0182	1175451.5867	0.0170	314.78	0.007	CTL	PD:AHTD STD. MONUMENT STAMPED PN:18
19	291948.7565	0.0170	1175178.4055	0.0165	302.38	0.007	CTL	PD:AHTD STD. MONUMENT STAMPED PN:19
20	292503.1271	0.0157	1175043.7257	0.0153	303.25	0.007	CTL	PD:AHTD STD. MONUMENT STAMPED PN:20
21	291146.6353	0.0204	1176004.1865	0.0190	324.73	0.007	CTL	PD:AHTD STD. MONUMENT STAMPED PN:21
22	287777.4546	0.0273	1175079.8551	0.0268	351.84	0.012	CTL	PD:AHTD STD. MONUMENT STAMPED PN:22
23	288509.2853	0.0262	1174922.4151	0.0251	411.32	0.011	CTL	PD:AHTD STD. MONUMENT STAMPED PN:23
24	288887.0721	0.0255	1174911.5337	0.0244	490.24	0.011	CTL	PD:AHTD STD. MONUMENT STAMPED PN:24
25	288218.6967	0.0217	1174532.5973	0.0214	370.23	0.011	CTL	PD:AHTD STD. MONUMENT STAMPED PN:25
26	288322.0015	0.0206	1173957.6771	0.0203	377.00	0.011	CTL	PD:AHTD STD. MONUMENT STAMPED PN:26
64	288247.6520	0.0242	1174865.0448	0.0246	375.79	0.011	CTL	PD:OLD T-POINT FROM JOB #080223
65	288240.8156	0.0219	1176166.6234	0.0226	372.72	0.012	CTL	PD:OLD T-POINT FROM JOB #080223
66	288399.6890	0.0260	1176774.4479	0.0248	383.32	0.012	CTL	PD:OLD T-POINT FROM JOB #080223
67	288649.3566	0.0276	1177463.2742	0.0286	414.49	0.012	CTL	PD:OLD T-POINT FROM JOB #080223
100	286487.1090	0.0001	1174773.7645	0.0001	390.90	0.004	GPS	PD:AHTD GPS #230030
101	286268.3524	0.0001	1173513.5916	0.0001	367.78	0.004	GPS	PD:AHTD GPS #230030A
102	295145.6526	0.0001	1178941.0873	0.0001	305.21	0.008	GPS	PD:AHTD GPS #230031
103	297421.0880	0.0001	1180281.5471	0.0001	282.54	0.008	GPS	PD:AHTD GPS #230031A
900	289784.2542	30.0000	1178071.3655	30.0000	362.46	0.003	TBM	PD:CHIS SQUARE CUT IN NORTH
901	289783.4969	30.0000	1178237.4940	30.0000	343.45	0.005	TBM	PD:CHIS SQUARE CUT IN CENTER
902	291048.0044	30.0000	1176552.9349	30.0000	322.16	0.006	TBM	PD:CHIS SQUARE CUT IN SOUTH
903	293312.3575	30.0000	1175351.0112	30.0000	306.16	0.006	TBM	PD:CHIS SQUARE CUT IN CENTER
904	294776.3194	30.0000	1176899.0213	30.0000	313.50	0.007	TBM	PD:CHIS SQUARE CUT IN NORTH
905	285425.5426	30.0000	1175417.0689	30.0000	434.54	0.003	TBM	PD:TOP OF BOLT TOP OF FIRE
906	285752.6179	30.0000	1174660.9241	30.0000	427.07	0.003	TBM	PD:CHIS SQUARE CUT IN NORTH
907	284023.4128	30.0000	1178662.3867	30.0000	378.17	0.002	TBM	PD:STANDARD ANTD CAP SET IN
908	295543.1908	30.0000	1179011.1835	30.0000	278.30	0.008	TBM	PD:AHTD BM #230001 STANDARD
909	301098.8267	30.0000	1180198.8309	30.0000	297.54	0.009	TBM	PD:AHTD CAP IN NW COR BR HDWL E FORK CADRON CR
910	300694.0261	30.0000	1180280.0480	30.0000	284.04	0.008	TBM	PD:SQ.CUT IN SW COR OF BR OVER E FORK CADRON CR
997	282228.3349	10.0000	1179195.9644	10.0000	351.69	0.000	BM	PD:NGS 1ST ORDER BM D 291
998	285022.7267	10.0000	1178361.1922	10.0000	401.14	0.000	BM	PD:NGS 1ST ORDER BM E 291
999	302681.3678	10.0000	1180382.7914	10.0000	286.26	0.000	BM	PD:NGS 2ND ORDER BM E 68

*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: 100-103*
Horizontal - Primary (2.0cm± 20PPM): *PN:1-26, 64-67*
Horizontal - Secondary (3 cm ± 50PPM): *PN:N/A*
Vertical - NGS 1st Order (±4mm x Vdist in km) *PN:997-999*
Vertical - NGS 2nd Order (±6mm x Vdist in km) *PN:N/A*
Vertical - NGS 3rd Order (±8mm x Vdist in km) *PN:900-910*

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: 0.999958967 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:
A project Elevation Factor of: 0.9999789219 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 440.67 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-26, 64-67, 100-103 From NGS BM D 291, E 291, & E 68

Basis of Bearing: Grid Bearings based on AHTD GPS points: *(List AHTD GPS points used)*
Convergence Angle is: 00 16 01.43 LEFT at PN: 8
LT: 35-07-41.11 N LG: 092-27-32.24 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TIMOTHY R. SMITH
10-27-15

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROD. DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		77	244

2 SURVEY CONTROL DETAILS
JOB NO. 080397

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	78	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

HWY. 25

POINT NO.	TYPE	STATION	NORTHING	EASTING
8038	POB	99+97.14	286448.3982	1174803.6802
8039	PI	107+53.77	287202.6551	1174863.5861
8001	PC	109+14.20	287362.5489	1174876.7779
8003	PT	115+35.56	287979.0433	1174952.9820
8004	PC	126+09.76	289038.8875	1175127.9936
8006	PT	146+00.39	291022.7836	1175194.2138
8040	PC	159+23.08	292339.2731	1175066.2188
8042	PT	168+92.87	293263.0121	1175293.8398
8043	PC	173+90.58	293679.2997	1175566.6489
8045	PT	185+37.72	294497.6312	1176360.6701
8046	PC	185+78.02	294520.7222	1176393.6891
8048	PT	192+77.07	294828.4656	1177018.3393
8049	PC	198+93.81	295013.8201	1177606.5757
8051	PT	201+50.52	295058.7552	1177858.6014
8052	PC	208+86.42	295093.7919	1178593.6607
8054	PT	213+92.71	295332.8408	1179019.4773
8055	POE	218+23.41	295689.4448	1179261.0086

I-40 WB. RAMP B

POINT NO.	TYPE	STATION	NORTHING	EASTING
8056	POB	6999+72.07	286918.3161	1174599.5739
8031	PC	7004+34.81	286880.2969	1175060.7477
8033	PT	7006+84.81	286806.9020	1175297.6609
8057	PC	7015+07.84	286398.9614	1176012.4856
8059	PT	7020+40.93	286237.9057	1176516.5782
8060	PC	7022+24.44	286219.6021	1176699.1772
8062	PT	7035+82.17	285648.2351	1177901.4734
8063	POE	7036+73.62	285583.4454	1177966.0086

I-40 WB. RAMP A

POINT NO.	TYPE	STATION	NORTHING	EASTING
8064	PC	101+79.30	286631.1441	1174803.6489
8066	PT	105+60.03	286887.4164	1174578.1956

BLANEY HILL RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8008	POB	0+00.00	288249.2841	1174326.1540
8009	PC	0+85.68	288242.3720	1174411.5584
8011	PT	4+21.75	288232.4859	1174747.3334
8012	PC	9+64.84	288244.3725	1175290.2882
8014	PT	12+19.96	288247.1167	1175545.3958

FRIENDSHIP RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8025	POE	17+00.00	291415.5910	1174950.4174
8026	PC	20+60.29	291422.6176	1175310.6431
8028	PT	24+51.57	291301.2026	1175674.6459

I-40

POINT NO.	TYPE	STATION	NORTHING	EASTING
8067	POB	6970+99.61	286545.3413	1171583.8390
8068	PC	7022+37.81	286123.1803	1176704.6670
8070	PT	7035+96.54	285559.0156	1177909.3693
8071	POE	7045+99.61	284843.8868	1178612.7433

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		080397	79	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

HWY. 25
PI = 112+25.05
Δ = 4°39'37"RT.
D = 0°45'00"
T = 310.85'
L = 621.36'
PC = 109+14.20
PT = 115+35.56
NO SUPERELEVATION

POB899+97.14
STA. 99+97.14
BEGIN JOB 080397

C.L. HWY. 25

C.L. I-40 WB. RAMP A

RAMP 3A
PI = 104+24.45
Δ = 91°45'40"LT.
D = 24°06'04"
T = 245.15'
L = 380.73'
PC = 101+79.30
PT = 105+60.03
MATCH EXISTING

PC 101+79.30
PT 105+60.03
PI104+24.45
N 87°13'12" W 245.15'
N 4°32'28" E 245.15'
N 4°32'28" E 756.63'

8038
8064
8066

STA. 104+48.70 ON HWY. 25 =
STA. 7002+12.74 ON I-40 WB. RAMP B
Δ 89°49'42"

POB6999+72.07
C.L. I-40 WB. RAMP B
S 85°17'14" E 462.74'

100 105 110 115

PI112+25.05

8039
N 4°42'59" E 160.44'
8001
N 4°42'59" E 310.85'
N 9°22'36" E 310.85'
8003

SURVEY BASELINE
SURVEY BASELINE S 04°08'56" W 695.04'

PI107+53.77
Δ=0°10'31" RT.
PC109+14.20

PNI PNI PDOAHTD STD. MONUMENT STAMPED PNI
PN2 PDOAHTD STD. MONUMENT STAMPED PN2
PN22 PDOAHTD STD. MONUMENT STAMPED PN2

SURVEY BASELINE S 46°09'34" W 237.74'

PT115+35.56

HWY. 25
PI = 136+10.74
Δ = 14°55'47"LT.
D = 0°45'00"
T = 1000.98'
L = 1990.63'
PC = 126+09.76
PT = 146+00.39
NO SUPERELEVATION

PC126+09.76
8004
N 9°22'36" E 1000.98'

PN5 PDOAHTD STD. MONUMENT STAMPED PN5
SURVEY BASELINE S 12°23'19" W 177.75'
PN6 PDOAHTD STD. MONUMENT STAMPED PN6
SURVEY BASELINE S 13°35'11" W 228.42'
PN7 PDOAHTD STD. MONUMENT STAMPED PN7

PN24 PDOAHTD STD. MONUMENT STAMPED PN2
SURVEY BASELINE S 09°52'59" E 181.64'
SURVEY BASELINE S 01°38'59" E 377.94'

PN23 PDOAHTD STD. MONUMENT STAMPED PN2
SURVEY BASELINE S 01°12'48" E 286.25'

PN3 PDOAHTD STD. MONUMENT STAMPED PN3
OLD T-POINT FROM JOB #080223

N 88°44'45" E 80.11'
N 88°44'45" E 168.18'
SURVEY BASELINE N 85°01'20" E 133.21'
PT4+21.75

C.L. BLANEY HILL RD.

HWY. 25
PI = 112+25.05
Δ = 4°39'37"RT.
D = 0°45'00"
T = 310.85'
L = 621.36'
PC = 109+14.20
PT = 115+35.56
NO SUPERELEVATION

SURVEY BASELINE S 18°45'43" E 410.65'
PT115+35.56

N 88°44'45" E 543.08'

STA. 117+97.95 ON HWY. 25 =
STA. 6+70.21 ON BLANEY HILL RD.
Δ 79°22'09"

115 5 120 121 125

8003
N 9°22'36" E 1074.20'

10/26/2015

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		080397	80	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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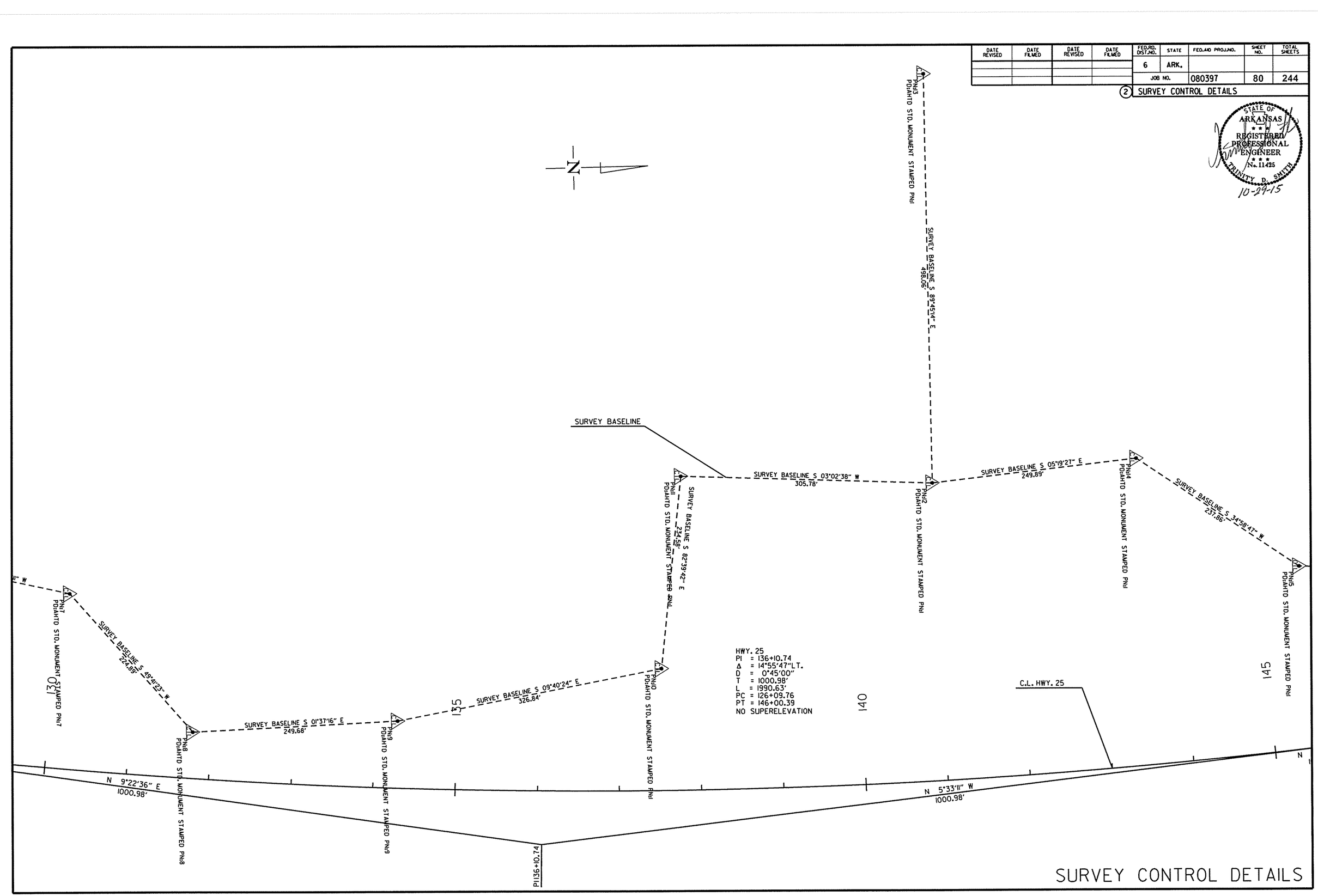
No. 11425
TRINITY D. SMITH
10-29-15



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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		080397	81	244

(2) SURVEY CONTROL DETAILS

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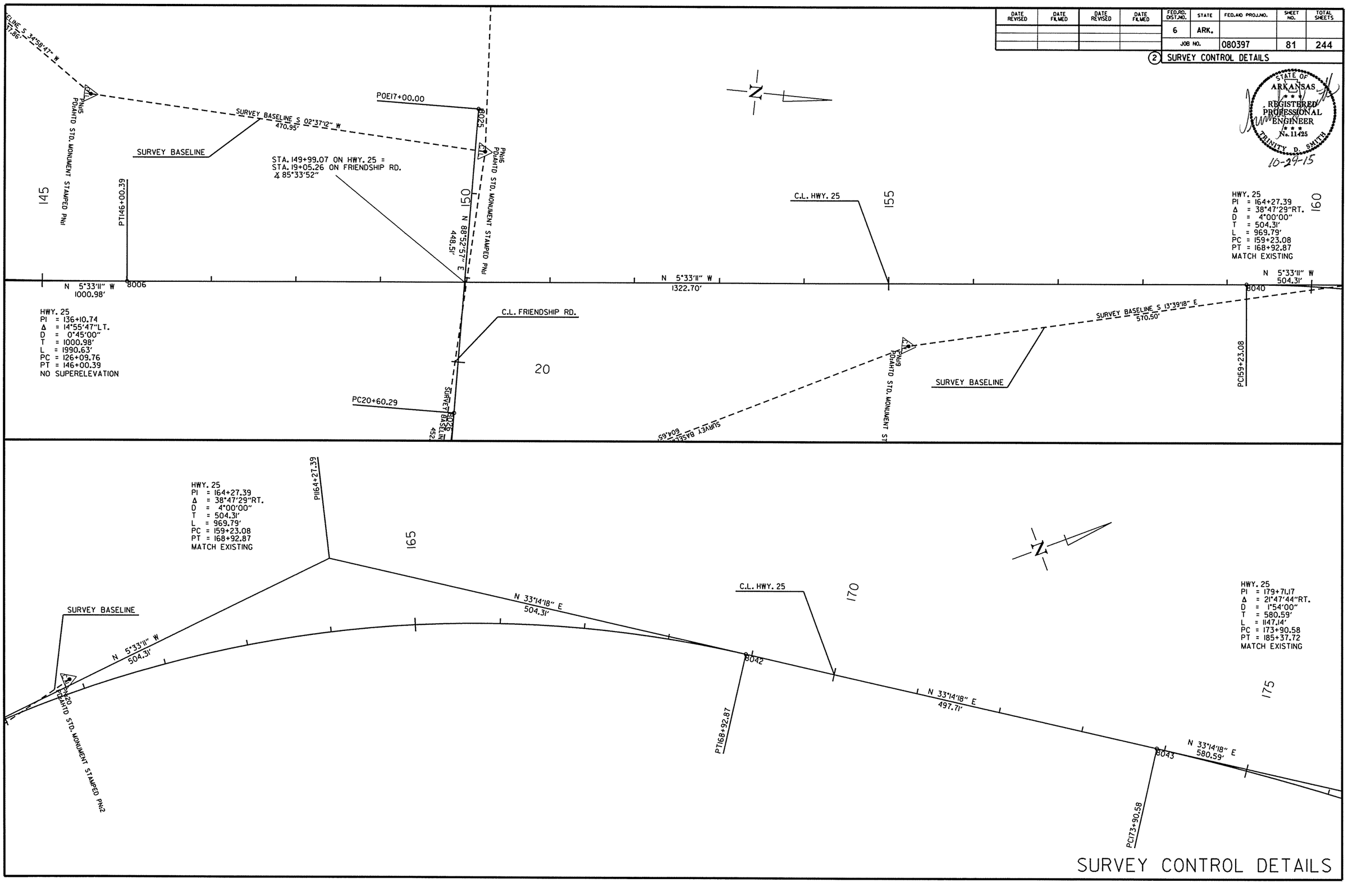
TRINITY D. SMITH
10-29-15



SURVEY CONTROL DETAILS

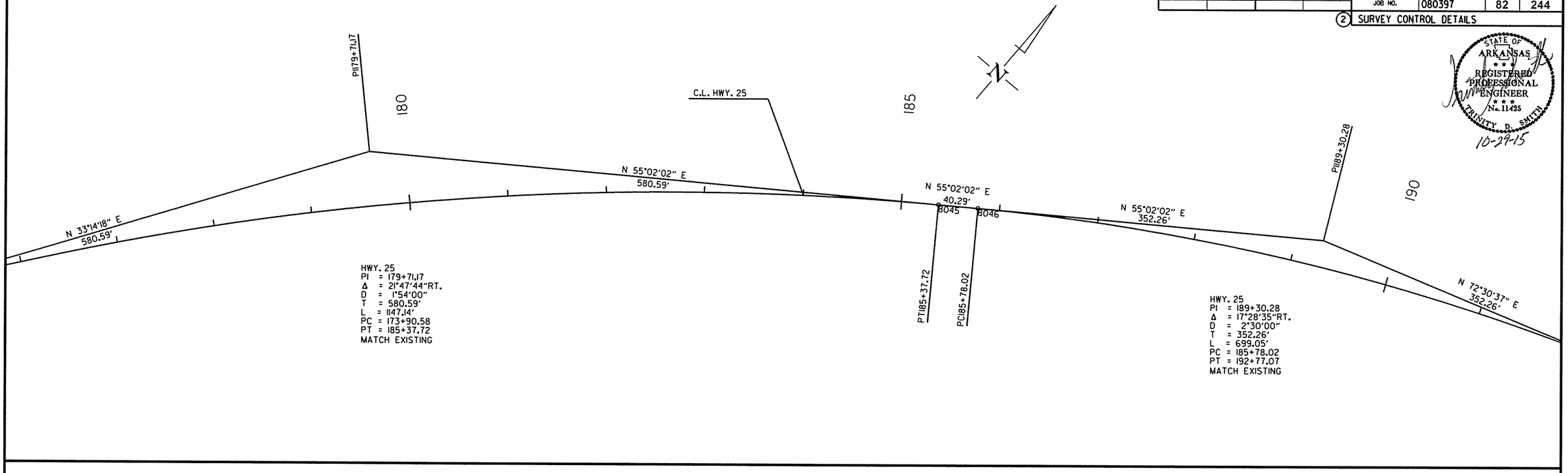
10/26/2015

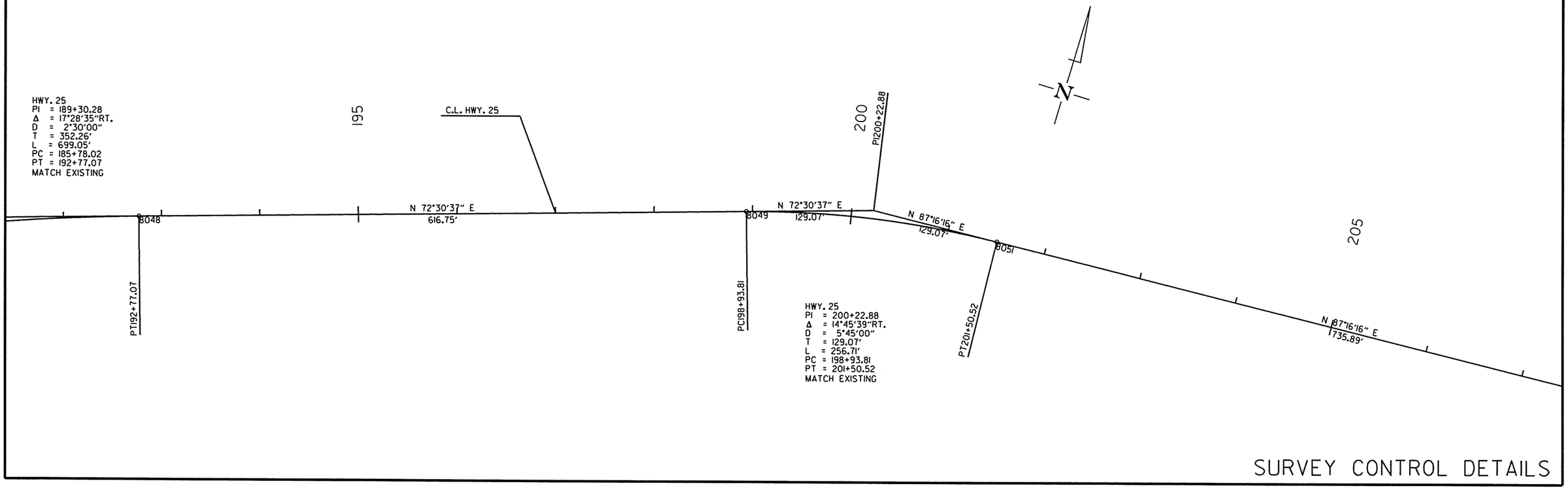
R080397.DGN

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.		080397	82	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15





10/26/2015

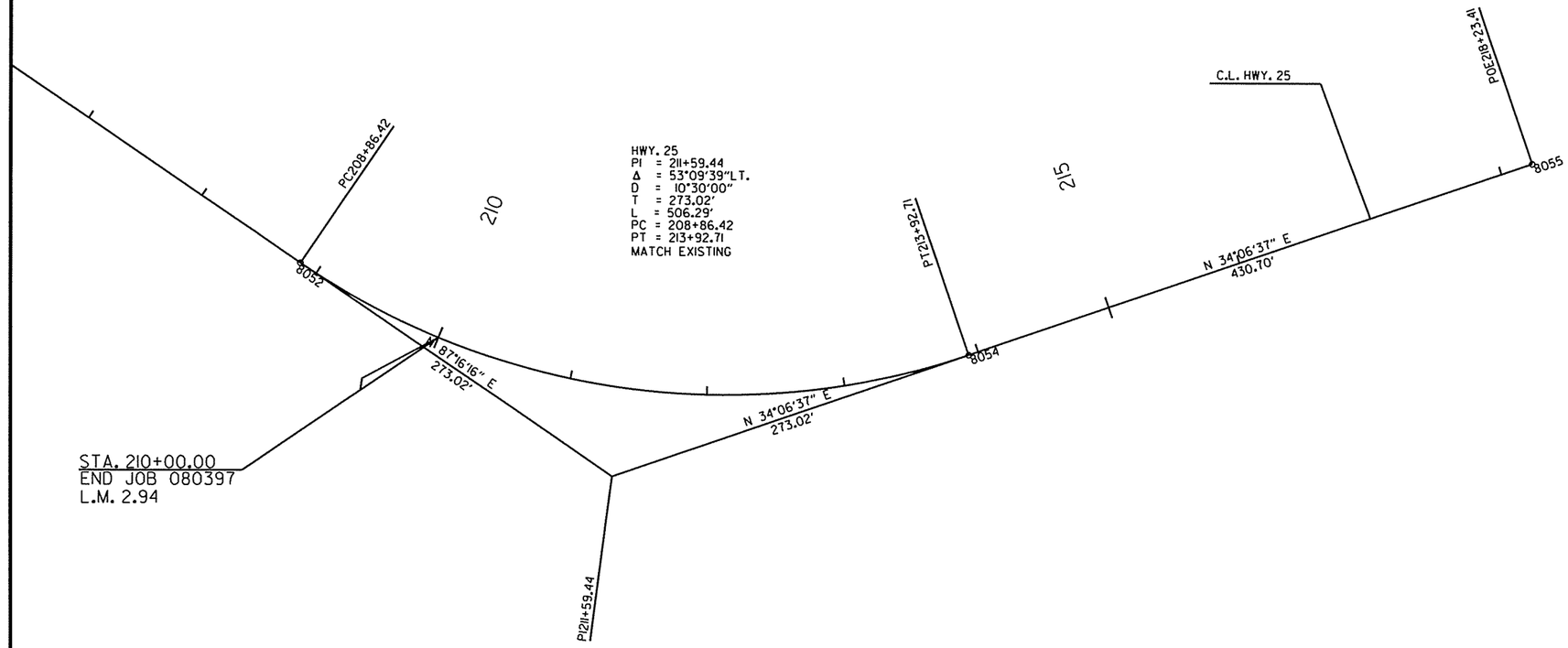
R080397.DGN

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.		080397	83	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-23-15



10/26/2015

R080397.DGN

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.		080397	84	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

7005

PI7005+61.83

S 85°17'14" E
127.02'

S 60°17'14" E
127.02'

8031

8033

PC7004+34.81

PT7006+84.81

I-40 WB. RAMP B
PI = 7005+61.83
Δ = 25°00'00"RT.
D = 10°00'00"
T = 127.02'
L = 250'
PC = 7004+34.81
PT = 7006+84.81
e = 0.068'/'
Ls = 250'

7010

S 60°17'14" E
823.04'

C.L. I-40 WB. RAMP B

7015

PC7015+07.84

8057

I-40 WB. RAMP B
PI = 7017+78.35
Δ = 23°59'19"LT.
D = 4°30'00"
T = 270.50'
L = 533.09'
PC = 7015+07.84
PT = 7020+40.93
e = 0.078'/'
Ls = 300'

7020

S 60°17'14" E
270.50'

S 84°16'33" E
270.50'

7020

7015

PI7017+78.35

C.L. I-40

N

I-40 WB. RAMP B
PI = 7029+31.37
Δ = 39°23'19"RT.
D = 2°54'04"
T = 706.93'
L = 1357.73'
PC = 7022+24.44
PT = 7035+82.17
e = MATCH EXISTING
Ls = MATCH EXISTING

PI7029+31.37

PI7029+47.36

STA. 7026+80.93
END I-40 WB. RAMP B
CONST.

7025

7030

S 84°16'33" E
706.93'

S 44°53'14" E
706.93'

S 44°31'31" E
709.55'

S 85°17'14" E
709.55'

I-40 WB. RAMP B
PI = 7017+78.35
Δ = 23°59'19"LT.
D = 4°30'00"
T = 270.50'
L = 533.09'
PC = 7015+07.84
PT = 7020+40.93
e = 0.078'/'
Ls = 300'

7020

PI7020+40.93

C.L. I-40 WB. RAMP B

S 84°16'33" E
183.51'

8059

8060

7025

7030

S 60°17'14" E
270.50'

S 84°16'33" E
270.50'

PI7017+78.35

C.L. I-40

S 85°17'14" E
5138.20'

PC7022+24.44

8068

PC7022+37.81

I-40
PI = 7029+47.36
Δ = 40°45'43"RT.
D = 3°00'00"
T = 709.55'
L = 1358.73'
PC = 7022+37.81
PT = 7035+96.54

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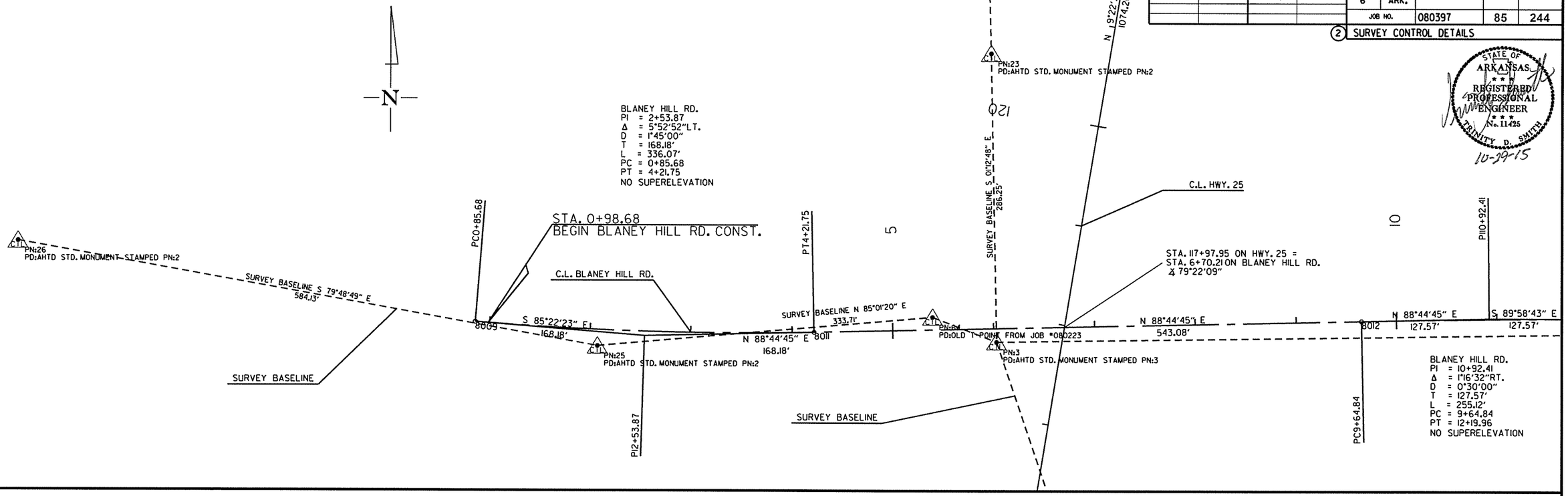
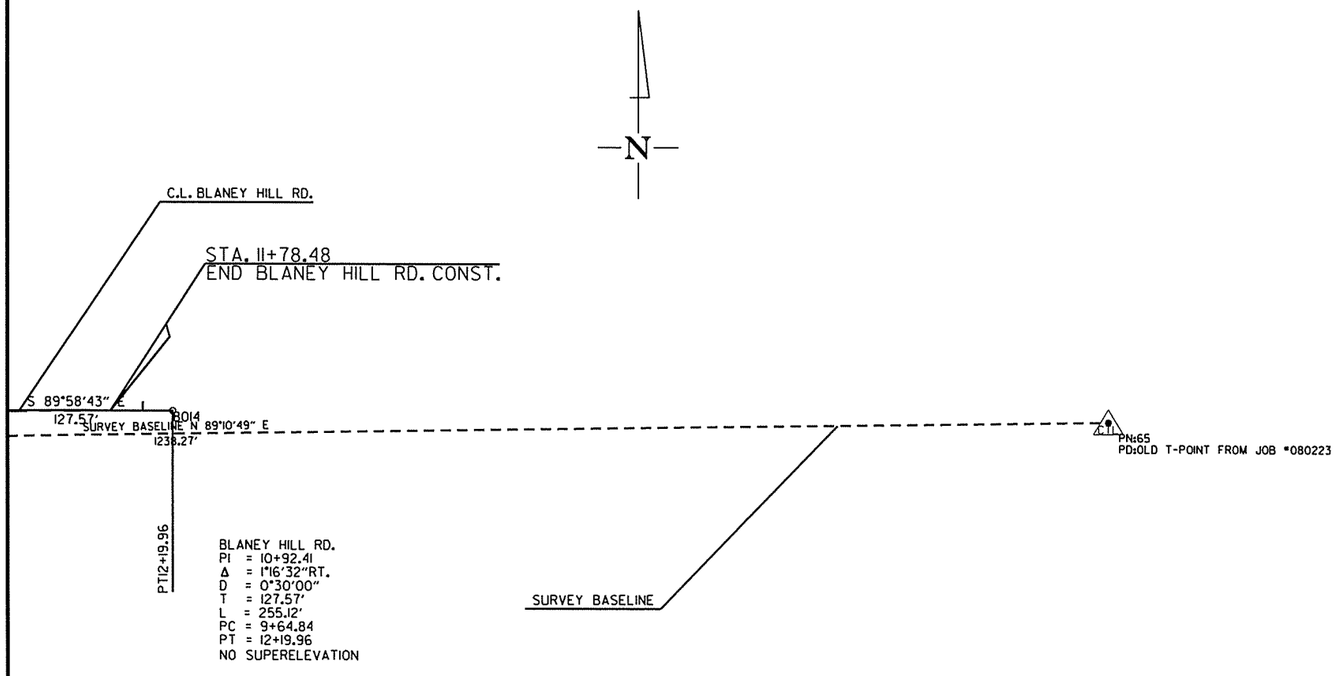
SURVEY CONTROL DETAILS

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.		080397	85	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15





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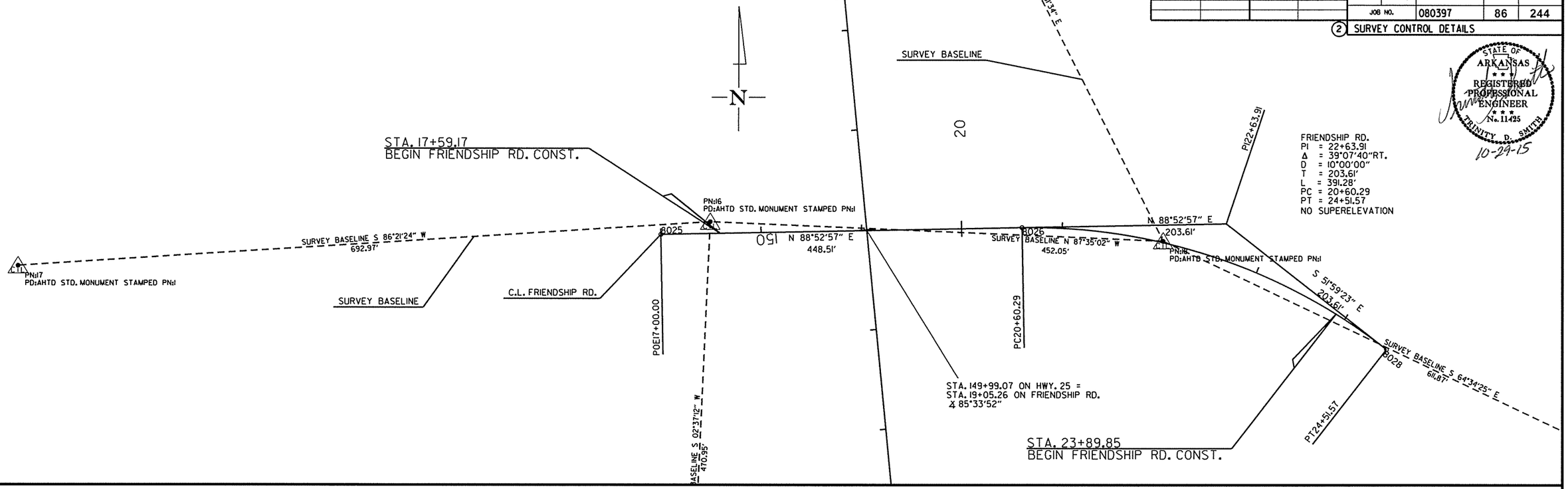
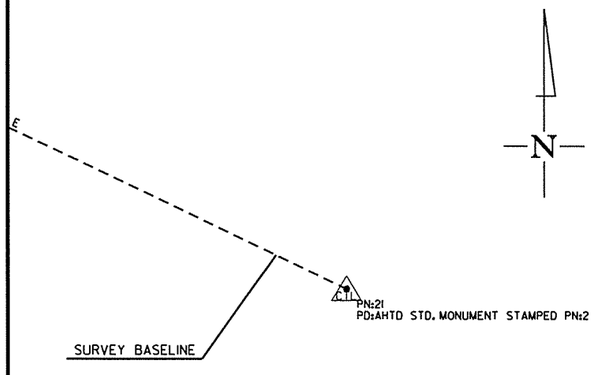
SURVEY CONTROL DETAILS

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.		080397	86	244

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15





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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.		080397	87	244

(2) SOIL LOG

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
104+00	35	7	13.80	92	27	35.80	CL	0-5	25	10	A-4(7)	BR/GR
112+00	35	7	21.70	92	27	35.00	CL	0-5	44	28	A-7-6(10)	BROWN
117+90	35	7	27.50	92	27	33.30	CL	0-5	23	7	A-2-4(0)	BR/GR
118+00	35	7	33.90	92	27	33.90	CL	0-5	26	10	A-4(0)	BR/GR
120+00	35	7	29.50	92	27	33.60	CL	0-2.5 Z	25	8	A-4(1)	BR/GR
128+00	35	7	37.40	92	27	32.10	CL	0-2 Z	25	5	A-4(0)	BR/GR
136+00	35	7	46.20	92	27	31.20	CL	0-2 Z	ND	NP	A-4(0)	BR/GR
144+00	35	7	53.10	92	27	31.50	CL	0-4Z	67	34	A-7-5(23)	BR/GR
150+00	35	7	59.10	92	27	32.20	CL	0-5	16	2	A-4(0)	BR/GR
158+00	35	8	6.70	92	27	33.10	18LT	0-5	30	11	A-6(5)	BR/GR
158+00	35	8	6.90	92	27	33.20	05LT	0-5	28	11	A-6(5)	BR/GR
7003+00	35	7	14.20	92	27	34.70	CL	0-4.5 Z	29	9	A-4(3)	BR/GR
7009+00	35	7	12.40	92	27	28.00	CL	0-5	29	9	A-4(5)	BROWN
7017+00	35	7	8.80	92	27	19.40	CL	0-1.5 Z	24	5	A-4(1)	BR/GR
7021+00	35	7	7.90	92	27	14.70	05RT	0-5	21	7	A-2-4(0)	BR/GR
7021+00	35	7	7.80	92	27	14.70	18RT	0-5	21	4	A-2-4(0)	BR/GR

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

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				6	ARK.			
				JOB NO.		080397	88	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

STA. 100+51 IN PLACE
TYPE N-3 DROP INLET ON LT.
WITH 12" X 92' C.M. PIPE OUTLET
MODIFY D.I. AND ADJUST TO GRADE
USING TYPE ST DROP INLET

STA. 100+56 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 8' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 8 LIN. FT.
18" F.E.S. = 1 EACH

STA. 103+09 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1 EACH

STA. 106+05 CONSTRUCT
10' x 8'x 170' R.C. BOX CULVERT
WITH 21 WINGS LT. & RT.
050= 702 C.F.S., D.A. = 544 ACRES

STA. 108+50 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 110+12.64 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION LT. & RT.
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 112+00 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 114+00 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 100+56.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 46.78 SQ. YD.

STA. 103+09 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 26.43 SQ. YD.

I-40 WB. RAMP A
PI = 104+24.45
Δ = 91°45'40"LT.
D = 24°06'04"
T = 245.15'
L = 380.73'
PC = 101+79.30
PT = 105+60.03
MATCH EXISTING

STA. 105+91.44 - CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 4.3 SQ. YD.

STA. 105+88.66 TO STA. 106+21.34 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 59.26 SQ. YD.

STA. 106+21.34 TO STA. 117+14.83 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 1982.86 SQ. YD.

STA. 108+50.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 12.92 SQ. YD.

STA. 110+12.64 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 7.06 SQ. YD.

STA. 112+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 5.81 SQ. YD.

STA. 114+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 8.28 SQ. YD.

HWY. 25
PI = 112+25.05
Δ = 4°39'37"RT.
D = 0°45'00"
T = 310.85'
L = 621.36'
PC = 109+14.20
PT = 115+35.56
NO SUPERELEVATION

STA. 104+48.70 ON HWY. 25 =
STA. 7002+12.74 ON I-40 WB. RAMP B
∠ 89°49'42"

POB6999+72.07

POB99+97.14

PC101+79.30

PI104+24.45

PT105+60.03

STA. 99+97.14
BEGIN JOB 080397

STA. 100+64.31 - CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 2.9 SQ. YD.

STA. 100+56.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 42.62 SQ. YD.

STA. 103+63 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 25.53 SQ. YD.

STA. 103+63 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 8' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 8 LIN. FT.
18" F.E.S. = 1 EACH

STA. 100+51 IN PLACE
TYPE N-3 DROP INLET ON RT.
WITH 12" X 92' C.M. PIPE OUTLET
MODIFY D.I. AND ADJUST TO GRADE
USING TYPE ST DROP INLET

STA. 100+56 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 8' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 8 LIN. FT.
18" F.E.S. = 1 EACH

PC7004+34.81

PT7006+84.81

PI7005+61.83

STA. 106+50 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 108+50 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 110+12.64 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION LT. & RT.
AND 18" X 8' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 8 LIN. FT.
18" F.E.S. = 1 EACH

STA. 112+00 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 9' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-10"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1 EACH

STA. 114+00 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 114+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 6.82 SQ. YD.

STA. 105+88.66 TO STA. 106+21.34 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 59.26 SQ. YD.

STA. 106+21.34 TO STA. 109+99.84 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 686.35 SQ. YD.

STA. 106+50.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 23.84 SQ. YD.

STA. 108+50.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 10.87 SQ. YD.

STA. 109+99.84 TO STA. 112+65.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 186.20 SQ. YD.

STA. 110+12.64 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 8.55 SQ. YD.

STA. 112+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 8.24 SQ. YD.

STA. 112+65.00 TO STA. 117+26.13 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 836.18 SQ. YD.

FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
107+55	116+97	LT.	A	953
107+54	117+23	RT.	A	968

CONST. LIMITS
EXISTING ROW & C/A
EXIST. ROW & C/A
PROP. ROW, C/A, & FENCE
BEGIN PROP. C/A
PROP. C/A
CONST. LIMITS
POND
HWY. 25

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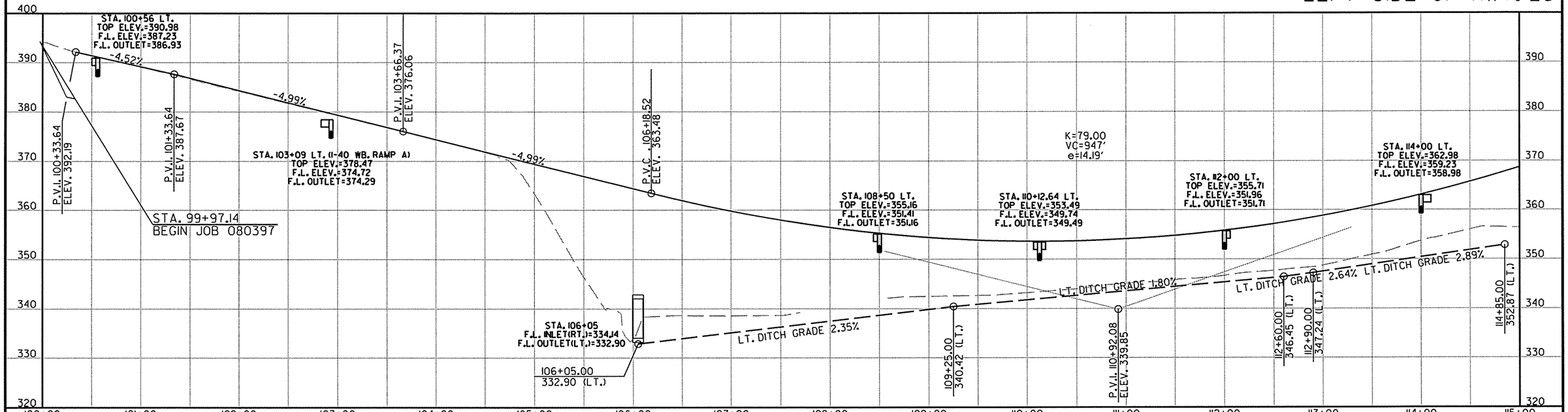
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	89	244

(2) PLAN AND PROFILE SHEETS

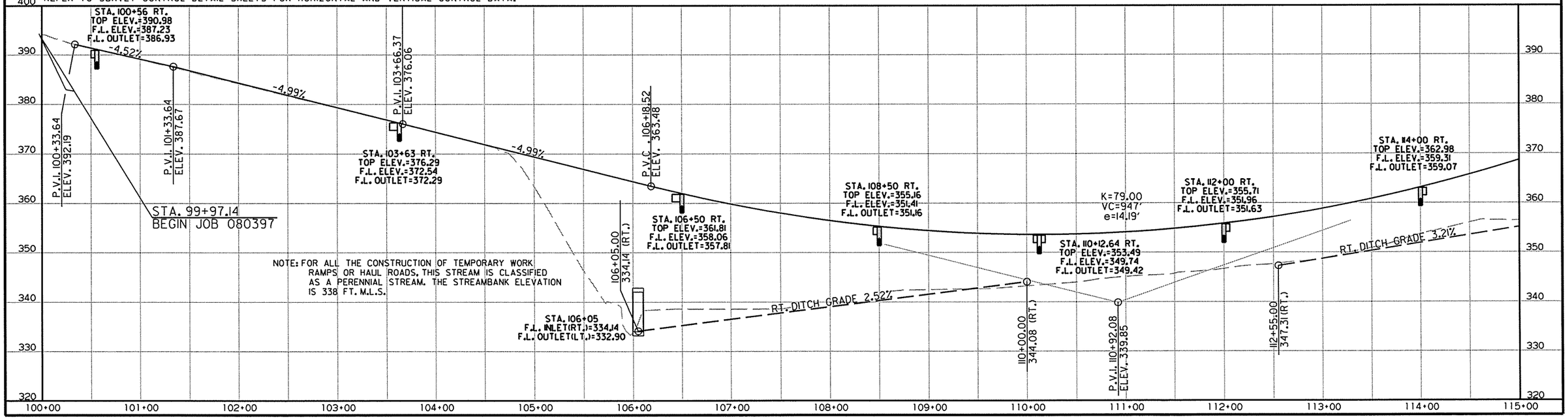
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

LEFT SIDE OF HWY. 25



RIGHT SIDE OF HWY. 25

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



NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAMBANK ELEVATION IS 338 FT. M.L.S.

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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.		080397	90	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

STA. 120+28 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 121+67 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 121+67.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 0.74 SQ. YD.

STA. 118+44 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1 EACH

STA. 118+19.34 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 26.1 SQ. YD.

STA. 120+16.88 TO STA. 120+35.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 12.72 SQ. YD.

STA. 120+28.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 2.23 SQ. YD.

STA. 120+35.00 TO STA. 145+80.65 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 4616.11 SQ. YD.

STA. 118+25.56 TO STA. 119+82.01 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 109.86 SQ. YD.

STA. 118+44.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 15.84 SQ. YD.

STA. 117+49.67 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 24.5 SQ. YD.

STA. 120+00 CONSTRUCT
24" x 34" PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 125 CU. YD.

STA. 121+67.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 1.22 SQ. YD.

STA. 118+67 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1 EACH

STA. 121+67 CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 118+44.42 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 19.0 SQ. YD.

STA. 118+67.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 19.69 SQ. YD.

STA. 118+72.36 TO STA. 145+65.24 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 4883.09 SQ. YD.

STA. 117+74.76 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 31.1 SQ. YD.

STA. 117+97.95 ON HWY. 25 =
STA. 6+70.21 ON BLANEY HILL RD.
Δ 79°22'09"

HWY. 25
PI = 112+25.05
Δ = 4°39'37"RT.
D = 0°45'00"
T = 310.85'
L = 621.36'
PC = 109+14.20
PT = 115+35.56
NO SUPERELEVATION

HWY. 25
PI = 136+10.74
Δ = 14°55'47"LT.
D = 0°45'00"
T = 1000.98'
L = 1990.63'
PC = 126+09.76
PT = 146+00.39
NO SUPERELEVATION

FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
122+00	145+00	LT.	C	2346
122+00	145+00	RT.	C	2402

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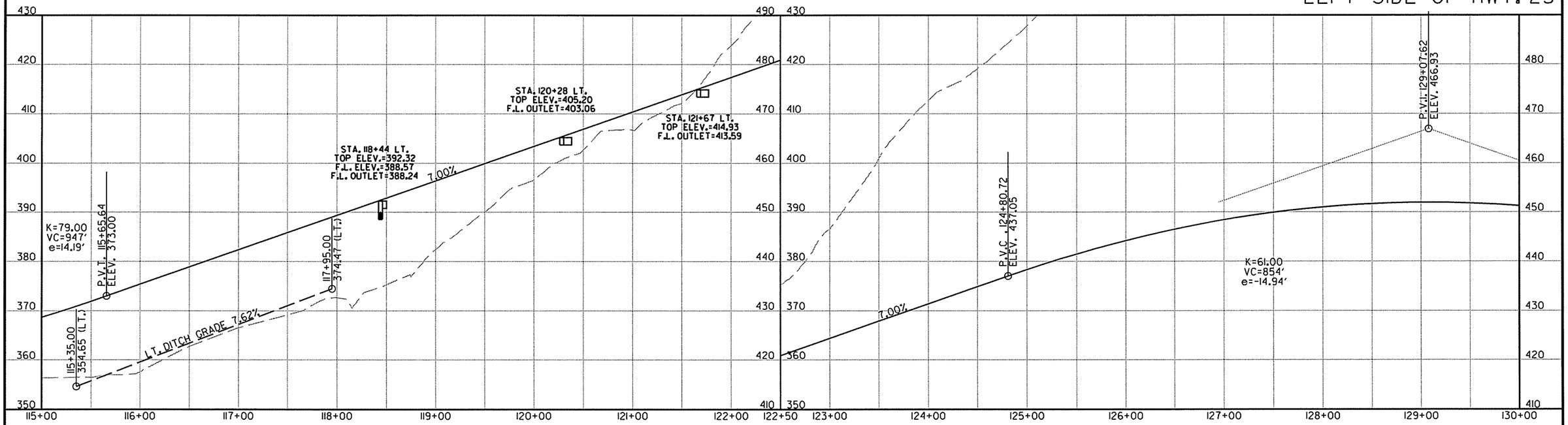
HWY. 25

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	91	244

(2) PLAN AND PROFILE SHEETS

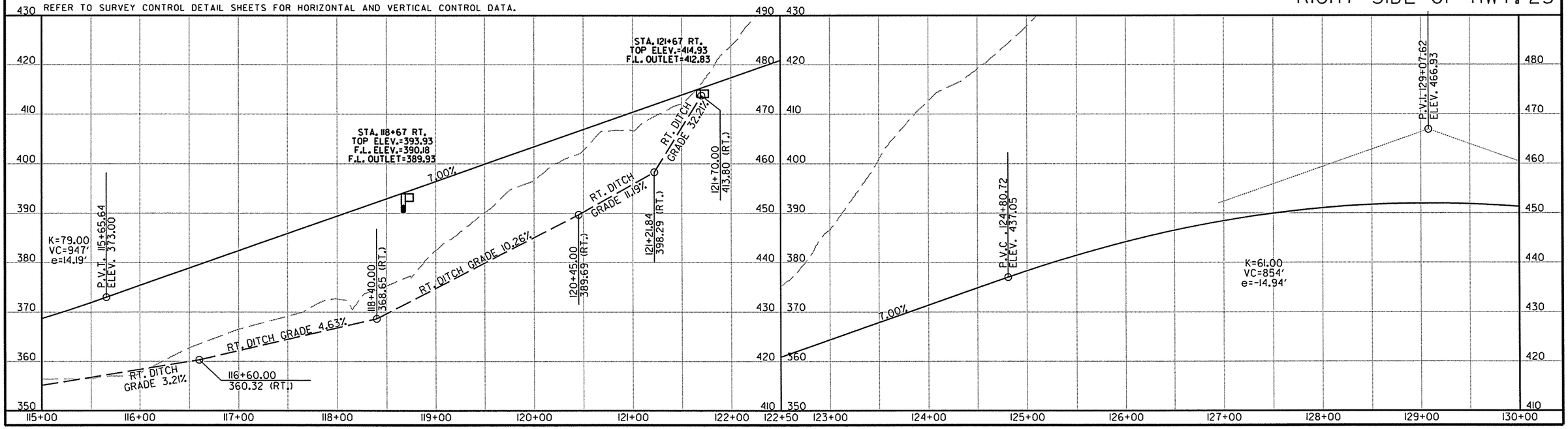
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

LEFT SIDE OF HWY. 25



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

RIGHT SIDE OF HWY. 25



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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.		080397	92	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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STA. 140+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 0.77 SQ. YD.

STA. 144+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 0.79 SQ. YD.

STA. 135+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 0.77 SQ. YD.

STA. 135+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 140+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 144+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

PROP. ROW

CONST. LIMITS

N 9°22'36" E

N 5°33'11" W

PI136+10.74

STA. 135+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 135+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 1.04 SQ. YD.

STA. 140+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 140+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 1.04 SQ. YD.

STA. 144+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 144+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 1.04 SQ. YD.

FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
122+00	145+00	LT.	C	2346
122+00	145+00	RT.	C	2402

HWY. 25
PI = 136+10.74
Δ = 14°55'47"LT.
D = 0°45'00"
T = 1000.98'
L = 1990.63'
PC = 126+09.76
PT = 146+00.39
NO SUPERELEVATION

10/26/2015

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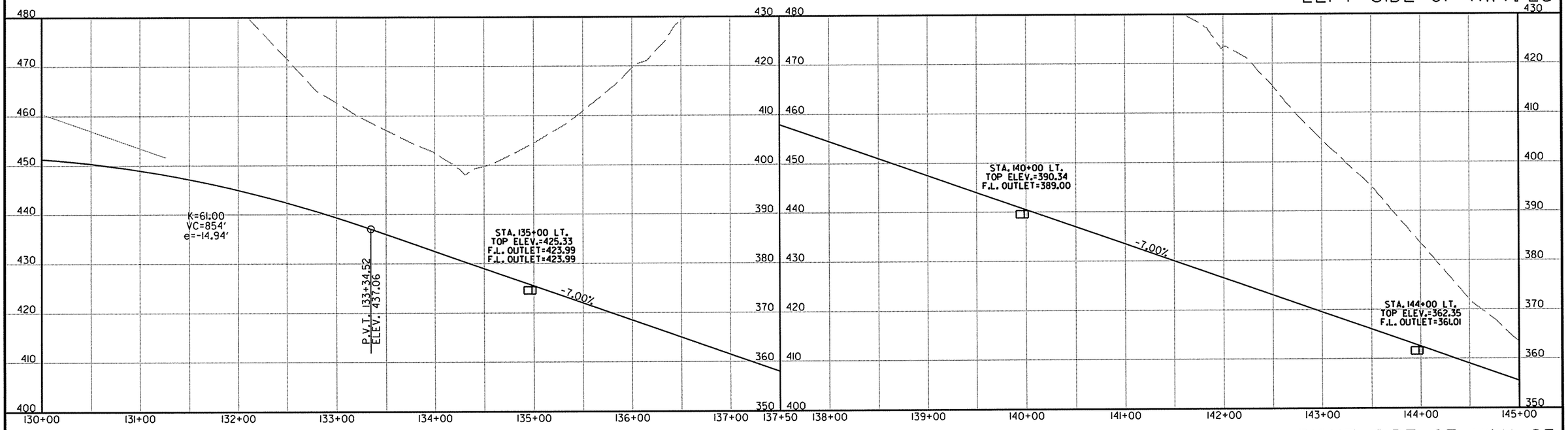
HWY. 25

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	93	244

(2) PLAN AND PROFILE SHEETS

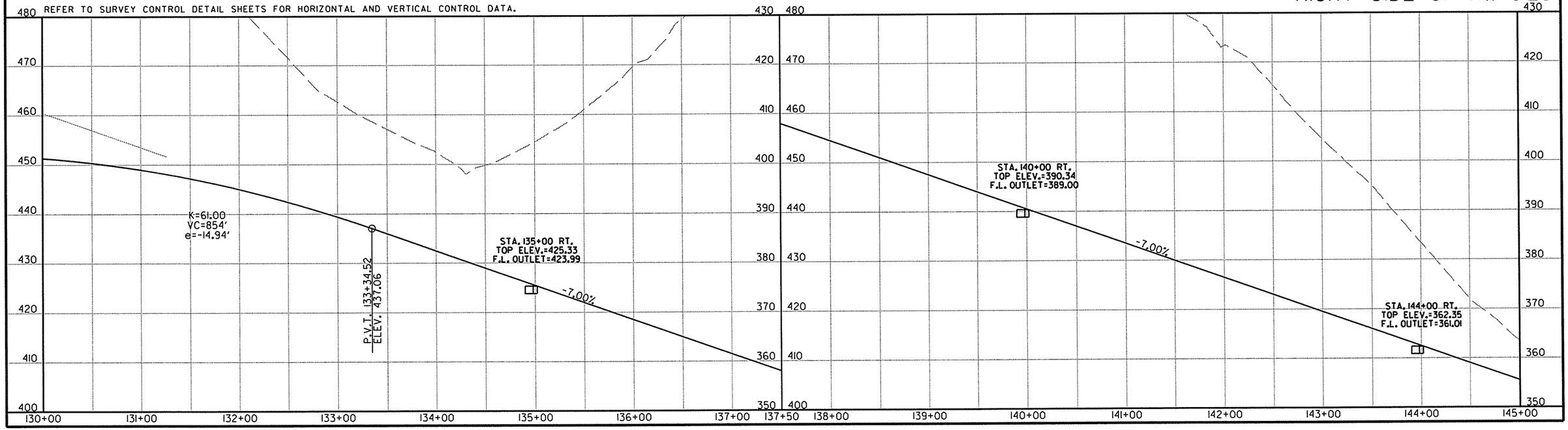
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-24-15

LEFT SIDE OF HWY. 25



RIGHT SIDE OF HWY. 25

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



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STA. 156+00 TO STA. 160+00
SPECIAL FLOOD HAZARD AREA

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	94	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-24-15

STA. 147+00 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1EACH

STA. 149+46 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1EACH

STA. 153+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 4' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 156+00 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1EACH

STA. 158+87 IN PLACE
6' X 8' X 52' R.C. BOX CULVERT
WITH 3# WINGS LT. AND RT.
RETAIN AND EXTEND
20' LT. AND 20' RT.
TO A COMPLETED LENGTH OF 92'
AND ADD 72" X 106' R.C. PIPE CULVERT
050 = 510 C.F.S., D.A. = 262.4 ACRES
72" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 106 LIN. FT.
72" F.E.S. = 2 EACH

STA. 158+64 CONSTRUCT
DROP INLET ON LT.
WITH 8' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1EACH

STA. 145+80.65 TO STA. 149+58.85 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 265.58 SQ. YD.

STA. 147+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 0.51 SQ. YD.

STA. 149+46.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 4.88 SQ. YD.

STA. 149+58.85 TO STA. 149+73.60 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 16.91 SQ. YD.

STA. 150+42.41 TO STA. 150+55.33 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 14.81 SQ. YD.

STA. 150+55.33 TO STA. 151+30.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 52.43 SQ. YD.

STA. 151+30.00 TO STA. 154+66.08 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 609.43 SQ. YD.

STA. 153+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 0.63 SQ. YD.

STA. 156+00.00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 1.69 SQ. YD.

STA. 154+66.08 TO STA. 157+57.51 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 204.65 SQ. YD.

HWY. 25
PI = 136+10.74
Δ = 14°55'47"LT.
D = 0°45'00"
T = 1000.98'
L = 1990.63'
PC = 126+09.76
PT = 146+00.39
NO SUPERELEVATION

STA. 149+52.50 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 28.9 SQ. YD.

STA. 150+55.96 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 36.0 SQ. YD.

STA. 158+89.60 - CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 4.0 SQ. YD.

SPECIAL FLOOD HAZARD AREA

STA. 145+65.24 TO STA. 149+66.08 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 281.48 SQ. YD.

STA. 147+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 3.69 SQ. YD.

STA. 149+41.33 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 28.9 SQ. YD.

STA. 149+35.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 6.16 SQ. YD.

STA. 147+00 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1EACH

STA. 149+35 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1EACH

STA. 149+99.07 ON HWY. 25 =
STA. 19+05.26 ON FRIENDSHIP RD.
Δ 85°33'52"

STA. 150+45.64 - CONSTRUCT
TYPE 2 WHEELCHAIR RAMP = 28.9 SQ. YD.

STA. 150+27.81 TO STA. 151+45.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 82.29 SQ. YD.

STA. 151+45.00 TO STA. 156+75.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE A) = 961.07 SQ. YD.

STA. 156+00 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
AND 18" X 6' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 6 LIN. FT.
18" F.E.S. = 1EACH

STA. 153+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 4' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 6'

STA. 158+64 CONSTRUCT
DROP INLET ON RT.
WITH 8' EXTENSION
AND 18" X 10' PIPE OUTLET WITH F.E.S.
DROP INLET H=3'-9"
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 3'
18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 10 LIN. FT.
18" F.E.S. = 1EACH

STA. 153+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 1.81 SQ. YD.

STA. 156+00.00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 3.62 SQ. YD.

STA. 158+89.60 - CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 4.0 SQ. YD.

HWY. 25
PI = 164+27.39
Δ = 38°47'29"RT.
D = 4°00'00"
T = 504.31'
L = 969.79'
PC = 159+23.08
PT = 168+92.87
MATCH EXISTING

100' TRANSITION

FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
122+00	145+00	LT.	C	2346
122+00	145+00	RT.	C	2402

OBLITERATE EXIST. PAVEMENT

HWY. 25

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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.		080397	95	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

LEFT SIDE OF HWY. 25

STA. 147+00 LT.
TOP ELEV.=341.36
F.L. ELEV.=337.61
F.L. OUTLET=337.36

-7.00%

LT. DITCH
GRADE -0.01%

146+40.00
335.75 (LT.)

147+17.51
335.74 (LT.)

P.V.C. 149+38.81
ELEV. 324.81

STA. 149+46 LT.
TOP ELEV.=324.15
F.L. ELEV.=320.40
F.L. OUTLET=320.07

K=79.00
VC=527'
e=4.40'

P.V.I. 152+02.44
ELEV. 306.37

STA. 153+00 LT.
TOP ELEV.=307.93
F.L. OUTLET=306.59

K=79.00
VC=527'
e=4.40'

P.V.T. 154+66.08
ELEV. 305.52

STA. 156+00 LT.
TOP ELEV.=305.26
F.L. ELEV.=301.51
F.L. OUTLET=301.18

-0.32%

STA. 158+64 LT.
TOP ELEV.=304.41
F.L. ELEV.=300.66
F.L. OUTLET=300.33

P.V.T. 158+97.86
ELEV. 304.12

STA. 158+87
F.L. INLET(LT.)=288.57
F.L. OUTLET(RT.)=288.21

RIGHT SIDE OF HWY. 25

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

STA. 147+00 RT.
TOP ELEV.=341.36
F.L. ELEV.=337.61
F.L. OUTLET=337.28

-7.00%

P.V.C. 149+38.81
ELEV. 324.81

STA. 149+35 RT.
TOP ELEV.=324.92
F.L. ELEV.=321.17
F.L. OUTLET=320.84

K=79.00
VC=527'
e=4.40'

152+00.00
308.02 (RT.)

RT. DITCH
GRADE -3.01%

RT. DITCH
GRADE
-1.23%

151+30.00
308.88 (RT.)

P.V.I. 152+02.44
ELEV. 306.37

K=79.00
VC=527'
e=4.40'

RT. DITCH
GRADE -3.01%

STA. 153+00 RT.
TOP ELEV.=307.70
F.L. OUTLET=306.42

RT. DITCH
GRADE -1.75%

153+00.00
305.01 (RT.)

RT. DITCH
GRADE
-8.11%

154+00.00
303.26 (RT.)

154+35.00
300.42 (RT.)

P.V.T. 154+66.08
ELEV. 305.52

RT. DITCH GRADE -2.42%

156+75.00
294.62 (RT.)

STA. 156+00 RT.
TOP ELEV.=305.13
F.L. ELEV.=301.38
F.L. OUTLET=301.13

-0.32%

STA. 158+64 RT.
TOP ELEV.=304.40
F.L. ELEV.=300.65
F.L. OUTLET=300.32

P.V.T. 158+97.86
ELEV. 304.12

STA. 158+87
F.L. INLET(LT.)=288.57
F.L. OUTLET(RT.)=288.21

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AND PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	96	244

(2) PLAN AND PLOT SHEETS

STA. 156+00 TO STA. 160+00
SPECIAL FLOOD HAZARD AREA

HWY. 25
PI = 164+27.39
Δ = 38°47'29"RT.
D = 4°00'00"
T = 504.31'
L = 969.79'
PC = 159+23.08
PT = 168+92.87
MATCH EXISTING

PI164+27.39

N 5°33'11" W

165

170

PT168+92.87

N 33°14'18" E

PC173+90.58

HWY. 25
PI = 179+71.17
Δ = 21°47'44"RT.
D = 1°54'00"
T = 580.59'
L = 1147.14'
PC = 173+90.58
PT = 185+37.72
MATCH EXISTING

175

CHISELED SQUARE CUT IN CONCRETE

SET 1/2" I.D. MONUMENT STAMPED PH-2

CHISELED SQUARE CUT IN CENTER

SPECIAL CABLE POST

SPECIAL FLOOD HAZARD AREA

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

PI179+71.17

180

185

N 33°14'18" E

N 55°02'02" E

PT185+37.72

PC185+78.02

HWY. 25
PI = 179+71.17
Δ = 21°47'44"RT.
D = 1°54'00"
T = 580.59'
L = 1147.14'
PC = 173+90.58
PT = 185+37.72
MATCH EXISTING

PI189+30.28

190

N 72°30'37" E

HWY. 25
PI = 189+30.28
Δ = 17°28'34"RT.
D = 2°30'00"
T = 352.26'
L = 699.05'
PC = 185+78.02
PT = 192+77.07
MATCH EXISTING

CHISELED SQUARE CUT IN CONCRETE

10/26/2015

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HWY. 25

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	97	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

HWY. 25
PI = 189+30.28
Δ = 17°28'34"RT.
D = 2°30'00"
T = 352.26'
L = 699.05'
PC = 185+78.02
PT = 192+77.07
MATCH EXISTING

195

200

PI200+22.88

N

205

N 72°30'37" E

PT192+77.07

PC198+93.81

PT201+50.52

N 87°16'16" E

HWY. 25
PI = 200+22.88
Δ = 14°45'39"RT.
D = 5°45'00"
T = 129.07'
L = 256.71'
PC = 198+93.81
PT = 201+50.52
MATCH EXISTING

PC208+86.42

210

HWY. 25
PI = 211+59.44
Δ = 53°09'39"LT.
D = 10°30'00"
T = 273.02'
L = 506.29'
PC = 208+86.42
PT = 213+92.71
MATCH EXISTING

215

PT213+92.71

PI211+59.44

PC218+23.41

N 34°06'37" E

N 87°16'16" E

+00.00

100' TRANSITION

+00.00

STA. 210+00.00
END JOB 080397
L.M. 2.94

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HWY. 25

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	98	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

I-40 WB. RAMP B

EXISTING ROW & C/A

STA. 7002+86.34 - CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 2.9 SQ. YD.

STA. 7003+37.87 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 37.48 SQ. YD.

I-40 WB. RAMP B
PI = 7017+78.35
Δ = 23°59'19"LT.
D = 4°30'00"
T = 270.50'
L = 533.09'
PC = 7015+07.84
PT = 7020+40.93
e = 0.078'/'
Ls = 300'

STA. 104+48.70 ON HWY. 25 =
STA. 7002+12.74 ON RAMP 3
Δ 89°49'42"

I-40 WB. RAMP B
PI = 7005+61.83
Δ = 25°00'00"RT.
D = 10°00'00"
T = 127.02'
L = 250'
PC = 7004+34.81
PT = 7006+84.81
e = 0.068'/'
Ls = 250'

STA. 7003+38 CONSTRUCT
42" X 145' R.C. PIPE CULVERT
WITH F.E.S. LT. & RT.
(10° LT. FWD. SKEW)
42" R.C. PIPE (CLASS IVXTYPE 3 BEDDING) = 146 LIN. FT.
42" F.E.S. = 2 EACH

STA. 7002+53.77 - CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.3 SQ. YD.

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

STA. 7003+09.81	BEGIN SUPERELEVATION (N.C.)	STA. 7012+82.84	BEGIN SUPERELEVATION (N.C.)
STA. 7005+59.81	MAX SUPERELEVATION (0.068'/')	STA. 7015+82.84	MAX SUPERELEVATION (0.078'/')
STA. 7006+22.31	MAX SUPERELEVATION (0.068'/')	STA. 7017+80.75	MAX SUPERELEVATION (0.078'/')
STA. 7008+72.31	END SUPERELEVATION (N.C.)	STA. 7022+30.75	END SUPERELEVATION (MATCH EXISTING) (0.065'/')

STA. 7002+29.83
BEGIN I-40 WB. RAMP B CONST.

P.V.I. 7002+29.83
ELEV. 371.59

P.V.C. 7004+82.64
ELEV. 371.59

K=264.55
VC=500'
e=1.18'

P.V.I. 7007+32.64
ELEV. 371.59

P.V.T. 7009+82.64
ELEV. 376.32

0.00%

1.89%

STA. 7003+38
F.L. INLET(RT.)=350.23
F.L. OUTLET(LT.)=349.43

420 410 400 390 380 370 360 350 340 330

7002+00 7003+00 7004+00 7005+00 7006+00 7007+00 7008+00 7009+00 7010+00 7011+00 7012+00 7013+00 7014+00 7015+00 7016+00 7017+00

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				6	ARK.			
				JOB NO.		080397	99	244

(2) PLAN AND PROFILE SHEETS

I-40 WB. RAMP B
PI = 7017+78.35
Δ = 23°59'19"LT.
D = 4°30'00"
T = 270.50'
L = 533.09'
PC = 7015+07.84
PT = 7020+40.93
e = 0.078'/'
Ls = 300'

STA. 7017+86 IN PLACE
24" X 108' R.C. PIPE OUTLET
WITH HDWL. LT.
(10° RT. FWD. SKEW)
REMOVE HEADWALL AND EXTEND 36' LT.
WITH F.E.S. LT.
TO A COMPLETED LENGTH OF 144'
24" R.C. PIPE (CLASS IIIXTYPE 3 BEDDING) = 40 LIN. FT.
24" F.E.S. = 1EACH

STA. 7022+49 IN PLACE
TYPE N D.I. IN MEDIAN
WITH 30" X 108' PIPE OUTLET RT.
AND 30" X 144' PIPE OUTLET LT.
AND HDWLS. LT. AND RT.
REMOVE LT. HDWL. AND EXTEND
2' LT. TO A COMPLETED LENGTH OF 144'
30" R.C. PIPE (CLASS IIIXTYPE 3 BEDDING) = 2 LIN. FT.
30" F.E.S. = 1EACH

I-40 WB. RAMP B
PI = 7029+31.37
Δ = 39°23'19"RT.
D = 2°54'04"
T = 706.93'
L = 1357.73'
PC = 7022+24.44
PT = 7035+82.17
e = MATCH EXISTING
Ls = MATCH EXISTING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

POND
N
340' DECELERATION LANE
EXISTING ROW & C/A
CONST. LIMITS
300' LANE TAPER
BOARD 2-SIDED
PARKING
+80.93
+40.93
7025
7020
7030
PI 7029+31.37
PI 7029+47.36
STA. 7026+80.93
END I-40 WB. RAMP B
CONST.
PT 7020+40.93
S 84°16'33" E
S 44°53'14" E
S 44°31'31" E
S 60°17'14" E
S 85°17'14" E
NOSE +11.37 7.50'
NOSE +11.54 116.19'
PI 7017+78.35
PC 7022+24.44
7022+37.81
DROP INLET
SIGN
6'
12"

I-40
PI = 7029+47.36
Δ = 40°45'43"RT.
D = 3°00'00"
T = 709.55'
L = 1358.73'
PC = 7022+37.81
PT = 7035+96.54

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

I-40 WB. RAMP B

STA. 7012+82.84	BEGIN SUPERELEVATION (N.C.)
STA. 7015+82.84	MAX SUPERELEVATION (0.078'/')
STA. 7017+80.75	MAX SUPERELEVATION (0.078'/')
STA. 7022+30.75	END SUPERELEVATION (MATCH EXISTING) (0.065'/')

STA. 7018+11.37 7.5' RT. C.L. RAMP 3 =
STA. 7018+11.54 116.19' LT. C.L. I-40
ELEV. 391.98

1.89%

STA. 7017+86
EXIST. F.L. OUTLET(RT.)=382.80
F.L. OUTLET(LT.)=381.62

STA. 7022+49
EXIST. F.L.=389.50

STA. 7026+80.93
END I-40 WB. RAMP B CONST.

450 440 430 420 410 400 390 380 370 360

7017+00 7018+00 7019+00 7020+00 7021+00 7022+00 7023+00 7024+00 7025+00 7026+00 7027+00 7028+00 7029+00 7030+00 7031+00 7032+00

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				6	ARK.			
				JOB NO.		080397	100	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-29-15

BLANEY HILL RD.
PI = 2+53.87
Δ = 5°52'52"LT.
D = 1°45'00"
T = 168.18'
L = 336.07'
PC = 0+85.68
PT = 4+21.75
NO SUPERELEVATION

BLANEY HILL RD.
PI = 10+92.41
Δ = 1°16'32"RT.
D = 0°30'00"
T = 127.57'
L = 255.12'
PC = 9+64.84
PT = 12+19.96
NO SUPERELEVATION

STA. 117+97.95 ON HWY. 25 =
STA. 6+70.21 ON BLANEY HILL RD.
Δ 79°22'09"

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

STA. 7+62 INSTALL
24" X 148' RT. SIDE DRAIN

STA. 9+74 INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU.YD.

STA. 5+88 INSTALL
30" X 112' LT. SIDE DRAIN

PROP. ROW
CONST. LIMITS
BLANEY HILL RD.
100' TRANSITION
N 9°22'36" E
S 85°22'23" E
N 88°44'45" E
S 89°58'43" E
PC0+85.68
PT4+21.75
P12+53.87
PC9+64.84
PT12+19.96
P110+92.41
END PROP. C/A
ROW FENCE
C/A

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

BLANEY HILL RD.

P.V.I. 0+98.68 ELEV. 368.68
P.V.C. 2+80.30 ELEV. 372.24
P.V.I. 3+30.11 ELEV. 373.21
P.V.T. 3+79.91 ELEV. 376.09
P.V.C. 5+38.48 ELEV. 385.27
P.V.I. 5+63.48 ELEV. 386.72
P.V.I. 6+37.65 ELEV. 388.20
P.V.T. 5+88.48 ELEV. 387.22
P.V.I. 7+02.77 ELEV. 389.04
P.V.C. 7+27.19 ELEV. 388.55
P.V.T. 7+57.19 ELEV. 387.95
P.V.T. 7+87.19 ELEV. 385.99
P.V.C. 8+79.94 ELEV. 379.91
P.V.I. 9+27.01 ELEV. 376.82
P.V.T. 9+74.09 ELEV. 375.85
P.V.I. 11+78.48 ELEV. 371.60

1.96%
5.79%
2.00%
-2.00%
-6.55%
-2.08%

K=26.00 VC=100' e=0.48'
K=13.20 VC=50' e=-0.24'
K=13.18 VC=60' e=-0.34'
K=21.03 VC=94' e=0.53'

STA. 5+88
F.L. INLET(LT.)=377.65
F.L. OUTLET(RT.)=367.65

STA. 7+62
F.L. INLET(LT.)=372.47
F.L. OUTLET(RT.)=363.01

STA. 0+98.68
BEGIN BLANEY HILL RD. CONST.

STA. 11+78.48
END BLANEY HILL RD. CONST.

410 400 390 380 370 360 350 340 330 320

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00

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				6	ARK.			
				JOB NO.		080397	101	244

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-24-15

FRIENDSHIP RD.
PI = 22+63.91
Δ = 39°07'40"RT.
D = 10°00'00"
T = 203.61'
L = 391.28'
PC = 20+60.29
PT = 24+51.57
NO SUPERELEVATION

STA. 17+73 IN PLACE
16" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU.YD.

STA. 18+50 INSTALL
DBL. 30" X 76' LT. SIDE DRAIN

STA. 19+35 IN PLACE
36" X 30' C.M. PIPE
REMOVE

STA. 19+71 INSTALL
42" X 62' RT. SIDE DRAIN

STA. 22+20 INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU.YD.

STA. 23+00 CONSTRUCT
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU.YDS.

STA. 21+27 CONSTRUCT
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU.YD. COMP. EMB.
= 20 CU.YD. UNCLASS. EXC.

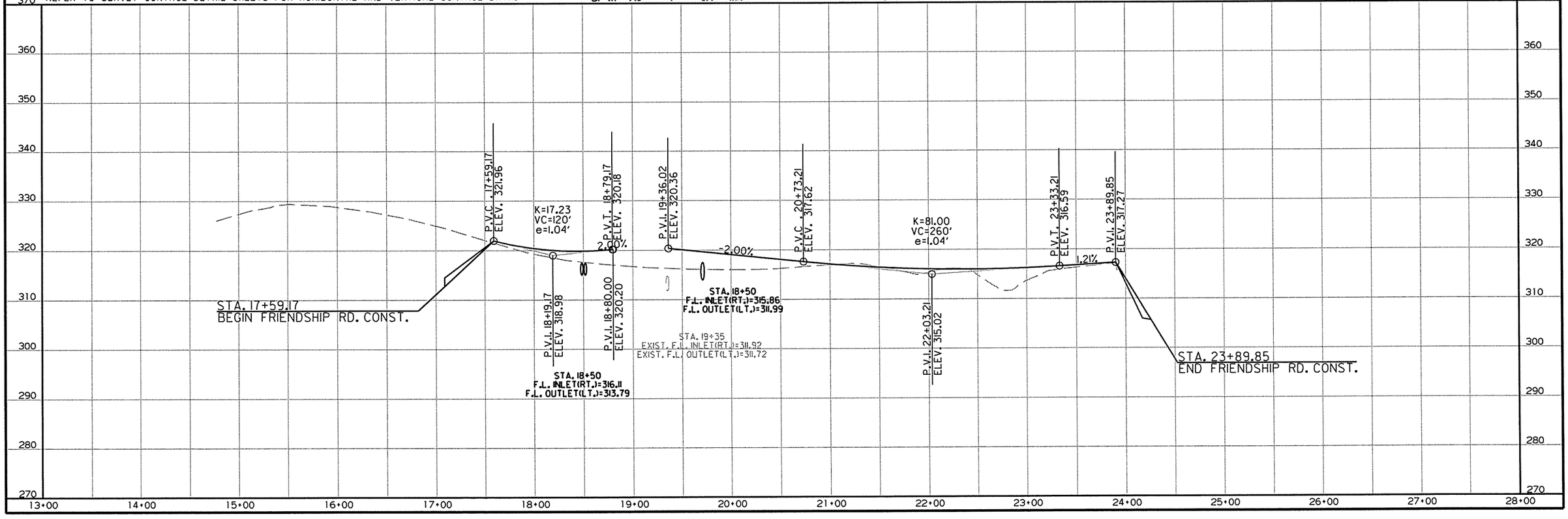
OBLITERATE EXIST. PAVEMENT

STA. 17+59.17
BEGIN FRIENDSHIP RD. CONST.

STA. 23+89.85
END FRIENDSHIP RD. CONST.

FRIENDSHIP RD.

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



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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.		080397	102	244

(2) SIGNING SUMMARY OF QUANTITIES

SIGNING SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	TOTAL	UNIT
202	REMOVAL AND DISPOSAL OF SIGNS	5	EACH
303	AGGREGATE BASE COURSE (CLASS 7)	140	TON
SP, SS &407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	32	TON
SP, SS &407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	2	TON
617	GUARDRAIL (TYPE A)	350	LIN FT
617	TERMINAL ANCHOR POSTS (TYPE 1)	2	EACH
617	GUARDRAIL TERMINAL (TYPE 2)	2	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-040-23-23)	1	EACH
725	GUIDE SIGN - ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	635	SQ. FT.
725	GUIDE SIGN - OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)	789	SQ. FT.
726	STANDARD SIGN	1029	SQ. FT.
727	EXIT NUMBER PANEL (TYPE A)	24	SQ. FT.
727	EXIT NUMBER PANEL (TYPE B)	79	SQ. FT.
727	EXIT NUMBER PANEL (TYPE C)	35	SQ. FT.
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)	23	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	3	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)	11	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-2)	6	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-4)	1	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-5)	6	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-6)	6	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	3262	POUND

NOTES:

ALL EXISTING GUIDE SIGNS SHALL BE MAINTAINED IN SUCH A MANNER THAT THE SIGNS ARE FULLY VISIBLE, INTACT, AND ERECT FOR THE DURATION OF THE PROJECT, AND SHALL BE REMOVED WHEN THEIR USE IS NO LONGER REQUIRED. REMOVAL AND DISPOSAL OF SIGNS, SUPPORTS, AND FOUNDATIONS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE EXISTING SIGNS AND SUPPORTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING FOOTINGS SHALL BE REMOVED AND THE HOLES FILLED WITH A SUITABLE MATERIAL AND COMPACTED.

EXISTING LOGOS WILL BE RELOCATED TO THE NEW LOGO SIGN BY THE CONTRACTOR. THE LOGO INSTALLATION SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

NOTE:
BREAKAWAY SIGN SUPPORT TOTAL IS CALCULATED BY TAKING THE LENGTH OF H1, H2, H3 AND THE STUB POST AND MULTIPLYING BY THE BEAM WEIGHT (LBS).

BASIS OF ESTIMATE:
NMAX = 205 FOR PG 76-22
MINERAL AGGREGATE 94.8%
ASPHALT BINDER (PG 76 – 22) 5.2%

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
10-16-14

OVERHEAD SIGNING QUANTITIES

SIGN NO./ LOCATION	OVERHEAD STRUCTURE TYPE						GUIDE SIGN			EXIT NUMBER PANEL				GUARDRAIL				
	INSTALL SIGN STRUCTURE (EA)			MAINTAIN EXISTING SIGN STRUCTURE			OVERHEAD MOUNTED			LEGEND	TYPE			TYPE A	TERM. ANCHOR POSTS TYPE 1	GUARDRAIL TERM. TYPE 2	AGG. BASE CR (CL. 7)	ACHM SURF. CR. 220 LBS/SY
							LENGTH	HEIGHT			A	B	C					
	ST	OH	BM	ST	OH	BM	LIN. FT.		SQ. FT.		SQ. FT.			LIN. FT.	EACH	EACH	TON	TON
OH-040-23-23		1												350	2	2	140	34
OH-040-23-7021+90WB-A							15.00	10.00	150.00	124A		26.25						
OH-040-23-7021+90WB-B							15.00	9.50	142.50	124B		26.25						
OH-040-23-05					1													
OH-040-23-7109+50WB-A (MAINTAIN)							17.00	12.50		125								
OH-040-23-109+50WB-B (REPLACE)							15.00	10.00	150.00	124A-B			35.00					
BM-040-23-03						1												
BM-040-23-7003+50WB							14.50	13.00	188.50	124A		26.25						
OH-040-23-02					1													
OH-040-23-7021+90EB-A (REPLACE)							15.00	10.50	157.50	124	23.57							
OH-040-23-6976+10EB-B (MAINTAIN)							14.00	12.00		125								
TOTALS:	**0**	**1**	**0**	**0**	**2**	**1**			**788.50**		**23.57**	**78.75**	**35.00**	**350**	**2**	**2**	**140**	**34**

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				6	ARK.			
				JOB NO.		080397	163	244
				(2)	SIGNING QUANTITIES			

ROADSIDE MOUNTED SIGNING QUANTITIES

GUIDE SIGN				BREAKAWAY SIGN SUPPORT											
	ROADSIDE MOUNTED			I-BEAM SIGN SUPPORTS		STEEL SECT. A-572		SIGN POST LENGTH		STUB POST LENGTH		FOOTINGS			SIGN POST AND STUB
	LENGTH	HEIGHT		TYPE				H - 1	H - 2	H - 1	H - 2	DIA.	DEPTH	EMBED.	
SIGN NO./ LOCATION	LIN. FT.		SQ. FT.	G-1	G-2	BEAM	LBS	LIN FT		LIN FT		LIN FT			POUND
GM-040-7036+90WB	11.00	5.50	60.50		1	W6	9	13.00	14.00	1.99	1.99	1.50	2.50	1.66	278.82
GM-040-LM121.9EB	15.00	9.50	142.50		1	W8	21	16.50	17.50	5.01	5.01	2.50	7.00	4.68	924.42
LF-040-7041+50WB	18.00	12.00	216.00		1	W8	21	19.00	20.00	5.01	5.01	3.00	7.00	4.68	1029.42
LG-040-7032+00WB	18.00	12.00	216.00		1	W8	21	19.00	20.00	5.01	5.01	3.00	7.00	4.68	1029.42
TOTALS:			**635.00**		**4**										**3262.08**

STANDARD SIGNS FLAT SHEET
OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (BOX 1 OF 2)

SIGN NO./ LOCATION	TYPE												STANDARD SIGN
	G-1	G-2	G2-1	G2-2	G2-3	G2-4	G2-5	G2-6	G2-7	G2-8	G2-9	G2-10	
	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	SQ. FT.
SS-25-113+00SB							1						47.86
SS-025-05NB								1					50.04
SS-064-LM3.505EB							1						52.54
SS-64-115+00WB							1						52.54
SS-025-01NB							1						52.36
SS-25-100+90SB							1						28.16
SS-040R-7010+00WB						1							19.98
SS-025-07SB							1						36.36
SS-25-107+00NB	1												6.00
SS-25-142+00NB			1										18.00
SS-040R-7003+50WB	1												8.18
SS-64-108+90WB			1										16.36
SS-025-06SB			1										16.36
SS-25-102+50NB			1										16.36
SS-025-03SB			1										16.54
SS-25-105+90SB								1					32.72
SS-064-120+20WB								1					24.72
SS-64-109+10EB								1					24.54
SS-64-109+90WB								1					24.54
SS-025-02NB								1					32.72
SS-25-155+00NB	1												13.00
SS-OLD25-LM1.545NB	1												13.00
SS-040R-7002+60WB				1									19.75
SS-25-152+00NB	1												11.00
SS-OLD25-20+00SB	1												13.00
SS-040-7021+90WB				1									20.00
SS-25-LM2.228SB	1												13.00
SS-040R-7013+00WB-A				1									20.00
SUBTOTALS:	**7**	**0**	**5**	**3**	**0**	**1**	**6**	**6**	**0**	**0**	**0**	**0**	**699.63**

STANDARD SIGNS FLAT SHEET
OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (BOX 2 OF 2)

SIGN NO./ LOCATION	TYPE												STANDARD SIGN
	G-1	G-2	G2-1	G2-2	G2-3	G2-4	G2-5	G2-6	G2-7	G2-8	G2-9	G2-10	
	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	SQ. FT.
SS-040R-7013+00WB-B				1									20.00
SS-OLD25-24+00NB	1												9.00
SS-CR-13+00EB	1												9.00
SS-CR-1+00EB	1												9.00
SS-CR-12+00WB	1												9.00
SS-040R-7007+00WB-A				1									24.75
SS-040R-7007+00WB-B				1									24.75
SS-25-157+00SB	1												4.60
SS-25-100+00NB	1												4.60
SS-25-157+00NB	1												4.60
SS-25-100+00SB	1												4.60
SS-25-145+00NB	1												7.50
SS-25-110+90SB	1												7.50
SS-25-146+90NB			1										9.00
SS-25-149+00NB			1										9.00
SS-25-111+00SB			1										9.00
SS-25-108+00SB			1										9.00
SS-25-145+00SB			1										12.00
SS-25-112+00NB			1										12.00
SS-040R-7002+20WB-A		1											22.50
SS-040R-7002+20WB-B		1											22.50
SS-25-150+10SB	1												9.00
SS-25-149+90SB	1												9.00
SS-25-118+10SB	1												9.00
SS-25-119+90SB	1												9.00
SS-040R-7002+40WB-A	1												2.25
SS-040R-7002+40WB-B	1												2.25
EX-040-7018+10WB		1											45.00
SUBTOTALS:	**16**	**3**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**329.40**
TOTALS:	**32**	**6**	**12**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1029.03**

REMOVAL AND DISPOSAL

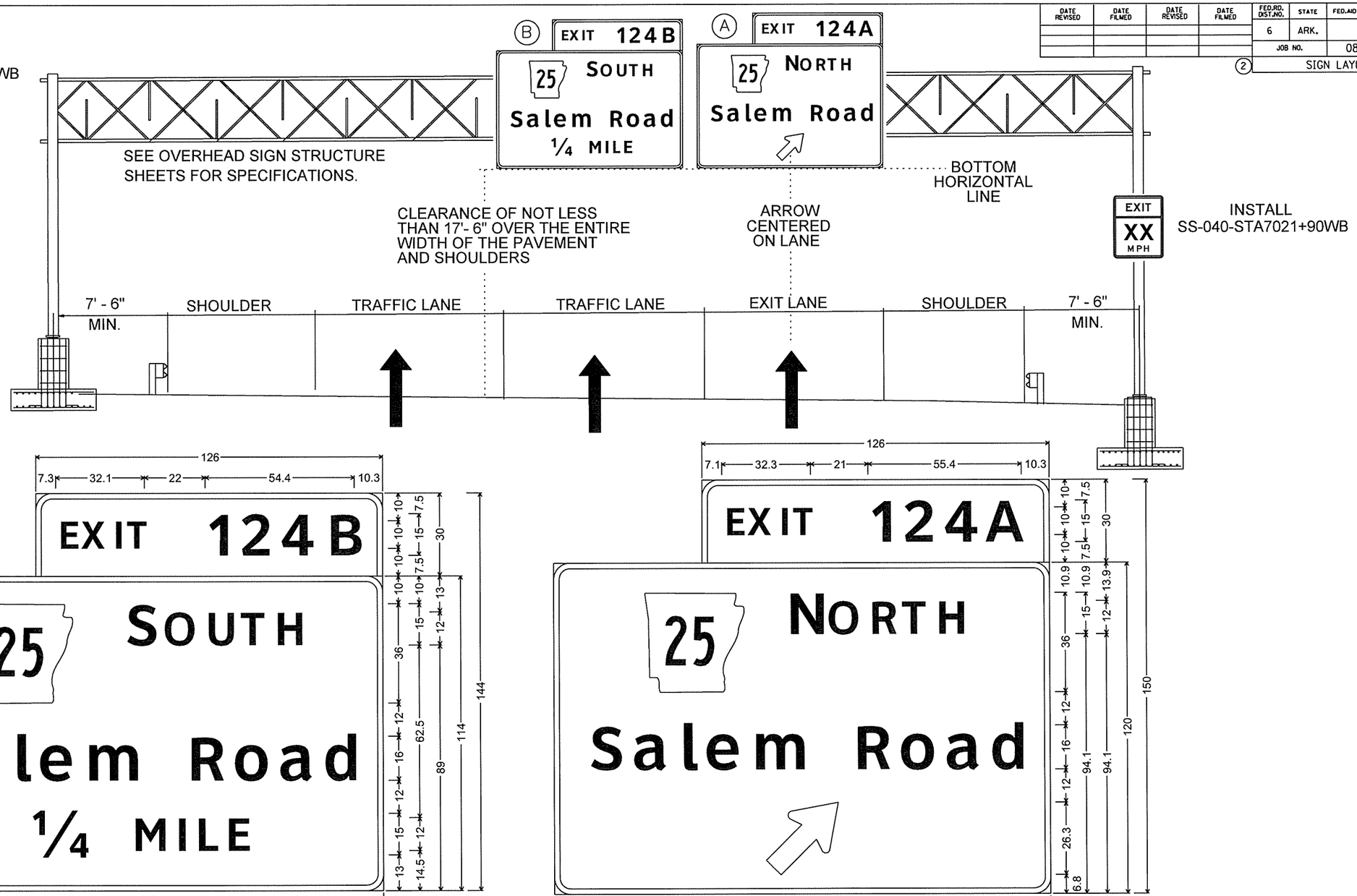
LOCATION	SIGNS AND BREAKAWAY SIGN SUPPORTS
	EACH
US64-LM4.482WB	1
US64-139+20WB	1
US64-143+60EB	1
US64-135+60EB	1
AR25-LM0.009NB	1
TOTAL:	**5**

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN
10-26-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	104	244

(2) SIGN LAYOUT SHEET

INSTALL
OH-040-23-23
OH-040-23-STA7021+90WB



OH-040-23-7021+90WB-B;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [124B] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Salem Road] ClearviewHwy-5-W 98% spacing; [¼] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

OH-040-23-7021+90WB-A;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [124A] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W;
[Salem Road] ClearviewHwy-5-W 98% spacing;
Standard Arrow Custom 33.4" X 20.3" 45°;

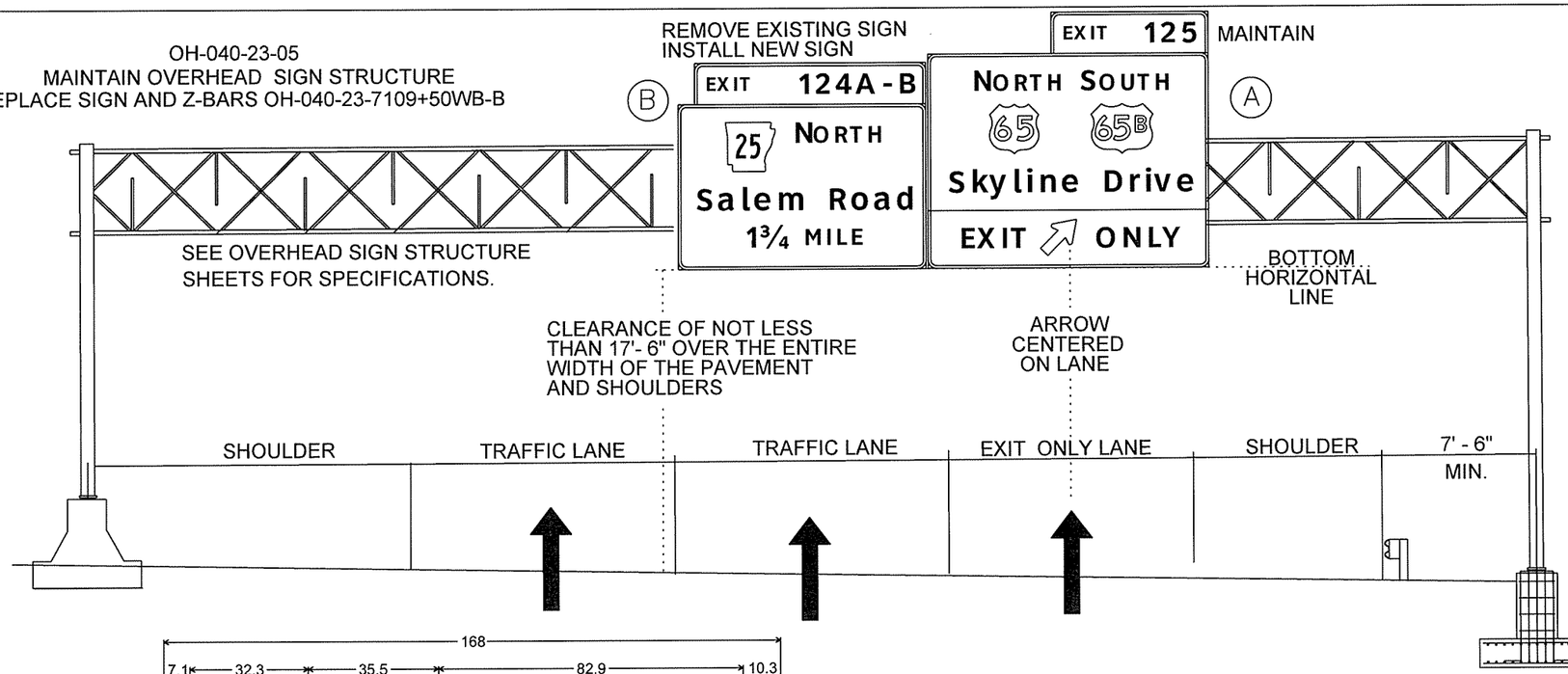
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	105	244

(2) SIGN LAYOUT SHEET

OH-040-23-05
MAINTAIN OVERHEAD SIGN STRUCTURE
REPLACE SIGN AND Z-BARS OH-040-23-7109+50WB-B

REMOVE EXISTING SIGN
INSTALL NEW SIGN



MAINTAIN

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS AS SHOWN.

ANY DAMAGE TO THE OVERHEAD SIGN STRUCTURE TO BE MAINTAINED THAT OCCURS AS PART OF THE REMOVAL OR RE-INSTALLATION OF THE OVERHEAD SIGN SHALL BE REPAIRED AND/OR REPLACED AT NO COST TO THE DEPARTMENT.

STATE OF ARKANSAS
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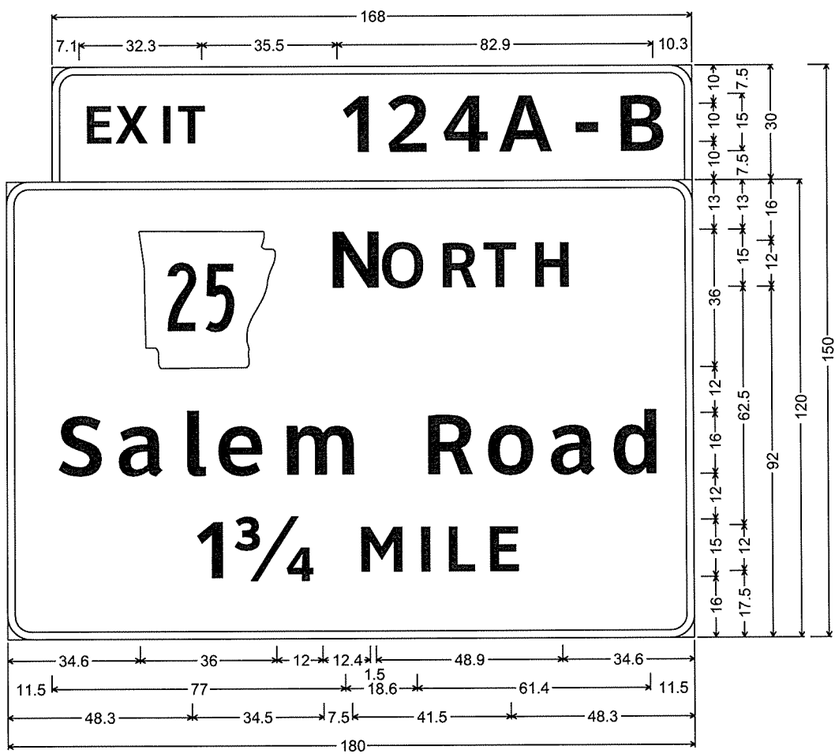
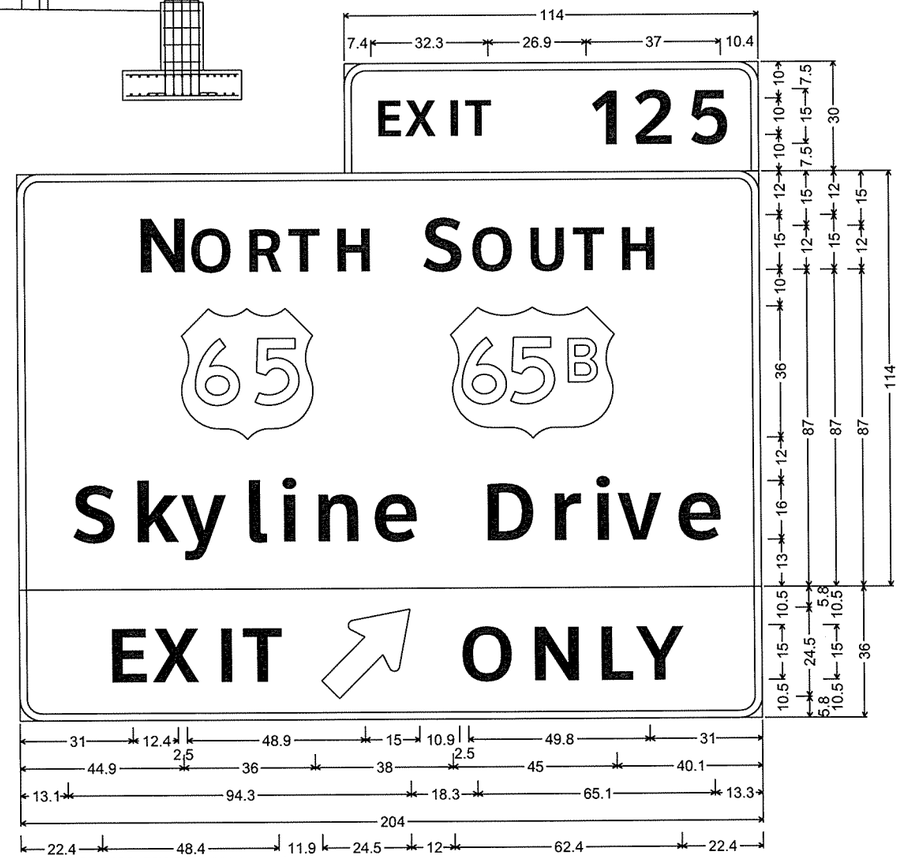
JOSEPH A. SARTINI



OH-040-23-109+50WB-B (INSTALL);
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [124A-B] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [N ORTH] ClearviewHwy-5-W; [Salem Road] ClearviewHwy-5-W 98% spacing;
[1¾] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;



OH-040-23-7109+50WB-A (MAINTAIN);

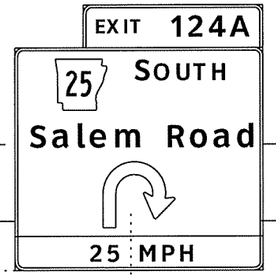
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	106	244

(2) SIGN LAYOUT SHEET

BM-040-23-03
MAINTAIN OVERHEAD SIGN STRUCTURE
REPLACE SIGN AND Z-BARS BM-040-23-7003+50WB

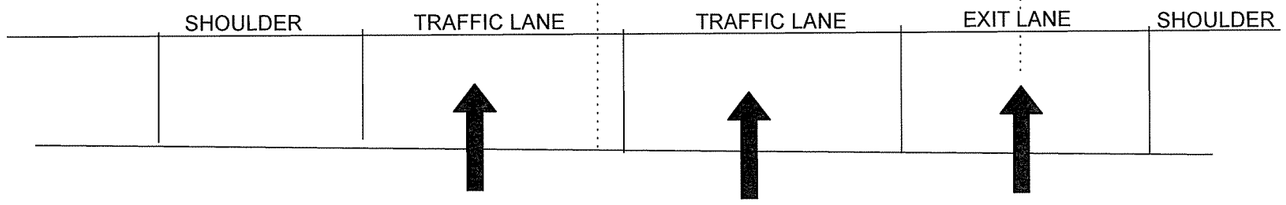
HWY 25 OVERPASS

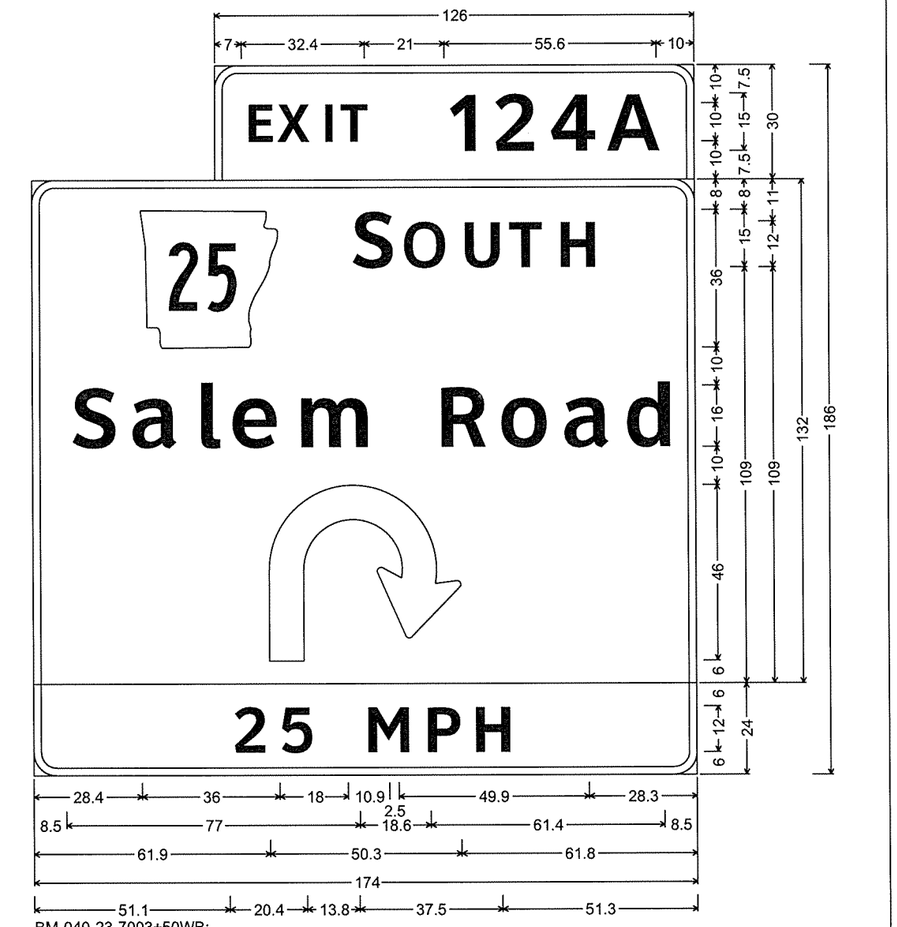
SEE OVERHEAD SIGN STRUCTURE SHEETS FOR SPECIFICATIONS.



CLEARANCE OF NOT LESS THAN 17'- 6" OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS

ARROW CENTERED ON LANE



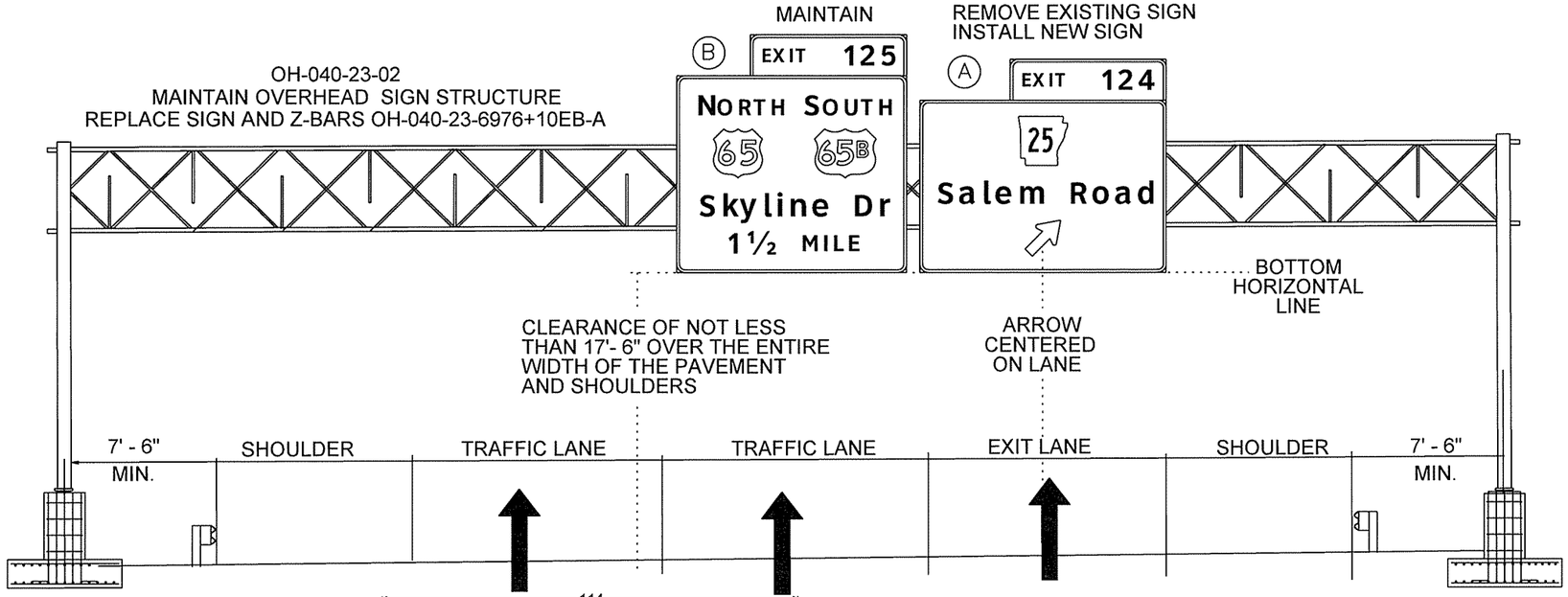


BM-040-23-7003+50WB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W 102% spacing; [124A] ClearviewHwy-5-W 102% spacing;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Salem Road] ClearviewHwy-5-W 98% spacing; Turn Arrow Custom;
6.0" Radius, 2.0" Border, Black on Yellow;
[25 MPH] ClearviewHwy-5-W;

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 7527
JOSEPH A. SARTINI
10-22-21

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	107	244
				(2) SIGN LAYOUT SHEET				

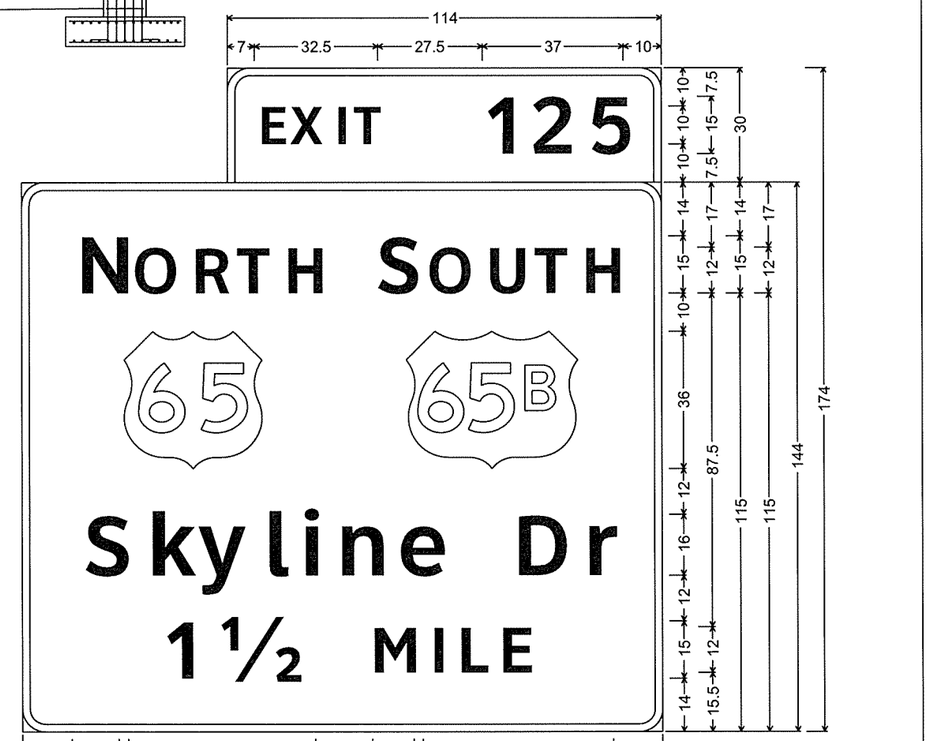
OH-040-23-02
MAINTAIN OVERHEAD SIGN STRUCTURE
REPLACE SIGN AND Z-BARS OH-040-23-6976+10EB-A



THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS AS SHOWN.

ANY DAMAGE TO THE OVERHEAD SIGN STRUCTURE TO BE MAINTAINED THAT OCCURS AS PART OF THE REMOVAL OR RE-INSTALLATION OF THE OVERHEAD SIGN SHALL BE REPAIRED AND/OR REPLACED AT NO COST TO THE DEPARTMENT.

OH-040-23-7021+90EB-A (REPLACE);
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W 102% spacing; [124] ClearviewHwy-5-W 102% spacing;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Salem Road] ClearviewHwy-5-W 101% spacing;
Standard Arrow Custom 33.4" X 20.3" 45°;

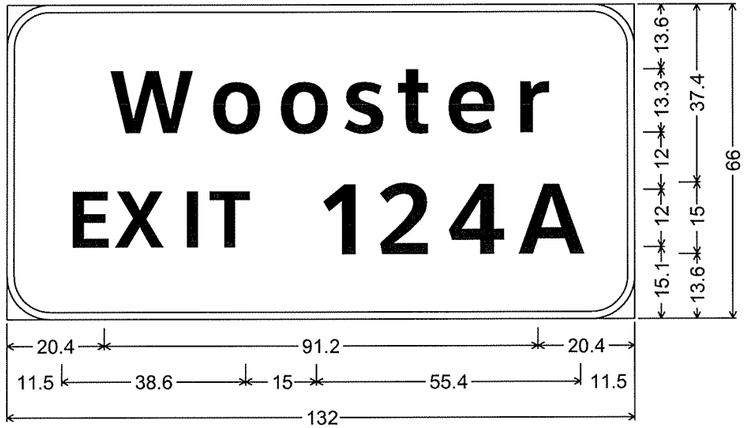


OH-040-23-6976+10EB-B (MAINTAIN);

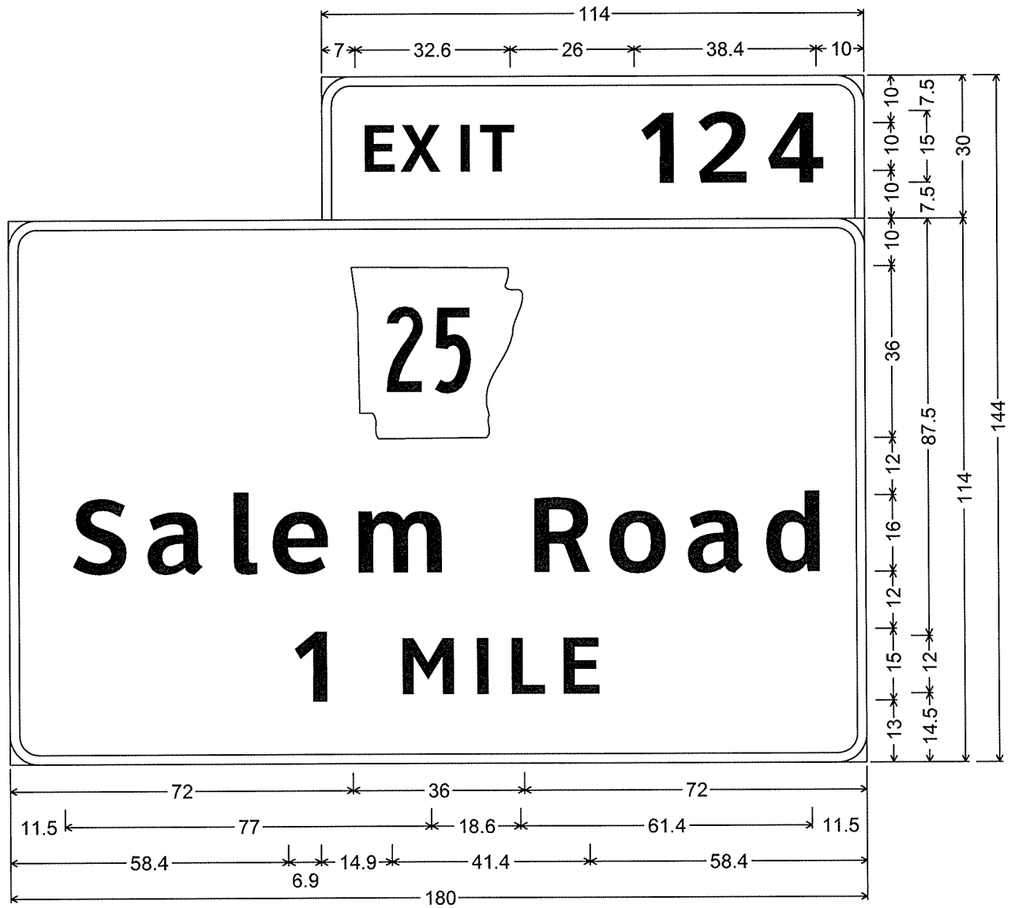
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7822
JOSEPH A. SARTINI

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	108	244

(2) SIGN LAYOUT SHEET



GM-040-7036+90WB; 9.0" Radius, 1.5" Border, White on Green;
[Wooster] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W;
[124A] ClearviewHwy-5-W;

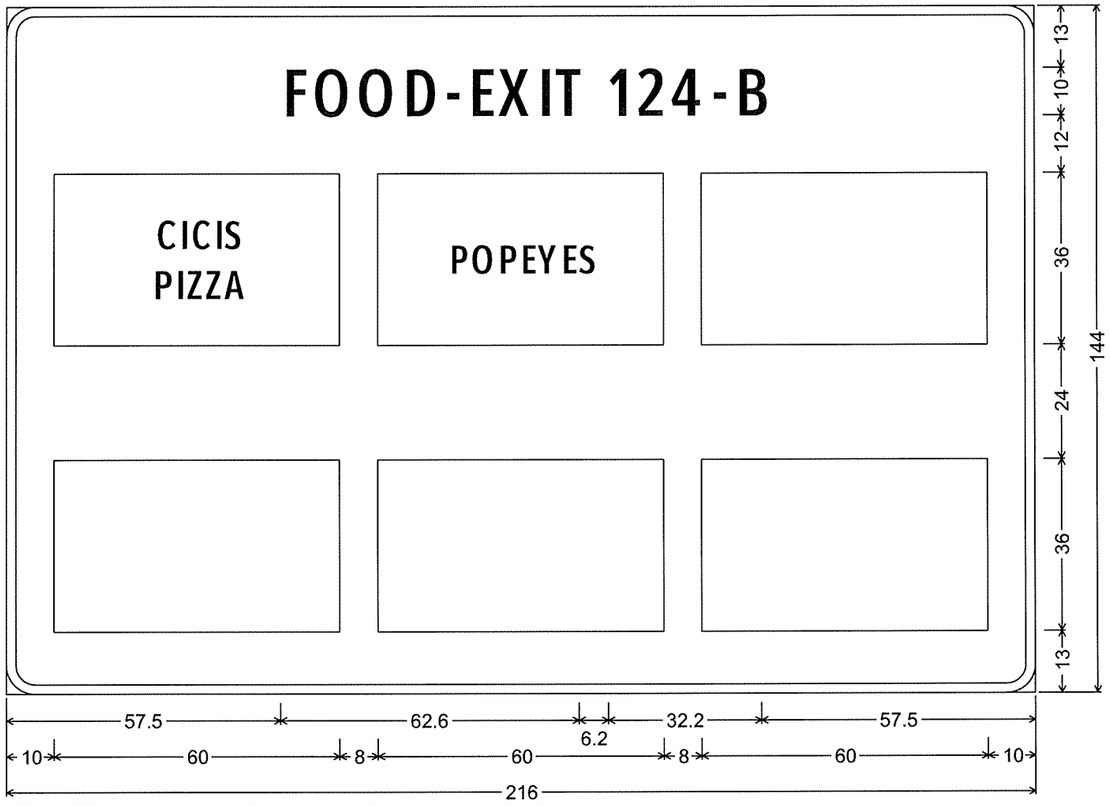


GM-040-LM121.9EB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W 105% spacing; [124] ClearviewHwy-5-W 104% spacing;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Salem Road] ClearviewHwy-5-W 98% spacing; [1] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

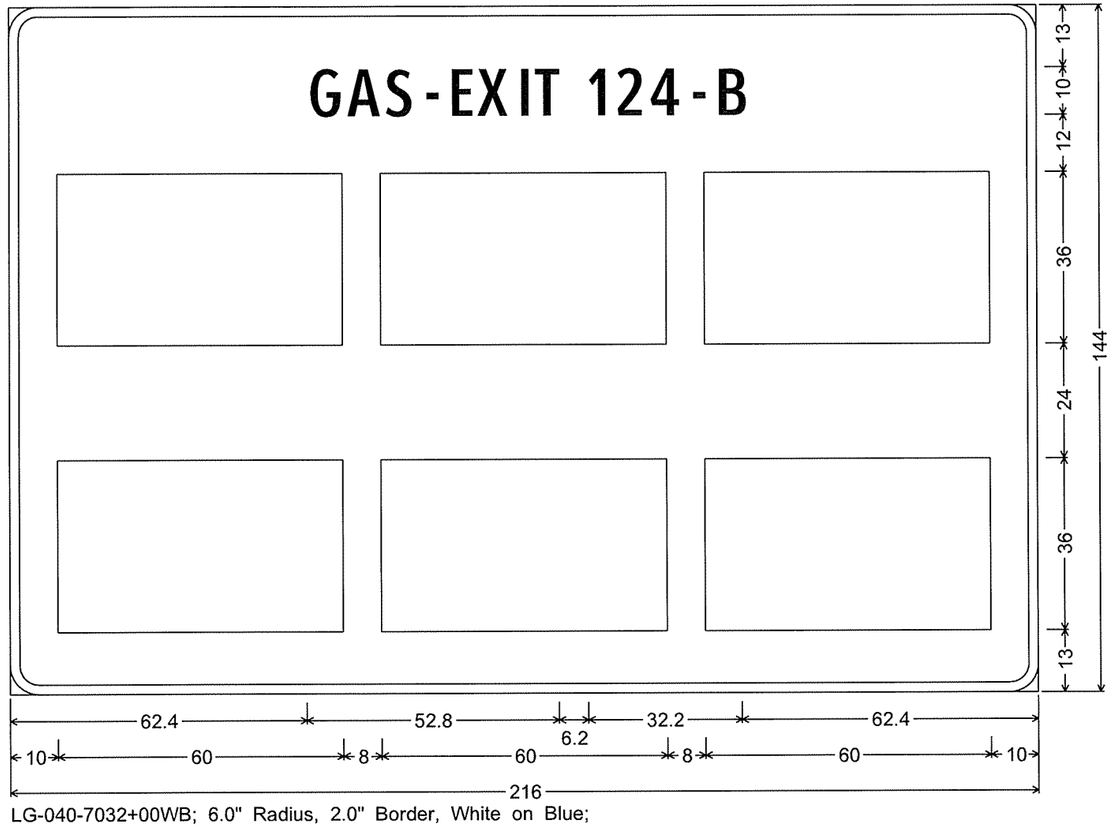
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-20-17

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	109	244

(2) SIGN LAYOUT SHEET



LF-040-7041+50WB; 6.0" Radius, 2.0" Border, White on Blue;
[FOOD-EXIT 124-B] ClearviewHwy-2-W;



LG-040-7032+00WB; 6.0" Radius, 2.0" Border, White on Blue;
[GAS-EXIT 124-B] ClearviewHwy-2-W;

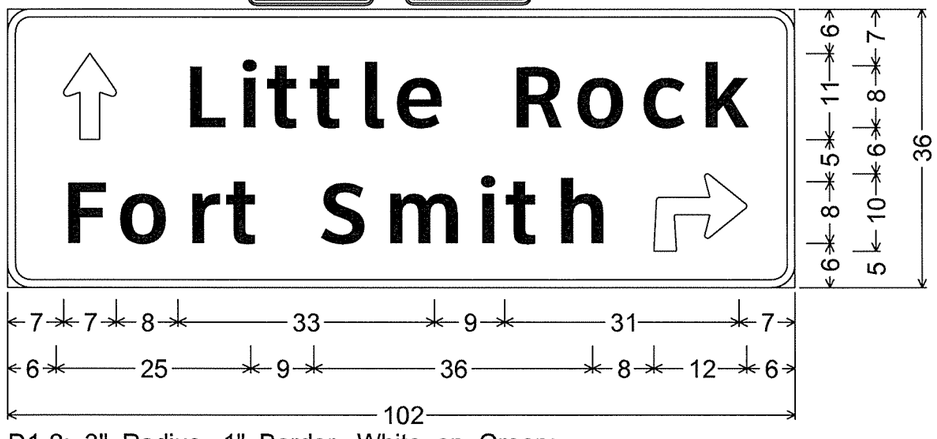
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
10-30-15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	110	244
				(2)	SIGN LAYOUT SHEET			

INSTALL
G2-5
SS-25-113+00SB

M2-1(BLUE) (21"X15")
M3-2(BLUE) (24"X12")
M1-1(40) (24"X24")
M5-4LT (24"X18")

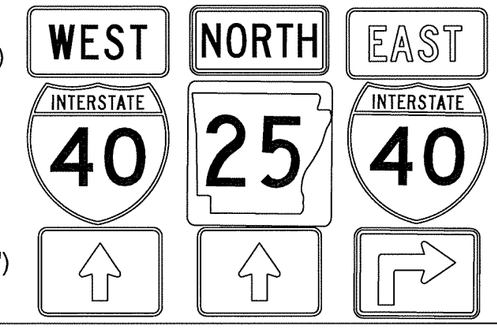
M2-1(BLUE) (21"X15")
M3-4(BLUE) (24"X12")
M1-1(40) (24"X24")
M5-6RT (24"X18")



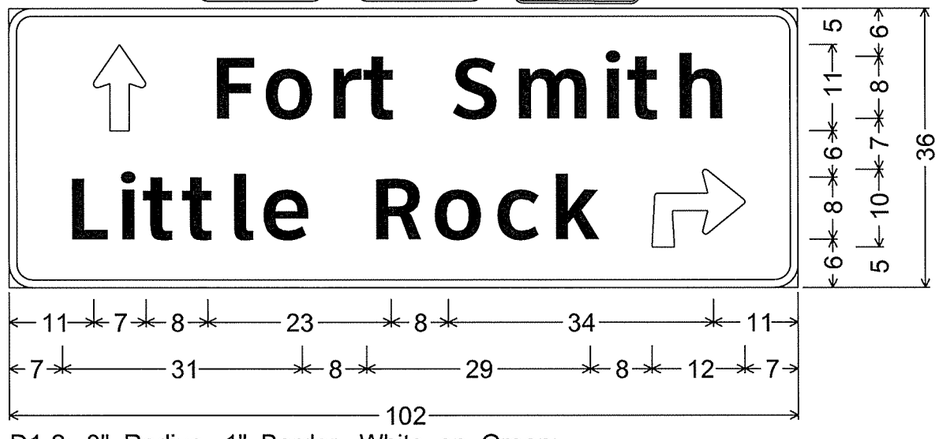
D1-2; 3" Radius, 1" Border, White on Green;
Standard Arrow Custom 11" X 7" 90°;
[Little Rock] ClearviewHwy-5-W;
[Fort Smith] ClearviewHwy-5-W;
90 Deg Advanced Turn Arrow 12" X 10";

REPLACE
G2-6
SS-025-05NB

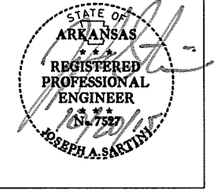
M3-4(BLUE) (24"X12")
M1-1(40) (24"X24")
M6-3 (BLUE) (21"X15")



M3-2(BLUE) (24"X12")
M3-1 (24"X12")
M1-1(40) (24"X24")
M1-6(25) (24"X24")
M5-1RT (BLUE) (21"X15")
M6-3 (21"X15")



D1-2; 3" Radius, 1" Border, White on Green;
Standard Arrow Custom 11" X 7" 90°;
[Fort Smith] ClearviewHwy-5-W-R;
[Little Rock] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	111	244

(2) SIGN LAYOUT SHEET

INSTALL
G-1
SS-040R-7003+50WB

M3-1 (24"X12")
M1-6(25) (24"X24")
M5-1RT (21"X15")

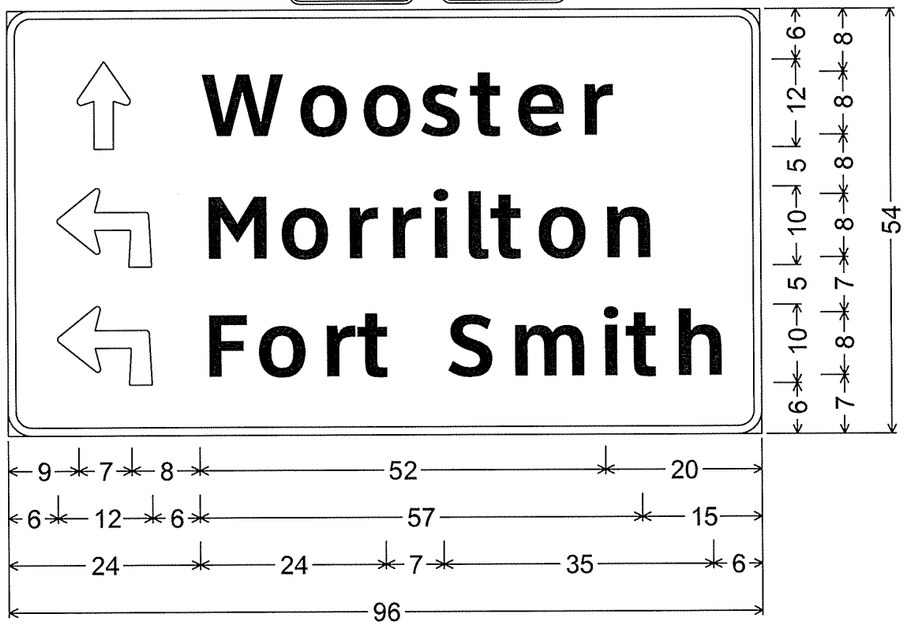
REPLACE
G2-1
SS-64-108+90WB

M3-2 (24"X12")
M3-4 (24"X12")
M1-4(64) (24"X24")
M1-4(64) (24"X24")
M6-1 (21"X15")
M6-1 (21"X15")

REPLACE
G2-5
SS-025-01NB

M3-4(BLUE) (24"X12")
M1-1(40) (24"X24")
M5-1LT (BLUE) (21"X15")

M3-1 (24"X12")
M1-6(25) (24"X24")
M5-1RT (21"X15")



D1-3; 3" Radius, 1" Border, White on Green;
Standard Arrow Custom 11" X 7" 90°;
[Wooster] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";
[Morrilton] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";
[Fort Smith] ClearviewHwy-5-W-R;

STATE OF ARKANSAS
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No. 7527
JOSEPH A. SARTINI

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	112	244
				(2)	SIGN LAYOUT SHEET			

REPLACE
G2-5
SS-064-LM3.505EB

M2-1 (21"X15")

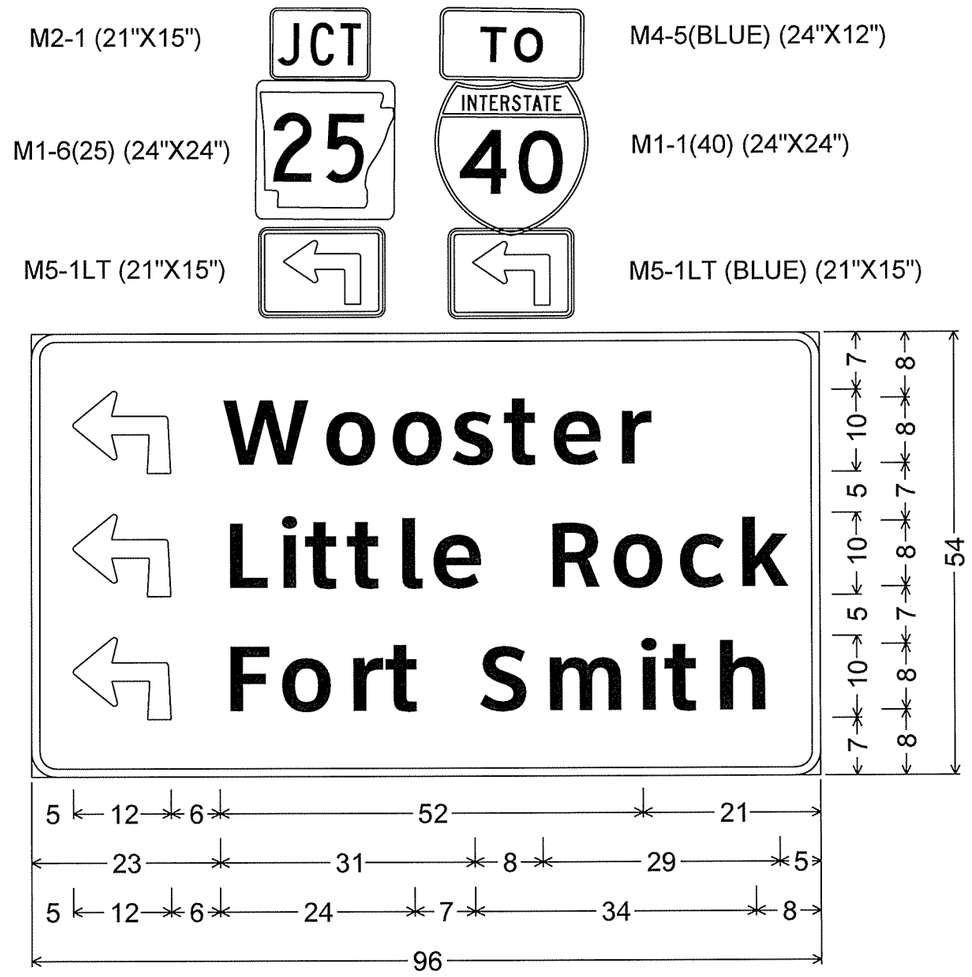
M1-6(25) (24"X24")

M5-1LT (21"X15")

M4-5(BLUE) (24"X12")

M1-1(40) (24"X24")

M5-1LT (BLUE) (21"X15")



D1-3; 3" Radius, 1" Border, White on Green;
90 Deg Advanced Turn Arrow 12" X 10";
[Wooster] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";
[Little Rock] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";
[Fort Smith] ClearviewHwy-5-W-R;

REPLACE
G2-5
SS-64-115+00WB

M2-1 (21"X15")

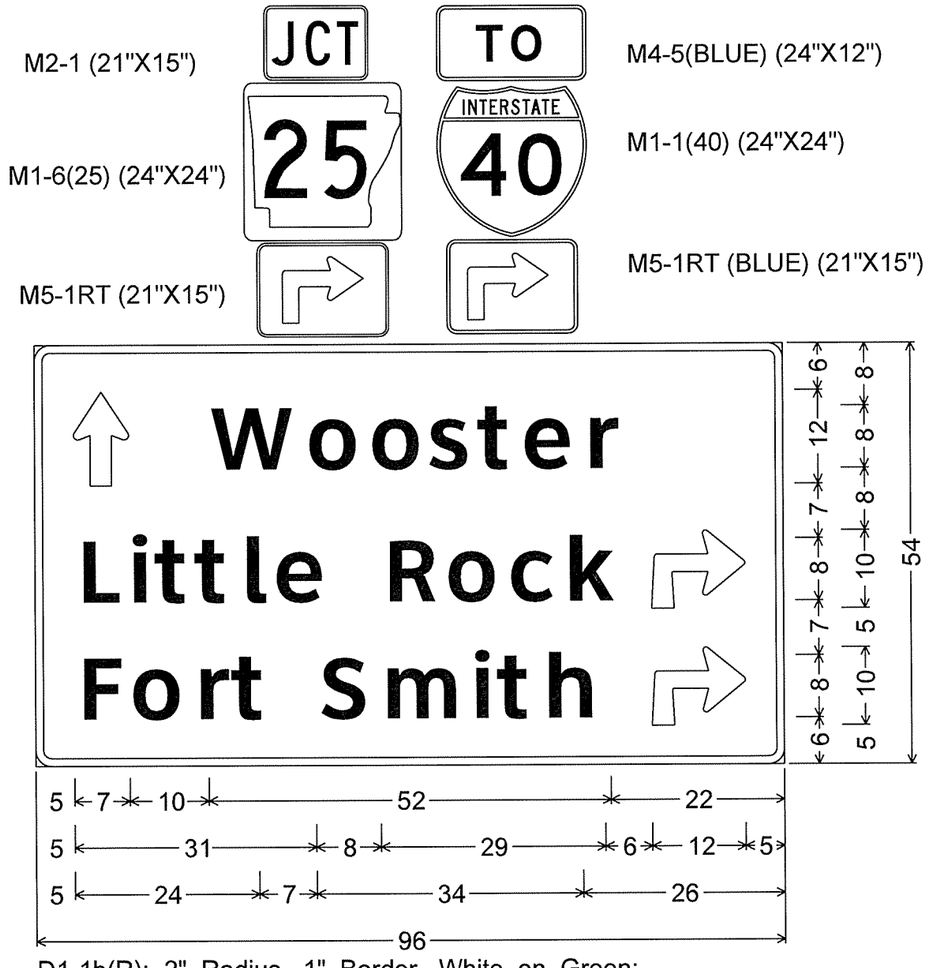
M1-6(25) (24"X24")

M5-1RT (21"X15")

M4-5(BLUE) (24"X12")

M1-1(40) (24"X24")

M5-1RT (BLUE) (21"X15")

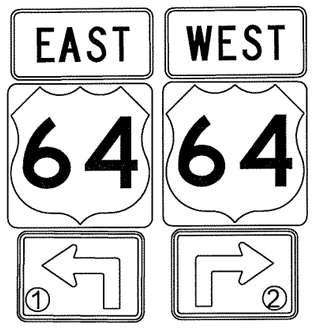


D1-1b(R); 2" Radius, 1" Border, White on Green;
Standard Arrow Custom 12" X 7" 90°;
[Wooster] ClearviewHwy-5-W-R;
[Little Rock] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";
[Fort Smith] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	113	244

② SIGN LAYOUT SHEET

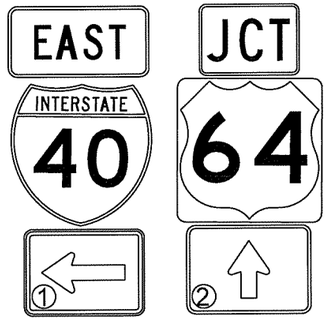
REPLACE
G2-1
SS-025-06SB



M3-2 (24"X12")
① M1-4(64) (24"X24")
M5-1LT (21"X15")

M3-4 (24"X12")
② M1-4(64) (24"X24")
M5-1RT (21"X15")

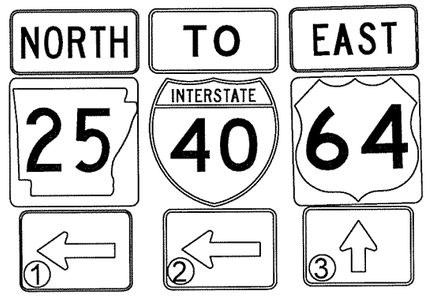
REPLACE
G2-1
SS-025-03SB



M3-2(BLUE) (24"X12")
① M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

M2-1 (21"X15")
② M1-4(64) (24"X24")
M6-3 (21"X15")

REPLACE
G2-6
SS-64-109+10EB



M3-1 (24"X12")
① M1-6(25) (24"X24")
M6-1 (21"X15")

M4-5(BLUE) (24"X12")
② M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

M3-2 (24"X12")
③ M1-4(64) (24"X24")
M6-3 (21"X15")

REPLACE
G2-1
SS-25-102+50NB

M3-4(BLUE) (24"X12")
① M1-1(40) (24"X24")
M5-1LT (BLUE) (21"X15")

M3-1 (24"X12")
③ M1-6(25) (24"X24")
M6-3 (21"X15")

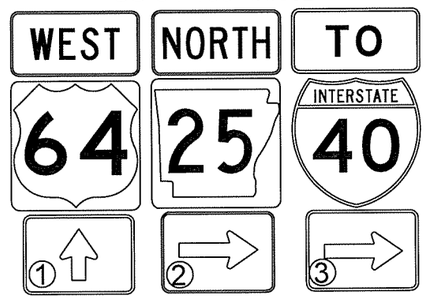
REPLACE
G2-6
SS-064-120+20WB

M3-4 (24"X12")
① M1-4(64) (24"X24")
M5-4LT (21"X15")

M4-5 (BLUE) (24"X12")
② M1-1(40) (24"X24")
M5-6RT (24"X18")

M2-1 (21"X15")
③ M1-6(25) (24"X24")
M5-6RT (24"X18")

INSTALL
G2-6
SS-64-109+90WB

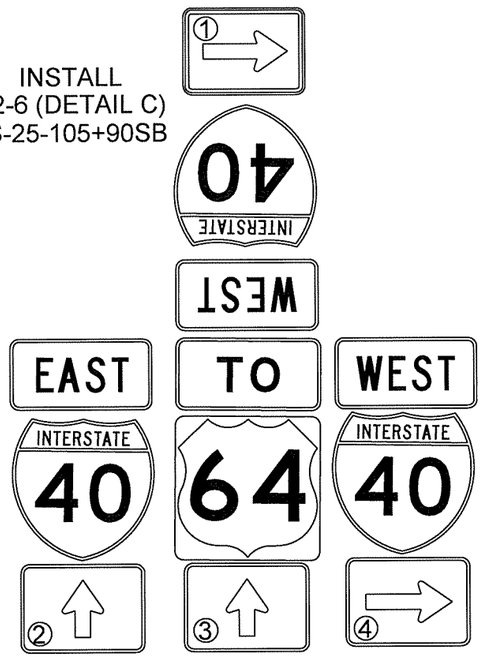


M3-4 (24"X12")
① M1-4(64) (24"X24")
M6-3 (21"X15")

M3-1 (24"X12")
② M1-6(25) (24"X24")
M6-1 (21"X15")

M4-5 (BLUE) (24"X12")
③ M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

INSTALL
G2-6 (DETAIL C)
SS-25-105+90SB



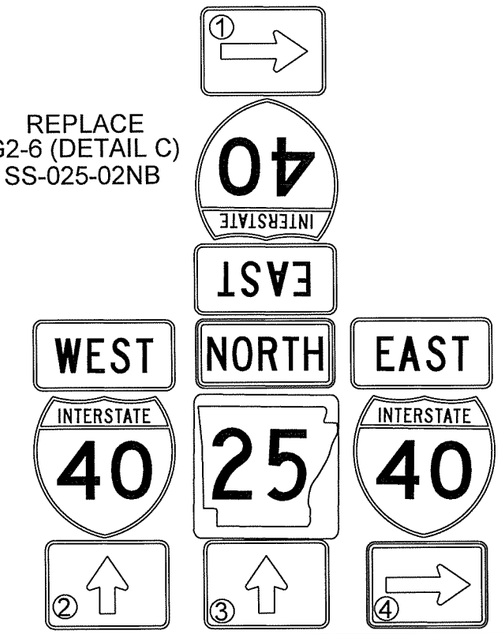
M3-4(BLUE) (24"X12")
① M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

M3-2(BLUE) (24"X12")
② M1-1(40) (24"X24")
M6-3 (BLUE) (21"X15")

M4-5 (24"X12")
③ M1-4(64) (24"X24")
M6-3 (21"X15")

M3-4(BLUE) (24"X12")
④ M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

REPLACE
G2-6 (DETAIL C)
SS-025-02NB



M3-2(BLUE) (24"X12")
① M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

M3-4(BLUE) (24"X12")
② M1-1(40) (24"X24")
M6-3 (BLUE) (21"X15")

M3-1 (24"X12")
③ M1-6(25) (24"X24")
M6-3 (21"X15")

M3-2(BLUE) (24"X12")
④ M1-1(40) (24"X24")
M6-1 (BLUE) (21"X15")

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7521
JOSEPH A. SARTINI
12/20/12

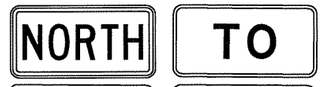
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	114	244

(2) SIGN LAYOUT SHEET

REPLACE
G2-5 (DETAIL-C)
SS-025-07SB

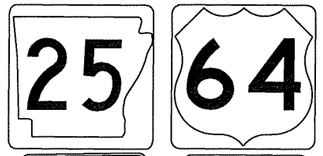
R5-1a (30"X42")

M3-1 (24"X12")



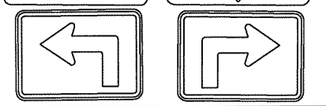
M4-5 (24"X12")

M1-6(25) (24"X24")

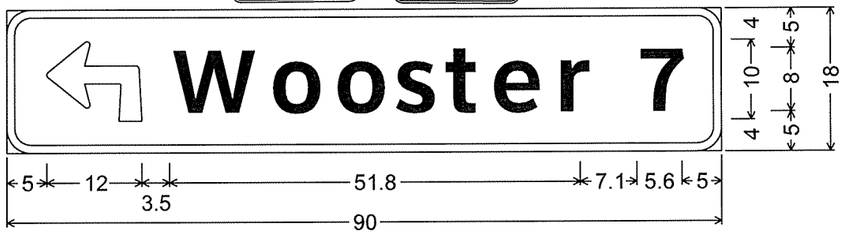


M1-4(64) (24"X24")

M5-1LT (21"X15")



M5-1RT (21"X15")



D1-1; 3.0" Radius, 1.0" Border, White on Green;
90 Deg Advanced Turn Arrow 12.0" X 10.0";
[Wooster 7] ClearviewHwy-5-W-R 101% spacing;

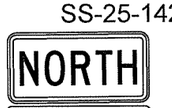
INSTALL
G-1
SS-25-107+00NB

M3-1 (24"X12")

M1-6(25) (24"X24")

INSTALL
G2-1
SS-25-142+00NB

M3-1 (24"X12")

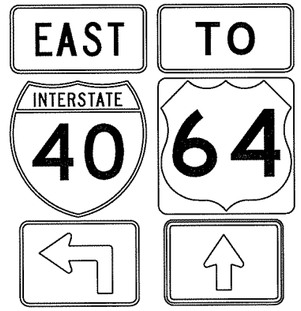


M1-6(25) (24"X24")

R3-7RT (36"X36")

M5-4LT (24"X18")

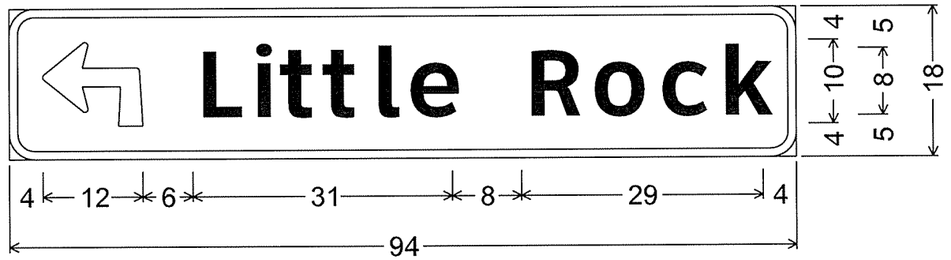
INSTALL
G2-5
SS-25-100+90SB



M3-2(BLUE) (24"X12")
M4-5 (24"X12")

M1-1(40) (24"X24")
M1-4(64) (24"X12")

M5-1LT (BLUE) (21"X15")
M6-3 (21"X15")



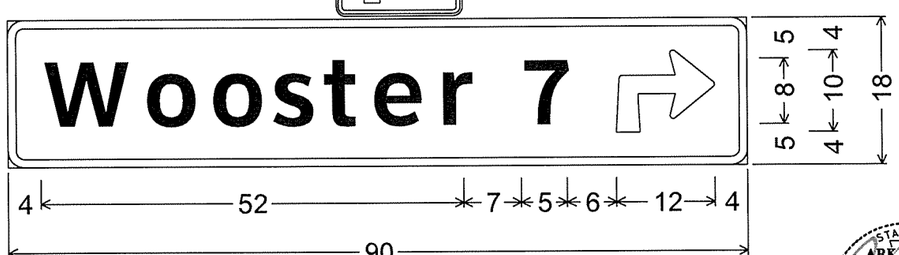
D1-1; 3" Radius, 1" Border, White on Green;
90 Deg Advanced Turn Arrow 12" X 10";
[Little Rock] ClearviewHwy-5-W-R;

INSTALL
G2-4
SS-040R-7010+00WB

M3-1 (24"X12")

M1-6(25) (24"X24")

M5-1RT (21"X15")

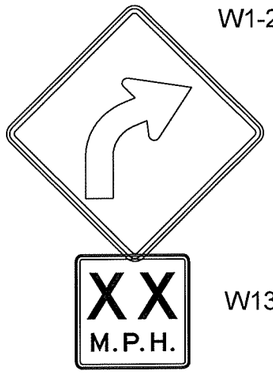


D1-1; 2" Radius, 1" Border, White on Green;
[Wooster 7] ClearviewHwy-5-W-R;
90 Deg Advanced Turn Arrow 12" X 10";

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	115	244

(2) SIGN LAYOUT SHEET

INSTALL
G-1
SS-25-155+00NB



W1-2RT (36"X36")

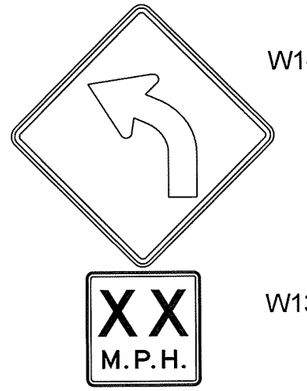
W13-1(XX) (24"X24")

INSTALL
G-1
SS-25-152+00NB

W8-25 (36"X36")

W16-2aP (24"X12")

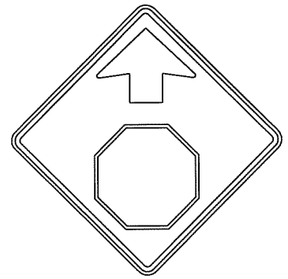
INSTALL
G-1
SS-25-LM2.228SB



W1-2LT (36"X36")

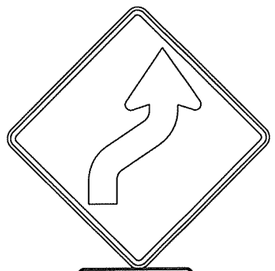
W13-1(XX) (24"X24")

INSTALL
G-1
W3-1A (36"X36")



SS-OLD25-24+00NB
SS-CR-13+00EB
SS-CR-1+00EB
SS-CR-12+00WB

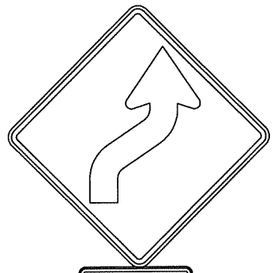
REPLACE EXISTING RIGHT CURVE
G-1
SS-OLD25-LM1.545NB



W1-4RT (36"X36")

W13-1(40) (24"X24")

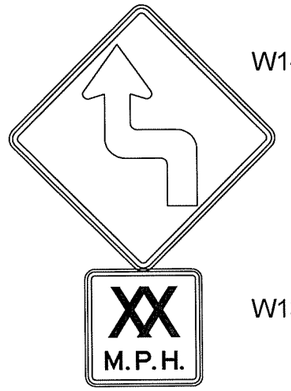
INSTALL
G-1
SS-OLD25-20+00SB



W1-4RT (36"X36")

W13-1(40) (24"X24")

INSTALL
G2-2
SS-040R-7013+00WB-A
SS-040R-7013+00WB-B



W1-3LT (48"X48")

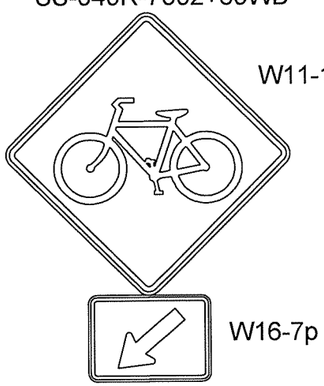
W13-1(XX) (24"X24")

INSTALL
G2-2 (DETAIL-C)
SS-040R-7007+00WB-A
SS-040R-7007+00WB-B

R5-1A (30"X42")

W11-1 (48"X48")

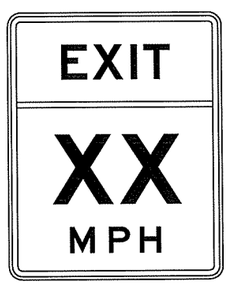
INSTALL
G2-2
SS-040R-7002+60WB



W11-1 (48"X48")

W16-7p (18"X30")

INSTALL
G2-2
SS-040-7021+90WB



W13-1 (48"X60")

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7627
JOSEPH A. SARTINI
10/15/15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	116	244

(2) SIGN LAYOUT SHEET

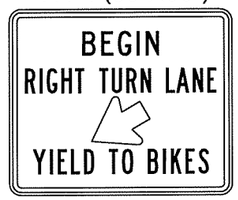
INSTALL
G-1
R3-17 (24"X18")
R3-17aP (24"X8")

SS-25-157+00SB
SS-25-100+00NB

INSTALL
G-1
R3-17 (24"X18")
R3-17bP (24"X8")

SS-25-157+00NB
SS-25-100+00SB

INSTALL
G-1
R4-4 (36"X30")



SS-25-145+00NB
SS-25-110+90SB

INSTALL
G-1
R1-1 (36"X36")

SS-25-150+10SB
SS-25-149+90SB
SS-25-118+10SB
SS-25-119+90SB

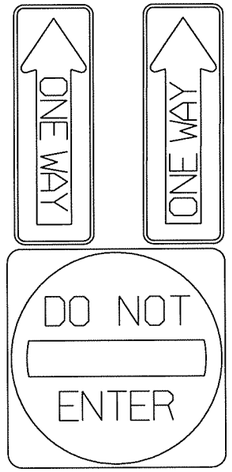
INSTALL
G2-1
R3-7RT (36"X36")

SS-25-146+90NB
SS-25-149+00NB
SS-25-111+00SB
SS-25-108+00SB

INSTALL
G2-1
R3-7RT (36"X48")

SS-25-145+00SB
SS-25-112+00NB

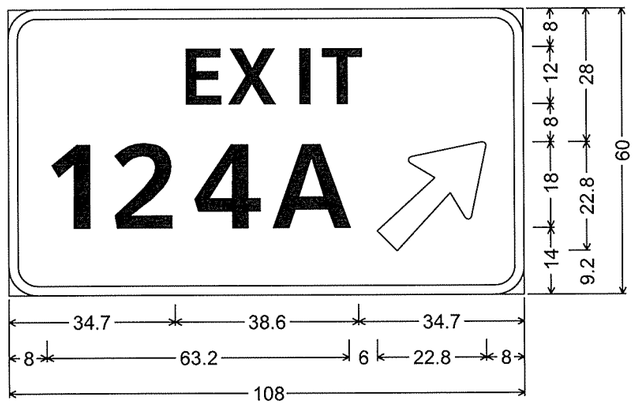
INSTALL
G-2
R5-1 (36"X36")
R6-1LT (54"X18")
R6-1RT (54"X18")



SS-040R-7002+20WB-A
SS-040R-7002+20WB-B

INSTALL
G-1
R1-1 (18"X18")

SS-040R-7002+40WB-A
SS-040R-7002+40WB-B



EX-040-7018+10WB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W;
[124A] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTAIN

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.		080397	117	244

(2) SIGN PLACEMENT SHEET

MAINTAIN

Menifee 6
Russellville 42
Fort Smith 126

6970 6975 6980

Salem Road
1 MILE
EXIT 124

REPLACE
GM-040-LM121.9EB

GAS-EXIT 124

MAINTAIN

Wooster
EXIT 124

MAINTAIN

OH-040-23-05
MAINTAIN OVERHEAD SIGN STRUCTURE
REPLACE SIGN AND Z-BARS OH-040-23-6976+10EB-A

MAINTAIN
(B) EXIT 125
NORTH SOUTH
65 65B
Skyline Dr
1½ MILE

REMOVE EXISTING SIGN
INSTALL NEW SIGN
(A) EXIT 124
25
Salem Road

7'-6" MIN. | SHOULDER | TRAFFIC LANE | TRAFFIC LANE | EXIT LANE | SHOULDER | 7'-6" MIN.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
11/18/15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	118	244

2 SIGN PLACEMENT SHEET

BM-040-23-03
REPLACE SIGNS
MAINTAIN EXISTING
BRIDGE MOUNTS

EXIT 124A
25 SOUTH
Salem Road
25 MPH

SHOULDER | TRAFFIC LANE | TRAFFIC LANE | EXIT LANE | SHOULDER

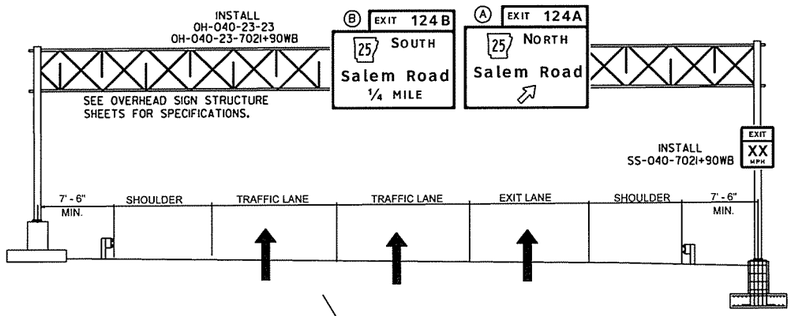
INSTALL SS-25-108+00SB
INSTALL SS-25-105+90SB
INSTALL SS-25-107+00NB
INSTALL SS-040R-7002+20WB-A
SS-040R-7002+20WB-B
INSTALL SS-040R-7002+60WB
INSTALL SS-040R-7003+50WB
INSTALL SS-040R-7007+00WB-A
SS-040R-7007+00WB-B
INSTALL SS-040R-7010+00WB
INSTALL SS-040R-7002+40WB-A
SS-040R-7002+40WB-B
REPLACE SS-25-102+50NB
REMOVE SS-25-101+50NB
INSTALL SS-040R-7013+00WB-A
SS-040R-7013+00WB-B
REPLACE SS-25-100+90SB
INSTALL SS-25-100+00SB
INSTALL SS-25-100+00NB
REMOVE GM-040-7012+00WB
REPLACE SS-025-01NB
REPLACE SS-025-03SB
REPLACE SS-025-02NB
REPLACE SS-025-07SB
REPLACE SS-025-06SB
REPLACE SS-025-05NB

MAINTAIN
MAINTAIN (8) W8-1 AT 50FT. SPACING
Wooster EXIT 124
Wooster
Morrilton
Fort Smith
Fort Smith
Little Rock

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI

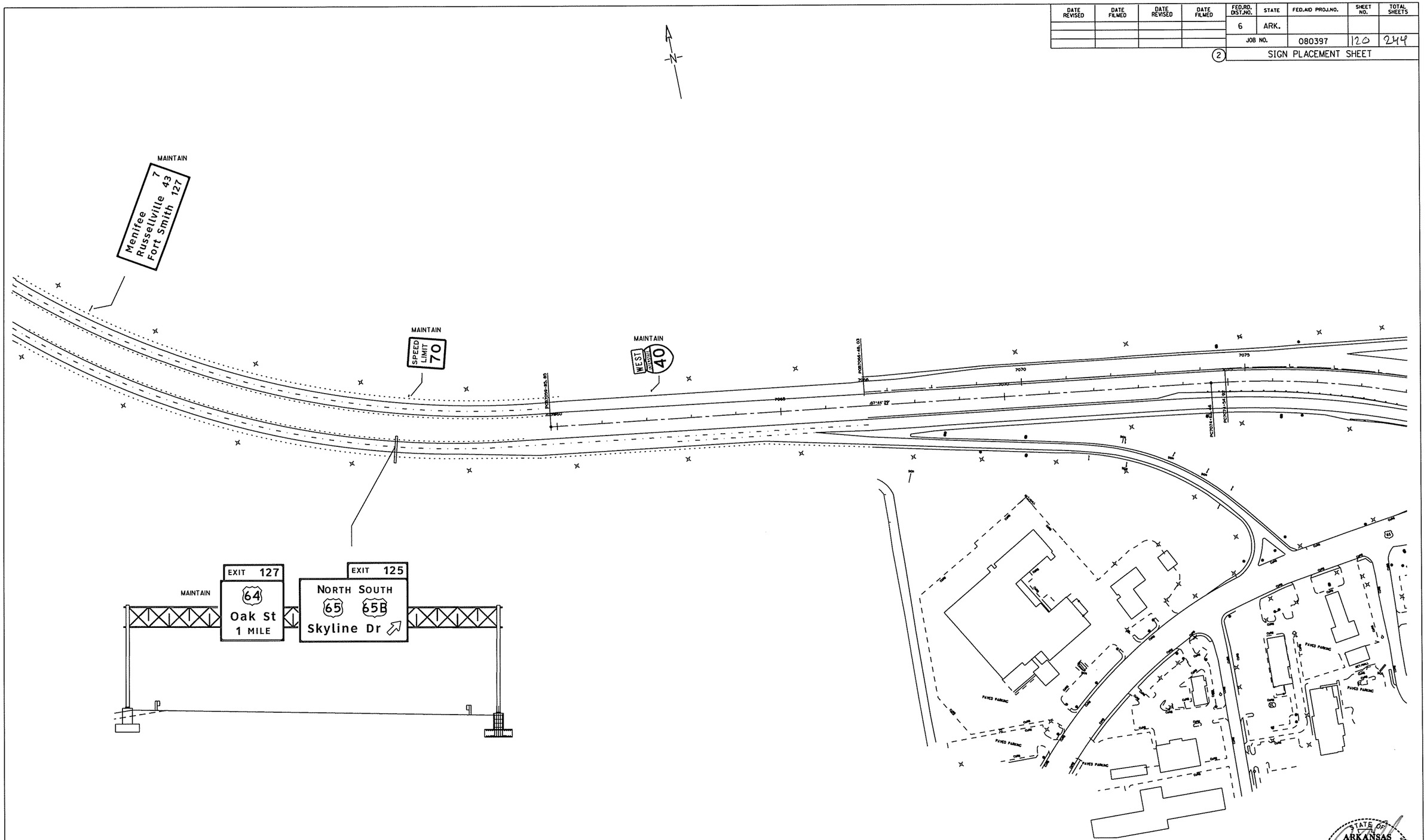
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	119	244

(2) SIGN PLACEMENT SHEET



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 7527
JOSEPH A. SARTISKY
5/16/18

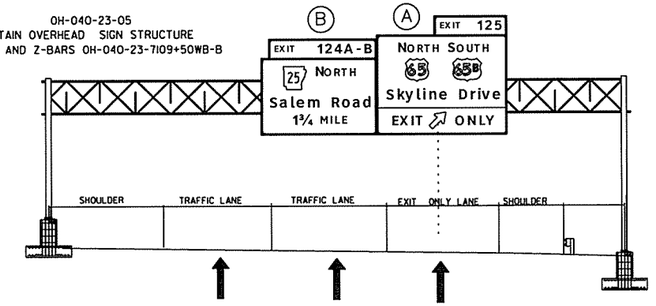
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	120	244
				(2)	SIGN PLACEMENT SHEET			



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	121	244

(2) SIGN PLACEMENT SHEET

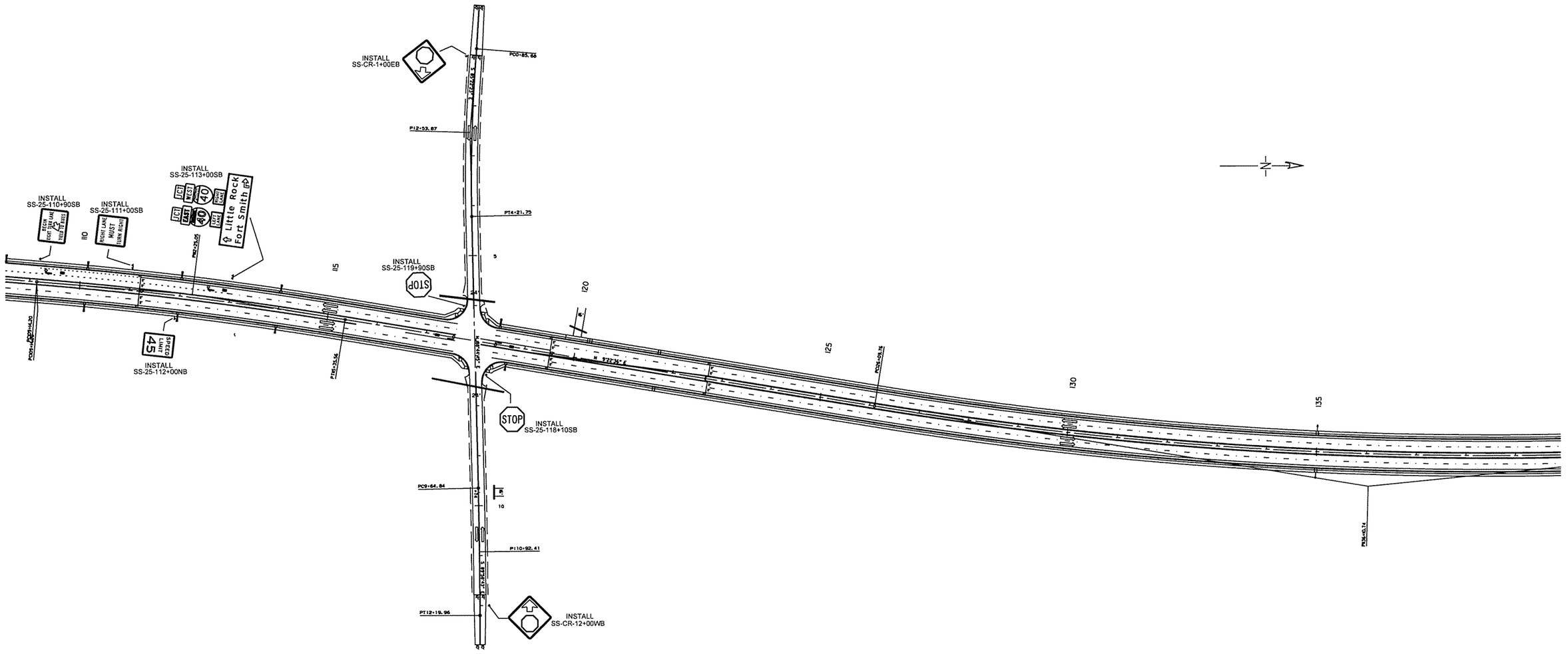
OH-040-23-05
MAINTAIN OVERHEAD SIGN STRUCTURE
REPLACE SIGN AND Z-BARS OH-040-23-7109+50WB-B



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	122	244

(2) SIGN PLACEMENT SHEET



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	123	244
				(2)	SIGN PLACEMENT SHEET			

INSTALL
SS-CR-13+00EB

INSTALL
SS-25-145+00SB

INSTALL
SS-25-149+90SB

INSTALL
SS-25-157+00SB

INSTALL
SS-25-142+00NB

INSTALL
SS-25-145+00NB

INSTALL
SS-25-146+90NB

INSTALL
SS-25-149+00NB

INSTALL
SS-25-150+10SB

INSTALL
SS-25-152+00NB

INSTALL
SS-25-155+00NB

INSTALL
SS-25-157+00NB

INSTALL
SS-25-LM2.228SB

INSTALL
SS-0LD25-20+00SB

INSTALL
SS-0LD25-24+00NB

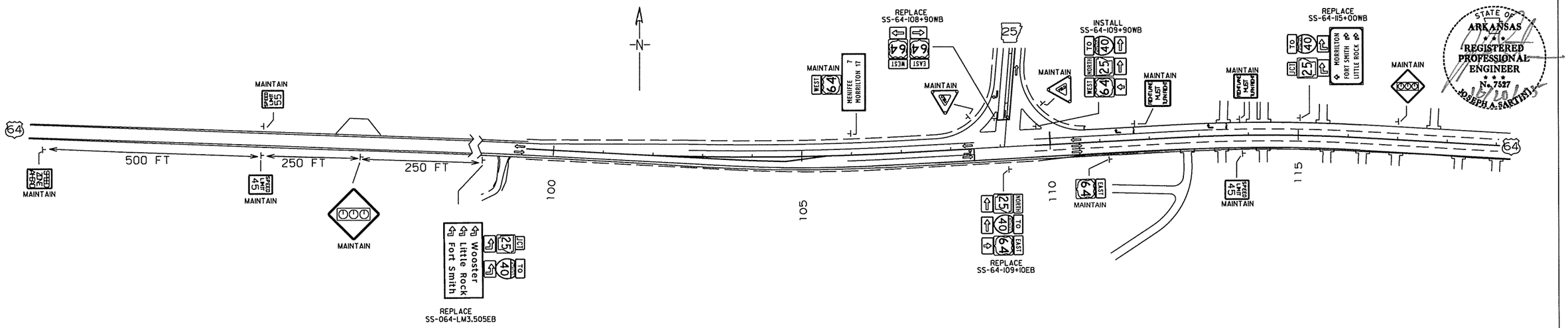
SS-OLD25-LM1.545NB
REPLACE EXISTING RIGHT CURVE

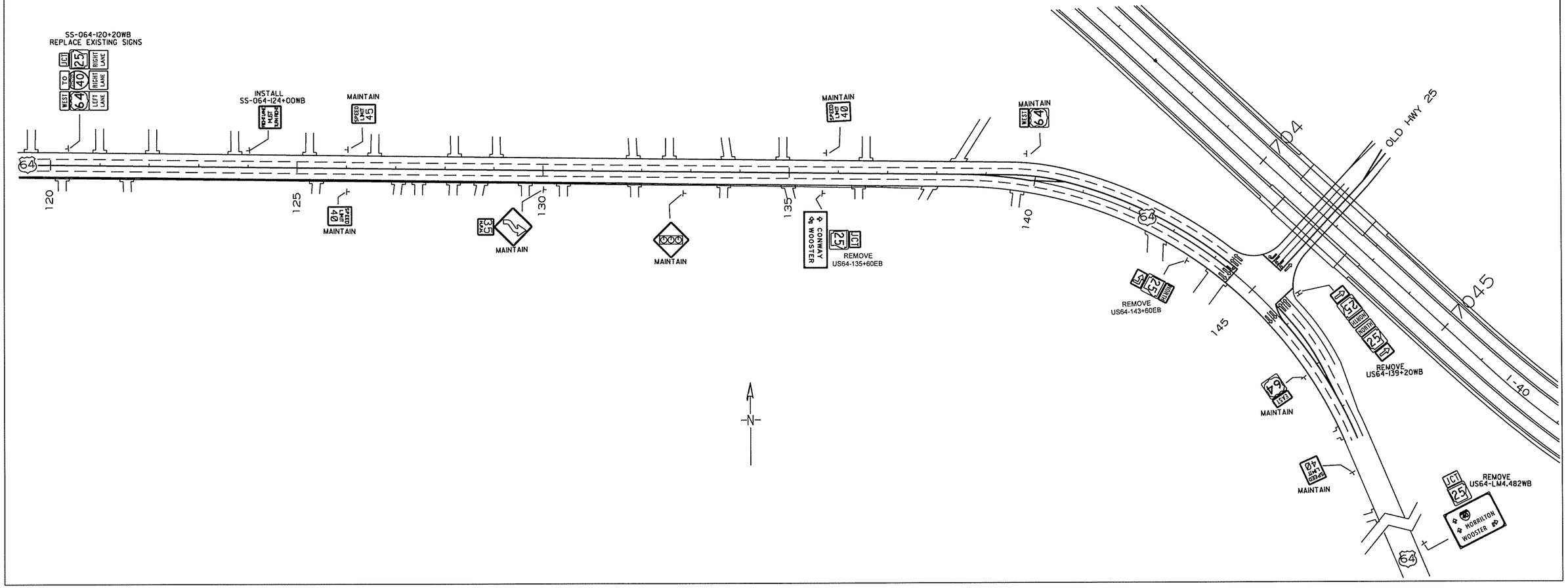
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7627
JOSEPH A. SARTINE
10/20/16

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	124	244

(2) SIGN PLACEMENT SHEET

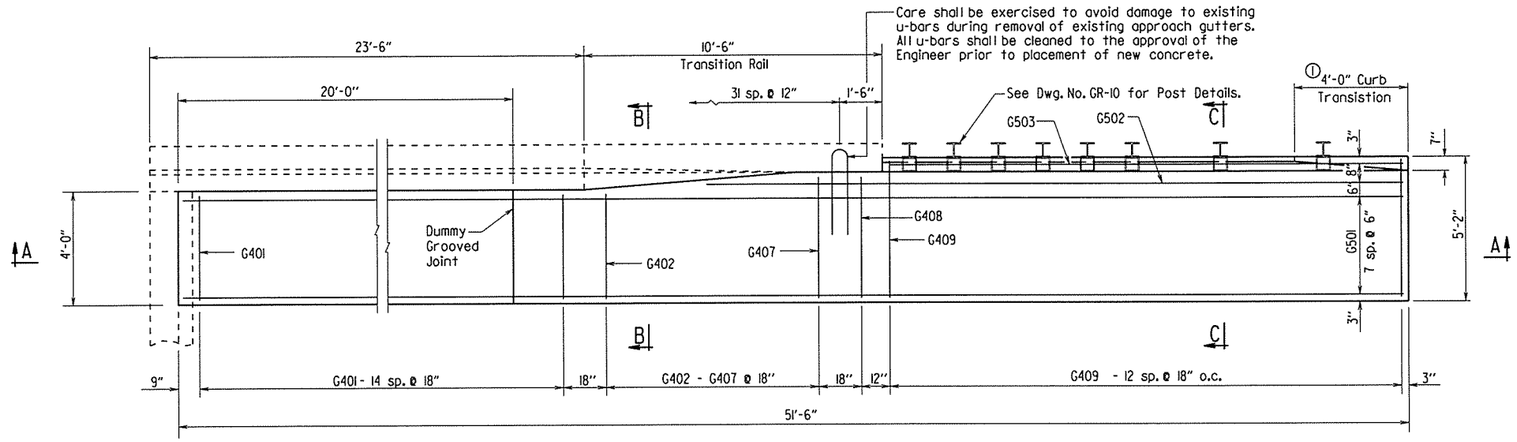
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN III
12-20-16





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.		080397	125	244

① 07055 - TYPE SPECIAL GUTTERS - 51217



HALF PLAN OF TYPE SPECIAL APPROACH GUTTERS

3/8" = 1'-0"

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

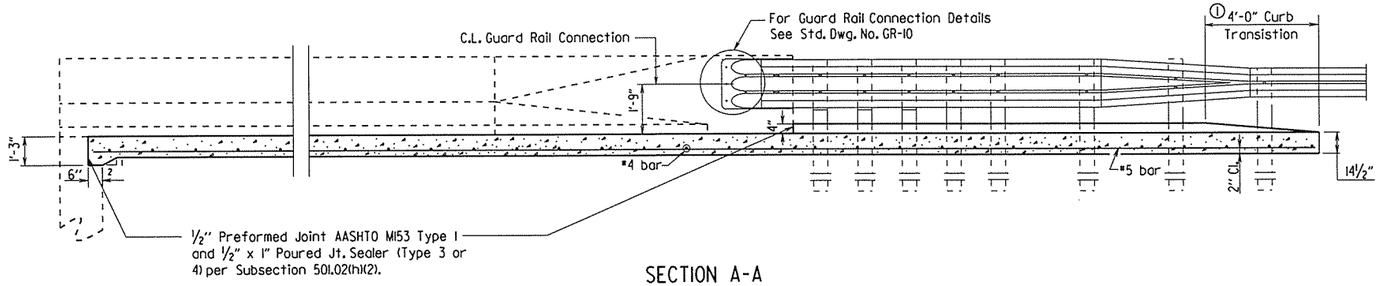
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

QUANTITIES FOR ONE TYPE SPECIAL APPROACH GUTTER

Reinforcing Steel	Concrete
Lbs.	Cu. Yds.
569	10.45

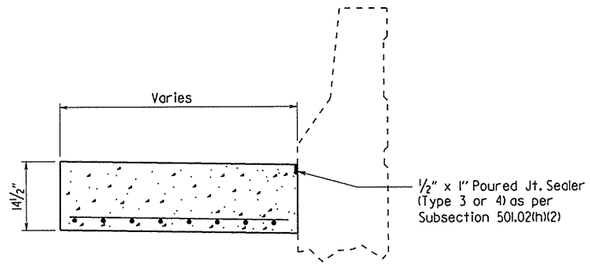
BAR LIST ONE TYPE SPECIAL GUTTER

Mark	No. Req'd.	Length
G401	15	3'-8"
G402 to G407	1 each	3'-8" to 4'-3"
G408	1	4'-3"
G409	13	4'-10"
G501	8	51'-2"
G502	1	24'-6"
G503	1	18'-2"



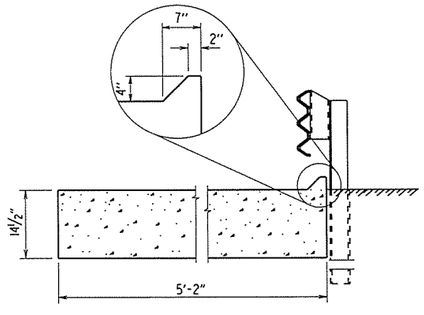
SECTION A-A

3/8" = 1'-0"



SECTION B-B

No Scale



SECTION C-C

No Scale

GENERAL NOTES

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 (fy = 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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-10-15
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH GUTTERS

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 8/25/15 FILENAME: b080397_ag.dgn

CHECKED BY: JHS DATE: 9/10/15 SCALE: as noted

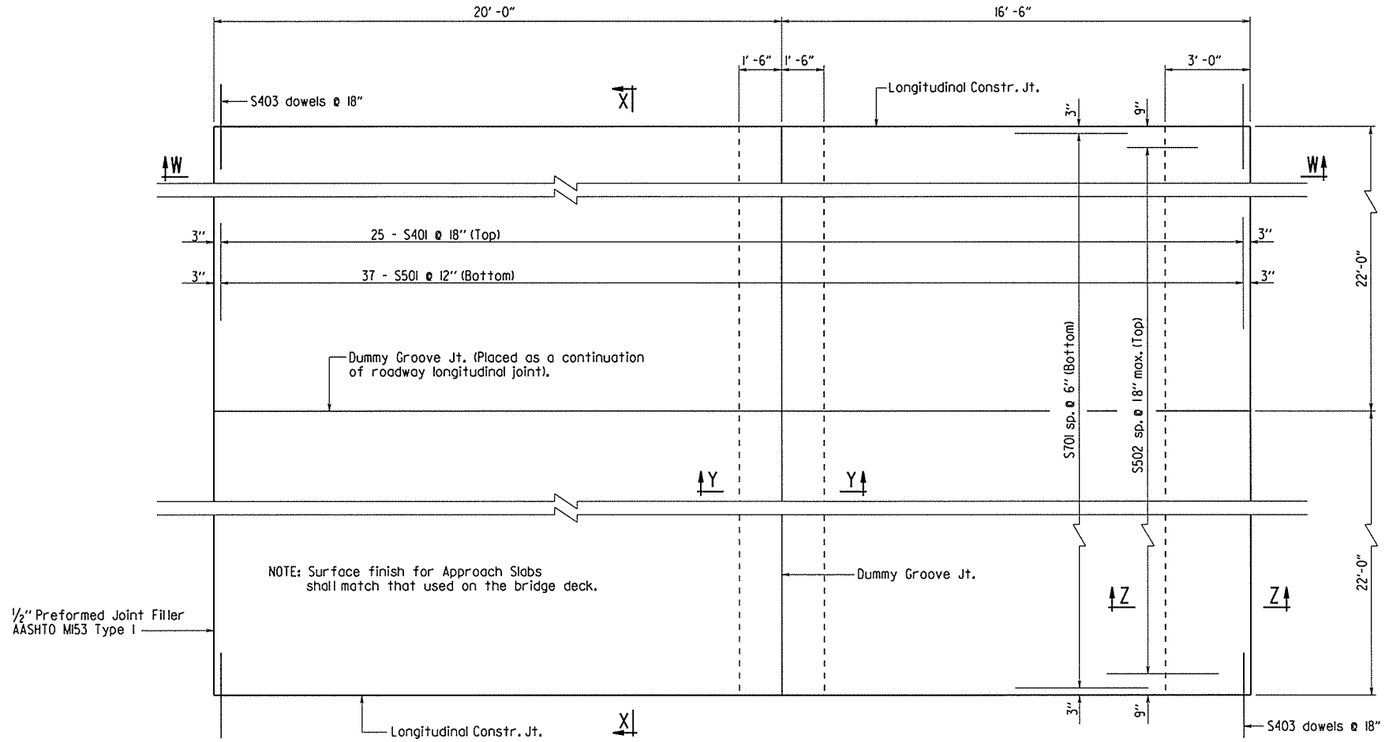
DESIGNED BY: DATE:

BRIDGE NO. 07055 DRAWING NO. 51217

PRINT DATE: 9/10/2015

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.		080397	126	244

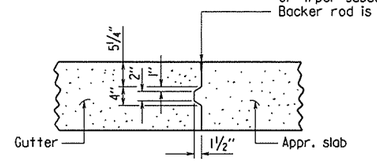
(1) 07055 - SPECIAL APPROACH SLAB - 51218



PLAN - APPROACH SLAB

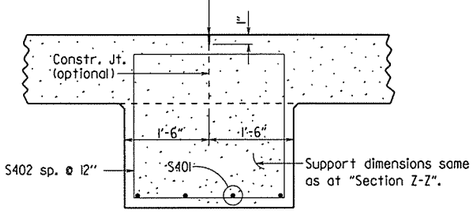
3/8" = 1'-0"

½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2).
Backer rod is not required.



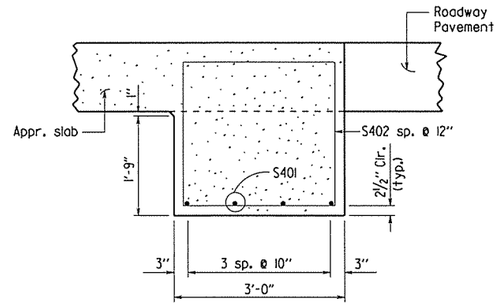
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"



SECTION Y-Y

¾" = 1'-0"

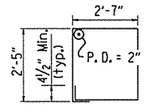


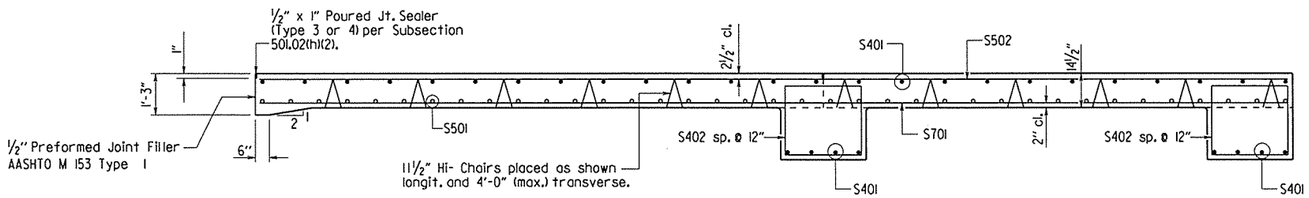
SECTION Z-Z

¾" = 1'-0"

BAR LIST

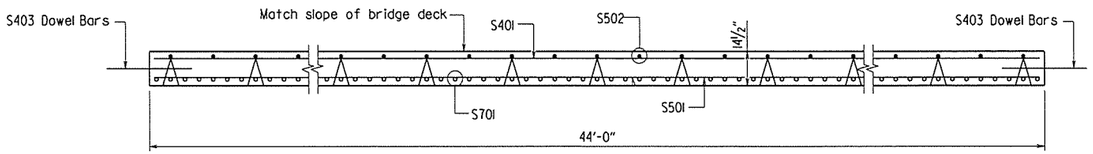
Mark	No. Req'd.	Length	Bending Diagrams
S401	33	43'-8"	Dimensions are out-to-out of bars
S402	88	10'-4"	
S403	50	3'-0"	
S501	37	43'-8"	
S502	30	36'-2"	
S701	88	36'-2"	





SECTION W-W

3/8" = 1'-0"



SECTION X-X

3/8" = 1'-0"

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete
44'-0"	10,993 lb.	89.9 cu. yd.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
9-10-15
CHARLES R. ELLIS

BRIDGE ENGINEER

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi) and shall be poured in the dry.

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

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

DETAILS OF TYPE SPECIAL APPROACH SLAB

ROUTE 40 SEC. 32

ARKANSAS STATE HIGHWAY COMMISSION

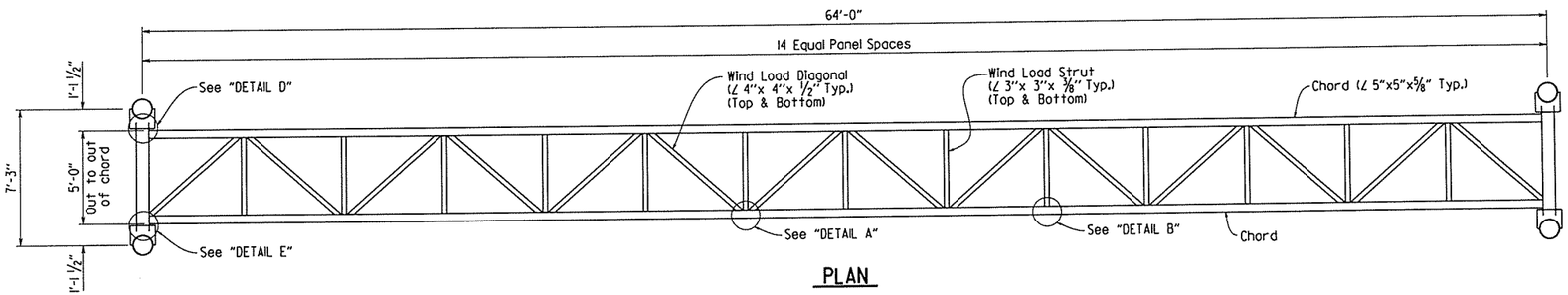
LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 8/26/15
CHECKED BY: BHS DATE: 9/10/15
DESIGNED BY: C.H.L. DATE:
FILENAME: b080397_as.dgn
SCALE: as noted

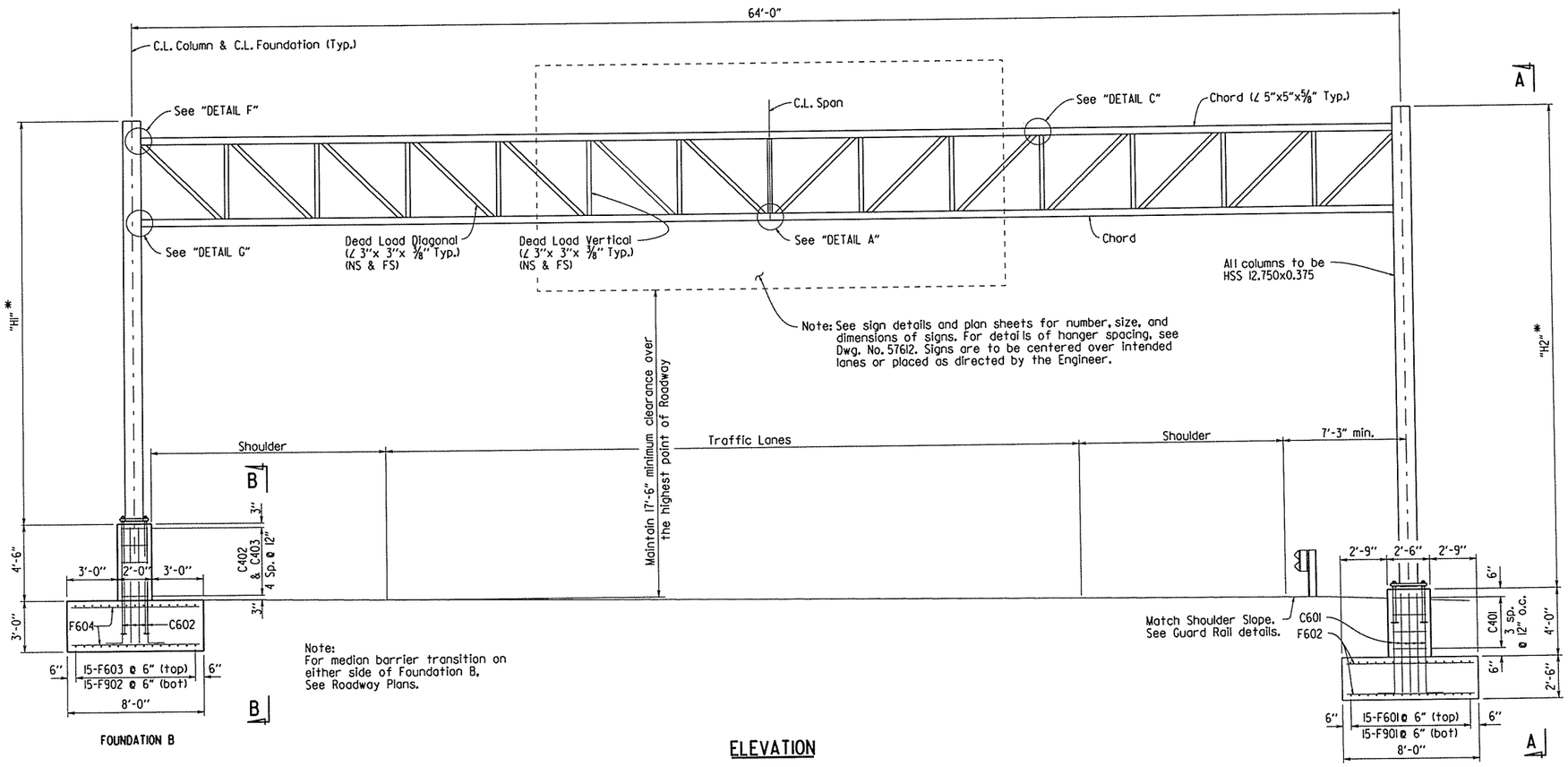
BRIDGE NO. 07055 DRAWING NO. 51218

PRINT DATE: 9/10/2015

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.		080397	127	244
				(1) OH-040-23-23		SIGN STRUCTURE		57608

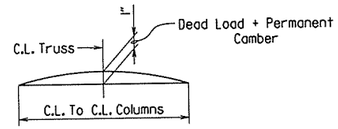


PLAN



ELEVATION

* Note: The Contractor shall make field measurements to determine the Column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (60'-0" to 70'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.



TRUSS CAMBER DIAGRAM

APPROXIMATE QUANTITIES FOR FOUNDATION (FOR INFORMATION ONLY)

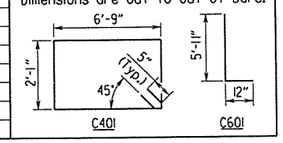
FOUNDATION	CLASS S CONCRETE (Cu. Yds.)	REINFORCING STEEL (Lbs.)	EXCAVATION (Cu. Yds.)
A	17.2	2659	51
B	22.0	3137	26

TABLE OF FOUNDATIONS

FOUNDATION		SIGN STRUCTURE
MEDIAN	OUTSIDE SHOULDER	
A	A	OH-040-23-23

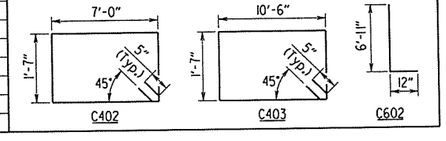
BAR LIST-FOUNDATION 'A'

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C401	8	18'-2"	3"	
C601	48	6'-9"	4½"	
F601	15	17'-6"	Str.	
F602	70	7'-6"	Str.	
F901	15	17'-6"	Str.	



BAR LIST-FOUNDATION 'B'

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C402	10	17'-8"	3"	
C403	5	24'-8"	3"	
C602	74	7'-9"	4½"	
F603	15	17'-6"	Str.	
F604	70	7'-6"	Str.	
F902	15	17'-6"	Str.	



STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

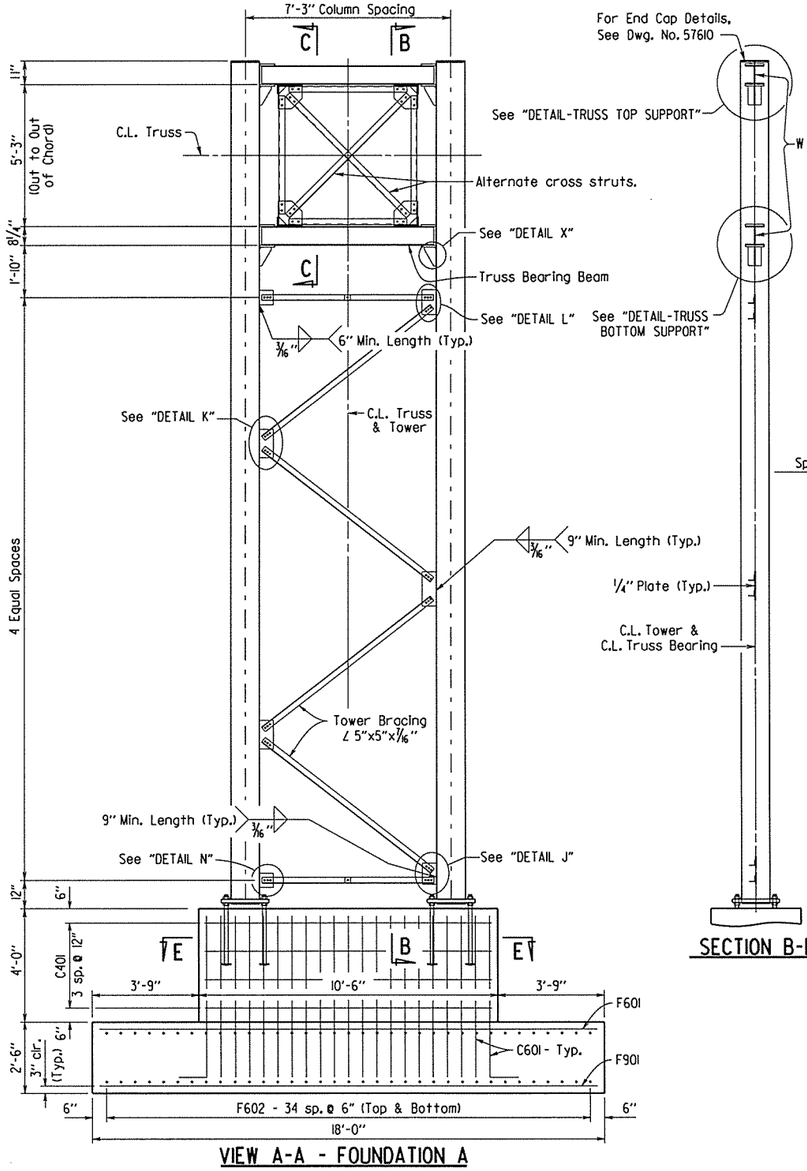
SHEET 1 OF 5
DETAILS FOR
64' STEEL OVERHEAD SIGN STRUCTURES

ROUTE 40 SEC. 23
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

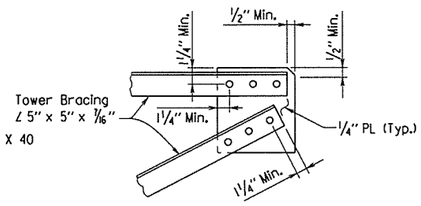
DRAWN BY: EOR DATE: 8/17/15 FILENAME: b080397_ohsign1.dgn
CHECKED BY: JNP DATE: 8/19/15 SCALE: NOT TO SCALE
DESIGNED BY: STD. DATE:
STR. NO. OH-040-23-23 DRAWING NO. 57608

PRINT DATE: 8/18/2015

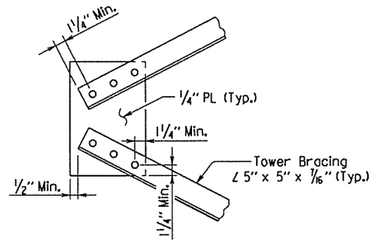
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	125	244
				① OH-040-23-23		SIGN STRUCTURE	57609	



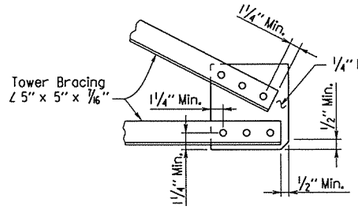
VIEW A-A - FOUNDATION A



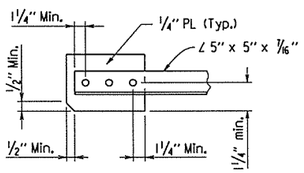
DETAIL L



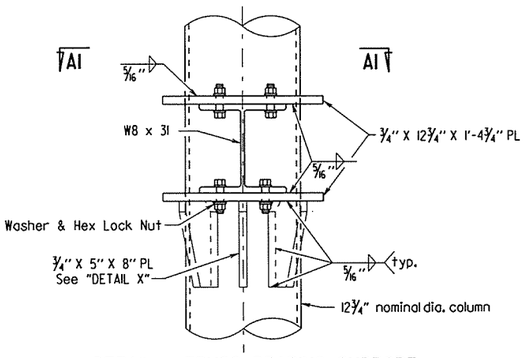
DETAIL K



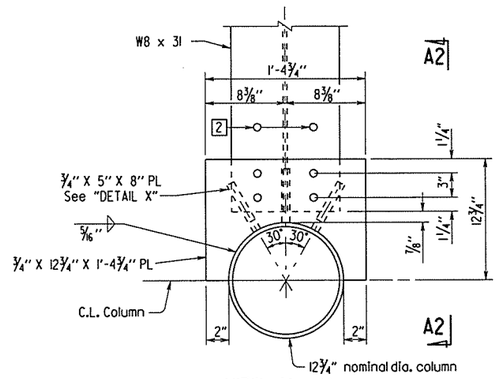
DETAIL J



DETAIL N

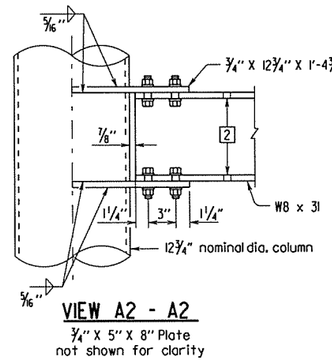


DETAIL - TRUSS BEARING SUPPORT



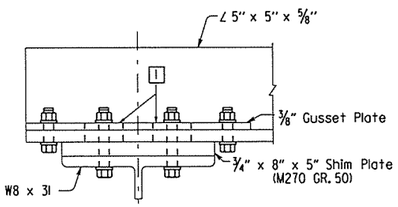
VIEW A1 - A1

PLAN AT TRUSS BEARING



VIEW A2 - A2

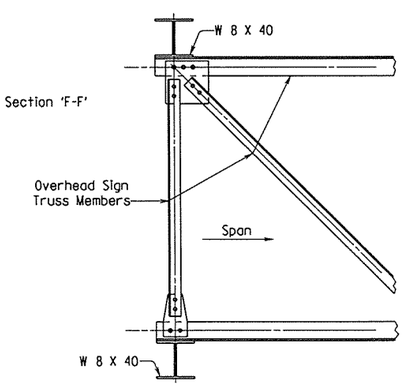
3/4" X 5" X 8" Plate not shown for clarity



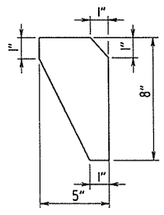
DETAIL - TRUSS CONNECTION

1 Slotted Hole in Gusset Plate and Chord Angle 11/16" X 2". Use plate washer on Gusset plate side. 11/16" ø holes in 3/4" shim plate and beam flange.

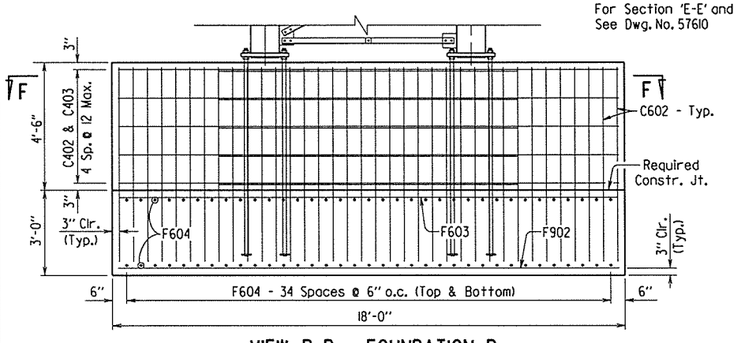
2 11/16" Dia. holes at top or bottom flanges as required.



SECTION C-C



DETAIL X



VIEW B-B - FOUNDATION B

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS FOR
64' STEEL OVERHEAD SIGN STRUCTURES

ROUTE 40 SEC. 23

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 8/17/15
CHECKED BY: JNP DATE: 8/19/15
DESIGNED BY: STD. DATE:
FILENAME: b080397_ohsignl.dgn
SCALE: NOT TO SCALE

STR. NO. OH-040-23-23 DRAWING NO. 57609

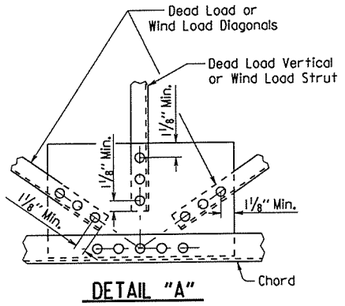
PRINT DATE: 8/18/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

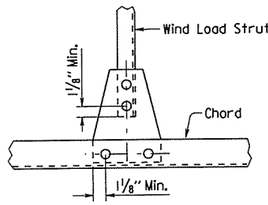
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080397	129	244
(1) OH-040-23-23		SIGN STRUCTURE	57610	

Note: All Gusset Plate thicknesses shall be ⅜".

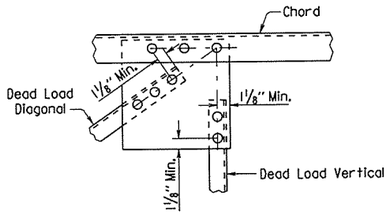
[1] Slotted Hole in Gusset Plate and Chord Angle 11/16" X 2". Use plate washer on Gusset plate side. 11/16" ø holes in ¾" shim plate and beam flange.



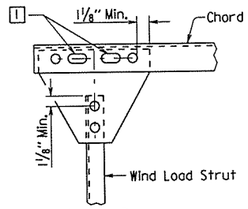
DETAIL "A"



DETAIL "B"



DETAIL "C"



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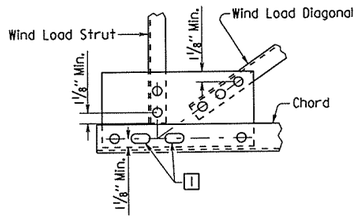
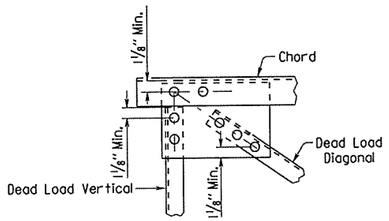
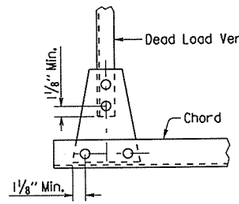


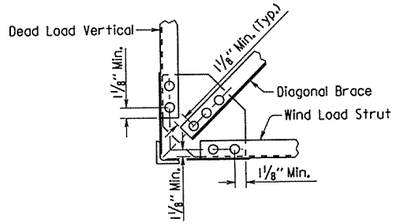
DETAIL E



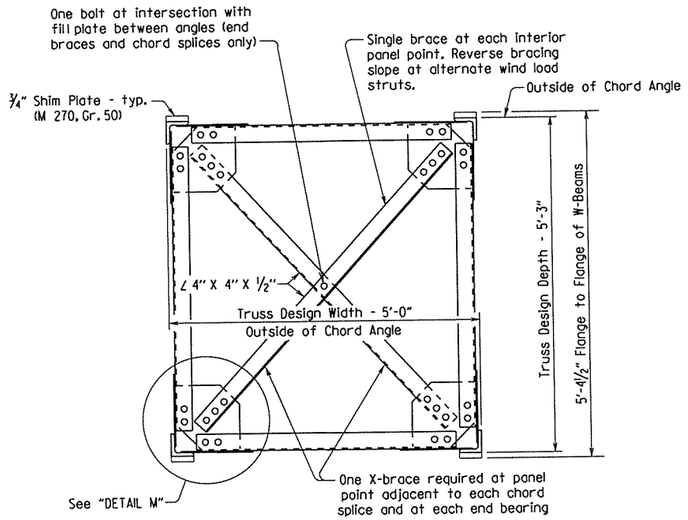
DETAIL "F"



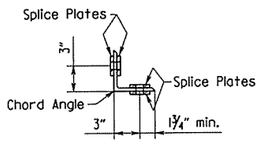
DETAIL "G"



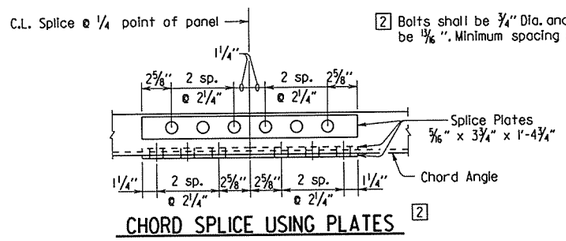
DETAIL "M"



TRUSS SECTION

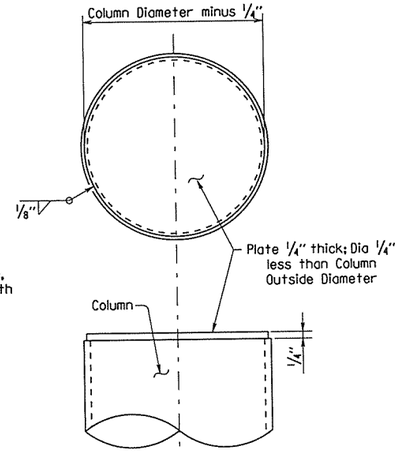


SECTION ON C.L. SPLICE

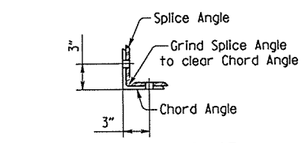


[2] Bolts shall be ¾" Dia. and open holes shall be 13/16". Minimum spacing shall be 2¼".

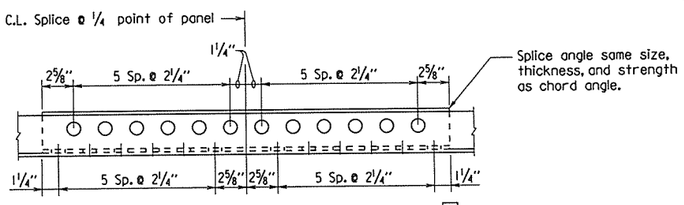
CHORD SPLICE USING PLATES [2]



END CAP DETAILS

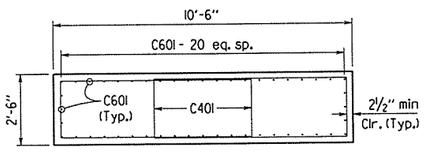


SECTION ON C.L. SPLICE

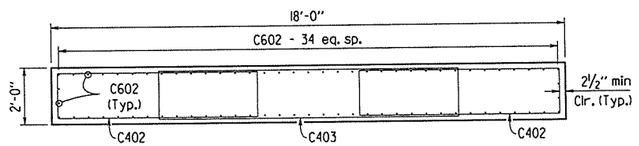


OPTIONAL CHORD SPLICE USING ANGLES [2]
Place Splice Angle on inside of Truss

Note: Chord angles may be spliced in convenient lengths for galvanizing and sign placement.



SECTION "E-E"
Foundation A



SECTION "F-F"
Foundation B

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
8-20-15
CHARLES R. ELLIS

BRIDGE ENGINEER

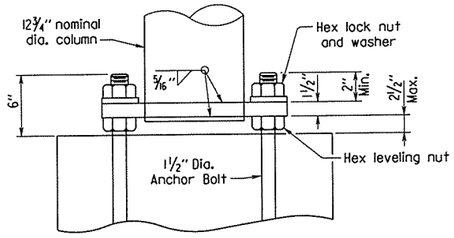
SHEET 3 OF 5
DETAILS FOR
64' STEEL OVERHEAD SIGN STRUCTURES

ROUTE 40 SEC. 23
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

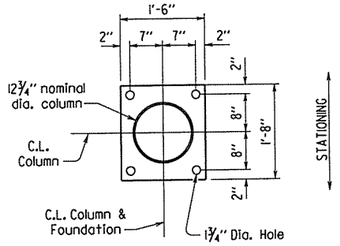
DRAWN BY: EOR DATE: 8/17/15 FILENAME: b080397_ohsign1.dgn
CHECKED BY: JNP DATE: 8/19/15 SCALE: NOT TO SCALE
DESIGNED BY: STD. DATE: —
STR. NO. OH-040-23-23 DRAWING NO. 57610

PRINT DATE: 8/18/2015

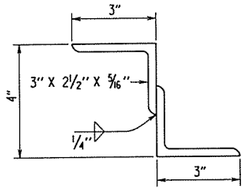
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	13	24
				1 OH-040-23-23		SIGN STRUCTURE		57611



ELEVATION - COLUMN BASE

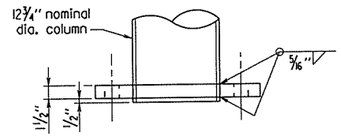


PLAN - COLUMN BASE



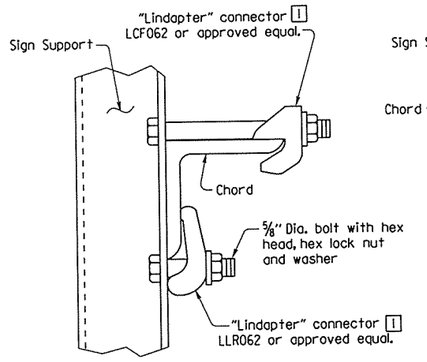
NOTE: Structural Z support may be fabricated from angles as shown.

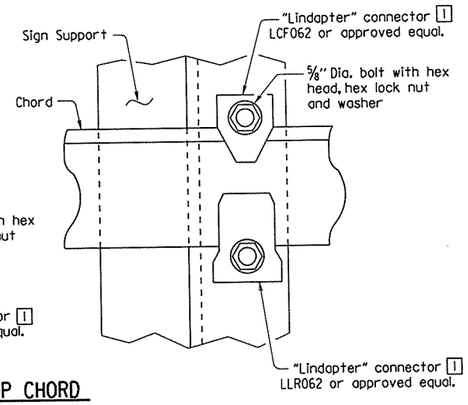
DETAILS OF ALTERNATE Z SUPPORT



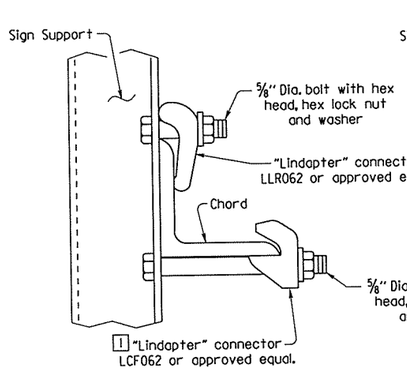
Note: Diameter of hole in base plate to be 1/8" larger than column diameter.

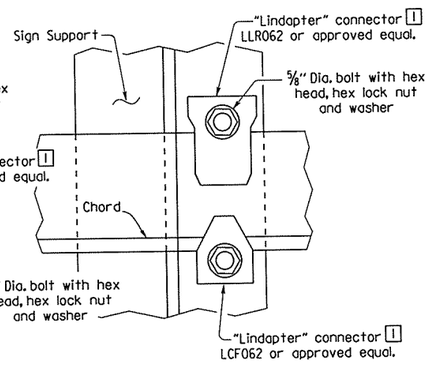
DETAIL OF COLUMN CONNECTION TO BASE PLATE





TOP CHORD



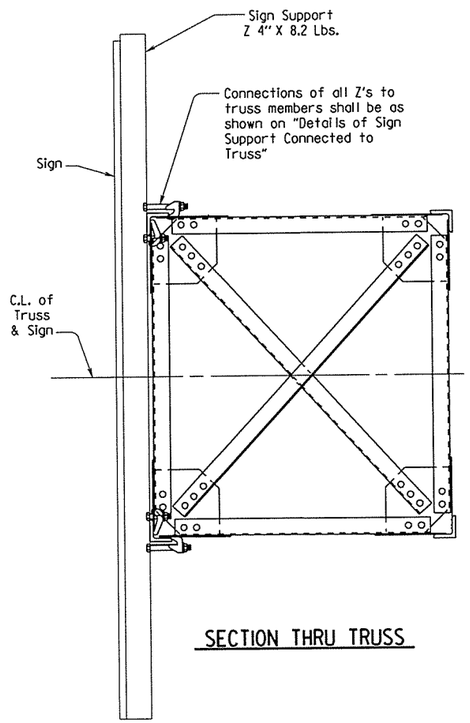


BOTTOM CHORD

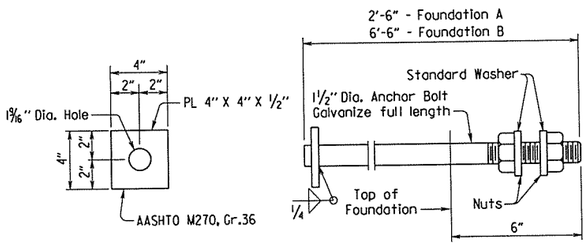
[1] Note: All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

Note: Install all support connectors clear of the gusset plates and splice locations.

DETAIL OF SIGN SUPPORT CONNECTED TO TRUSS



SECTION THRU TRUSS



Anchor bolts shall comply with AASHTO M314, Grade 55, with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

ANCHOR BOLT DETAIL

STATE OF ARKANSAS
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SHEET 4 OF 5
DETAILS FOR
64' STEEL OVERHEAD SIGN STRUCTURES
ROUTE 40 SEC. 23
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 8/17/15 FILENAME: b080397_ohsignl.dgn
CHECKED BY: JVP DATE: 8/19/15 SCALE: NOT TO SCALE
DESIGNED BY: STD. DATE: —
STR. NO. OH-040-23-23 DRAWING NO. 57611

PRINT DATE: 8/18/2015

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.		080397	131	244
				1 OH-040-23-23		SIGN STRUCTURE	57612	

GENERAL NOTES:

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

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition, 2013 with current interim revisions.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet. Use of additional sign area must be approved by the Engineer. If the structure height ("H1"or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

Class S Concrete	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	AASHTO M 270, Grade 36 (Fy = 36,000 psi)
Plate, W-Section:	AASHTO M 270, Grade 50 (Fy = 50,000 psi)
[1] Pipe:	ASTM A 139, Gr. C, straight-seam welded (Fy = 42,000 psi), ASTM A 500, Gr. B (Fy = 42, 000 psi), ASTM A 501, Gr. B (Fy = 50,000 psi), ASTM A 714, Class 2, Grade II, Type E or S (Fy = 50,000 psi)
Z-Shapes:	AASHTO M 270, Grade 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A 1011, SS, Grade 36, Type 2, or Grade 40
Bolts:	ASTM A 325, Type 1
Locknuts - Approved Type:	Meeting or exceeding AASHTO M 292
Washers:	ASTM F 436
Nuts:	ASTM A 563 or AASHTO M 292, Grade DH or Grade 2H

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, 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. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All steel shall be galvanized according to Subsection 807.19. Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15 feet apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

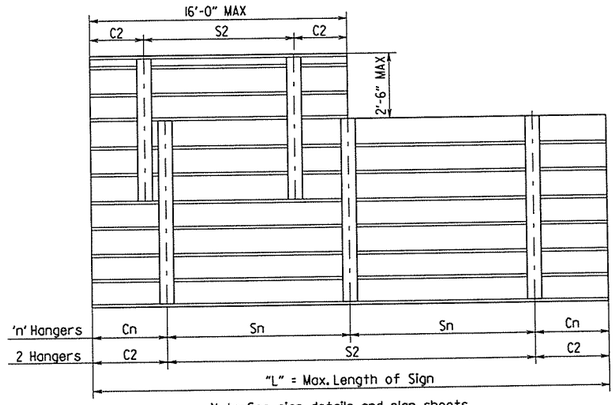
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ⅝" diameter and open holes shall be 11/16". Bolt spacing shall be 2¼" for ⅝" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM A 325 Type 1, galvanized according to Subsection 807.06. Nuts and washers for ASTM A 325 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07.

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Sign Structures". The excavations for the footings shall be backfilled before the structure is attached to the foundations.



Note: See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

[1] In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation: CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing 'Sn'
15'-0"	2 Hangers	0.21 x 'L'	0.58 x 'L'
30'-0"	3 Hangers	0.145 x 'L'	0.355 x 'L'
45'-0"	4 Hangers	0.107 x 'L'	0.262 x 'L'

Hanger spacing and cantilever length shall be rounded to the nearest inch.

ISOMETRIC VIEW

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SHEET 5 OF 5
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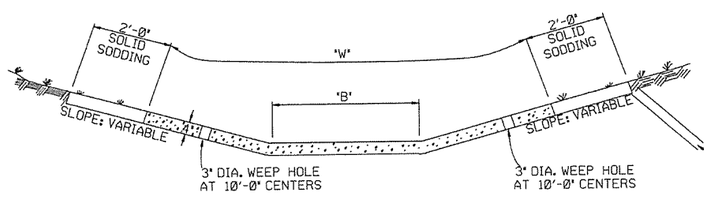
64' STEEL OVERHEAD SIGN STRUCTURES

ROUTE 40 SEC. 23
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 8/17/15 FILENAME: b080397_ohsignl.dgn
CHECKED BY: JVP DATE: 8/19/15 SCALE: NOT TO SCALE
DESIGNED BY: STD. DATE: —
STR. NO. OH-040-23-23 DRAWING NO. 57612

PRINT DATE: 8/18/2015

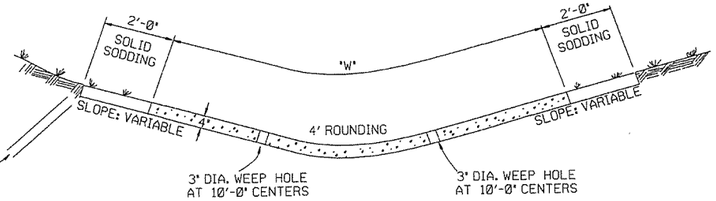
REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

TYPE A

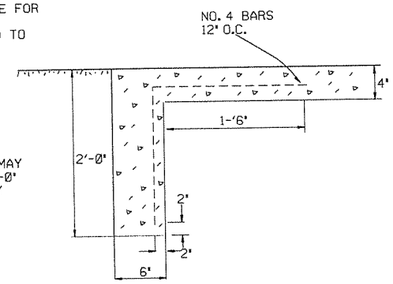
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



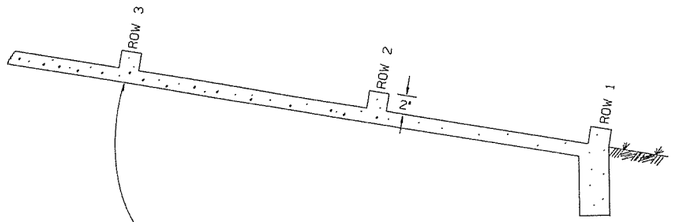
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'

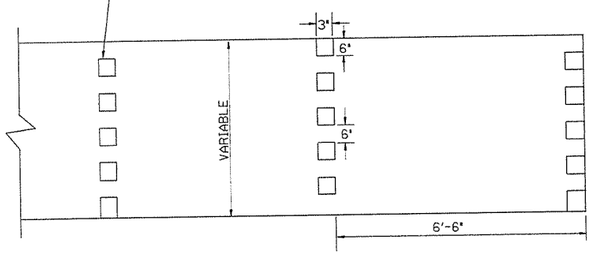
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED



ENERGY DISSIPATORS
(NO SCALE)

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

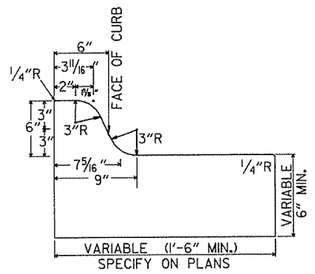
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

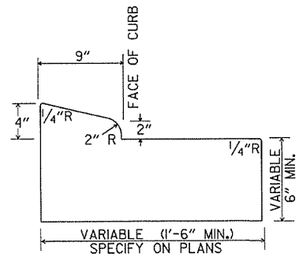
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

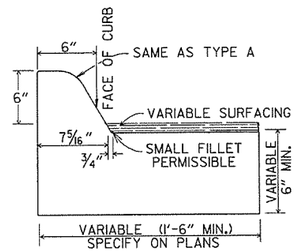
STANDARD DRAWING CDP-1



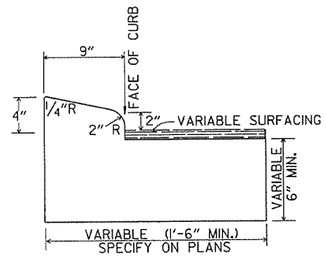
TYPE A



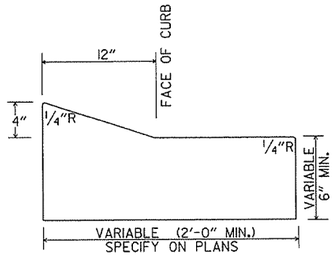
TYPE B-1



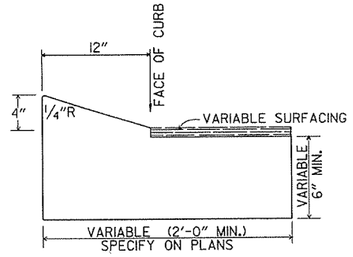
TYPE C



TYPE B-2

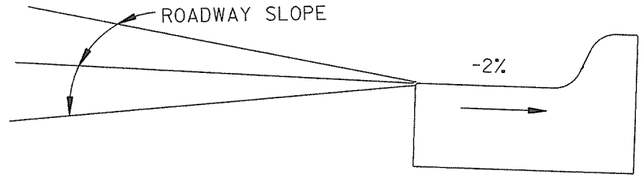


TYPE E-1



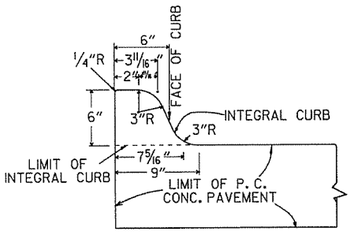
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

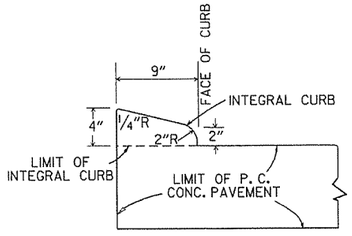


DETAIL OF GUTTER SLOPE

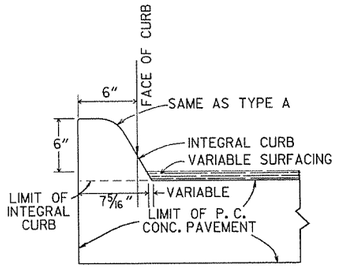
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

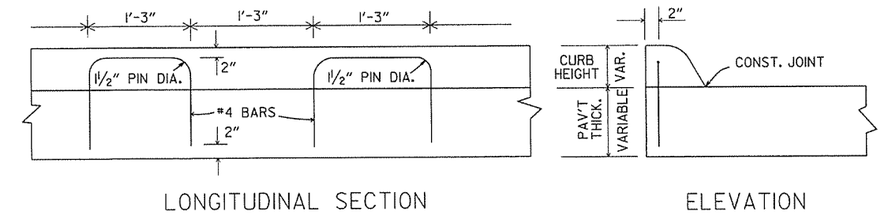


TYPE B



TYPE C

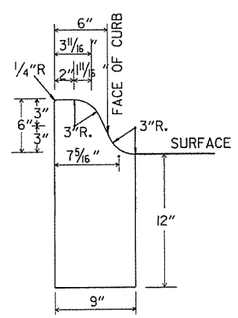
INTEGRAL CURB



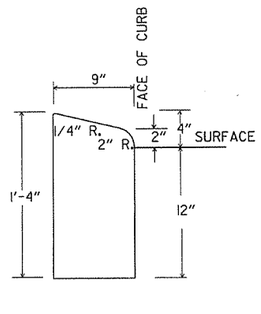
LONGITUDINAL SECTION

ELEVATION

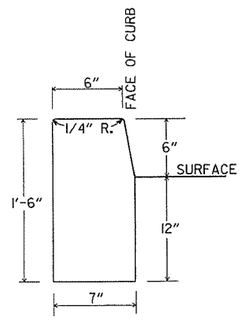
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



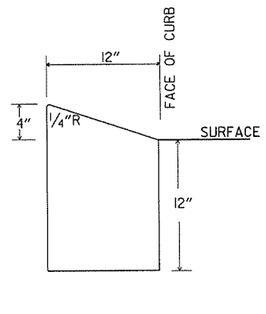
TYPE A



TYPE B

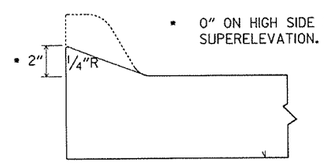


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

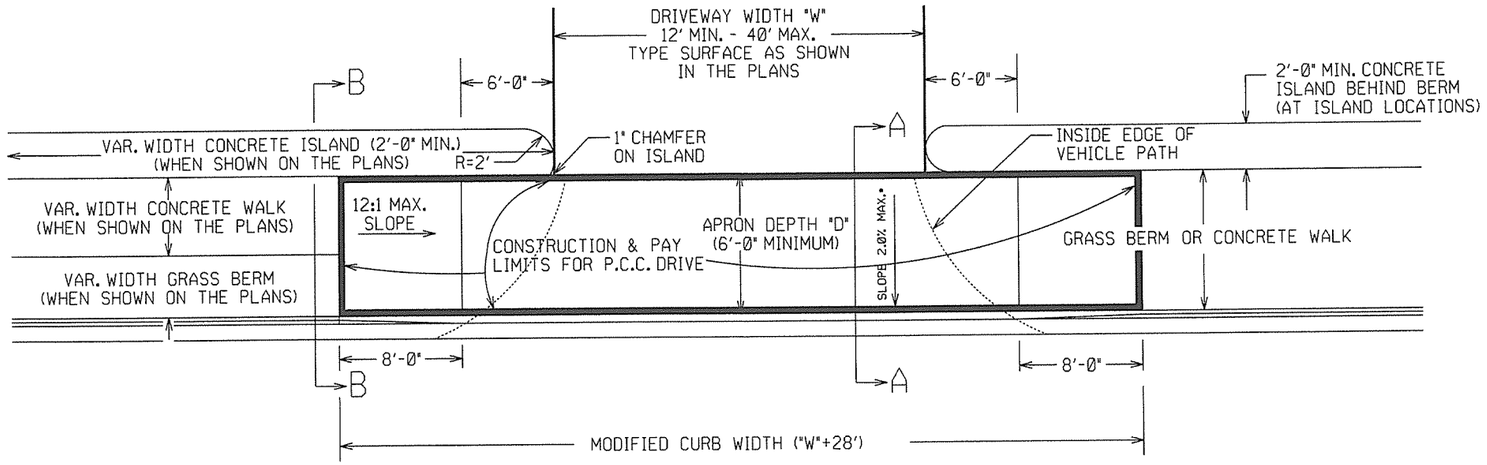
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	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	512-10-2-72

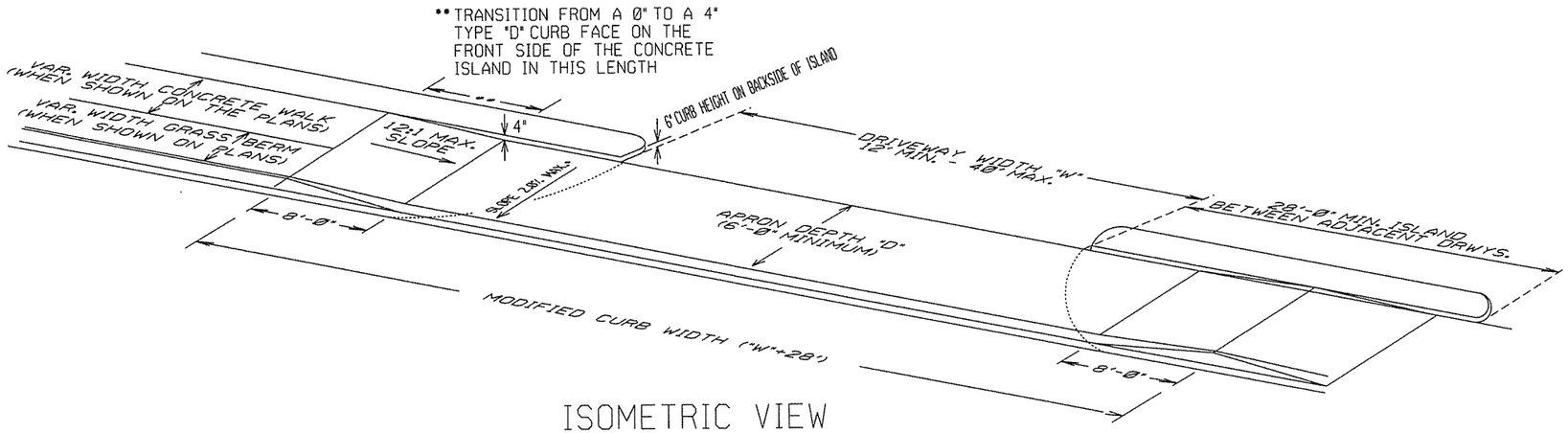
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

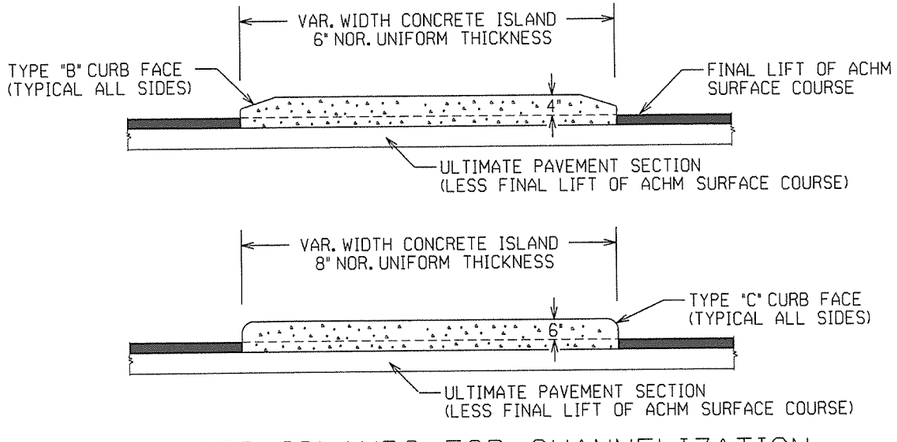
STANDARD DRAWING CG-1



PLAN VIEW

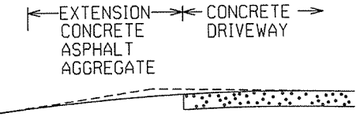


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

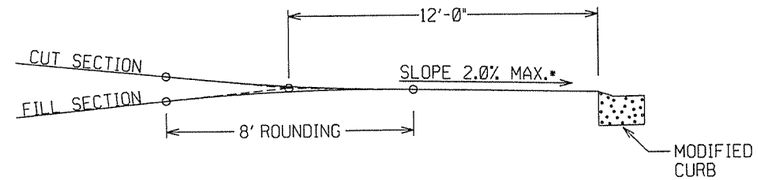
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

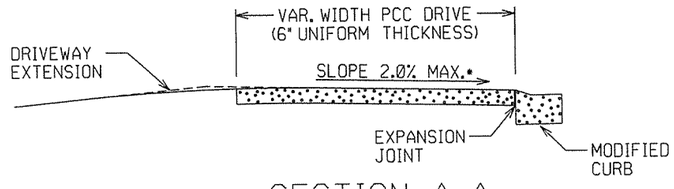
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

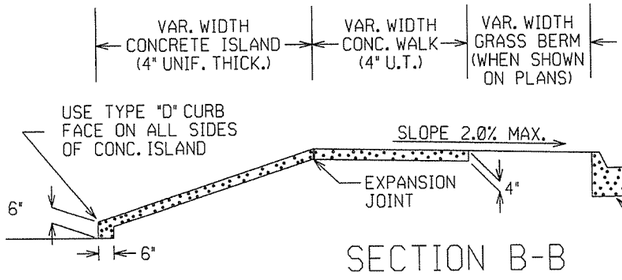


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



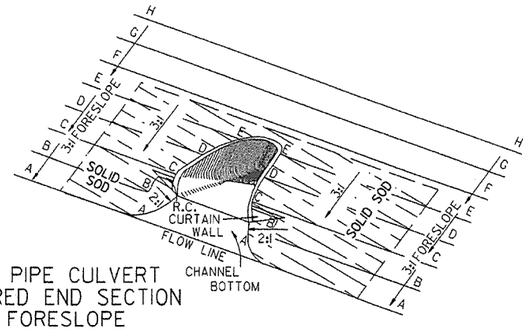
SECTION A-A



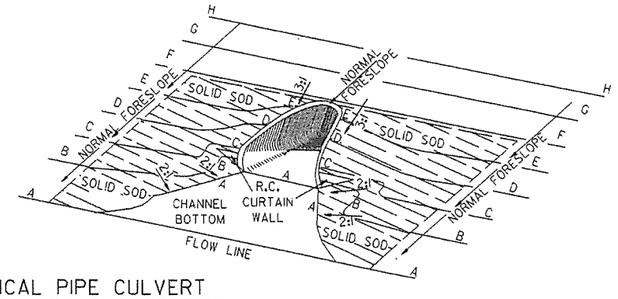
SECTION B-B
CURBED ISLAND BEHIND WALK

2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED
DATE REV	DATE FILMED	DESCRIPTION

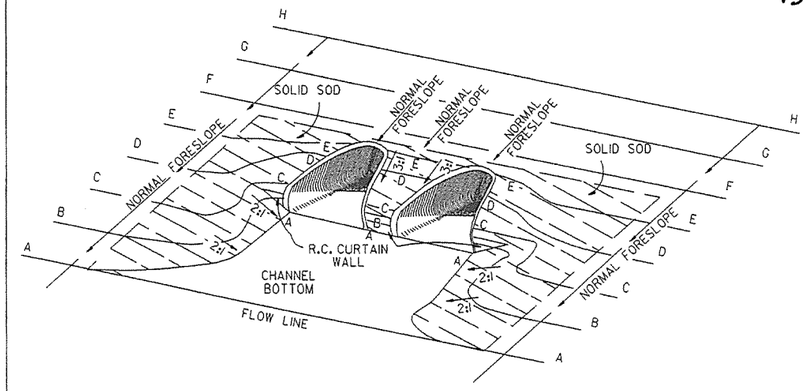
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

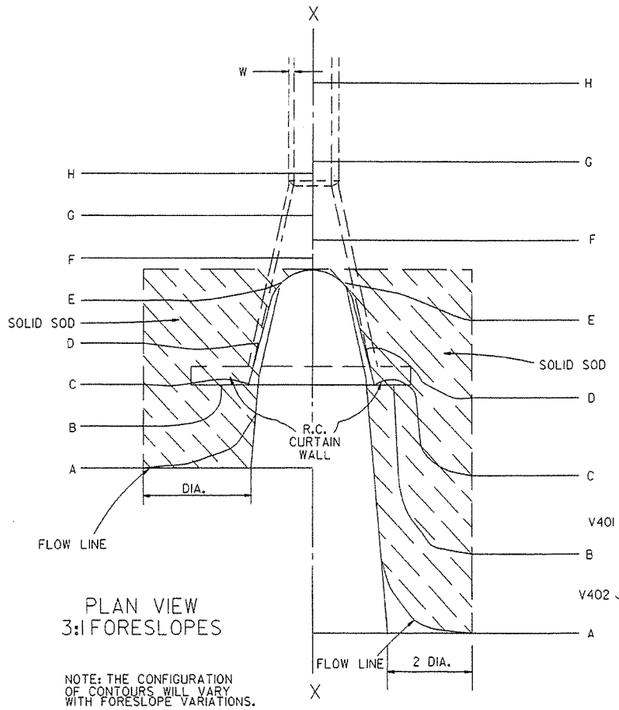
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	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

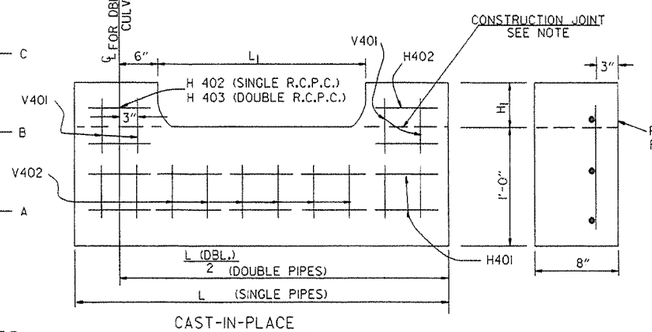
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

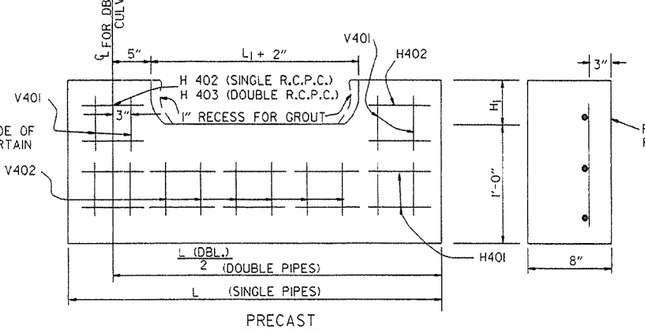
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

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

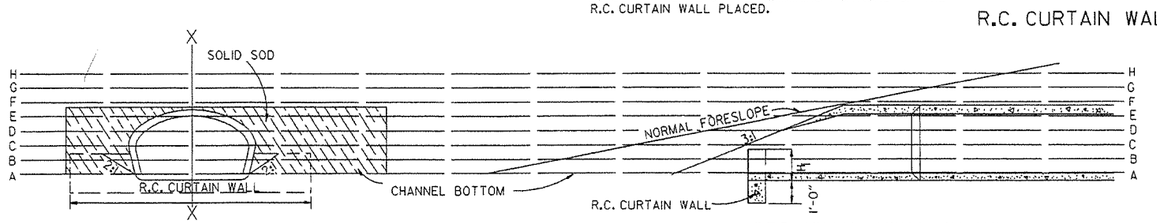
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96
10-12-95	CORRECTED SPELLING	
11- 3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

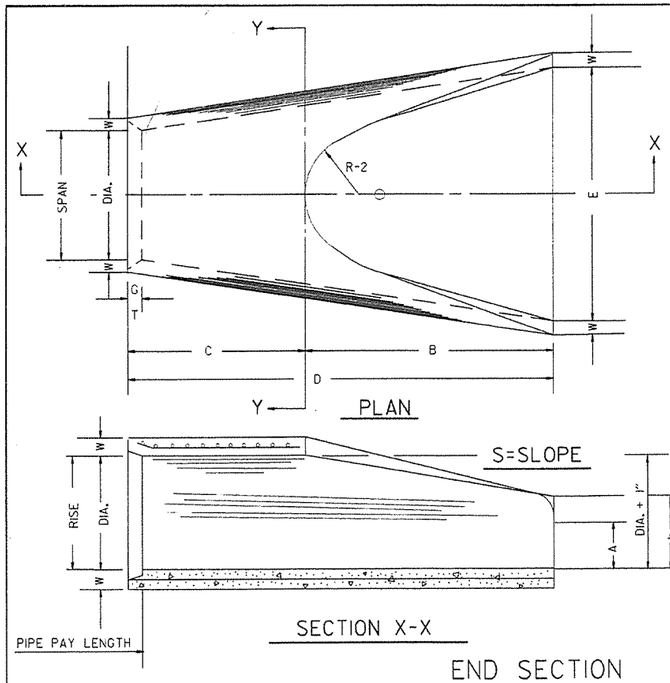


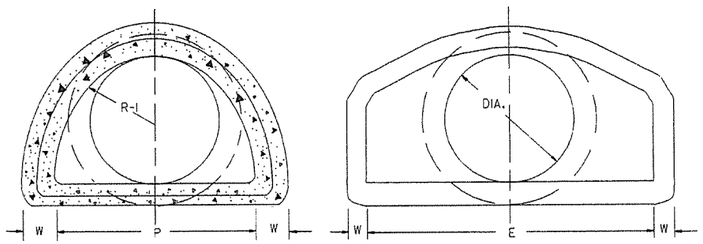
TABLE OF DIMENSIONS

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"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅜"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¼"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅜"	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"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

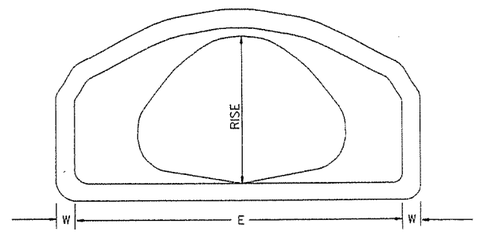
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	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"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅜	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	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"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2½:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	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.

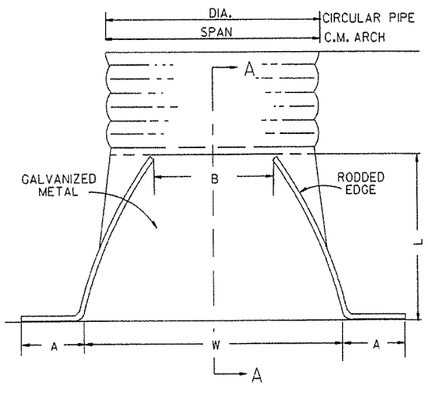


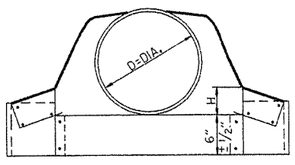
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

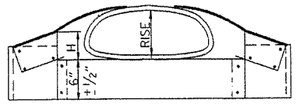




CIRCULAR PIPE

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



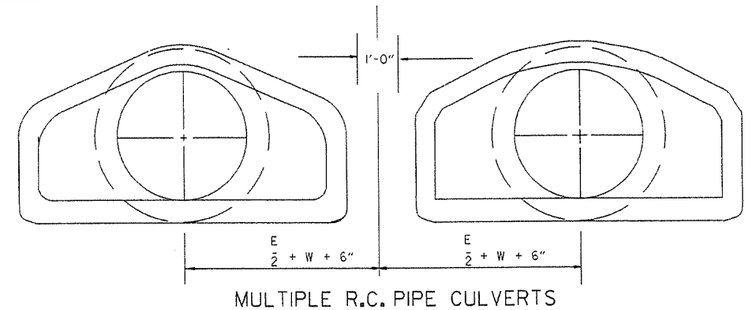
C.M. ARCH PIPE

C.M. ARCH PIPE

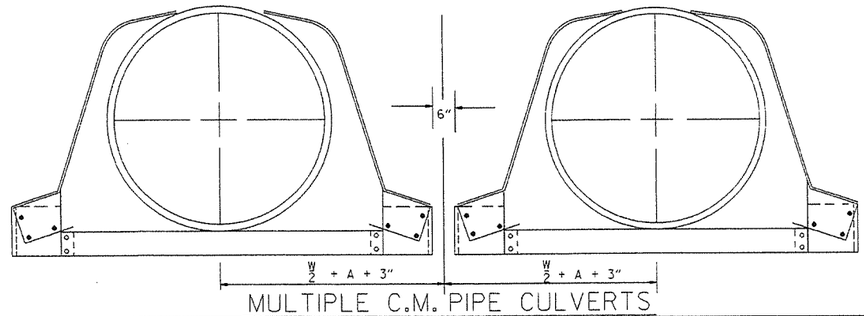
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
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

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
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 COMMISION

FLARED END SECTION

STANDARD DRAWING FES-2

stdfes2.dgn

4′-0″ LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5′-0″ CLASS A CONC. CU. YDS.	HEIGHT 5′-0″ REINF. STEEL POUNDS	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. CU. YDS.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL POUNDS
18″	2′-6″	1.77	156	0.28	22
24″	2′-6″	1.79	156	0.28	22
30″	3′-2″	2.39	205	0.30	26
36″	3′-8″	2.63	236	0.32	28
42″	4′-4″	2.95	250	0.34	30
48″	4′-10″	3.21	265	0.36	32

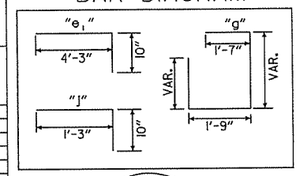
DROP INLET EXTENSION

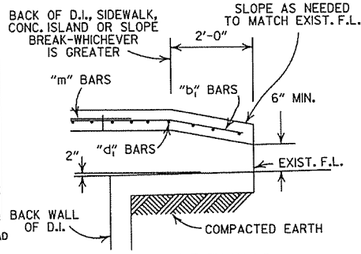
4′-0″ CLASS A CONC. CU. YDS.	4′-0″ REINF. STEEL POUNDS	8′-0″ CLASS A CONC. CU. YDS.	8′-0″ REINF. STEEL POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET		
INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

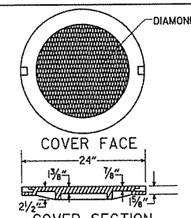
BAR DIAGRAM





BACK OPENING

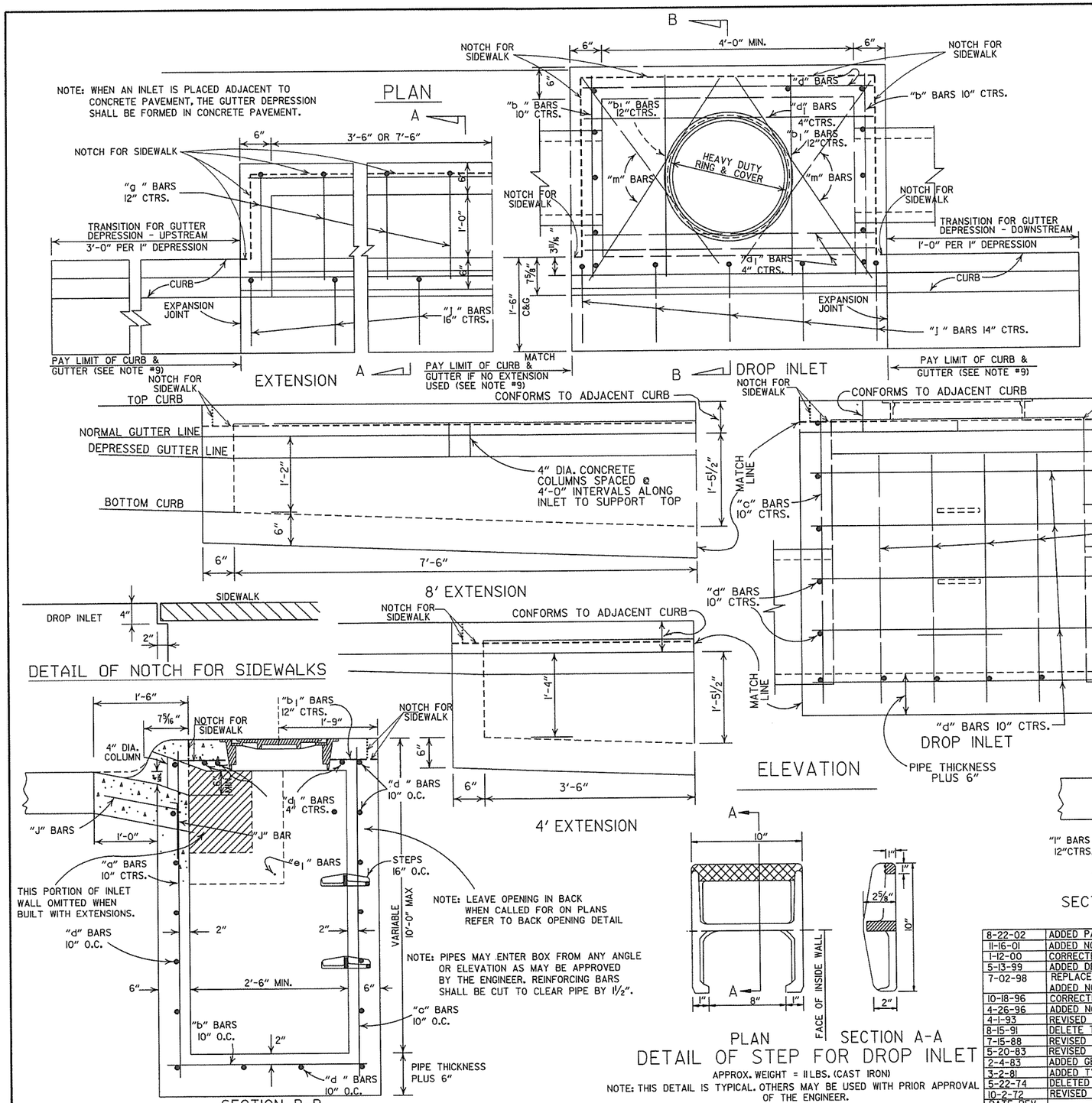
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾″ CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4′-0″ HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½″ COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10′-0″ HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4″x2″ NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



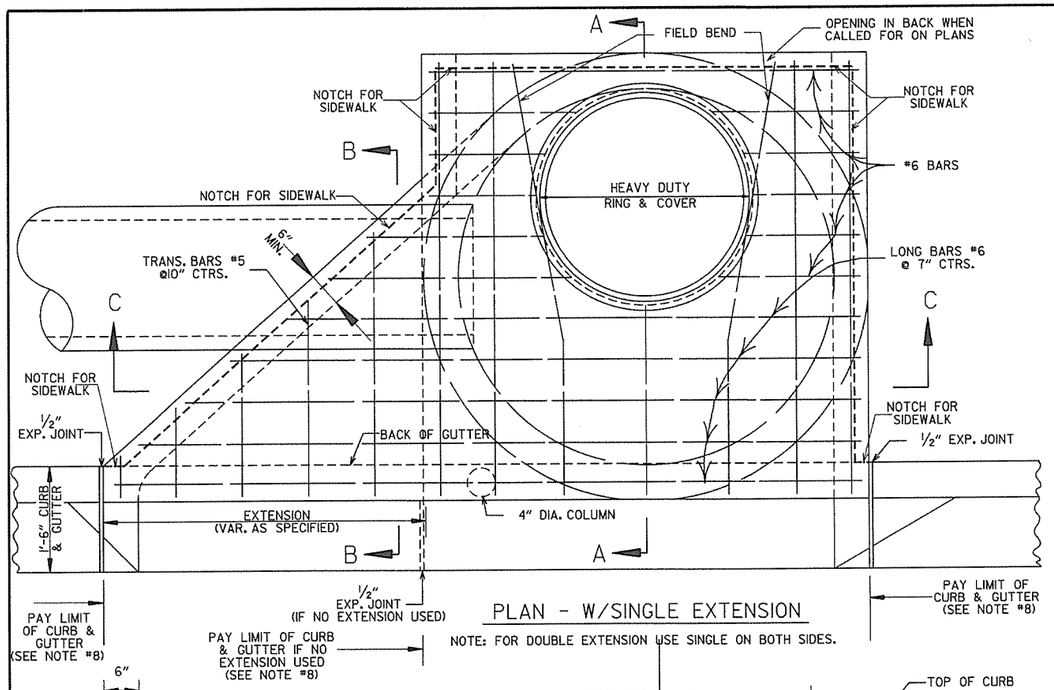
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4′)(8′) EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

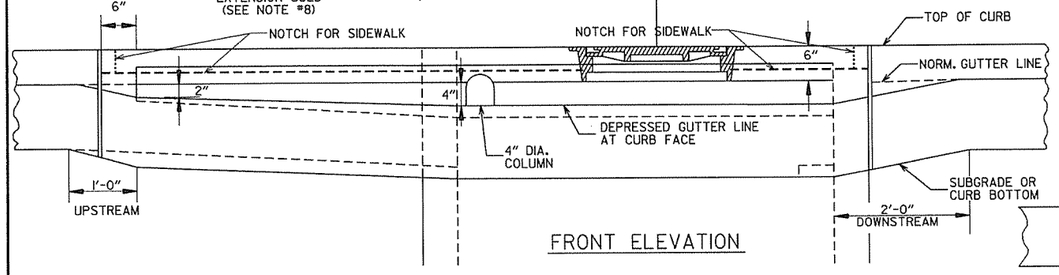
(TYPE C)

STANDARD DRAWING FPC-9E

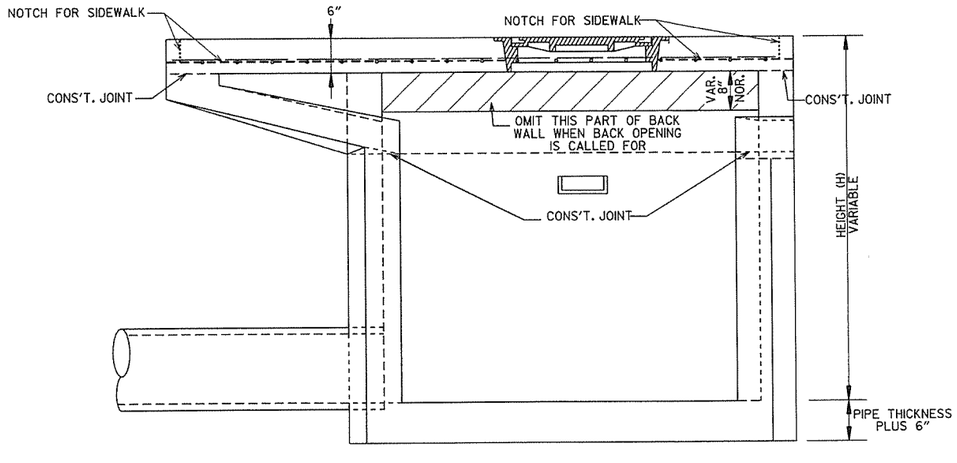


PLAN - W/SINGLE EXTENSION

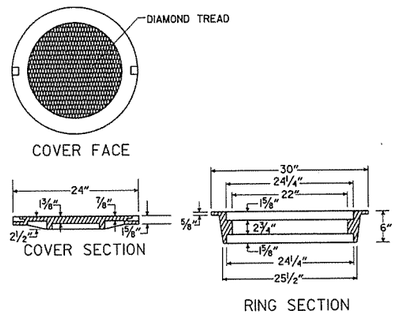
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.



FRONT ELEVATION



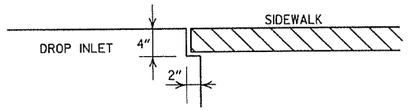
SECTION C-C



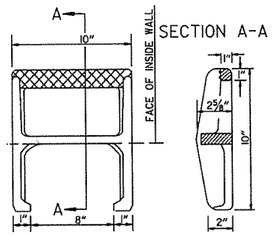
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS

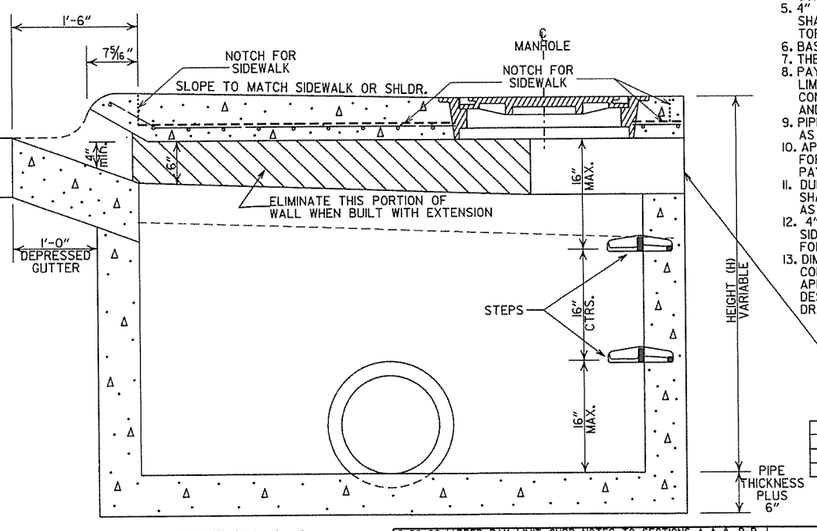


APPROX. WEIGHT = 11 LBS. (CAST IRON)

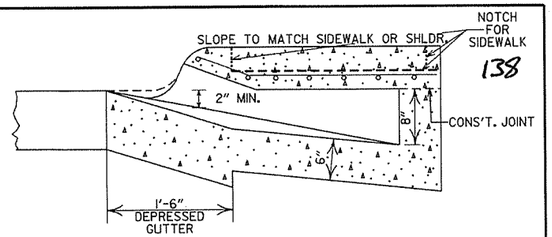
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

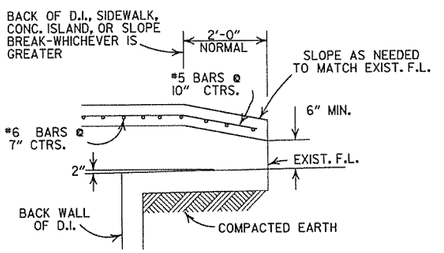
DETAIL OF STEP FOR DROP INLET



SECTION A-A



SECTION B-B



BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

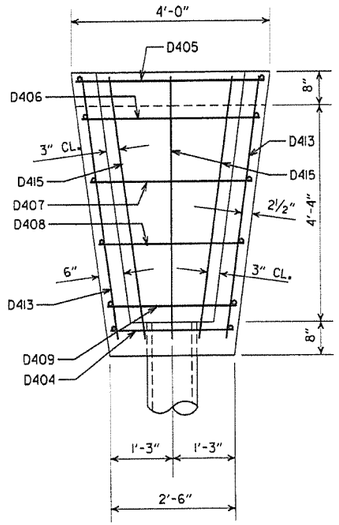
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11, ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN, BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 10	11-30-89
3-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-3-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	635-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-2-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

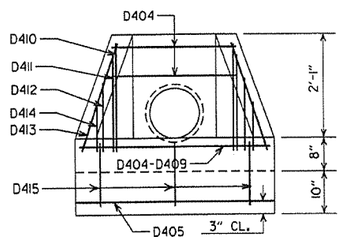
STANDARD DRAWING FPC-9M



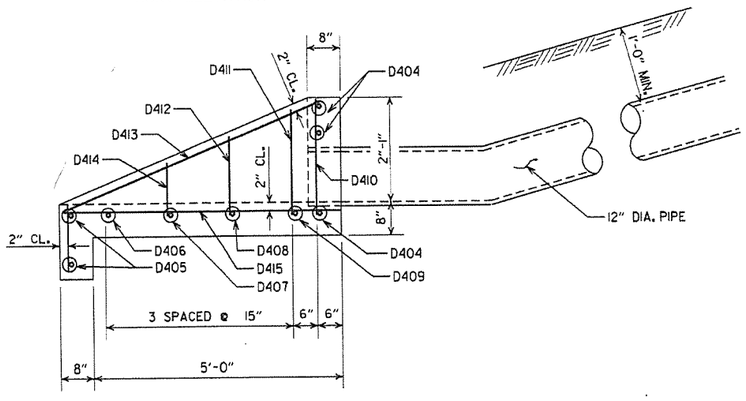
PLAN

BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	5'-4", 1'-2", 2" P.D., D415

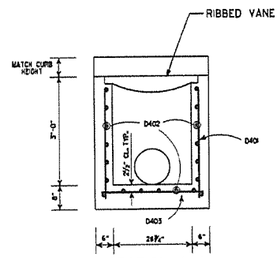


FRONT ELEVATION



SIDE ELEVATION
CONCRETE SPILLWAY

DETAILS OF CONCRETE SPILLWAY (TYPE A)

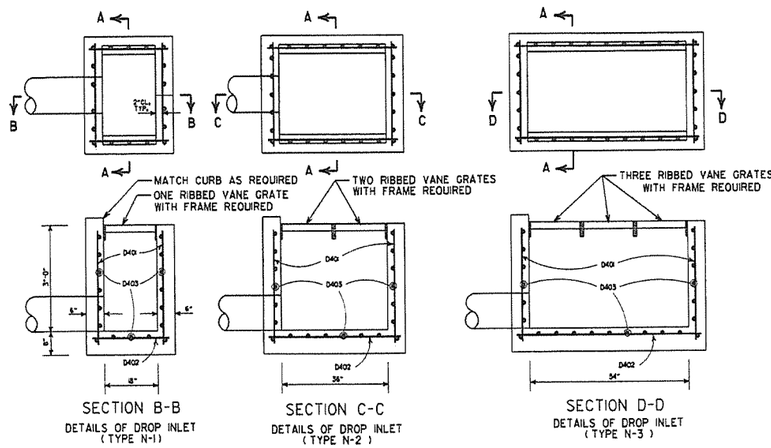


SECTION A-A

BAR LIST (DROP INLET)

MARK	TYPE N-1		TYPE N-2		TYPE N-3	
	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
D401	20	3'-0"	26	3'-0"	32	3'-0"
D402	19	2'-2"	19	3'-8"	19	5'-2"
D403	17	2'-11"	20	2'-11"	23	2'-11"

ALL BARS #4 @ 6" SPACING



SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

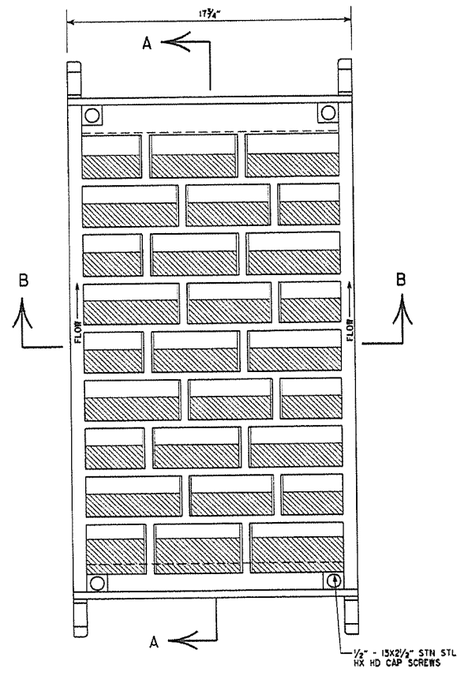
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

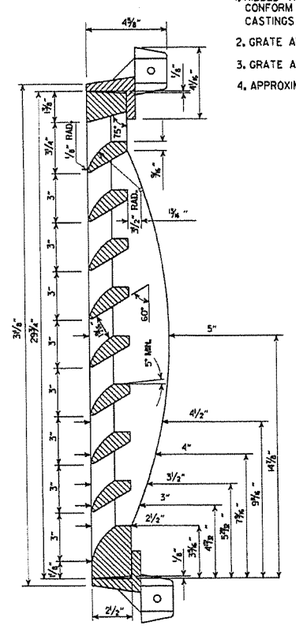
SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

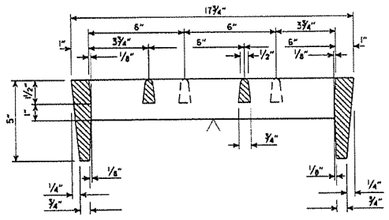
GENERAL NOTES (GRATE & FRAME)

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.

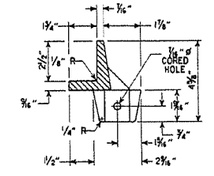




SECTION A-A



SECTION B-B



SECTION THRU FRAME

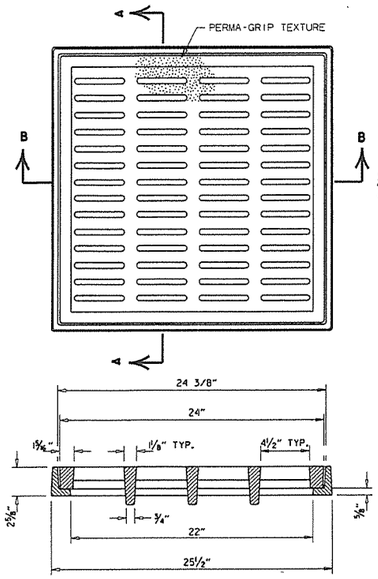
DETAILS OF RIBBED VANE GRATE AND FRAME

DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98	7-2-98	REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

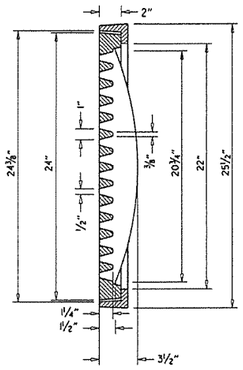
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N



SECTION B-B

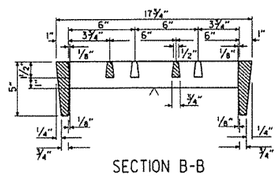


SECTION A-A

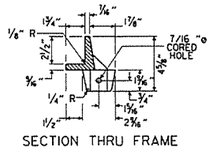
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" 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 211LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

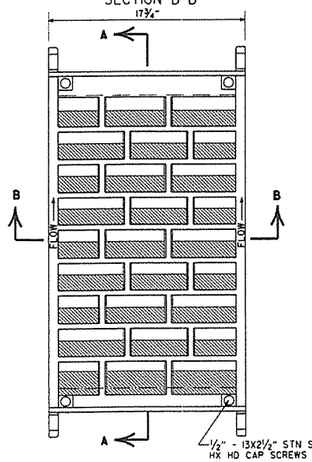
DETAILS OF PEDESTRIAN GRATE AND FRAME

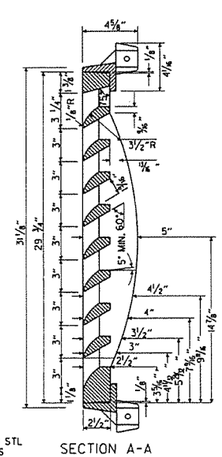


SECTION B-B



SECTION THRU FRAME



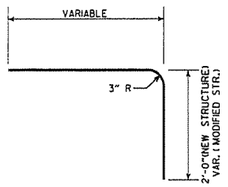


SECTION A-A

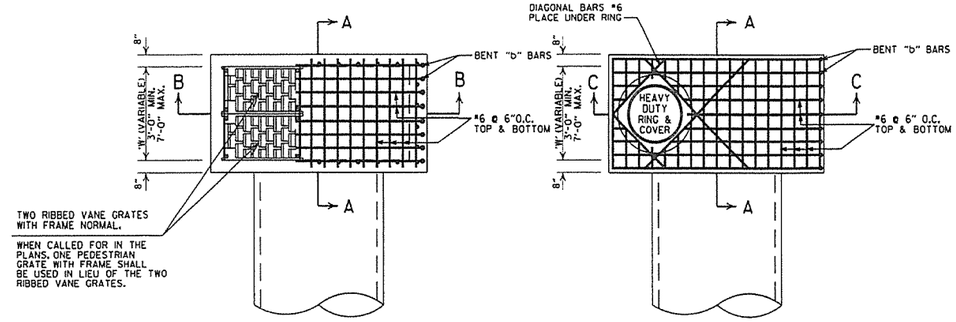
DETAILS OF RIBBED VANE GRATE AND FRAME

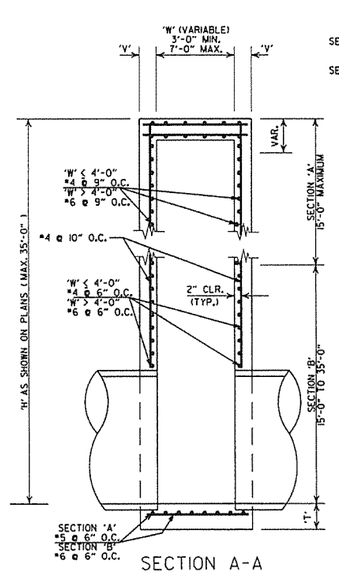
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

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.



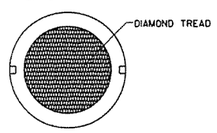
DETAIL OF BENT "b" BAR



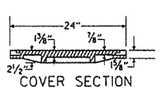


SECTION A-A

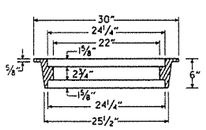
DETAILS OF DROP INLET (TYPE ST)



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 ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

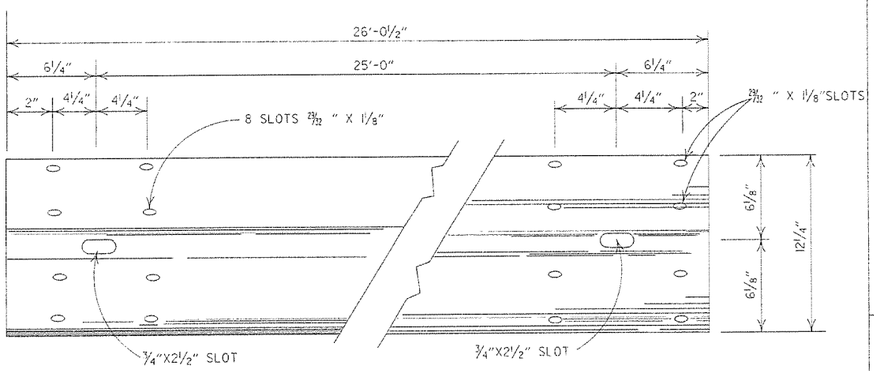
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE 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.

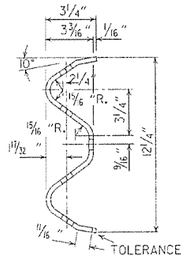
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED 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)

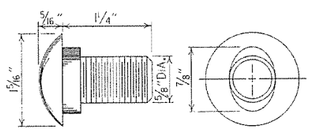
STANDARD DRAWING FPC-9S



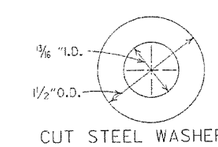


DETAILS OF W-BEAM GUARD RAIL

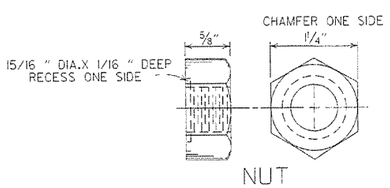
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



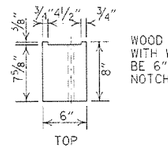
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

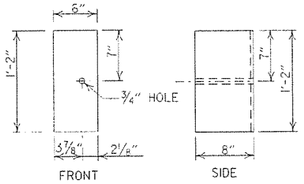


NUT



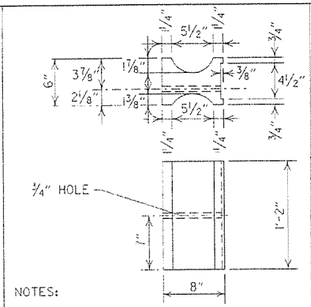
WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"×8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



FRONT SIDE

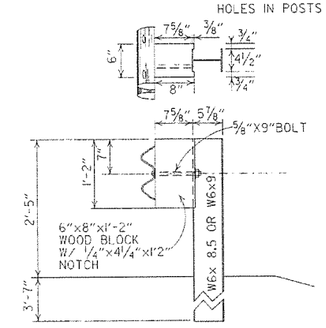
WOOD BLOCKOUT (W-BEAM)



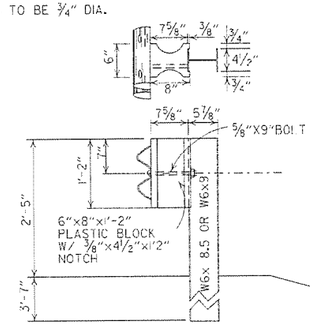
NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.

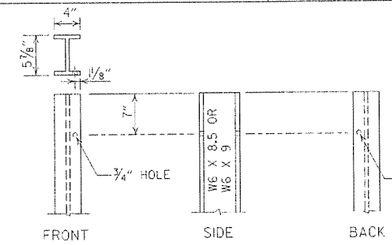


WOOD BLOCKOUT CONNECTIONS

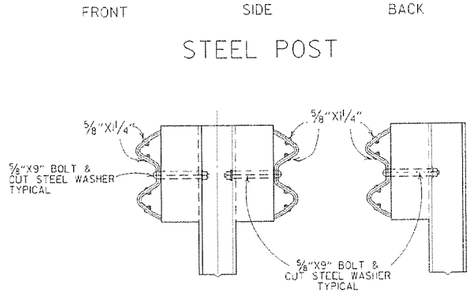


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

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

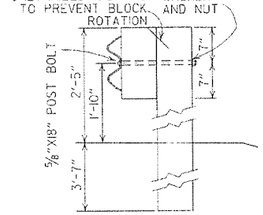
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

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

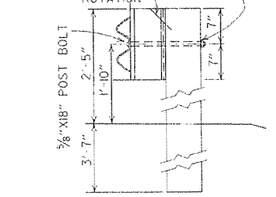
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
0-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87

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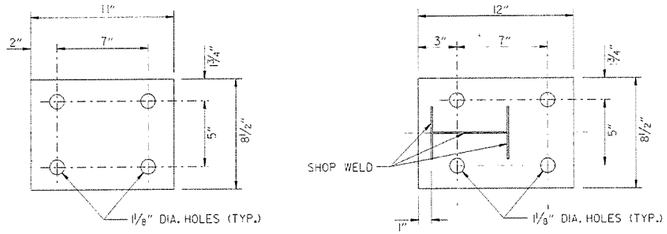
GUARD RAIL DETAILS

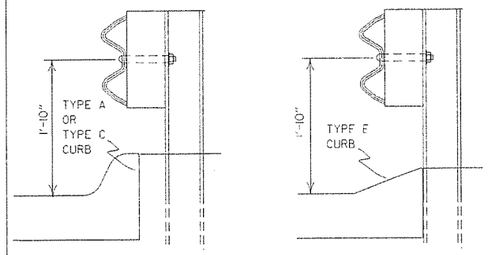
STANDARD DRAWING GR-8



WASHER PLATE

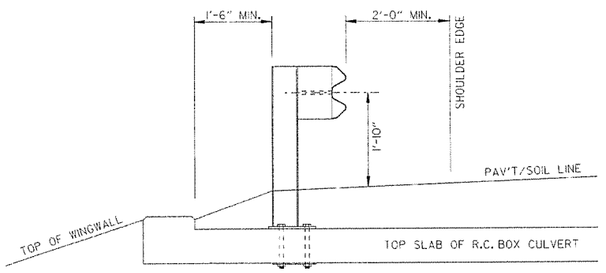
BASE PLATE

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

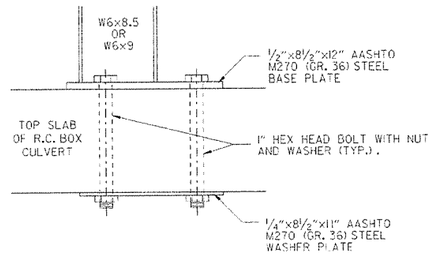


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

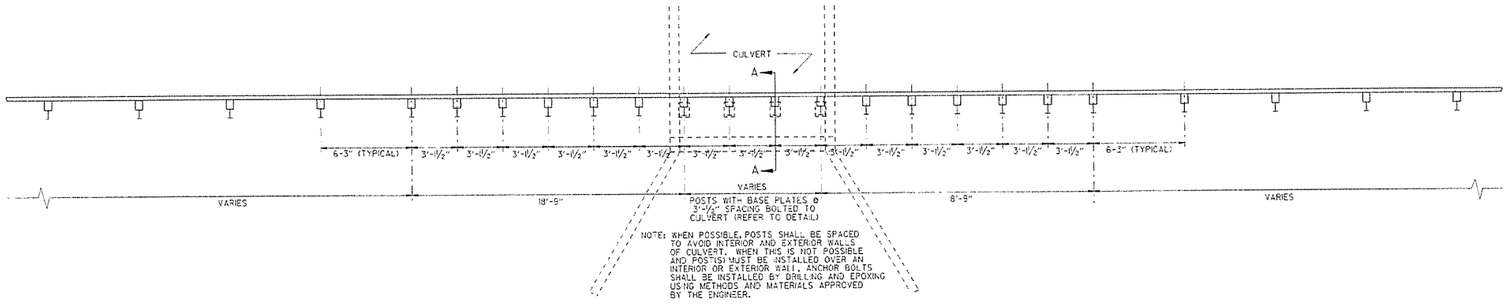
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



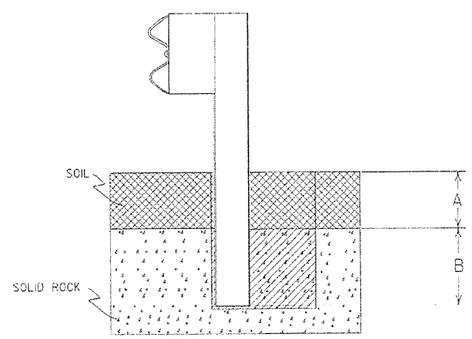
DETAIL OF CONNECTION



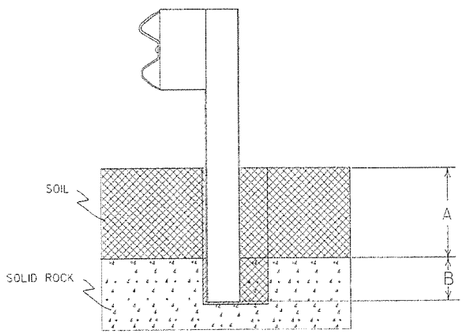
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

Case 1

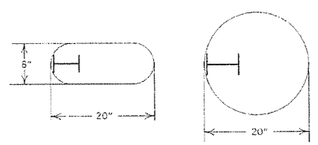


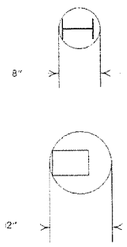
Case 2



Plan View Steel Posts

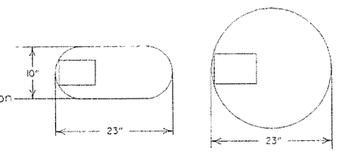
Either hole configuration acceptable





Plan View Wood Posts

Either hole configuration acceptable



Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

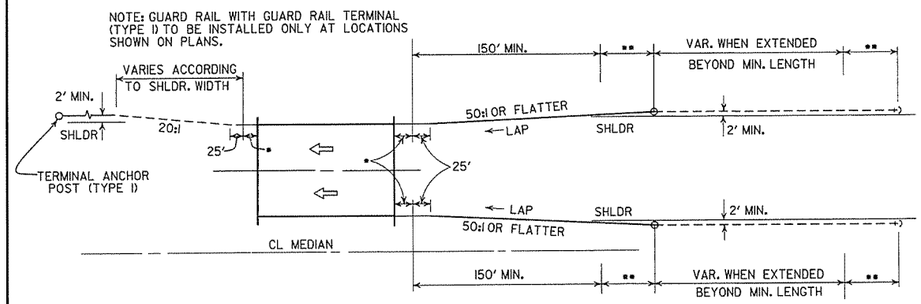
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

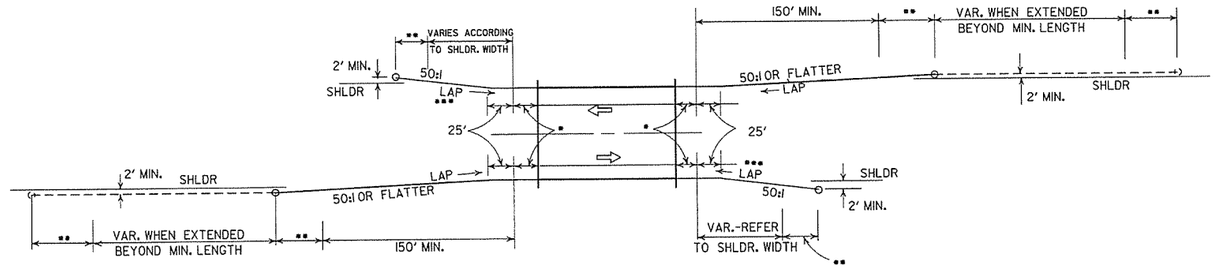
STANDARD DRAWING GR-8A

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



ONE-WAY TRAFFIC

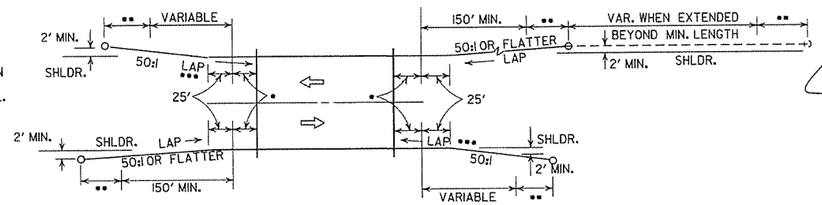
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

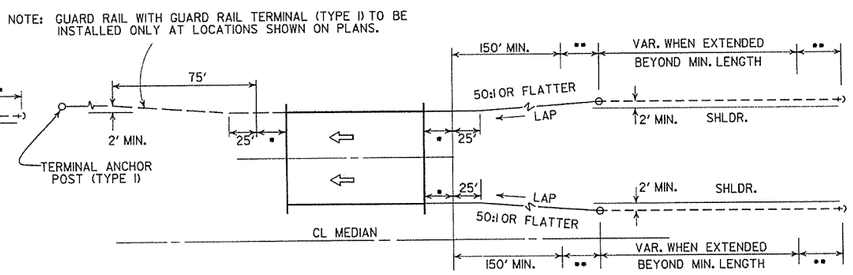
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

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



TWO-WAY TRAFFIC

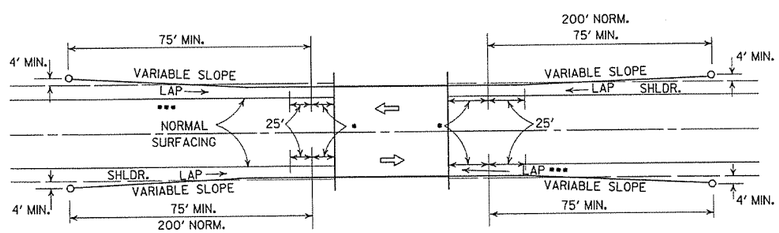
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

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



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

LEGEND

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

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

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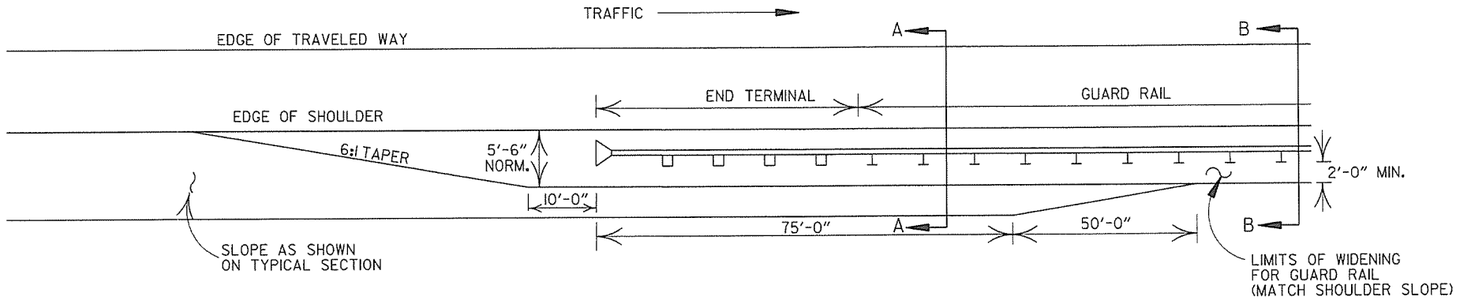
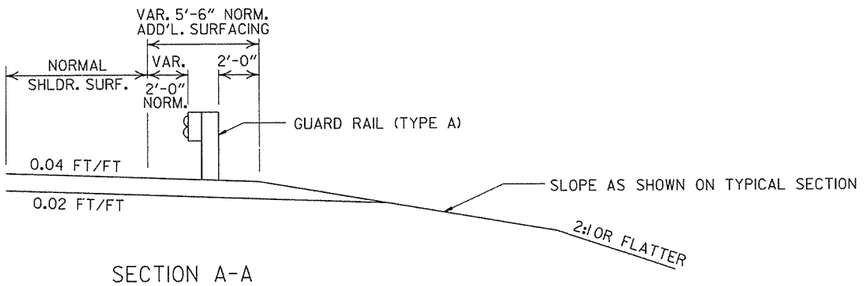
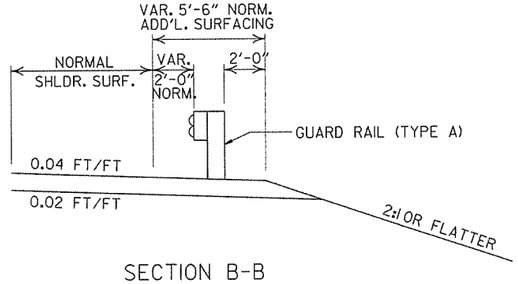
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





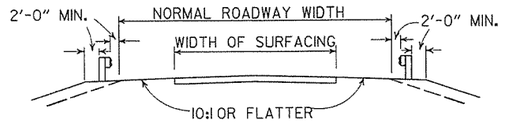
SECTION A-A



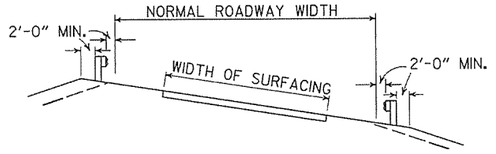
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

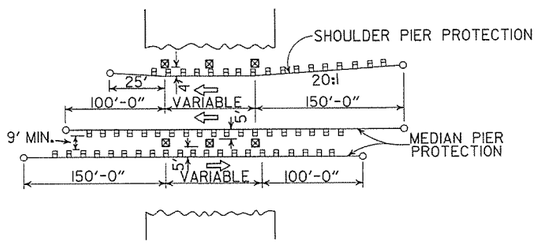


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



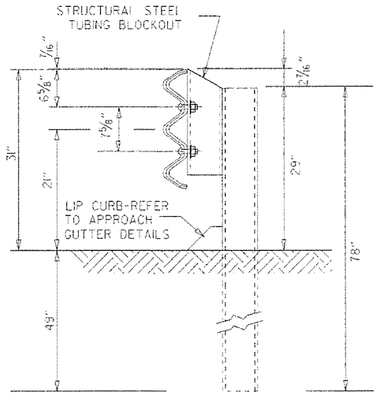
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

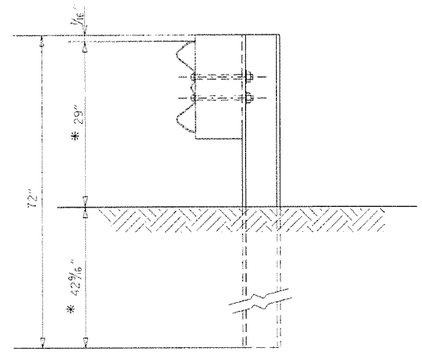
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

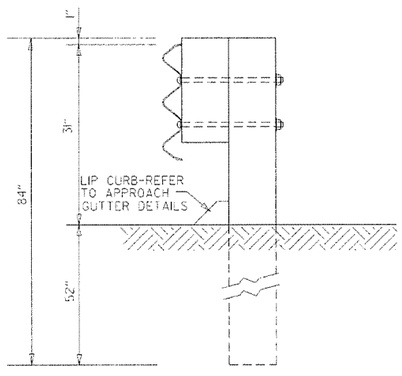


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

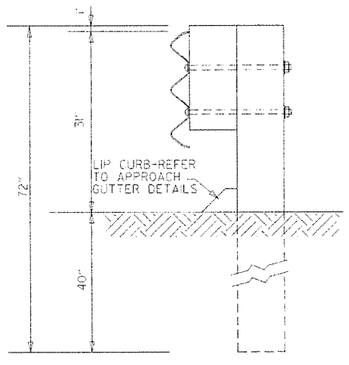


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

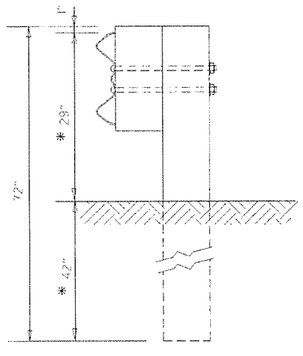
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



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

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

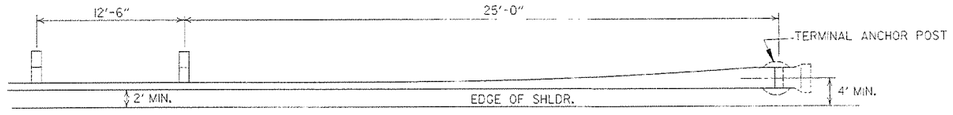
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

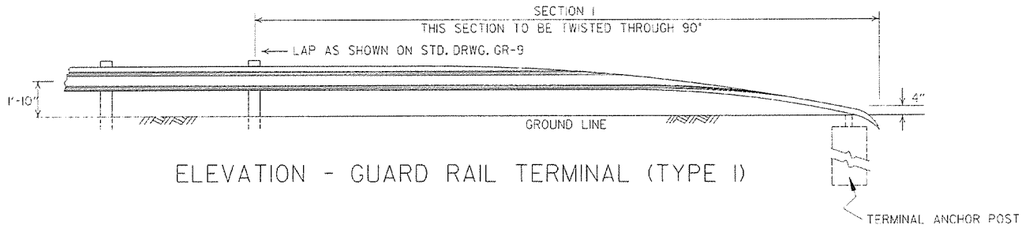
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

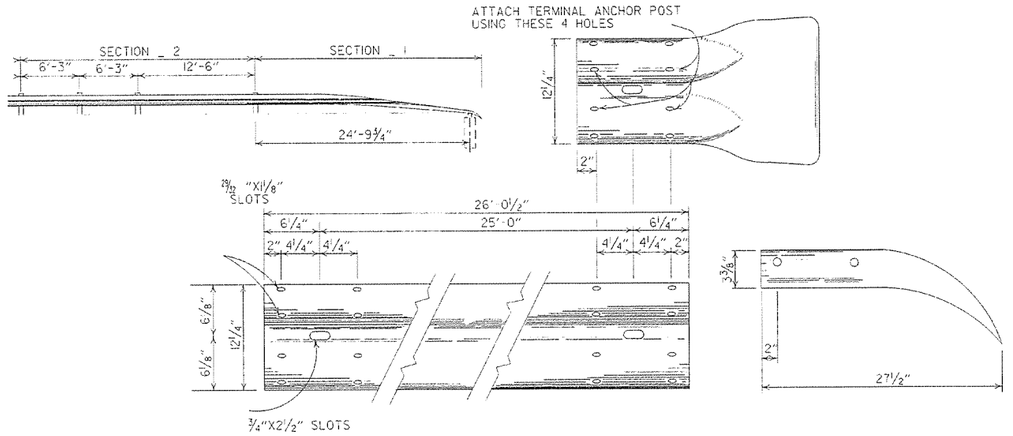


PLAN - GUARD RAIL TERMINAL (TYPE I)



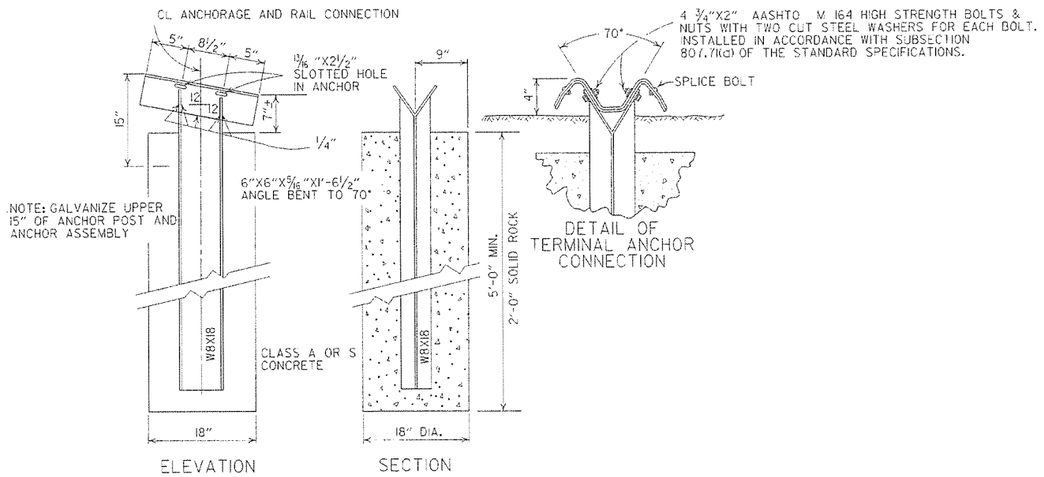
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

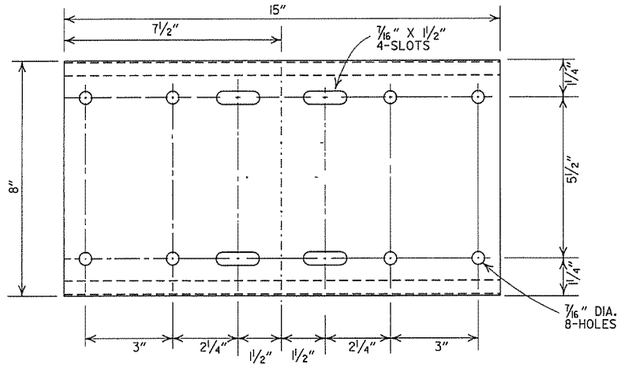
TERMINAL SECTION



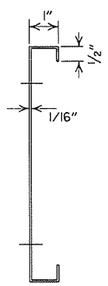
NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

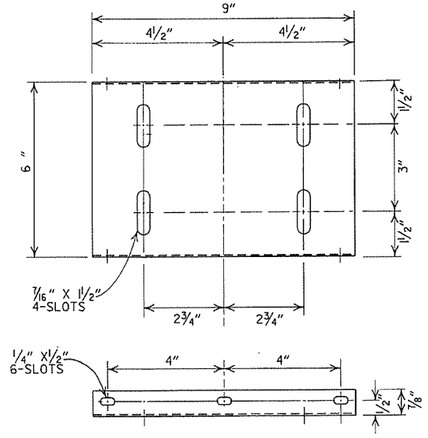
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

			ARKANSAS STATE HIGHWAY COMMISSION
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"		
6-26-97	REVISED LAP NOTE		GUARD RAIL DETAILS
10-18-96	REVISED ASTM REF. TO AASHTO		
11-3-94	DIMENSION TERMINAL DETAIL		
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92	STANDARD DRAWING GRT-1
10-1-92	DRAWN & ISSUED	10-1-92	
DATE	REVISION	DATE FILM	

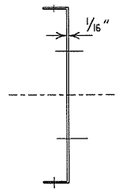


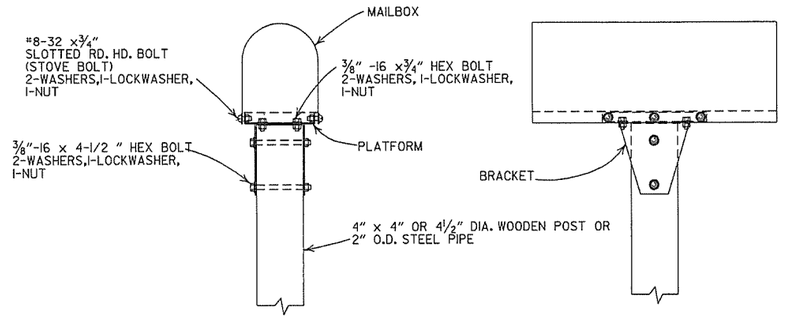
SHELF



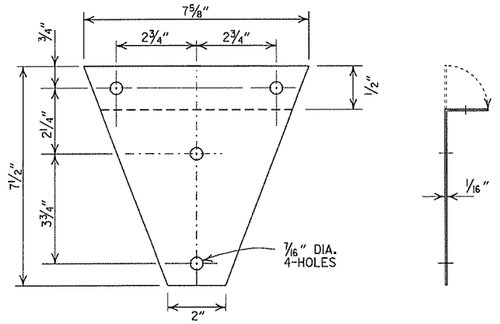


PLATFORM





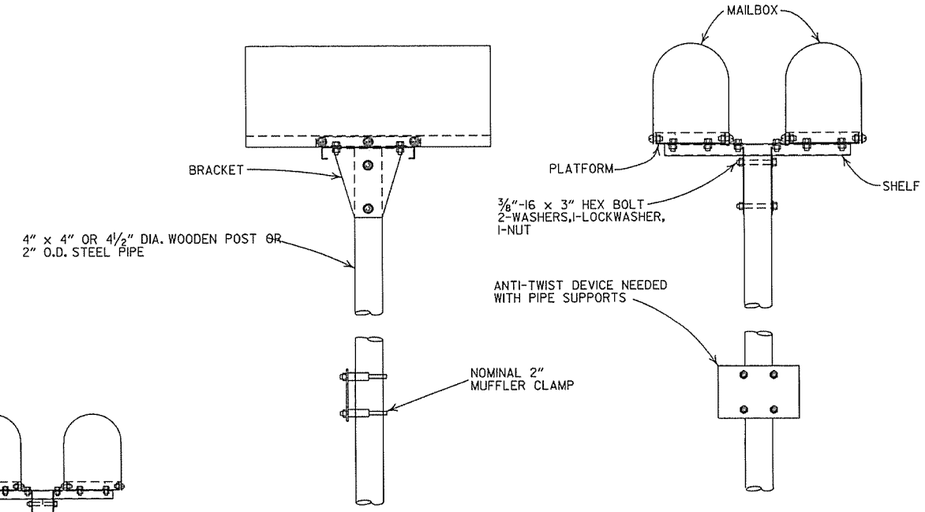
SINGLE INSTALLATION



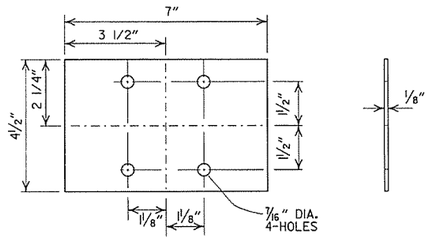
BRACKET

GENERAL NOTES

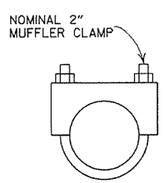
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



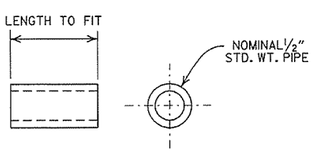
DOUBLE INSTALLATION



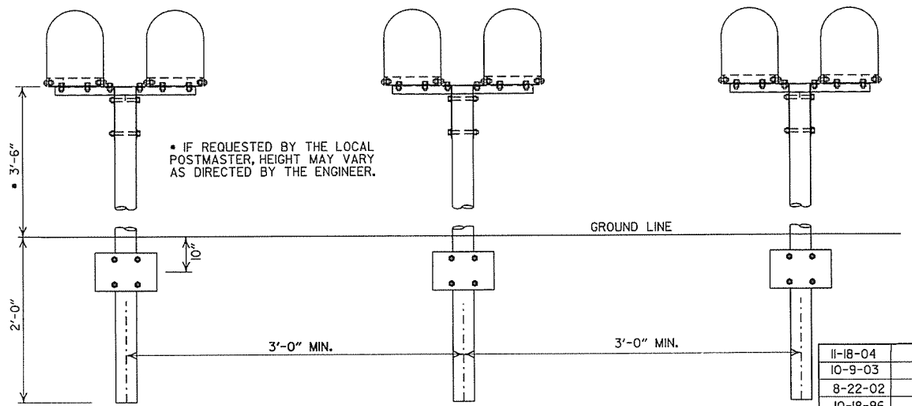
ANTI-TWIST PLATE



CLAMP



SPACER



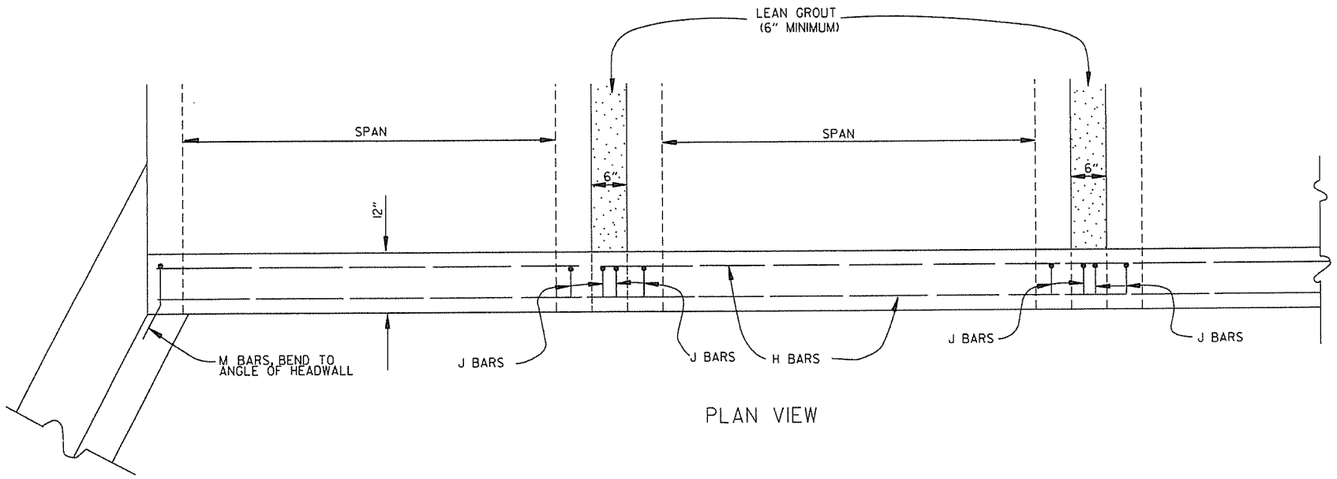
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

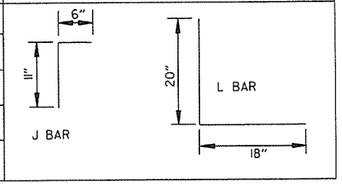
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

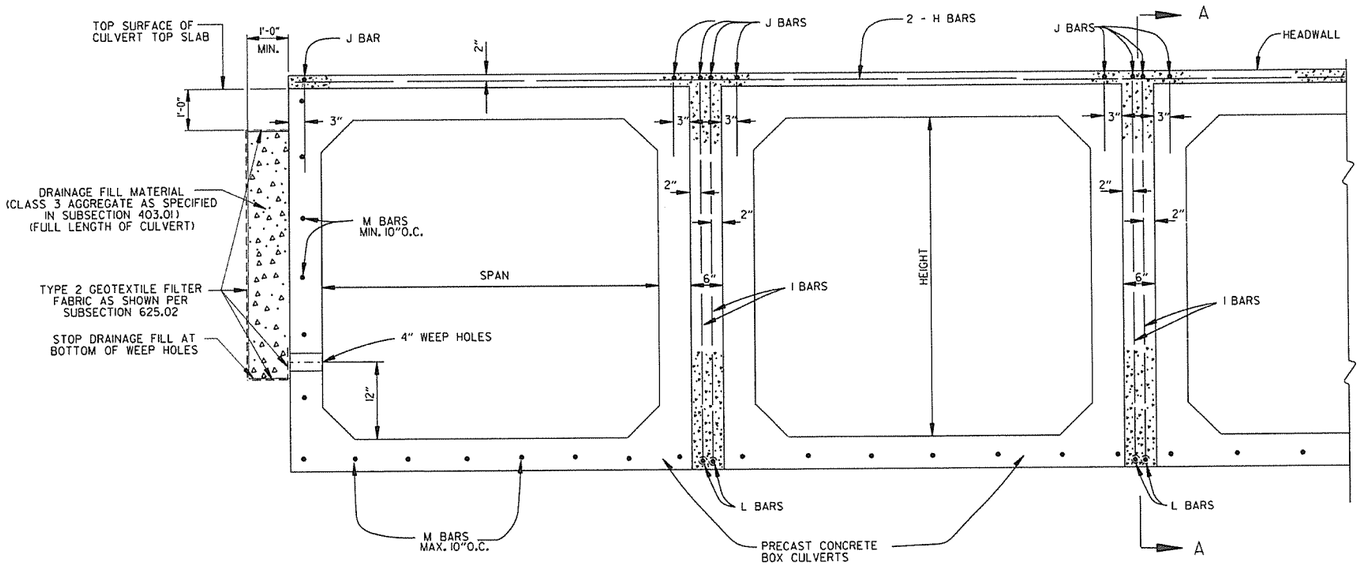
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

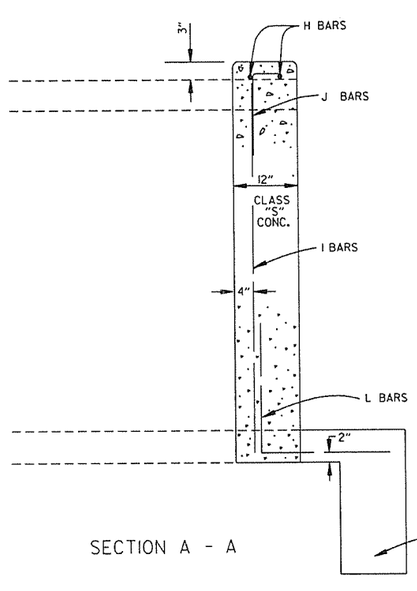
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT), ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED: JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	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	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

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

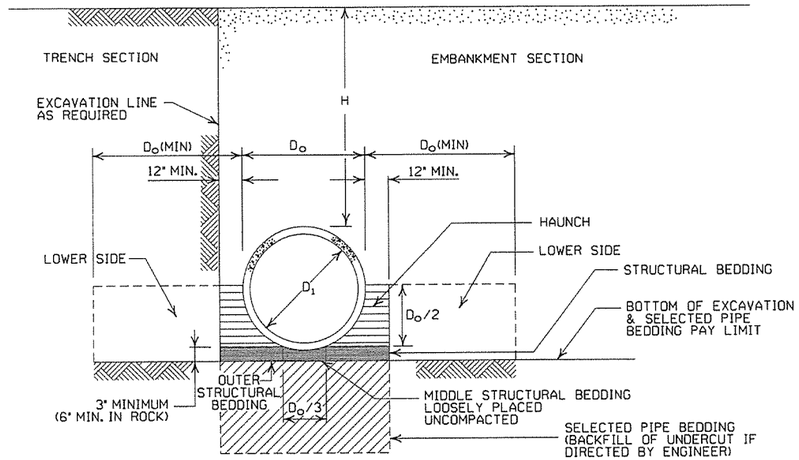
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

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

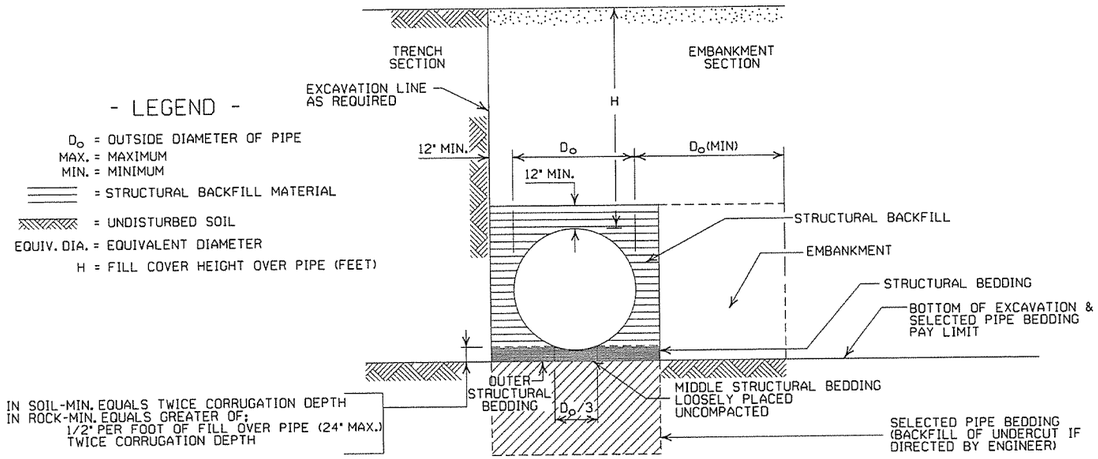
③ SM-3 WILL NOT BE ALLOWED.

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.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1	INSTALLATION TYPE 2	INSTALLATION TYPE 1	
36	40x31	5	0.079	3	2	12	15	
42	46x36	6	0.079	3	2	13	15	
48	53x41	7	0.079	3	2	13	15	
54	60x46	8	0.079	3	2	13	15	
60	66x51	9	0.079	3	2	13	15	
66	73x55	12	0.079	3	2	15	15	
72	81x59	14	0.079	3	2	15	15	
78	87x63	14	0.079	3	2	15	15	
84	95x67	16	0.109	3	2	15	15	
90	103x71	16	0.109	3	2	15	15	
96	112x75	18	0.109	3	2	15	15	
102	117x79	18	0.109	3	2	15	15	
108	128x83	18	0.138	3	2	15	15	



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."

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

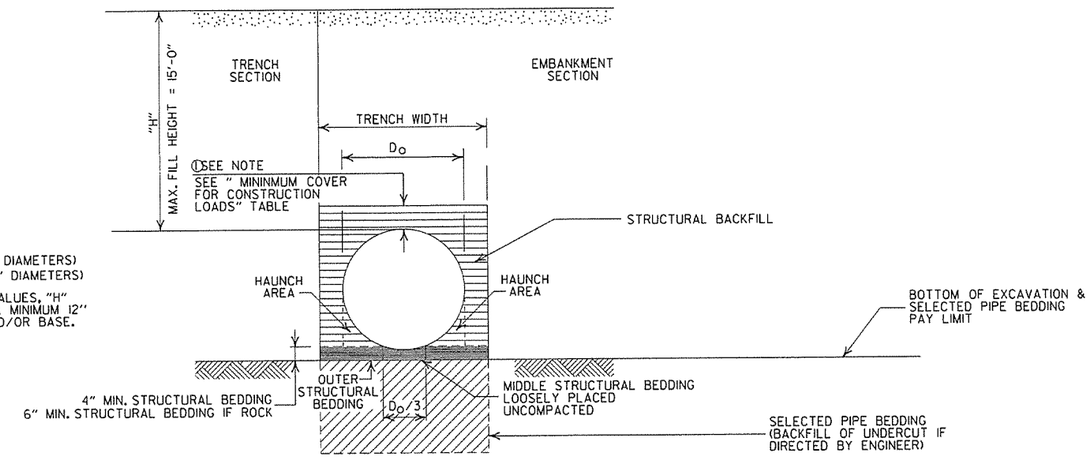
STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	TRENCH WIDTH (FEET) "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.

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 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

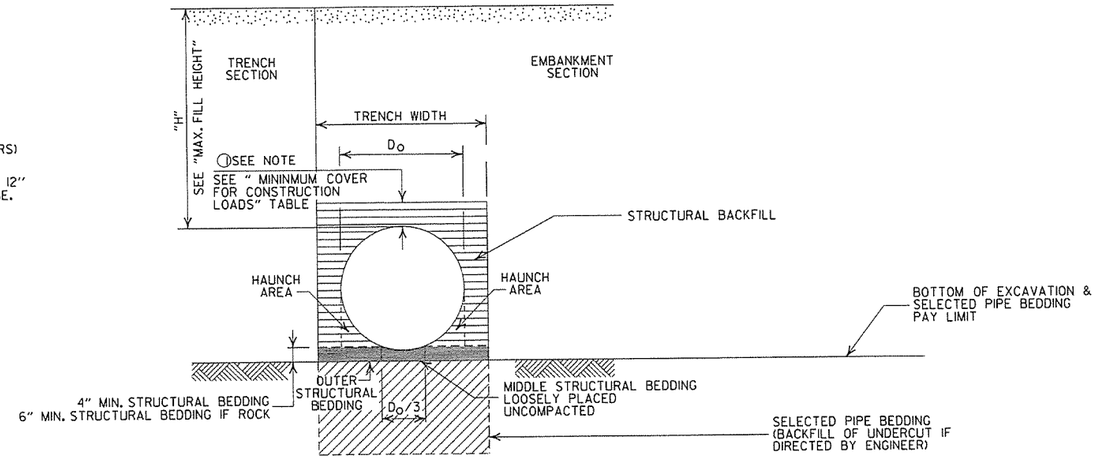
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS 18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL 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	

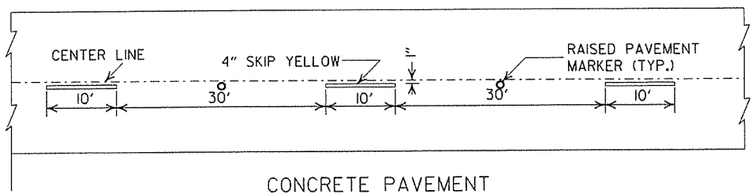
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

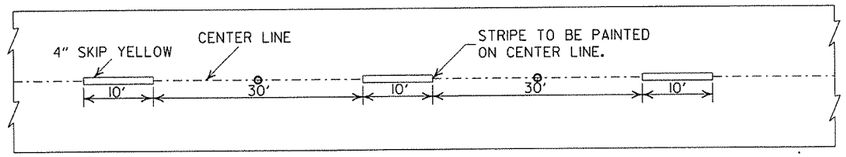
STANDARD DRAWING PCP-2

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

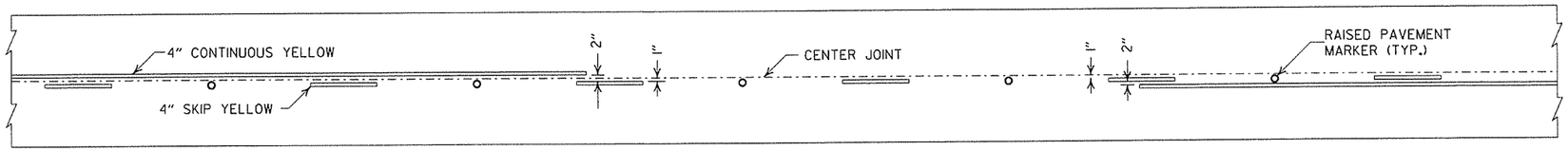


CONCRETE PAVEMENT

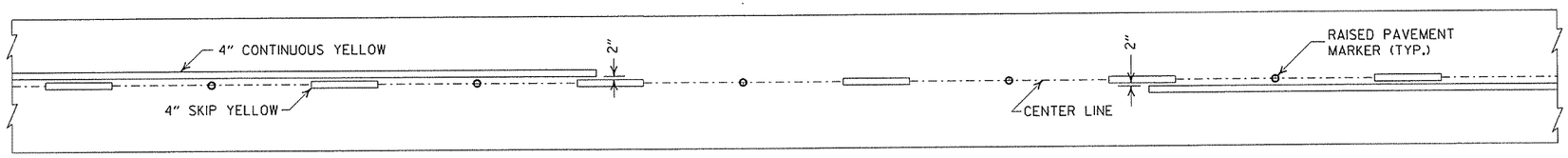


ASPHALT PAVEMENT

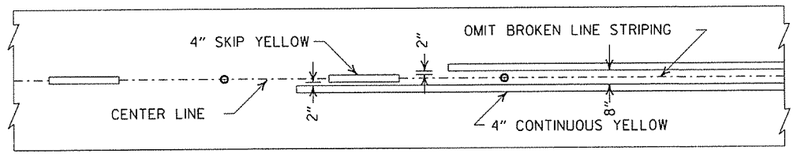
BROKEN LINE STRIPING



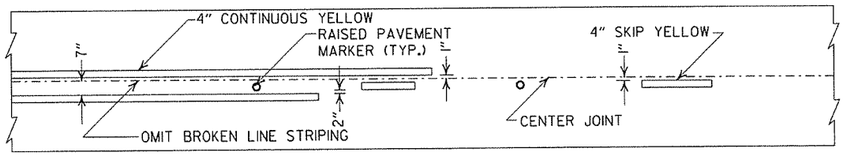
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

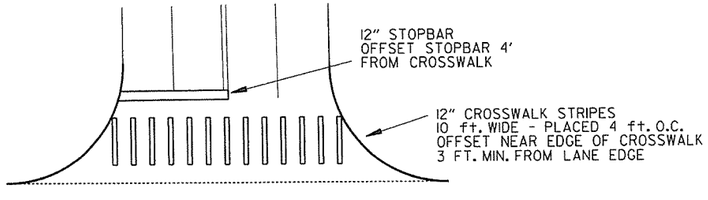


ASPHALT PAVEMENT



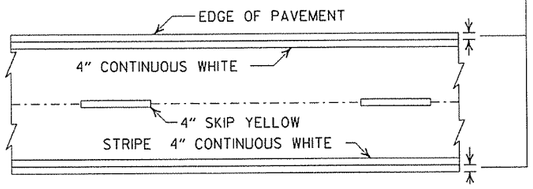
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

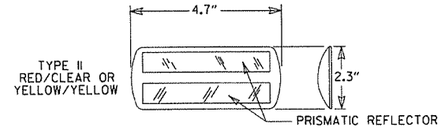


CROSSWALK AND STOPBAR DETAILS

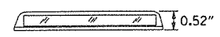
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

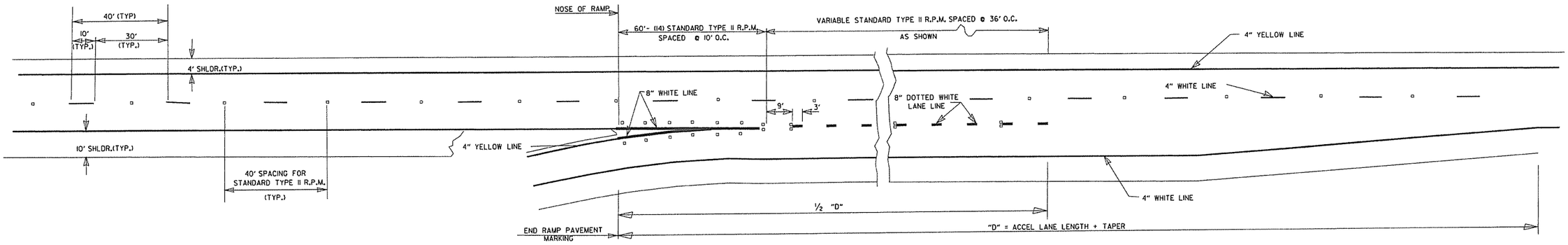
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

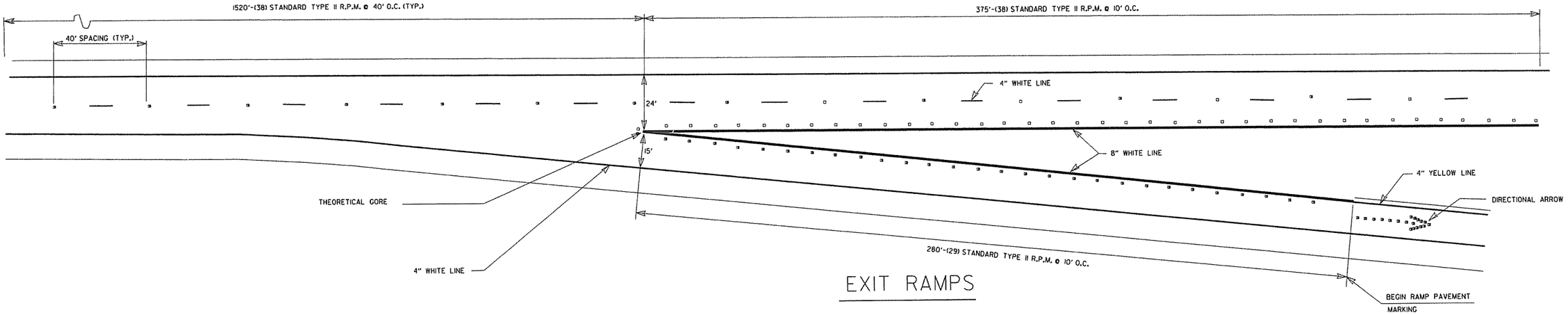
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

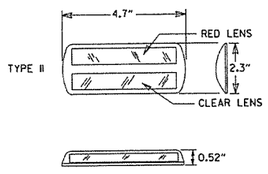
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

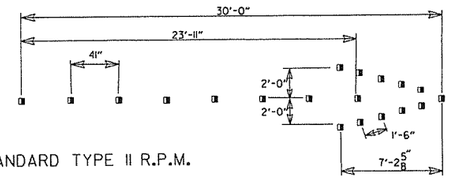


EXIT RAMPS



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
7-26-12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

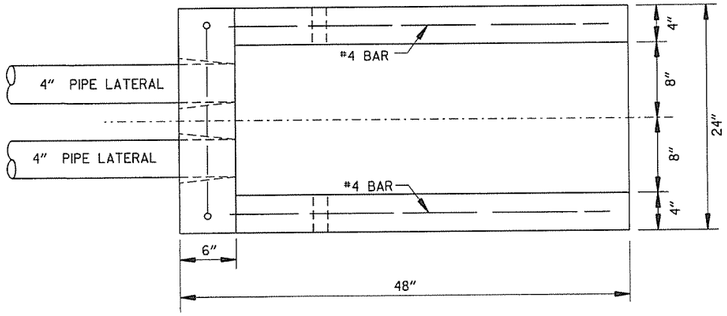
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2

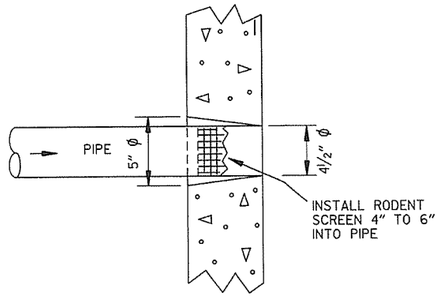
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

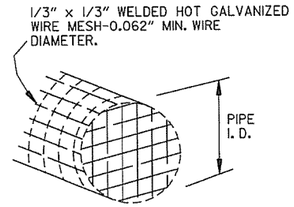
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



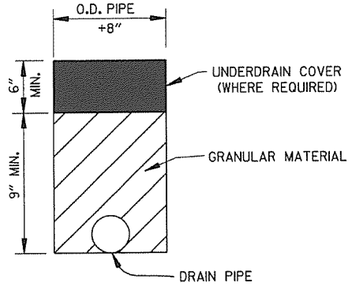
PLAN VIEW

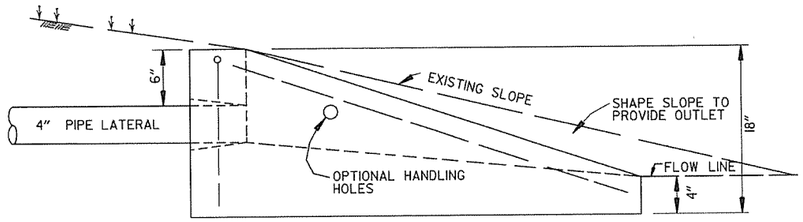


DETAIL OF HOLE FOR 4" PIPE

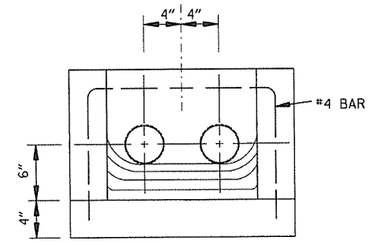


DETAIL OF RODENT SCREEN

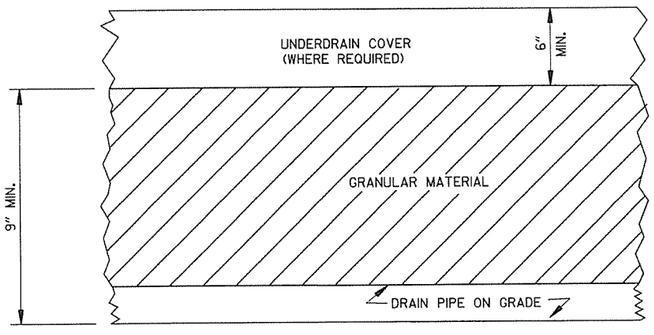




SIDE VIEW

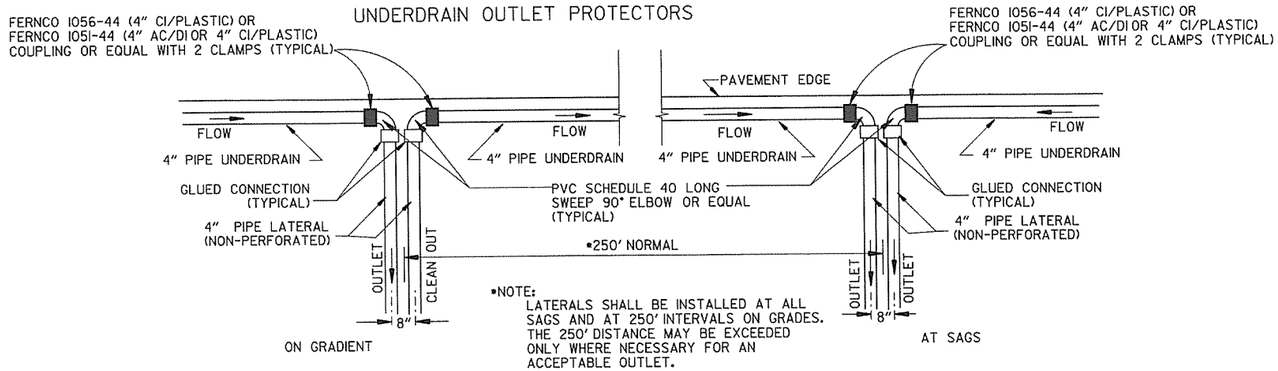


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

DATE	REVISION	DATE FILMED
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

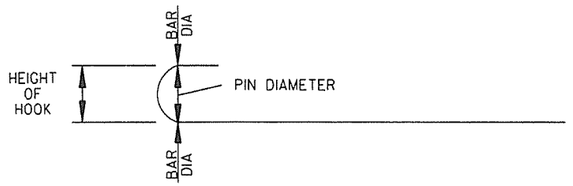
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

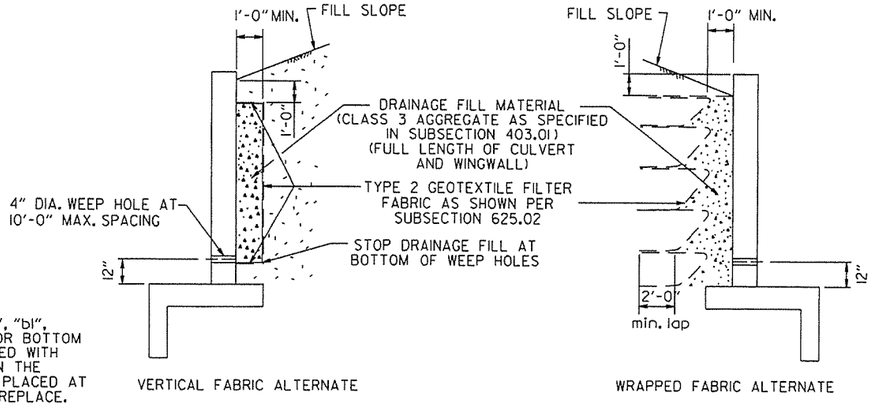
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

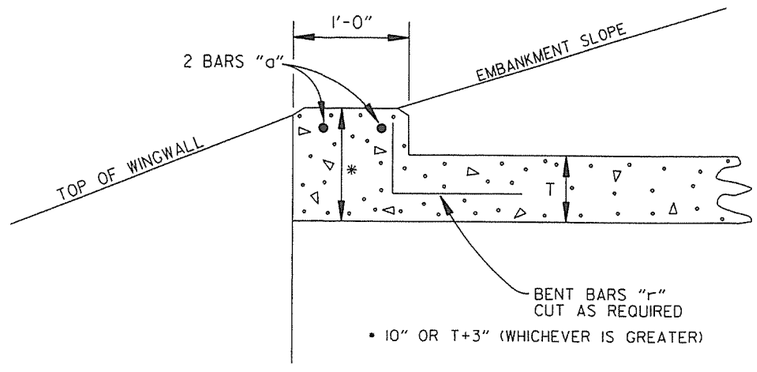
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

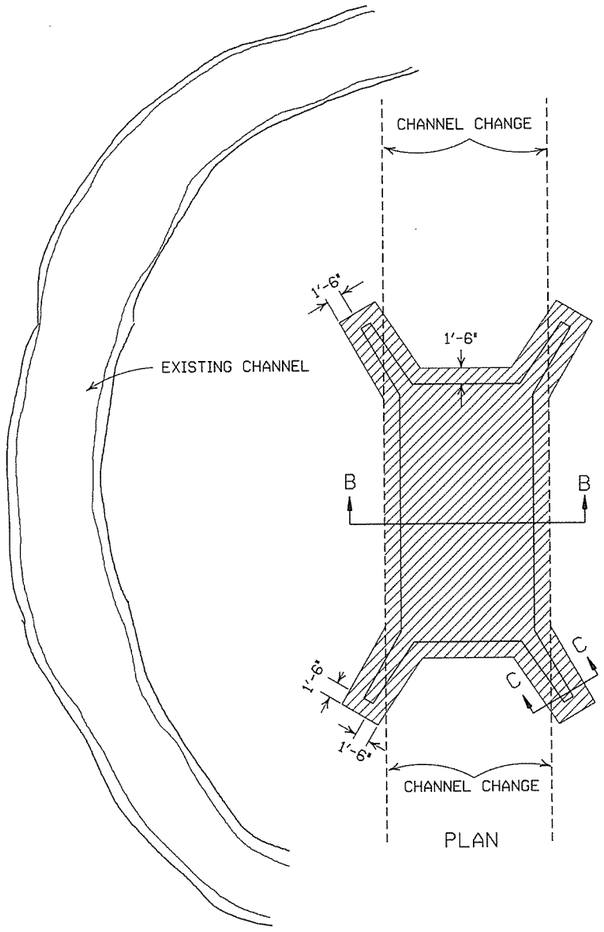
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

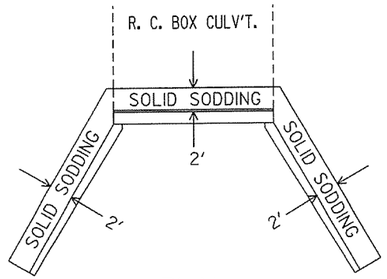
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

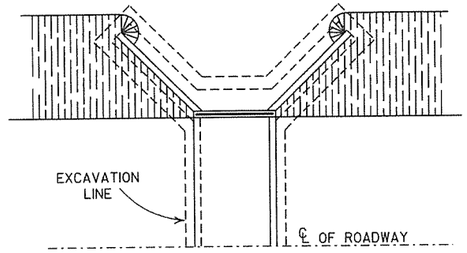
SOLID SODDING



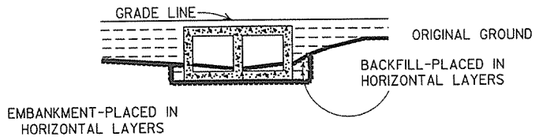
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

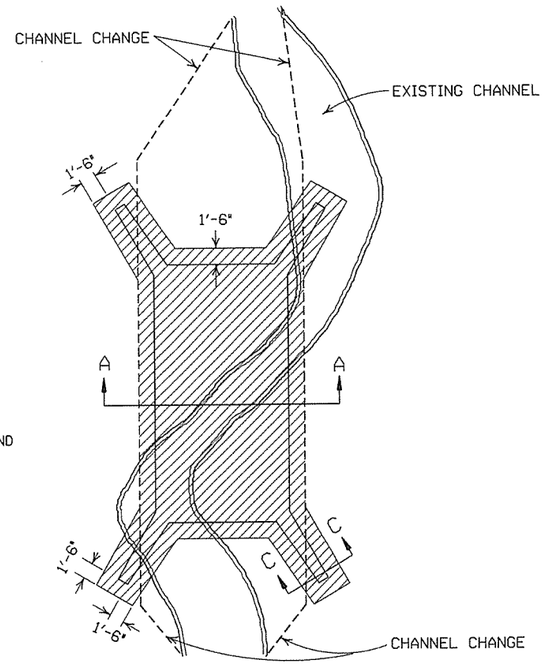


PLAN

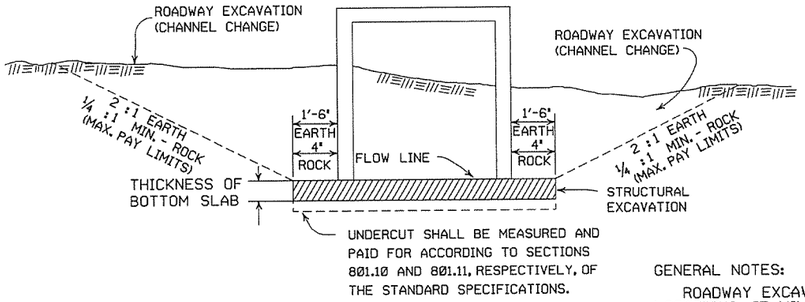


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

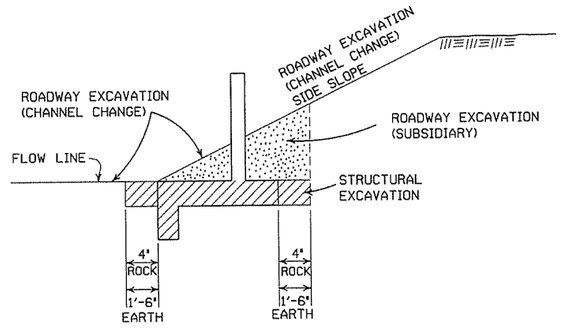


PLAN

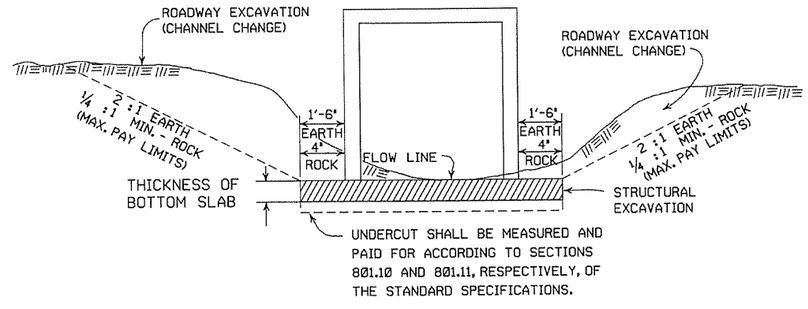


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

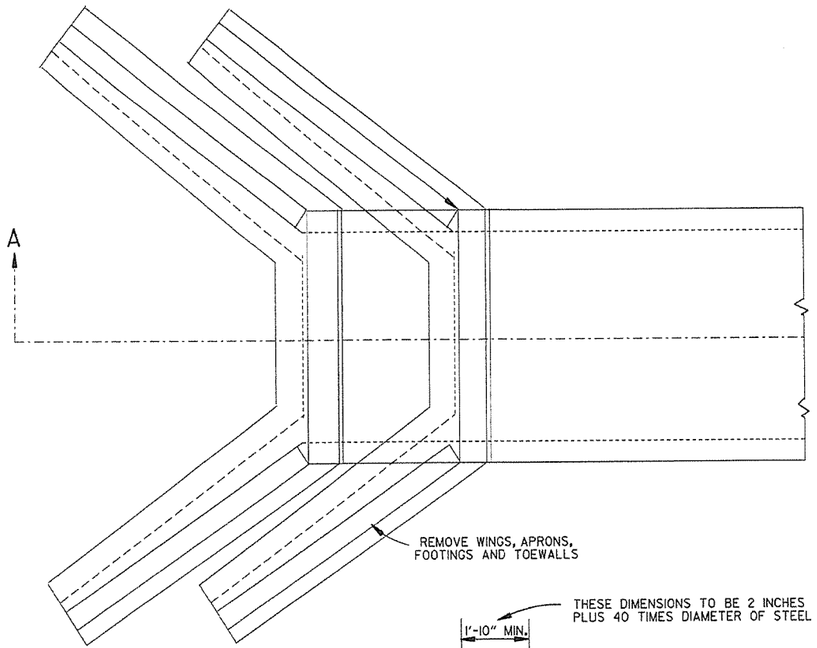
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

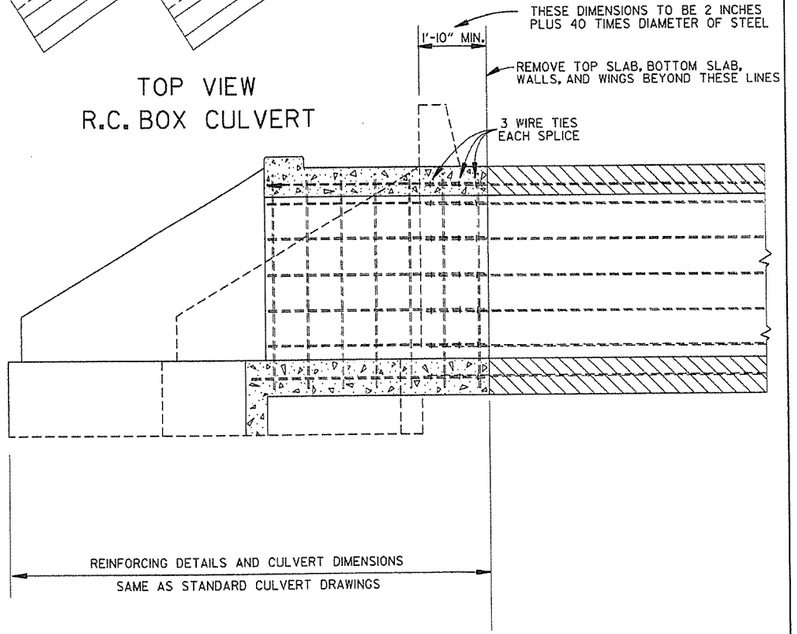
ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

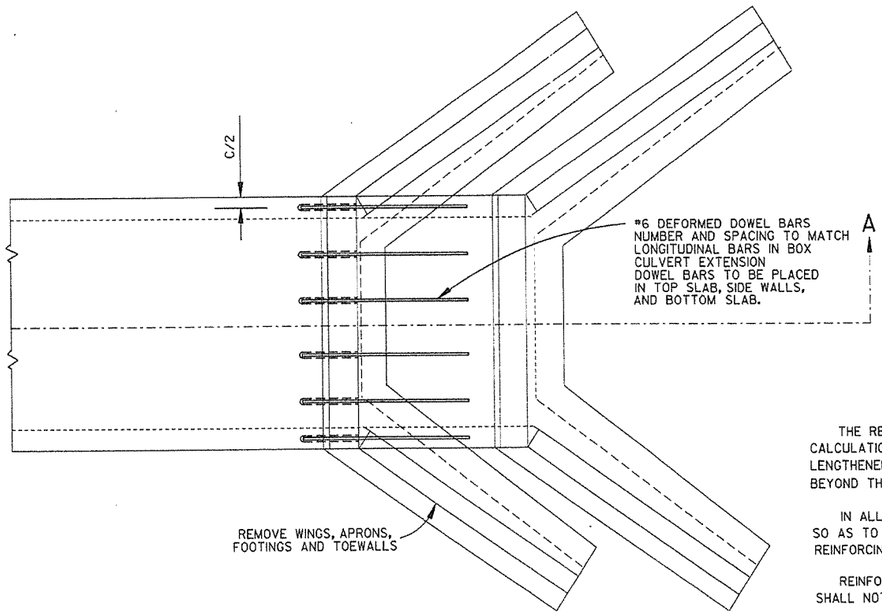


TOP VIEW
R.C. BOX CULVERT

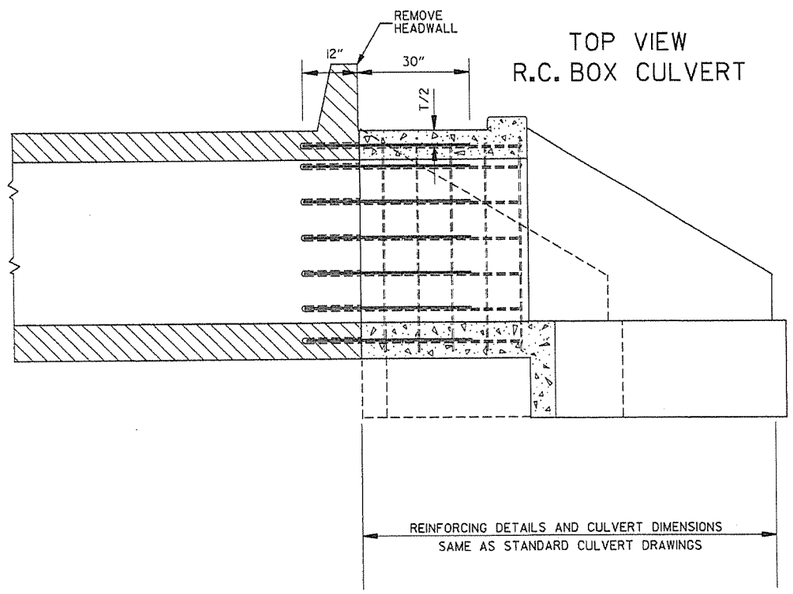


SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT



SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER, AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2, REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

ARKANSAS STATE HIGHWAY COMMISSION

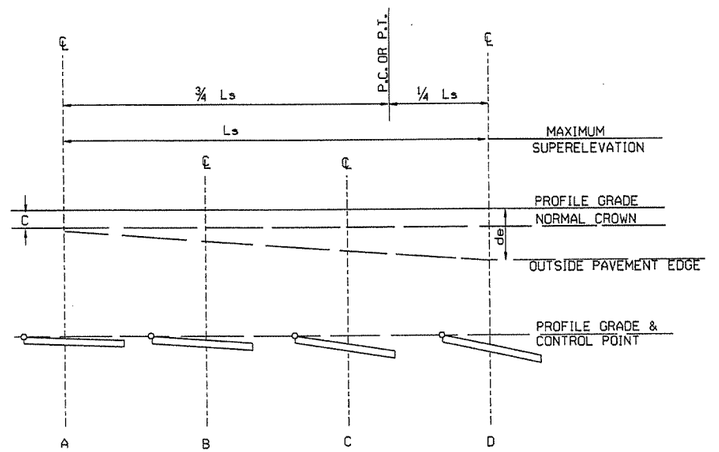
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

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

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 4° 15′ | D MAX = 3° 30′



ONE-WAY TRAFFIC
INSIDE LANE

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

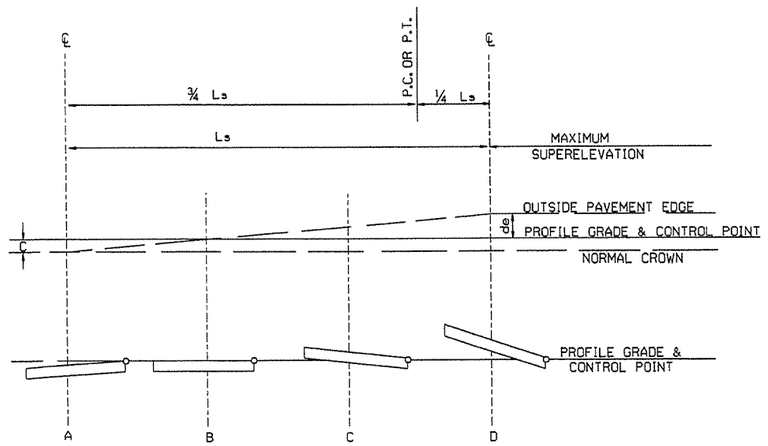
ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
S - SUPERELEVATION
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT
e - MAXIMUM RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
C - NORMAL CROWN (FT.)

GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%



ONE-WAY TRAFFIC
OUTSIDE LANE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

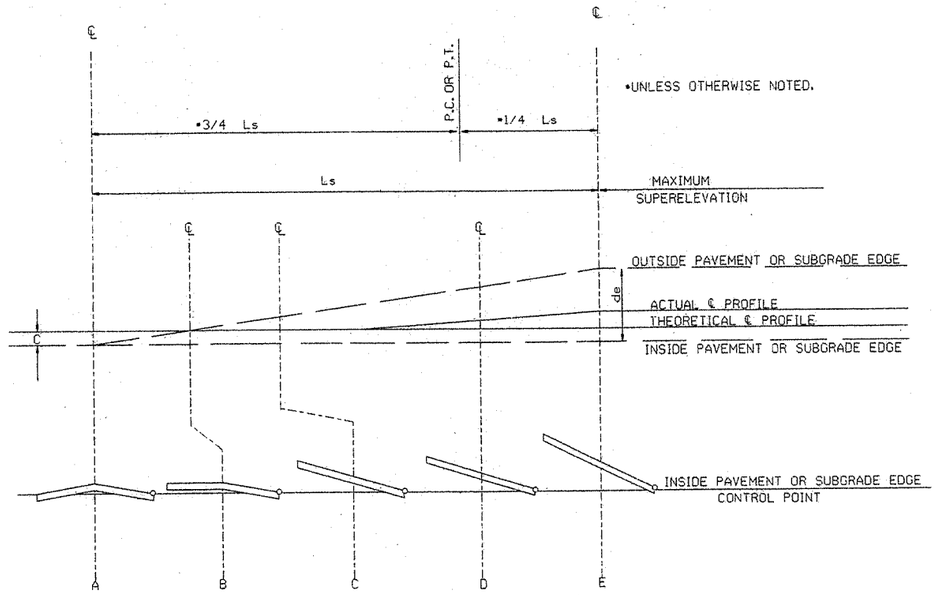
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 3° 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.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

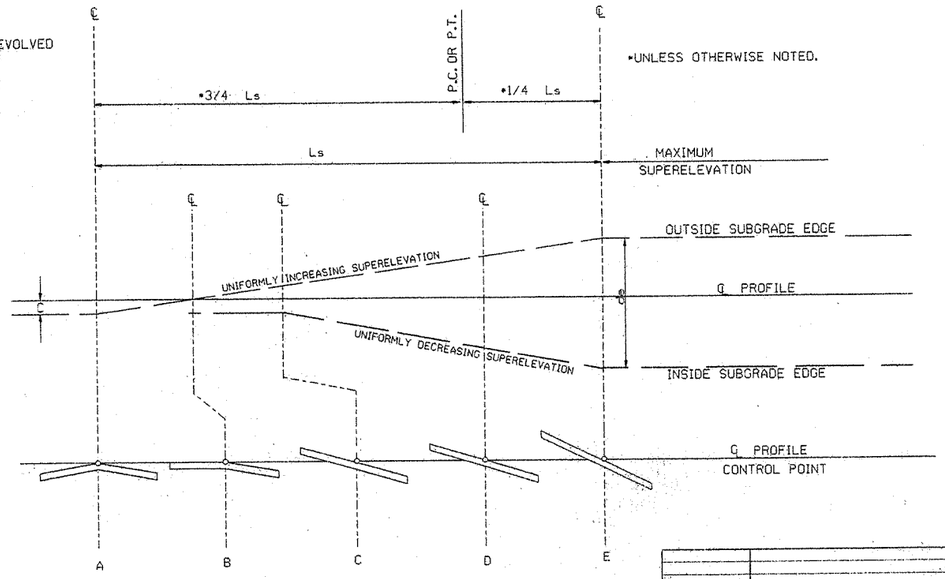
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

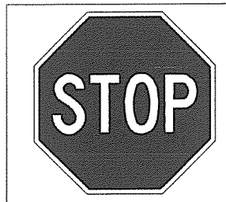
DATE	REVISION	DATE FILMED
10-16-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

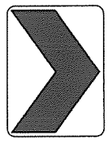
STANDARD DRAWING SE-2

FILE STDSE2.DGN



R1-1
30"X30"

W1-3
30"X30"
(LT. OR RT.)

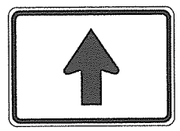


W1-8
18"X24"

W2-5
30"X30"

W3-1
36"X36"

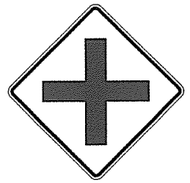
W5-1
36"X36"



M6-3
21"X15"

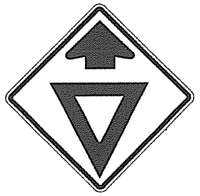
R1-2
36"X36"X36"

W1-4
30"X30"
(LT. or RT.)



W2-1
30"X30"

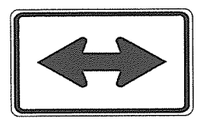
S1-1
36"X36"



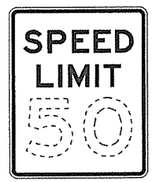
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.

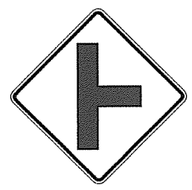


M6-4
21"X15"



R2-1
24"X30"

W1-5
30"X30"
(LT. or RT.)

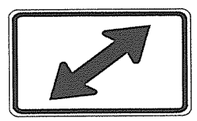


W2-2
30"X30"

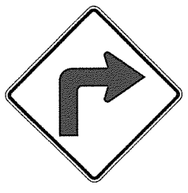
W5-2
36"X36"

W8-3
36"X36"

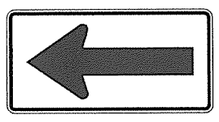
R1-3P
18"X6"



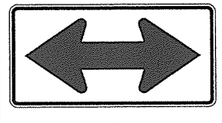
M6-5
21"X15"



W1-1
30"X30"
(LT. or RT.)

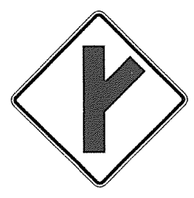


W1-6
48"X24"

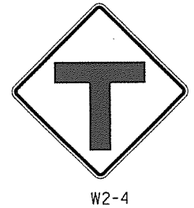


W1-7
48"X24"

W1-2
30"X30"
(LT. or RT.)

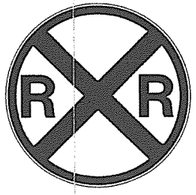


W2-3
30"X30"
(LT. or RT.)

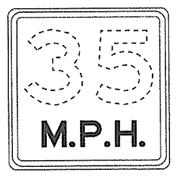


W2-4
30"X30"

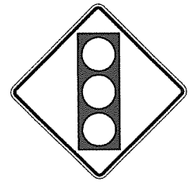
W5-3
36"X36"



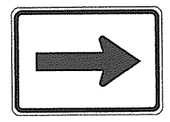
W10-1
36" DIAMETER



W13-1P
18"X18"

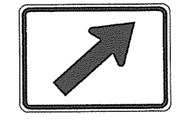


W3-3
36"X36"

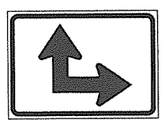


M6-1
21"X15"

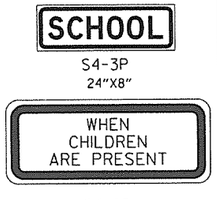
NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.



M6-2
21"X15"

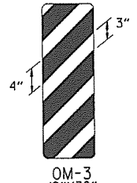


M6-6
21"X15"

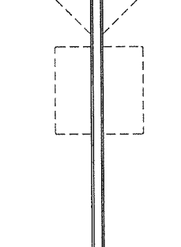


S4-3P
24"X8"

S4-2P
24"X10"



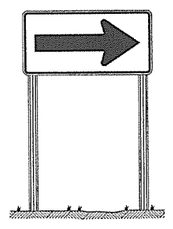
OM-3
12"X36"
(LT. or RT.)



(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

TYPE A

NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.



TYPE B

TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

SUPPORT ASSEMBLIES

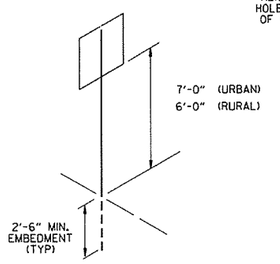
DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

ARKANSAS STATE HIGHWAY COMMISSION

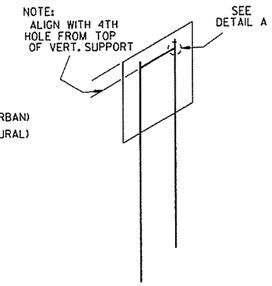
STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

STANDARD DRAWING SHS-1

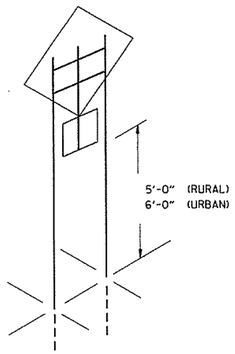
STANDARD HIGHWAY SIGNS



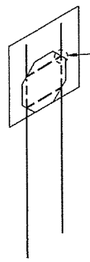
U-1



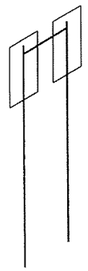
U-2



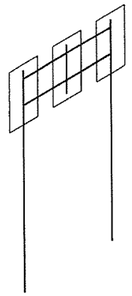
U-2 (A)



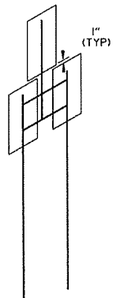
U-2 (B)



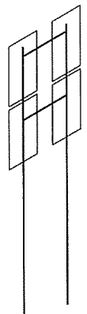
U-2 (1)



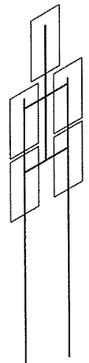
U-2 (2)



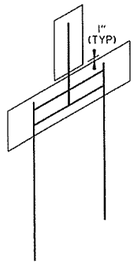
U-2 (3)



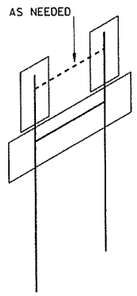
U-2 (4)



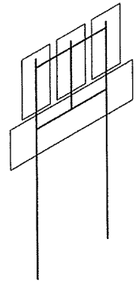
U-2 (5)



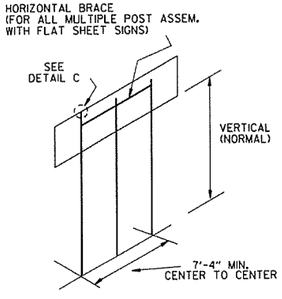
U-2 (6)



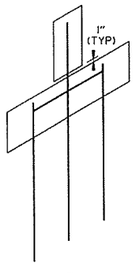
U-2 (7)



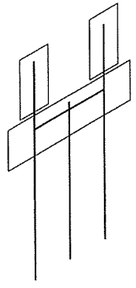
U-2 (8)



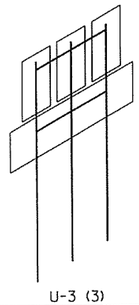
U-3



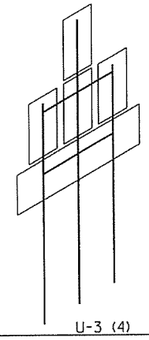
U-3 (1)



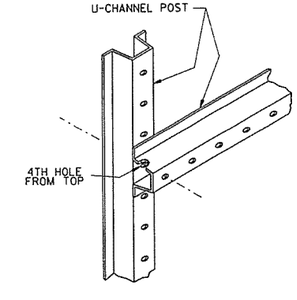
U-3 (2)



U-3 (3)

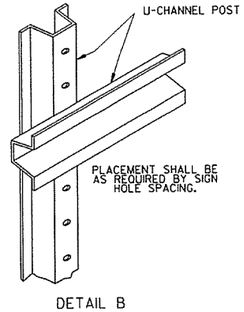


U-3 (4)



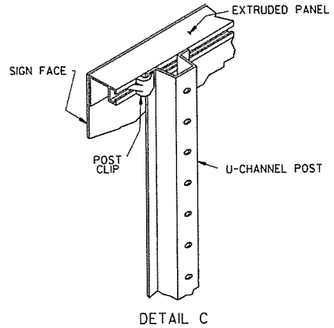
DETAIL A

SHOWING HORIZONTAL BRACE



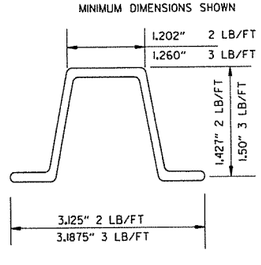
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



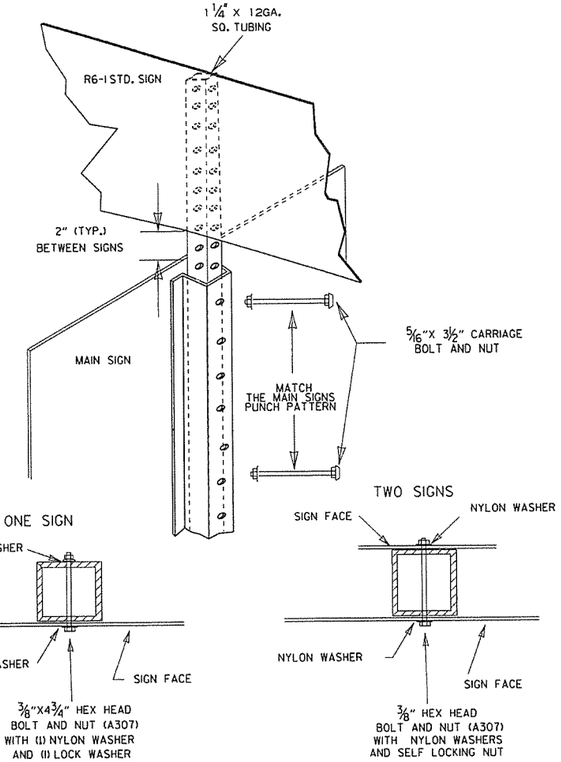
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



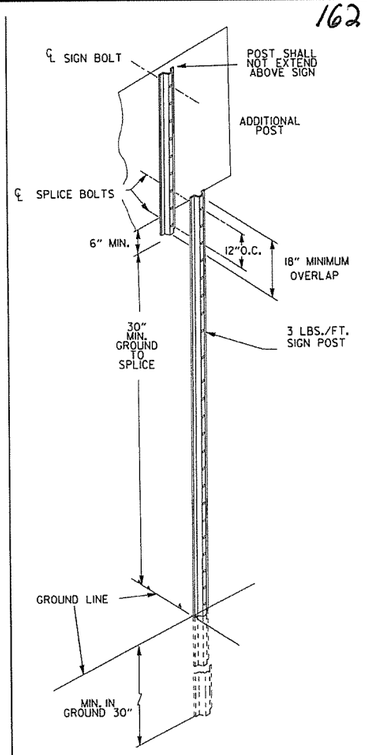
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

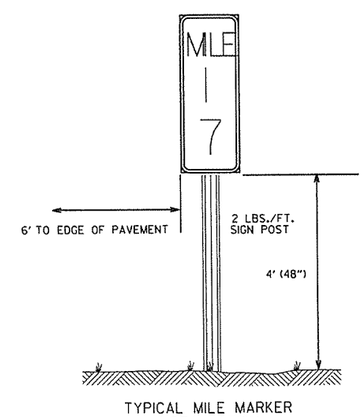
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

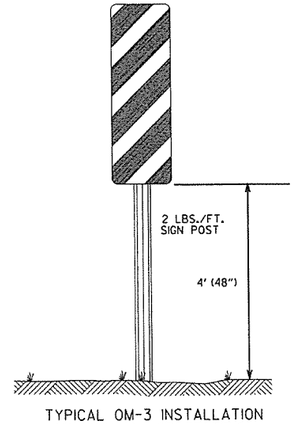
NORMAL INSTALLATIONS WILL REQUIRE $\frac{5}{16}$" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

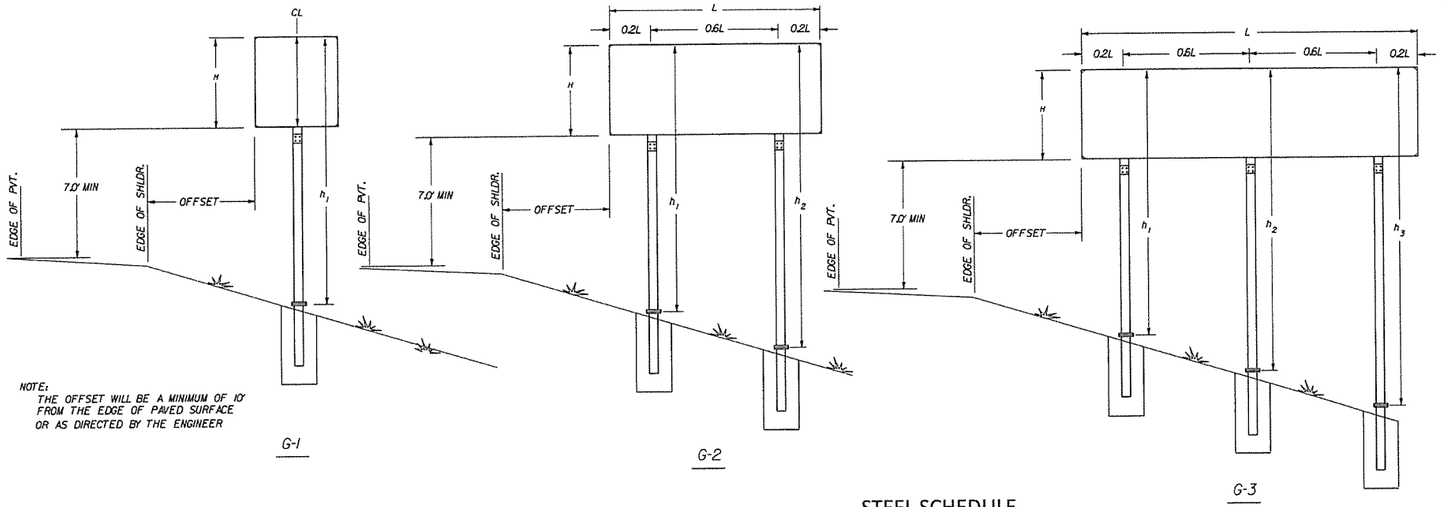
DATE	REVISION	FILMED
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

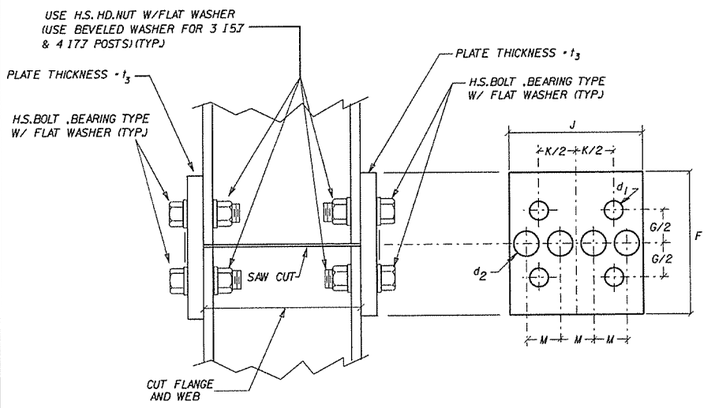
U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

POST SIZE	BASE CONNECTION DATA: BOLT SIZE	BOLT TORQUE (INCH/LBS)	A	B	C	D	E	t_1	t_2	W	R	FUSE PLATE DATA: F	G		J	K	M	d_1	d_2	t_3	BOLT SIZE	WT. OF EACH FUSE PLATE LBS.
W 6X9												4¼"	2"		4"	2¼"	1"	9/16"	¾"	¼"	½" x 1½"	1.01
W 6X12	⅝" x 2¾"	450"-680"	5"	2"	1¼"	2¾"	1⅛"	¾"	½"	¼"	11/32"	5"	2½"		6"	3½"	1½"	11/16"	1¼"	⅜"	⅝" x 2¼"	2.51
W 6X15												5"	2½"		5¼"	2¾"	1¼"	1⅛"	1¼"	⅜"	¾" x 2¼"	2.26
W 8X18												5½"	2½"		5¼"	2¾"	1¼"	1⅜"	1"	½"	¾" x 2¼"	3.35
W 8X21																						
W 10X22	¾" x 3½"	750"-1050"	6"	2¼"	1⅜"	3½"	1¼"	1"	¾"	5/16"	13/32"	6"	3"		5¾"	2¾"	1⅜"	1⅛"	1⅛"	½"	¾" x 2¼"	4.03
W 10X26																						
W 12X26												6"	3"		6½"	3½"	1⅝"	1⅛"	1⅝"	½"	¾" x 2¼"	4.47

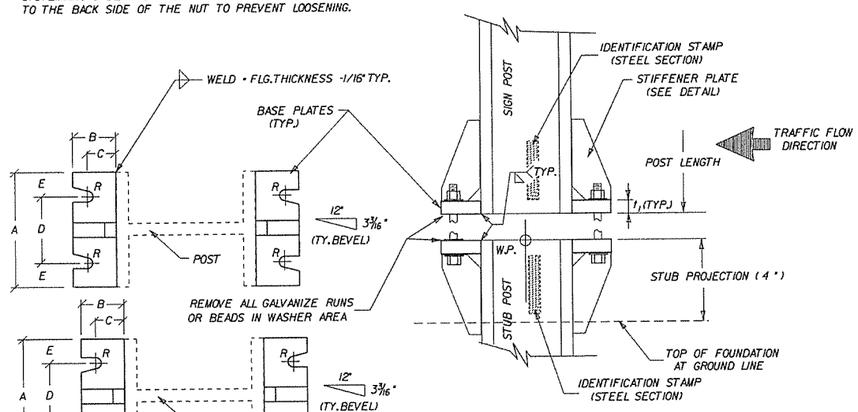


NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER

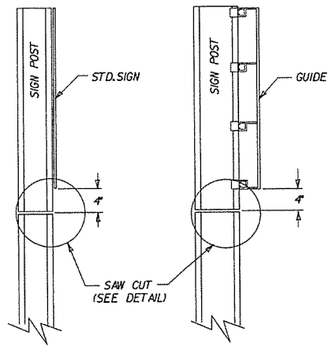


NOTE: USE H.S. HEX HEAD BOLTS, HEX HEAD NUTS AND BEVEL OR FLAT WASHERS (WHERE REQ.) UNDER NUTS. ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AST M-A36, AST M-A441, AST M-572 GRADE 50, OR AST M-A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.

NOTE: SECTIONS SHOWN ARE FOR INSTALLATION ON THE RIGHT SHOULDER AND IN THE GORE. BOLT HOLES IN BASE PLATE ARE SLOTTED AND BEVELED AS SHOWN. USE H.S. BOLTS WITH HEX HD., HEX NUT AND THREE FLAT WASHERS FOR EACH BOLT. SEE TABLE FOR BOLT DIA. AND TORQUE.
NOTE: ASSEMBLE SIGN POST TO STUB POST USING THE BOLTS SPEC. IN THE TABLE AND AS SHOWN IN THE ELEVATION DETAILS. THERE SHALL BE THREE FLAT WASHERS ON EACH BOLT LOCATED AS SHOWN IN THE ELEVATIONS. USE A SHIM TO PLUMB THE SIGN POST. THEN TIGHTEN THE BOLTS USING A 12" TO 15" WRENCH UNTIL THE WASHERS AND SHIMS ARE SEATED AND THE BOLT THREADS ARE CLEAR. THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE). THE BURR THREADS ADJACENT TO THE BACK SIDE OF THE NUT TO PREVENT LOOSENING.



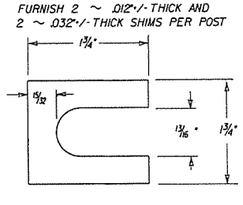
NOTE: BOLT HOLES, USED IN THE MOUNTING OF STANDARD SIGNS SHALL BE LOCATED IN THE FLANGE ADJACENT TO THE NEAR EDGE OF PAVEMENT FOR SINGLE POST ASSEMBLIES AND IN THE OUTSIDE FLANGES FOR MULTIPLE POST ASSEMBLIES.



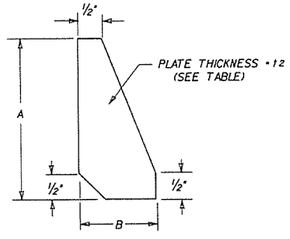
NOTE: POST SHALL BE SAW CUT AFTER GALVANIZING AND THE CUT SURFACE TREATED. AFTER PLATE IS INSTALLED AND ALL BOLTS FULLY TIGHTENED, WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPEC. O-G-93 (STICK ONLY).

STANDARD SIGNS GUIDE SIGNS

FUSE PLATE DETAILS



SHIM DETAIL

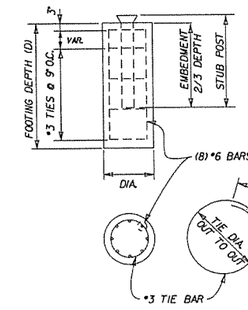


STIFFENER PLATE DETAIL

STEEL SCHEDULE

FOOTING DIAMETER	#3 TIE BARS: DIAMETER	BAR LENGTH	POUNDS
INCHES	INCHES	FEET	
18	12	4.39	1.65
24	18	5.96	2.24
30	24	7.53	2.83
36	30	9.1	3.42

FOOTIG DEPTH	#6 STRAIGHT BARS: BAR LENGTH	NUMBER REQ'D.	POUNDS
FEET	FEET		
2.50	2.00	8	24.03
3.00	2.50	8	30.04
3.50	3.00	8	36.05
4.00	3.50	8	42.06
4.50	4.00	8	48.06
5.00	4.50	8	54.07
5.50	5.00	8	60.08
6.00	5.50	8	66.09
6.50	6.00	8	72.10
7.00	6.50	8	78.10
7.50	7.00	8	84.11
8.00	7.50	8	90.12



FOOTING QUANTITIES

FOOTIG DEPTH	NUMBER TIE BARS REQ'D	18" DIAMETER: CLASS S CONCRETE	REINF STEEL	24" DIAMETER: CLASS S CONCRETE	REINF STEEL	30" DIAMETER: CLASS S CONCRETE	REINF STEEL	36" DIAMETER: CLASS S CONCRETE	REINF STEEL
FEET		CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)
2.50	4	0.16	31						
3.00	4	0.20	37						
3.50	5	0.23	44						
4.00	6	0.26	52	0.47	56				
4.50	6	0.29	58	0.52	62				
5.00	7	0.33	66	0.58	70	0.91	74		
5.50	8			0.64	78	1.00	83		
6.00	8			0.70	84	1.09	89	1.57	93
6.50	9					1.18	98	1.70	103
7.00	10					1.27	106	1.83	112
7.50	10							1.96	118
8.00	11							2.09	128

GENERAL NOTES

TIGHTEN THE HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.

BASE PLATES AND STIFFENER PLATES SHALL BE OF THE SAME MATERIAL AS THE PRIMARY SUPPORT POSTS WHICH THEY ARE WELDED.

REFER TO THE PLANS FOR FOOTING DIMENSIONS.

EACH STUB POST AND SIGN POST SHALL HAVE A PERMANENT IDENTIFYING STAMP WHICH SPECIFIES THE STEEL SECTION USED. IF THE CONTRACTOR ELECTS TO SHIP THE STUB POST SEPARATE FROM THE SIGN POST A MATCH MARK SYSTEM WILL BE REQUIRED.

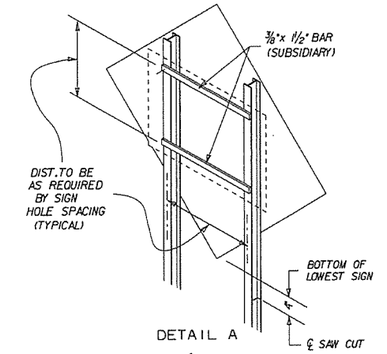
SIGN POST AND STUB POST

DATE	REVISION	FILMED
9-12-13	ISSUED	

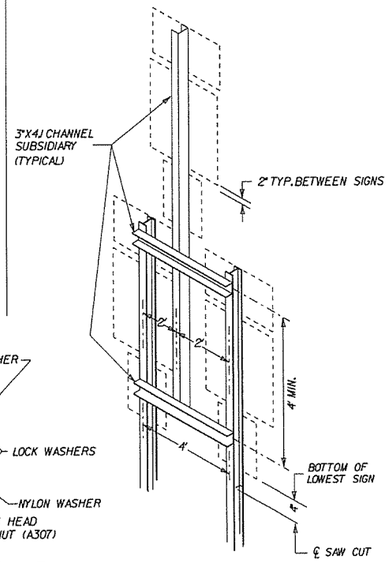
ARKANSAS STATE HIGHWAY COMMISSION

DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

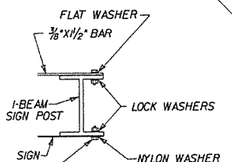
STANDARD DRAWING SHS-3



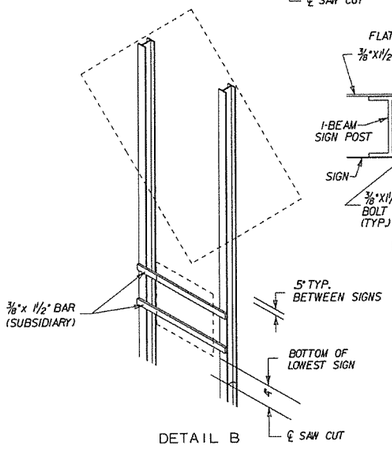
DETAIL A



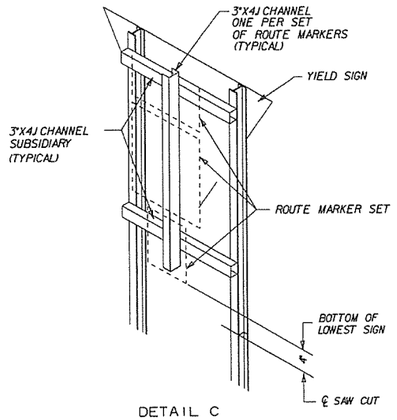
DETAIL D



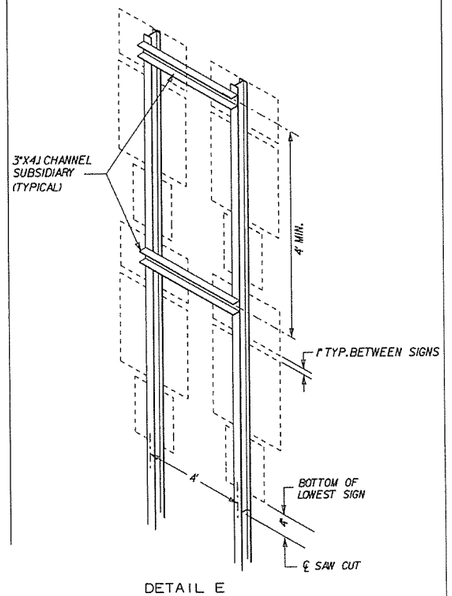
DETAIL F



DETAIL B



DETAIL C



DETAIL E

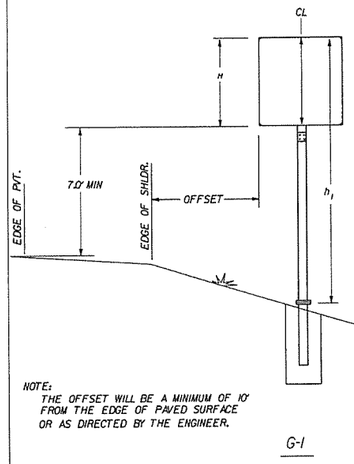
NOTE

ALL ADDITIONAL MOUNTING HARDWARE, BOLTS, NUTS, CHANNELS AND BAR STRAPS REQUIRED TO MOUNT SECONDARY SIGNS WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN SIGN SUPPORT SPECIFIED. PAYMENT WILL BE CONSIDERED SUBSIDIARY TO THE MAIN SUPPORT.

THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS MAY BE ASTM A-36.

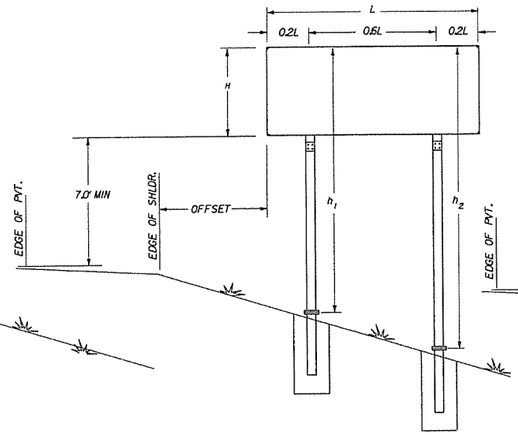
REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE 1/8" DIA. UNLESS OTHERWISE SHOWN.

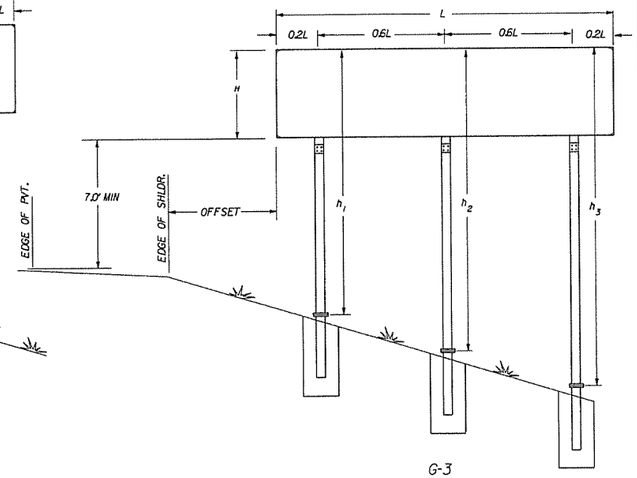


NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER.

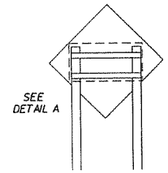
G-1



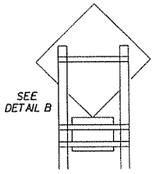
G-2



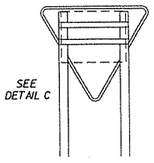
G-3



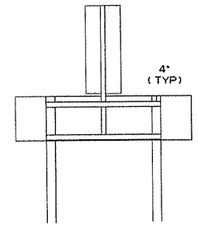
G2-1



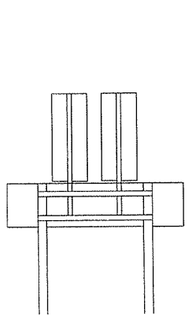
G2-2



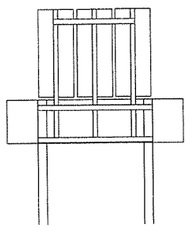
G2-3



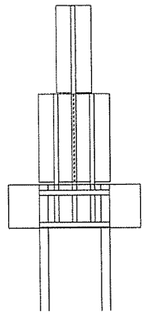
G2-4



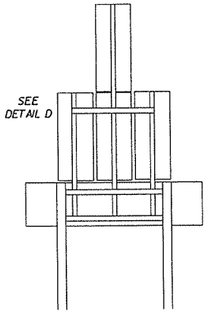
G2-5



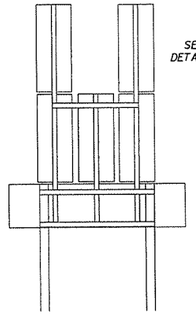
G2-6



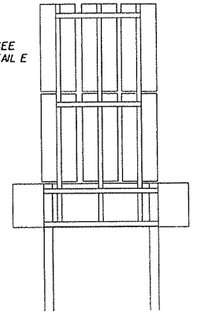
G2-7



G2-8

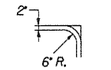


G2-9



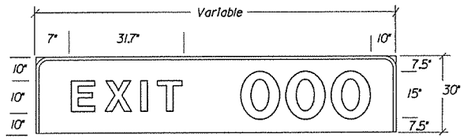
G2-10

		ARKANSAS STATE HIGHWAY COMMISSION
		DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS
9-12-13	ISSUED	STANDARD DRAWING SHS-4
DATE	REVISION	FILMED



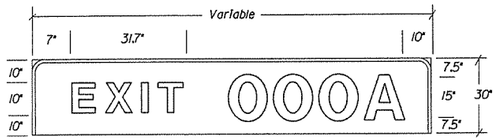
TYPICAL DETAIL

TYPE A



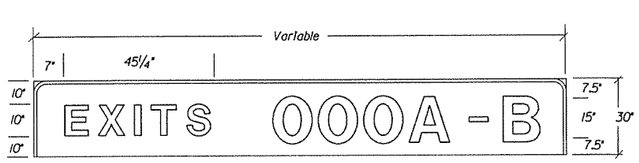
EXIT WITH 1 DIGIT 84"X30"=17.50 SF
EXIT WITH 2 DIGITS 96"X30"=20.0 SF
EXIT WITH 3 DIGITS 114"X30"=23.57 SF

TYPE B



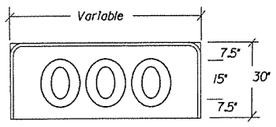
EXIT WITH 1 DIGIT PLUS "A"OR"B" 96"X30"=20.0 SF
EXIT WITH 2 DIGITS PLUS "A"OR"B" 114"X30"=23.57 SF
EXIT WITH 3 DIGITS PLUS "A"OR"B" 126"X30"=26.25 SF

TYPE C



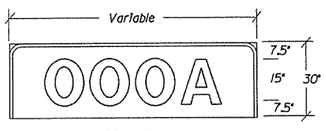
EXITS WITH 1 DIGIT PLUS "A"&"B" 132"X30"=27.50 SF
EXITS WITH 2 DIGITS PLUS "A"&"B" 150"X30"=31.25 SF
EXITS WITH 3 DIGITS PLUS "A"&"B" 168"X30"=35.00 SF

TYPE D



1 DIGIT 24"X30"=5.0 SF
2 DIGITS 42"X30"=8.75 SF
3 DIGITS 60"X30"=12.50 SF

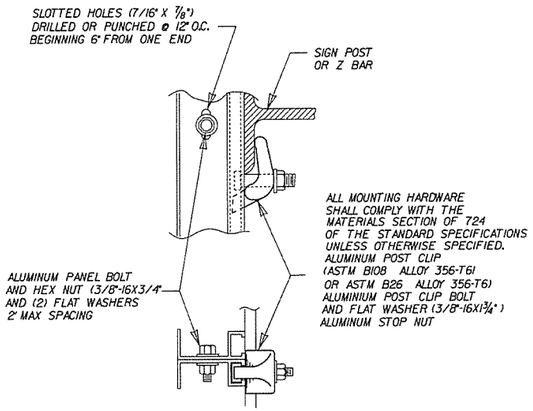
TYPE E

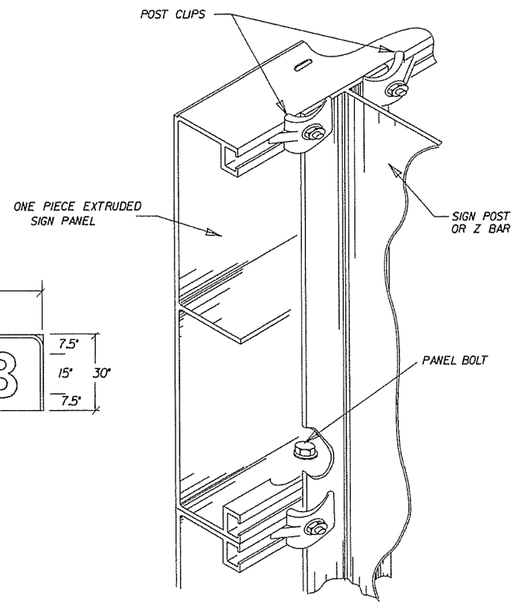


1 DIGIT PLUS "A"OR"B" 42"X30"=8.75 SF
2 DIGITS PLUS "A"OR"B" 60"X30"=12.50 SF
3 DIGITS PLUS "A"OR"B" 78"X30"=16.25 SF

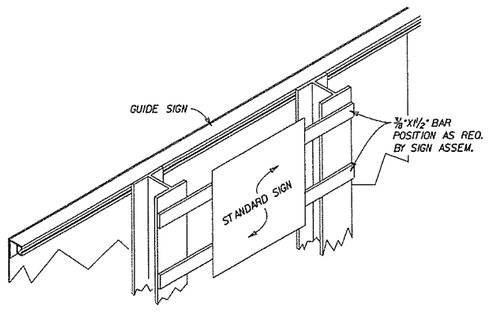
EXIT PANEL DETAILS

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BORDERS. THE BACK GROUND COLOR WILL BE AS USE SPECIFIES. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED OR AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBSIDIARY TO THE ITEM "EXIT NUMBER PANEL".

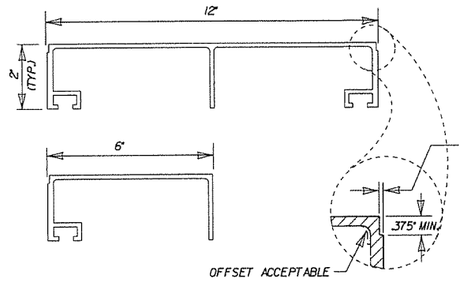




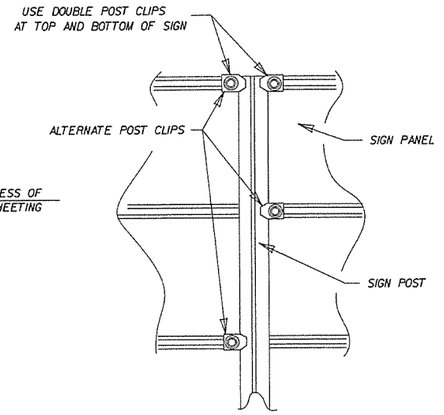
MOUNTING HARDWARE



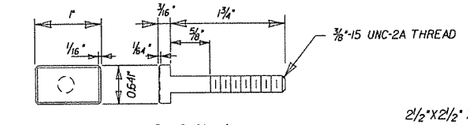
SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN



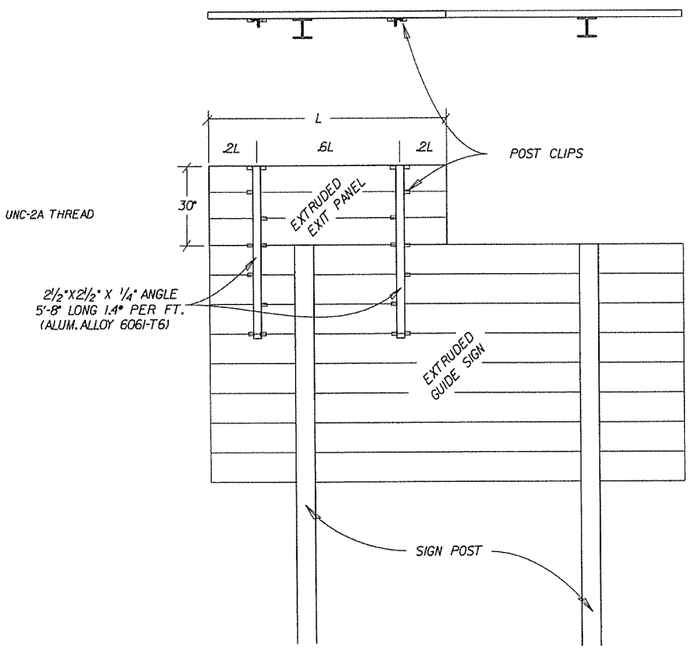
ONE PIECE EXTRUDED SIGN PANELS



POST CLIP PLACEMENT



POST CLIP BOLT

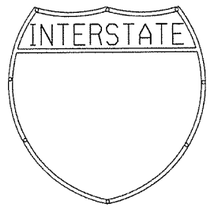


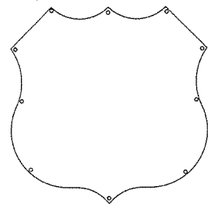
			ARKANSAS STATE HIGHWAY COMMISSION
			DETAILS OF GUIDE SIGN PANELS
9-12-13 DATE	ISSUED REVISION	FILMED	STANDARD DRAWING SHS-5

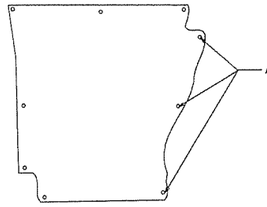
THE CONTRACTOR SHALL DRILL AND POP-RIVET LEGEND, SHIELDS, ARROWS, OR OTHER COPY AS SHOWN.

MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS

DIRECT APPLIED BORDER







DIRECT APPLIED BORDER

AD-68 RIVETS

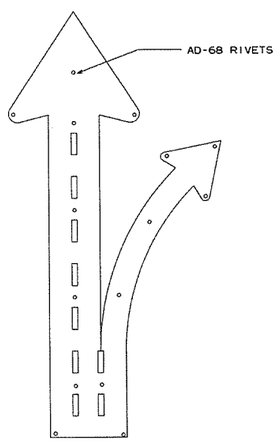
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

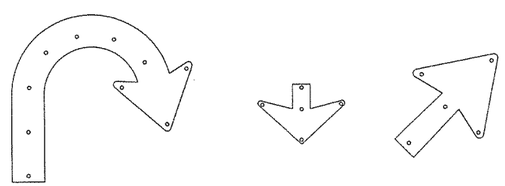
AD-68 RIVETS

a b c d e f g h i j k l m n o p q r s t u v w x y z

AD-68 RIVETS

0 1 2 3 4 5 6 7 8 9 1/4 1/2 3/4





NOTES:

LEGEND ON GUIDE SIGNS ON THE MAIN LANES SHALL BE DEMOUNTABLE LEGEND. LEGEND ON GUIDE SIGNS ON CROSS ROADS AND RAMPS SHALL BE DIRECT APPLIED. THE DEMOUNTABLE AND DIRECT APPLIED LEGENDS SHALL BE TYPE IX SHEETING.

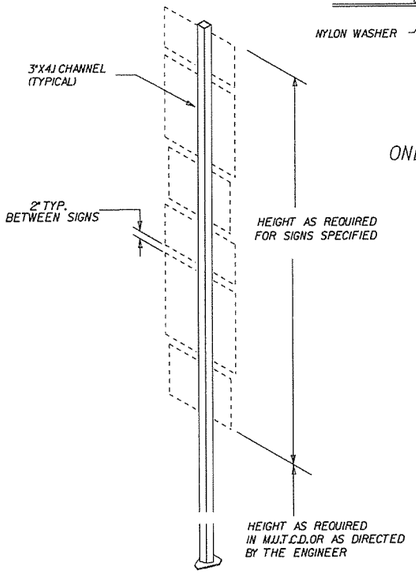
THE BACKGROUND ON ALL GUIDE SIGNS AND STANDARD SIGNS SHALL BE CONSTRUCTED USING TYPE III SHEETING.

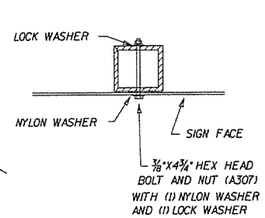
TYPE IX SHEETING FOR BORDER, LEGEND, SHIELDS, ARROWS, OR OTHER COPY SHALL BE ORIENTED VERTICALLY AS PER MANUFACTURERS' DATUM MARKS, ORIENTATION MARKS, OR OTHER RECOMMENDATIONS.

SIGN LEGEND, SHIELDS, ARROWS OR OTHER COPY SHALL BE APPLIED WITH RIVETS ONLY.

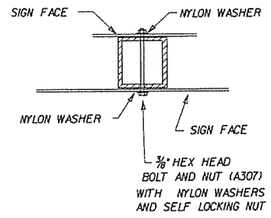
NO OTHER METHOD OF APPLYING CHARACTERS IS ALLOWED.

			ARKANSAS STATE HIGHWAY COMMISSION
			MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS
9-12-13	ISSUED		STANDARD DRAWING SHS-6
DATE	REVISION	FILMED	





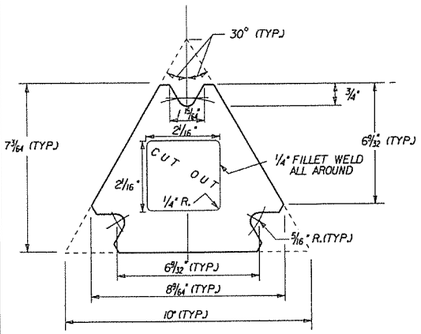
ONE SIGN



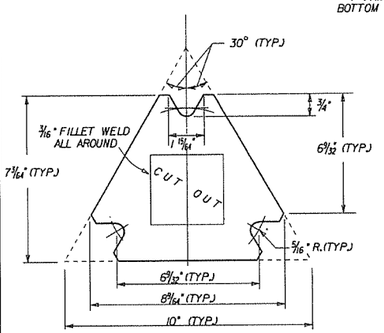
TWO SIGNS

CHANNEL SHALL BE FULL LENGTH OF RECTANGULAR AND SQUARE SIGNS AND SHALL EXTEND 1/2" BEYOND BOLT HOLES ON DIAMOND OR IRREGULAR SHAPED SIGNS.

MOUNTING HARDWARE



TOP PLATE



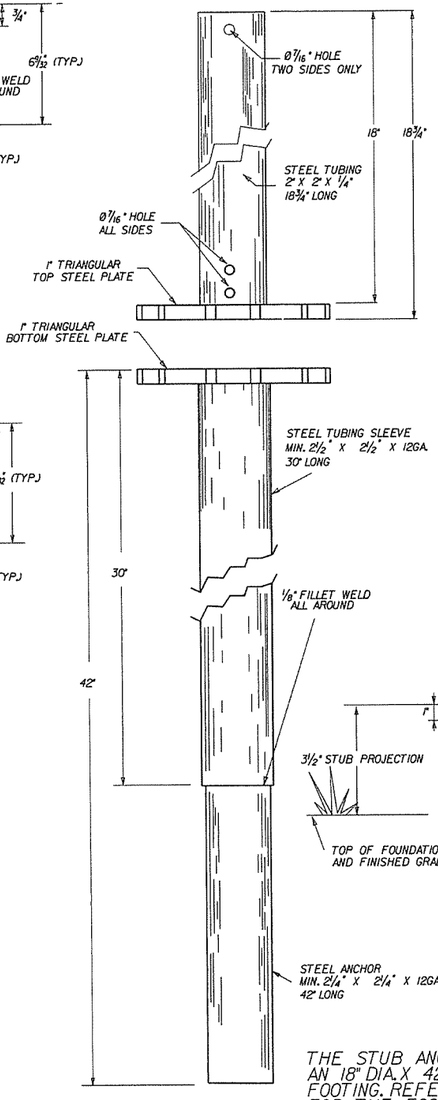
BOTTOM PLATE

GENERAL NOTES:

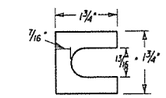
THE TOP PLATE OF TRIANGULAR SLIP BASES SHALL HAVE THE SAME EXTERIOR DIMENSIONS AS THE BOTTOM PLATE.

INSIDE DIAMETER OF THE SIGN POST SHALL BE CUT THROUGH THE CENTER OF THE TOP PLATE WITH THE HOLE EDGE BEVELED AS SHOWN. THE BEVEL END SHALL BE TANGENT TO THE BOLT HOLE . ANY MISALIGNMENT SHALL BE REMOVED BY GRINDING . FACE OF BEVEL SHALL BE FINISHED TO A MINIMUM SMOOTHNESS OF 1-500 .

OTHER MASH COMPLIANT BREAKAWAY SIGN SUPPORTS THAT HAVE THE SAME TOP PLATE DIMENSIONS AND SUPPORT 2 1/4" X 2 1/4" SQUARE TUBE SIGN POSTS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.

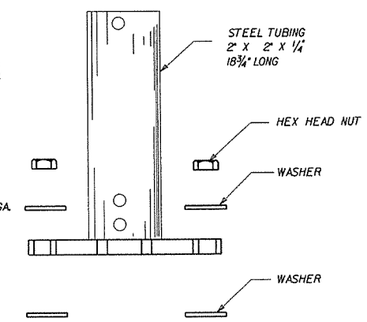


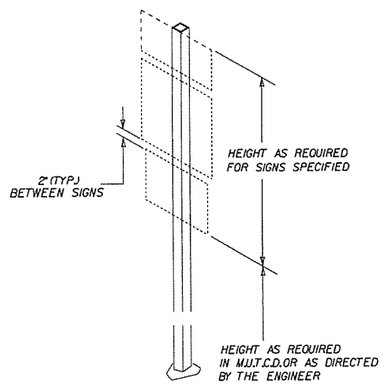
THE STUB ANCHOR SHALL BE SET IN AN 18" DIA.X 42" DEEP CONCRETE FOOTING. REFER TO STD.DRWG.SHS-3 FOR THE FOOTING DETAILS.



FURNISH (2) .012" THICK AND (2) .032" THICK SHIMS PER POST

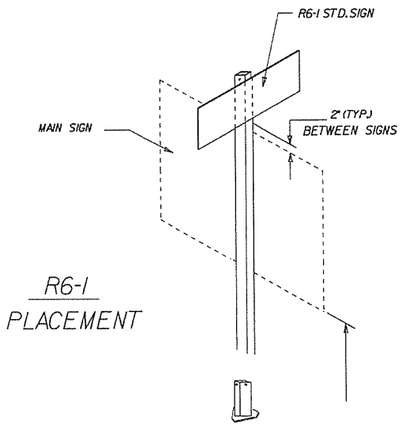
SHIM DETAIL





TYPE-1

BASIS OF ESTIMATE
APPROX. 100 lbs STEEL



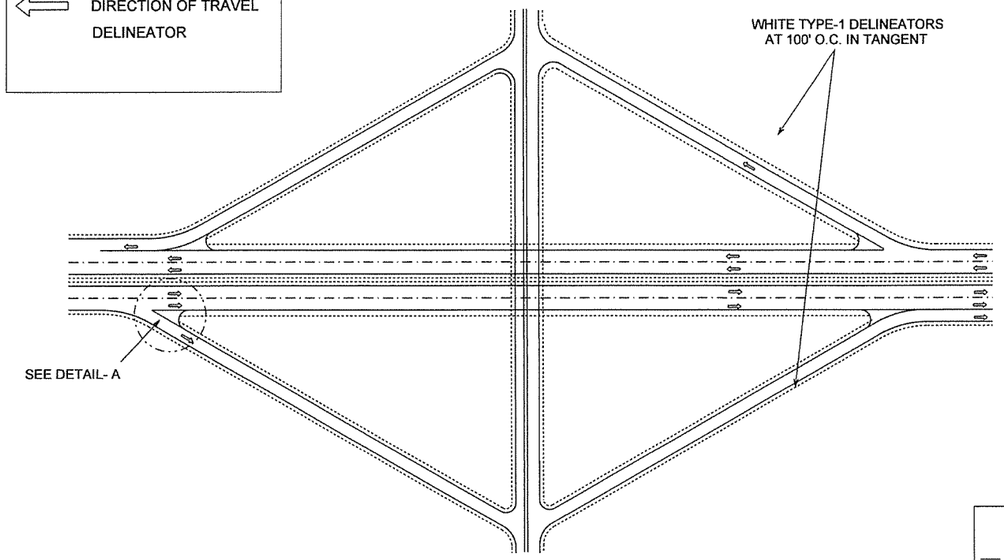
R6-1 PLACEMENT

			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS
9-12-13 DATE	ISSUED	FILMED	STANDARD DRAWING SHS-7
	REVISION		

LEGEND

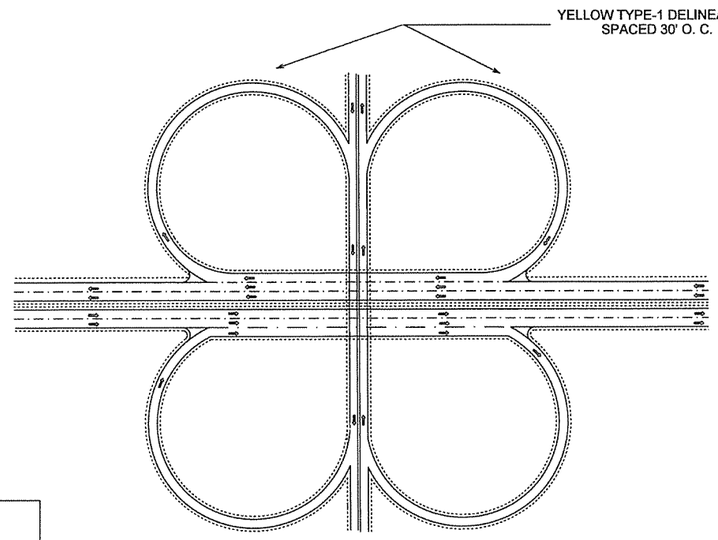
DIRECTION OF TRAVEL

DELINEATOR

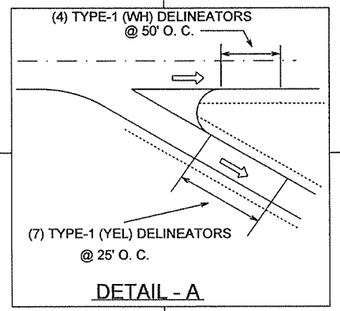


TYPICAL DIAMOND INTERCHANGE (ALL RAMPS)

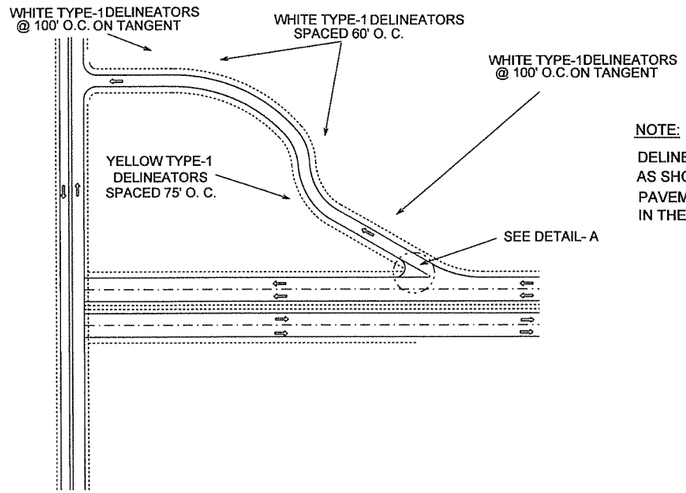
DELINEATORS PLACEMENT DETAIL



TYPICAL CLOVERLEAF INTERCHANGE (ALL RAMPS)



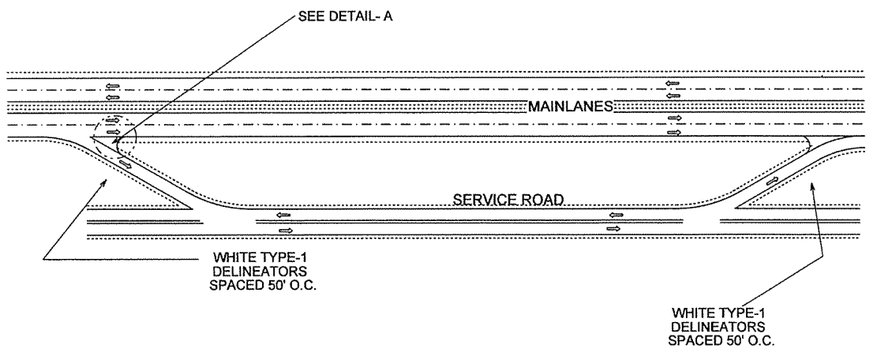
DETAIL - A



MODIFIED DIAMOND INTERCHANGE

NOTE:

DELINEATORS SHALL ONLY BE INSTALLED AS SHOWN IN DETAIL-A IF RAISED PAVEMENT MARKERS ARE NOT PRESENT IN THE GORE OF THE OFF RAMPS.

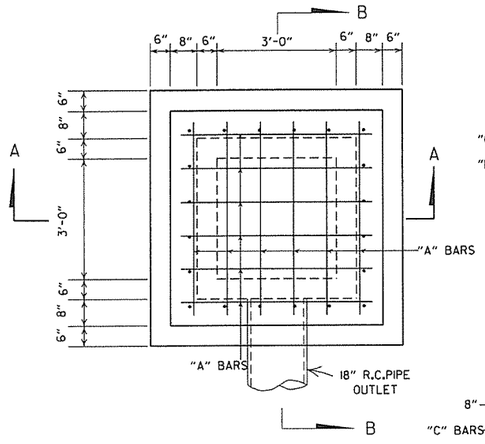


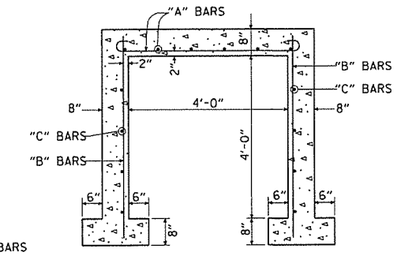
TYPICAL SLIP RAMP

GUIDANCE:

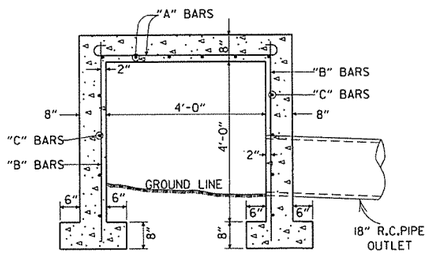
DELINEATORS SHOULD BE MOUNTED ON SUITABLE SUPPORTS SO THAT THE TOP OF THE HIGHEST RETROREFLECTOR IS 1.2 M (4 FT) ABOVE THE NEAR ROADWAY EDGE. THEY SHOULD BE PLACED 0.6 TO 2.4 M (2 TO 8 FT) OUTSIDE THE OUTER EDGE OF THE SHOULDER, OR IF APPROPRIATE, IN LINE WITH THE ROADSIDE BARRIER THAT IS 2.4 M (8 FT) OR LESS OUTSIDE THE OUTER EDGE OF THE SHOULDER.

			ARKANSAS STATE HIGHWAY COMMISSION
			TYPICAL DELINEATOR PLACEMENT ALONG THE INTERSTATE SYSTEM
9-12-13 DATE	ISSUED REVISION	FILMED	STANDARD DRAWING SHS-8





SEC A-A



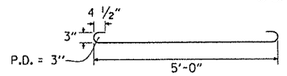
SEC B-B

NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



"A" BARS

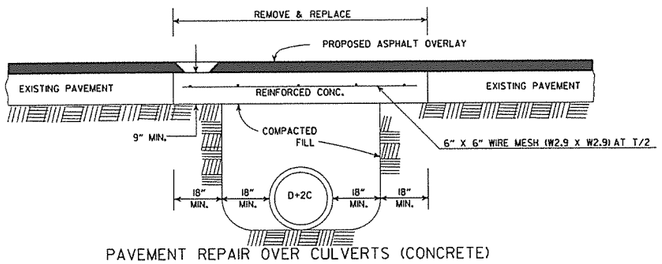
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

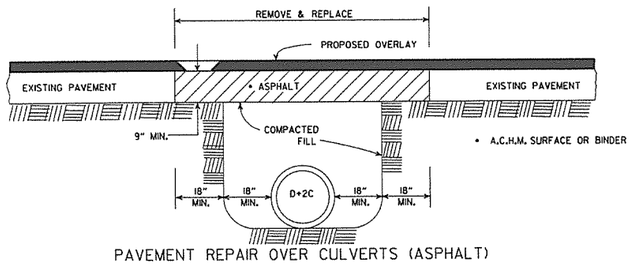
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



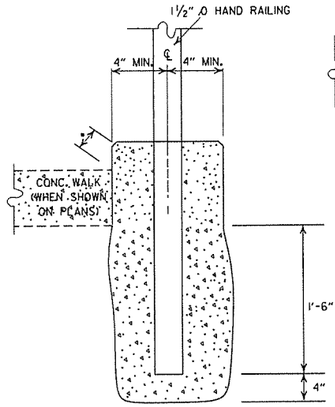
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



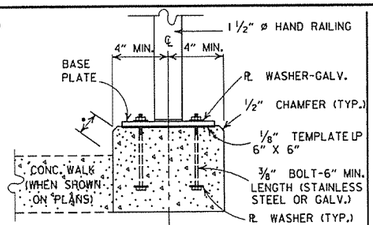
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

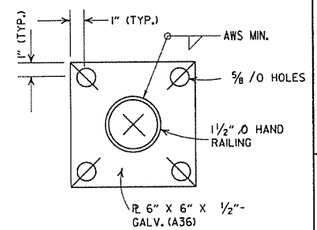
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

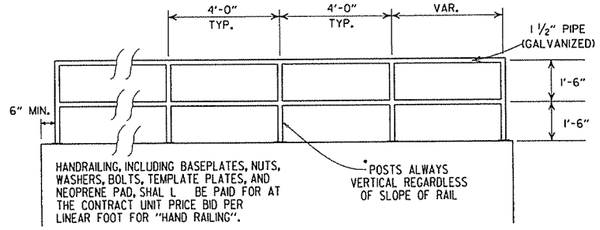


POST CONNECTION TO WALL

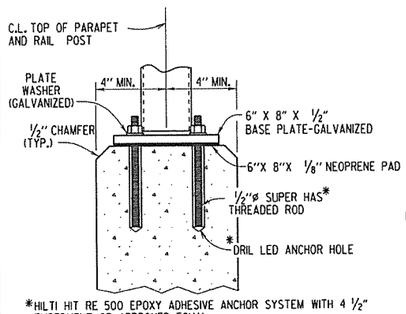


BASE PLATE

POST CONNECTION DETAILS



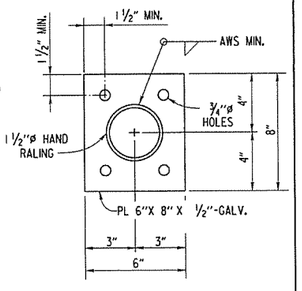
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

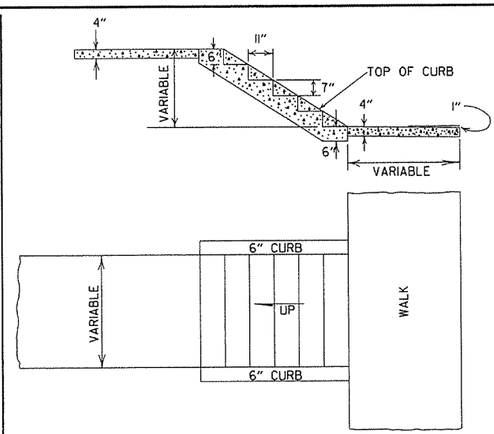
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
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

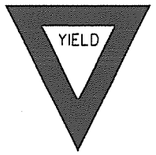
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1

R1-1

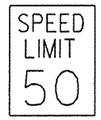
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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"

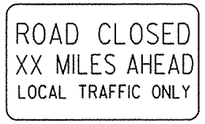
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

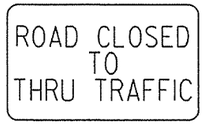
48"X30"

R11-3A



60"X30"

R11-4



60"X30"

RSP-1

48"X30"

W1-1

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

W1-2

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

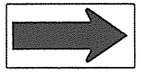
W1-3

STD. 48"X48"

W1-4

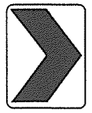
STD. 48"X48"

W1-6



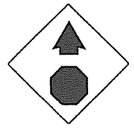
STD. 48"X24"
SPECIAL 60"X30"

W1-8



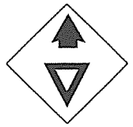
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



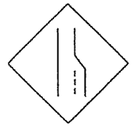
STD. 36"X36"
SPECIAL 48"X48"

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"

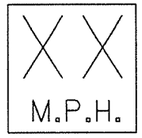
W8-7

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"

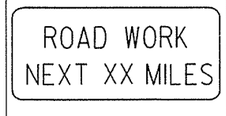
W8-11

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	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT, HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

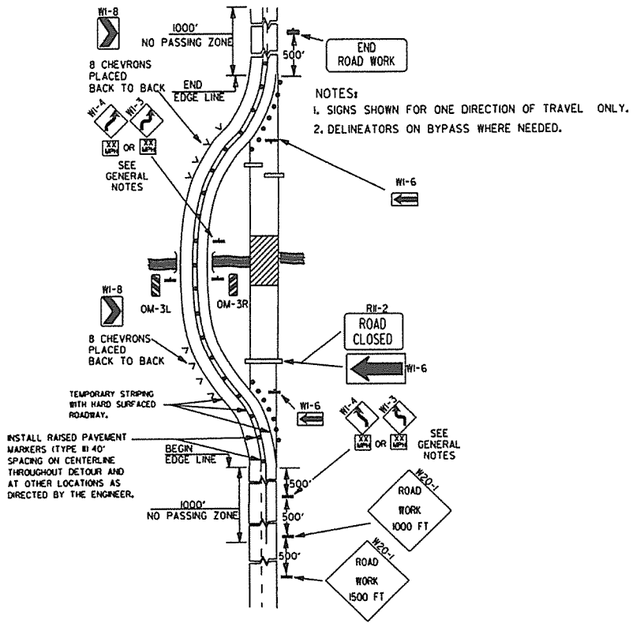
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

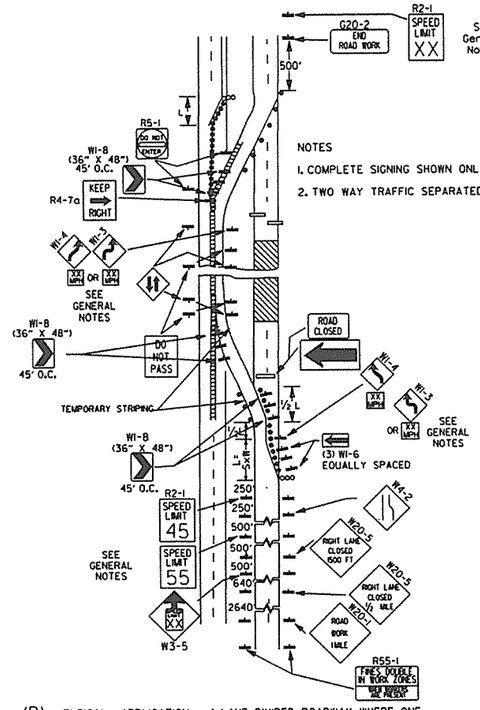
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



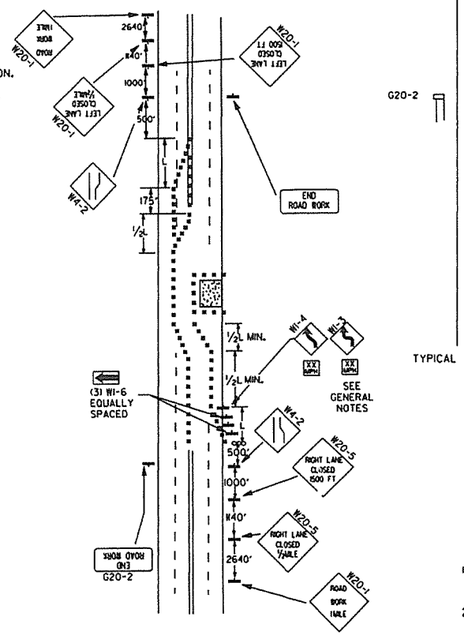
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

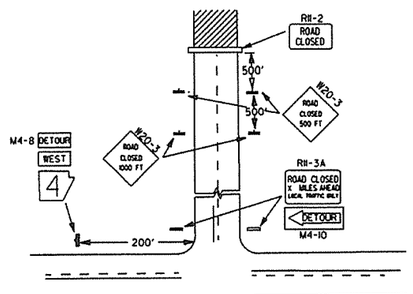


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

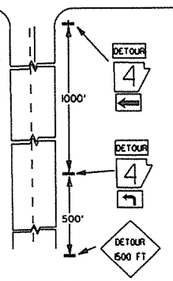
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



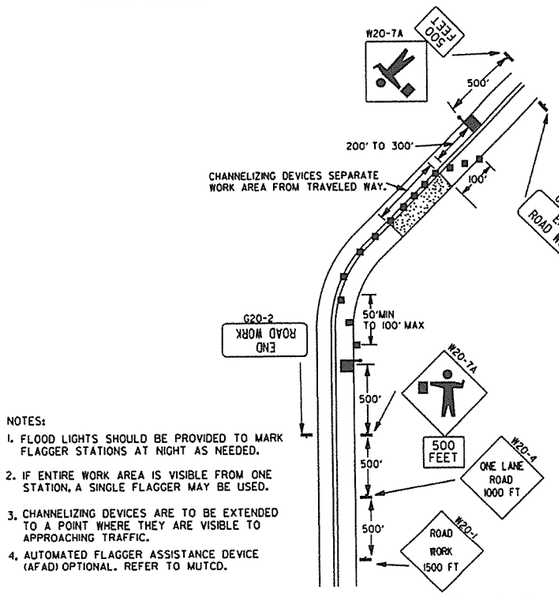
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

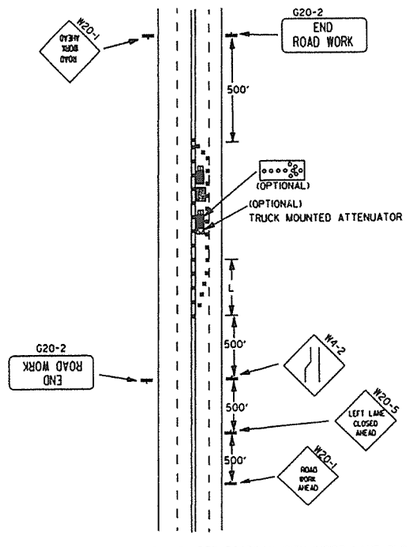


(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



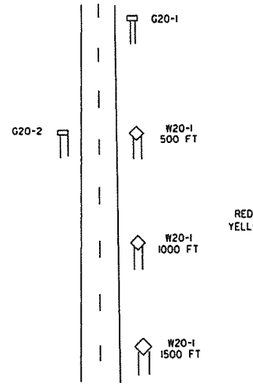
NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

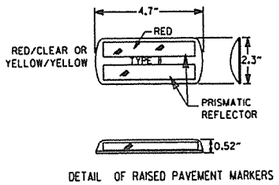


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

KEY:
- FLAGGER
- POSITIVE BARRIER
- ARROW PANEL (IF REQUIRED)
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- TRAFFIC DRUM
- RAISED PAVEMENT MARKER



TYPICAL ADVANCE WARNING SIGN PLACEMENT



DETAIL OF RAISED PAVEMENT MARKERS

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L=\frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

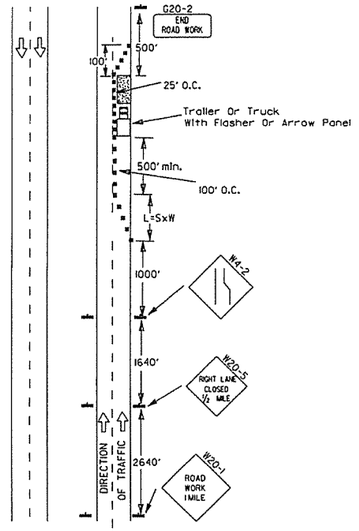
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

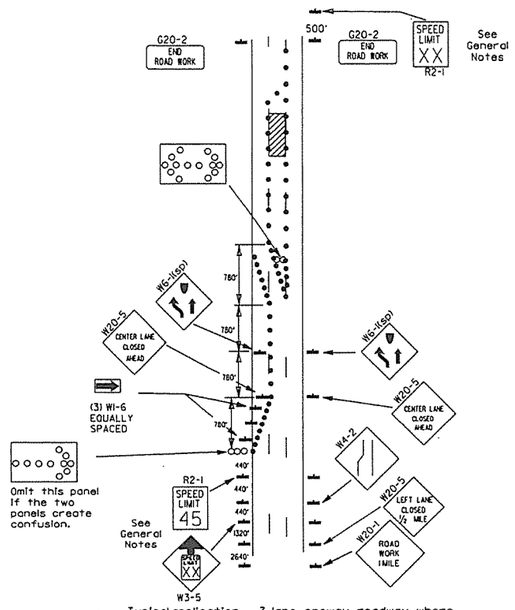
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

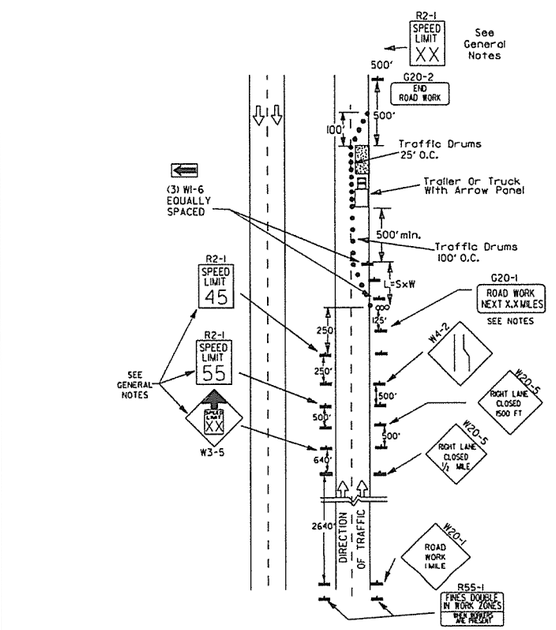
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operatipns of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

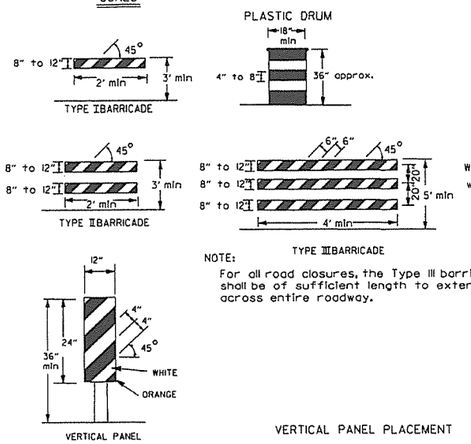
KEY:

- ○○○ Arrow Panel (if Required)
- ■ Channelizing Device
- ● Traffic drum

GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-145mph 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 NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



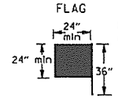
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

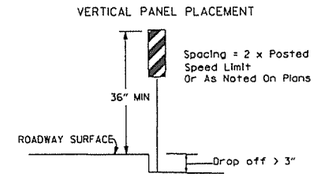
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

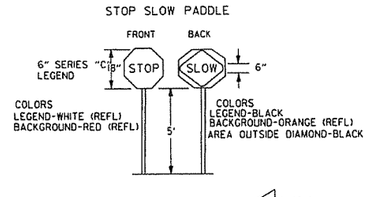
* When shown on the plans concrete barrier will be used.

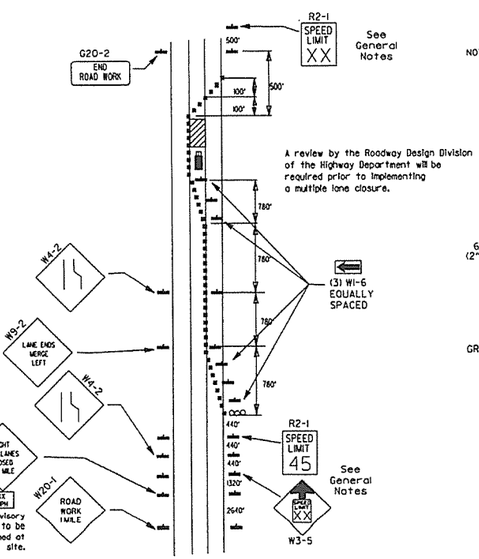
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



Flag shall be of good grade red material

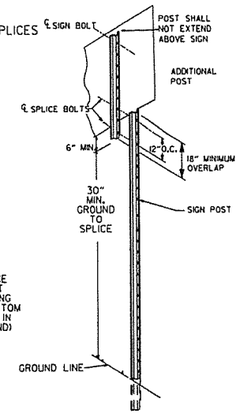






(D) Typical application - closing multiple lanes of a multilane highway.

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
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	

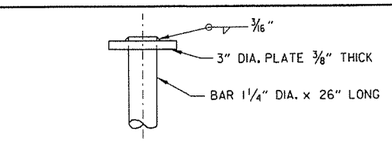
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

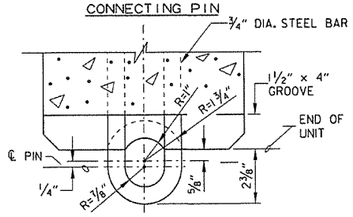
STANDARD DRAWING TC-3

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", 90°, 3 3/8" R, LIFTING HOLE
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°, 9 1/2", 2'-1 3/8", 4 3/8"

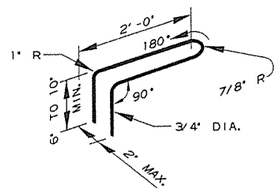


CONNECTING PIN

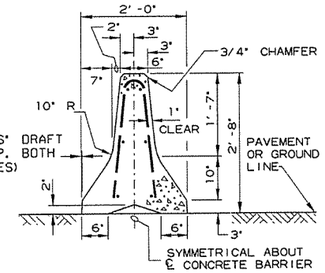


SECTION E-E

CONNECTION DETAILS

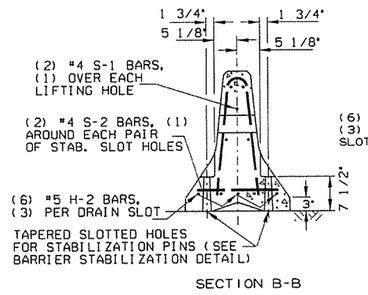


CONNECTION LOOP

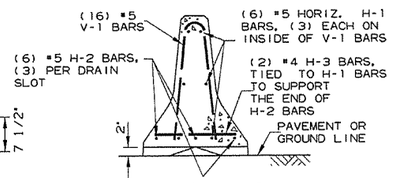


SYMMETRICAL ABOUT

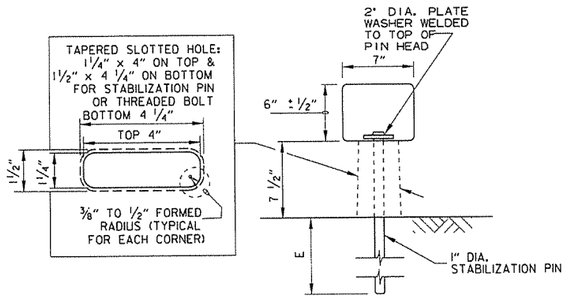
SECTION A-A



SECTION B-B



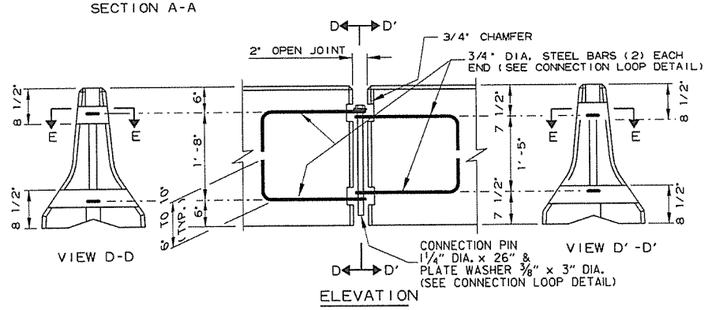
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

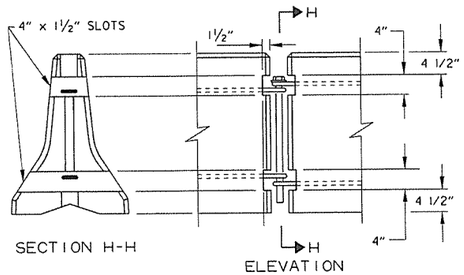
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



VIEW D-D

VIEW D'-D'

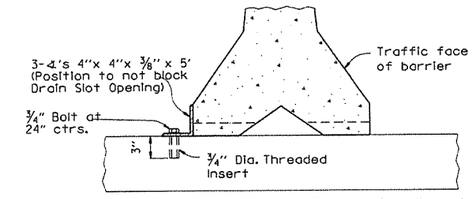
ELEVATION



SECTION H-H

ELEVATION

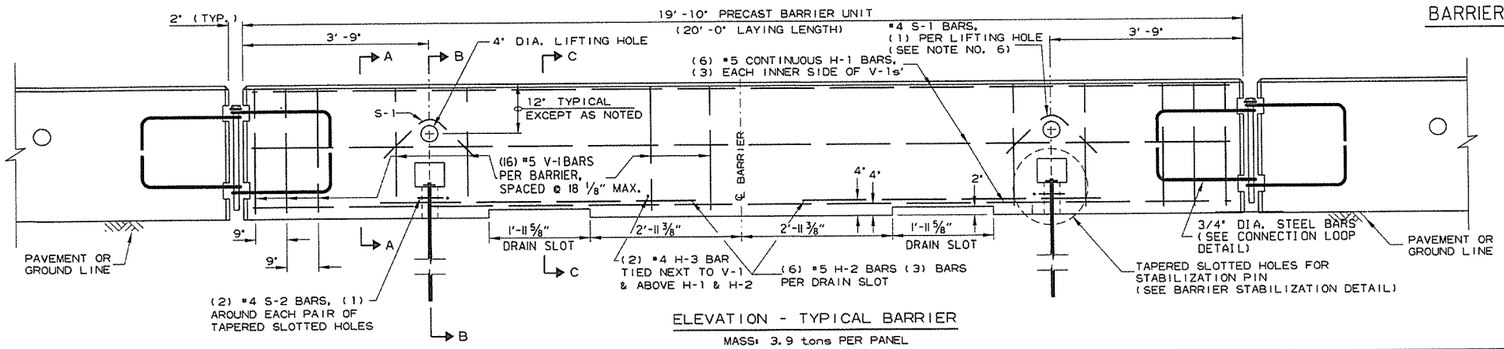
BARRIER REMOVAL SLOT DETAILS



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

1. The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

2. Materials shall meet the following minimum requirements:
   Concrete: 2500 psi compressive strength at 28 days.
   Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
   Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
   Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

   In applications where barrier 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 AHTD Qualified Products List for Construction Concrete Barrier Markers.
   Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
   Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

3. Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

4. Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

5. Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

6. A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

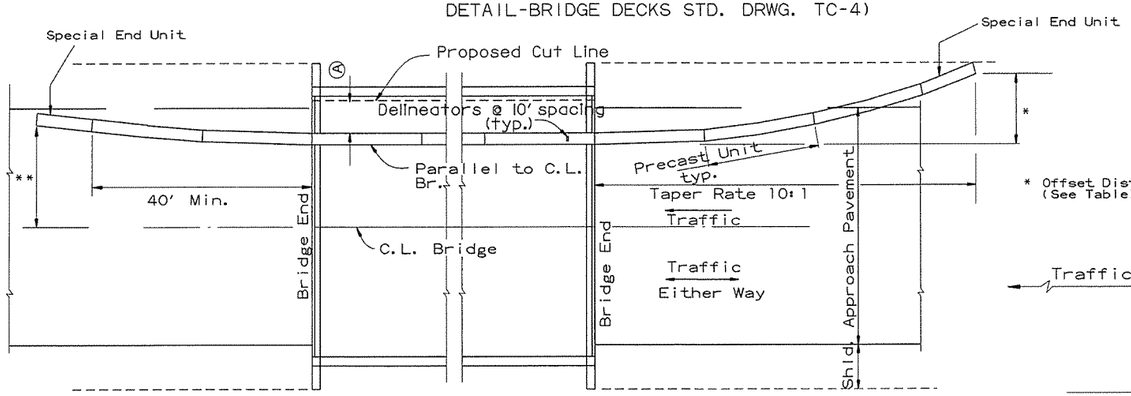
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

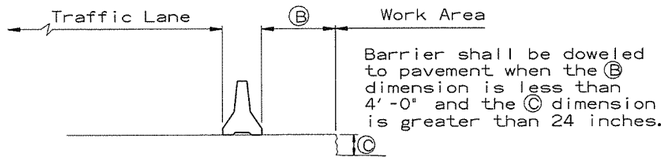
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

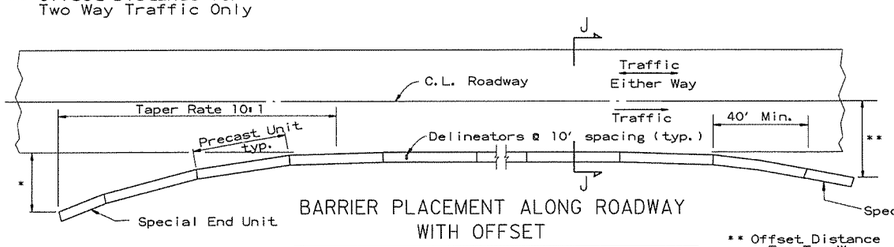


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

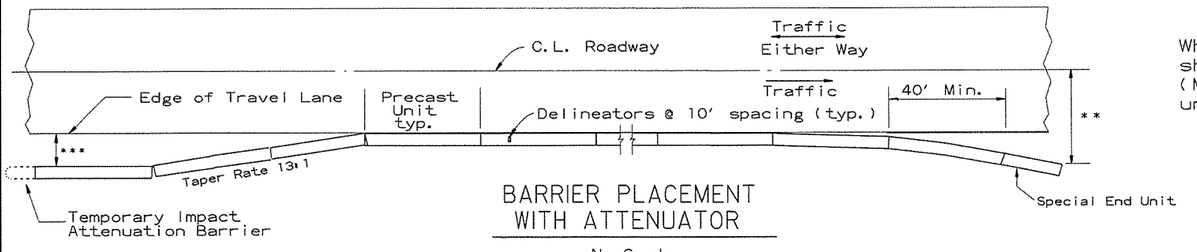
* Offset Distance (See Table)

** 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.

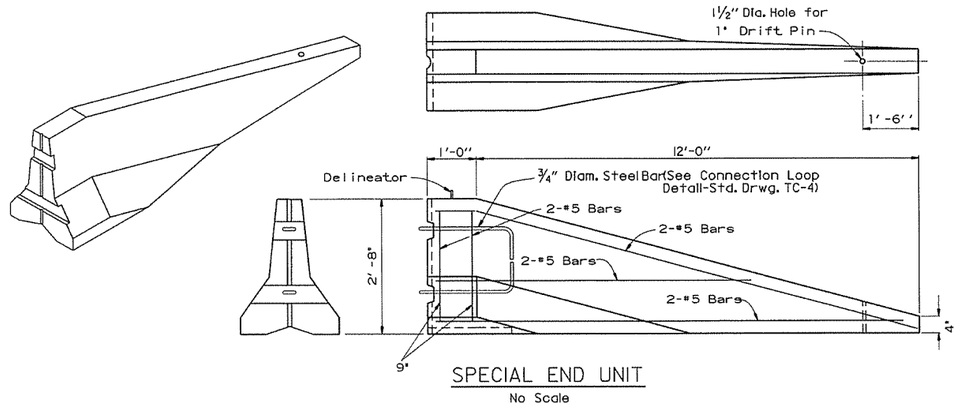


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

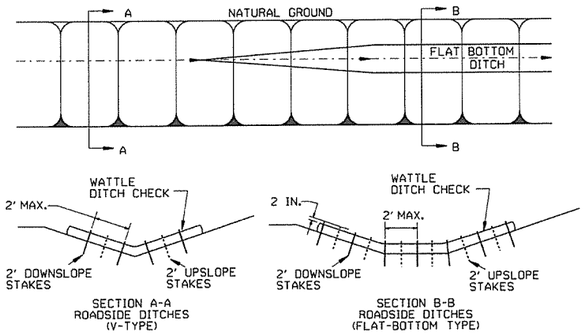
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

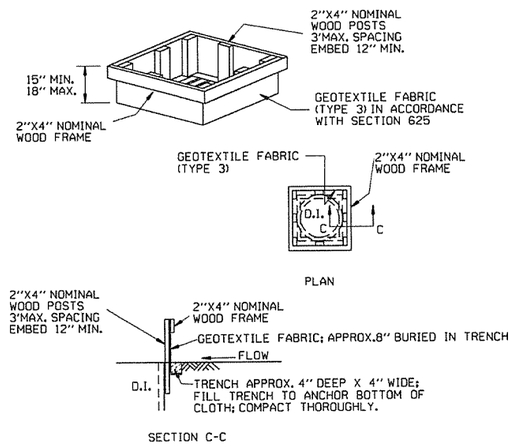
STANDARD DRAWING TC-5

GENERAL NOTES

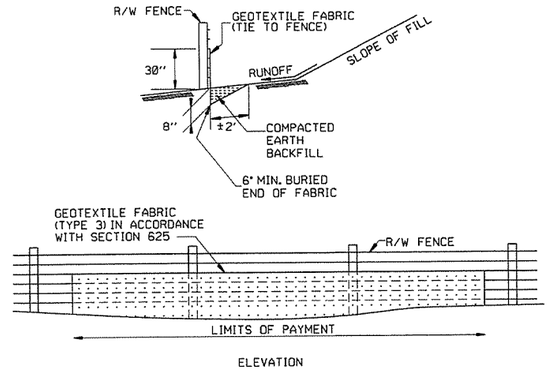
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

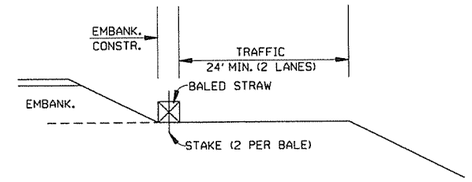
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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.

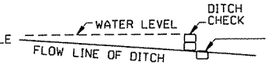
2. NO GAPS SHALL BE LEFT BETWEEN BALES.

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.

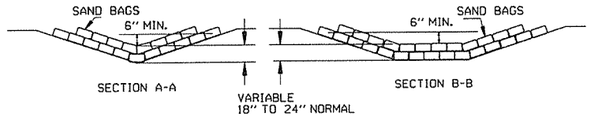


BALED STRAW FILTER BARRIER (E-2)

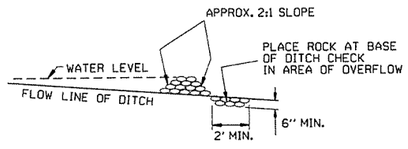
NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS.

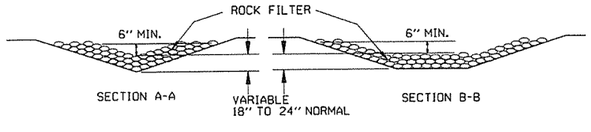


PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW

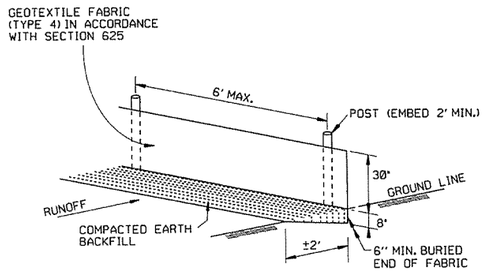


SAND BAG DITCH CHECK (E-5)





ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

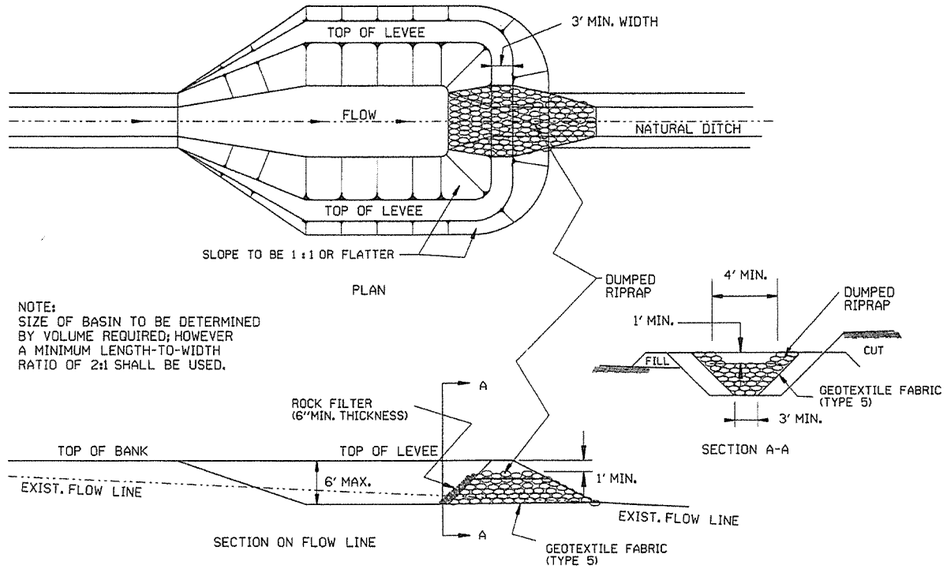
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

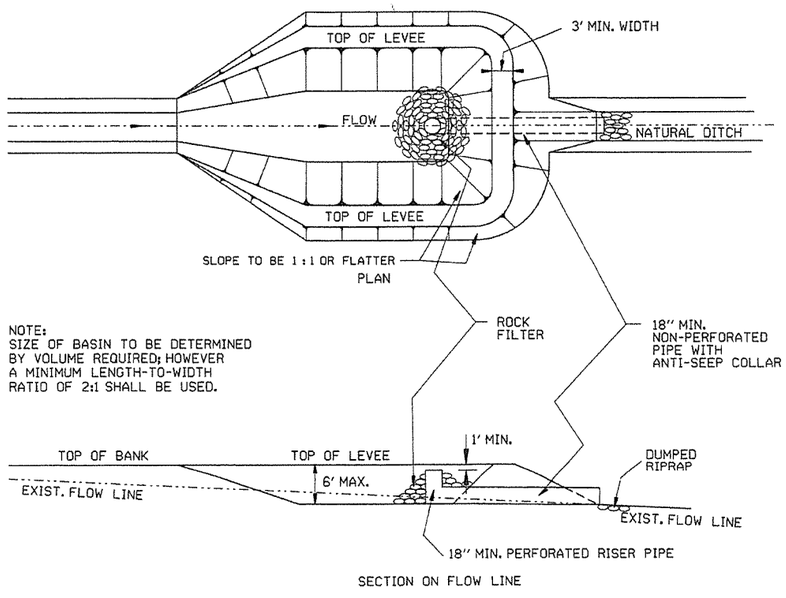
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

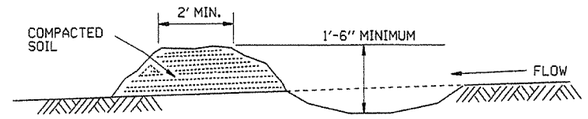
STANDARD DRAWING TEC-1



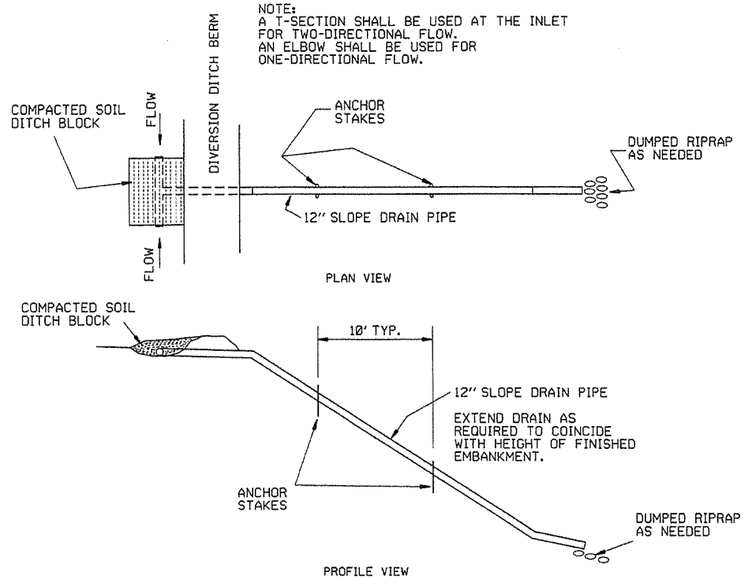
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



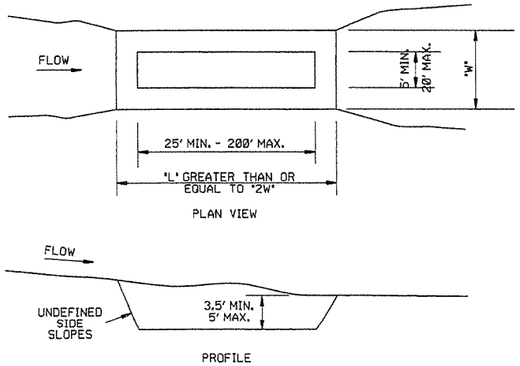
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

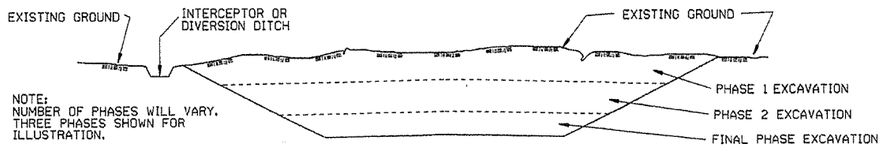
STANDARD DRAWING TEC-2

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



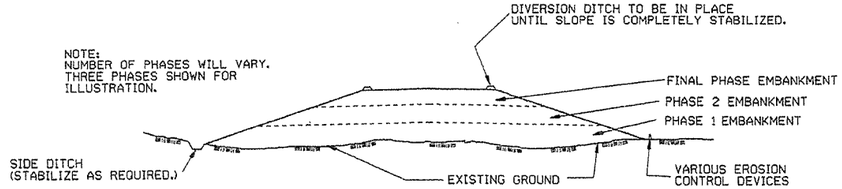
GENERAL NOTE

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.

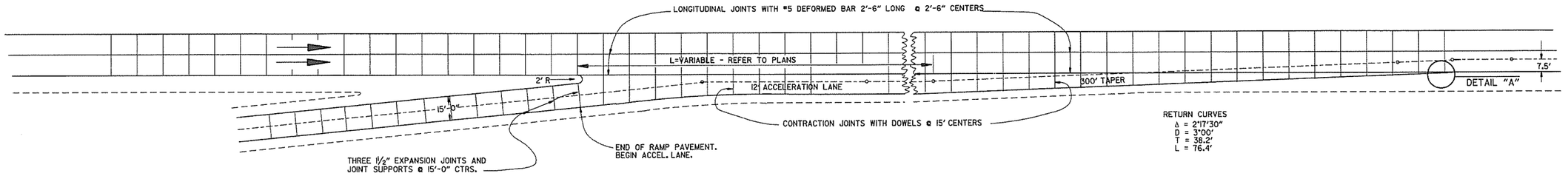
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

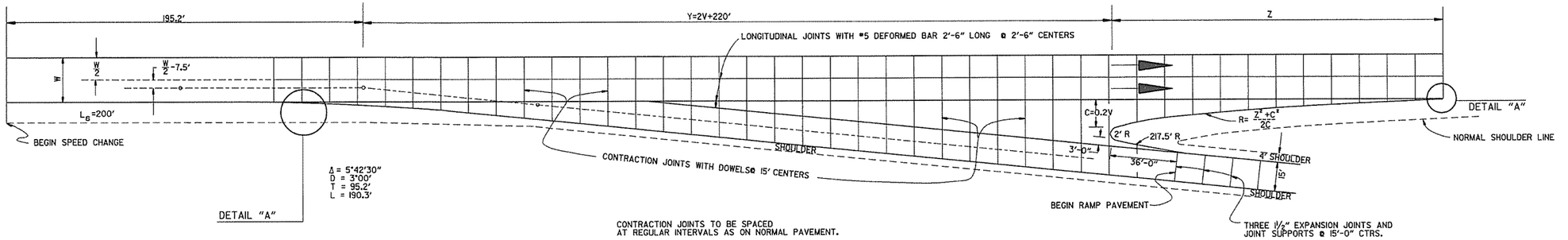
STANDARD DRAWING TEC-3

stdtec3.dgn



ENTRANCE RAMP

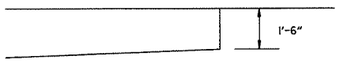
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



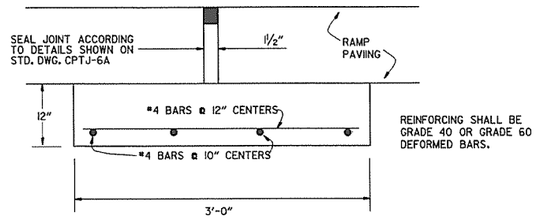
EXIT RAMP

EXIT RAMP

DESIGN SPEED V	Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADDITIONAL SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.29
60	340.0	12.0	168.0	1182.0	790.55
70	360.0	14.0	210.0	1582.0	902.27



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

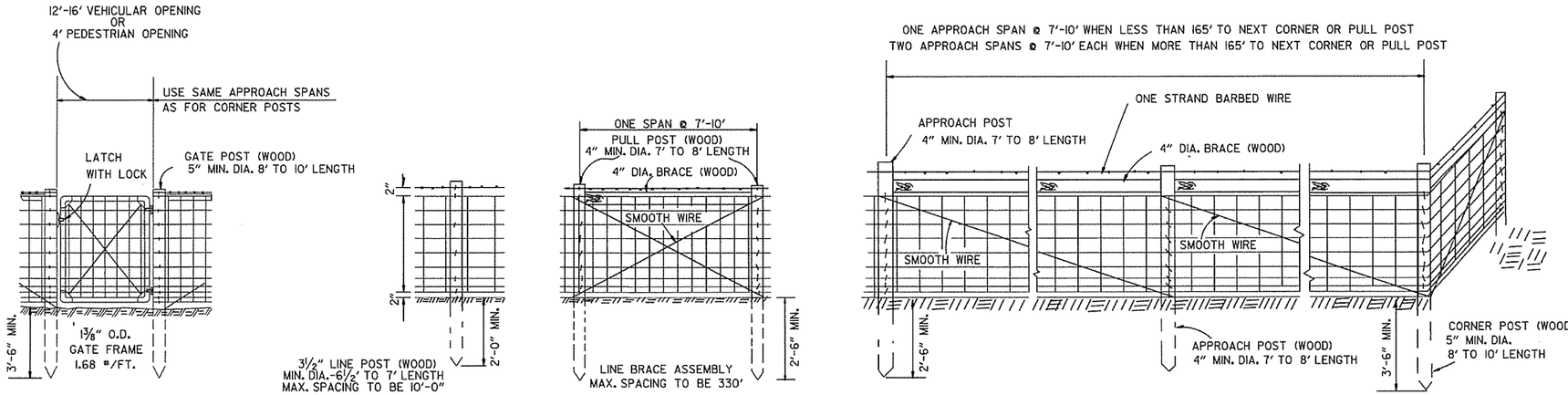
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

DATE	REVISION	DATE FILM'D
8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORM'D TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

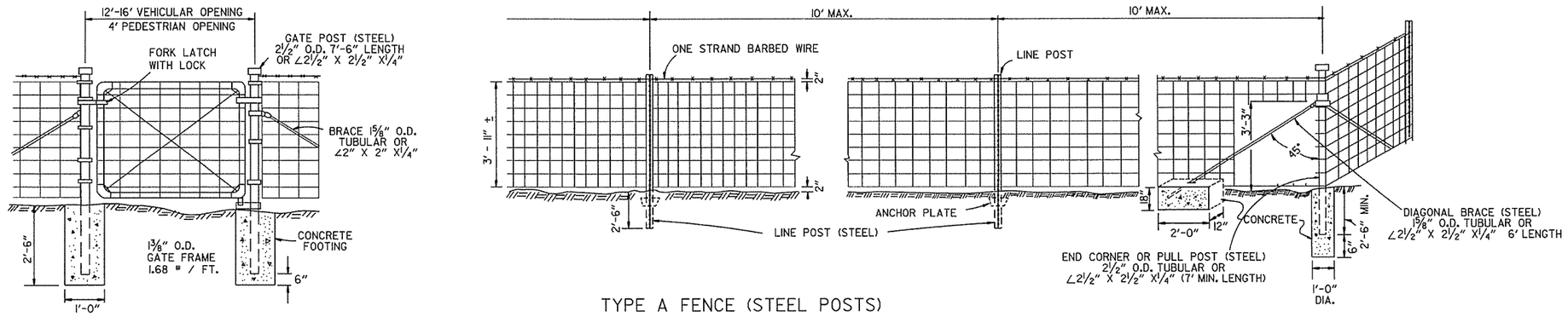
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A

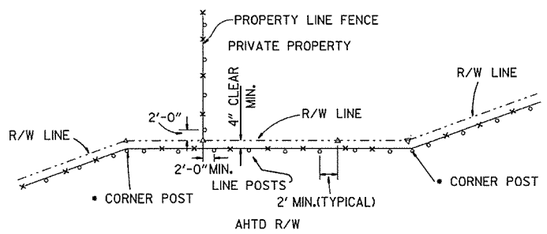


TYPE A FENCE (WOOD POSTS)

NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.



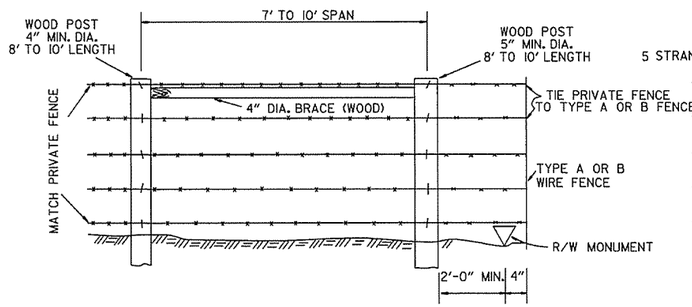
TYPE A FENCE (STEEL POSTS)



•NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

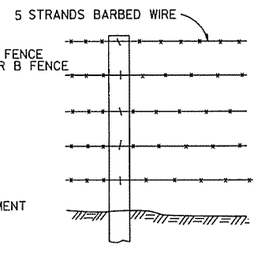
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



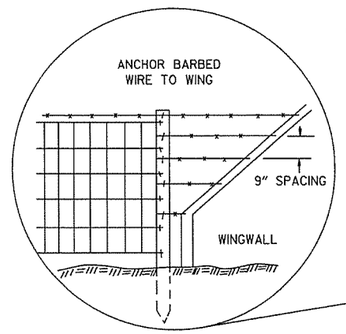
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

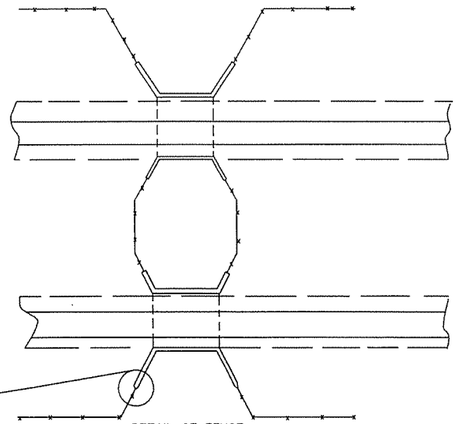
PRIVATE FENCE
TERMINAL INSTALLATION



SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

TYPE B FENCE





DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF WOOD LINE POSTS OF 7' LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

GATE HINGES AND LATCHES WITH LOCKS TO BE OF A TYPE APPROVED BY THE ENGINEER. DRIVEWAY GATES, EITHER SINGLE 12' OR 16' OR DOUBLE 6' TO 8' OPENINGS OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE FOR USE BY MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF BANK TO THE BRIDGE STRUCTURE, A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFIEICNT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO THE BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD"; AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

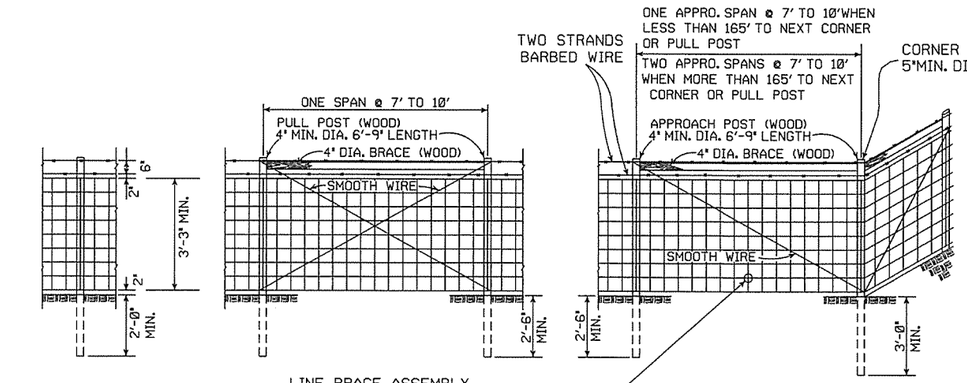
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
7-15-88	ADDED SPLICE NOTES	
7-15-88	ADDED HEIGHT DIMENSION	
4-3-87	REVISED VARIOUS NOTES	
	AND GENERAL NOTES	
11-1-84	MAX. POST SPACING	
1-4-83	MIN. DIA. LINE POST	
10-2-72	REVISED & REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

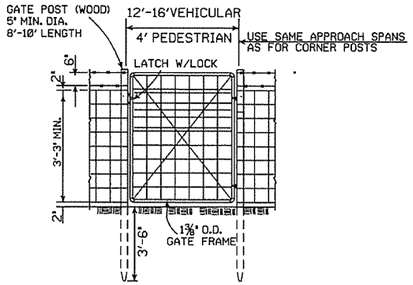
STANDARD DRAWING WF-1

TYPE C FENCE (WOOD POSTS)



LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'



GENERAL NOTES:

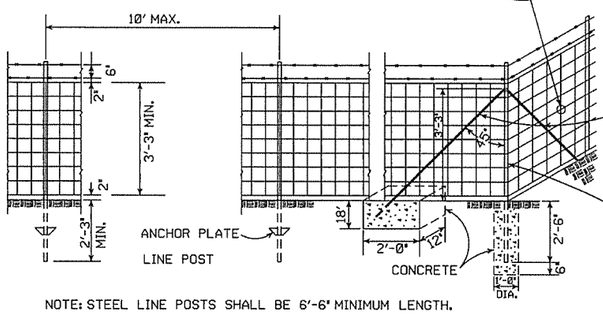
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.
TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

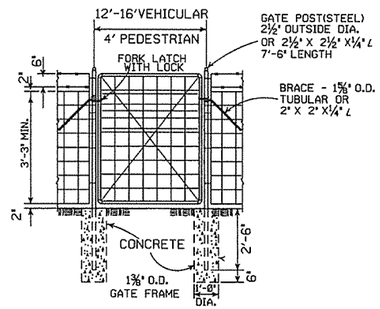
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

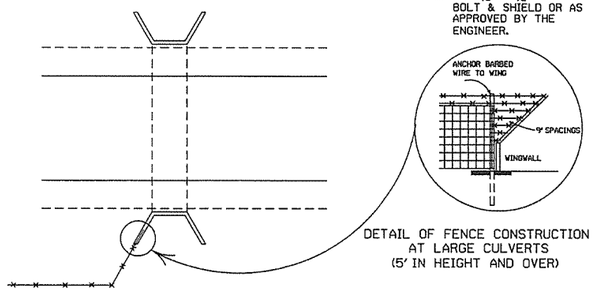
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED 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.

OTHER APPROVED TIES WILL BE PERMITTED







NOTE: USE ⅜" X 1½" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.

DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

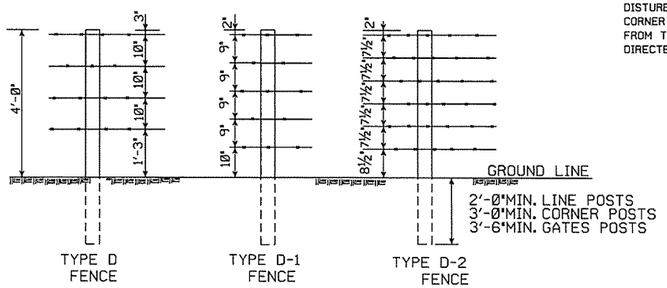
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 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.

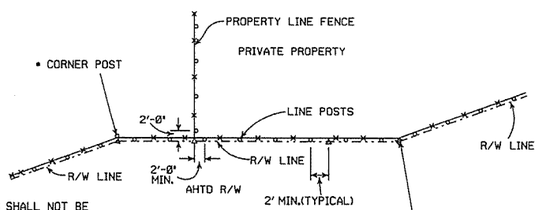
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

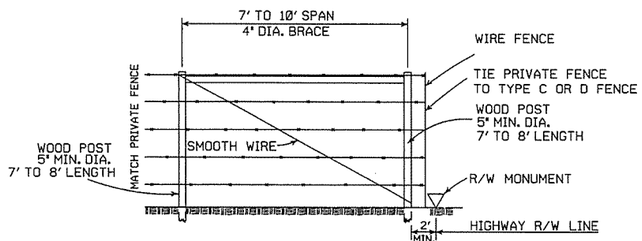


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

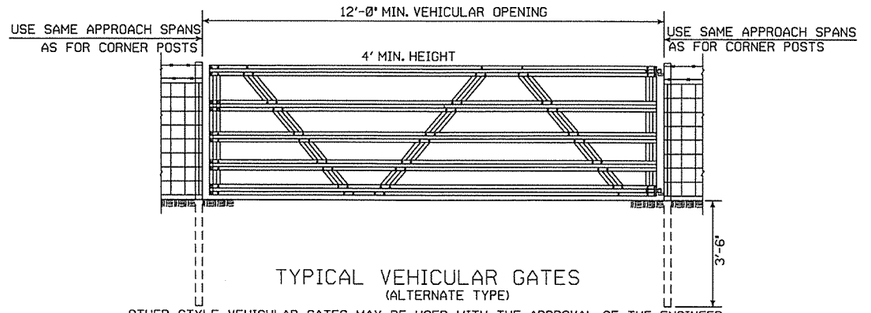


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

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.



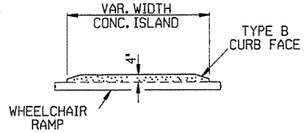
TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

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

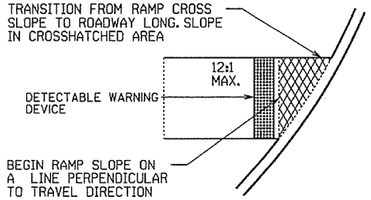
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

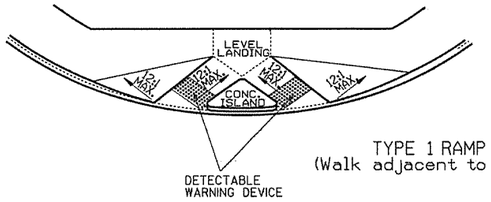
STANDARD DRAWING WF-4



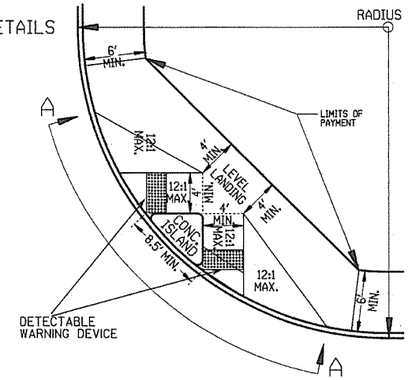
CONCRETE ISLAND DETAIL



SLOPE TRANSITION DETAILS



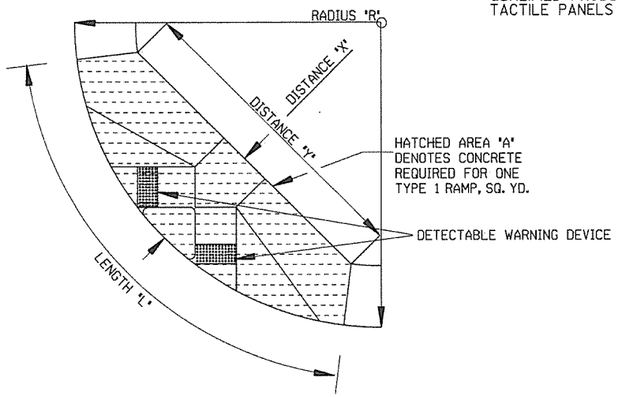
TYPE 1 RAMP
(Walk adjacent to curb)



SECTION A-A

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

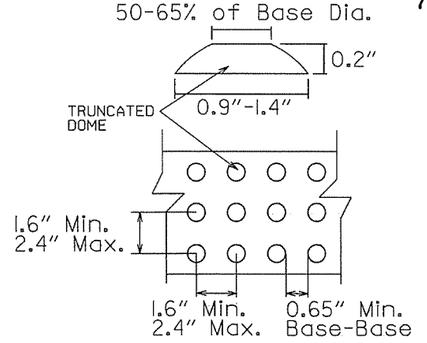
RADIUS 'R' FEET	DISTANCE 'X' FEET	DISTANCE 'Y' FEET	LENGTH 'L' FEET	RAMP AREA 'A' SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80



NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

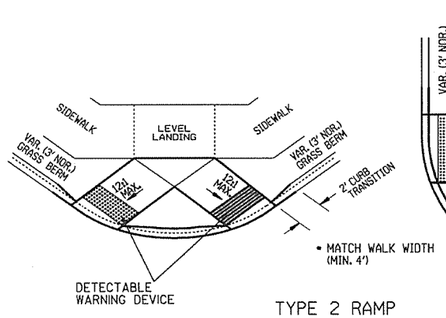
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



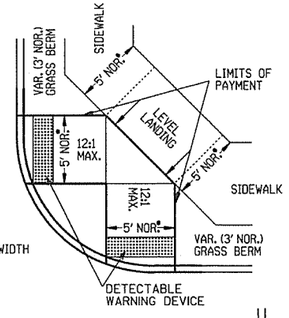
DETECTABLE WARNING DEVICE DETAIL

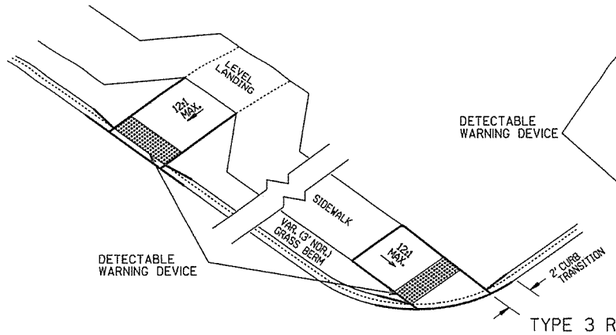
GENERAL NOTES:

IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

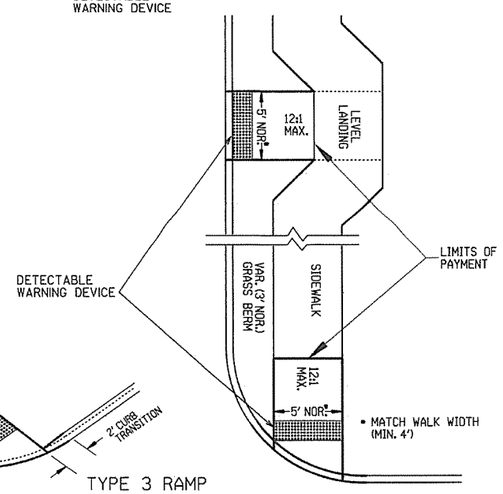


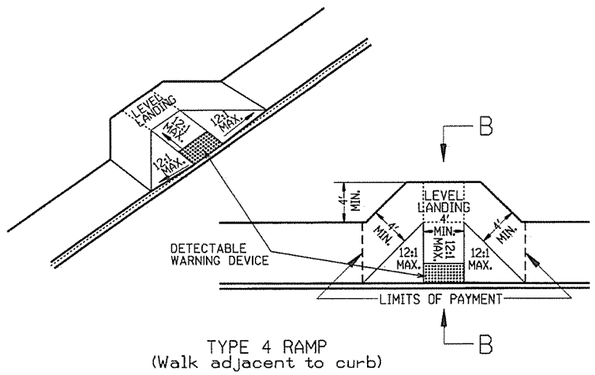
TYPE 2 RAMP



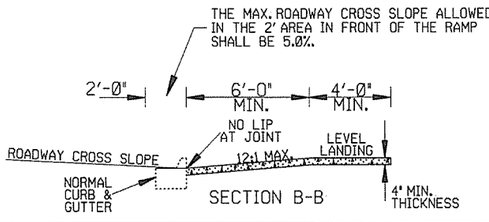


TYPE 3 RAMP





TYPE 4 RAMP
(Walk adjacent to curb)



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

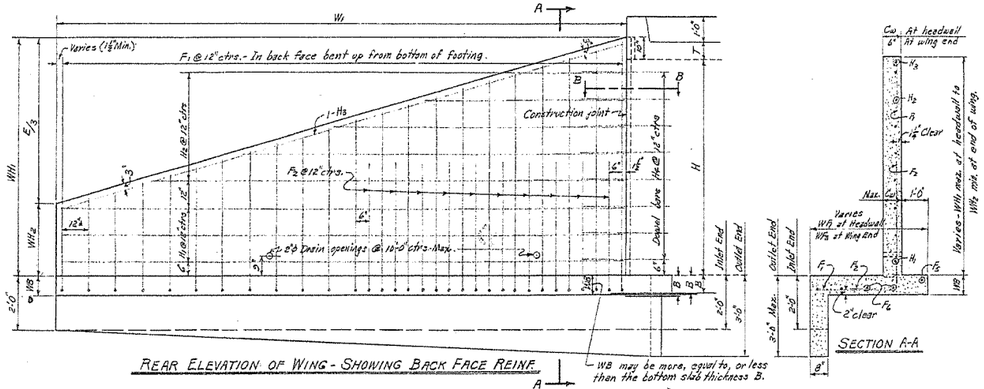
DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD. SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8UTOI2/MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	-------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1

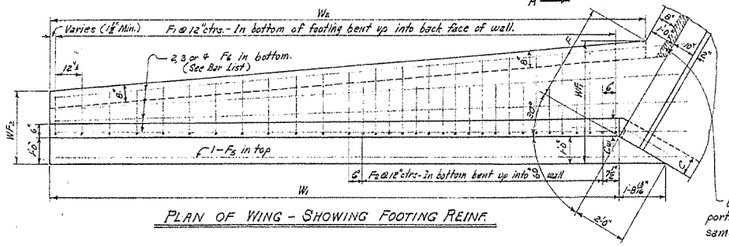
FED. ROAD DIV.	STATE	FED. AID PROJECT	SHEET NO.	TOTAL SHEETS
8	ARK.		182	
JOB NO.				



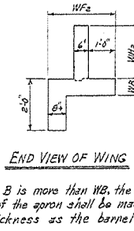
REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

SECTION A-A

W8 may be more, equal to, or less than the bottom slab thickness B.

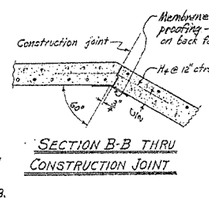


PLAN OF WING - SHOWING FOOTING REINF.

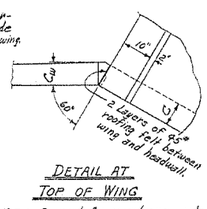


END VIEW OF WING

When B is more than W8, the shaded portion of the apron shall be made the same thickness as the barrel base B.



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR FOOTING DIMENSION		LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING	PERPENDICULAR DIST. FROM HDWL TO END OF WING				INLET END	OUTLET END
H	WB	Cw	WH1	WH2	WF1	WF2	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-8"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-2"	1'-4⅜"	8'-6"	9'-9⅜"	9'-2¾"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-8"	10'-6"	12'-1⅝"	12'-1⅝"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4⅝"	2'-1⅜"	12'-6"	14'-5⅜"	14'-1⅞"	2.978	2.668
		7"	5'-10"	1'-8"	3'-4"	2'-4⅝"	2'-1⅜"	12'-6"	14'-5⅜"	14'-2⅞"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅝"	14'-6"	16'-9"	17'-1⅜"	3.440	3.661
		7⅝"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅝"	14'-6"	16'-9"	17'-1⅛"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅝"	14'-6"	16'-9"	17'-1⅛"	3.582	3.803
7'	8½"	7⅝"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0½"	19'-3⅜"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0½"	19'-3⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-3⅝"	18'-6"	21'-4½"	22'-0"	5.761	6.097

* Quantity per wing does not include headwall or that portion of apron or footwall for the length W8.

APRON DIMENSION W3

W3 = (CW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2 x FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11⅛"	5'-0"	3'-0⅛"	9'-8"	7'-8⅛"	14'-4"	12'-4⅛"	19'-0"	17'-0⅛"	23'-8"	21'-8⅛"
	3'	2'-8⅝"	5'-0"	2'-3⅜"	9'-8"	6'-11⅛"	14'-4"	11'-7⅛"	19'-0"	16'-3⅛"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅝"	9'-8"	5'-4⅜"	14'-4"	10'-5⅜"	19'-0"	14'-8⅜"	23'-8"	19'-9⅜"
	6'	5'-0⅜"	5'-2"	0'-1½"	9'-11"	4'-10⅝"	14'-8"	9'-7⅝"	19'-5"	14'-0⅝"	24'-2"	19'-1⅝"
5'	3'	2'-8⅝"	6'-0"	3'-3⅜"	11'-8"	8'-11⅛"	17'-4"	14'-7⅛"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅝"	11'-8"	7'-4⅜"	17'-4"	13'-0⅜"	23'-0"	18'-8⅜"	28'-8"	24'-4⅜"
	6'	5'-0⅛"	6'-2"	1'-1⅞"	11'-11"	6'-10⅛"	17'-8"	12'-7⅝"	23'-5"	18'-0⅝"	29'-2"	24'-1⅝"
	7'	6'-2⅝"	6'-3"	0'-0⅞"	12'-1"	5'-10⅞"	17'-11"	11'-8⅝"	23'-9"	17'-6⅝"	29'-7"	23'-10⅝"
6'	3'	2'-8⅝"	7'-0"	4'-3⅜"	13'-8"	10'-11⅛"	20'-4"	17'-7⅛"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅝"	13'-9"	9'-4⅜"	20'-4"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-4⅜"
	6'	5'-0⅛"	7'-2"	2'-1⅞"	13'-11"	8'-10⅛"	20'-8"	15'-7⅝"	27'-5"	22'-0⅝"	34'-2"	29'-1⅝"
	7'	6'-2⅝"	7'-5"	1'-0⅞"	14'-1"	7'-10⅞"	20'-11"	14'-8⅝"	27'-9"	21'-6⅝"	34'-7"	28'-4⅝"
	8'	7'-1"	7'-6"	0'-5"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-6"
7'	4'	3'-6"	8'-0"	4'-6"	15'-6"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3⅜"	8'-0"	3'-8⅝"	15'-8"	11'-4⅜"	23'-4"	19'-0⅜"	31'-0"	26'-8⅜"	38'-8"	34'-4⅜"
	6'	5'-0⅛"	8'-2"	3'-1⅞"	15'-11"	10'-10⅛"	23'-8"	18'-7⅝"	31'-5"	26'-0⅝"	39'-3"	34'-1⅝"
	7'	6'-2⅝"	8'-5"	2'-0⅞"	16'-1"	9'-10⅞"	23'-11"	17'-8⅝"	31'-9"	25'-0⅝"	39'-7"	33'-10⅝"
	8'	7'-1"	8'-6"	1'-0"	16'-2"	8'-10"	24'-0"	16'-9"	31'-10"	24'-6"	39'-8"	32'-6"
8'	4'	3'-6"	9'-0"	5'-6"	17'-6"	14'-2"	26'-4"	22'-10"	35'-8"	31'-4"	49'-0"	45'-0"
	5'	4'-3⅜"	9'-2"	4'-10⅜"	17'-11"	13'-7⅜"	26'-8"	22'-2⅜"	35'-5"	31'-1⅜"	44'-2"	39'-10⅜"
	6'	5'-0⅛"	9'-2"	4'-1⅞"	17'-11"	12'-10⅛"	26'-8"	21'-2⅝"	35'-5"	30'-1⅝"	44'-2"	39'-1⅝"
	7'	6'-2⅝"	9'-5"	3'-0⅞"	18'-1"	11'-10⅞"	26'-11"	20'-3⅝"	35'-9"	29'-1⅝"	44'-7"	38'-4⅝"
	8'	7'-1"	9'-6"	2'-0"	18'-2"	10'-11"	27'-0"	19'-8"	35'-10"	28'-6"	44'-8"	37'-6"
9'	5'	4'-3⅜"	10'-2"	5'-10⅜"	19'-11"	15'-7⅜"	29'-8"	25'-0⅜"	39'-5"	35'-1⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅛"	10'-3"	5'-2⅛"	20'-1"	15'-0⅛"	29'-11"	24'-2⅝"	39'-9"	34'-2⅝"	49'-7"	44'-2⅝"
	7'	6'-2⅝"	10'-5"	4'-0⅞"	20'-1"	13'-10⅞"	29'-11"	23'-3⅝"	39'-9"	33'-2⅝"	49'-7"	43'-2⅝"
	8'	7'-1"	10'-6"	3'-0"	20'-2"	12'-10"	30'-0"	22'-5"	39'-10"	32'-6"	49'-8"	42'-6"
10'	5'	4'-3⅜"	11'-2"	6'-0⅜"	21'-11"	17'-7⅜"	32'-8"	28'-4⅜"	43'-5"	39'-1⅜"	54'-2"	49'-10⅜"
	6'	5'-0⅛"	11'-3"	5'-2⅛"	22'-1"	17'-0⅛"	32'-11"	27'-10⅝"	43'-9"	38'-2⅝"	54'-7"	49'-2⅝"
	7'	6'-2⅝"	11'-5"	4'-0⅞"	22'-1"	15'-10⅞"	32'-11"	26'-9⅝"	43'-9"	37'-2⅝"	54'-7"	48'-2⅝"
	8'	7'-1"	11'-6"	3'-0"	22'-2"	14'-10"	33'-0"	25'-5"	43'-10"	36'-6"	54'-8"	47'-6"
11'	6'	5'-0⅛"	12'-3"	7'-5⅛"	24'-2"	19'-1⅛"	36'-0"	30'-11"	47'-10"	42'-9⅛"		
	7'	6'-2⅝"	12'-4"	6'-1⅞"	24'-2"	17'-11⅞"	36'-0"	29'-9⅝"	47'-10"	41'-7⅞"		
	8'	7'-1"	12'-6"	5'-0"	24'-3"	16'-11"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0⅛"	13'-4"	8'-3⅛"	26'-2"	21'-1⅛"	39'-0"	33'-11⅛"	51'-10"	46'-9⅛"		
	7'	6'-2⅝"	13'-5"	7'-1⅞"	26'-2"	19'-11⅞"	39'-0"	32'-9⅝"	51'-10"	45'-7⅞"		
	8'	7'-1"	13'-6"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS ©	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS					
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT	
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	
4'	2'	6"	7"	108.0	4.50	5.46	6.42	7.38	8.34	
	3'	6"	7"	169.8	6.26	7.21	8.17	9.13	10.09	
	4'	6"	7"	254.6	8.33	9.28	10.24	11.20	12.16	
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56	
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49	
5'	3'	6"	7"	169.8	6.97	7.63	8.29	9.36	11.12	
	4'	6"	7"	254.6	8.56	9.70	10.87	12.03	13.20	
	5'	6"	7"	357.8	10.96	12.10	13.26	14.43	15.59	
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54	
	7'	7½"	8½"	1134.6	18.99	20.15	21.37	22.59	23.80	
6'	3'	6"	7"	169.8	6.68	8.06	9.42	10.80	12.18	
	4'	6"	7"	254.6	8.75	10.13	11.49	12.87	14.25	
	5'	7"	8"	357.8	11.15	12.53	13.89	15.27	16.65	
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59	
	7'	7½"	8½"	1134.6	19.16	20.58	22.00	23.43	24.86	
	8'	8"	9"	1922.6	24.09	25.53	26.96	28.39	29.83	
7'	4'	6"	7"	254.6	8.97	10.58	12.15	13.76	15.35	
	5'	6"	7"	357.8	11.36	12.97	14.54	16.15	17.75	
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66	
	7'	7½"	8½"	1134.6	19.38	21.02	22.69	24.28	25.92	
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89	
8'	4'	6"	7"	254.6	9.19	11.03	12.82	14.65	14.95	
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.36	
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75	
	7'	7½"	8½"	1134.6	19.59	21.96	23.30	25.16	26.93	
	8'	8"	9"	1925.6	24.52	26.91	28.29	30.11	31.96	
9'	5'	7"	7"	357.8	12.26	13.89	16.37	18.45	20.47	
	6'	7½"	8"	583.1	15.94	18.04	20.09	22.19	24.23	
	7'	7½"	8½"	1134.6	19.81	21.91	23.96	26.06	28.10	
	8'	8"	9"	1925.6	24.76	26.86	28.91	31.00	33.05	
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.24	21.52	
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.99	25.28	
	7'	7½"	8½"	1134.6	20.09	22.37	24.64	26.87	29.16	
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.81	34.10	
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.28		
	7'	8"	8½"	1134.6	20.64	23.22	25.71	28.18		
	8'	8"	9"	1925.6	25.19	27.77	30.27	32.74		
12'	6'	8"	8"	583.1	16.92	19.75	22.45	25.18		
	7'	8"	8½"	1134.6	20.87	23.69	26.50	29.13		
	8'	8"	9"	1925.6	25.42	28.25	30.96	33.69		

© For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S. and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

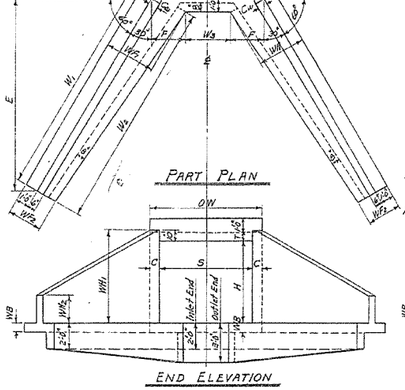
UNIT STRESSES:-

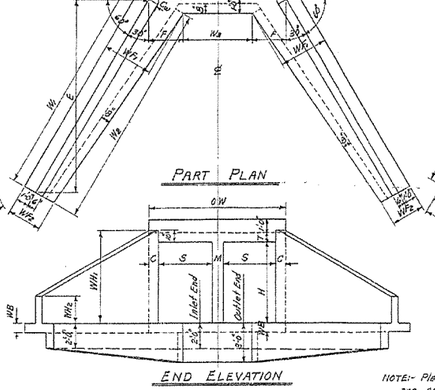
Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

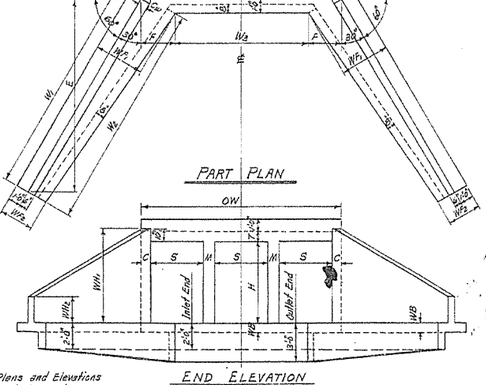
SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

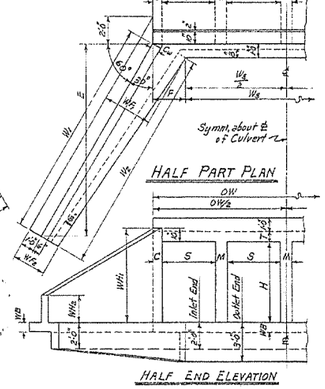
CLASS S CONCRETE

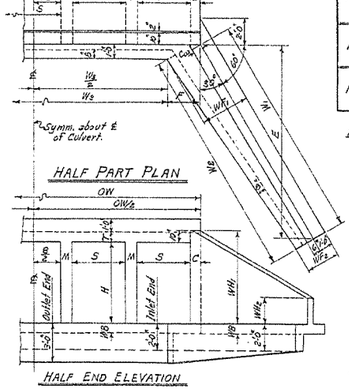




NOTE:- Plans and Elevations are not to scale.





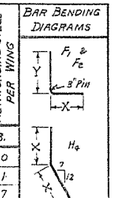


MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length.							F2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						F3 Straight: Longitudinal in top of wing footing heel.			F4 Straight: Longitudinal in bottom of wing footing toe.			H1 Straight: Horizontal in back face of wing.			H2 Straight: Horizontal in back face of wing. One bar of each length.					H3 Straight: In back face of wing at top-on slope.			H4 Bent: Dowels thru construction joint at headwall.				QUANTITY REINFORCING STEEL PER WING
				LENGTHS VARY		X	Y																	LENGTHS VARY											
H	SIZE	SPACING	NO. REQD	MIN.	MAX.	MIN.	MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	MAX.	MIN.	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X		LB.
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	#3	12"	1	—	9'-6"	#3	1	7'-9"	#3	12"	2	2'-8"	1'-4"	27.0
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-5"	4'-0"	—	—	—	—	#3	1	12'-0"	#3	2	11'-6"	#3	12"	1	9'-6"	#3	12"	2	7'-6"	9'-6"	#3	1	9'-9"	#3	12"	3	2'-8"	1'-8"	41.1
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	#3	1	14'-9"	#3	3	13'-6"	#5	12"	1	11'-10"	#3	12"	3	10'-11"	9'-6"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-8"	63.7
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	#3	1	16'-8"	#3	3	16'-0"	#5	12"	2	14'-2"	#3	12"	3	10'-11"	9'-6"	#3	1	14'-7"	#3	12"	5	2'-8"	1'-8"	89.5
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-6"	#3	12"	4	16'-4"	9'-6"	#3	1	17'-0"	#3	12"	6	2'-8"	1'-6"	145.8
7'	#4	12"	20	3'-9"	10'-8"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	#3	1	21'-6"	#4	4	21'-0"	#4	12"	2	18'-9"	#4	12"	5	17'-9"	9'-6"	#4	1	19'-5"	#4	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	#4	1	23'-8"	#4	4	23'-0"	#4	12"	3	21'-1"	#4	12"	5	17'-9"	9'-6"	#4	1	21'-10"	#4	12"	8	3'-6"	1'-9"	356.4

BAR BENDING DIAGRAMS



NOTE:- Dimensions are to bar centers.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 6-20-62. Checked By:- RHS- 1-9-63
Drawn By:- W.C.H. 12-4-62. Checked By:- RHS- 1-31-63
Quantities By:- W.C.H. 12-14-62. Checked By:- EHS- 3-20-63
Reviewed By:- EHS- 3-20-63

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H= 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MVL 6-8 (3)

RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			183	
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

"a" bars – STRAIGHT – In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each.
"b" bars – BENT - See Diagram at Right – In Top and Bottom Slabs of Barrel. Alternate with "a" bars.

Section & Bar Group	Length of Sections	Depth of Cover D	Clear Span S	Clear Height H	"a" Size	"a" Spacing	"a" No. Req'd 3:1	"a" No. Req'd 4:1	"a" Length	"b" Size	"b" Spacing	"b" No. Req'd 3:1	"b" No. Req'd 4:1	"b" Length	"b" X
Section "A" & Bar Group "A"	3:1 = 22'-0"; 4:1 = 32'-0"	0' to 10'-0"	1 @ 4'	3'	#4	12"	48	68	4'-9"	#4	12"	44	64	5'-7"	4'-8½"
				4'			48	68	4'-9"			44	64	5'-7"	4'-8½"
				5'			48	68	4'-9"			44	64	5'-7"	4'-8½"
				6'			48	68	4'-11"			44	64	5'-9"	4'-10½"
			1 @ 5'	3'	#5	12"	48	68	5'-9"	#5	12"	44	64	6'-8"	5'-8½"
				4'			48	68	5'-9"			44	64	6'-8"	5'-8½"
				5'			48	68	5'-9"			44	64	6'-8"	5'-8½"
				6'			48	68	5'-11"			44	64	6'-10"	5'-10½"
				7'			48	68	6'-0"			44	64	6'-11"	5'-11½"
			1 @ 6'	4'	#5	12"	48	68	6'-9"	#6	12"	44	64	7'-10"	6'-8"
				5'			48	68	6'-9"			44	64	7'-10"	6'-8"
				6'			48	68	6'-11"			44	64	8'-0"	6'-10"
				7'			48	68	7'-0"			44	64	8'-1"	6'-11"
				8'			48	68	7'-1"			44	64	8'-2"	7'-0"
Section "B" & Bar Group "B"	3:1 = 11'-0"; 4:1 = 16'-0"	10'-0" to 15'-0"	1 @ 4'	3'	#4	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"
			1 @ 5'	3'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"
				5'			22	32	5'-9"			22	32	6'-10"	5'-8"
				6'			22	32	5'-11"			22	32	7'-0"	5'-10"
				7'			22	32	6'-0"			22	32	7'-1"	5'-11"
			1 @ 6'	4'	#6	12"	22	32	6'-9"	#6	12"	22	32	7'-10"	6'-8"
				5'			22	32	6'-9"			22	32	7'-10"	6'-8"
				6'			22	32	6'-11"			22	32	8'-0"	6'-10"
				7'			22	32	7'-0"			22	32	8'-1"	6'-11"
				8'			22	32	7'-1"			22	32	8'-2"	7'-0"
Section "C" & Bar Group "C"	3:1 = 11'-0"; 4:1 = 16'-0"	15'-0" to 20'-0"	1 @ 4'	3'	#5	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"
				5'			22	32	4'-9"			22	32	5'-8"	4'-8½"
				6'			22	32	4'-11"			22	32	5'-10"	4'-10½"
			1 @ 5'	3'	#5	11"	24	36	5'-9"	#6	11"	24	34	6'-10"	5'-8"
				4'			24	36	5'-9"			24	34	6'-10"	5'-8"
				5'			24	36	5'-9"			24	34	6'-10"	5'-8"
				6'			24	36	5'-11"			24	34	7'-0"	5'-10"
				7'			24	36	6'-0"			24	34	7'-1"	5'-11"
			1 @ 6'	4'	#6	11"	24	36	6'-9"	#6	11"	24	34	7'-10"	6'-8"
				5'			24	36	6'-9"			24	34	7'-10"	6'-8"
				6'			24	36	6'-11"			24	34	8'-0"	6'-10"
				7'			24	36	7'-0"			24	34	8'-1"	6'-11"
				8'			24	36	7'-1"			24	34	8'-2"	7'-0"
Section "D" & Bar Group "D"	3:1 = 11'-0"; 4:1 = 16'-0"	20'-0" to 25'-0"	1 @ 4'	3'	#5	11"	24	36	4'-9"	#5	11"	24	34	5'-8"	4'-8½"
				4'			24	36	4'-9"			24	34	5'-8"	4'-8½"
				5'			24	36	4'-9"			24	34	5'-8"	4'-8½"
				6'			24	36	4'-11"			24	34	5'-10"	4'-10½"
			1 @ 5'	3'	#6	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"
				4'			22	32	5'-9"			22	32	6'-10"	5'-8"
				5'			22	32	5'-9"			22	32	6'-11"	5'-9"
				6'			22	32	5'-11"			22	32	7'-1"	5'-11"
				7'			22	32	6'-1"			22	32	7'-2"	6'-0"
			1 @ 6'	4'	#7	12"	22	32	6'-9"	#6	12"	22	32	7'-10"	6'-8"
				5'			22	32	6'-10"			22	32	7'-11"	6'-9"
				6'			22	32	6'-11"			22	32	8'-1"	6'-11"
				7'			22	32	7'-1"			22	32	8'-2"	7'-0"
				8'			22	32	7'-2"			22	32	8'-4"	7'-2"
Section "E" & Bar Group "E"	3:1 = 11'-0"; 4:1 = 16'-0"	25'-0" to 30'-0"	1 @ 4'	3'	#6	12"	22	32	4'-9"	#5	12"	22	32	5'-8"	4'-8½"
				4'			22	32	4'-9"			22	32	5'-8"	4'-8½"
				5'			22	32	4'-10"			22	32	5'-9"	4'-9½"
				6'			22	32	5'-0"			22	32	5'-11"	4'-11½"
			1 @ 5'	3'	#6	11"	24	34	5'-9"	#6	11"	24	36	6'-10"	5'-8"
				4'			24	34	5'-9"			24	36	6'-10"	5'-8"
				5'			24	34	5'-10"			24	36	7'-0"	5'-10"
				6'			24	34	6'-0"			24	36	7'-2"	6'-0"
				7'			24	34	6'-2"			24	36	7'-3"	6'-1"
			1 @ 6'	4'	#7	11"	24	34	6'-9"	#6	11"	24	36	7'-10"	6'-8"
				5'			24	34	6'-11"			24	36	8'-0"	6'-10"
				6'			24	34	7'-1"			24	36	8'-2"	7'-0"
				7'			24	34	7'-2"			24	36	8'-4"	7'-2"
				8'			24	34	7'-4"			24	36	8'-5"	7'-3"
Section "F" & Bar Group "F"	3:1 = 11'-0"; 4:1 = 16'-0"	30'-0" to 35'-0"	1 @ 4'	3'	#6	13"	20	30	4'-9"	#6	13"	20	30	5'-10"	4'-8"
				4'			20	30	4'-9"			20	30	5'-10"	4'-8"
				5'			20	30	4'-11"			20	30	6'-0"	4'-10"
				6'			20	30	5'-1"			20	30	6'-2"	5'-0"
			1 @ 5'	3'	#7	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"
				4'			22	32	5'-9"			22	32	6'-11"	5'-9"
				5'			22	32	5'-11"			22	32	7'-1"	5'-11"
				6'			22	32	6'-1"			22	32	7'-3"	6'-1"
				7'			22	32	6'-3"			22	32	7'-4"	6'-2"
	Varies with Length of Barrel		1 @ 6'	4'	#7	12"	Varies with Length of Barrel	Varies with Length of Barrel	6'-10"	#7	12"	Varies with Length of Barrel	Varies with Length of Barrel	8'-1"	6'-9"
				5'					7'-0"					8'-3"	6'-11"
				6'					7'-2"					8'-5"	7'-1"
				7'					7'-4"					8'-7"	7'-3"
				8'					7'-5"					8'-8"	7'-4"
Section "G" & Bar Group "G"	Varies with Length of Barrel	35'-0" to 40'-0"	1 @ 4'	3'	#6	12"	Varies with Length of Barrel	Varies with Length of Barrel	4'-9"	#6	12"	Varies with Length of Barrel	Varies with Length of Barrel	5'-10"	4'-8"
				4'					4'-10"					5'-11"	4'-9"
				5'					5'-0"					6'-1"	4'-11"
				6'					5'-2"					6'-3"	5'-1"
			1 @ 5'	3'	#7	11"			5'-9"	#6	11"			6'-10"	5'-8"
				4'					5'-10"					7'-0"	5'-10"
				5'					6'-0"					7'-2"	6'-0"
				6'					6'-2"					7'-4"	6'-2"
				7'					6'-4"					7'-5"	6'-3"

STRAIGHT: "d" bars – Longitudinal in Top Slab of Barrel; "d1" bars – Longitudinal in Sidewalls; "e" bars – Longitudinal in Bottom Slab of Barrel. "f" bars – STRAIGHT – Verticals in Sidewalls.

Section	S	H	"d" Size	"d" Spacing	"d" No. Req'd	"d" Length	"d1" Size	"d1" Spacing	"d1" No. Req'd	"d1" Length	"e" Size	"e" Spacing	"e" No. Req'd	"e" Length	"f" Size	"f" Spacing	"f" No. Req'd 3:1	"f" No. Req'd 4:1	"f" Length
A	1 @ 4'	3'	#4	12"	5	33'-3" for 32'-0" Section	#4	12"	6	33'-3" for 32'-0" Section	#4	12"	5	34'-3" for 32'-0" Section	#4	12"	44	64	3'-10"
		4'			5				8				5				44	64	4'-10"
		5'			5				10				5				44	64	5'-10"
		6'			5				12				5				44	64	6'-10"
	1 @ 5'	3'	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	44	64	3'-11"
		4'			6				8				6				44	64	4'-11"
		5'			6				10				6				44	64	5'-11"
		6'			6				12				6				44	64	6'-11"
		7'			6				14				6			10"	54	78	7'-11"
	1 @ 6'	4'	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	44	64	5'-0"
		5'			7				10				7				44	64	6'-0"
		6'			7				12				7				44	64	7'-0"
		7'			7				14				7			10"	54	78	8'-0"
		8'			7				16				7		#5	11"	48	70	9'-0"
B	1 @ 4'	3'	#4	12"	5	34'-3" for 33'-0" Length Section	#4	12"	6	34'-3" for 33'-0" Length Section	#4	12"	5	34'-3" for 33'-0" Length Section	#4	12"	22	32	3'-10"
		4'			5				8				5				22	32	4'-10"
		5'			5				10				5				22	32	5'-10"
		6'			5				12				5			10"	28	40	6'-10"
	1 @ 5'	3'	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	3'-11"
		4'			6				8				6				22	32	4'-11"
		5'			6				10				6				22	32	5'-11"
		6'			6				12				6			11"	24	36	6'-11"
		7'			6				14				6		#5	12"	22	32	7'-11"
	1 @ 6'	4'	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-1"
		5'			7				10				7				22	32	6'-1"
		6'			7				12				7			10"	28	40	7'-1"
		7'			7				14				7		#5	11"	24	34	8'-1"
		8'			7				16				7		#6	12"	22	32	9'-1"
C	1 @ 4'	3'	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	3'-10"
		4'			5				8				5				22	32	4'-10"
		5'			5				10				5			10"	28	40	5'-10"
		6'			5				12				5		#5	12"	22	32	6'-10"
	1 @ 5'	3'	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-0"
		4'			6				8				6				22	32	5'-0"
		5'			6				10				6			11"	24	36	6'-0"
		6'			6				12				6		#5	12"	22	32	7'-0"
		7'			6				14				6		#6	12"	22	32	8'-0"
	1 @ 6'	4'	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-2"
		5'			7				10				7				22	32	6'-2"
		6'			7				12				7		#5	12"	22	32	7'-2"
		7'			7				14				7		#6	12"	22	32	8'-2"
		8'			7				16				7			10"	26	38	9'-2"
D	1 @ 4'	3'	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	3'-11"
		4'			5				8				5				22	32	4'-11"
		5'			5				10				5		#5	12"	22	32	5'-11"
		6'			5				12				5			10"	26	38	6'-11"
	1 @ 5'	3'	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-1"
		4'			6				8				6				22	32	5'-1"
		5'			6				10				6			11"	24	34	6'-1"
		6'			6				12				6		#5	11"	24	34	7'-1"
		7'			6				14				6		#6	12"	22	32	8'-1"
	1 @ 6'	4'	#4	12"	7		#4	12"	8		#4	12"	7		#4	12"	22	32	5'-4"
		5'			7				10				7				22	32	6'-4"
		6'			7				12				7		#5	12"	22	32	7'-4"
		7'			7				14				7		#6	12"	22	32	8'-4"
		8'			7				16				7			10"	26	40	9'-4"
E	1 @ 4'	3'	#4	12"	5		#4	12"	6		#4	12"	5		#4	12"	22	32	4'-0"
		4'			5				8				5				22	32	5'-0"
		5'			5				10				5		#5	12"	22	32	6'-0"
		6'			5				12				5		#6	12"	22	32	7'-0"
	1 @ 5'	3'	#4	12"	6		#4	12"	6		#4	12"	6		#4	12"	22	32	4'-3"
		4'			6				8				6				22	32	5'-3"
		5'			6				10				6			10"	28	40	6'-3"
		6'			6				12				6		#5	11"	24	36	7'-3"
		7'			6				14				6		#6	11"	24	34	8'-3"
	1 @ 6'	4'	#4	11"	8		#4	12"	8		#4	11"	8		#4	12"	22	32	5'-5"
		5'			8				10				8			11"	24	36	6'-5"
		6'			8				12				8		#5	12"	22	32	7'-5"
		7'			8				14				8		#6	12"	22	32	8'-5"
		8'			8				16				8			10"	26	38	9'-5"
F	1 @ 4'	3'	#4	12	5		#4	12"	6		#4	12"	5		#4	12"	22	32	4'-1"
		4'			5				8				5				22	32	5'-1"
		5'			5				10				5		#5	12"	22	32	6'-1"
		6'			5				12				5		#6	12"	22	32	7'-1"
	1 @ 5'	3'	#4	10½"	7		#4	12"	6		#4	10½"	7		#4	12"	22	32	4'-4"
		4'			7				8				7				22	32	5'-4"
		5'			7				10				7			10"	26	36	6'-4"
		6'			7				12				7		#5	11"	24	34	7'-4"
		7'			7				14				7		#6	11"	24	36	8'-4"
	1 @ 6'	4'	#4	9½"	9	Varies with Length of Barrel	#4	12"	8	Varies with Length of Barrel	#4	9½"	9	Varies with Length of Barrel	#4	12"	Varies with Length of Barrel	Varies with Length of Barrel	5'-7"
		5'			9				10				9			10"			6'-7"
		6'			9				12				9		#5	12"			7'-7"
		7'			9				14				9		#6	12"			8'-7"
		8'			9				16				9			10"			9'-7"
G	1 @ 4'	3'	#4	10½"	6		#4	12"	6		#4	10½"	6		#4	12"			4'-2"
		4'			6				8				6						5'-2"
		5'			6				10				6		#5	12"			6'-2"
		6'			6				12				6		#6	12"			7'-2"
	1 @ 5'	3'	#4	10½"	7		#4	12"	6		#4	10½"	7		#4	12"			4'-5"
		4'			7				8				7						5'-5"
		5'			7				10				7			10"			6'-5"
		6'			7				12				7		#5	11"			7'-5"
		7'			7				14				7		#6	11"			8'-5"

NOTE:- Bars for each Section to be marked with the Section Letter, thus for Section B, the bars should be marked Ba, Bb, Bd, Bd1, Be and Bf.

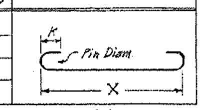
Designed By:- W.C.H. 9-5-62 Checked By:- RHS 11-8-62
Drawn By:- W.C.H. 10-10-62 Checked By:- J.E.M. 11-12-62
Quantities By:- W.C.H. 11-7-62 Checked By:- J.E.M. 11-16-62

DIMENSIONS — QUANTITIES

Max. Design Depth of Cover D	Clear Span S	Clear Height H	Sq. Ft. Opening A	Overall Width OW	Thickness of Top Slab T	Thickness of Sidewalls C	Thickness of Bottom Slab B	Overall Height OH	Class S Conc. per Lin. Ft. of Barrel CU.YD.	Reinforcing Steel per Lin. Ft. of Barrel LB.	Additional per Lap LB.	Additional Two Headwalls & Aprons LB.
Section "A" - 10'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6½"	4'-1"	0.312	29.62	13.36	51.44
		4'	16	5'-0"		6"		5'-1"	0.349	32.29	15.03	51.44
		5'	20	5'-0"		6"		6'-1"	0.386	34.96	16.70	51.44
		6'	24	5'-2"		7"		7'-1"	0.467	38.08	18.37	52.33
	1 @ 5'	3'	15	6'-0"	7"	6"	7"	4'-2"	0.370	43.16	15.03	79.37
		4'	20	6'-0"		6"		5'-2"	0.407	45.83	16.70	79.37
		5'	25	6'-0"		6"		6'-2"	0.444	48.50	18.37	79.37
		6'	30	6'-2"		7"		7'-2"	0.526	51.87	20.04	80.77
		7'	35	6'-3"		7½"		8'-2"	0.594	57.00	21.71	81.46
	1 @ 6'	4'	24	7'-0"	7½"	6"	7½"	5'-3"	0.472	58.99	18.37	93.29
		5'	30	7'-0"		6"		6'-3"	0.509	61.66	20.04	93.29
		6'	36	7'-2"		7"		7'-3"	0.591	65.18	21.71	94.68
		7'	42	7'-3"		7½"		8'-3"	0.660	70.41	23.38	95.37
		8'	48	7'-4"		8"		9'-3"	0.735	79.83	25.05	96.07
Section "B" - 15'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6½"	4'-1"	0.312	33.98	13.36	
		4'	16	5'-0"		6"		5'-1"	0.349	36.65	15.03	
		5'	20	5'-0"		6"		6'-1"	0.386	39.32	16.70	
		6'	24	5'-2"		7"		7'-1"	0.467	44.39	18.37	
	1 @ 5'	3'	15	6'-0"	7"	6"	7"	4'-2"	0.370	49.78	15.03	
		4'	20	6'-0"		6"		5'-2"	0.407	52.45	16.70	
		5'	25	6'-0"		6"		6'-2"	0.444	55.12	18.37	
		6'	30	6'-2"		7"		7'-2"	0.526	59.48	20.04	
		7'	35	6'-3"		7½"		8'-2"	0.594	67.68	21.71	
	1 @ 6'	4'	24	7'-0"	8"	6"	8¼"	5'-4¼"	0.499	65.30	18.37	
		5'	30	7'-0"		6"		6'-4¼"	0.536	66.63	20.04	
		6'	36	7'-2"		7"		7'-4¼"	0.619	73.53	21.71	
		7'	42	7'-3"		7½"		8'-4¼"	0.688	82.41	23.38	
		8'	48	7'-4"		8"		9'-4¼"	0.763	93.19	25.05	
Section "C" - 20'-0"	1 @ 4'	3'	12	5'-0"	6½"	6"	6¾"	4'-1¼"	0.316	37.54	13.36	
		4'	16	5'-0"		6"		5'-1¼"	0.353	40.21	15.03	
		5'	20	5'-0"		6"		6'-1¼"	0.390	44.44	16.70	
		6'	24	5'-2"		7"		7'-1¼"	0.471	51.38	18.37	
	1 @ 5'	3'	15	6'-0"	7½"	6"	7¾"	4'-3¼"	0.394	52.85	15.03	
		4'	20	6'-0"		6"		5'-3¼"	0.431	55.52	16.70	
		5'	25	6'-0"		6"		6'-3¼"	0.468	58.92	18.37	
		6'	30	6'-2"		7"		7'-3¼"	0.550	67.04	20.04	
		7'	35	6'-3"		7½"		8'-3¼"	0.618	78.27	21.71	
	1 @ 6'	4'	24	7'-0"	8½"	6"	9"	5'-5½"	0.526	69.39	18.37	
		5'	30	7'-0"		6"		6'-5½"	0.563	72.06	20.04	
		6'	36	7'-2"		7"		7'-5½"	0.646	81.20	21.71	
		7'	42	7'-3"		7½"		8'-5½"	0.716	92.67	23.38	
		8'	48	7'-4"		8"		9'-5½"	0.791	103.06	25.05	
Section "D" - 25'-0"	1 @ 4'	3'	12	5'-0"	6¾"	6"	7¼"	4'-2"	0.327	39.63	13.36	
		4'	16	5'-0"		6"		5'-2"	0.364	42.30	15.03	
		5'	20	5'-0"		6"		6'-2"	0.401	49.41	16.70	
		6'	24	5'-2"		7"		7'-2"	0.483	55.14	18.37	
	1 @ 5'	3'	15	6'-0"	8"	6"	8½"	4'-4½"	0.417	55.28	15.03	
		4'	20	6'-0"		6"		5'-4½"	0.454	57.95	16.70	
		5'	25	6'-0½"		6¼"		6'-4½"	0.501	61.61	18.37	
		6'	30	6'-2½"		7¼"		7'-4½"	0.585	71.20	20.04	
		7'	35	6'-4"		8"		8'-4½"	0.668	81.45	21.71	
	1 @ 6'	4'	24	7'-0"	9¼"	6"	9¾"	5'-7"	0.559	72.95	18.37	
		5'	30	7'-1"		6½"		6'-7"	0.616	76.21	20.04	
		6'	36	7'-2½"		7¼"		7'-7"	0.691	85.22	21.71	
		7'	42	7'-4"		8"		8'-7"	0.776	97.23	23.38	
		8'	48	7'-5½"		8¾"		9'-7"	0.869	108.02	25.05	
Section "E" - 30'-0"	1 @ 4'	3'	12	5'-0"	7¼"	6"	7¾"	4'-3"	0.343	42.12	13.36	
		4'	16	5'-0"		6"		5'-3"	0.380	44.79	15.03	
		5'	20	5'-1"		6½"		6'-3"	0.436	52.39	16.70	
		6'	24	5'-3"		7½"		7'-3"	0.521	63.09	18.37	
	1 @ 5'	3'	15	6'-0"	8¾"	6"	9¼"	4'-6"	0.444	58.94	15.03	
		4'	20	6'-0"		6"		5'-6"	0.481	61.61	16.70	
		5'	25	6'-1½"		6¾"		6'-6"	0.549	66.77	18.37	
		6'	30	6'-3½"		7¾"		7'-6"	0.637	75.68	20.04	
		7'	35	6'-5"		8½"		8'-6"	0.724	88.37	21.71	
	1 @ 6'	4'	24	7'-0"	10"	6"	10½"	5'-8½"	0.591	79.04	20.04	
		5'	30	7'-2"		7"		6'-8½"	0.669	83.78	21.71	
		6'	36	7'-4"		8"		7'-8½"	0.760	92.53	23.38	
		7'	42	7'-5½"		8¾"		8'-8½"	0.850	104.59	25.05	
		8'	48	7'-7"		9½"		9'-8½"	0.949	115.61	26.72	
Section "F" - 35'-0"	1 @ 4'	3'	12	5'-0"	7¾"	6"	8¼"	4'-4"	0.358	45.49	13.36	
		4'	16	5'-0"		6"		5'-4"	0.395	48.16	15.03	
		5'	20	5'-2"		7"		6'-4"	0.471	56.32	16.70	
		6'	24	5'-4"		8"		7'-4"	0.560	67.17	18.37	
	1 @ 5'	3'	15	6'-0"	9¼"	6"	9¾"	4'-7"	0.463	63.18	16.70	
		4'	20	6'-0½"		6¼"		5'-7"	0.509	66.11	18.37	
		5'	25	6'-2½"		7¼"		6'-7"	0.588	71.65	20.04	
		6'	30	6'-4½"		8¼"		7'-7"	0.679	80.70	21.71	
		7'	35	6'-6"		9"		8'-7"	0.770	93.59	23.38	
	1 @ 6'	4'	24	7'-1"	10¾"	6½"	11¼"	5'-10"	0.641	85.81	21.71	
		5'	30	7'-3"		7½"		6'-10"	0.724	91.60	23.38	
		6'	36	7'-5"		8½"		7'-10"	0.818	99.56	25.05	
		7'	42	7'-7"		9½"		8'-10"	0.925	112.23	26.72	
		8'	48	7'-8½"		10¼"		9'-10"	1.030	123.01	28.39	
Section "G" - 40'-0"	1 @ 4'	3'	12	5'-0"	8¼"	6"	8¾"	4'-5"	0.373	49.38	15.03	
		4'	16	5'-1"		6½"		5'-5"	0.427	52.56	16.70	
		5'	20	5'-3"		7½"		6'-5"	0.507	60.85	18.37	
		6'	24	5'-5"		8½"		7'-5"	0.599	71.86	20.04	
	1 @ 5'	3'	15	6'-0"	9¾"	6"	10¼"	4'-8"	0.481	67.30	16.70	
		4'	20	6'-1½"		6¾"		5'-8"	0.545	70.89	18.37	
		5'	25	6'-3½"		7¾"		6'-8"	0.628	76.56	20.04	
		6'	30	6'-5½"		8¾"		7'-8"	0.723	85.78	21.71	
		7'	35	6'-7"		9½"		8'-8"	0.817	98.84	23.38	

NOTE:- For details of wings and bar lists, see Drawing Nos. W-X002-1, W-X003-1, and W-X004-1.

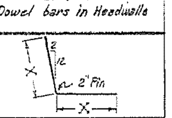
Bar Size	Pin Diam.	K	Add for 2 Hooks
#4	2"	4"	0'-10½"
#5	2½"	4¾"	0'-11½"
#6	3"	5"	1'-2"
#7	3½"	5¾"	1'-4"

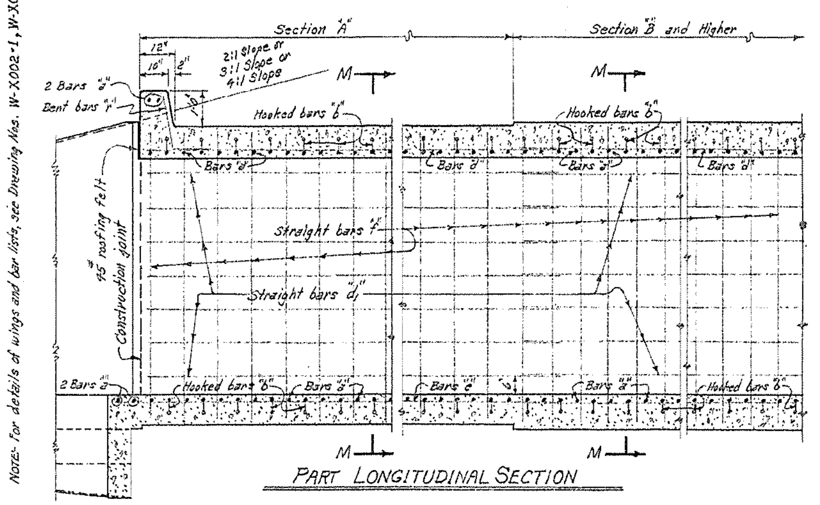


NOTE:- Dimensions are to centers of bars.

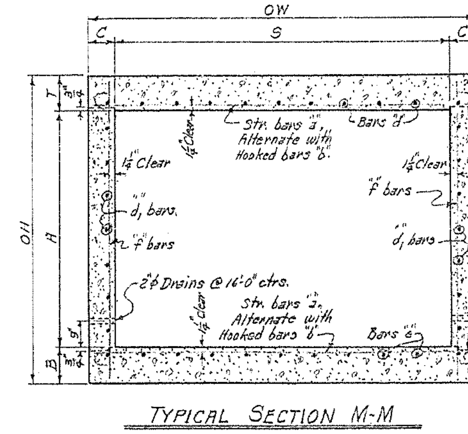
DOWEL BARS FOR TWO HEADWALLS

Span	Size	Spacing	No. Req'd	Length	X
4'	#4	11"	12	2'-5"	1'-2½"
5'	#4	11½"	14	2'-6"	1'-3"
6'	#4	12"	16	2'-7"	1'-3½"

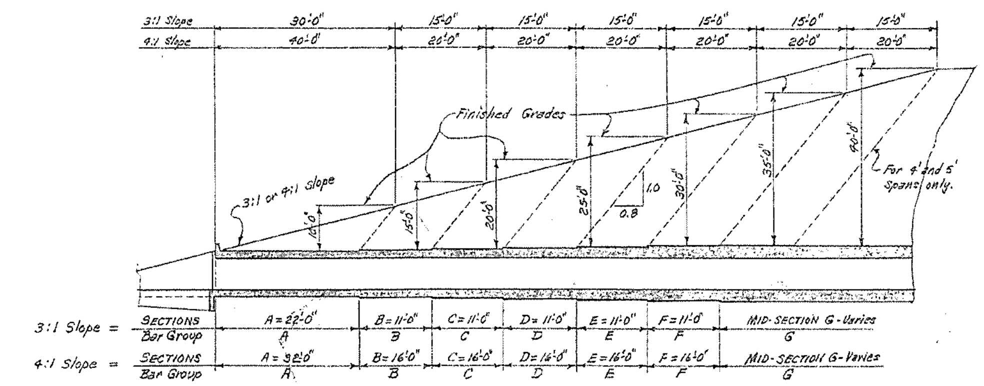




PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



TYPICAL LONGITUDINAL SECTION-SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections, with Bar Groups to be shown on Cross Section Sheets.

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

Depths of Cover	Sections & Bar Groups for End Sections A	B	C	D	E	F	Mid-Section and Bar Group
5.0' to 9.5'	✓						A
10.0' to 14.5'	✓						B
15.0' to 19.5'	✓	✓					C
20.0' to 24.5'	✓	✓	✓				D
25.0' to 29.5'	✓	✓	✓	✓			E
30.0' to 34.5'	✓	✓	✓	✓	✓		F
35.0' to 40.0'	✓	✓	✓	✓	✓	✓	G

LENGTH OF SECTIONS FOR SKEWED CULVERTS

Skew Angle	Sec. of Skew Angle	3:1 Slopes Sections A	3:1 Slopes Sections B,C,D,E or F	4:1 Slopes Sections A	4:1 Slopes Sections B,C,D,E or F
0°	1.0	22.0'	11.0'	32.0'	16.0'
15°	1.0353	22.776'	11.388'	33.129'	16.564'
30°	1.1547	25.403'	12.702'	36.950'	18.475'
45°	1.4142	31.113'	15.556'	45.255'	22.627'

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X002-1, W-X003-1 and W-X004-1.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

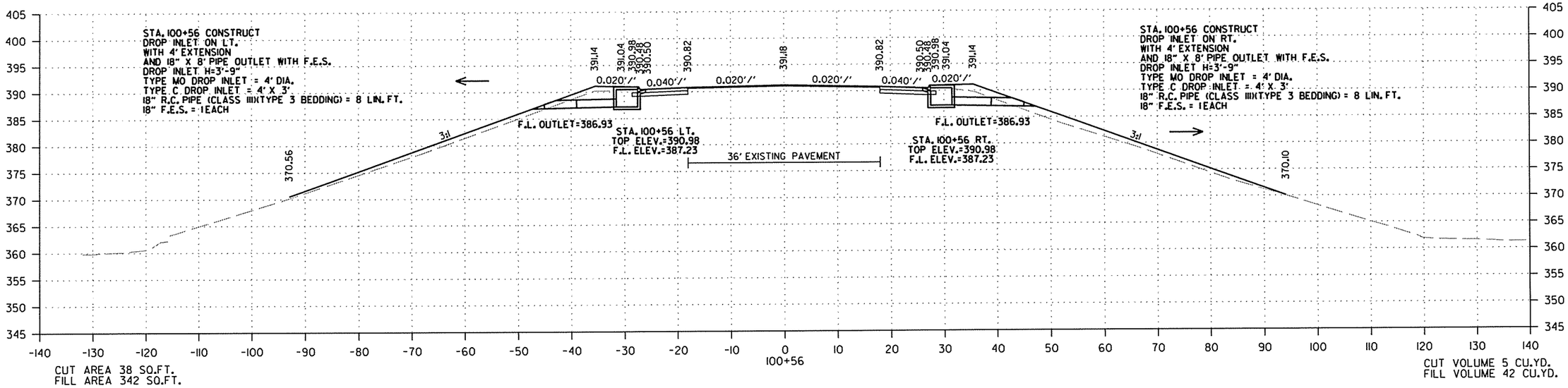
4', 5' & 6' SPANS SINGLES — 3:1 OR 4:1 SLOPES OVER 5'-0" COVER

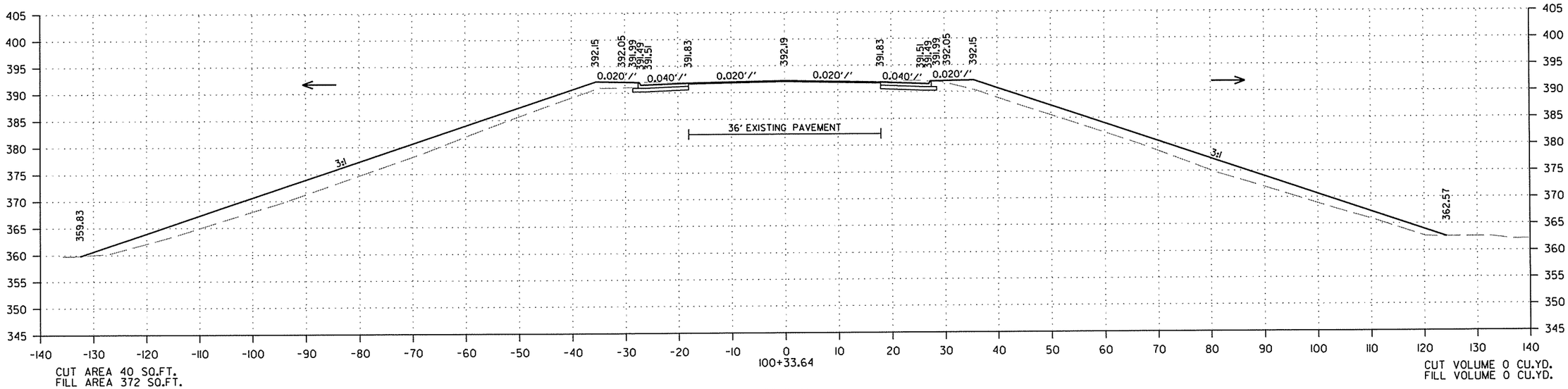
STANDARD DRAWING NO. R-100X-X1

(10)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	184	244

(2) CROSS SECTIONS





99+97.14
BEGIN JOB 080397

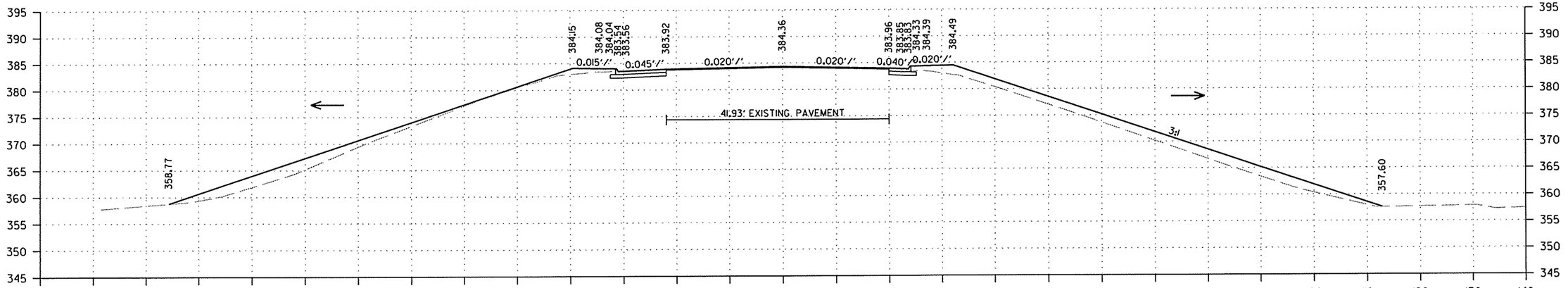
HWY. 25
CROSS SECTIONS STA. 100+34 TO STA. 100+56

10/26/2015

R080397.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.		080397	185	244

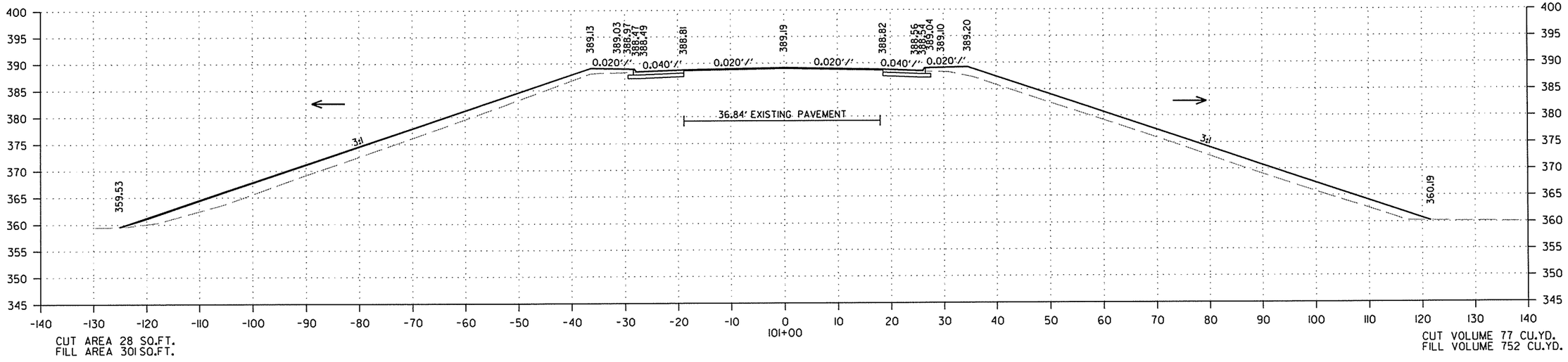
(2) CROSS SECTIONS



CUT AREA 19 SQ.FT.
FILL AREA 219 SQ.FT.

102+00

CUT VOLUME 86 CU.YD.
FILL VOLUME 1096 CU.YD.



CUT AREA 28 SQ.FT.
FILL AREA 301 SQ.FT.

101+00

CUT VOLUME 77 CU.YD.
FILL VOLUME 752 CU.YD.

HWY. 25
CROSS SECTIONS STA. 101+00 TO STA. 102+00

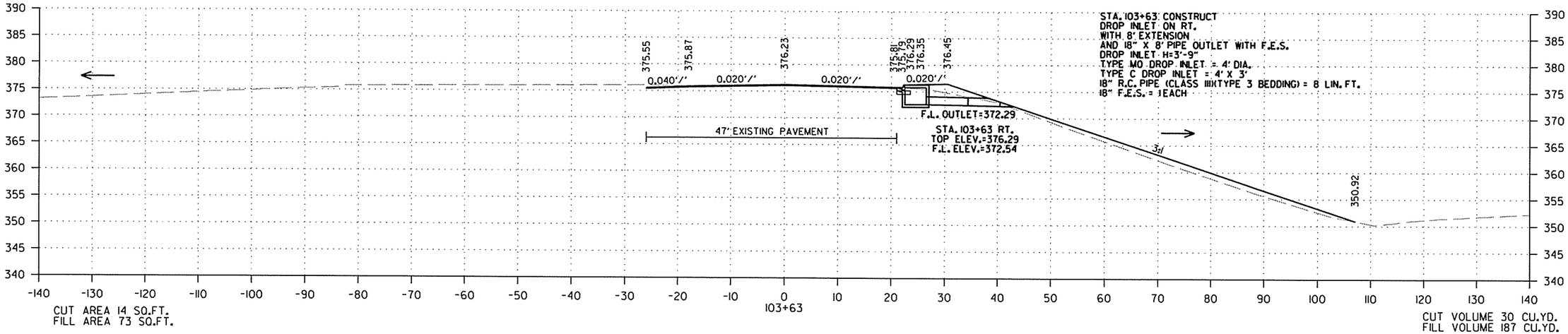
10/26/2015

R080397.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.		080397	186	244

(2) CROSS SECTIONS



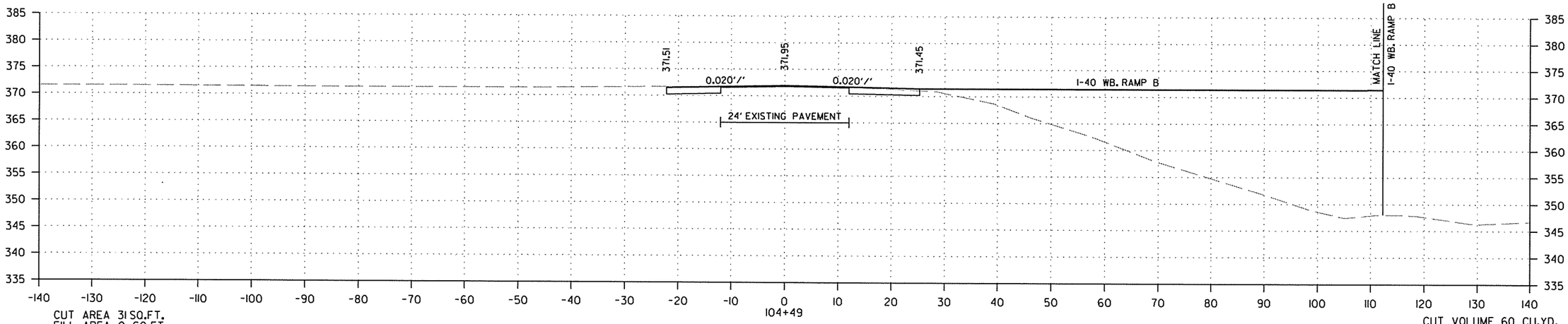
10/26/2015

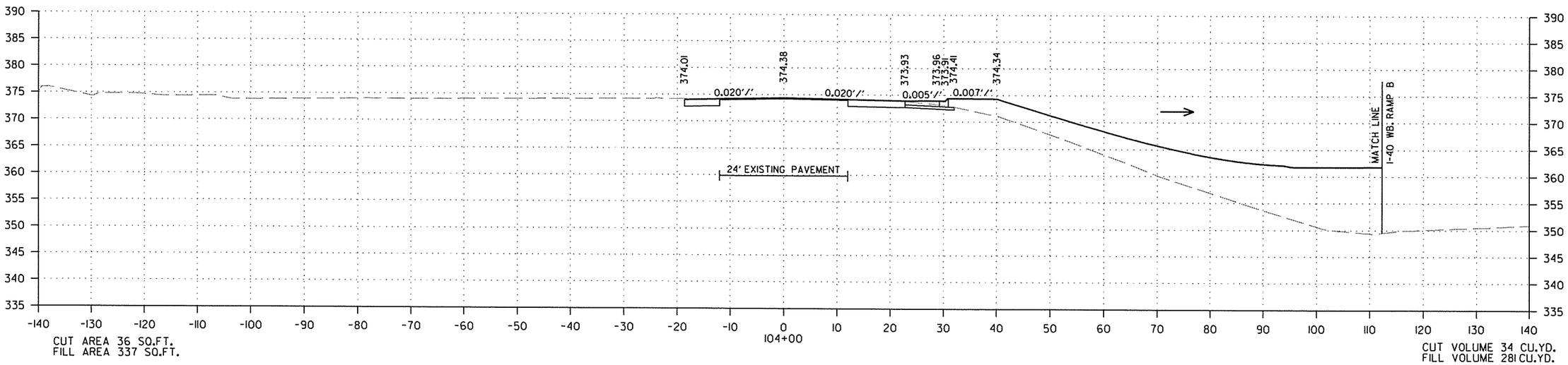
R080397.DGN

HWY. 25
CROSS SECTIONS STA. 103+00 TO STA. 103+63

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	187	244

(2) CROSS SECTIONS





HWY. 25
CROSS SECTIONS STA. 104+00 TO STA. 104+49

10/26/2015

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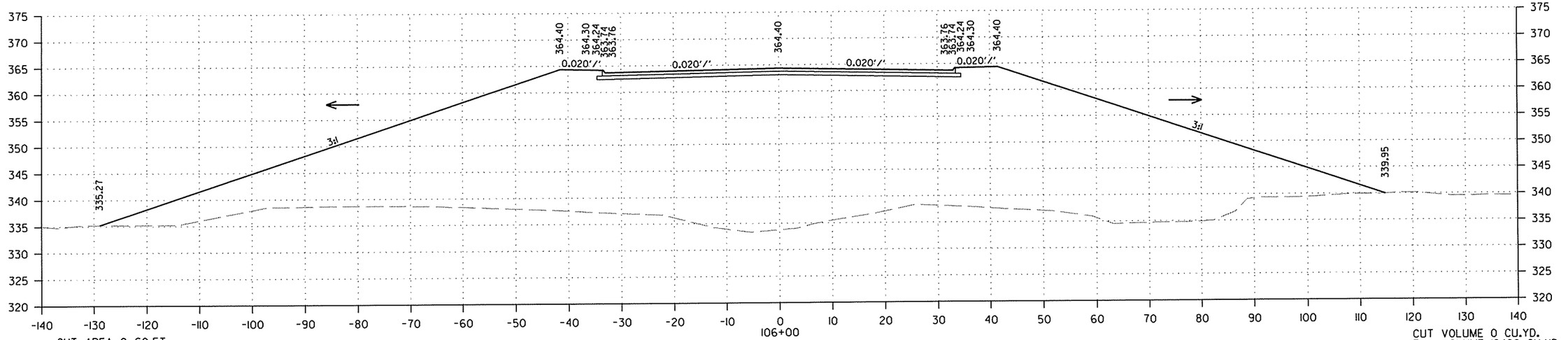
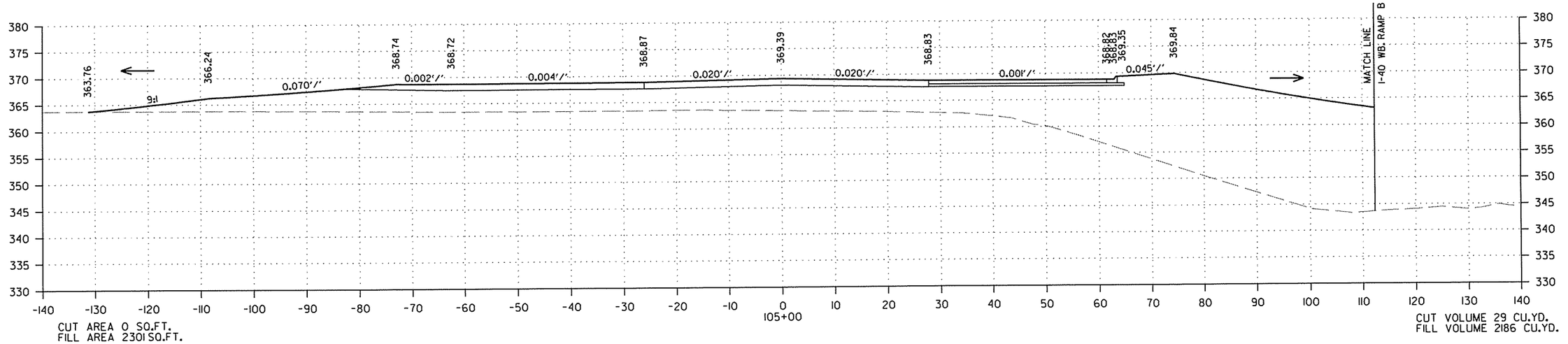
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	188	244

(2) CROSS SECTIONS



CUT AREA 0 SQ.FT.
FILL AREA 4399 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 12408 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 2301 SQ.FT.

CUT VOLUME 29 CU.YD.
FILL VOLUME 2186 CU.YD.

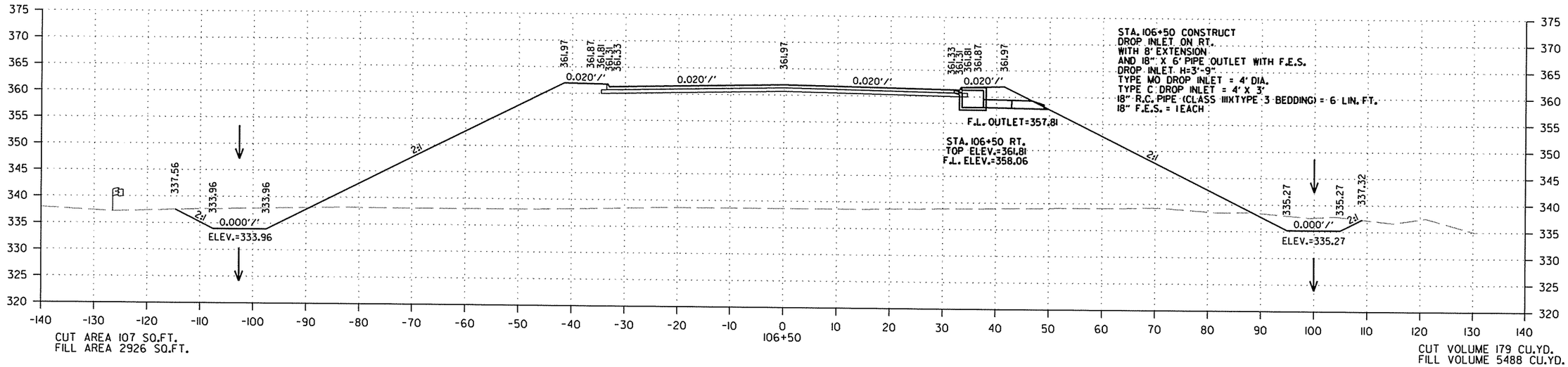
HWY. 25
CROSS SECTIONS STA. 105+00 TO STA. 106+00

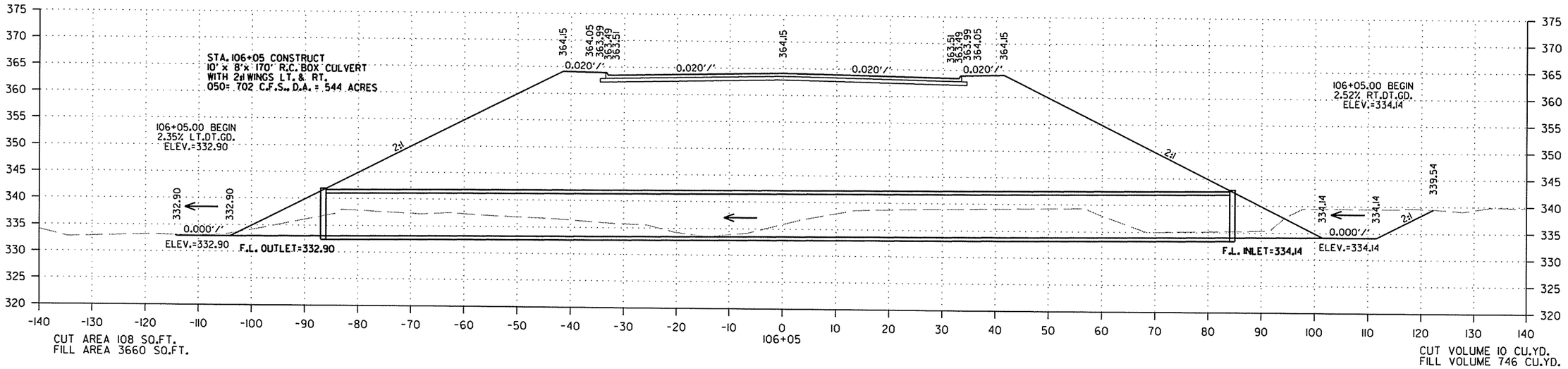
10/26/2015

R080397.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.		080397	189	244

(2) CROSS SECTIONS





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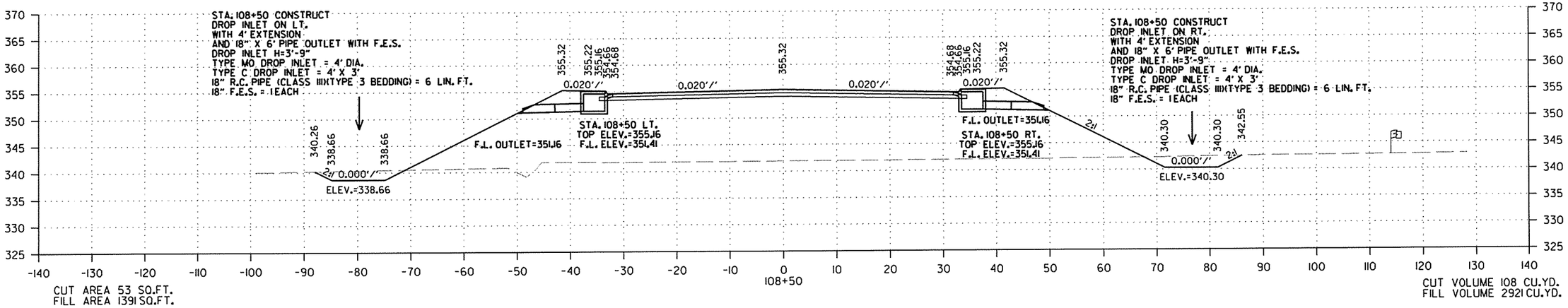
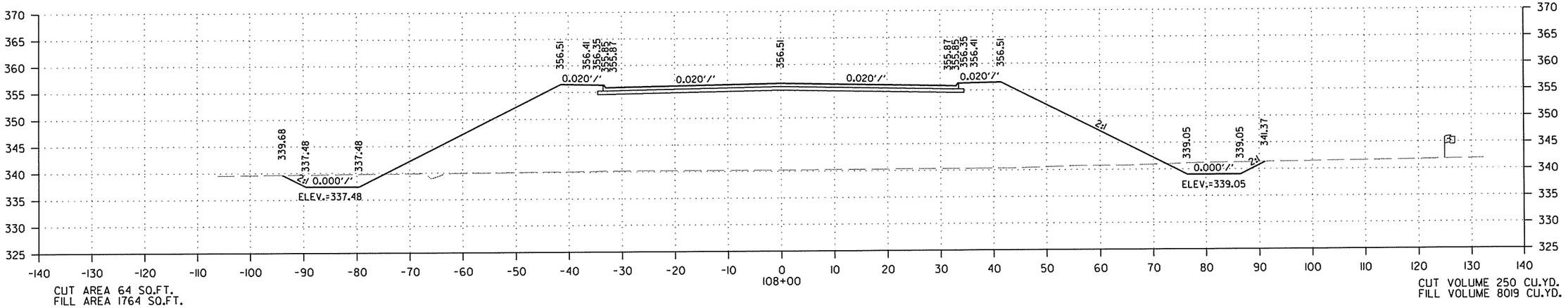
R080397.DGN

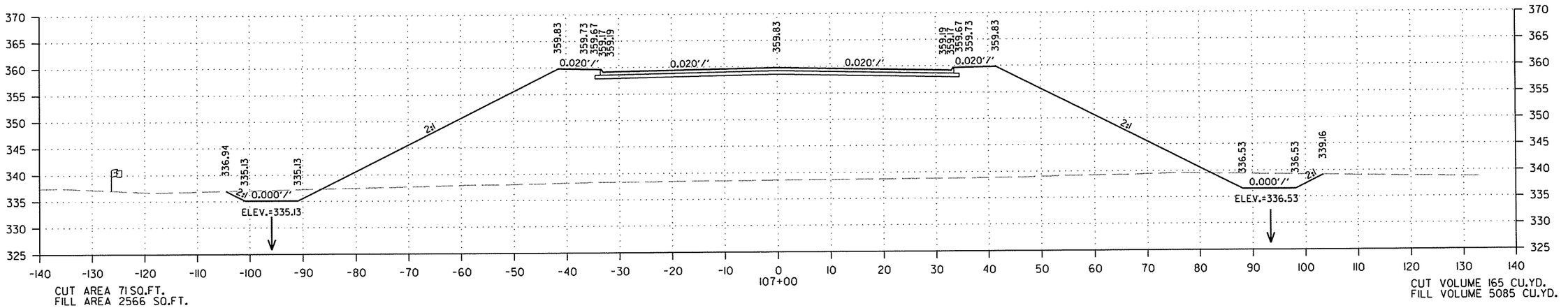
HWY. 25
CROSS SECTIONS STA. 106+05 TO STA. 106+50

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	190	244

(2) CROSS SECTIONS







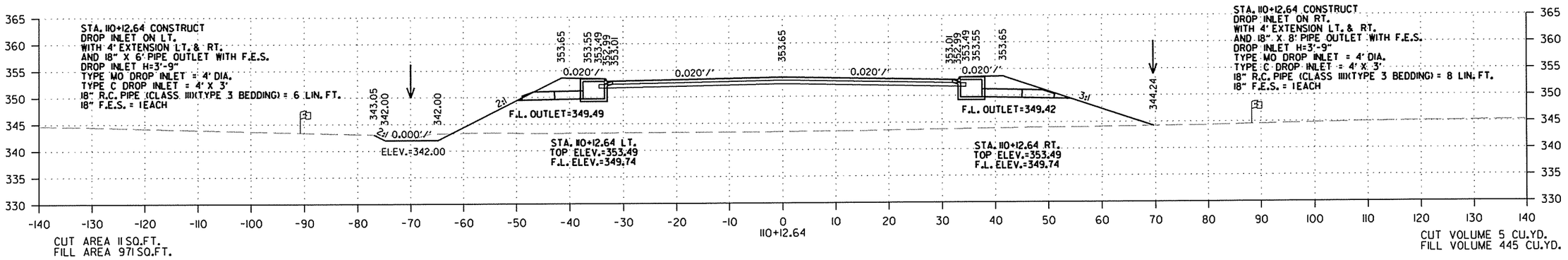
HWY. 25
CROSS SECTIONS STA. 107+00 TO STA. 108+50

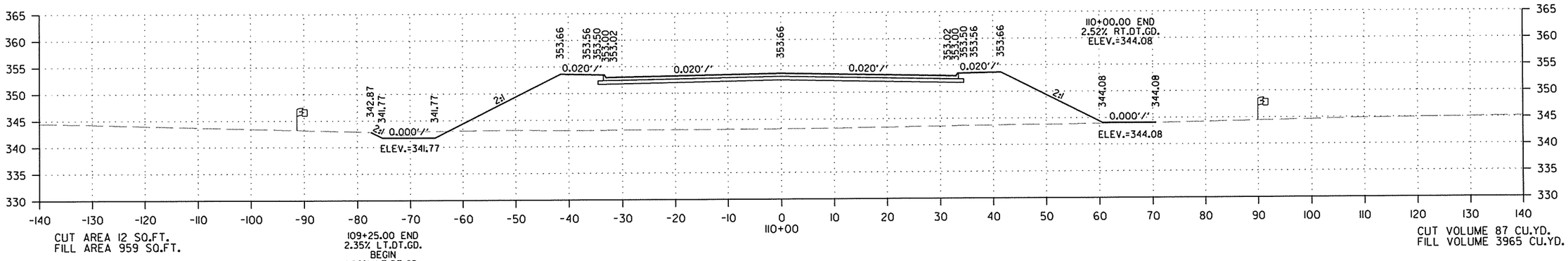
10/26/2015

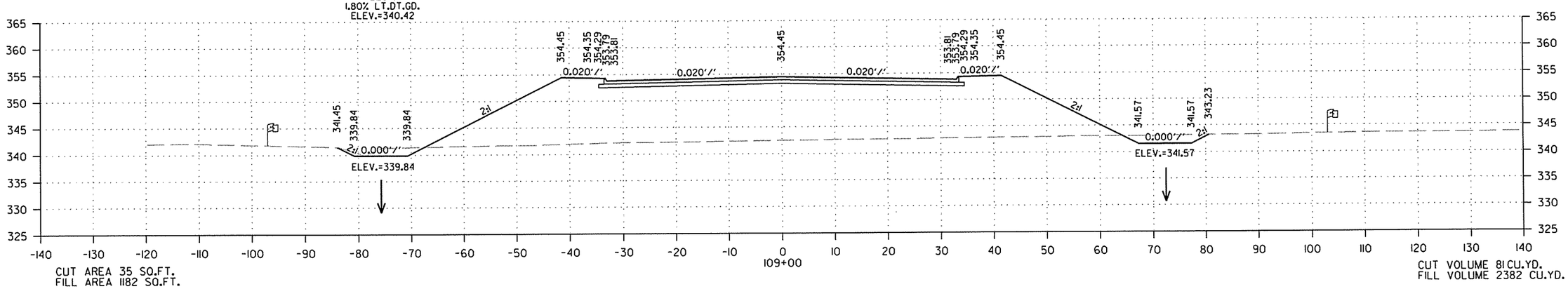
R080397.DGN

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.		080397	191	244

(2) CROSS SECTIONS







HWY. 25
CROSS SECTIONS STA. 109+00 TO STA. 110+12.64

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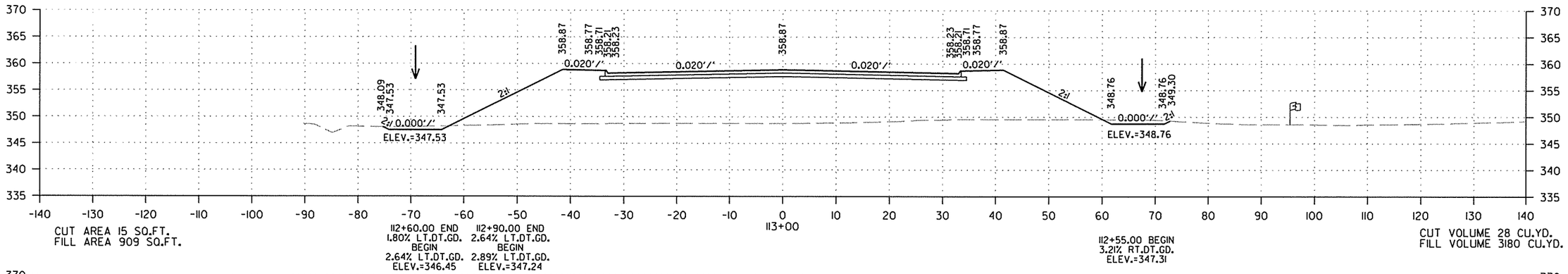
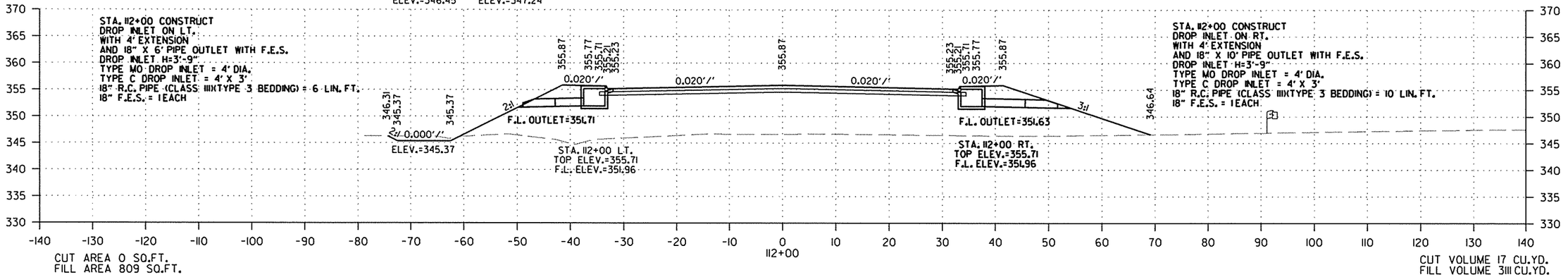
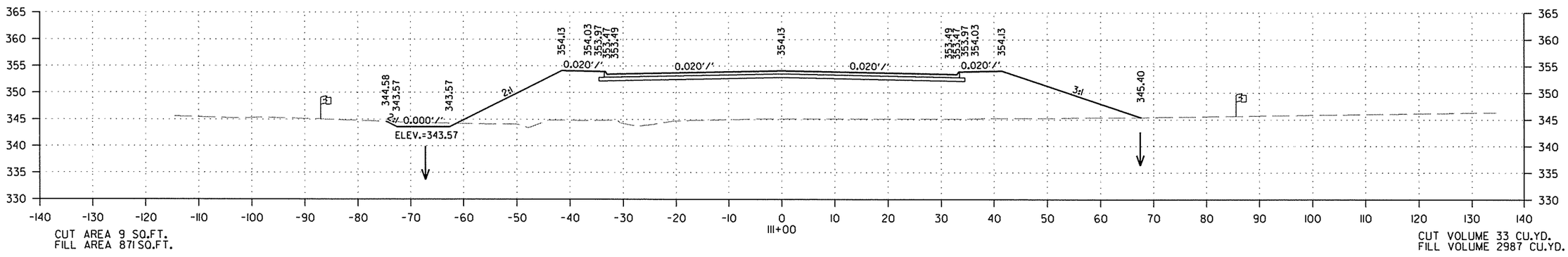
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	192	244

(2) CROSS SECTIONS







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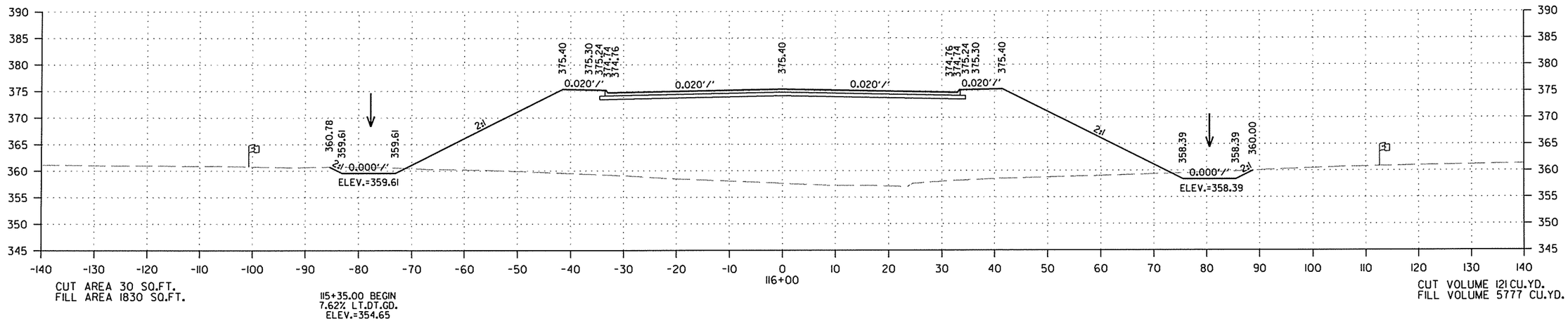
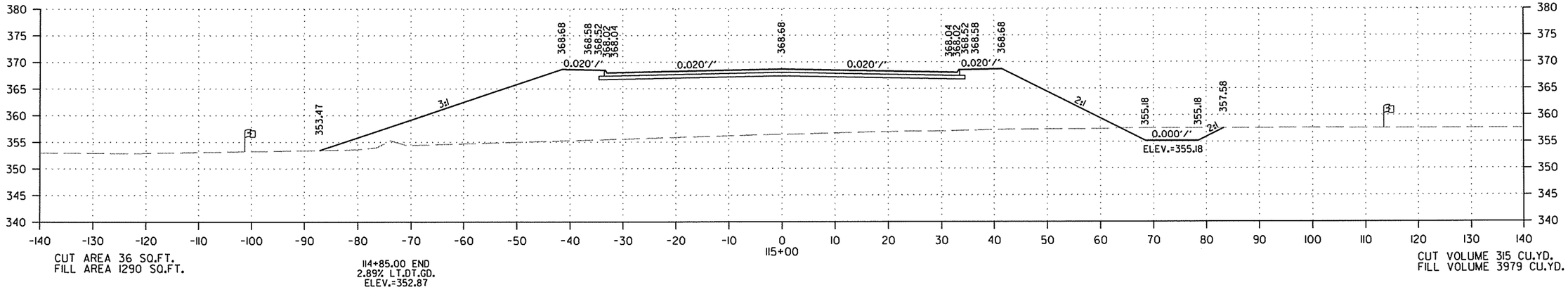
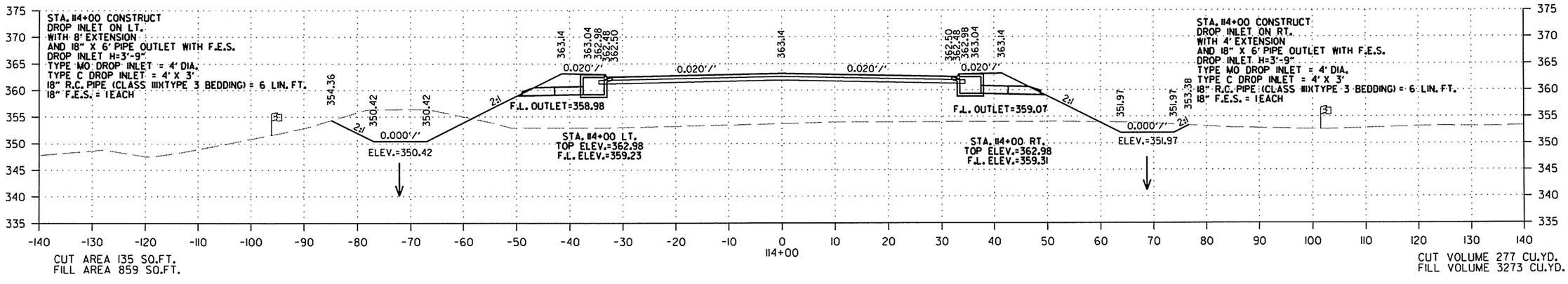
HWY. 25
CROSS SECTIONS STA. 111+00 TO STA. 113+00

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.		080397	193	244

(2) CROSS SECTIONS







HWY. 25
CROSS SECTIONS STA. 114+00 TO STA. 116+00

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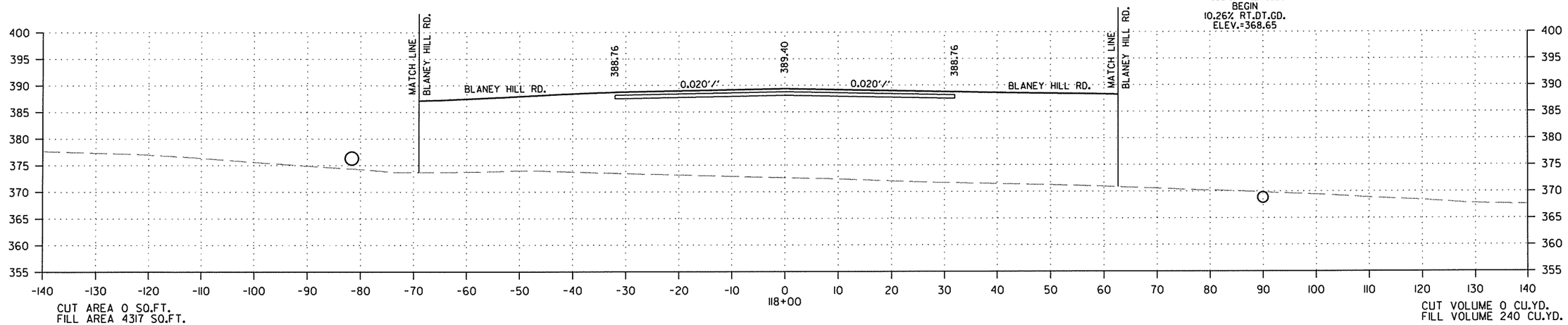
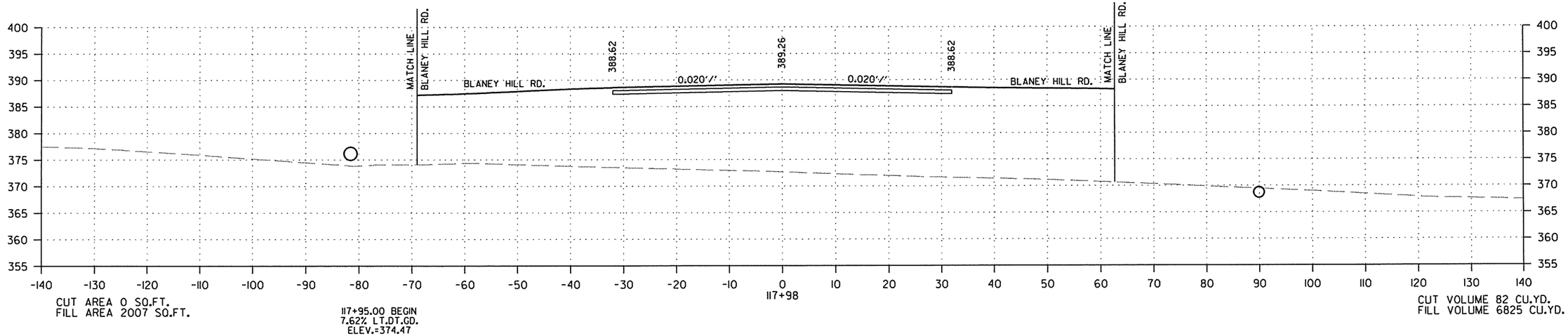
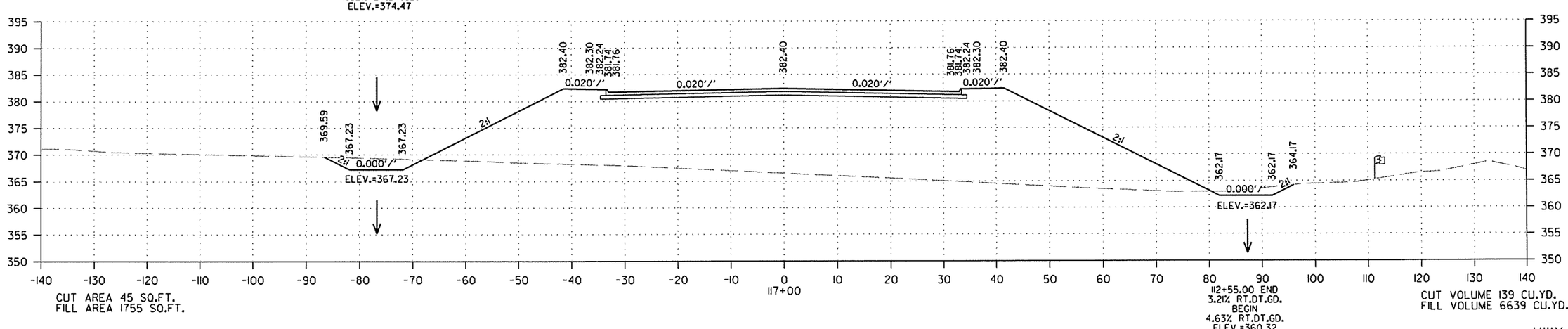
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	194	244

(2) CROSS SECTIONS







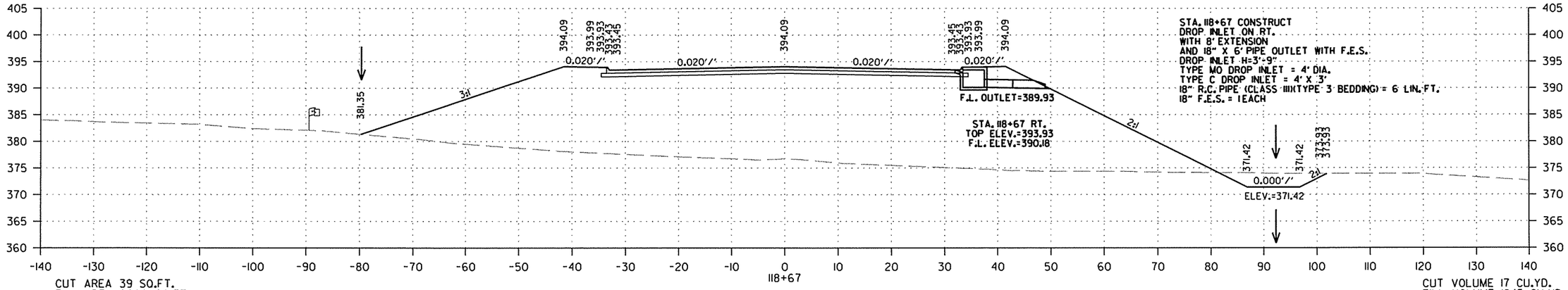
HWY. 25
CROSS SECTIONS STA. 117+00 TO STA. 118+00

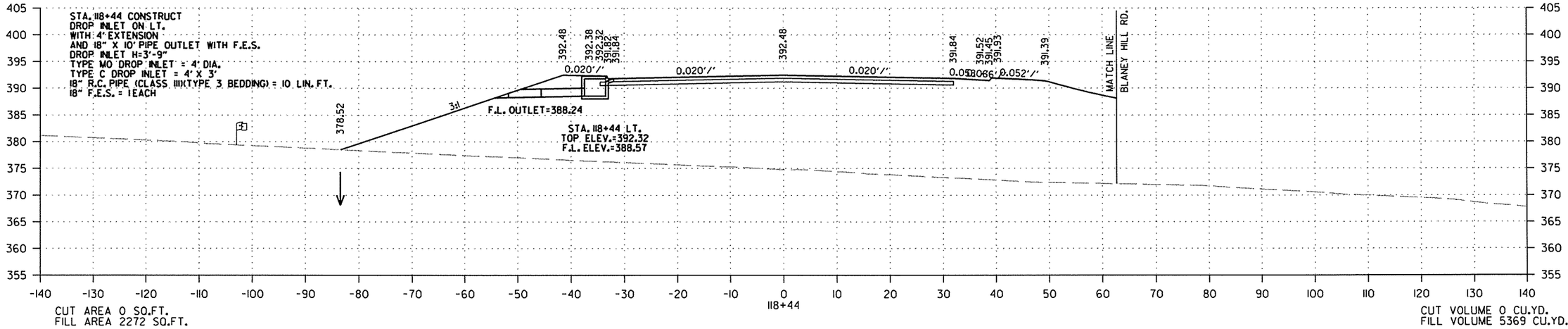
10/26/2015

R080397.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.		080397	195	244

(2) CROSS SECTIONS





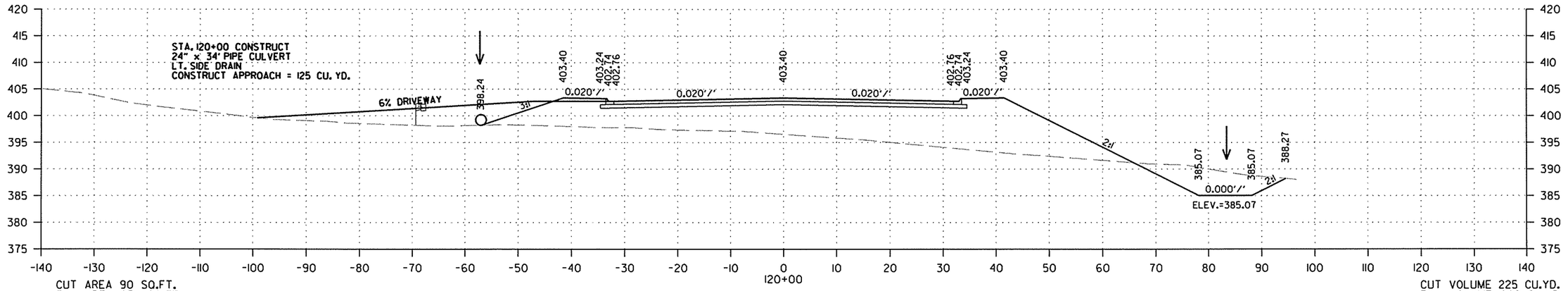
HWY. 25
CROSS SECTIONS STA. 118+44 TO STA. 118+67

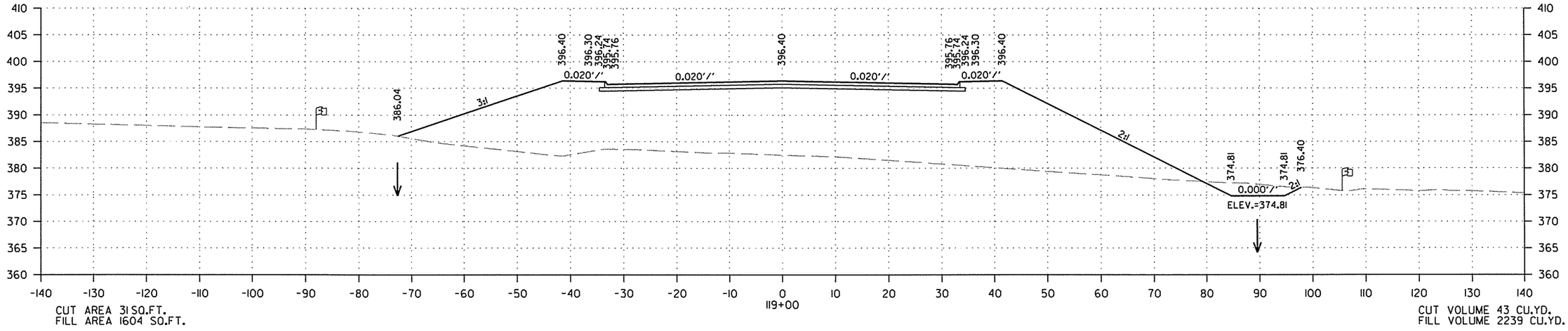
10/26/2015

R080397.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.		080397	196	244

(2) CROSS SECTIONS





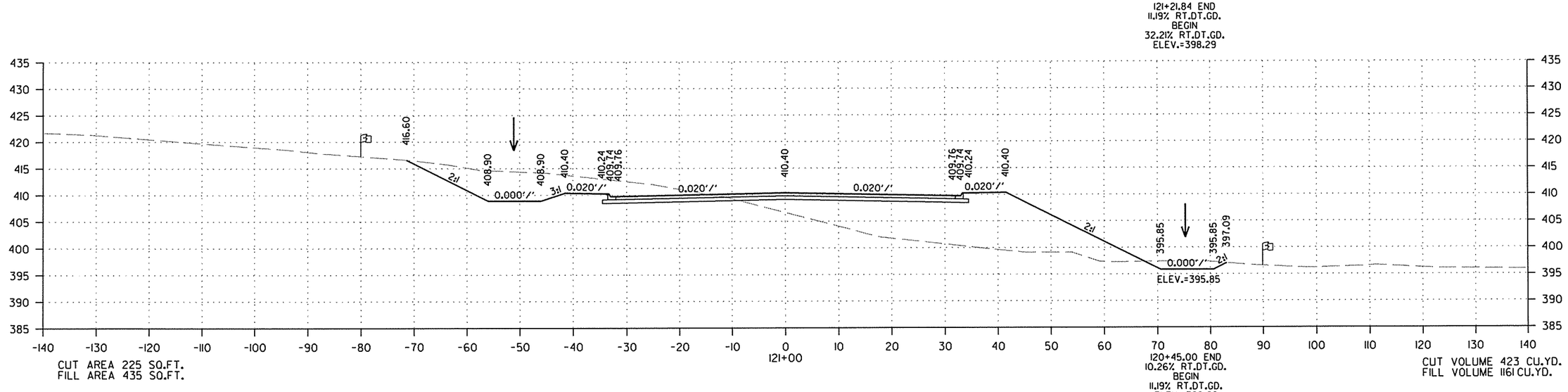
HWY. 25
CROSS SECTIONS STA. 119+00 TO STA. 120+00

10/26/2015

R080397.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	197	244

(2) CROSS SECTIONS



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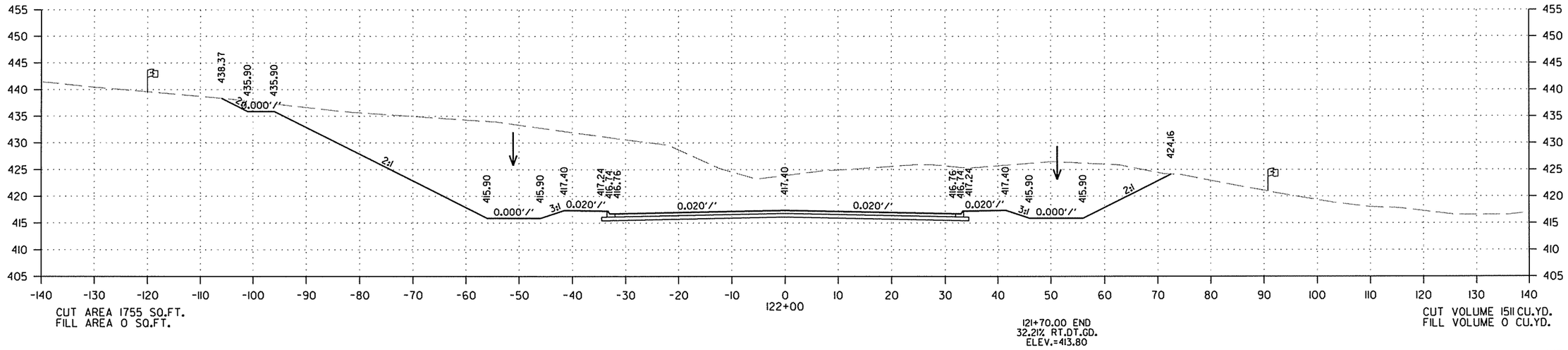
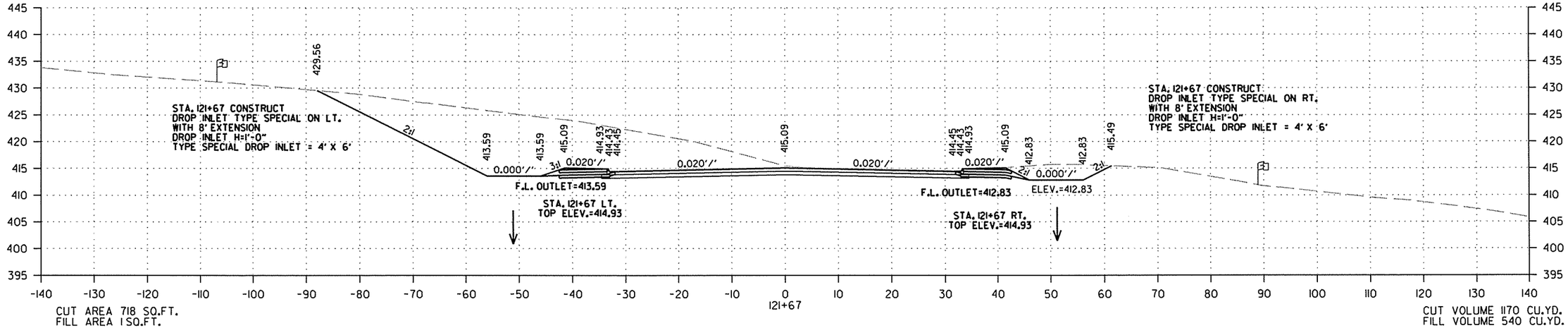
HWY. 25
CROSS SECTIONS STA. 120+28 TO STA. 121+00

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.		080397	198	244

(2) CROSS SECTIONS





HWY. 25
CROSS SECTIONS STA. 121+67 TO STA. 122+00

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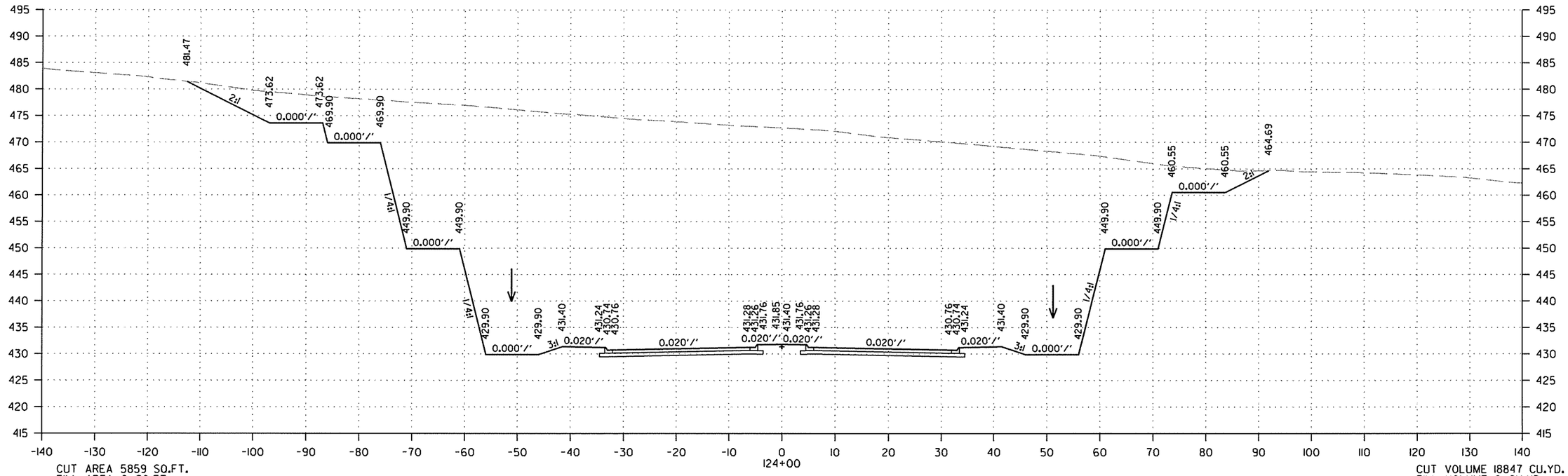
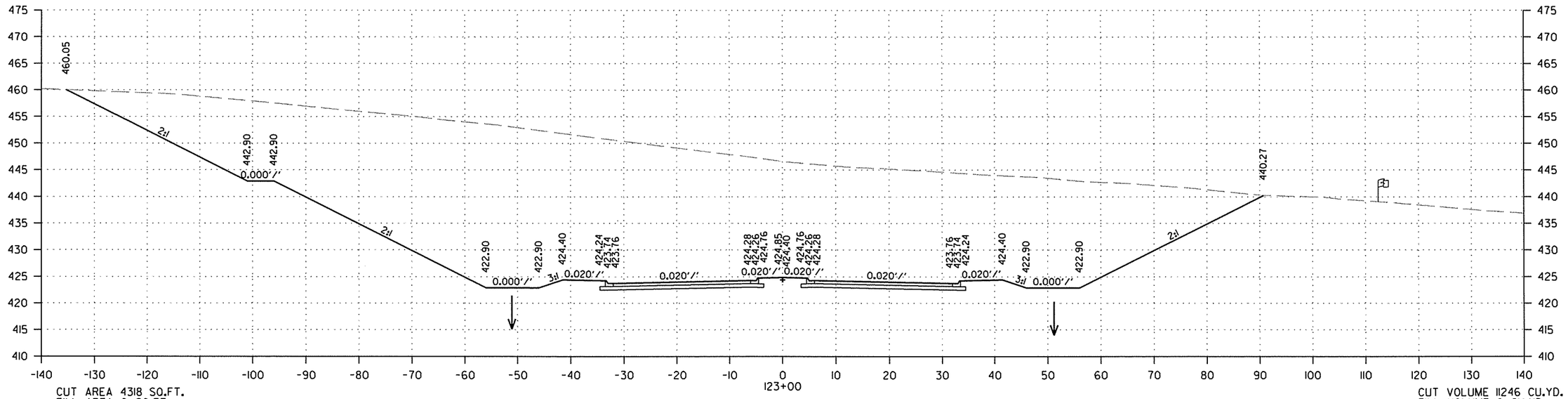
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	199	244

(2) CROSS SECTIONS



CUT AREA 5859 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 18847 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 4318 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 11246 CU.YD.
FILL VOLUME 0 CU.YD.

HWY. 25
CROSS SECTIONS STA. 123+00 TO STA. 124+00

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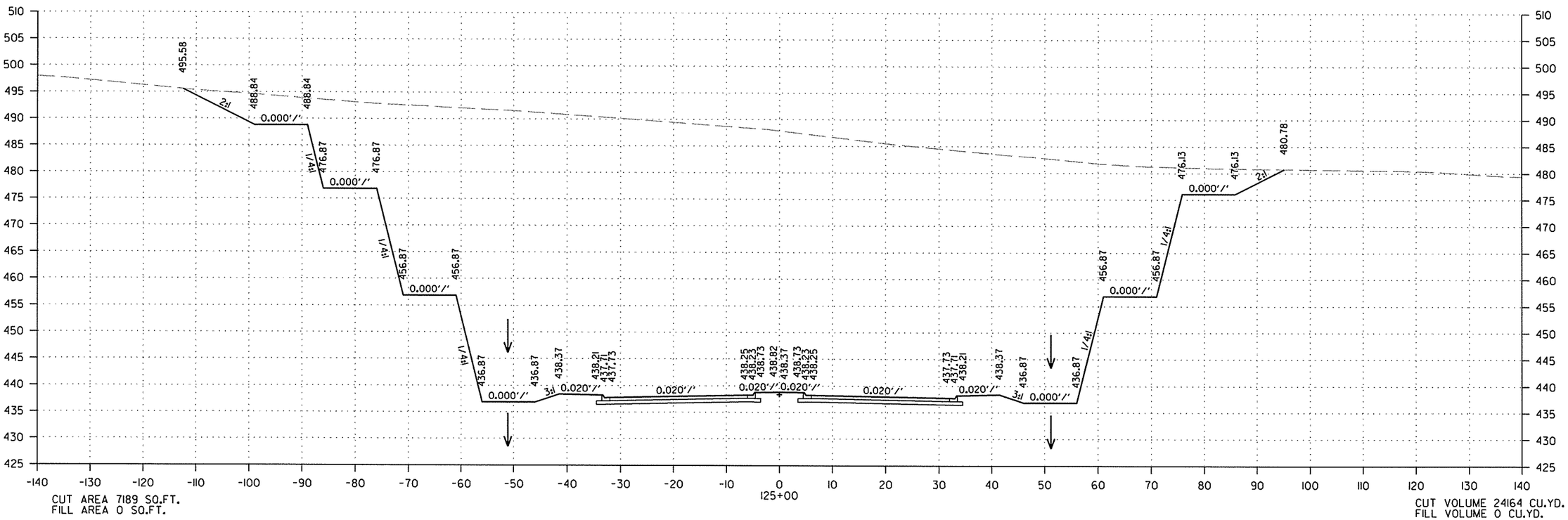
R080397.DGN

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.		080397	200	244

(2) CROSS SECTIONS



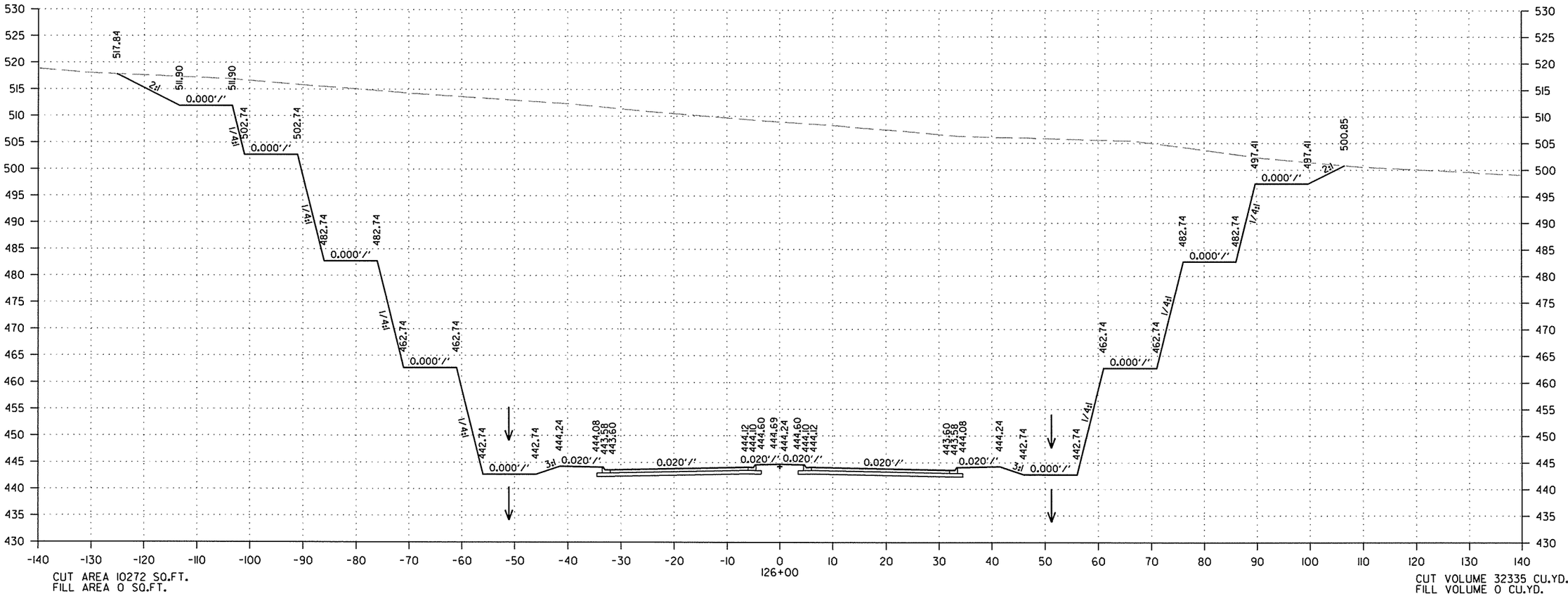
HWY. 25
CROSS SECTIONS STA. 125+00 TO STA. 125+00

10/26/2015

R080397.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.		080397	201	244

(2) CROSS SECTIONS



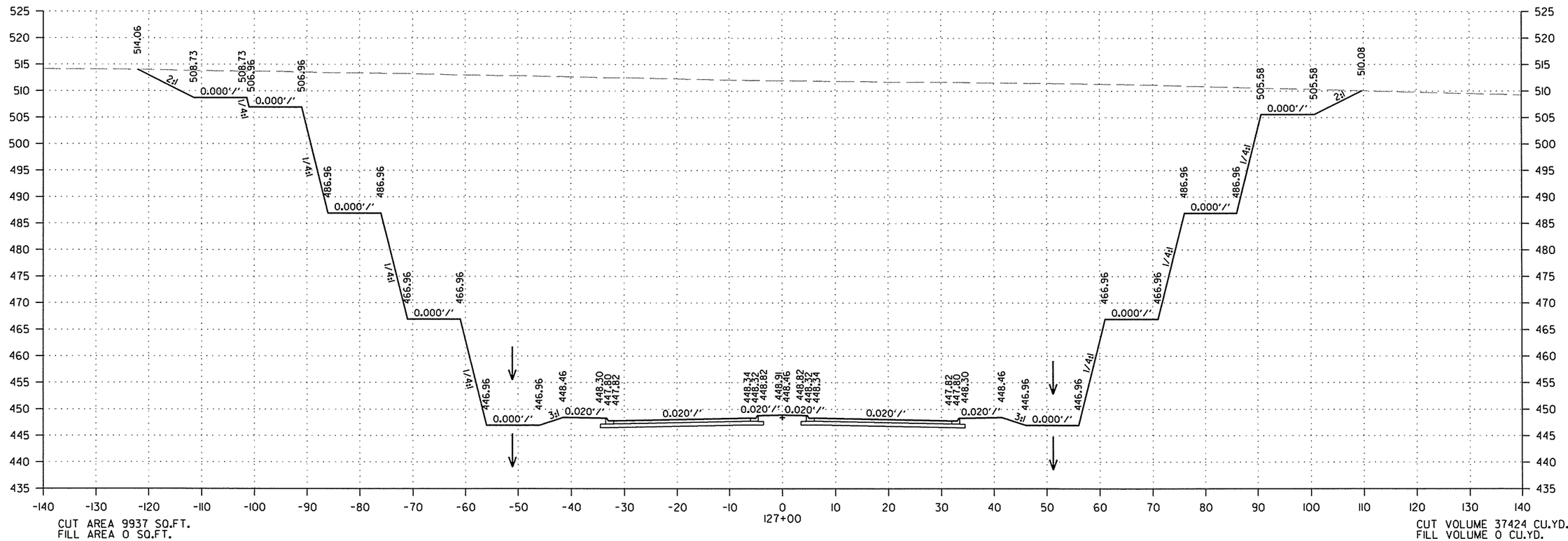
HWY. 25
CROSS SECTIONS STA. 126+00 TO STA. 126+00

10/26/2015

R080397.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.		080397	202	244

(2) CROSS SECTIONS



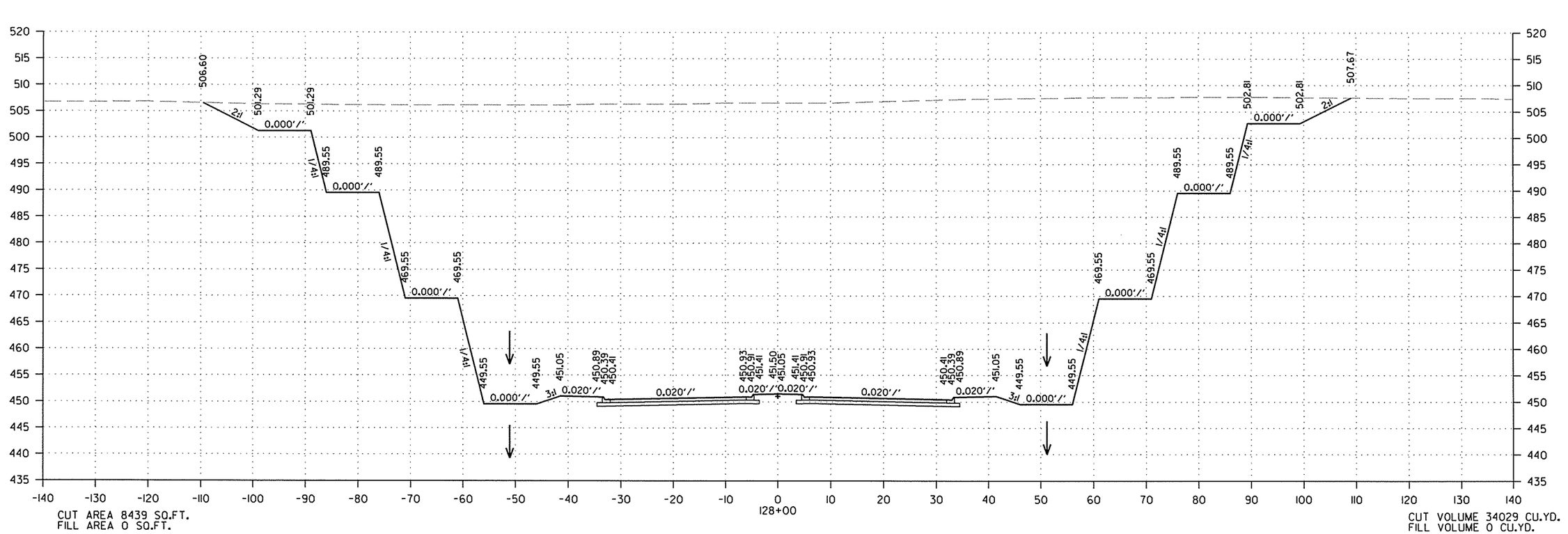
HWY. 25
CROSS SECTIONS STA. 127+00 TO STA. 127+00

10/26/2015

R080397.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.		080397	203	244

(2) CROSS SECTIONS



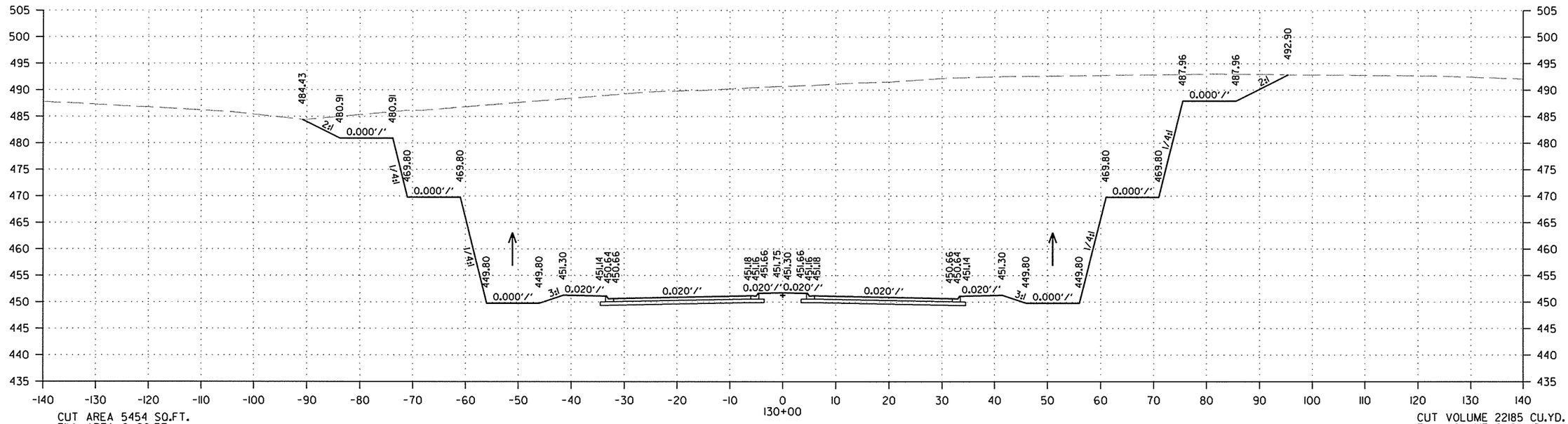
HWY. 25
CROSS SECTIONS STA. 128+00 TO STA. 128+00

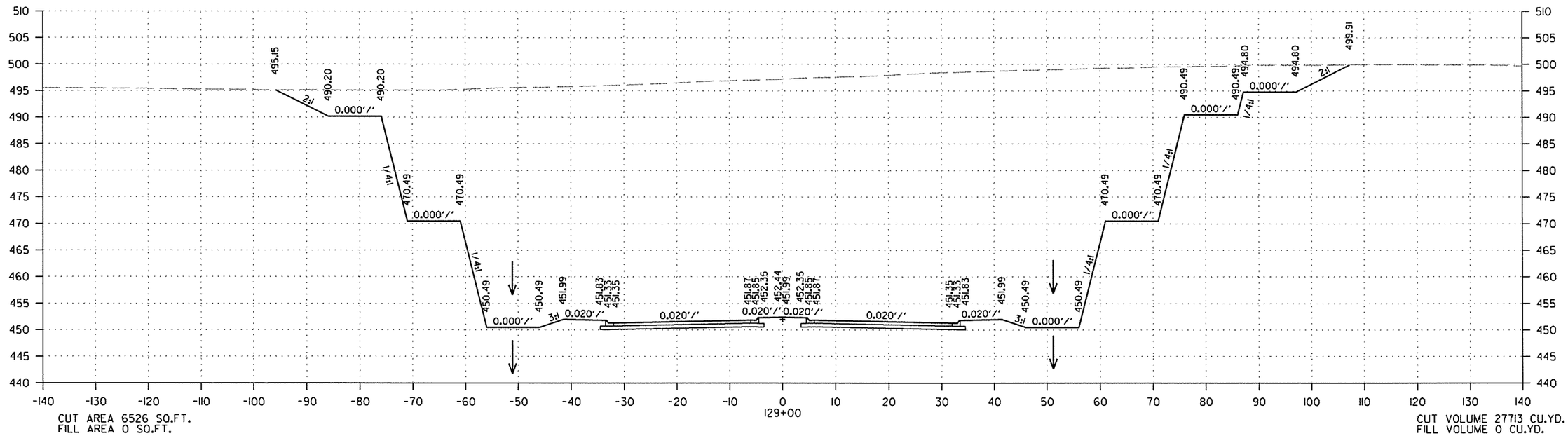
10/26/2015

R080397.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.		080397	204	244

(2) CROSS SECTIONS





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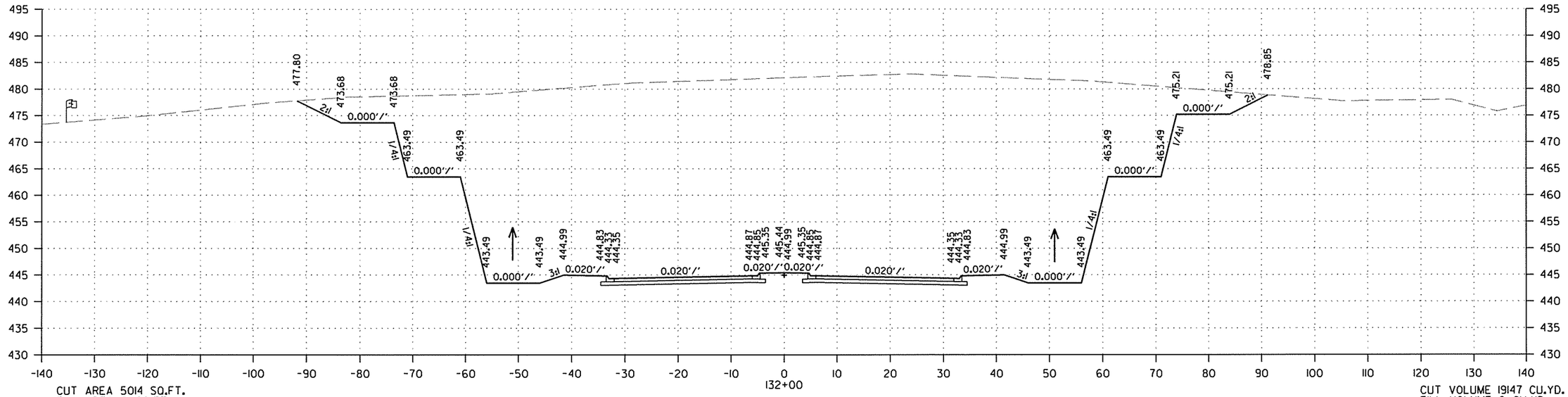
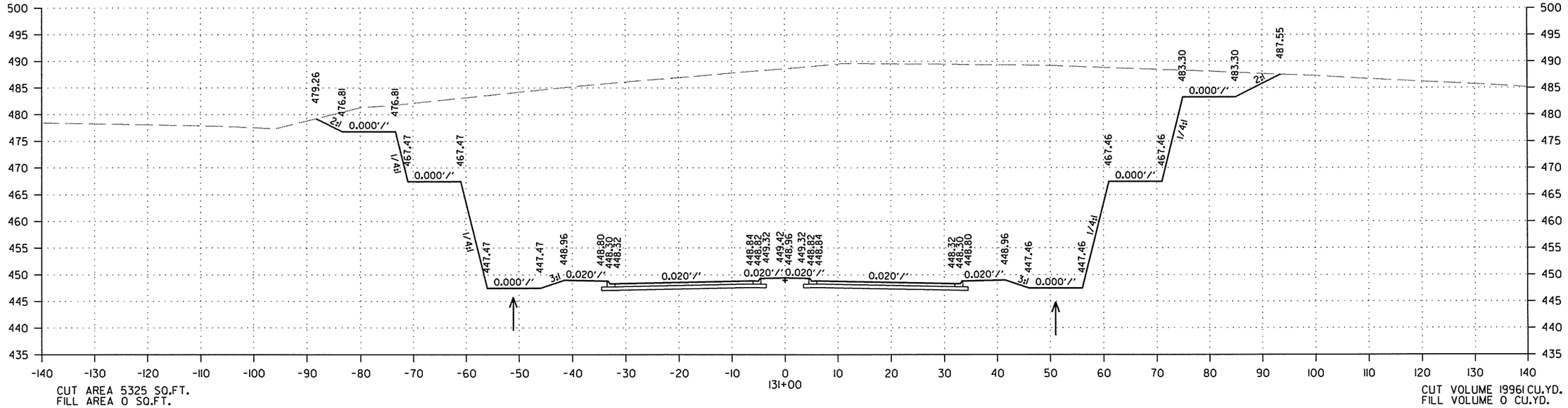
HWY. 25
CROSS SECTIONS STA. 129+00 TO STA. 130+00

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.		080397	205	244

(2) CROSS SECTIONS





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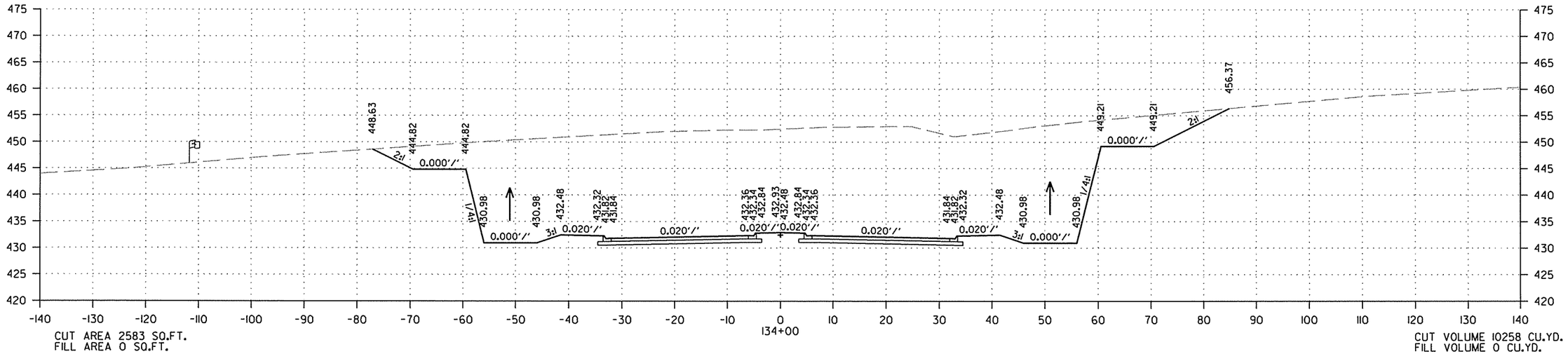
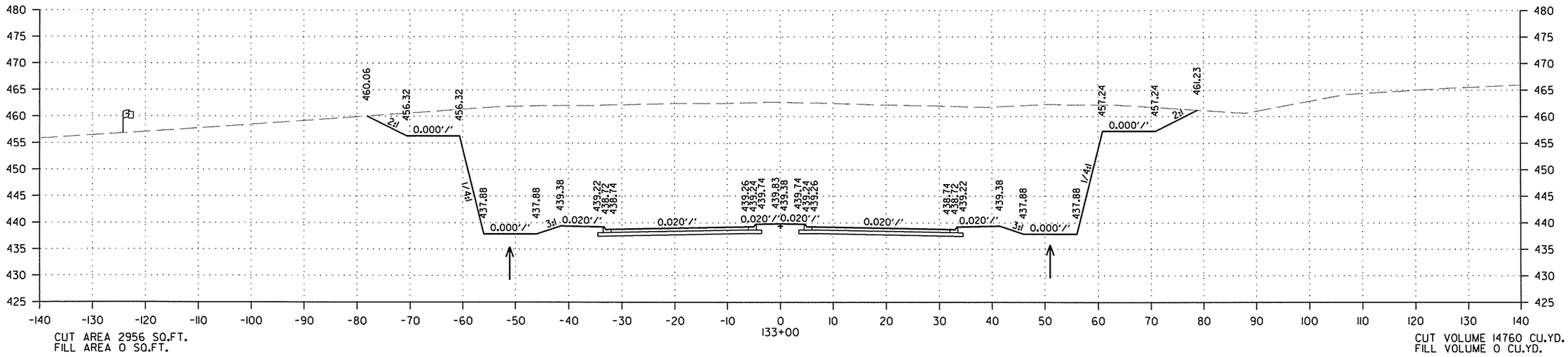
R080397.DGN

HWY. 25
CROSS SECTIONS STA. 131+00 TO STA. 132+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.		080397	206	244

(2) CROSS SECTIONS





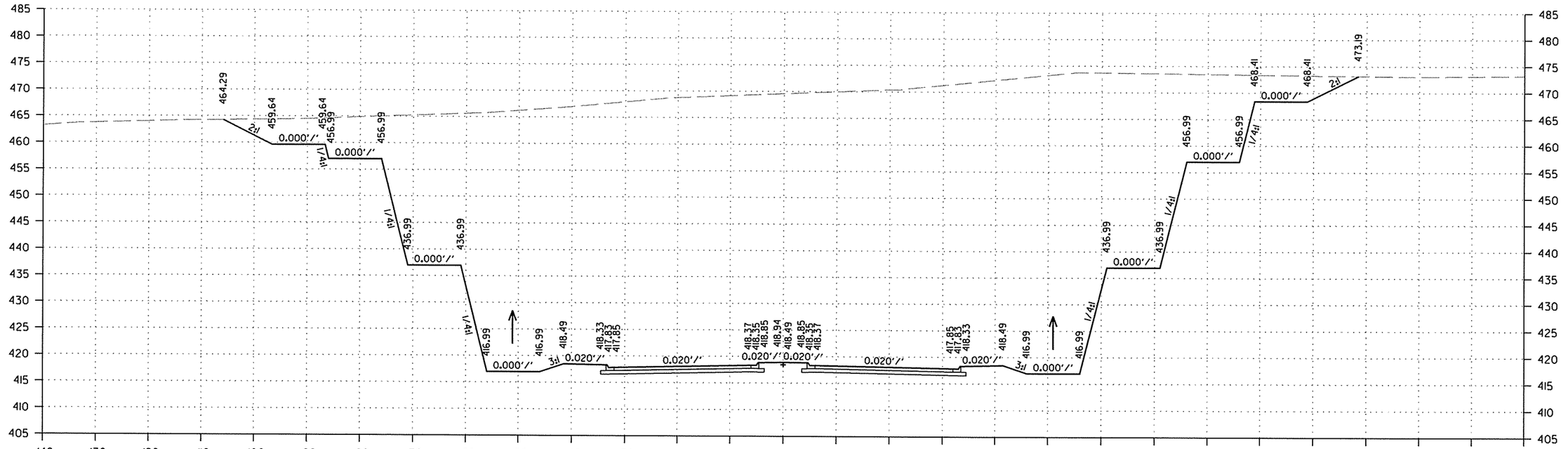
HWY. 25
CROSS SECTIONS STA. 133+00 TO STA. 134+00

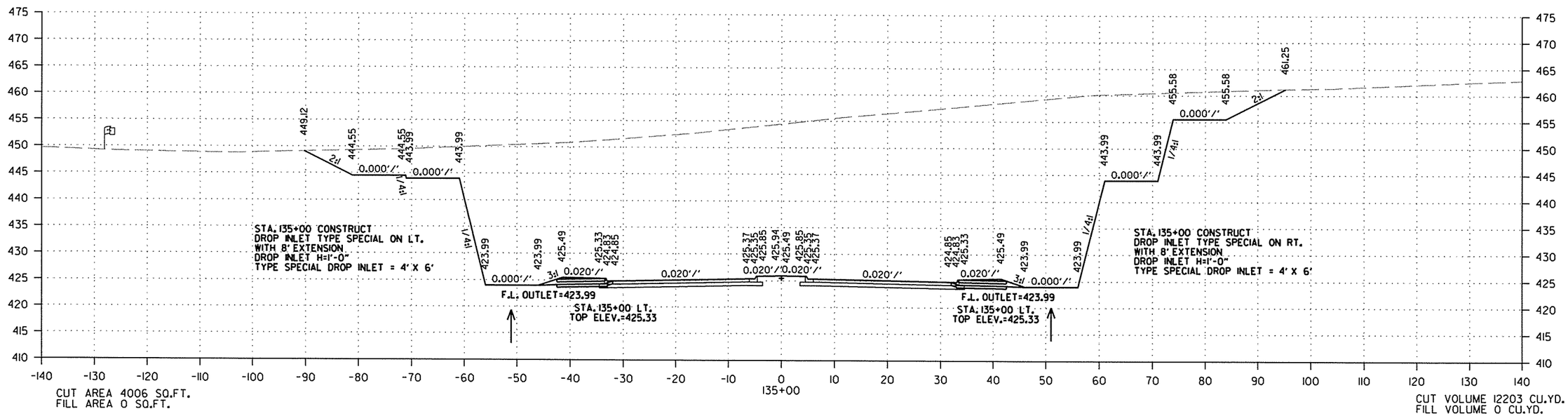
10/26/2015

R080397.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.		080397	207	244

(2) CROSS SECTIONS





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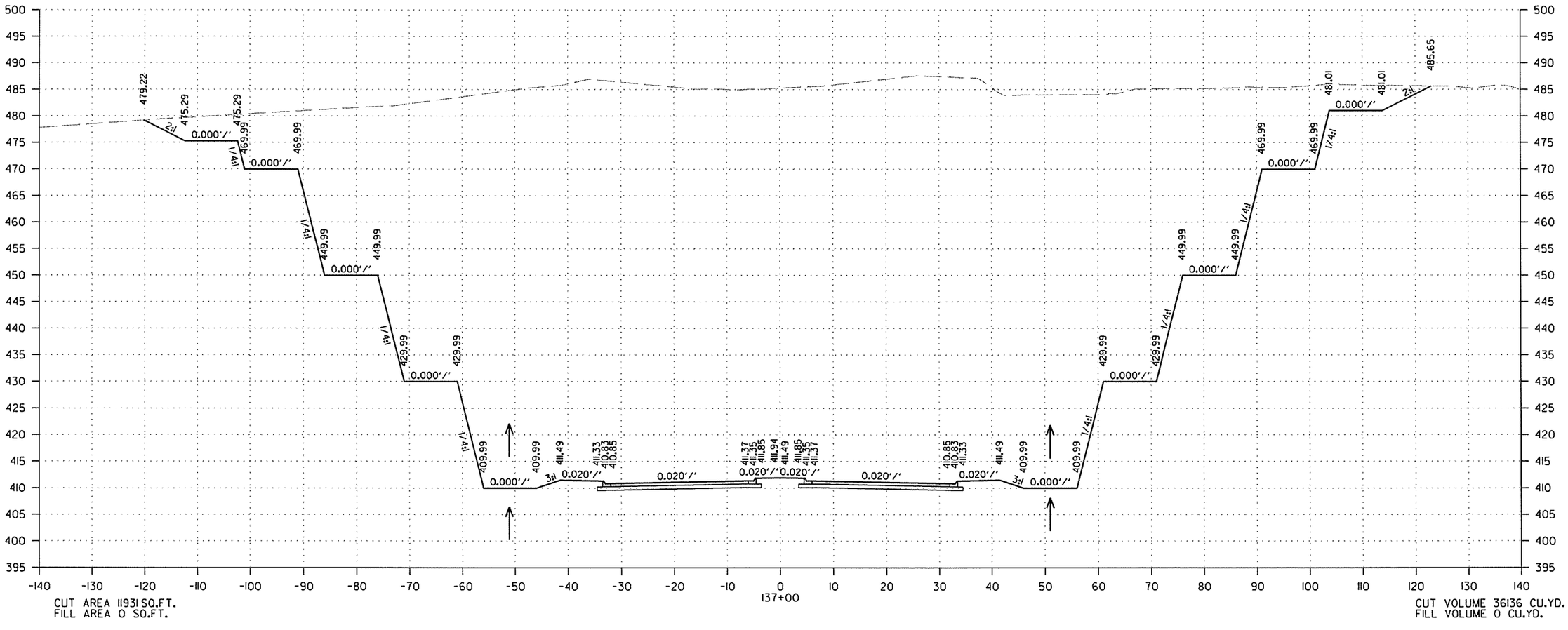
HWY. 25
CROSS SECTIONS STA. 135+00 TO STA. 136+00

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.		080397	208	244

(2) CROSS SECTIONS



CUT AREA 11931 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 36136 CU.YD.
FILL VOLUME 0 CU.YD.

HWY. 25
CROSS SECTIONS STA. 137+00 TO STA. 137+00

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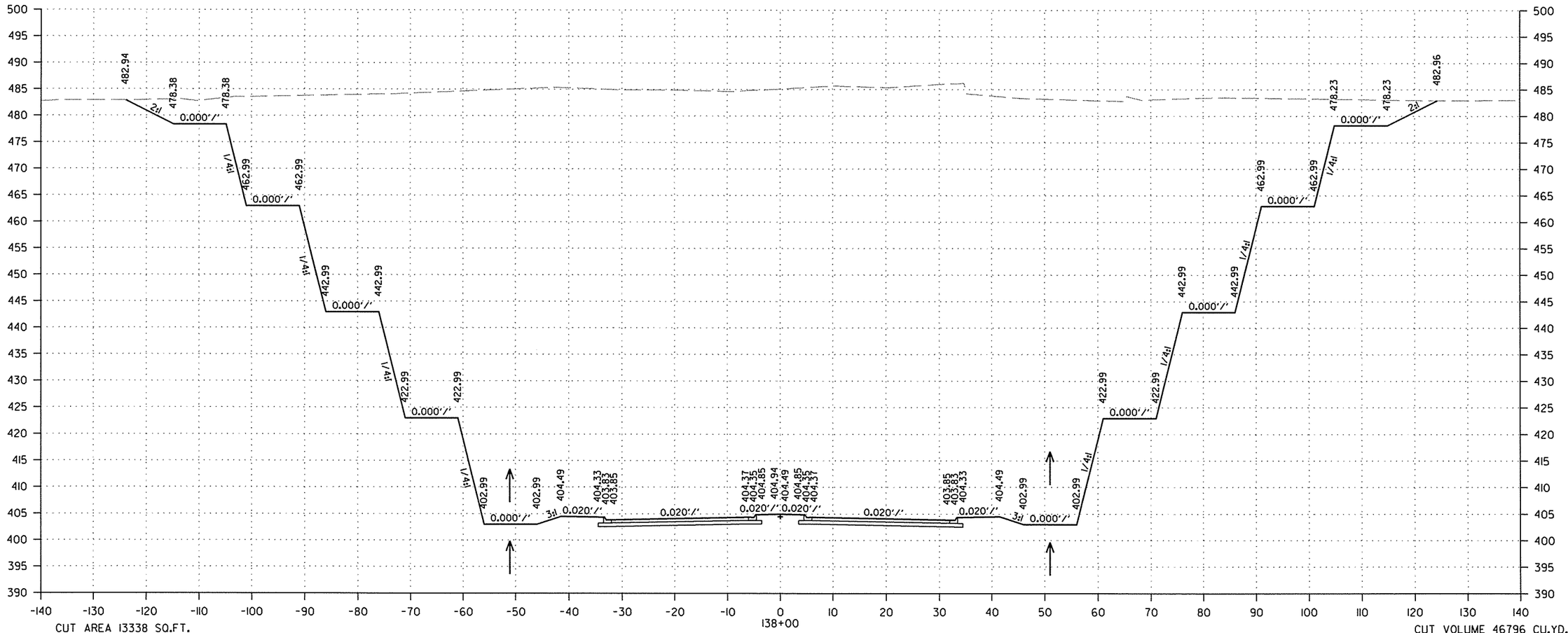
R080397.DGN

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.		080397	209	244

(2) CROSS SECTIONS



CUT AREA 13338 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 46796 CU.YD.
FILL VOLUME 0 CU.YD.

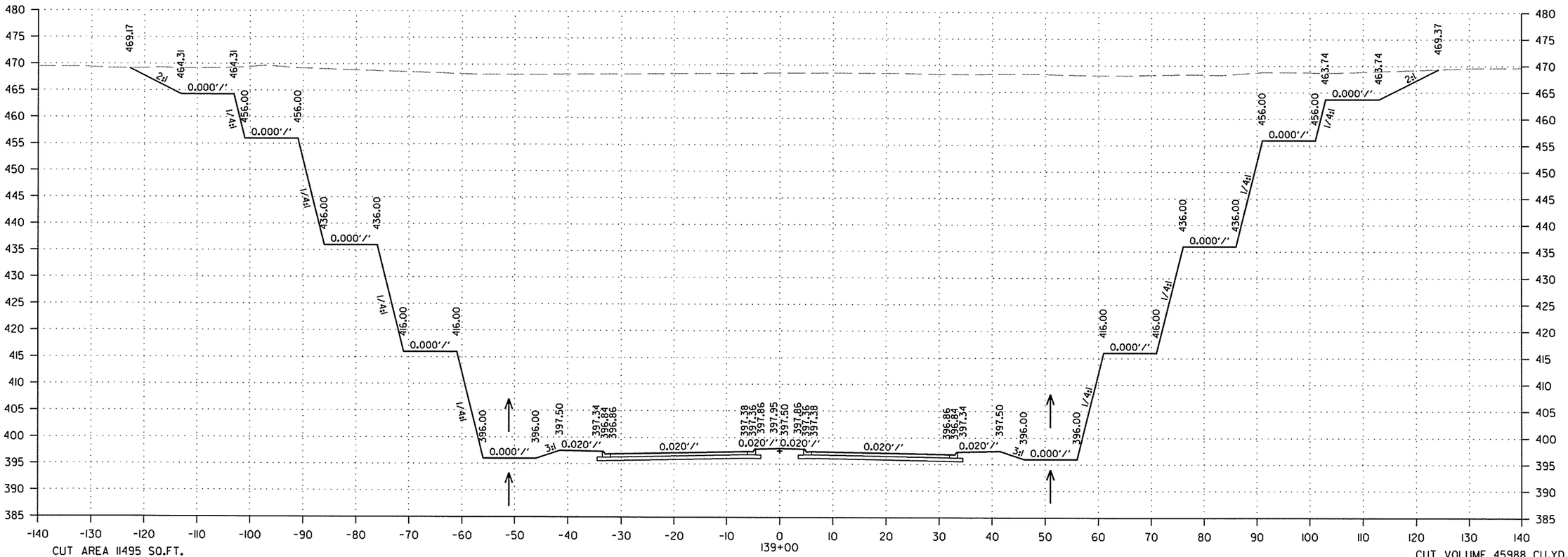
HWY. 25
CROSS SECTIONS STA. 138+00 TO STA. 138+00

10/26/2015

R080397.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.		080397	210	244

(2) CROSS SECTIONS



CUT AREA 11495 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 45988 CU.YD.
FILL VOLUME 0 CU.YD.

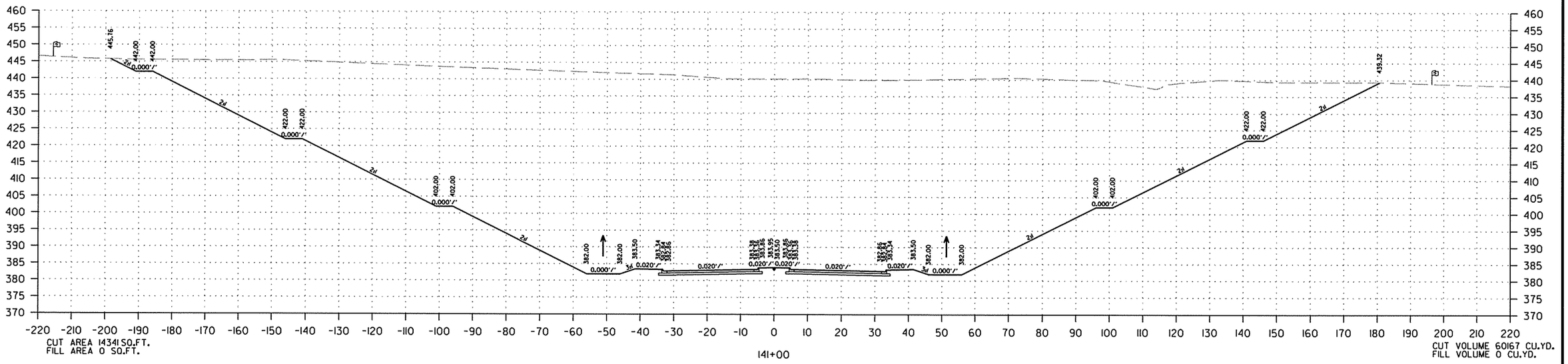
HWY. 25
CROSS SECTIONS STA. 139+00 TO STA. 139+00

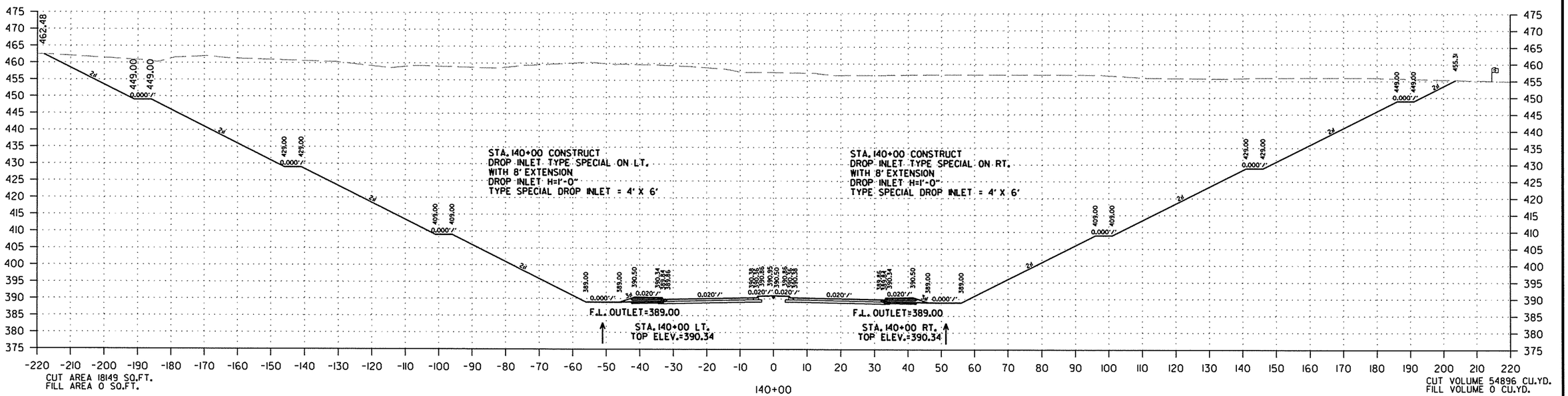
10/26/2015

R080397.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.		080397	211	244

(2) CROSS SECTIONS





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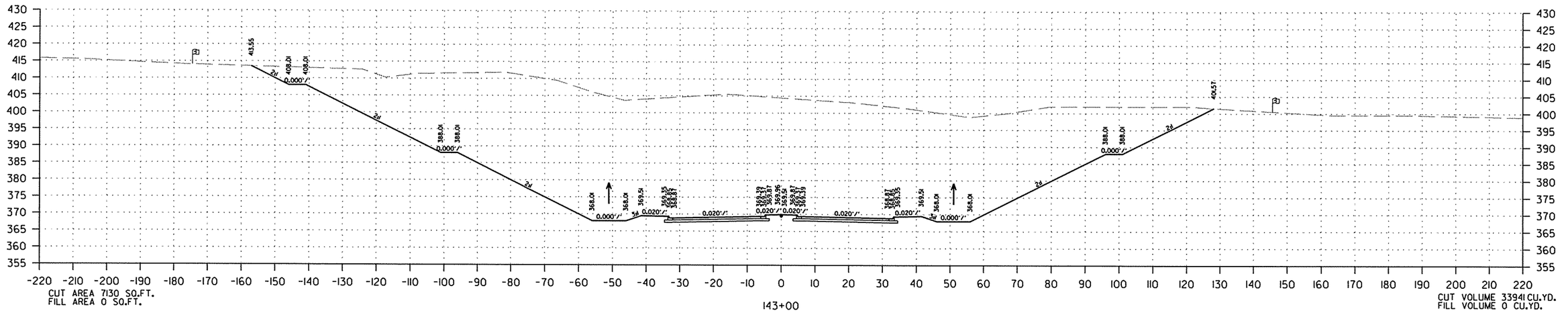
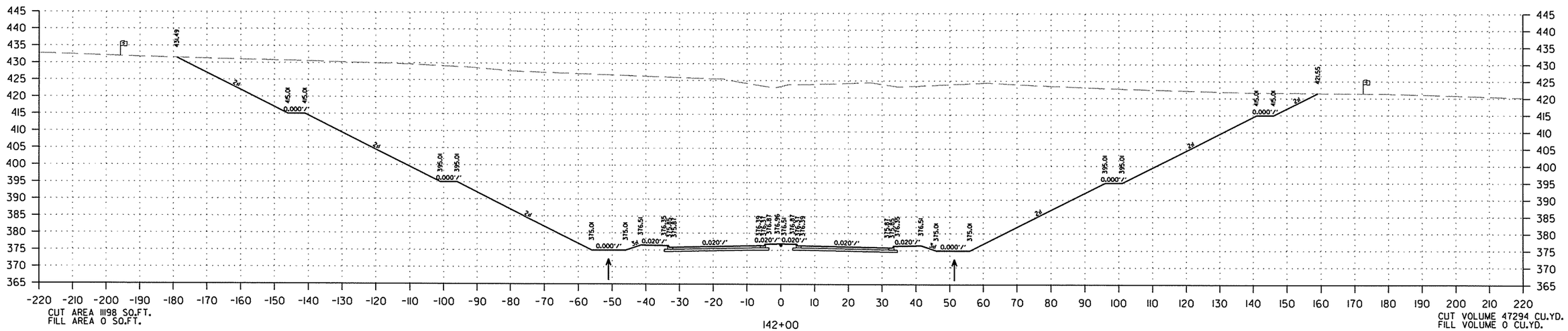
R080397.DGN

HWY. 25
CROSS SECTIONS STA. 140+00 TO STA. 141+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.		080397	212	244

(2) CROSS SECTIONS





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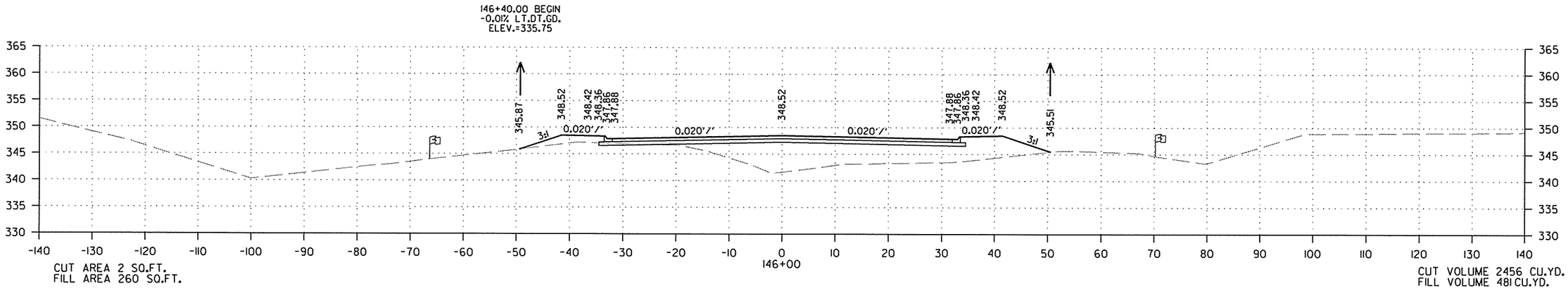
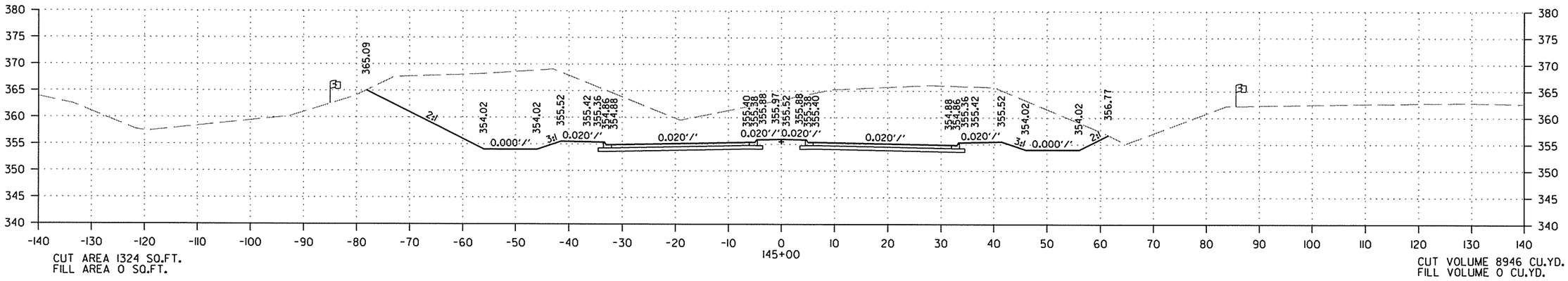
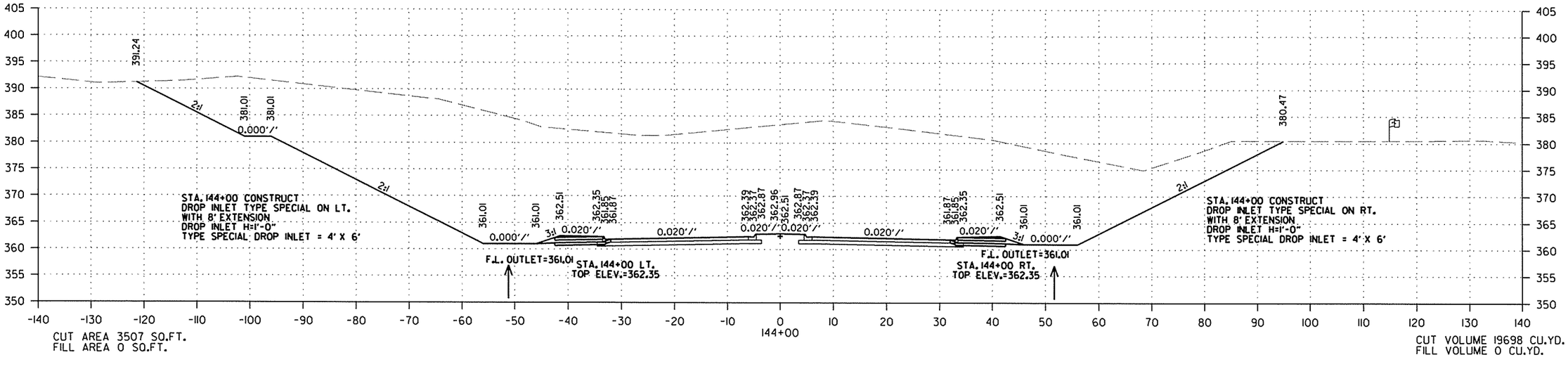
HWY. 25
CROSS SECTIONS STA. 142+00 TO STA. 143+00

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.		080397	213	244

(2) CROSS SECTIONS







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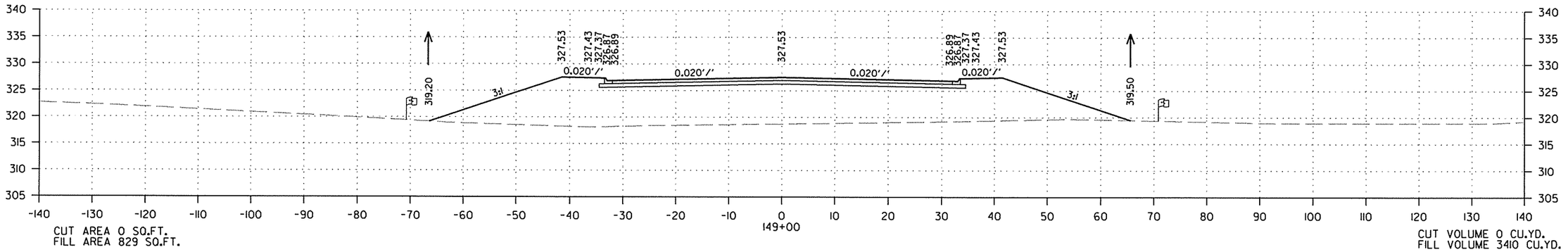
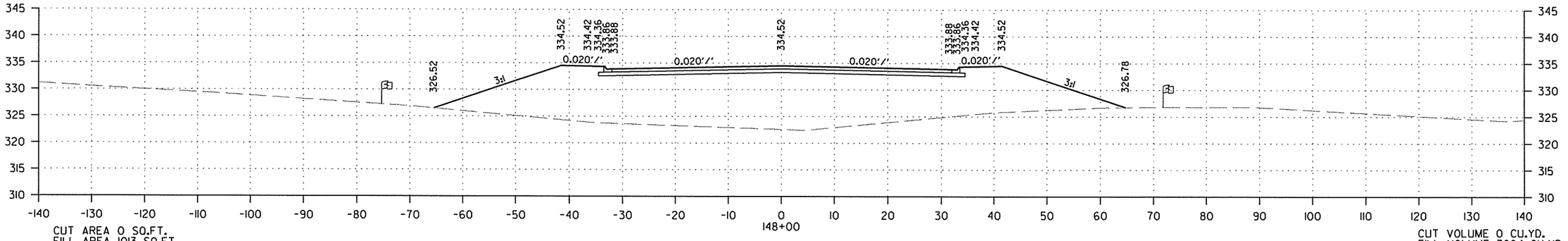
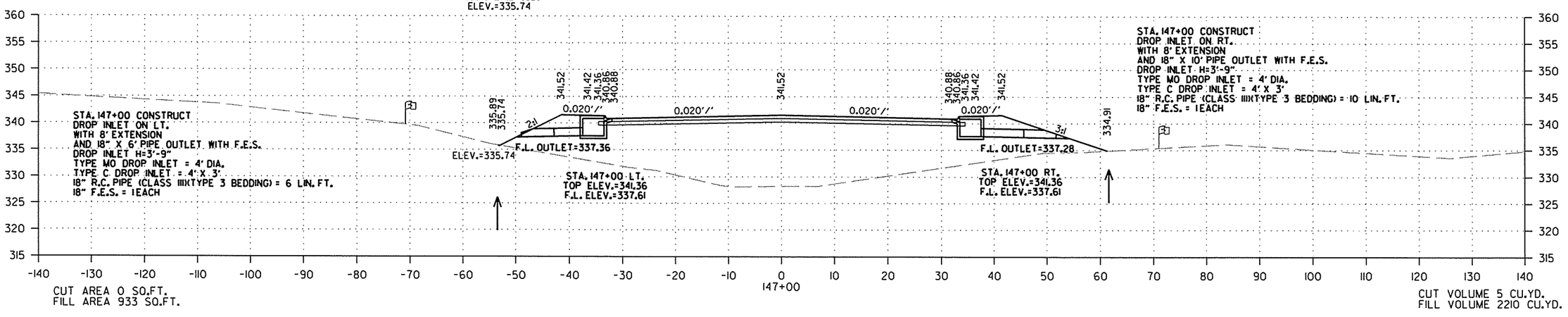
HWY. 25
CROSS SECTIONS STA. 144+00 TO STA. 146+00

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.		080397	214	244

(2) CROSS SECTIONS







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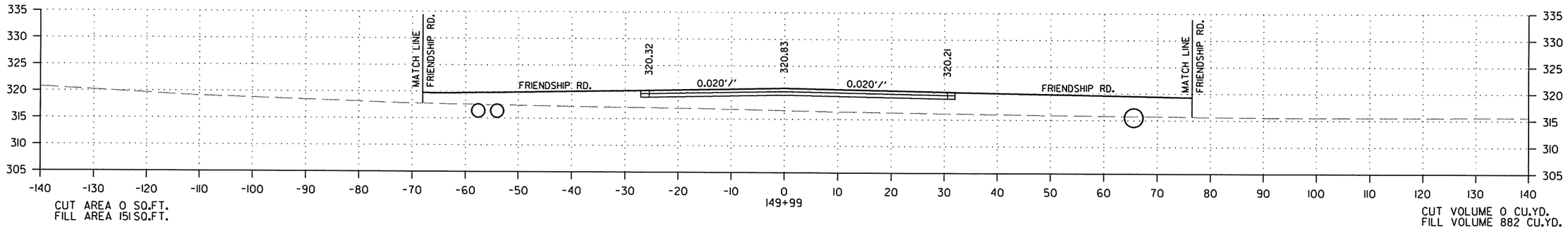
HWY. 25
CROSS SECTIONS STA. 147+00 TO STA. 149+00

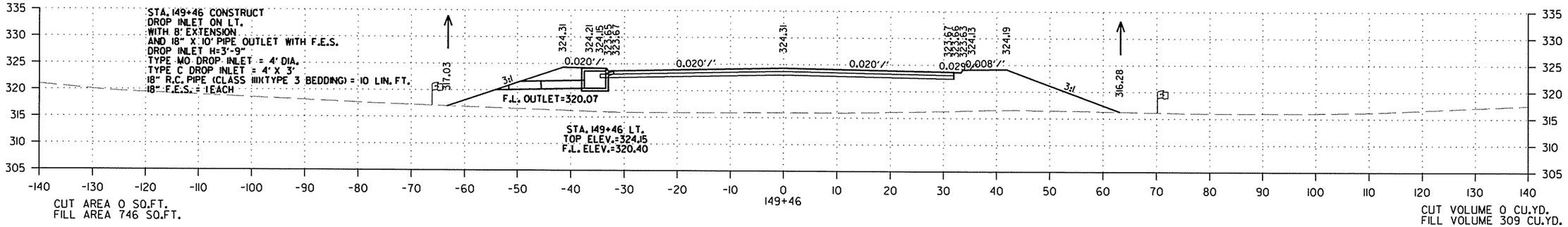
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	215	244

(2) CROSS SECTIONS



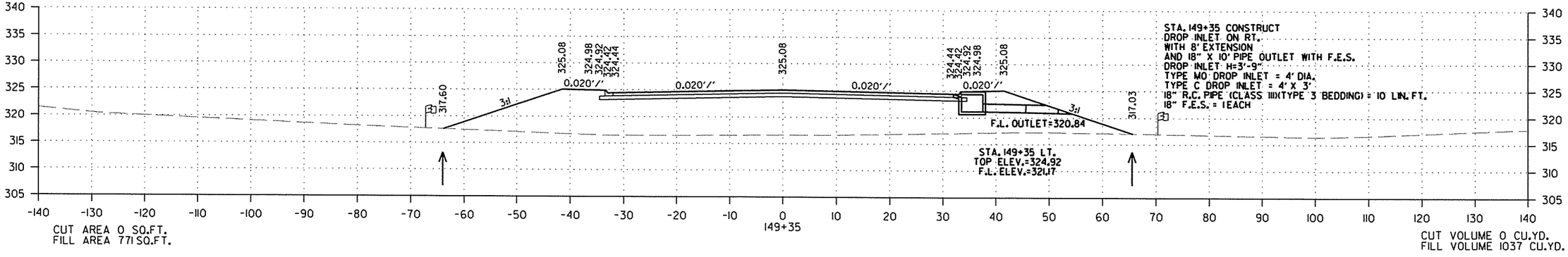
CUT AREA 0 SQ.FT.
FILL AREA 151 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 882 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 746 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 309 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 771 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 1037 CU.YD.

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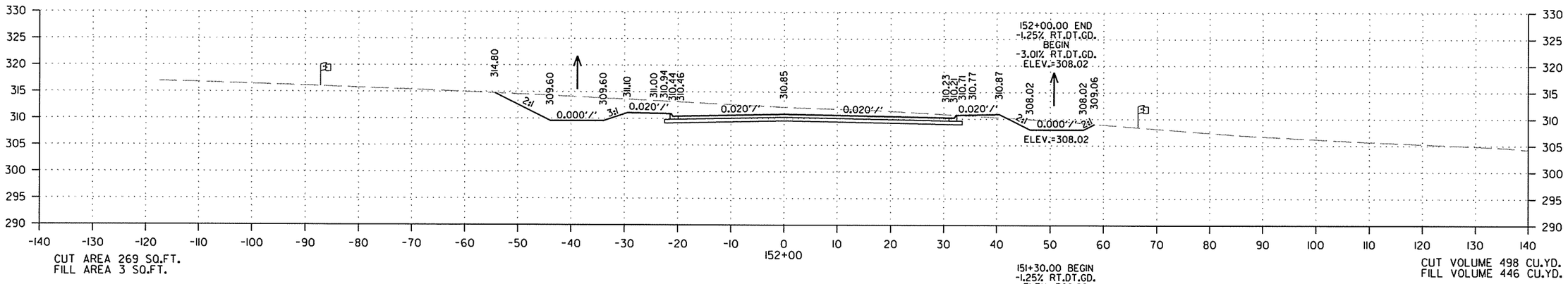
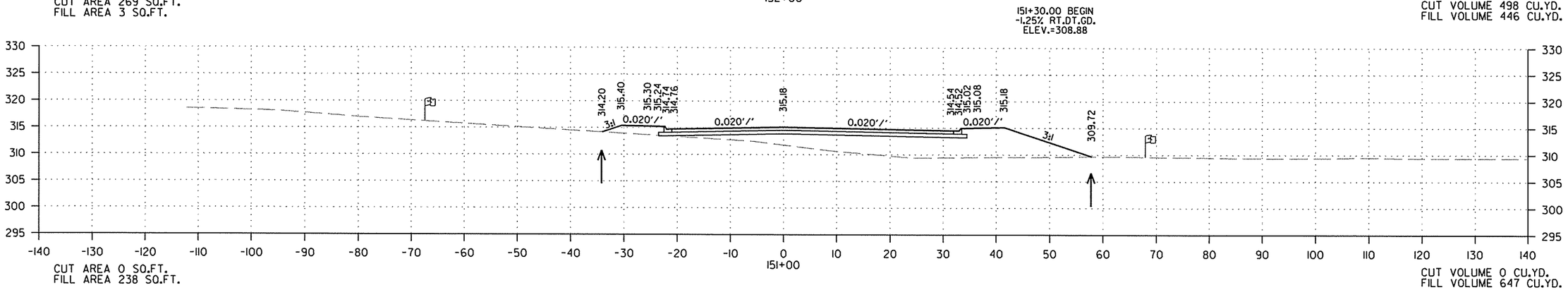
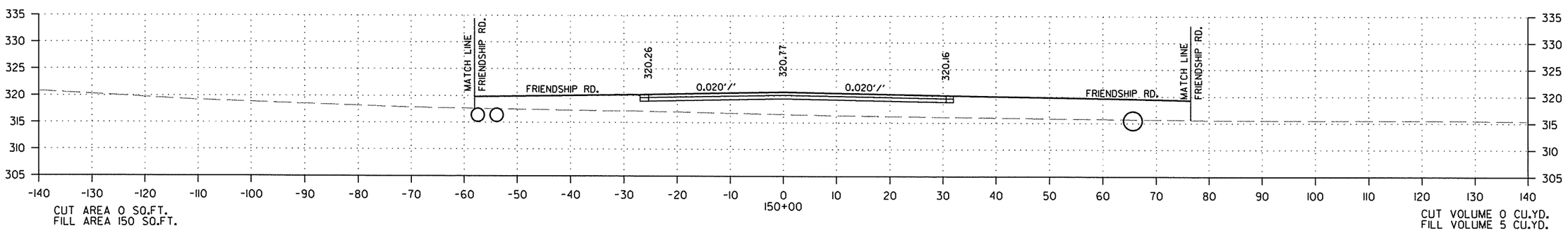
HWY. 25
CROSS SECTIONS STA. 149+35 TO STA. 149+99

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	216	244

(2) CROSS SECTIONS







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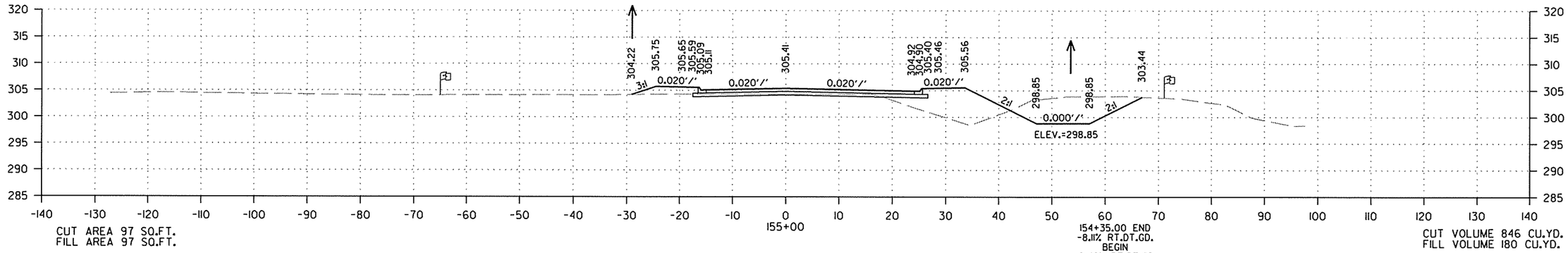
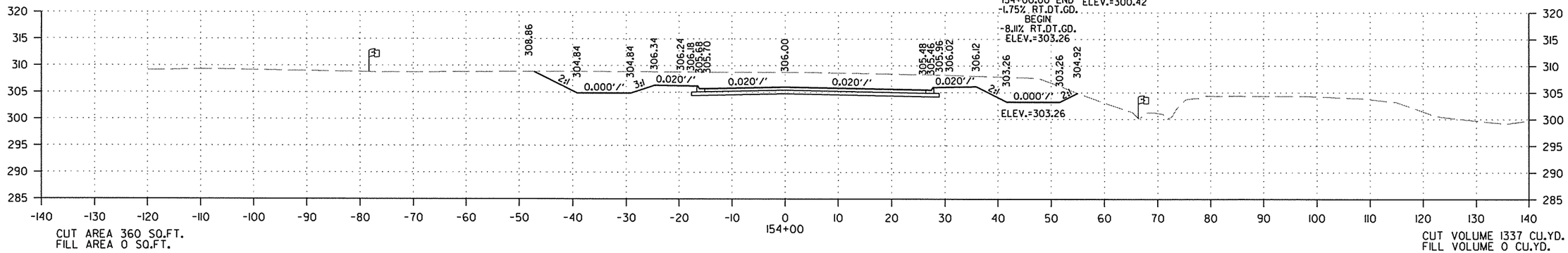
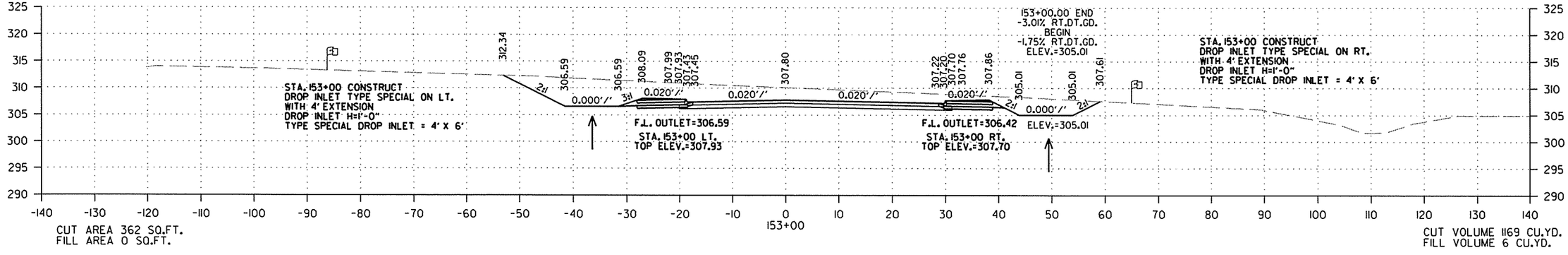
HWY. 25
CROSS SECTIONS STA. 150+00 TO STA. 152+00

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.		080397	217	244

(2) CROSS SECTIONS







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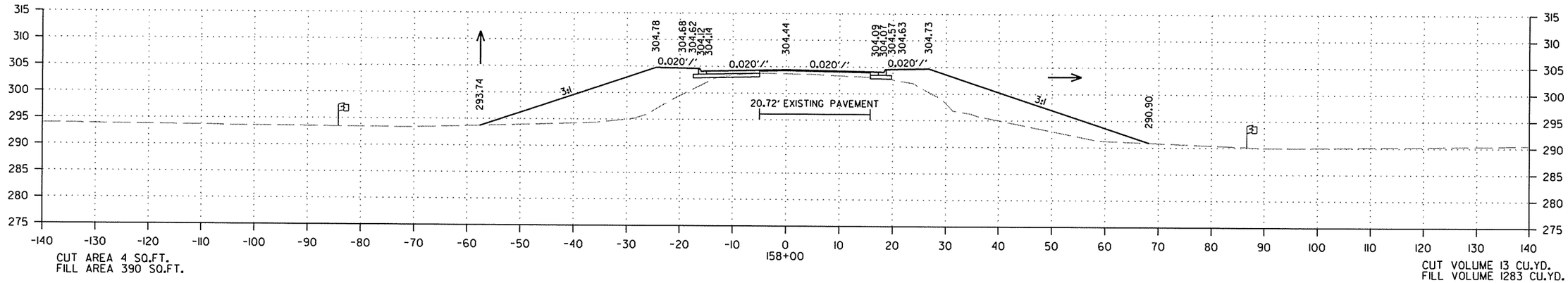
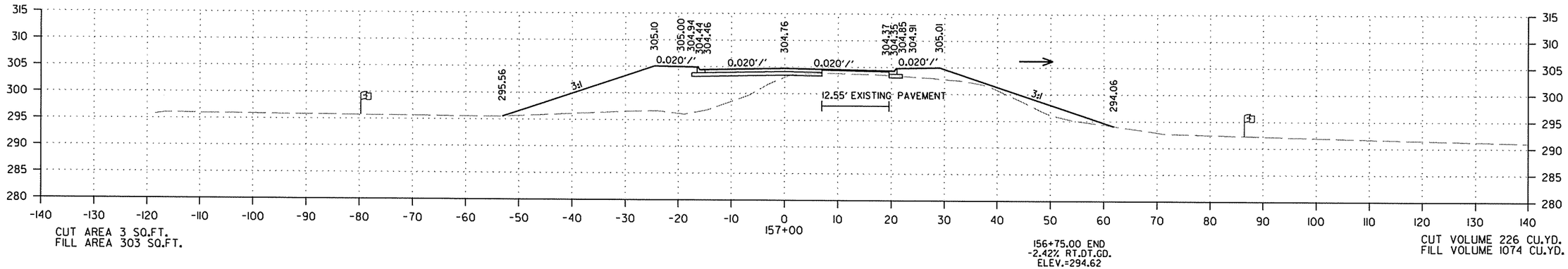
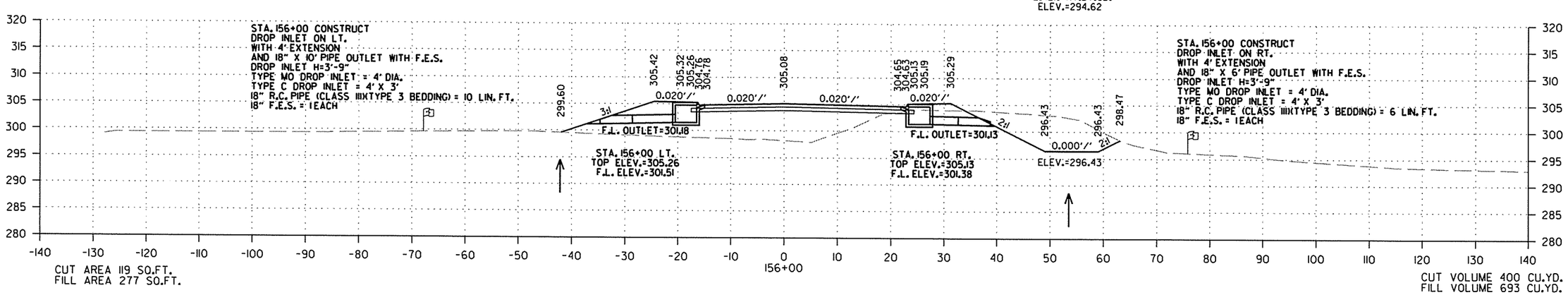
HWY. 25
CROSS SECTIONS STA. 153+00 TO STA. 155+00

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.		080397	218	244

(2) CROSS SECTIONS







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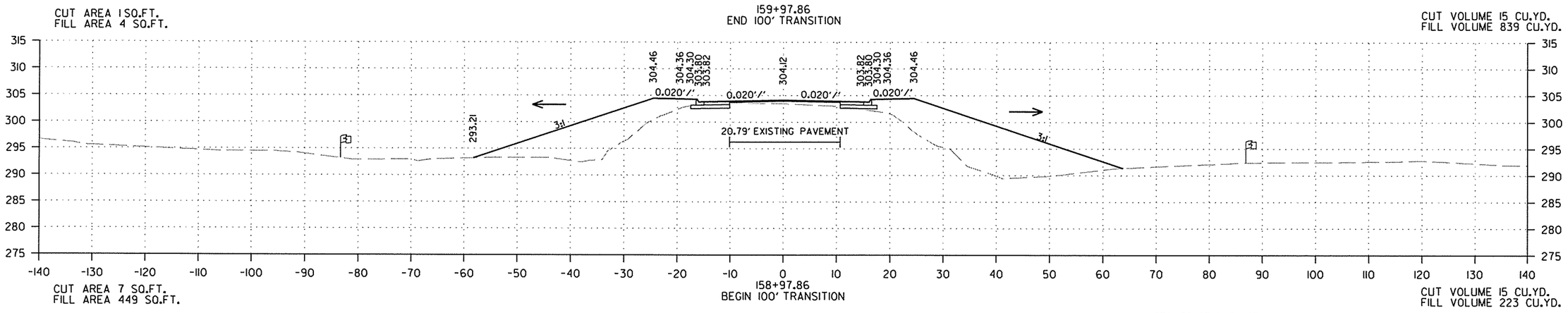
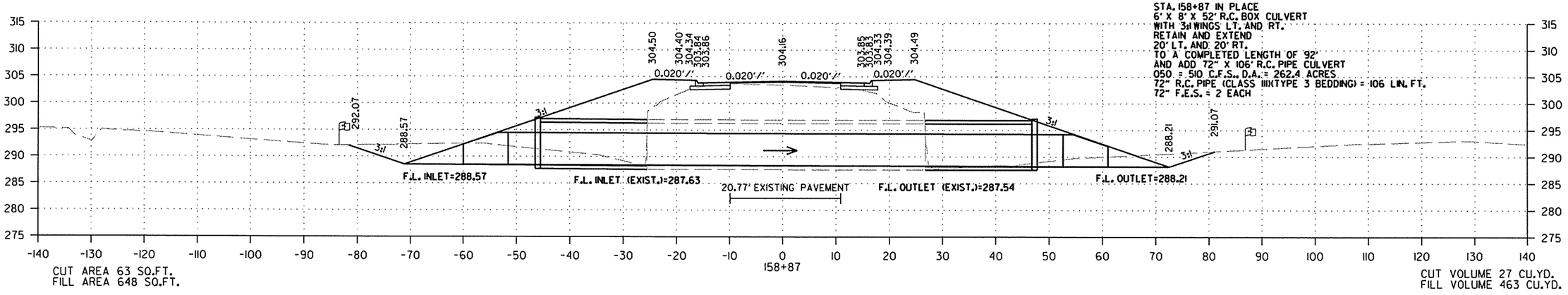
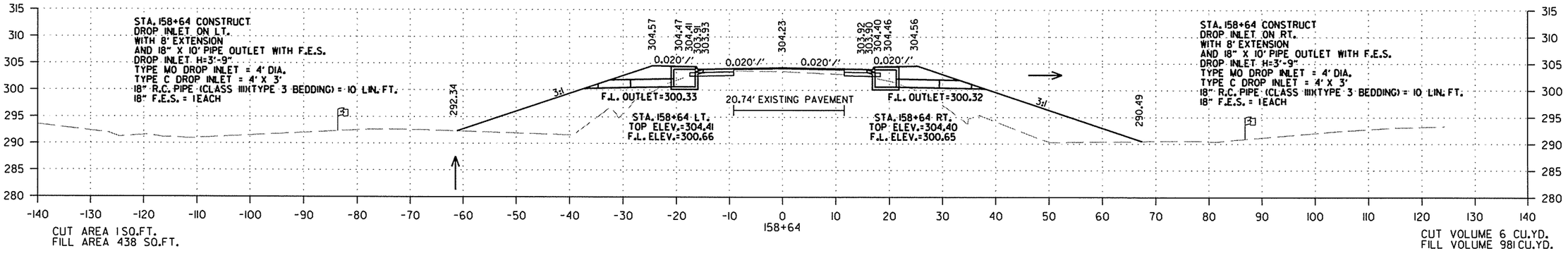
HWY. 25
CROSS SECTIONS STA. 156+00 TO STA. 158+00

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.		080397	219	244

(2) CROSS SECTIONS







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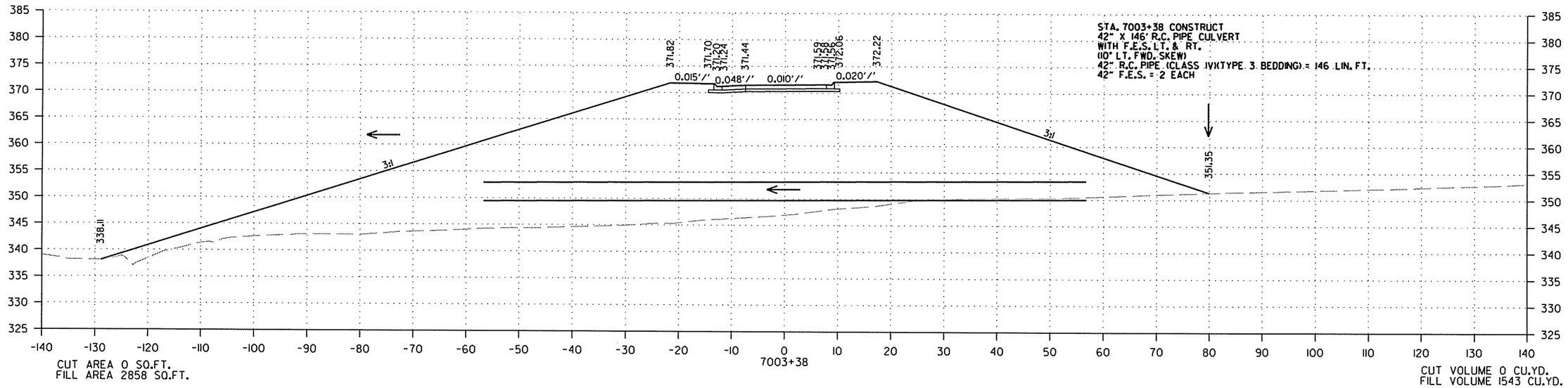
R080397.DGN

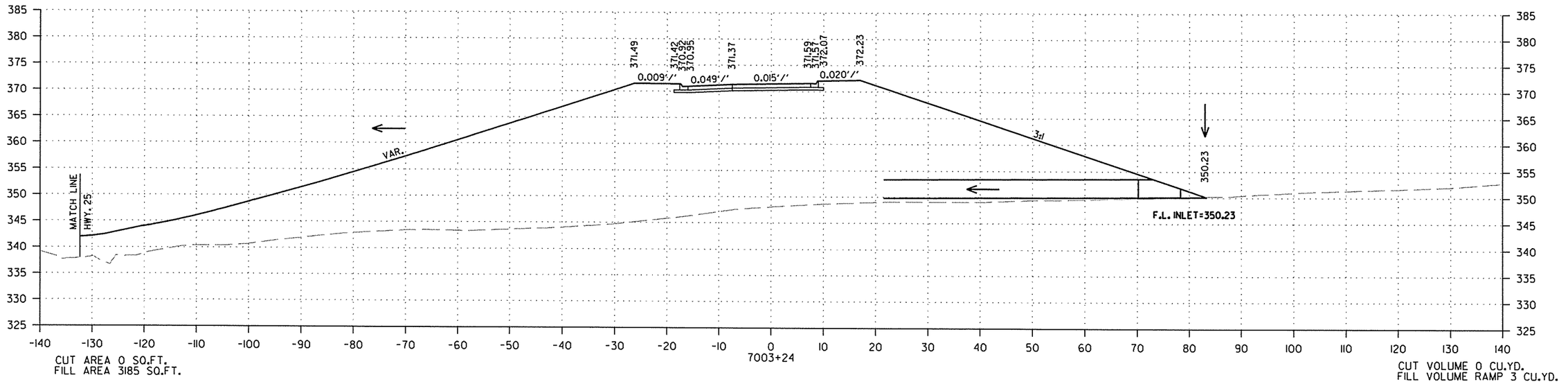
HWY. 25
CROSS SECTIONS STA. 158+64 TO STA. 158+97.86

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		080397	220	244

(2) CROSS SECTIONS





I-40 WB. RAMP B
CROSS SECTIONS STA. 7003+24 TO STA. 7003+38

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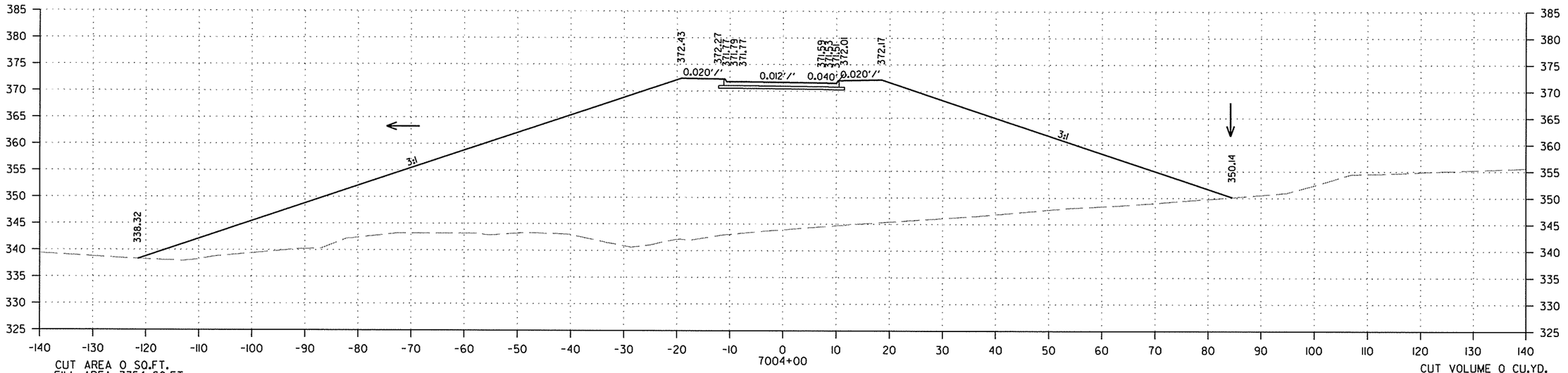
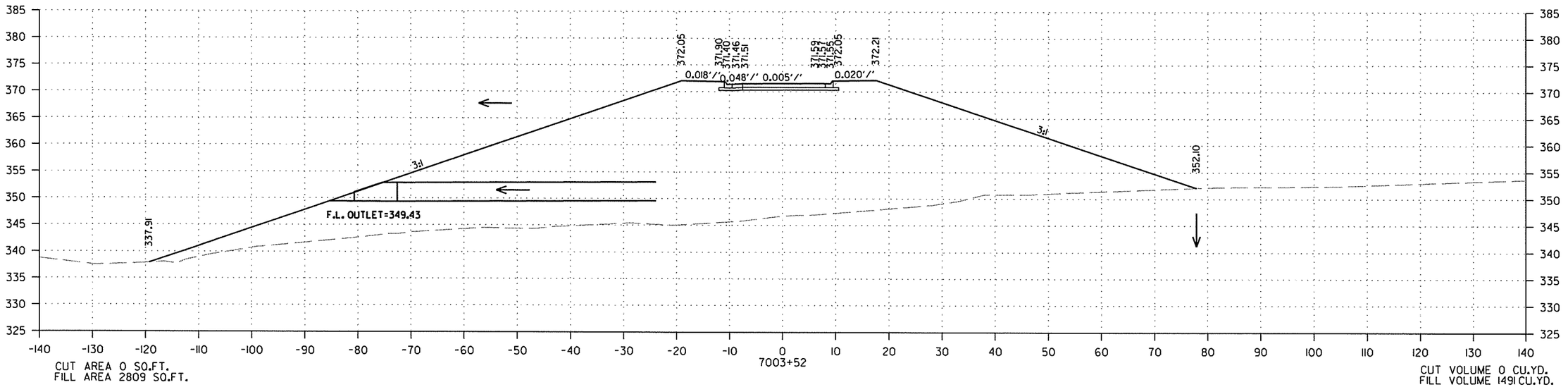
R080397.DGN

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.		080397	221	244

(2) CROSS SECTIONS





I-40 WB. RAMP B
CROSS SECTIONS STA. 7003+52 TO STA. 7004+00

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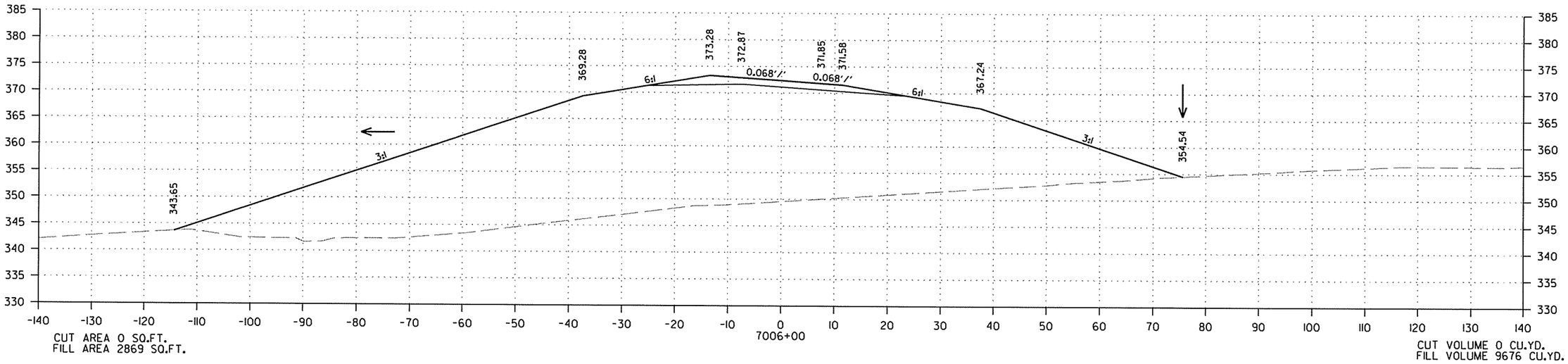
R080397.DGN

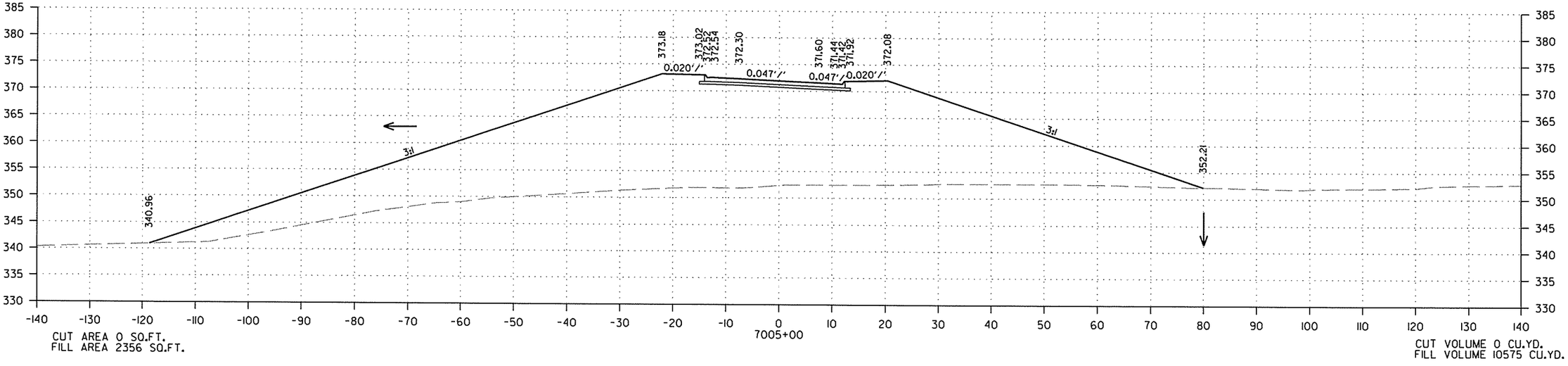
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	222	244

(2) CROSS SECTIONS



CUT AREA 0 SQ.FT.
FILL AREA 2869 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 9676 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 2356 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 10575 CU.YD.

I-40 WB. RAMP B
CROSS SECTIONS STA. 7005+00 TO STA. 7006+00

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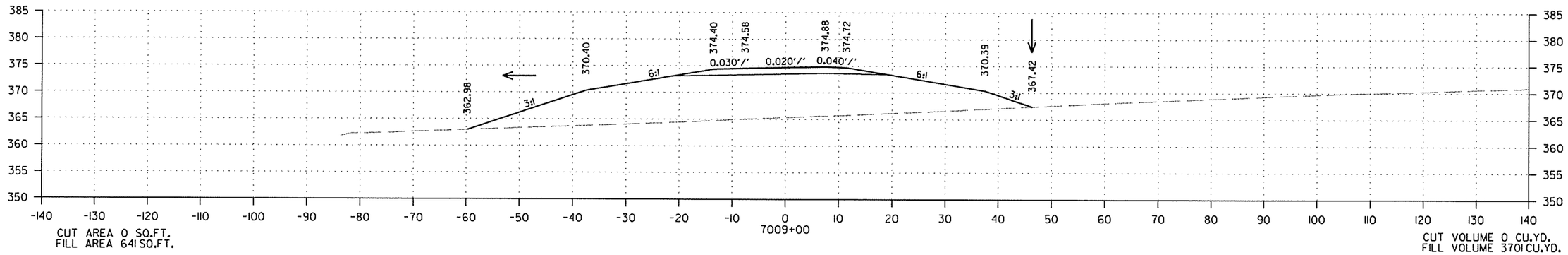
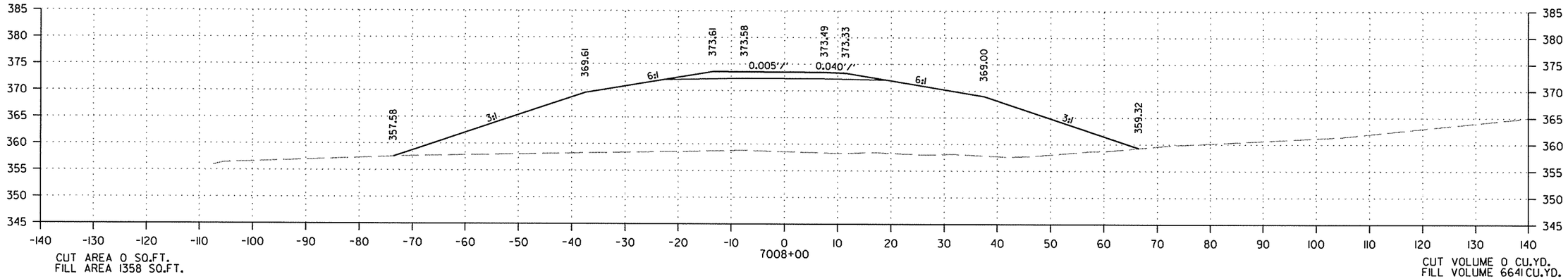
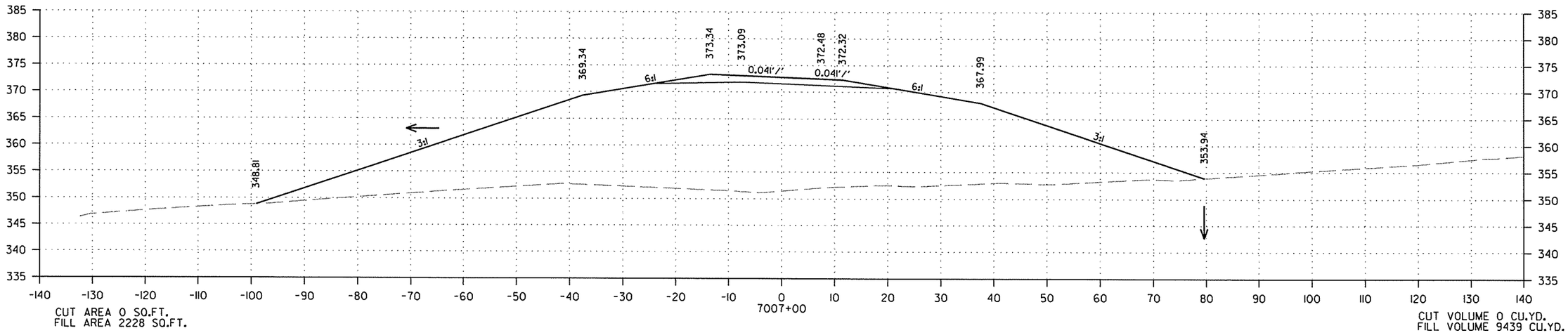
R080397.DGN

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.		080397	223	244

(2) CROSS SECTIONS







I-40 WB. RAMP B
CROSS SECTIONS STA. 7007+00 TO STA. 7009+00

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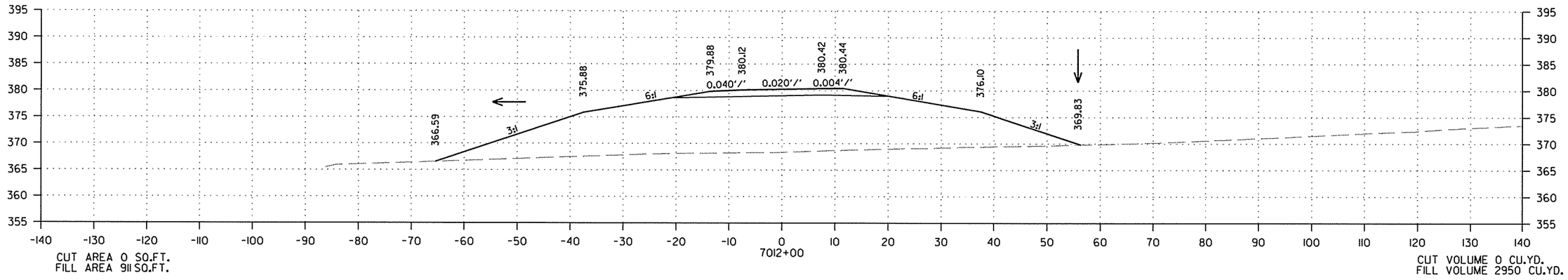
R080397.DGN

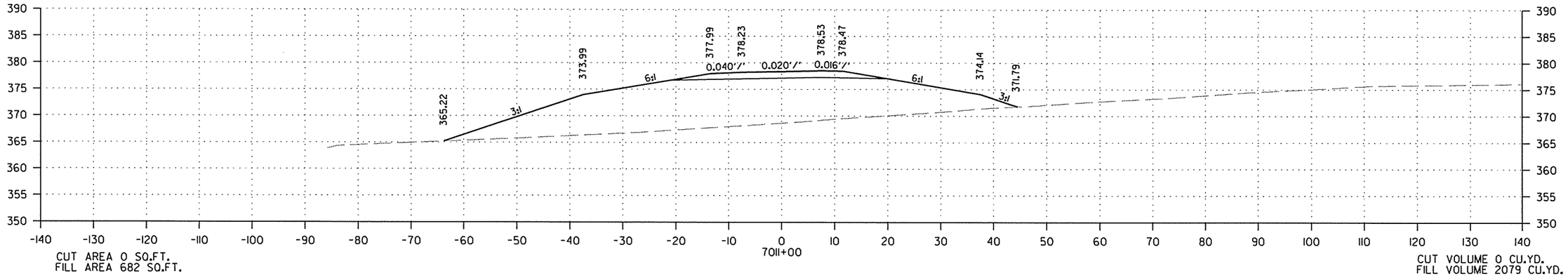
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	224	244

(2) CROSS SECTIONS



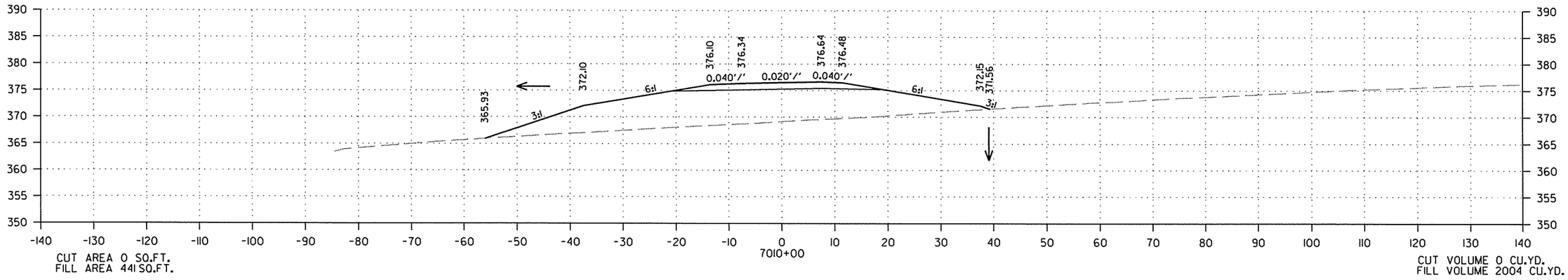
CUT AREA 0 SQ.FT.
FILL AREA 911 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 2950 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 682 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 2079 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 441 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 2004 CU.YD.

I-40 WB. RAMP B
CROSS SECTIONS STA. 7010+00 TO STA. 7012+00

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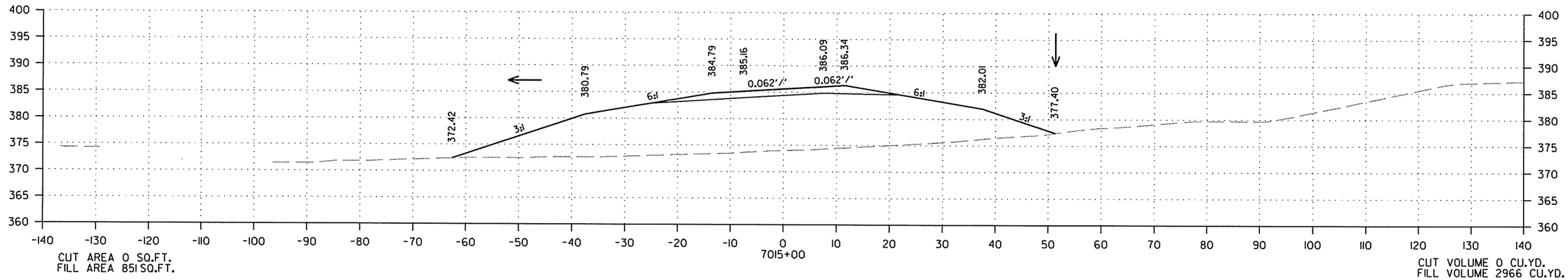
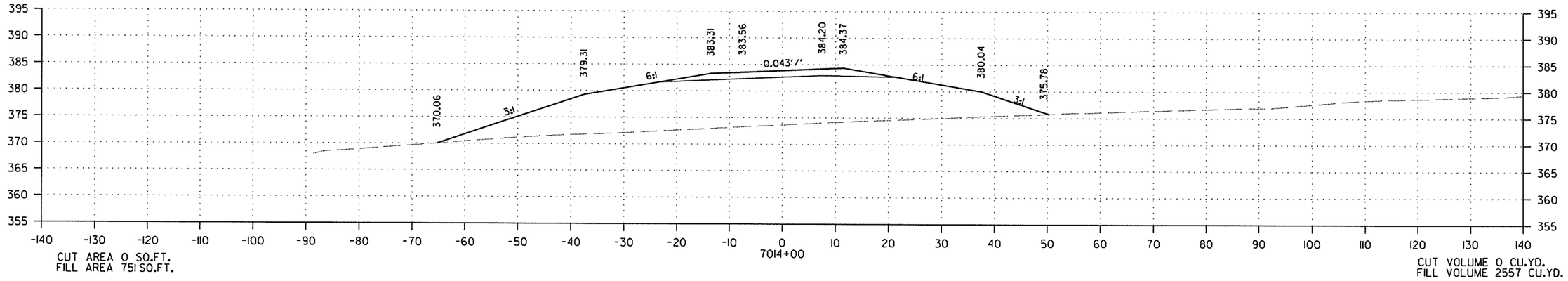
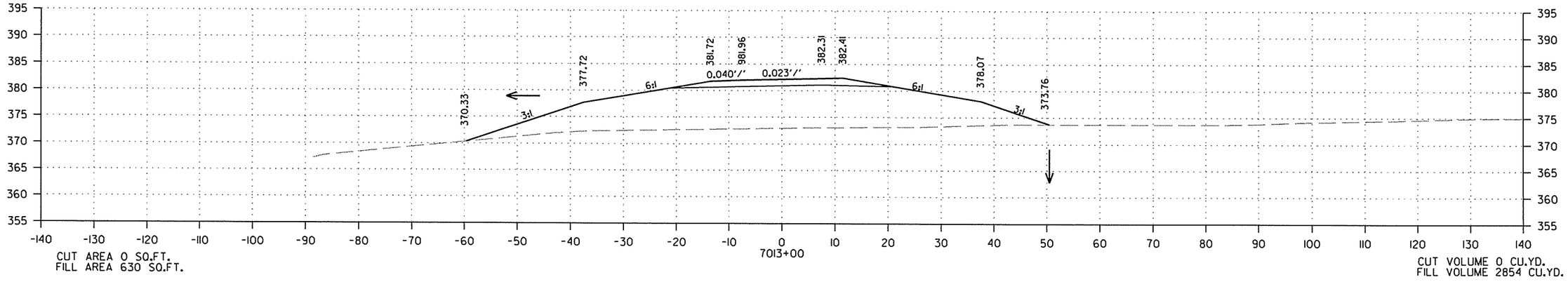
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	225	244

(2) CROSS SECTIONS







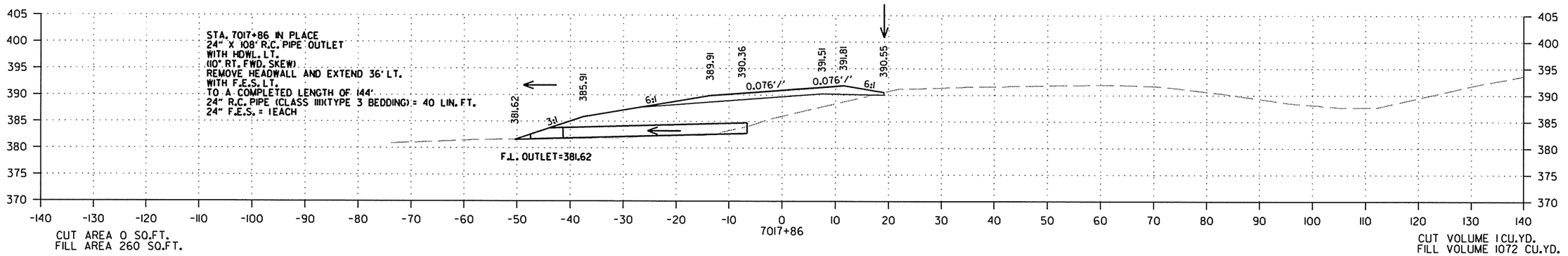
I-40 WB. RAMP B
CROSS SECTIONS STA. 7013+00 TO STA. 7015+00

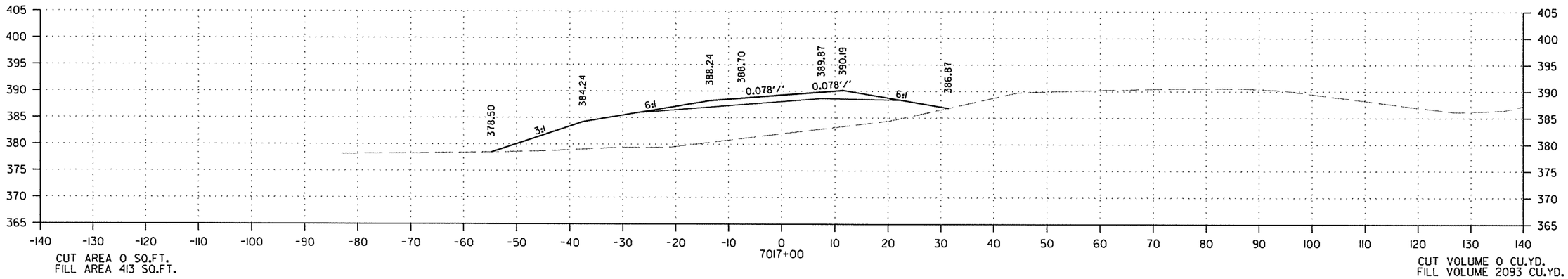
10/26/2015

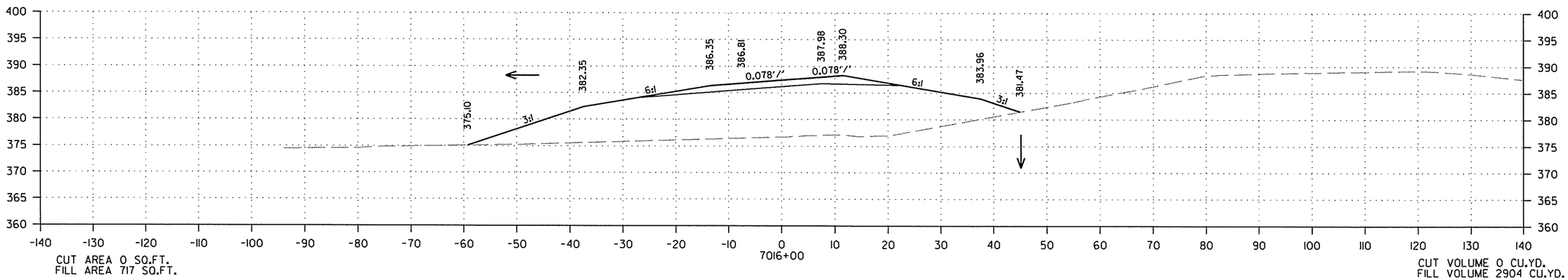
R080397.DGN

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.		080397	226	244

(2) CROSS SECTIONS







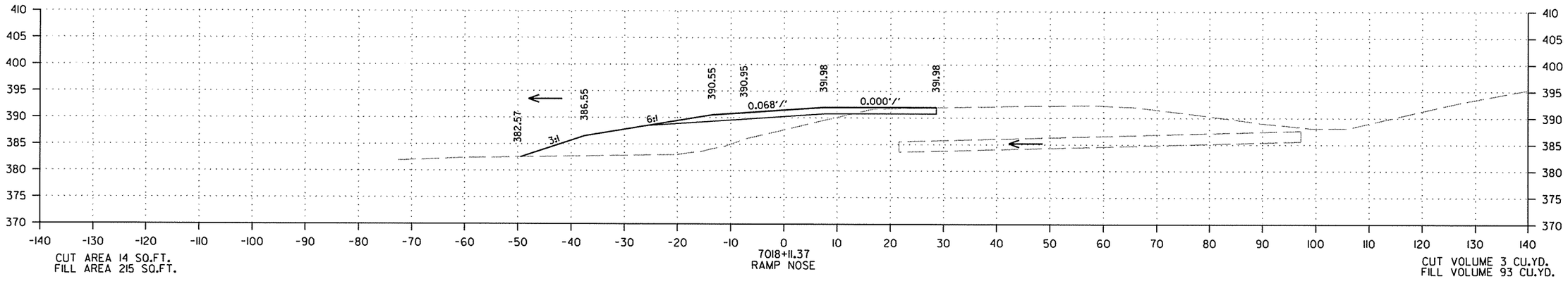
I-40 WB. RAMP B
CROSS SECTIONS STA. 7016+00 TO STA. 7017+86

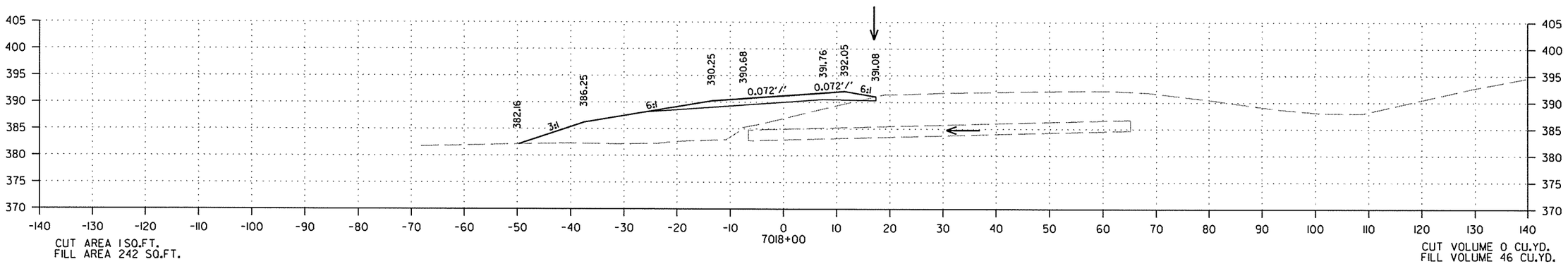
10/26/2015

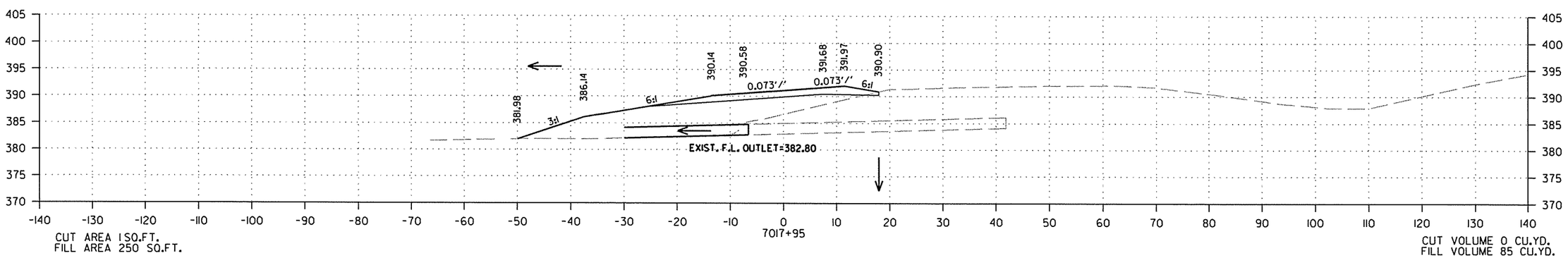
R080397.DGN

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.		080397	227	244

(2) CROSS SECTIONS







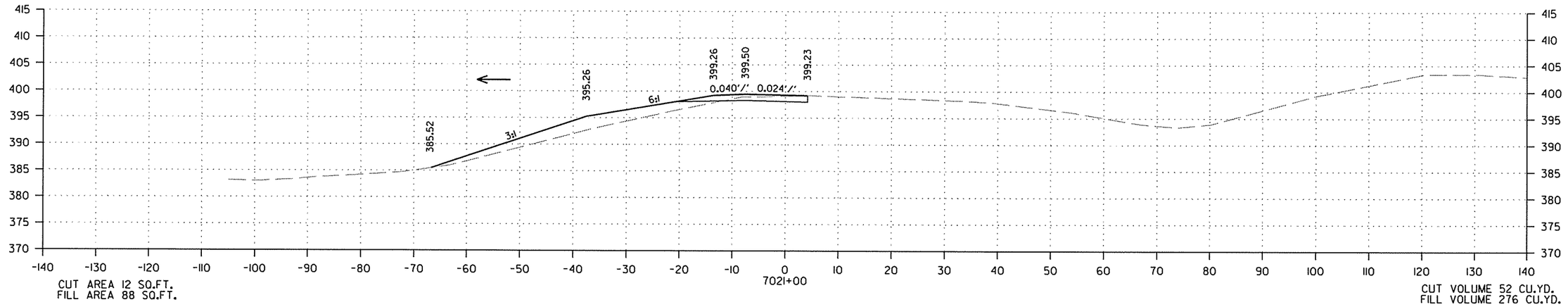
I-40 WB. RAMP B
CROSS SECTIONS STA. 7017+95 TO STA. 7018+11.37

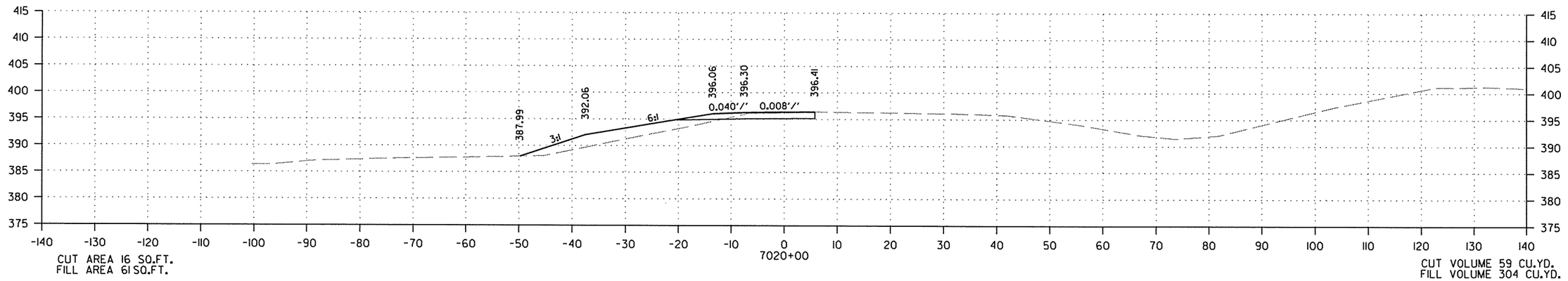
10/26/2015

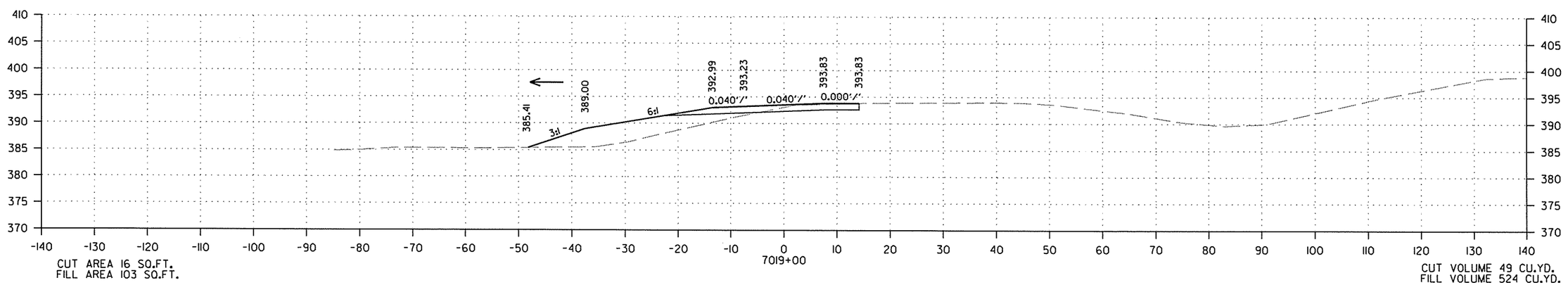
R080397.DGN

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.		080397	228	244

(2) CROSS SECTIONS







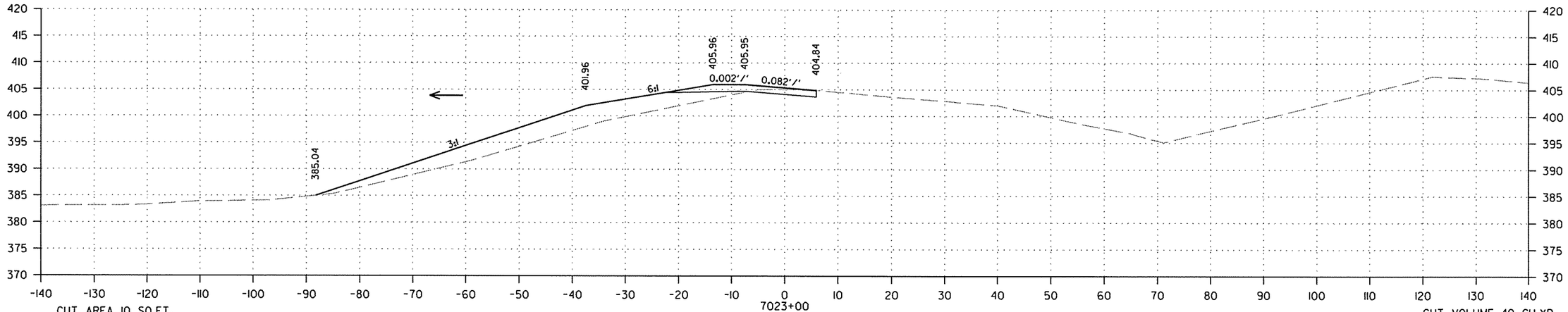
I-40 WB. RAMP B
CROSS SECTIONS STA. 7019+00 TO STA. 7021+00

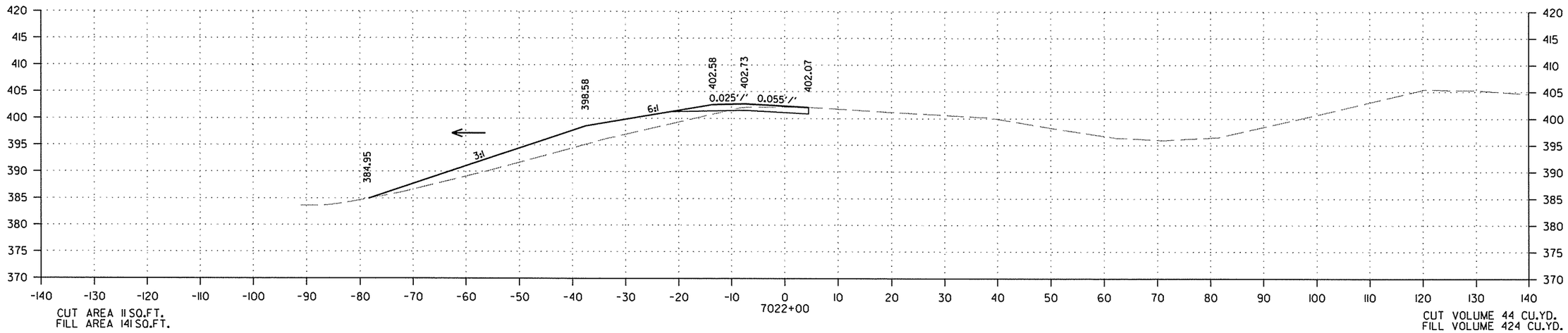
10/26/2015

R080397.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.		080397	229	244

(2) CROSS SECTIONS





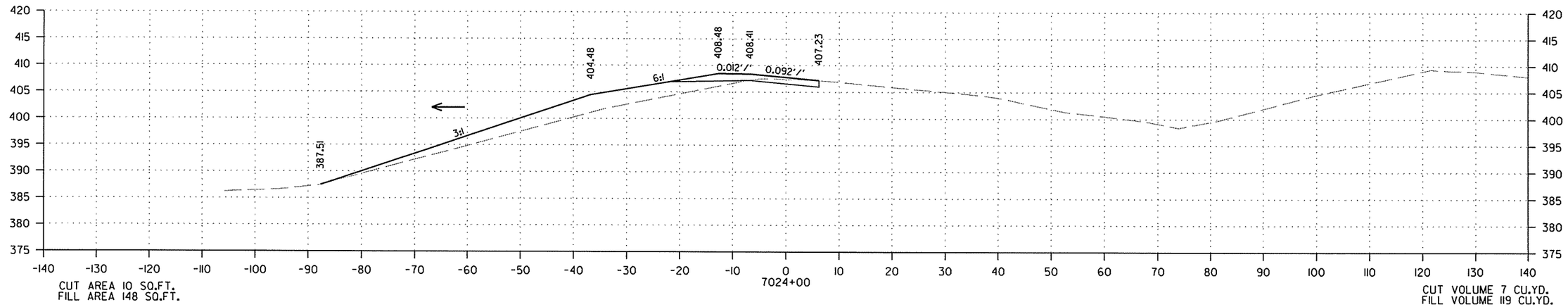
I-40 WB. RAMP B
CROSS SECTIONS STA. 7022+00 TO STA. 7023+00

10/26/2015

R080397.DGN

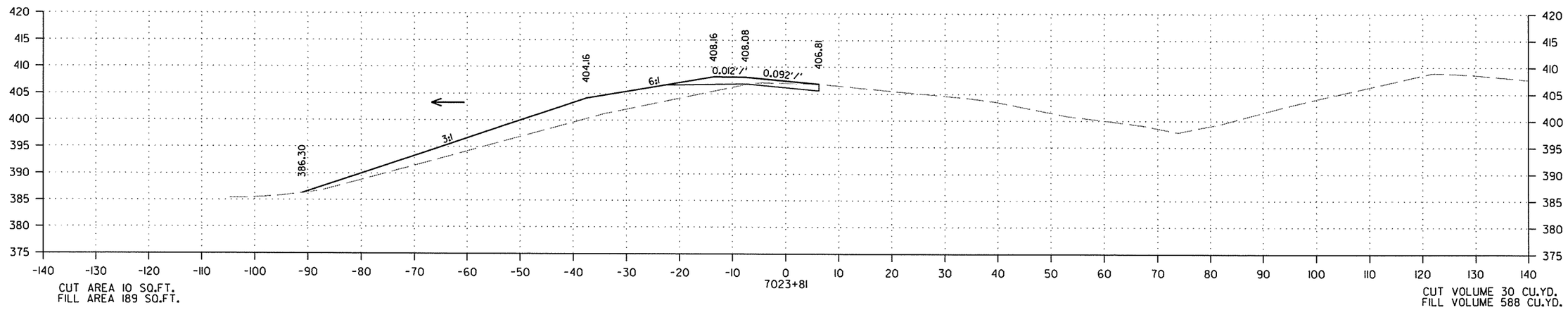
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	230	244

(2) CROSS SECTIONS



CUT AREA 10 SQ.FT.
FILL AREA 148 SQ.FT.

CUT VOLUME 7 CU.YD.
FILL VOLUME 119 CU.YD.



CUT AREA 10 SQ.FT.
FILL AREA 189 SQ.FT.

CUT VOLUME 30 CU.YD.
FILL VOLUME 588 CU.YD.

I-40 WB. RAMP B
CROSS SECTIONS STA. 7023+81 TO STA. 7024+00

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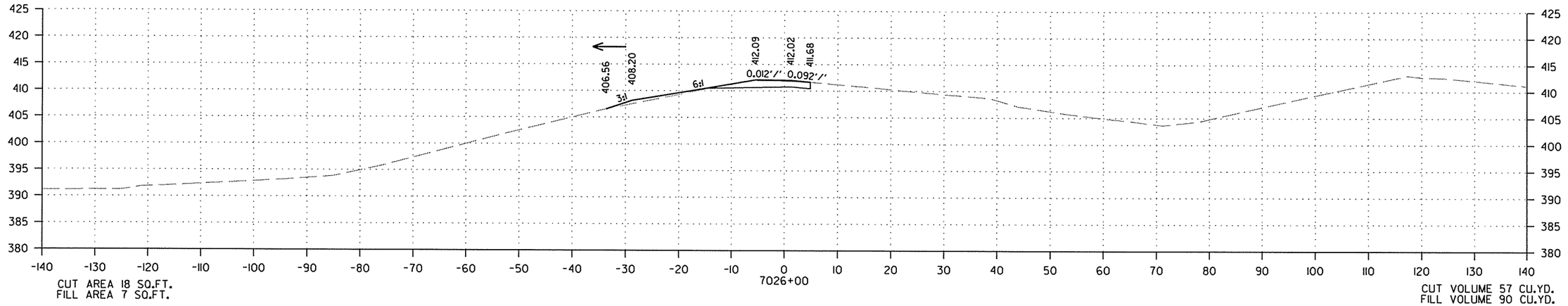
R080397.DGN

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.		080397	231	244
				(2) CROSS SECTIONS				



I-40 WB. RAMP B
CROSS SECTIONS STA. 7025+00 TO STA. 7026+00

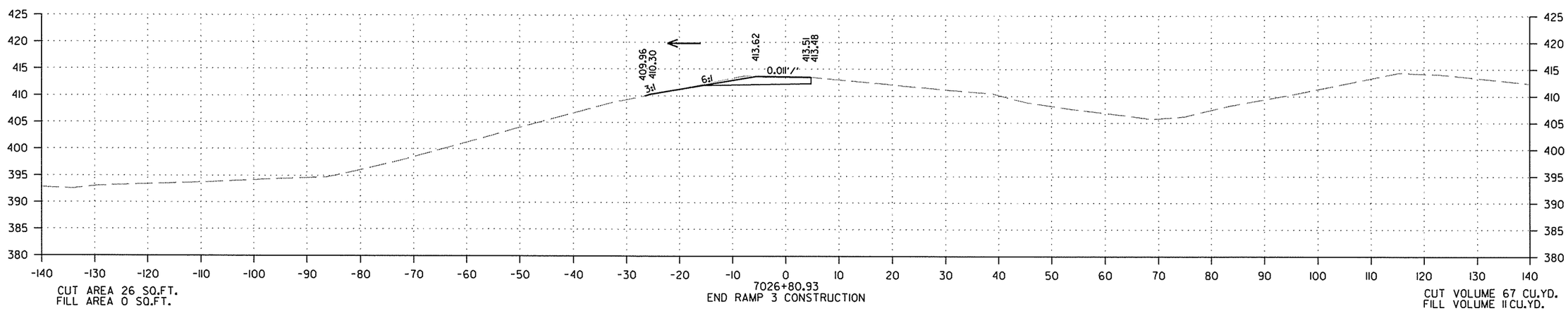
10/26/2015

R080397.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.		080397	232	244

(2) CROSS SECTIONS



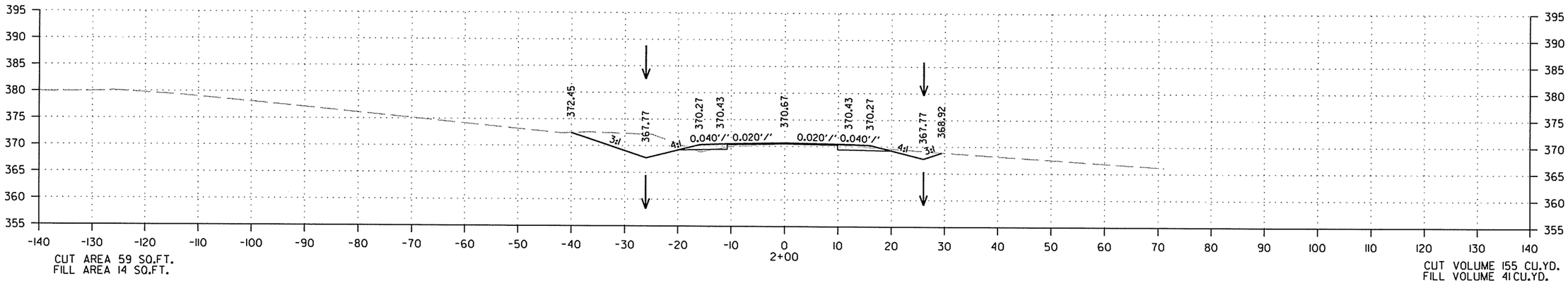
I-40 WB. RAMP B
CROSS SECTIONS STA. 7026+80.93

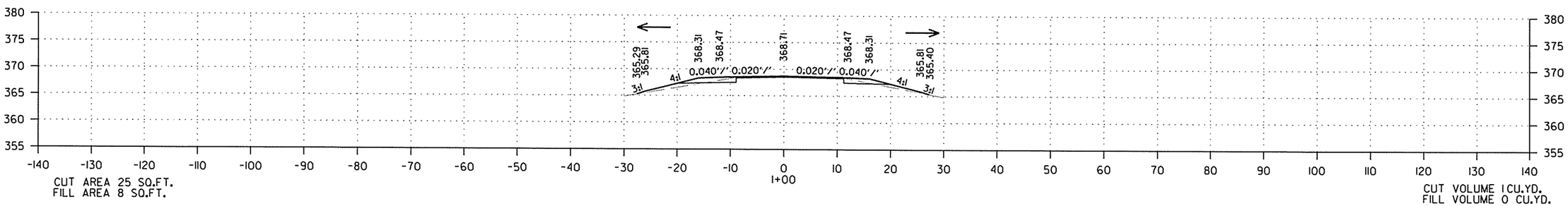
10/26/2015

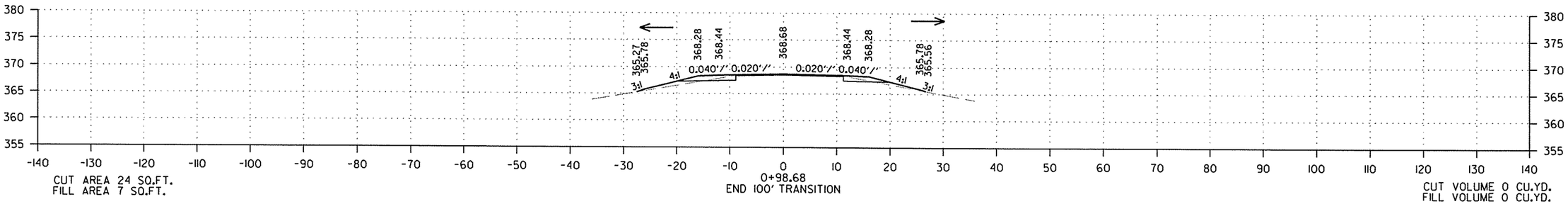
R080397.DGN

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.		080397	233	244

(2) CROSS SECTIONS







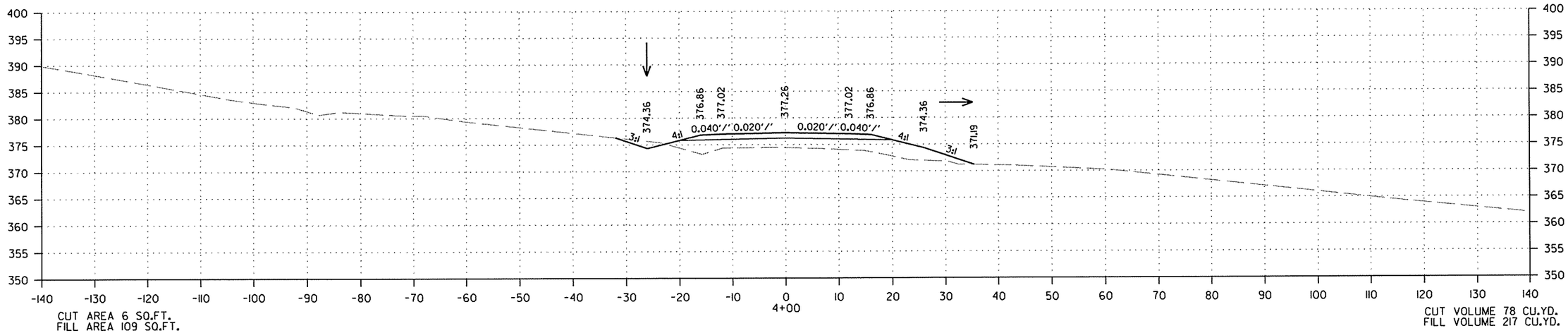
BLANEY HILL RD.
CROSS SECTIONS STA. 0+98.68 TO STA. 2+00

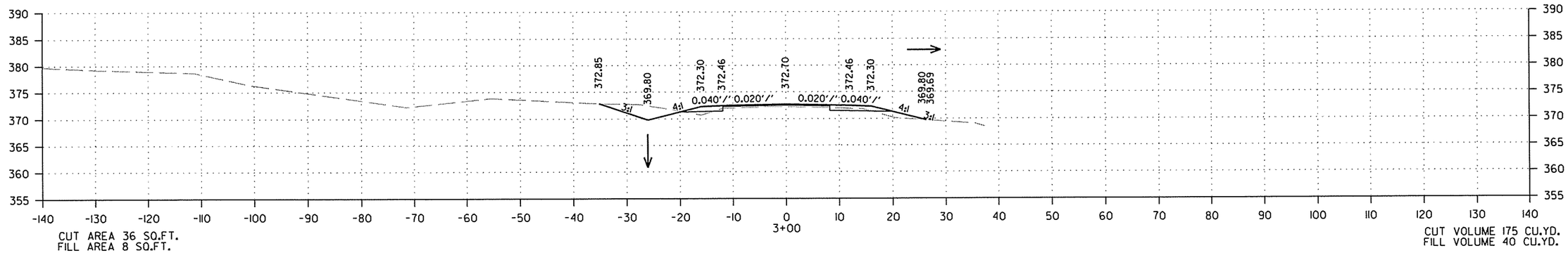
10/26/2015

R080397.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.		080397	234	244

(2) CROSS SECTIONS





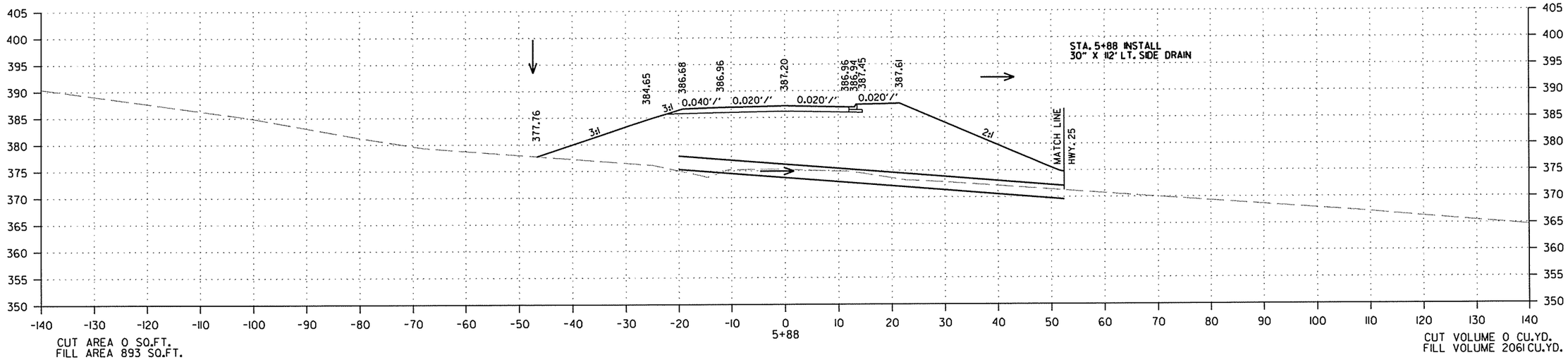
BLANEY HILL RD.
CROSS SECTIONS STA. 3+00 TO STA. 4+00

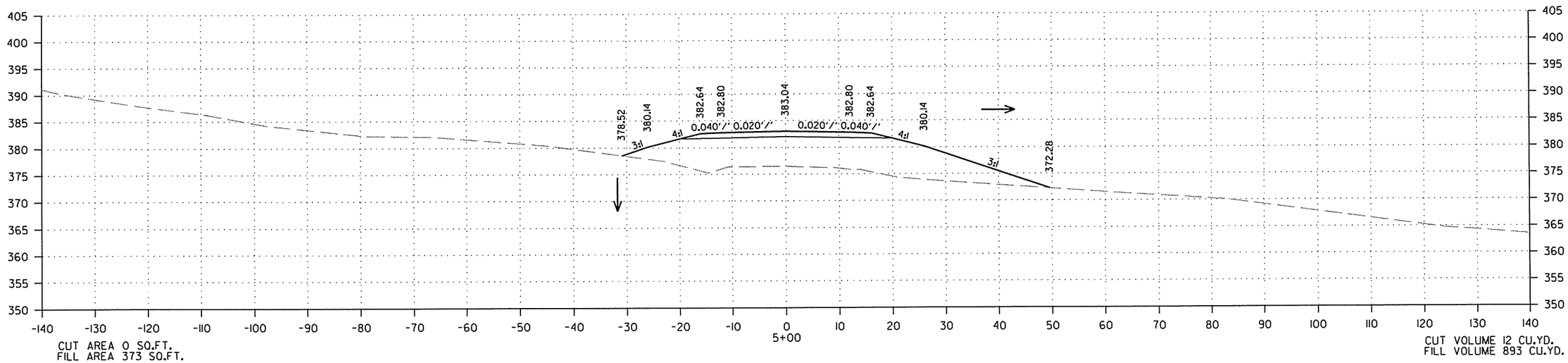
10/26/2015

R080397.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.		080397	235	244

(2) CROSS SECTIONS





BLANEY HILL RD.
CROSS SECTIONS STA. 5+00 TO STA. 5+88

10/26/2015

R080397.DGN

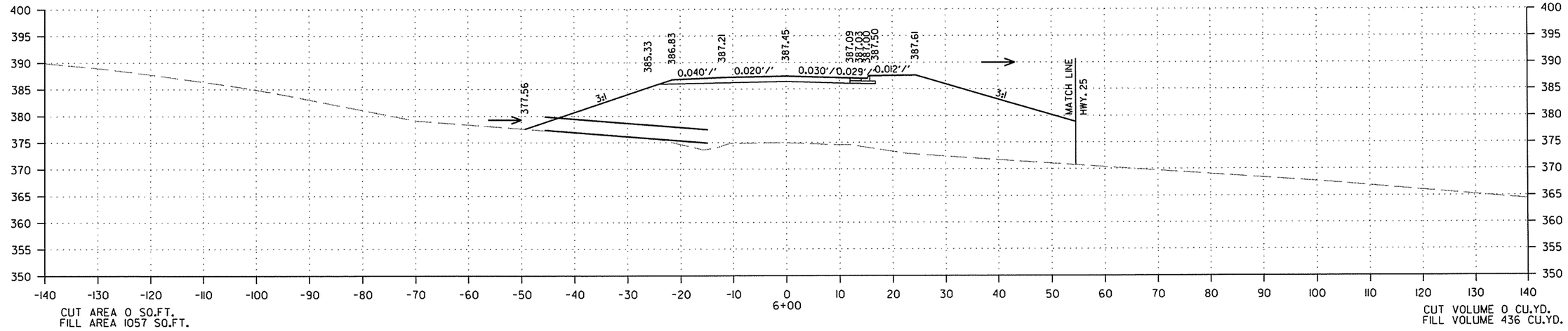
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	236	244

(2) CROSS SECTIONS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STA. 117+97.95 ON HWY. 25 =
STA. 6+70.21 ON BLANEY HILL RD.
Δ 100°37'51"

CUT VOLUME 0 CU.YD.
FILL VOLUME 1374 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 1057 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 436 CU.YD.

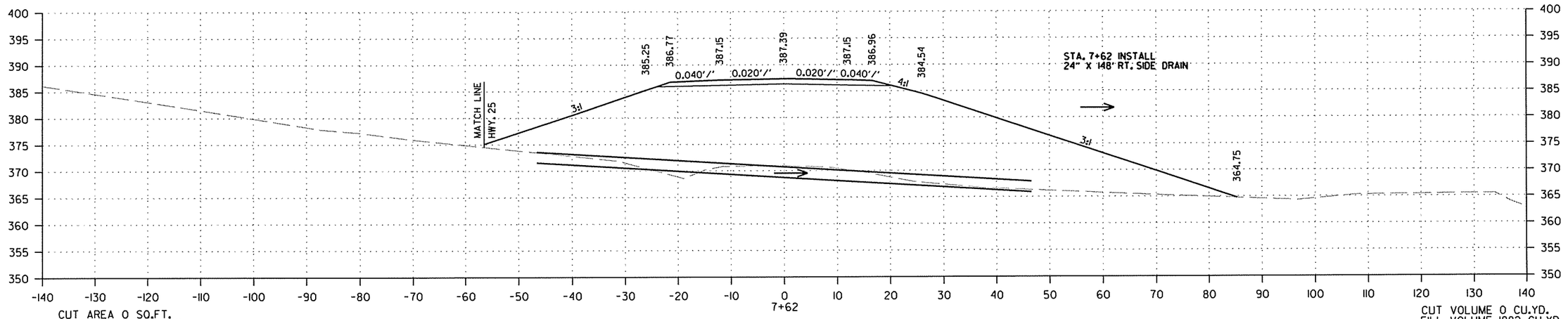
BLANEY HILL RD.
CROSS SECTIONS STA. 6+00

10/26/2015

R080397.DGN

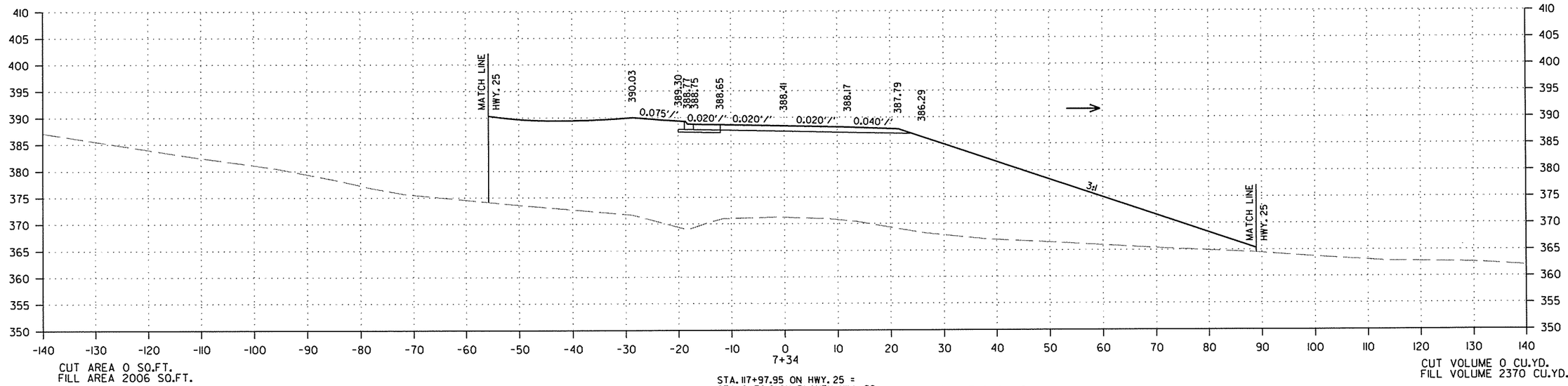
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	237	244

(2) CROSS SECTIONS



CUT AREA 0 SQ.FT.
FILL AREA 1569 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 1882 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 2006 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STA. 117+97.95 ON HWY. 25 =
STA. 6+70.21 ON BLANEY HILL RD.
& 100°37'51"

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 2370 CU.YD.

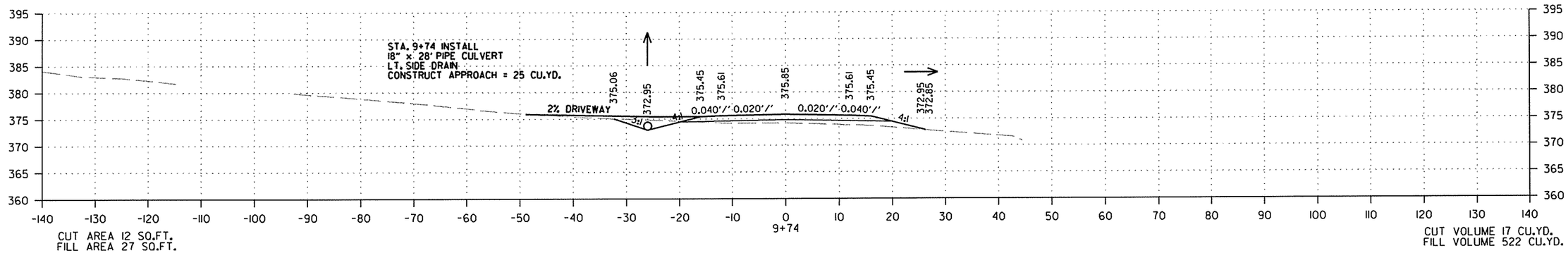
BLANEY HILL RD.
CROSS SECTIONS STA. 7+34 TO STA. 7+62

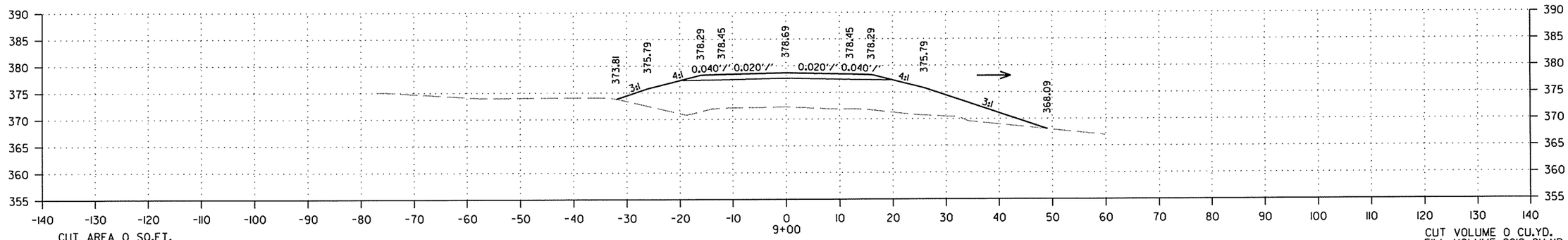
10/26/2015

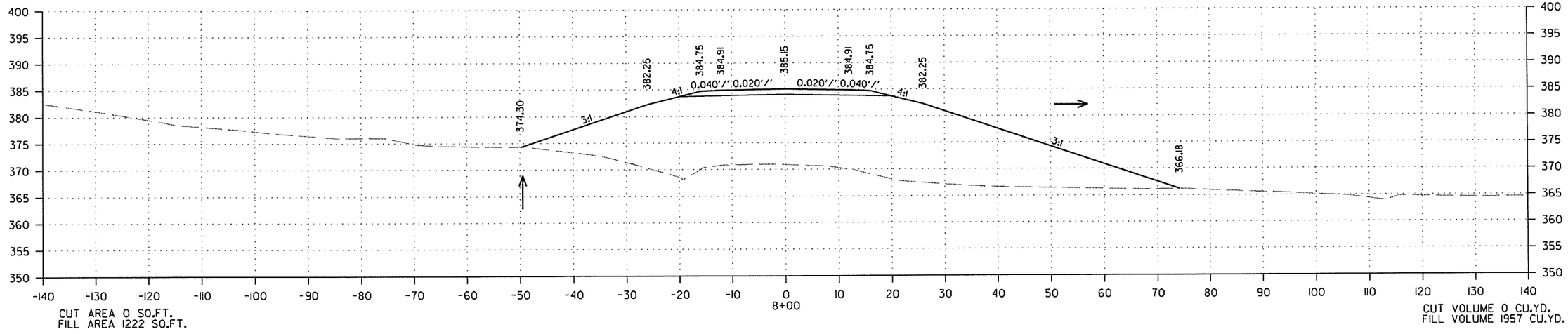
R080397.DGN

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.		080397	238	244

(2) CROSS SECTIONS







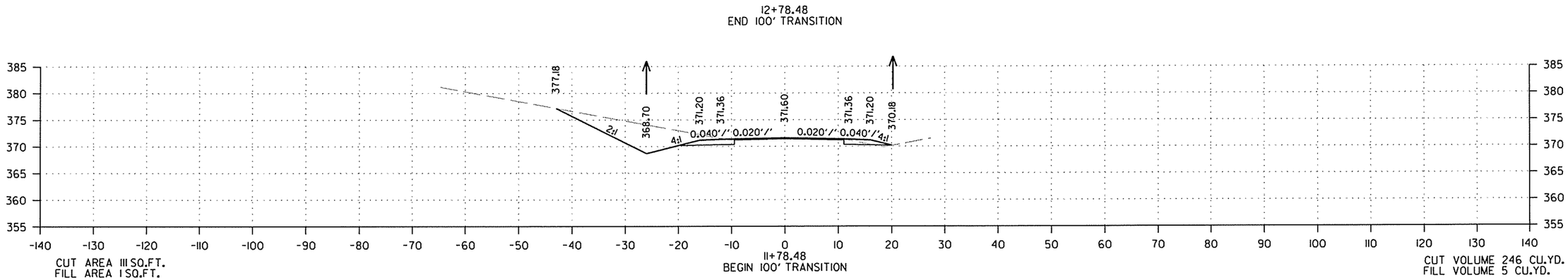
10/26/2015

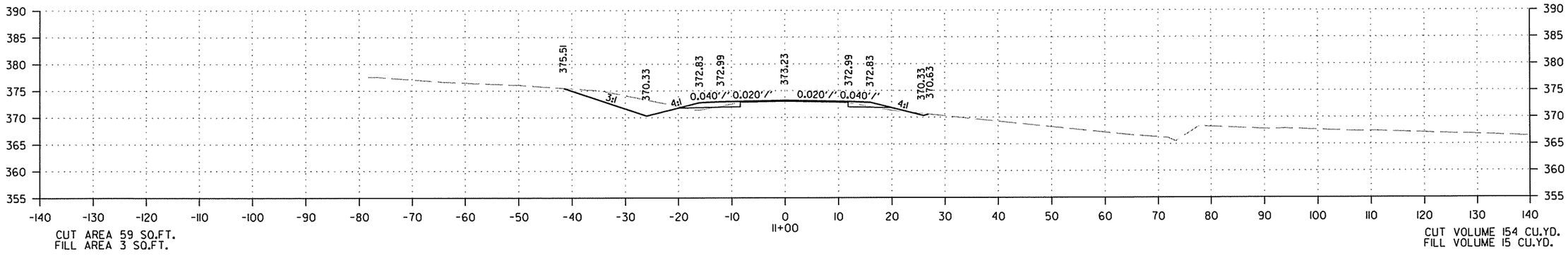
R080397.DGN

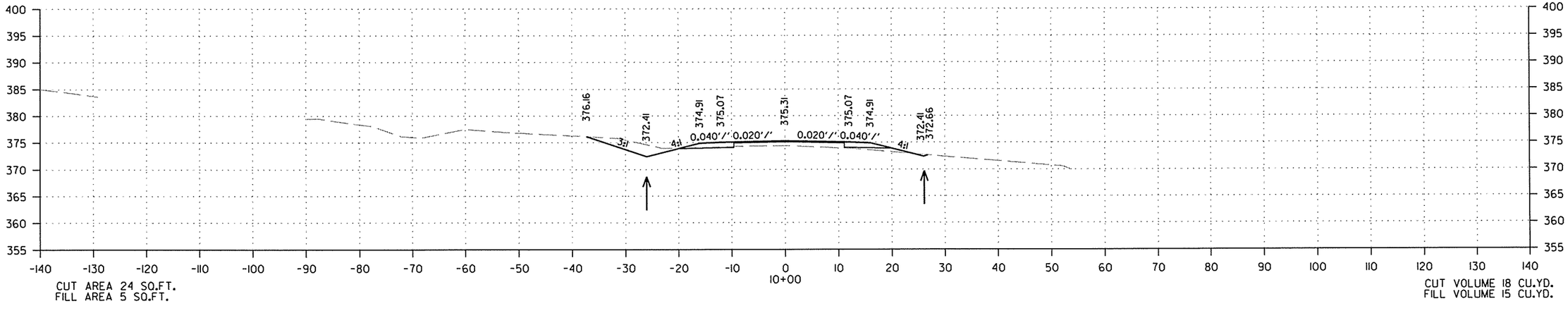
BLANEY HILL RD.
CROSS SECTIONS STA. 8+00 TO STA. 9+74

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	239	244

(2) CROSS SECTIONS







BLANEY HILL RD.
CROSS SECTIONS STA. 10+00 TO STA. 11+78.48

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R080397.DGN

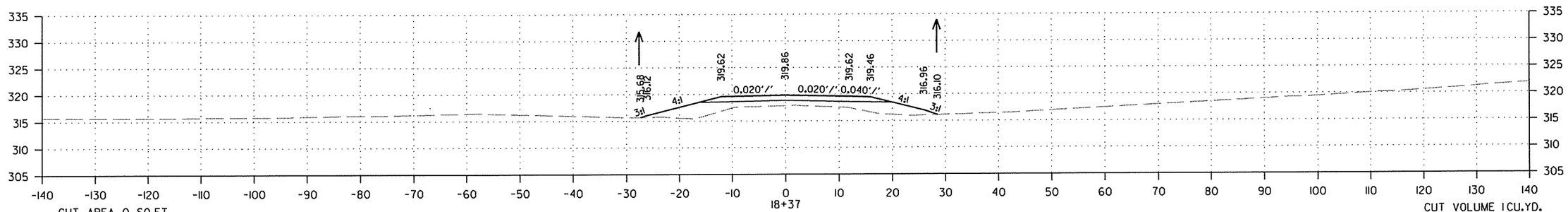
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	240	244

(2) CROSS SECTIONS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STA. 149+99.07 ON HWY. 25 =
STA. 19+05.26 ON FRIENDSHIP RD.
Δ 94°26'08"

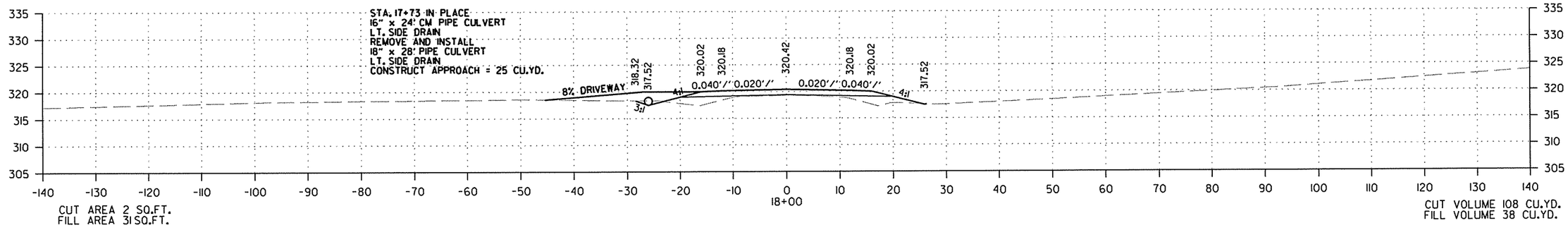
CUT VOLUME 0 CU.YD.
FILL VOLUME 99 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 78 SQ.FT.

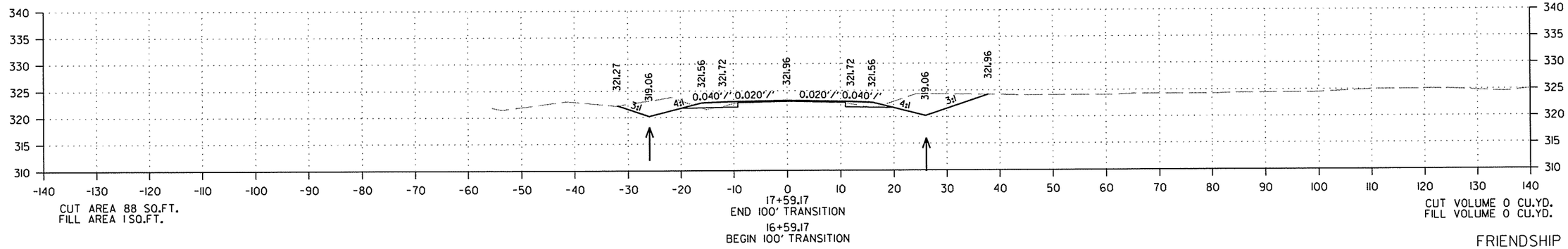
CUT VOLUME 1 CU.YD.
FILL VOLUME 75 CU.YD.

STA. 17+73 IN PLACE
16" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU.YD.



CUT AREA 2 SQ.FT.
FILL AREA 31 SQ.FT.

CUT VOLUME 108 CU.YD.
FILL VOLUME 38 CU.YD.



CUT AREA 88 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

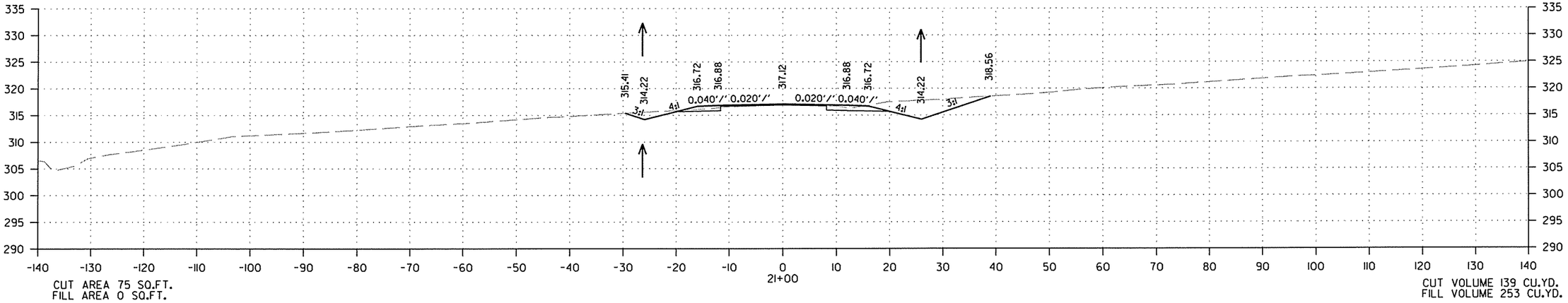
FRIENDSHIP RD.
CROSS SECTIONS STA. 17+59.17 TO STA. 18+37

10/26/2015

R080397.DGN

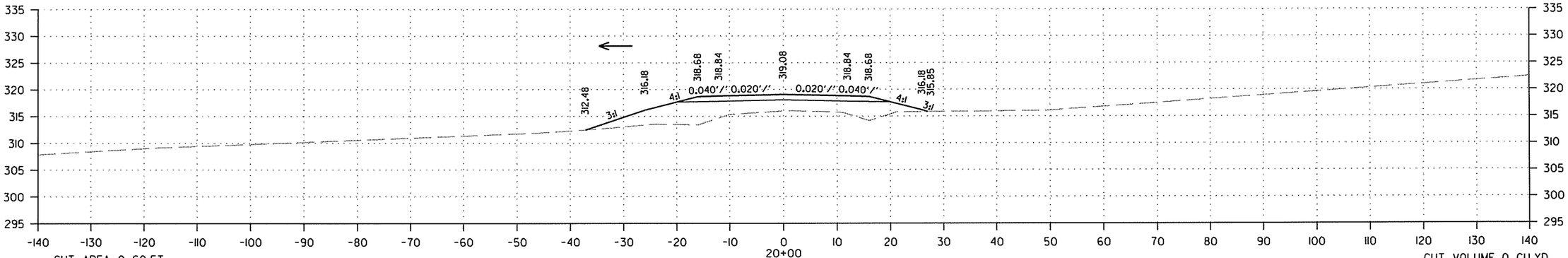
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	241	244

(2) CROSS SECTIONS



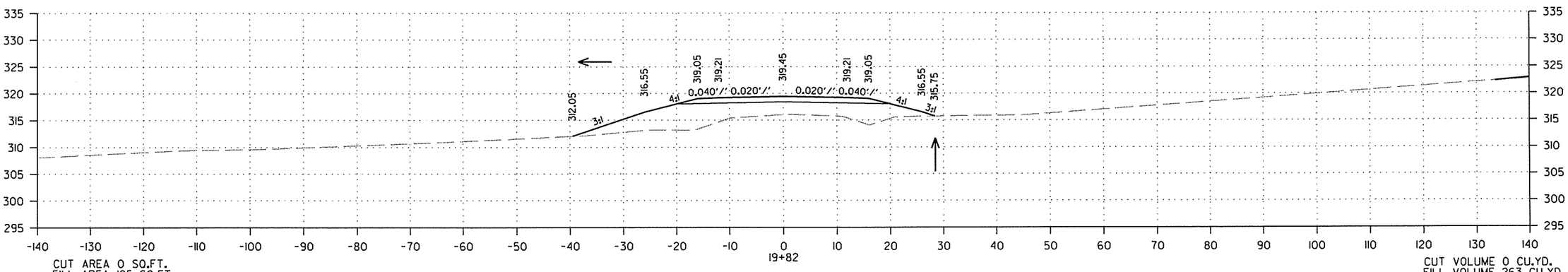
CUT AREA 75 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 139 CU.YD.
FILL VOLUME 253 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 153 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 113 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 185 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STA. 149+99.07 ON HWY. 25 =
STA. 19+05.26 ON FRIENDSHIP RD.
Δ 94°26'08"

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 263 CU.YD.

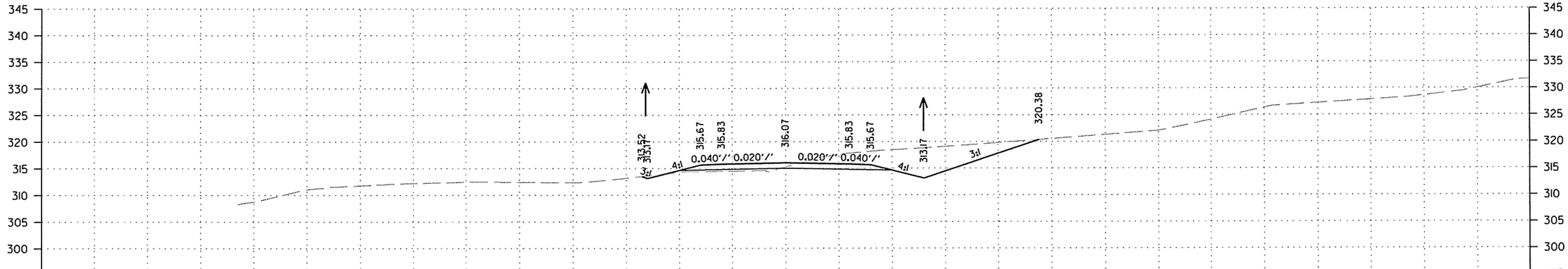
FRIENDSHIP RD.
CROSS SECTIONS STA. 19+82 TO STA. 21+00

10/26/2015

R080397.DGN

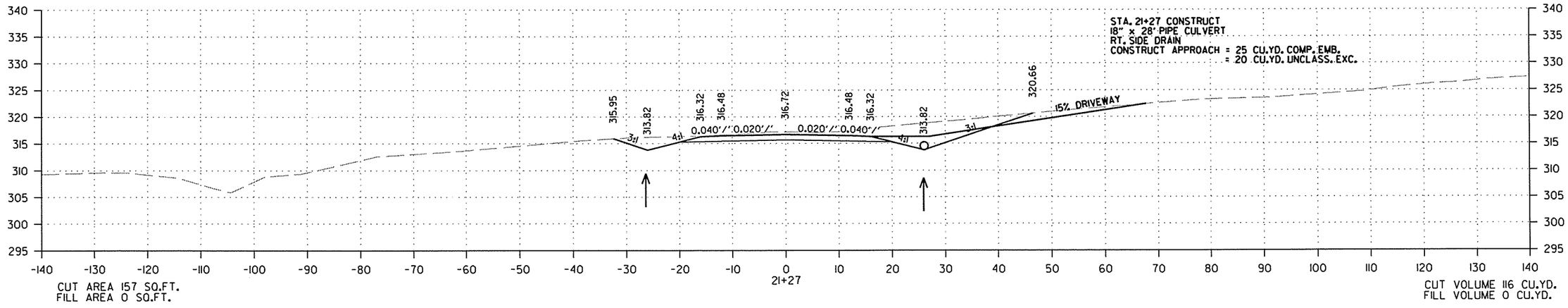
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080397	242	244

(2) CROSS SECTIONS



CUT AREA 140 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 402 CU.YD.
FILL VOLUME 10 CU.YD.



STA. 21+27 CONSTRUCT
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU.YD. COMP. EMB.
= 20 CU.YD. UNCLASS. EXC.

CUT AREA 157 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 116 CU.YD.
FILL VOLUME 0 CU.YD.

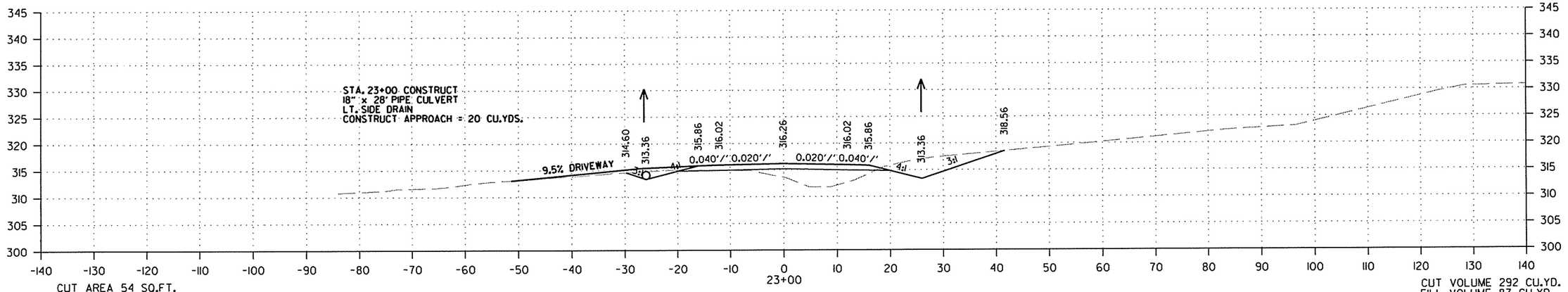
10/26/2015

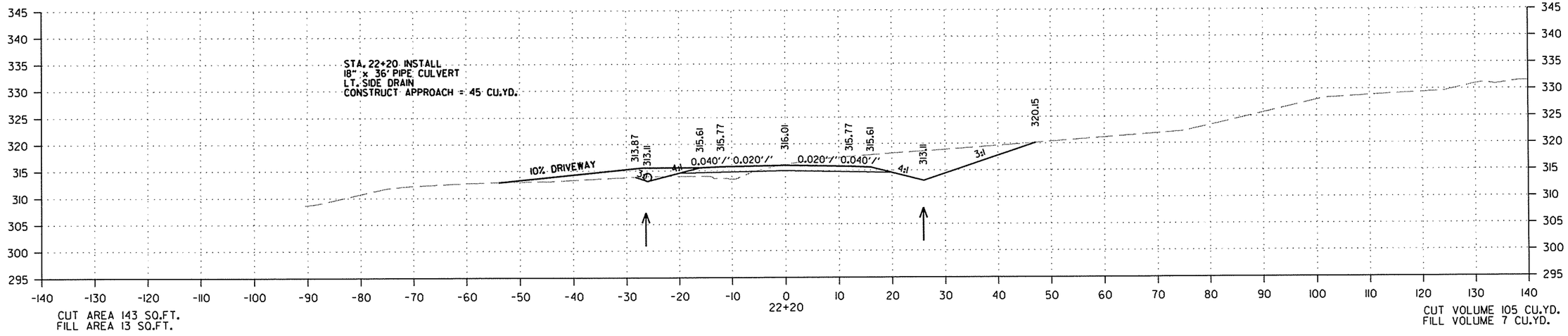
R080397.DGN

FRIENDSHIP RD.
CROSS SECTIONS STA. 21+27 TO STA. 22+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.		080397	243	244

(2) CROSS SECTIONS





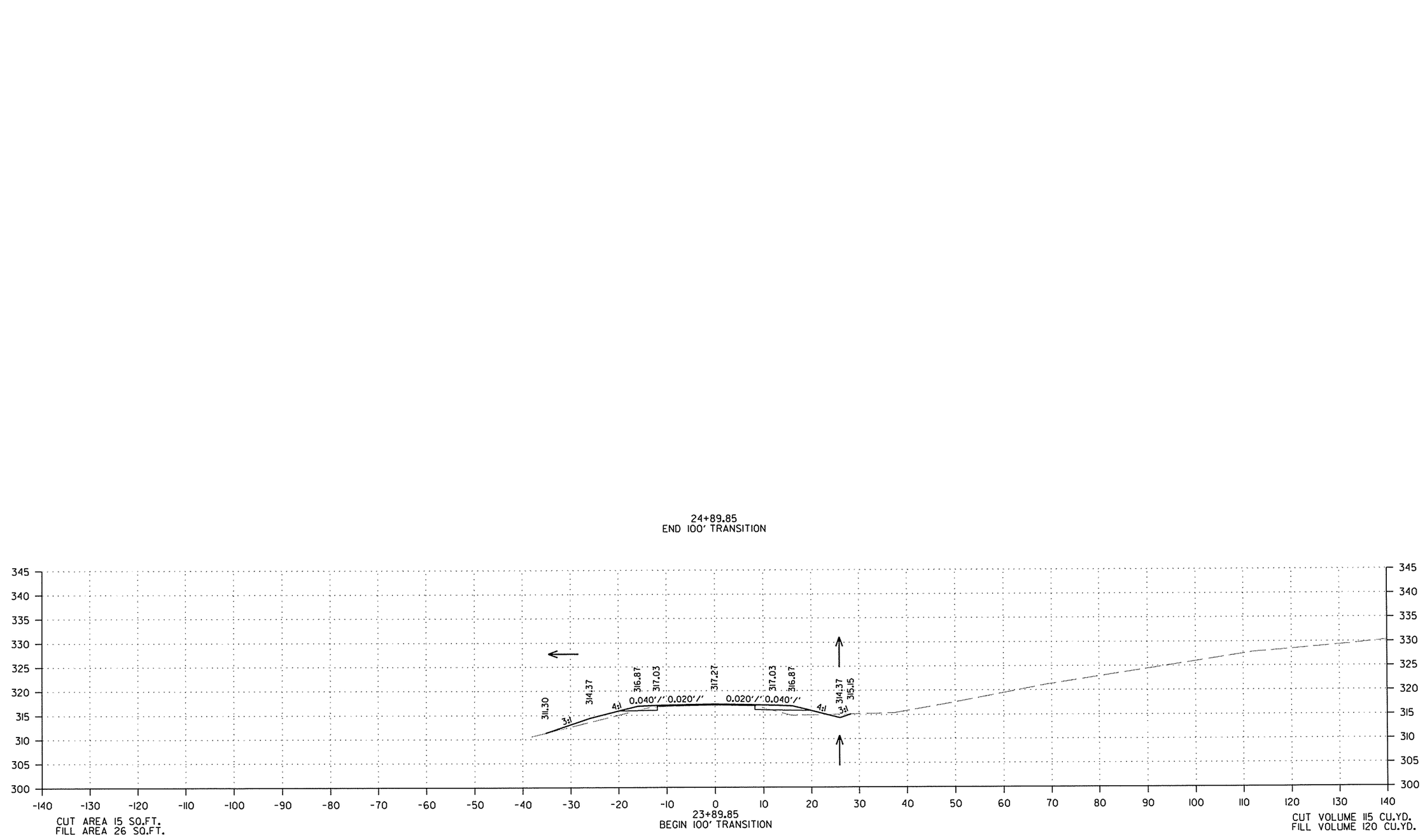
FRIENDSHIP RD.
CROSS SECTIONS STA. 22+20 TO STA. 23+00

10/26/2015

R080397.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.		080397	244	244

(2) CROSS SECTIONS



FRIENDSHIP RD.
CROSS SECTIONS STA. 23+89.85

10/26/2015

R080397.DGN