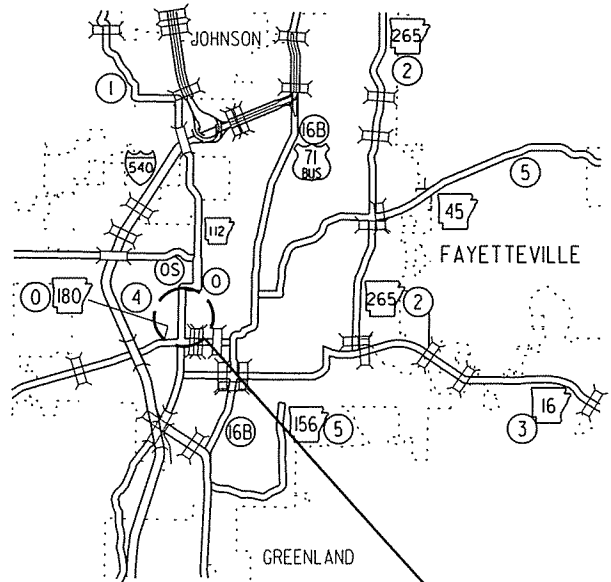


040581

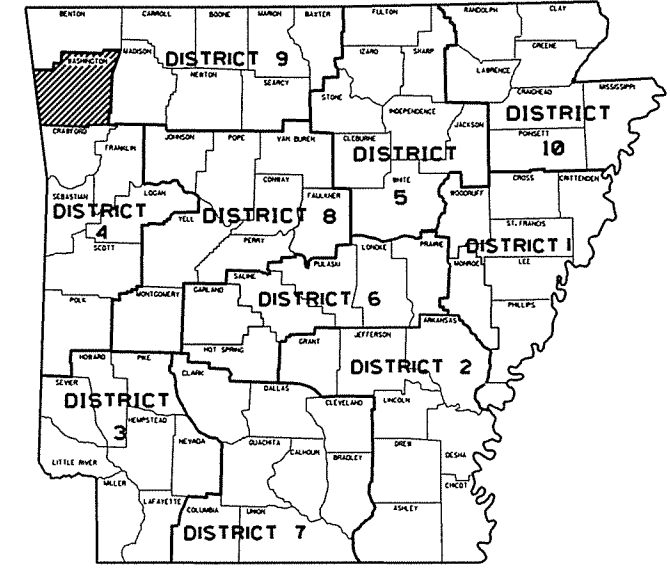
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						040581	1	106
				② HWY. 180 - LEROY POND DR. (HWY. 112) (FAYETTEVILLE) (S)				

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY**

**HWY. 180 - LEROY POND DR. (HWY. 112)
(FAYETTEVILLE) (S)
WASHINGTON COUNTY
ROUTE 112 SECTION 0
F.A.P. NO. STP-STPU-9142(31)
JOB 040581**



VICINITY MAP
PROJECT LOCATION



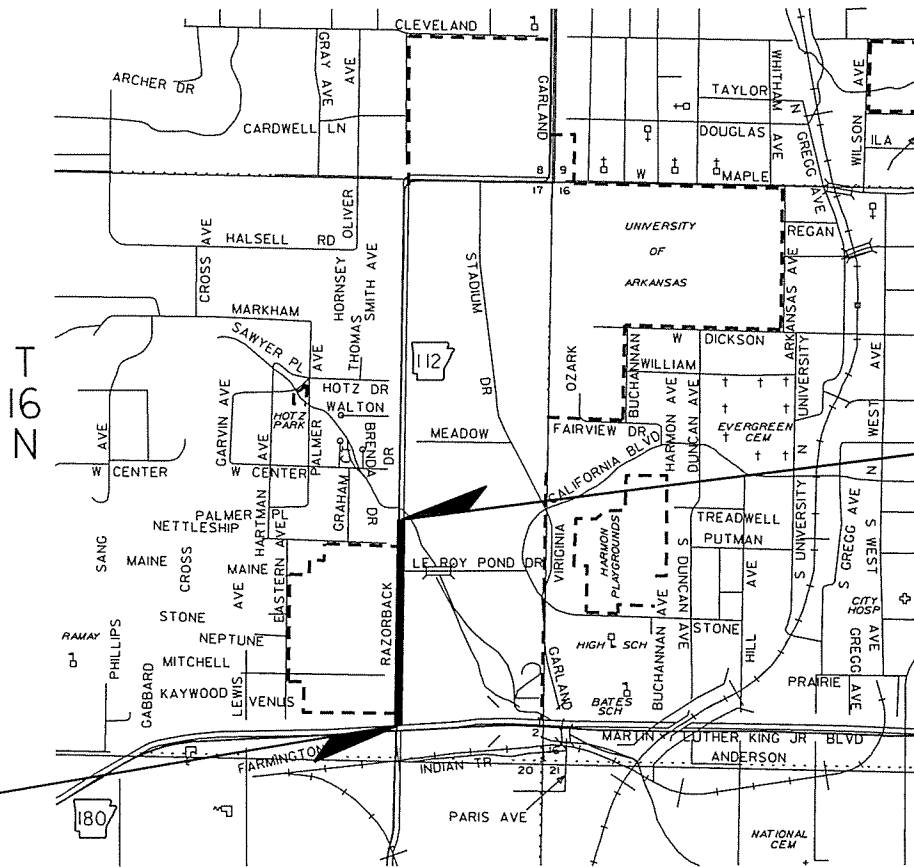
ARKANSAS HWY. DIST. 4

DESIGN TRAFFIC DATA

DESIGN YEAR	-----	2014
2014 ADT	-----	18,000
2034 ADT	-----	25,500
2034 DHV	-----	2805
DIRECTIONAL DISTRIBUTION	-----	60%
TRUCKS	-----	3%
DESIGN SPEED	-----	40 MPH



NOT TO SCALE
R30W



STA. 103+01.0
BEGIN JOB 040581
(RAZORBACK ROAD)
LOG MILE =1.474

STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)



APPROVED



Ralph J. Hall
DEPUTY DIRECTOR
AND CHIEF ENGINEER

PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N36° 03' 24"	N36° 03' 33"	N36° 03' 43"
LON.	W94° 10' 50"	W94° 10' 49"	W94° 10' 49"

GROSS LENGTH OF PROJECT 1873.90 FEET OR 0.355 MILES
NET LENGTH OF ROADWAY 1873.90 FEET OR 0.355 MILES
NET LENGTH OF BRIDGES 0.00 FEET OR 0.000 MILES
NET LENGTH OF PROJECT 1873.90 FEET OR 0.355 MILES

P.E. JOB 040418

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		2	106

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SHEET NO.	TITLE	DRWG. NO.	DATE
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2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS AND GENERAL NOTES		
3 - 4	TYPICAL SECTIONS OF IMPROVEMENT		
5	SPECIAL DETAILS		
6 - 9	TEMPORARY EROSION CONTROL DETAILS		
10 - 15	MAINTENANCE OF TRAFFIC		
16 - 17	PERMANENT PAVEMENT MARKING DETAILS		
18 - 21	QUANTITIES		
22	SUMMARY OF QUANTITIES AND REVISIONS		
23 - 25	SURVEY CONTROL DETAILS		
26 - 31	PLAN AND PROFILE SHEETS		
32 - 36	SIGNALIZATION PLAN SHEETS		
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38	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	11-29-07
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42	DETAILS OF DROP INLETS (TYPE C)	FPC-9E	8-22-02
43	DETAILS OF DROP INLET (TYPE MO)	FPC-9M	8-22-02
44	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	FPC-9S	7-26-12
45	PRECAST CONCRETE BOX CULVERTS	PBC-1	12-15-11
46	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1	12-15-11
47	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	12-15-11
48	PAVEMENT MARKING DETAILS	PM-1	9-12-13
49	DETAILS OF PIPE UNDERDRAIN	PU-1	4-10-03
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54	HEAVY DUTY PULL BOX	SD-6	9-12-13
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56	SERVICE POINT	SD-9	9-12-13
57	STEEL POLE WITH MAST ARM	SD-11	9-12-13
58	DETAILS OF SPECIAL ITEMS	SI-1	9-12-13
59	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	12-15-11
60	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-12-13
61	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
62	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
63	TEMPORARY EROSION CONTROL DEVICES	TEC-2	6-02-94
64	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-03-94
65	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1	11-10-05
66	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X003-1	5-10-66
67	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-200X-0	2-15-63
68 - 106	CROSS SECTIONS		

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

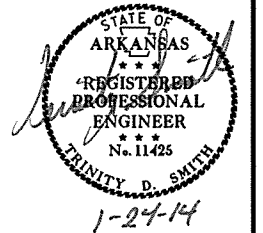
GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- 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.
- 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.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- 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.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- 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.

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

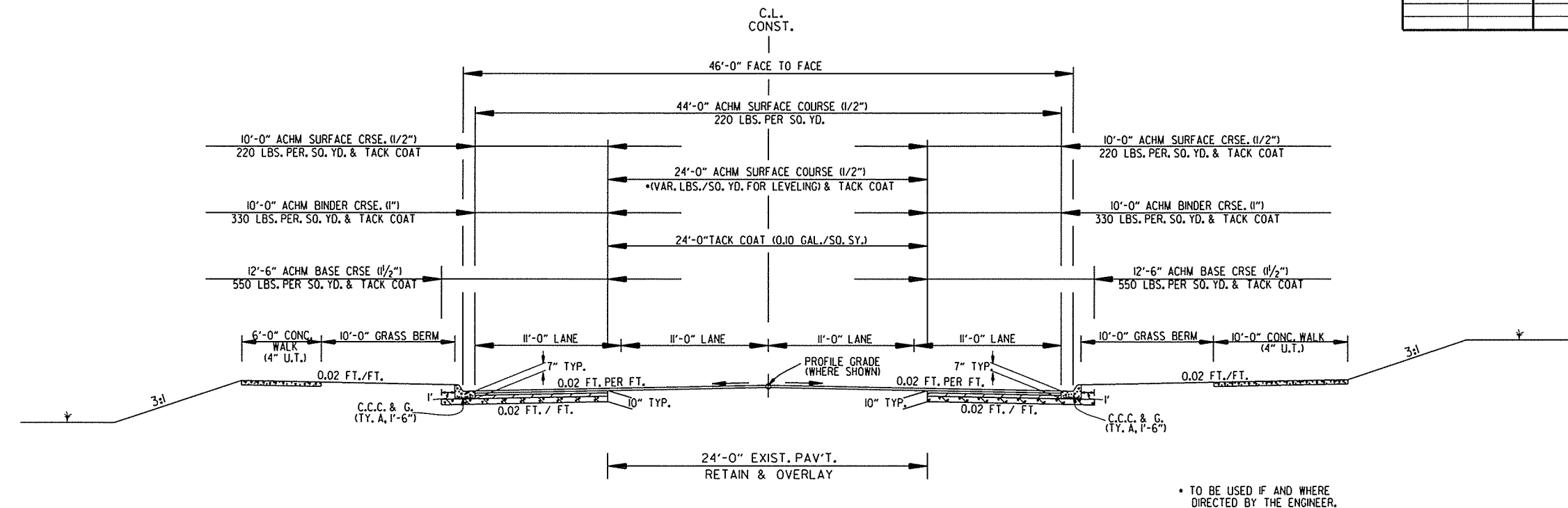
NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
620-1	MULCH COVER
711-1	CONCRETE PULL BOX
714-1	DESIGN AND MATERIAL REQUIREMENTS FOR TRAFFIC SIGNAL MAST ARMS AND POLES
715-1	DESIGN AND MATERIAL REQUIREMENTS FOR TRAFFIC SIGNAL PEDESTAL POLES
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 040581	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 040581	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 040581	CABINET DRAWER ASSEMBLY
JOB 040581	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
JOB 040581	EDGE CARD VIDEO PROCESSOR
JOB 040581	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 040581	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 040581	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 040581	INTERNET BIDDING
JOB 040581	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 040581	LED TRAFFIC SIGNAL HEAD
JOB 040581	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 040581	MAINTENANCE OF TRAFFIC
JOB 040581	PARTNERING REQUIREMENTS
JOB 040581	SEQUENCE OF CONSTRUCTION
JOB 040581	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 040581	SITE USE (A + C METHOD)
JOB 040581	STORM WATER POLLUTION PREVENTION PLAN
JOB 040581	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 040581	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040581	SYSTEM LOCAL CONTROLLER
JOB 040581	UTILITY ADJUSTMENTS
JOB 040581	VALUE ENGINEERING
JOB 040581	VIDEO DETECTOR (COLOR)
JOB 040581	WARM MIX ASPHALT



2 INDEX OF SHEETS, GOV. SPECS. & GEN. NOTES

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				6	ARK.			
				JOB NO.	040581		3	106

2 TYPICAL SECTIONS OF IMPROVEMENT



4 LANE TANGENT SECTION
 STA. 107+50 - STA. 113+73
 STA. 120+49 - STA. 121+75

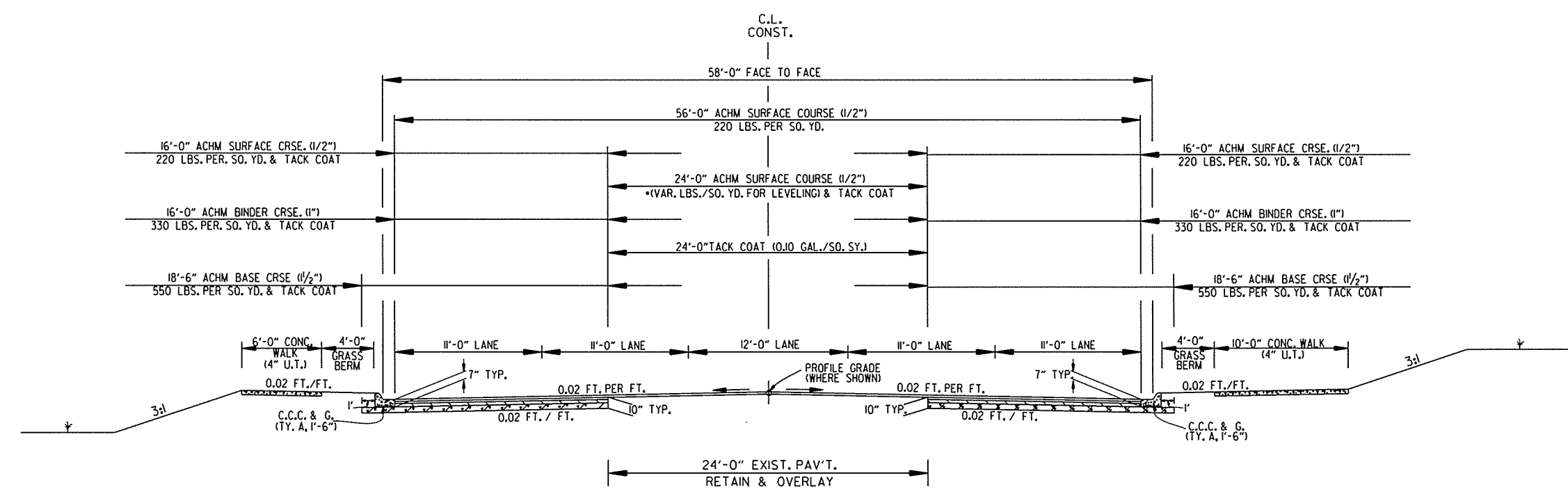
* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTES:
 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 APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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

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

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED 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.



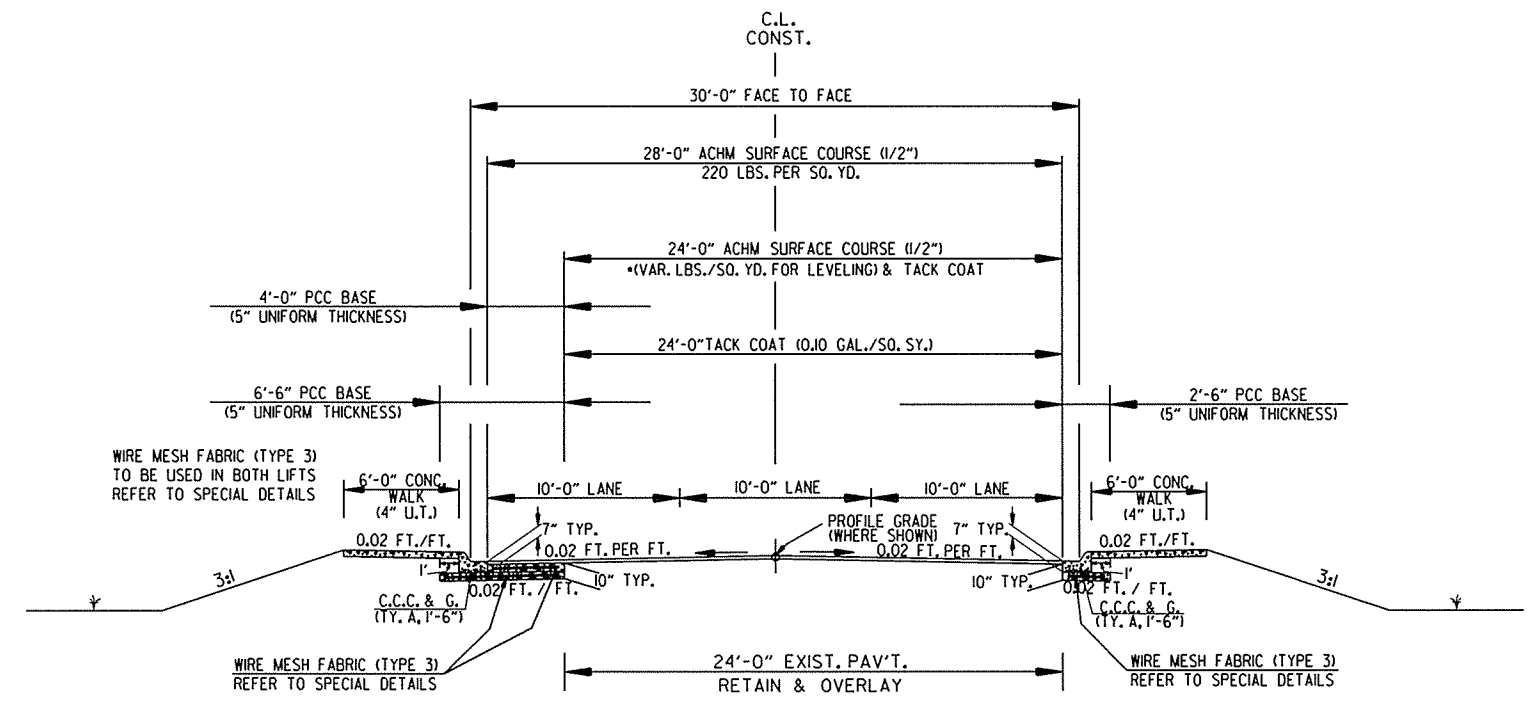
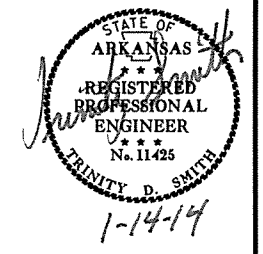
5 LANE TANGENT SECTION
 STA. 103+01.10 - STA. 105+90
 STA. 115+33 - STA. 118+89

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

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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.	040581		4	106

2 TYPICAL SECTIONS OF IMPROVEMENT



LEROY POND

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

NOTES:
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 APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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

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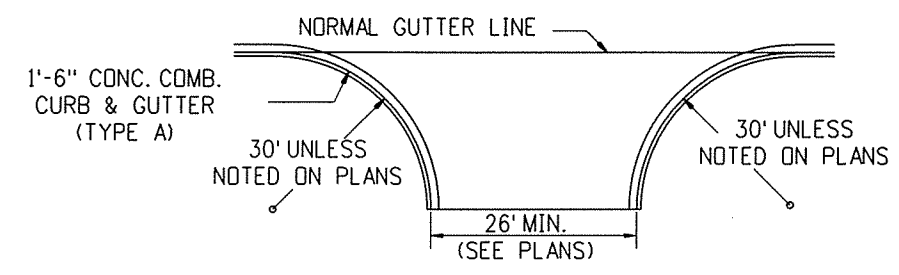
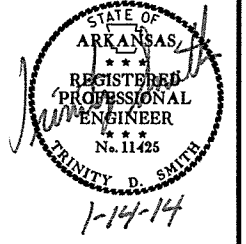
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9/19/2013

R040581.DGN

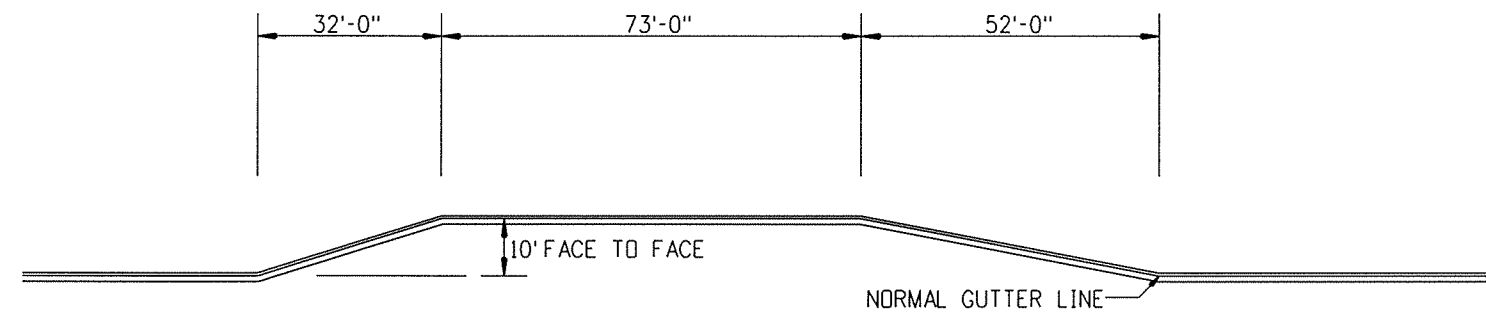
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				6	ARK.			
JOB NO. 040581							5	106

2 SPECIAL DETAILS



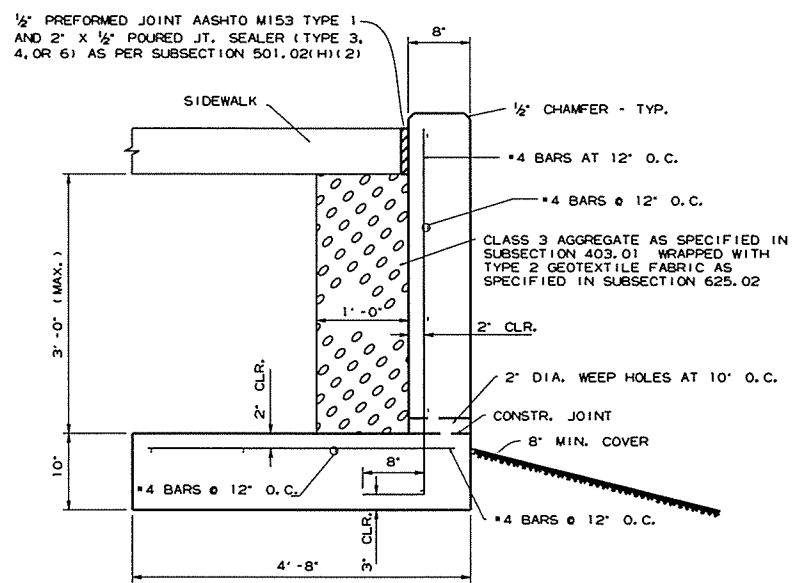
DETAIL OF TURNOUTS FOR ASPHALT STREETS

NOTE: THE TYPICAL SECTION FOR THE CITY STREET CONNECTIONS IN THE CURB & GUTTER SECTION SHALL MATCH THE PROPOSED WIDENING SECTION SHOWN FOR THE MAIN LANES. UNLESS OTHERWISE NOTED ON THE PLANS, ALL CITY STREET RADII WILL BE 30'.



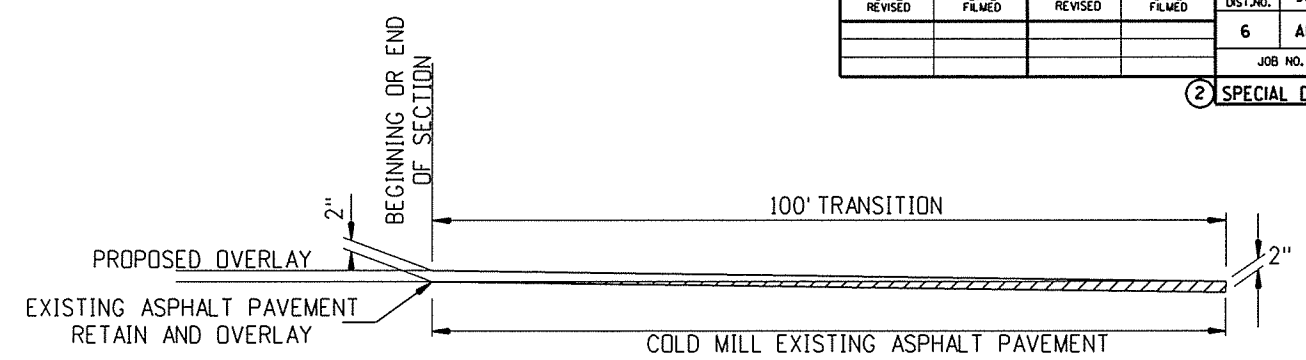
BUS TURNOUT DETAIL

NOTE: THE TYPICAL SECTION FOR THE BUS TURNOUT SHALL MATCH THE PROPOSED MAIN LANES.



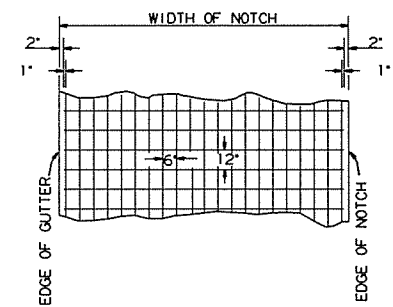
NOTES:
 JOINTS IN THE WALL SHALL MATCH THE TYPE AND SPACING OF THE JOINTS IN THE WALK.
 ALL CONCRETE SHALL BE CLASS S (F' C=3,500 PSI) AND SHALL BE POURED IN THE DRY.
 REINFORCING STEEL SHALL BE AASHTO M31 OR M53, GRADE 60 (FY=60,000 PSI).
 PAYMENT FOR THE WEEP HOLES, CLASS 3 AGGREGATE, TYPE 2 GEOTEXTILE FABRIC, PREFORMED JOINT FILLER, POURED JOINT SEALER, REINF. STEEL, AND CONCRETE SHALL BE INCLUDED IN THE UNIT BID PRICE PER SQ. YD. FOR CONCRETE WALKS (TYPE SPECIAL).

**CONCRETE RETAINING WALL SPECIAL DETAIL
 MAX HEIGHT 3'-0"**



COLD MILLING DETAIL AT EXISTING PAVEMENT TIE-INS

NOTE: 50' PER 1" OF OVERLAY FOR MAIN LANES

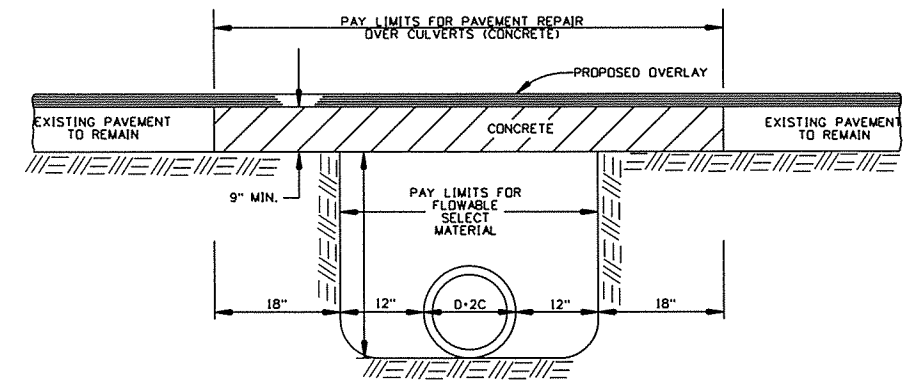


DETAIL OF REINFORCING STEEL FOR P.C.C. BASE PAVEMENT (WIRE MESH TYPE 3)

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

NOTES:

- LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
- MESH FABRIC IS NOT REQUIRED WHEN THE WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
- 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' U.T.).



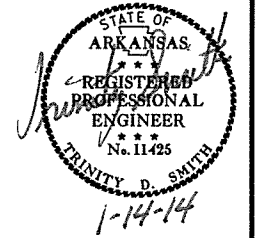
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

8/19/2013
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SPECIAL DETAILS

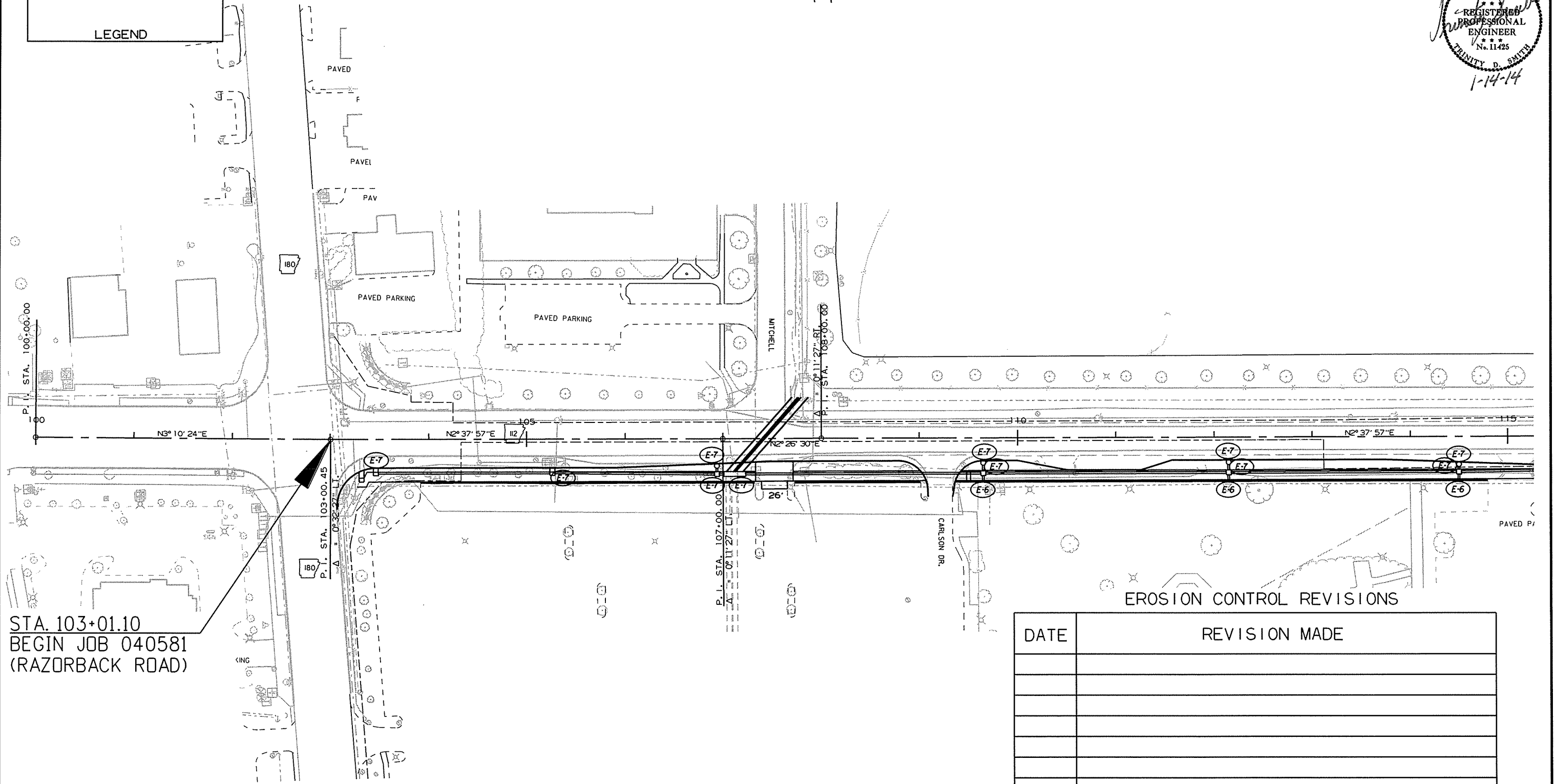
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2 TEMPORARY EROSION CONTROL DETAILS



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

LEGEND



STA. 103+01.10
BEGIN JOB 040581
(RAZORBACK ROAD)

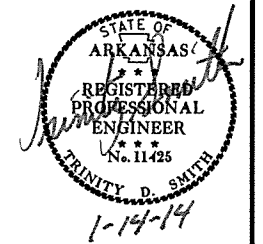
EROSION CONTROL REVISIONS

DATE	REVISION MADE

8/15/2013 R040581.DGN

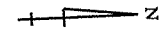
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JOB NO. 040581							7	106

② TEMPORARY EROSION CONTROL DETAILS



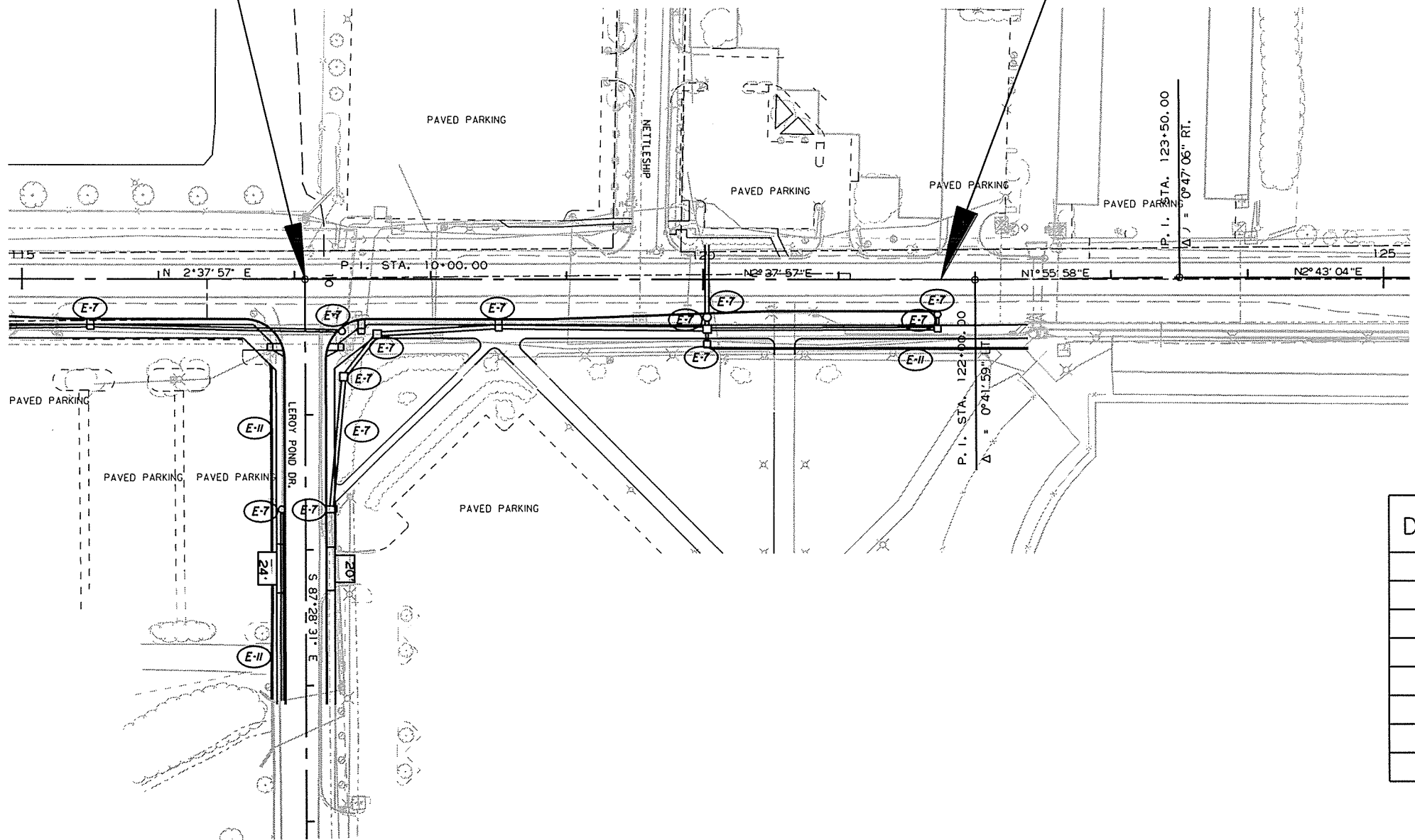
	ROCK DITCH CHECKS
	DROP INLET SILT FENCE
	SILT FENCE

LEGEND



STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)

STA. 117+04.94 HWY. 112
STA. 10+00 LEROY POND DR.
∠ 90° 00' 00"

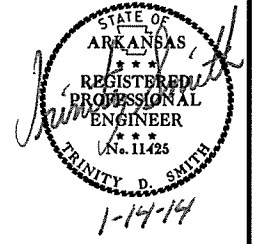


EROSION CONTROL REVISIONS

DATE	REVISION MADE

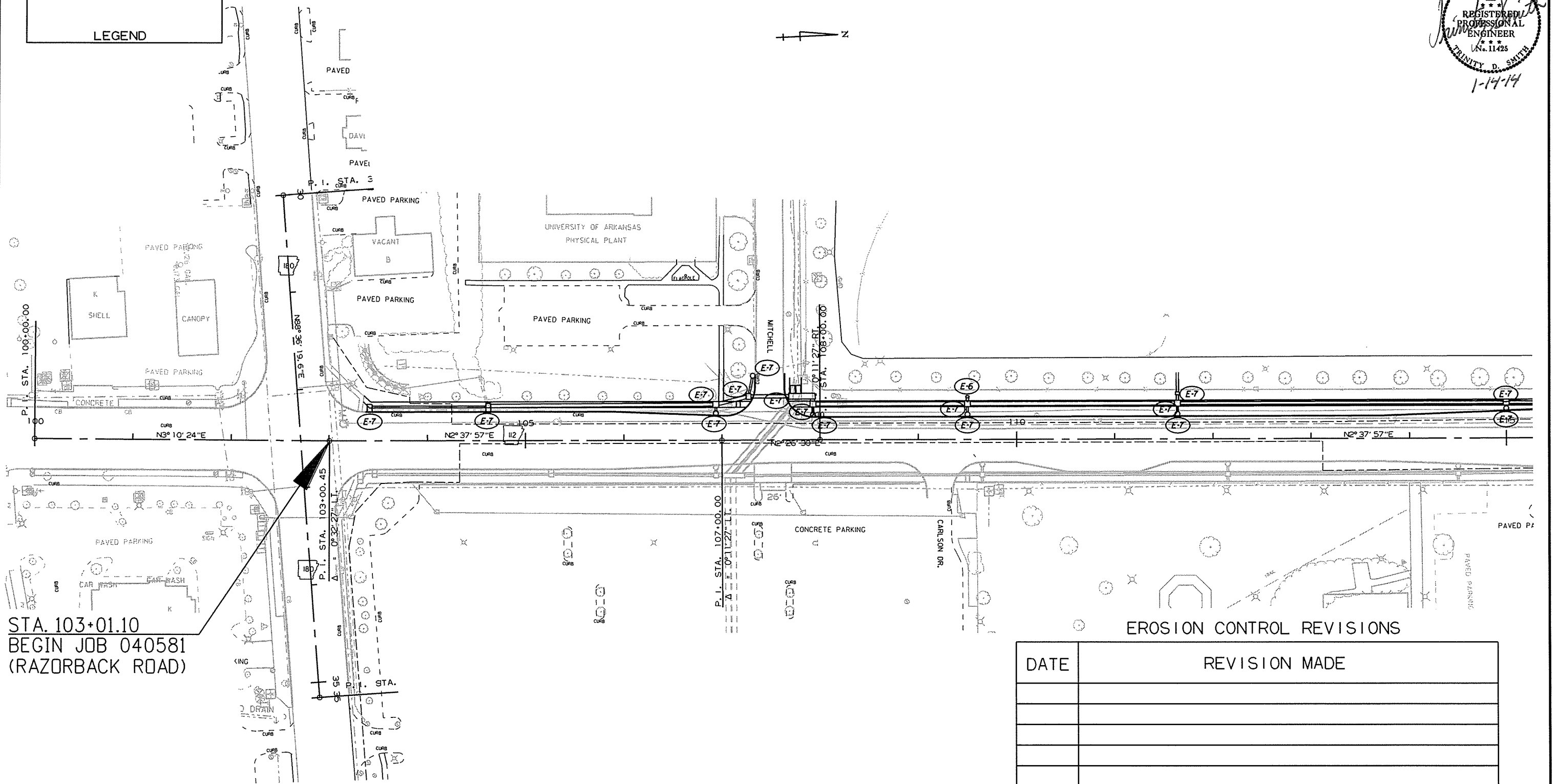
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				6	ARK.		8	106

2 TEMPORARY EROSION CONTROL DETAILS



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

LEGEND



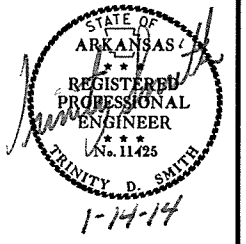
STA. 103+01.10
 BEGIN JOB 040581
 (RAZORBACK ROAD)

EROSION CONTROL REVISIONS

DATE	REVISION MADE

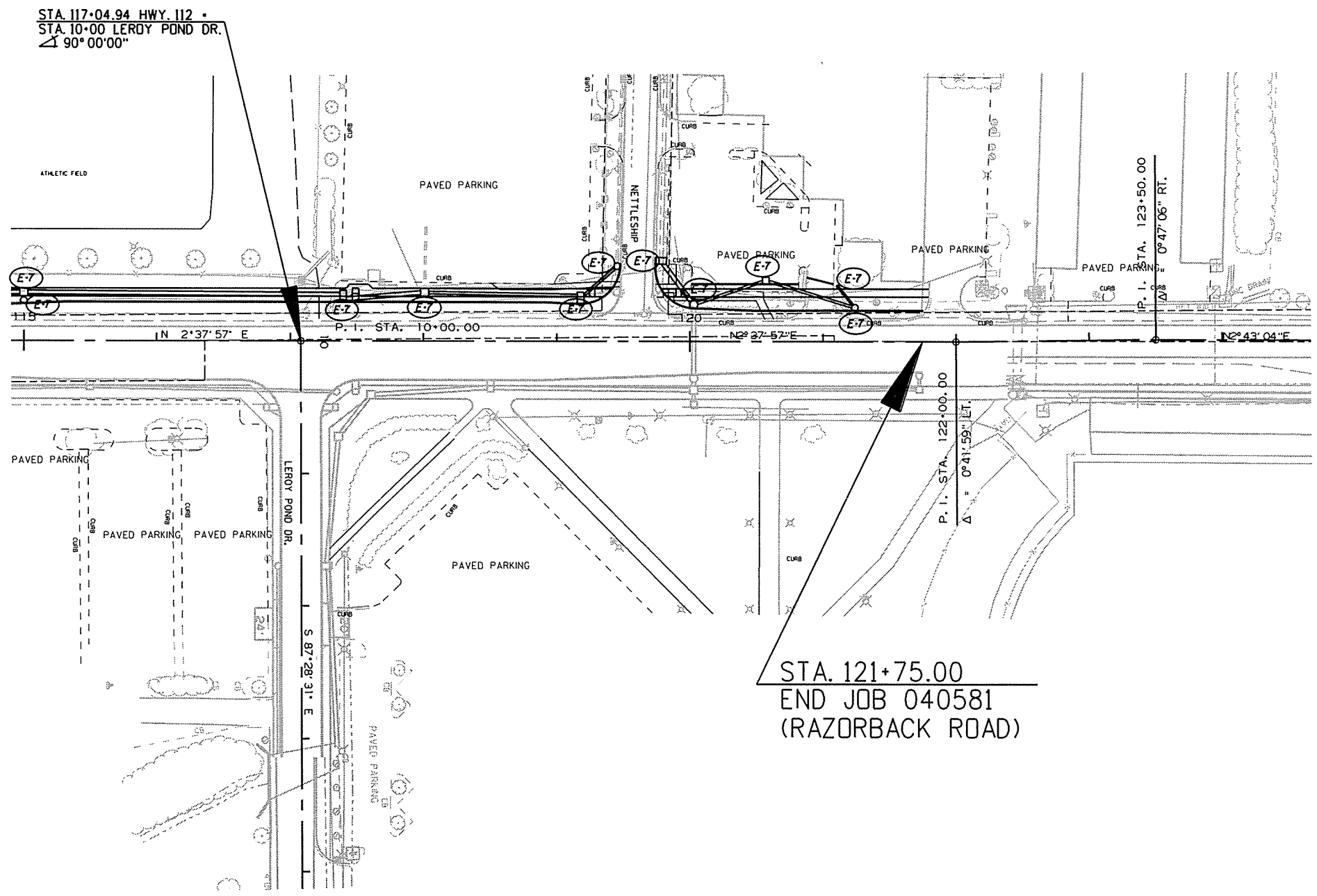
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② TEMPORARY EROSION CONTROL DETAILS



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

LEGEND



EROSION CONTROL REVISIONS

DATE	REVISION MADE

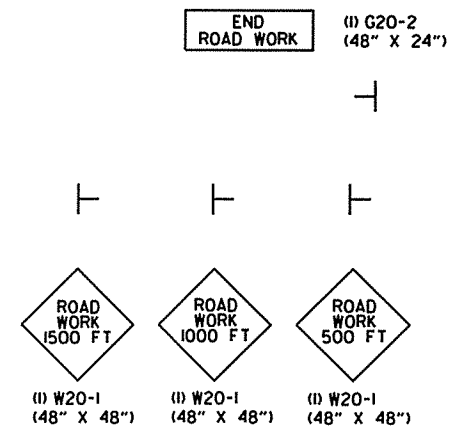
8/15/2013
R040581.DGN

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.	040581		10	106

② MAINTENANCE OF TRAFFIC



THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4' OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.



ADVANCE WARNING SIGN PLACEMENT
 PLACE ON HWY. 112 AT THE BEGINNING AND END OF THE PROJECT AND ON HWY. 180. ALL STAGES

MAINTENANCE OF TRAFFIC QUANTITIES: STAGE 1

- SIGNS = 370.0 LIN. FT.
- VERTICAL PANELS = 52 EACH
- TRAFFIC DRUMS = 42 EACH
- BARRICADES = 32 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS = 7,359 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS (ARROW) = 1 EACH

STAGE 1: RIGHT SIDE CONSTRUCTION

INSTALL ADVANCE WARNING SIGNS AT THE BEGINNING AND END OF PROJECT AND REFER TO MAINTENANCE OF TRAFFIC SP.

PLACE W20-1 (ROAD WORK AHEAD) SIGNS ON ALL INTERSECTING STREETS, DELINEATE DRIVEWAYS AND CITY STREETS ON THE SIDE BEING WIDENED WITH TRAFFIC DRUMS (6 PER DRIVE) AS SHOWN ON PLANS. MAINTAIN TRAFFIC THROUGHOUT THE PROJECT USING VERTICAL PANELS PLACED AT 40' O.C. ON THE RIGHT SIDE.

CONSTRUCT NOTCH AND WIDEN ON RIGHT SIDE OF HWY. 10 UP TO THE FINAL 2" LIFT OF SURFACE COURSE.

STAGE 2: LEFT SIDE CONSTRUCTION

MAINTAIN TRAFFIC USING VERTICAL PANELS PLACED 40' O.C. ON SIDE BEING WIDENED. DELINEATE DRIVEWAYS AND CITY STREETS ON THE SIDE BEING WIDENED WITH TRAFFIC DRUMS (6 PER DRIVE) AS SHOWN ON PLANS. CONSTRUCT THE NOTCH AND WIDEN SECTION UP TO THE FINAL 2" LIFT OF SURFACE COURSE.

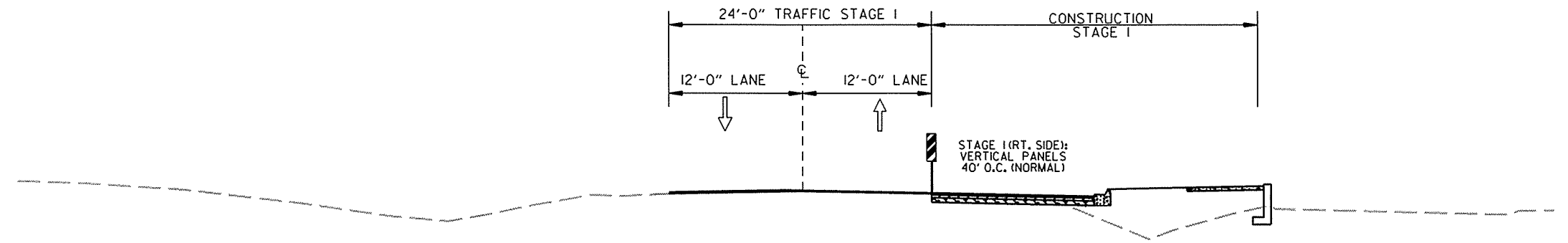
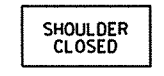
CONSTRUCT FINAL ACHM SURFACE COURSE UNDER TRAFFIC AND APPLY FINAL STRIPING AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

NOTE: VERTICAL PANELS 40' O.C.

NOTE: R4-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



NOTE: RSP-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



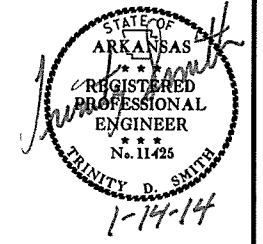
MAINTENANCE OF TRAFFIC DETAILS - STAGE 1

8/15/2013

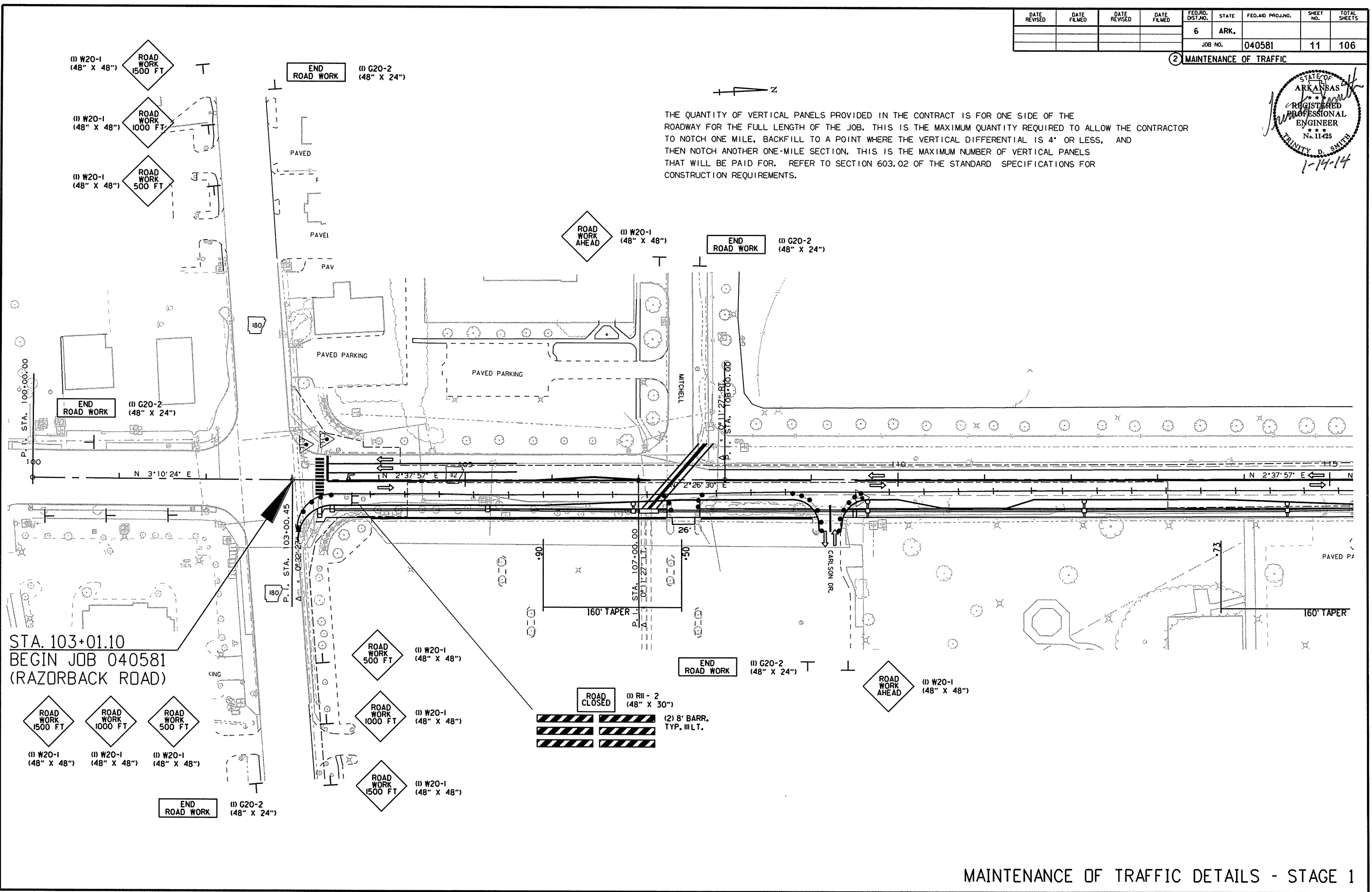
RO40581.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		11	106

② MAINTENANCE OF TRAFFIC



THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

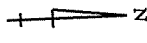
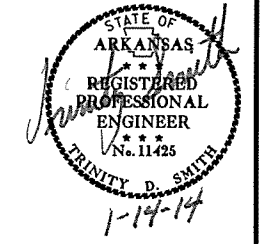


STA. 103+01.10
BEGIN JOB 040581
(RAZORBACK ROAD)

8/15/2013
R040581.DGN

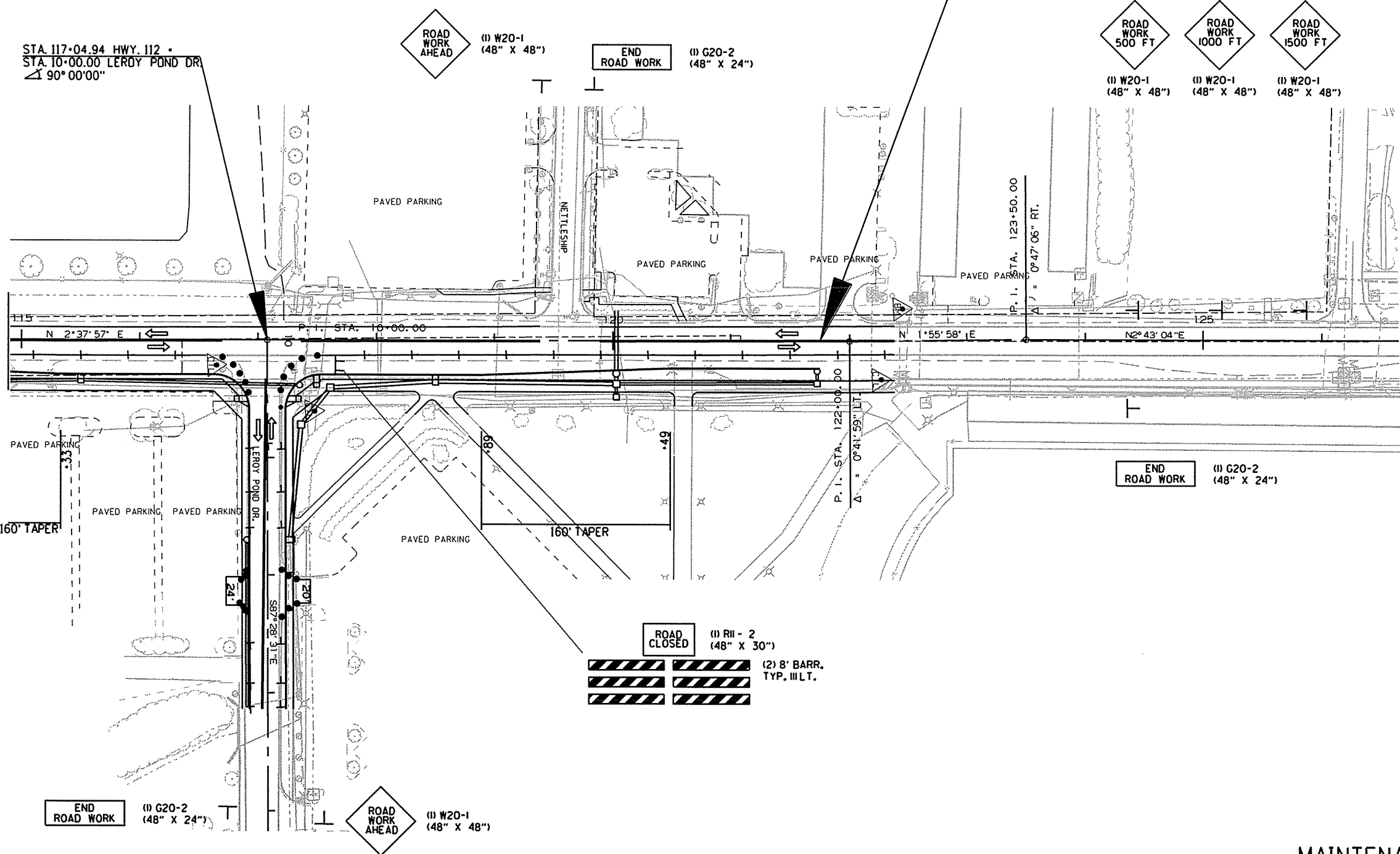
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		12	106

② MAINTENANCE OF TRAFFIC



STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)

STA. 117+04.94 HWY. 112 •
STA. 10+00.00 LEROY POND DR.
∠ 90° 00' 00"

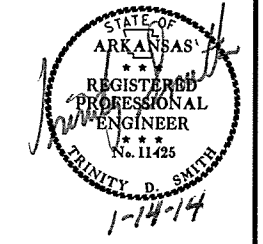


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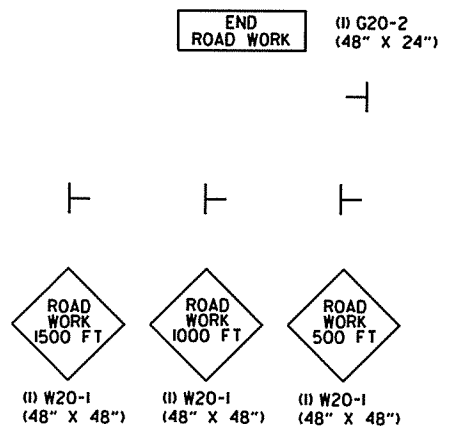
RO40581.DGN

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.	040581		13	106

② MAINTENANCE OF TRAFFIC



THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.



ADVANCE WARNING SIGN PLACEMENT
 PLACE ON HWY. 10 AT THE BEGINNING AND END OF THE PROJECT.
 ALL STAGES

MAINTENANCE OF TRAFFIC : STAGE II

- SIGNS = 370.0 LIN. FT.
- VERTICAL PANELS = 42 EACH
- TRAFFIC DRUMS = 100 EACH
- BARRICADES = 32 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS = 625 LIN. FT.
- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 563 LIN. FT.

STAGE 1: RIGHT SIDE CONSTRUCTION

INSTALL ADVANCE WARNING SIGNS AT THE BEGINNING AND END OF PROJECT AND REFER TO MAINTENANCE OF TRAFFIC SP.

PLACE W20-1 (ROAD WORK AHEAD) SIGNS ON ALL INTERSECTING STREETS, DELINEATE DRIVEWAYS AND CITY STREETS ON THE SIDE BEING WIDENED WITH TRAFFIC DRUMS (6 PER DRIVE) AS SHOWN ON PLANS. MAINTAIN TRAFFIC THROUGHOUT THE PROJECT USING VERTICAL PANELS PLACED AT 40' O.C. ON THE RIGHT SIDE.

CONSTRUCT NOTCH AND WIDEN ON RIGHT SIDE OF HWY. 10 UP TO THE FINAL 2" LIFT OF SURFACE COURSE.

STAGE 2: LEFT SIDE CONSTRUCTION

MAINTAIN TRAFFIC USING VERTICAL PANELS PLACED 40' O.C. ON SIDE BEING WIDENED. DELINEATE DRIVEWAYS AND CITY STREETS ON THE SIDE BEING WIDENED WITH TRAFFIC DRUMS (6 PER DRIVE) AS SHOWN ON PLANS. CONSTRUCT THE NOTCH AND WIDEN SECTION UP TO THE FINAL 2" LIFT OF SURFACE COURSE.

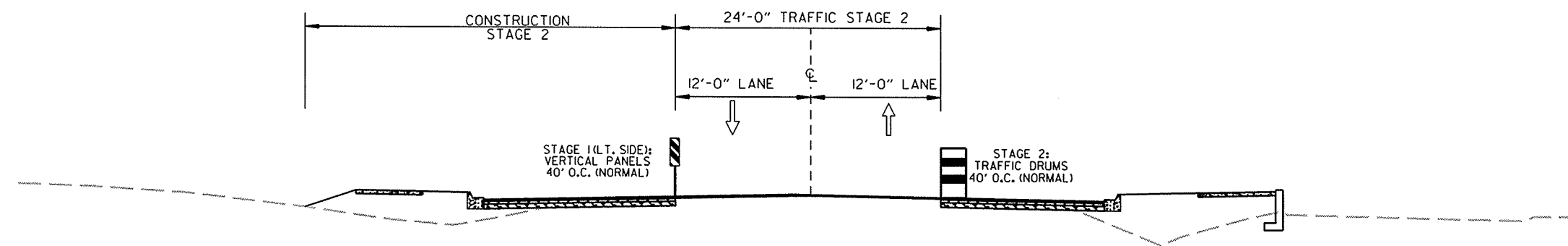
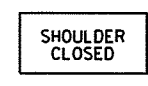
CONSTRUCT FINAL ACHM SURFACE COURSE UNDER TRAFFIC AND APPLY FINAL STRIPING AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

NOTE: VERTICAL PANELS 40' O.C.

NOTE: R4-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

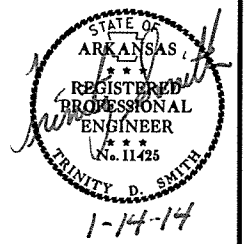


NOTE: RSP-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

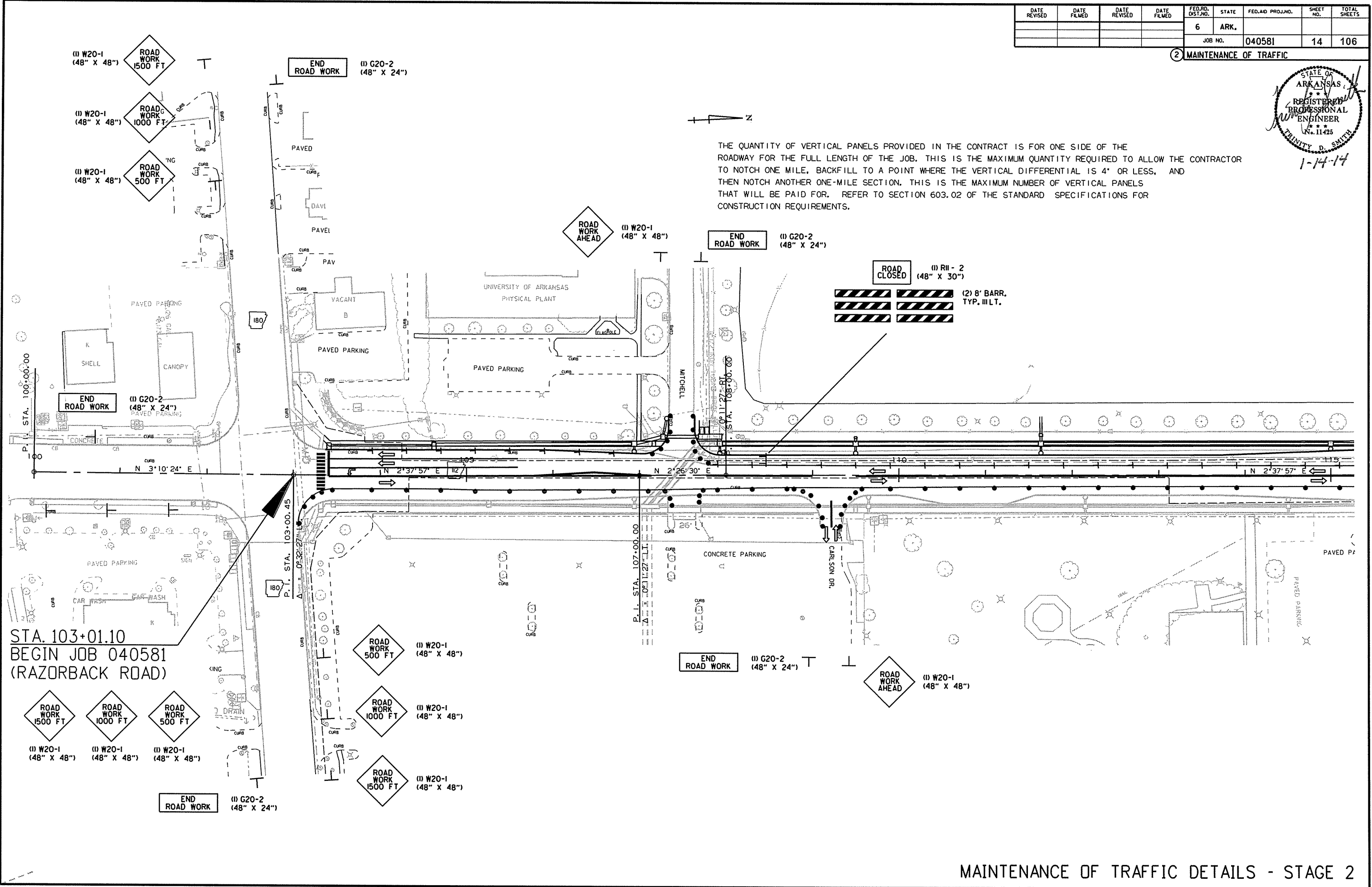


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		14	106

2 MAINTENANCE OF TRAFFIC



THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4' OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

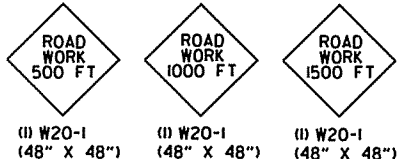
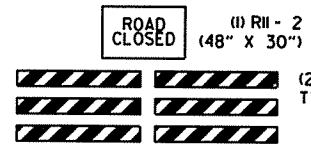
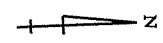
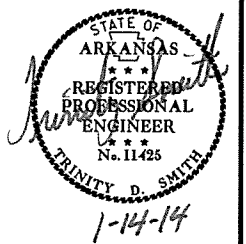


STA. 103+01.10
BEGIN JOB 040581
(RAZORBACK ROAD)

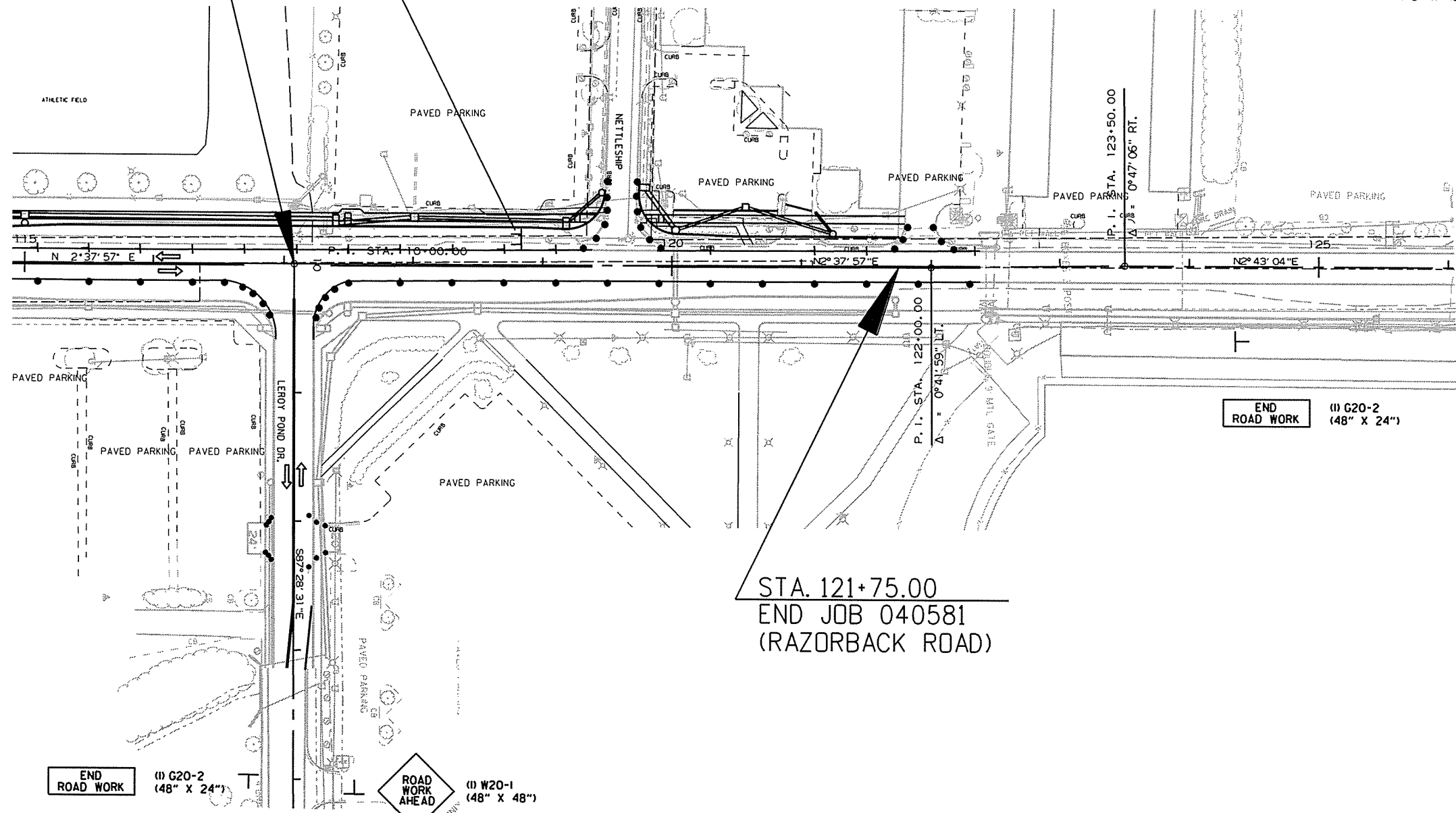
8/15/2013
R040581.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		15	106

2 MAINTENANCE OF TRAFFIC



STA. 117+04.94 HWY. 112
 STA. 10+00.00 LEROY POND DR.
 90° 00' 00"



STA. 121+75.00
 END JOB 040581
 (RAZORBACK ROAD)

8/15/2013
 R040581.DGN

RAISED PAVEMENT MARKERS (TYPE II)(YELLOW/YELLOW) ARE TO BE PLACED ON EACH SIDE OF THE CENTER TURN LANE AT 80' INTERVALS.

RAISED PAVEMENT MARKERS (TYPE II)(WHITE/RED) ARE TO BE PLACED ON THE LANE LINES AT 80' INTERVALS.

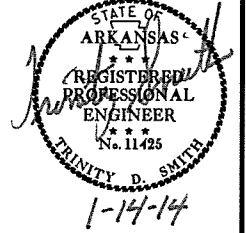
REFER TO THE PERMANENT PAVEMENT MARKING DETAILS, STD. DRWG. PM-1, AND THE LATEST EDITION OF THE MUTCD FOR ADDITIONAL PAVEMENT MARKING DETAILS.



SHARED LANE MARKING

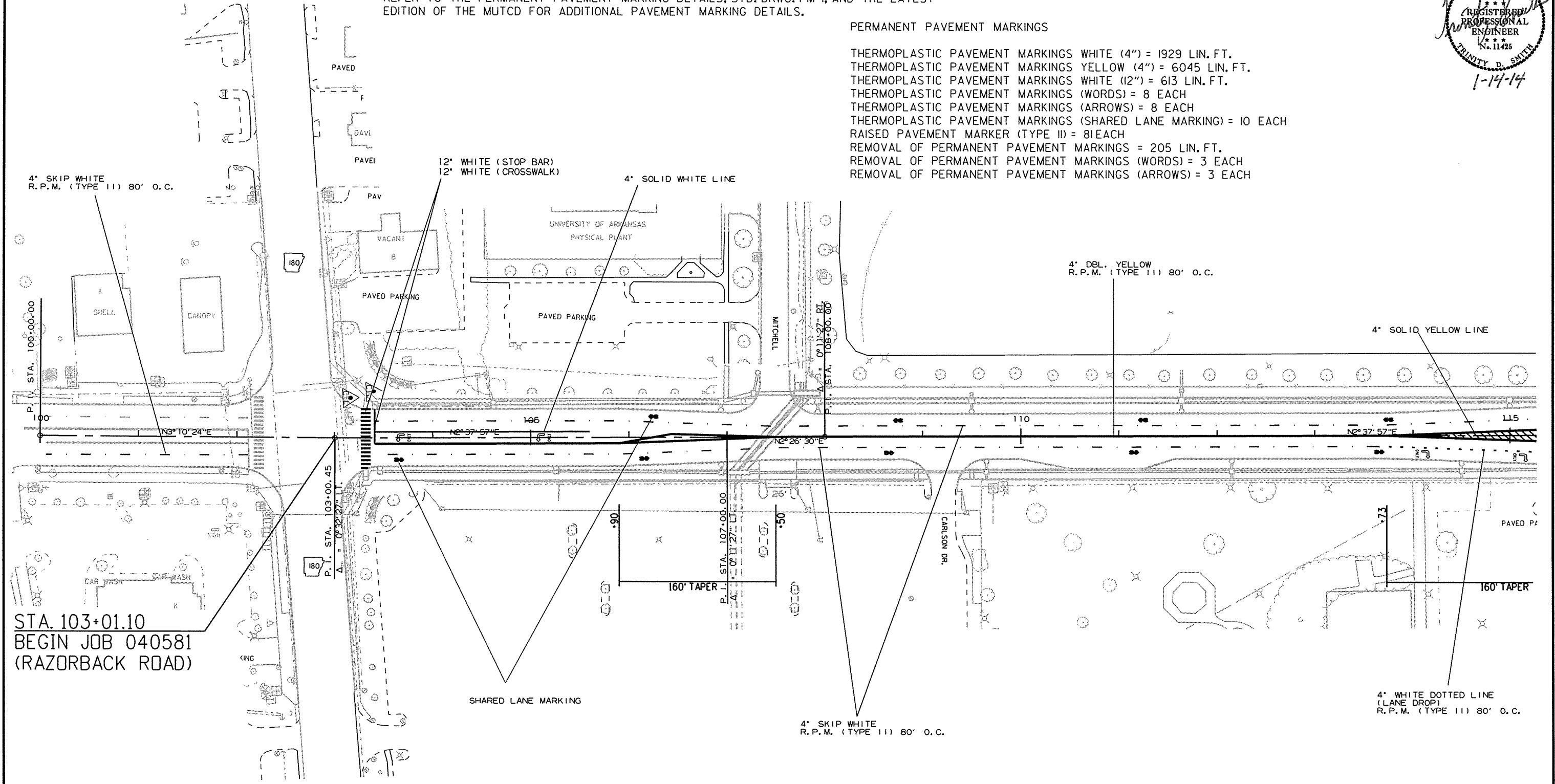
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		16	106

2 PERMANENT PAVEMENT MARKING DETAILS



PERMANENT PAVEMENT MARKINGS

- THERMOPLASTIC PAVEMENT MARKINGS WHITE (4") = 1929 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4") = 6045 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKINGS WHITE (12") = 613 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKINGS (WORDS) = 8 EACH
- THERMOPLASTIC PAVEMENT MARKINGS (ARROWS) = 8 EACH
- THERMOPLASTIC PAVEMENT MARKINGS (SHARED LANE MARKING) = 10 EACH
- RAISED PAVEMENT MARKER (TYPE II) = 81 EACH
- REMOVAL OF PERMANENT PAVEMENT MARKINGS = 205 LIN. FT.
- REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS) = 3 EACH
- REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS) = 3 EACH

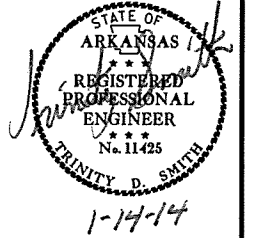


STA. 103+01.10
BEGIN JOB 040581
(RAZORBACK ROAD)

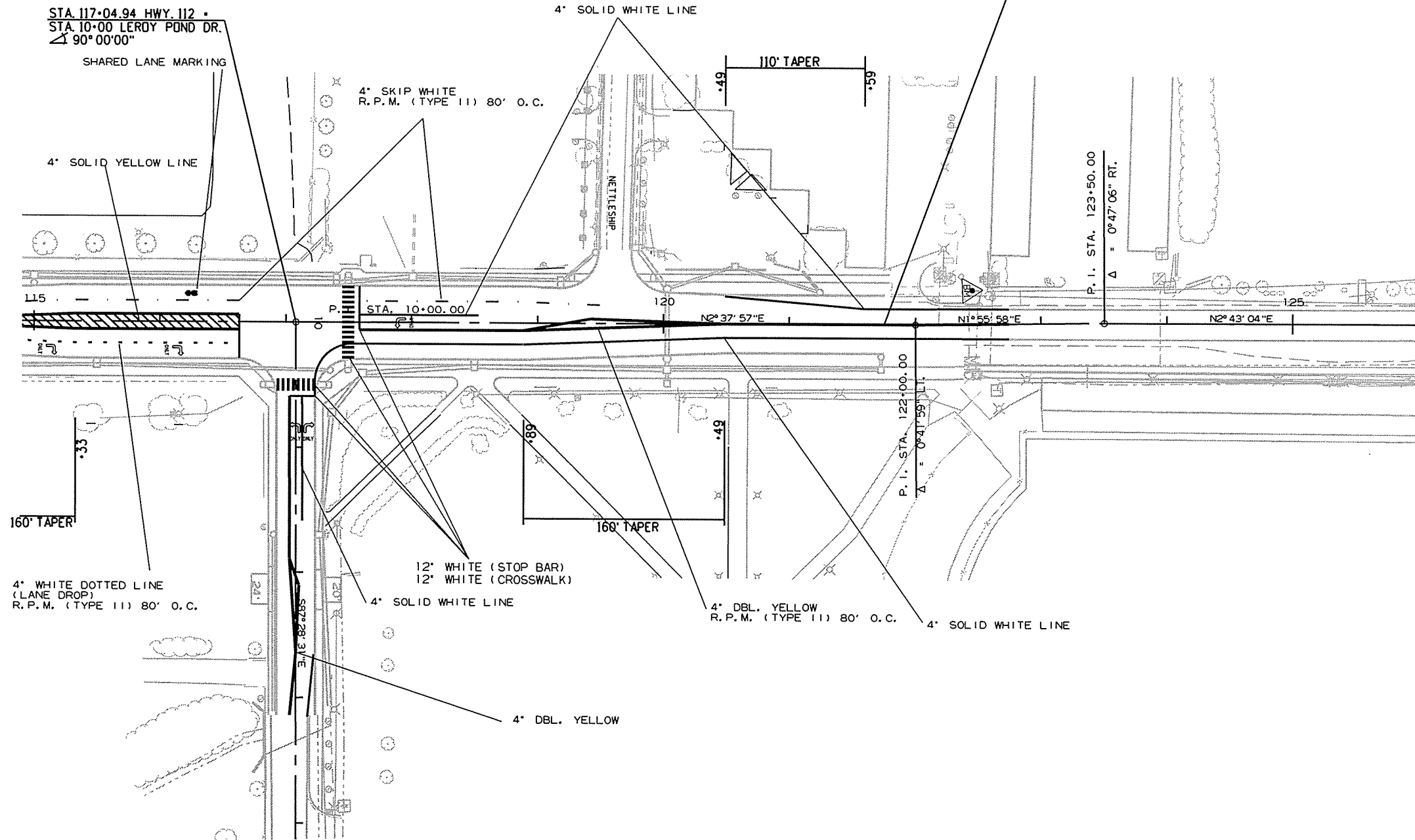
PERMANENT PAVEMENT MARKING DETAILS

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.	040581		17	106

2 PERMANENT PAVEMENT MARKING DETAILS



STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)



8/15/2013

R040581.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. 040581							18	106

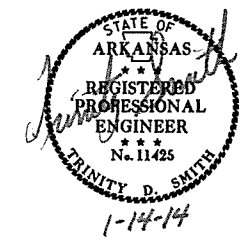
ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)
						NO.	SQ. FT.			
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	64.0			
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	64.0			
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	64.0			
W20-1	ROAD WORK AHEAD	48"x48"	4	4	4	4	64.0			
G20-2	END ROAD WORK	48"x24"	8	8	8	8	64.0			
R11-2	ROAD CLOSED	48"x30"	2	2	2	2	20.0			
R4-1	DO NOT PASS	24"x30"	2	2	2	2	10.0			
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	20.0			
	VERTICAL PANELS		52	42	52			52		
	TRAFFIC DRUMS		42	100	100				100	
	TYPE III BARRICADE-LT. (8')		4	4	4					32
TOTALS:							370.0	52	100	32

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

QUANTITIES



SOIL LOG

STATION	LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
104+00	8'RT	0-5'	31	18	A-6(11)	GRAY
112+00	15'LT	0-5'	33	18	A-6(10)	BROWN
112+00	5'LT	0-5'	32	19	A-6(9)	BROWN
120+00	24'RT	0-5'	30	13	A-6(5)	BR/GR
120+00	5'RT	0-5'	20	7	A-4(0)	GRAY
120+00	24'RT	0-5'	31	16	A-6(7)	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.

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
ENTIRE	PROJECT	STAGE 1-MAIN LANES	1007	2213
ENTIRE	PROJECT	STAGE 2-MAIN LANES	363	2355
ENTIRE	PROJECT	APPROACHES		5
		MITCHELL STREET	33	9
		CARLSON DRIVE	38	
		LEROY POND DRIVE	101	158
		NETTLESHIP STREET	29	6
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	500	500
TOTALS:			2071	5246

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL		TEMPORARY EROSION CONTROL													
			WATER	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	*SEDIMENT BASIN	*OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL				
															M.GAL.	SQ.YD.	ACRE	ACRE
ENTIRE	PROJECT	STAGE 1	23.1	1836	1.69	1.69	34.5					9	575	999			61	
ENTIRE	PROJECT	STAGE 2	31.8	2520	1.44	1.44	29.4					6	625				25	
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.												220	15	200	100	32	32	58
TOTALS:			54.9	4356	3.13	3.13	63.9	220	30	1400	1099	32	32	144				

BASIS OF ESTIMATE:
 WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
 WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
 SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
 ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
101+00	109+00	MAIN LANES	8	8
119+00	121+00	MAIN LANES	2	2
TOTALS:			10	10

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF PERMANENT PAVEMENT MARKINGS		CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKINGS							
						WORDS	ARROWS			ARROWS	WORDS	TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	4"		12" WHITE	WORDS	ARROWS	SHARED LANE MARKING
						EACH	EACH			EACH	LIN. FT.	EACH		WHITE	YELLOW				
REMOVAL OF PERMANENT PAVEMENT MARKINGS			205	205															
REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)			3				3												
REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)			3				3												
CONSTRUCTION PAVEMENT MARKINGS	7359	625			7984														
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	1							1											
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		563							563										
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)			50							50									
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			31								31								
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")			1980									1980							
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")			6045										6045						
THERMOPLASTIC PAVEMENT MARKINGS WHITE (12")			513											513					
THERMOPLASTIC PAVEMENT MARKINGS WORDS			8												8				
THERMOPLASTIC PAVEMENT MARKINGS ARROWS			8													8			
THERMOPLASTIC PAVEMENT MARKINGS SHARED LANE MARKING			10															10	
TOTALS:				205	7984	3	3	1	563	50	31	1980	6045	513	8	8		10	

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

QUANTITIES

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SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	10	STATION
201	GRUBBING	10	STATION
202	REMOVAL AND DISPOSAL OF CURB	839	LIN. FT.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	1784	LIN. FT.
202	REMOVAL AND DISPOSAL OF WALKS	992	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	2	EACH
202	REMOVAL AND DISPOSAL OF JUNCTION BOXES	1	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS	10	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	18	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING	4	SQ. YD.
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLE AND FOUNDATION	4	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	2	EACH
202	REMOVAL AND DISPOSAL OF HANDRAIL	20	LIN. FT.
202	REMOVAL AND DISPOSAL OF BOLLARDS	5	EACH
202	REMOVAL AND DISPOSAL OF PARKING METERS	5	EACH
206	FLOWABLE SELECT MATERIAL	228	CU. YD.
210	UNCLASSIFIED EXCAVATION	2071	CU. YD.
210	COMPACTED EMBANKMENT	5246	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	82	TON
309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)	1421	SQ. YD.
401	TACK COAT	1319	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	1592	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	66	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	784	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	34	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	2522	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	1	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")	132	TON
412	COLD MILLING ASPHALT PAVEMENT	1078	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	9	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	25	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY	129.77	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SP, SS, & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	370	SQ. FT.
SS & 604	BARRICADES	32	LIN. FT.
SS & 604	TRAFFIC DRUMS	100	EACH
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	7984	LIN. FT.
SS & 604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	1	EACH
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	563	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	205	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)	3	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	3	EACH
SS & 604	VERTICAL PANELS	52	EACH
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	20	LIN. FT.
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	2108	LIN. FT.
606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	2108	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	14	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	7	LIN. FT.
606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	7	LIN. FT.
SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	1027	LIN. FT.
606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	1027	LIN. FT.
SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	52	LIN. FT.
SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	296	LIN. FT.
606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	296	LIN. FT.
SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	364	LIN. FT.
606	42" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	364	LIN. FT.
SS & 606	60" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	204	LIN. FT.
SS & 606	12" SIDE DRAIN	618	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
606	SELECTED PIPE BEDDING	200	CU. YD.
609	DROP INLETS (TYPE C)	10	EACH
609	DROP INLETS (TYPE E)	3	EACH
609	DROP INLETS (TYPE MO)	17	EACH
609	DROP INLETS (TYPE ST)	1	EACH
609	JUNCTION BOXES (TYPE E)	16	EACH
609	DROP INLET EXTENSIONS (4')	8	EACH
609	YARD DRAINS	7	EACH
611	4" PIPE UNDERDRAINS	500	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	48.3	CU. YD.
SS & 620	MULCH COVER	3.13	ACRE
SS & 620	WATER	119.0	M.GAL.
621	TEMPORARY SEEDING	3.13	ACRE
621	SILT FENCE	1099	LIN. FT.
621	SAND BAG DITCH CHECKS	220	BAG
621	DROP INLET SILT FENCE	1400	LIN. FT.
621	SEDIMENT BASIN	32	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	32	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	144	CU. YD.
621	ROCK DITCH CHECKS	30	CU. YD.
624	SOLID SODDING	4369	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	300	SQ. YD.
633	CONCRETE WALKS	2765	SQ. YD.
633	CONCRETE WALKS (TYPE SPECIAL)	845	SQ. YD.
633	HAND RAILING	713	LIN. FT.
634	CONCRETE CURB (TYPE D)	570	LIN. FT.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	4122	LIN. FT.

* DENOTES ALTERNATE BID ITEMS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	040581	22 / 106

② SUMMARY OF QUANTITIES AND REVISIONS



SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
641	WHEELCHAIR RAMPS (TYPE 2)	66	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASES)	1	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1194	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	59	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	245	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	125	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	416	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	135	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	411	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	389	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 2)	2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (20')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44'-44')	1	EACH
SP	LUMINAIRE ASSEMBLY	3	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	2	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	1980	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	513	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	6045	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	8	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	8	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (SHARED LANE MARKING)	10	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	81	EACH
SP	18" STREET NAME SIGN	3	EACH
SP & 733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO CABLE	720	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP & 733	VIDEO EDGE CARD EXTENDER	1	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	8	CU. YD.
802	CLASS S CONCRETE-ROADWAY	10.71	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	1256	POUND

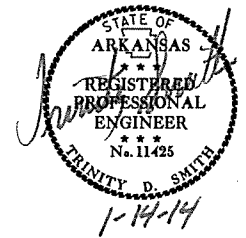
REVISIONS

DATE	REVISION	SHEET NUMBER

8/19/2013 R040581.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.	040581		23	106

② SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES

Project Name: s040418
 Date: 1/29/2009
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
 PROJECTED TO GROUND.
 Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	640640.4398	669476.8355	1443.95	CTL	T-1 3" BRASS CAP U OF A PN#1
2	639481.5405	669422.3461	1443.65	CTL	T-2 3" BRASS CAP U OF A PN#2
7	639347.3811	668114.4531	1400.16	CTL	T-7 3" BRASS CAP U OF A PN#7
8	638367.3332	668142.4270	1359.31	CTL	T-8 3" BRASS CAP U OF A PN#8
9	635952.2544	668054.5672	1273.24	CTL	T-9 3" BRASS CAP U OF A PN#9
10	634550.9097	667882.9340	1265.14	CTL	T-10 3" BRASS CAP SET IN CONC. AT INTERSECTION
11	632744.5222	667966.0518	1252.08	CTL	T-11 3" BRASS CAP U OF A PN#11
12	631695.8340	667888.4380	1246.70	CTL	T-12 3" BRASS CAP U OF A PN#12
13	635165.8758	667979.0434	1266.61	CTL	T-13 5" REBAR 2" ALUM. CAP
14	635871.3819	668011.8395	1272.47	CTL	T-14 5" REBAR 2" ALUM. CAP
15	636432.3748	668048.6375	1280.47	CTL	T-15 5" REBAR 2" ALUM. CAP
16	637167.5910	668079.8748	1295.16	CTL	T-16 5" REBAR 2" ALUM. CAP
17	637773.8357	668065.7634	1320.36	CTL	T-17 5" REBAR 2" ALUM. CAP
18	638225.5008	668128.0175	1349.51	CTL	T-18 5" REBAR 2" ALUM. CAP
19	638748.1166	668080.7274	1390.84	CTL	T-19 5" REBAR 2" ALUM. CAP
20	639472.7967	668400.4398	1385.82	CTL	T-20 5" REBAR 2" ALUM. CAP
21	639391.7178	669024.9639	1426.94	CTL	T-21 5" REBAR 2" ALUM. CAP
22	639464.4720	669466.2650	1444.54	CTL	T-22 5" REBAR 2" ALUM. CAP
23	640314.4706	669547.7937	1434.44	CTL	T-23 5" REBAR 2" ALUM. CAP
100	633343.1786	667880.7033	1259.23	GPS	AHTD GPS 720032
101	646579.6854	669777.9556	1276.03	GPS	AHTD GPS 720033
903	632342.5239	667760.8629	1244.24	BM	TBM-903 SQUARE CUT IN HEADWALL EAST SIDE HWY 112
904	630627.4078	667558.5756	1225.14	BM	TBM-904 STD AHTD CAP ON R.C. BOX OF HWY 112 AHTD DISK 720044
909	632342.5239	667760.8629	1241.40	BM	909-Q 310 GOVT. BM Q 310 STAINLESS STEEL ROD
910	631542.7949	667332.4261	1231.72	BM	TBM-910 CORPS ENG. BRASS RC BOX ON SOUTH SIDE OF 15TH STREET
912	636453.2656	667989.4398	1281.30	BM	TBM-912 SQUARE CUT IN HEADWALL WEST SIDE HWY 112
913	638810.7778	668114.9319	1379.26	BM	CHISELED SQUARE OF EAST EDGE DROP INLET
914	640354.5682	669549.6952	1434.87	BM	TBM-914 AHTD CAP SOUTHEAST OF CATCH BASIN
1500	639709.7880	669480.2566	1440.83	CTL	8 SPIKE ON GARLAND AVE.
1501	639937.8255	669493.6225	1437.95	CTL	8 SPIKE ON GARLAND AVE.
1502	639555.5792	668812.9828	1418.32	CTL	8" SPIKE IN FLOWER BED
1503	639533.2207	668651.7298	1399.90	CTL	8" SPIKE 7.5 S. OF 36" OAK OAK
1504	639334.5686	668312.1434	1381.04	CTL	CPS IN CENTER OF PK
1505	639323.5531	668550.2498	1381.55	CTL	CPS IN CENTER OF PK
1506	639158.2293	668799.9659	1381.74	CTL	CPS IN CROSS HATCHED
1507	638836.8555	667977.6466	1398.01	CTL	CPS IN IN UPPER PK W.
1508	639117.7652	668255.7625	1373.28	CTL	CPS IN DRIVING LANE
1509	638470.4648	667918.2489	1393.91	CTL	CPS IN EDGE OF CITY STREET

CONST-RZRBK

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	634209.1476	667911.3953
8001	PI	103+00.45	634509.1358	667928.0268
8002	PI	107+00.00	634908.2683	667946.3786
8003	PI	108+00.00	635008.1780	667950.6387
8004	PI	122+00.00	636406.7004	668014.9418
8005	PI	123+50.00	636556.6151	668020.0008
8006	PI	146+50.00	638854.0282	668129.0587
8007	PI	151+50.00	639352.7197	668165.2052
8008	PI	154+25.25	639627.7122	668176.9793
8009	PI	156+25.31	639827.7428	668180.5436
8010	POE	160+00.10	640201.9548	668201.2583

CONST-LEROY POND

POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	POB	10+00.00	635915.1527	667992.3407
8012	POE	15+00.00	635893.1282	668491.8554

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
 *(standard markings common to all caps), or as indicated
 (other markings indicated in the point description of the individual point).
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
 A PROJECT CAF OF 0.9999141647 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
 THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
 GRID DISTANCE = GROUND DISTANCE X CAF.
 GRID COORDINATES ARE STORED UNDER FILE NAME S040418G1.CTL
 HORIZONTAL DATUM: NAD 83 (1997)
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
 AT A SPECIFIC POINT.

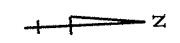
REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
 IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
 REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
 ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
 DETERMINED FROM GPS CONTROL POINTS: 720032-720033
 CONVERGENCE ANGLE: 01-16-07.0 RIGHT AT POINT NO. 16
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

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.	040581		24	106

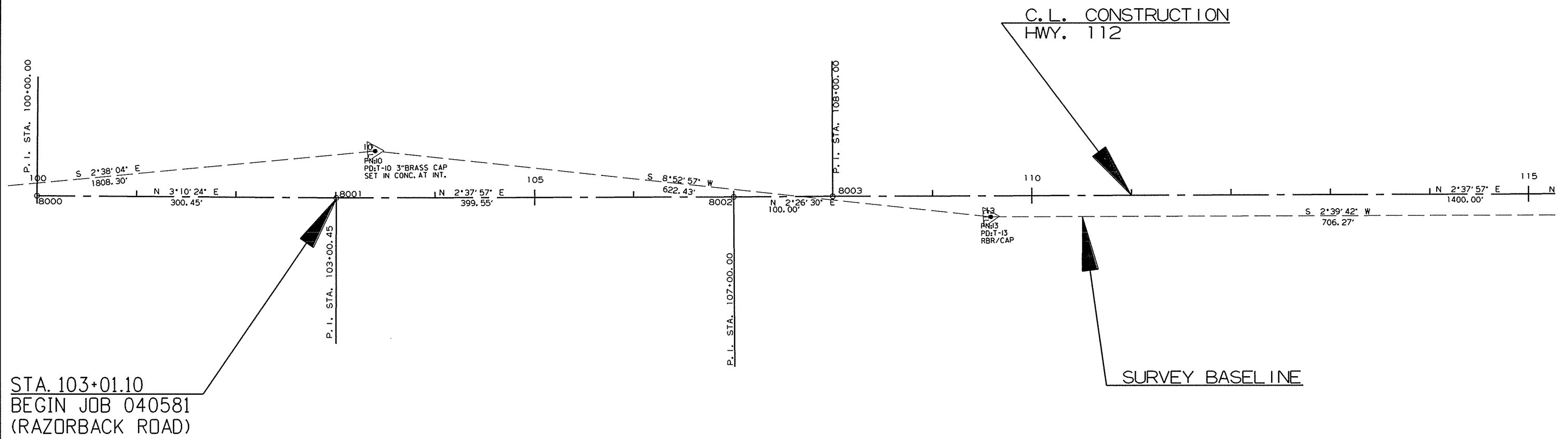
2 SURVEY CONTROL DETAILS



P. I. = 103+00.45
 $\Delta = 0^{\circ}32'27''$ LT.

P. I. = 107+00.00
 $\Delta = 0^{\circ}11'27''$ LT.

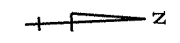
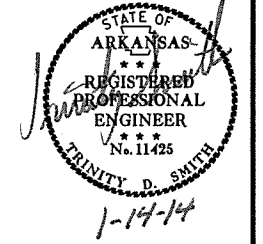
P. I. = 108+00.00
 $\Delta = 0^{\circ}11'27''$ RT.



8/15/2013
 R040581.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. 040581							25	106

2 SURVEY CONTROL DETAILS



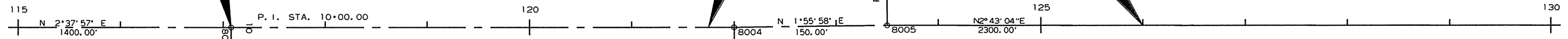
STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)

STA. 117+04.94 HWY. 112
STA. 10+00.00 LEROY POND DR.
∠ 90° 00' 00"

P. I. = 122+00.00
Δ = 0° 41' 59" LT.

P. I. = 123+50.00
Δ = 0° 47' 06" RT.

C.L. CONSTRUCTION
HWY. 112



PN#4
PD:T-14
RBR/CAP
91.47'
W.C.S.
RN#9
PD:T-9 3" BRASS
CAP U OF A PN#9

PN#5
PD:T-15
2" ALUM
CAP 2" X 5/8" RBR

PN#6
PD:T-16
2" ALUM
CAP 2" X 5/8" RBR

STA. 10+28.00
BEGIN CONSTRUCTION
LEROY POND

SURVEY BASELINE

C.L. CONSTRUCTION
LEROY POND



STA. 13+14.00
END CONSTRUCTION
LEROY POND

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STA. 103+41.16 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 117' PIPE CULVERT
CONNECT TO DROP INLET ON LT. @ STA. 104+62.21
TYPE C - 4' x 7'
H - 2'-9"

STA. 103+41.16 IN PLACE
DROP INLET ON LT.
WITH 18" x 117' R.C. PIPE CULVERT
REMOVE

STA. 104+62.21 IN PLACE
DROP INLET ON LT.
36" x 235' R.C. PIPE CULVERT
REMOVE

STA. 104+62.21 CONSTRUCT
DROP INLET ON LT. WITH 4' EXTENSION
CONNECT TO EXIST. 24" PIPE CULVERT
& 36" x 227' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 106+94
TYPE C - 4' x 8'
H - 4'-9"

P. I. = 103+00.45
Δ = 0°32'27" LT.

STA. 106+94 CONSTRUCT
JUNCTION BOX ON LT.
WITH 36" x 30' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 107+28
TYPE E - 5' x 5'
H - 7'-3"

STA. 106+94 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 5' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 106+94
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 107+04 IN PLACE
JUNCTION BOX ON LT.
REMOVE

STA. 107+04 IN PLACE
10' x 4' x 48' R.C. BOX CULVERT
FILL AND ABANDON

STA. 107+28 CONSTRUCT
JUNCTION BOX ON LT.
WITH 36" x 39' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 107+82
TYPE E - 5' x 5'
H - 7'-0"

STA. 107+31 CONSTRUCT
DROP INLET ON LT. WITH 4' EXTENSION
& 18" x 17' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 107+28
TYPE MD - 4'
TYPE C - 4' x 4'
H - 7'-0"

STA. 107+38 IN PLACE
6' x 3' x 62' R.C. BOX CULVERT
ON LT. REMOVE

STA. 107+82 CONSTRUCT
JUNCTION BOX ON LT.
WITH DBL. 5' x 4' x 8' R.C. BOX CULVERT
WITH STRAIGHT WINGS
& DBL. 60" x 102' R.C. PIPE CULVERT
(CLASS IV) (TYPE 4 BEDDING)
ON 42° LT. FWD. SKEW
CONNECT TO JUNCTION BOX ON RT. @ STA. 107+12
TYPE E - 26' x 5'
H - 7'-8"

Q50 - 176 CFS
D.A. - 60 ACRES

P. I. = 107+00.00
Δ = 0°11'27" LT.

P. I. = 108+00.00
Δ = 0°11'27" RT.

STA. 107+93 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 7' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 107+93
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 107+93 CONSTRUCT
JUNCTION BOX ON LT.
WITH 42" x 3' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 107+82
TYPE E - 5' x 5'
H - 5'-3"

STA. 109+50 CONSTRUCT
JUNCTION BOX ON LT.
WITH 18" x 2' R.C. PIPE CULVERT INLET
WITH FES
& 42" x 152' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 107+93
TYPE E - 8' x 5'
H - 5'-0"

STA. 109+50 CONSTRUCT
DROP INLET ON LT. WITH 4' EXTENSION
& 18" x 7' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 109+50
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 111+64 CONSTRUCT
DROP INLET ON LT. WITH 4' EXTENSION
& 18" x 7' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 111+64
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 111+64 CONSTRUCT
JUNCTION BOX ON LT.
WITH 42" x 209' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 109+50
TYPE E - 5' x 5'
H - 5'-0"

STA. 111+64 CONSTRUCT
DROP INLET ON LT.
WITH 24" x 7' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 111+64
TYPE E - 3' x 2'
H - 3'-7"

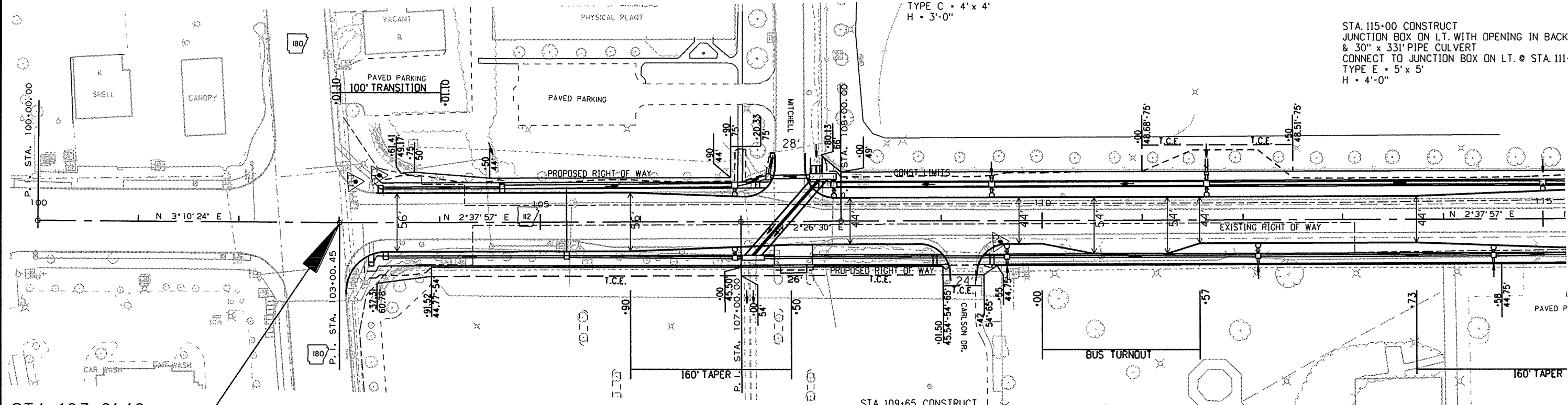
STA. 111+64 IN PLACE
24" R.C. PIPE CULVERT
RETAIN AND EXTEND 14' RT.
CONNECT TO DROP INLET ON LT. @ STA. 111+64

2 PLAN SHEETS (RAZORBACK RD.)



STA. 115+00 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 2' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT.
@ STA. 115+00
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 115+00 CONSTRUCT
JUNCTION BOX ON LT. WITH OPENING IN BACK
& 30" x 331' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 111+64
TYPE E - 5' x 5'
H - 4'-0"



STA. 103+01.10
BEGIN JOB 040581
(RAZORBACK ROAD)
LOG MILE = 1.474

STA. 103+46 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 176' PIPE CULVERT
CONNECT TO DROP INLET ON RT. @ STA. 105+26
TYPE C - 4' x 7'
H - 4'-0"

STA. 105+26 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 164' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 106+94
TYPE C - 4' x 7'
H - 6'-6"

STA. 106+94 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 5' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 106+94
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 106+94 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 6' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 107+12
TYPE E - 4' x 4'
H - 8'-5"

STA. 107+12 CONSTRUCT
JUNCTION BOX ON RT.
CONNECT TO EXIST. DBL. 60" R.C. PIPE CULVERT
TYPE E - 21' x 4'
H - 9'-4"

STA. 107+52 CONSTRUCT
APPROACH ON RT.

STA. 107+06 IN PLACE
JUNCTION BOX ON RT.
24" x 230' R.C. PIPE CULVERT
REMOVE

STA. 109+65 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 7' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 109+65
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 109+65 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 6' R.C. PIPE CULVERT INLET
& 18" x 240' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 107+12
TYPE E - 4' x 4'
H - 5'-0"

STA. 109+22 CONSTRUCT
APPROACH ON RT.

STA. 110+42 IN PLACE
24" x 35' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 112+15 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 6' R.C. PIPE CULVERT INLET
& 18" x 246' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 109+65
TYPE E - 4' x 4'
H - 4'-6"

STA. 112+15 CONSTRUCT
DROP INLET ON RT. WITH 4' EXTENSION
& 18" x 7' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 112+15
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 114+50 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 4' PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 114+50
TYPE MD - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 114+50 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 6' R.C. PIPE CULVERT INLET
& 18" x 231' PIPE CULVERT INLET
CONNECT TO JUNCTION BOX ON RT. @ STA. 112+15
TYPE E - 4' x 4'
H - 4'-6"

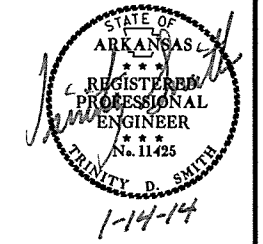
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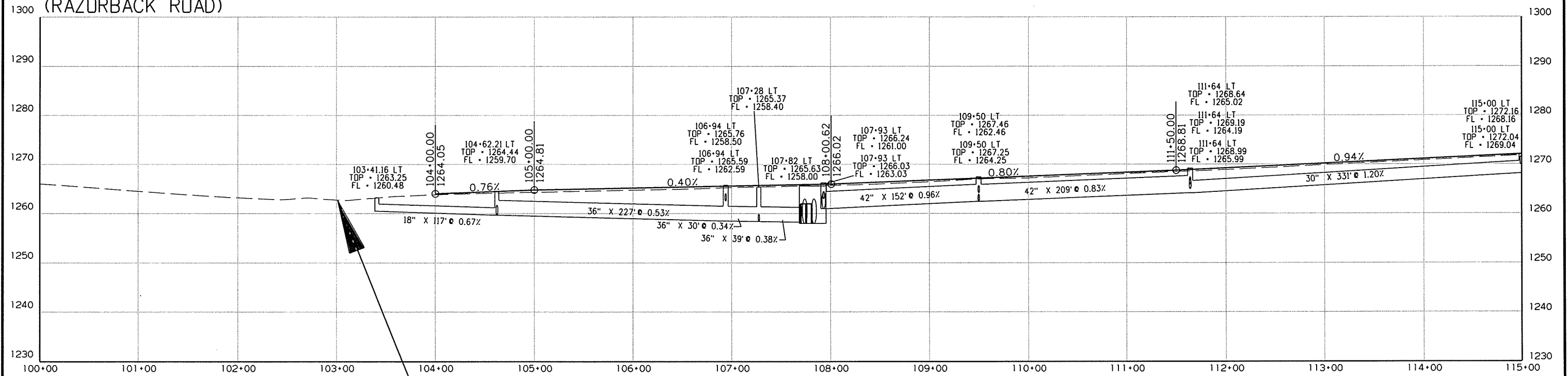
FOR ALL R.C. PIPE CULVERT INSTALLATIONS
USE TYPE 3 BEDDING UNLESS OTHERWISE
SPECIFIED. FOR ALL C.M. PIPE CULVERT
INSTALLATIONS USE TYPE 2 BEDDING UNLESS
OTHERWISE SPECIFIED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 040581							27	106

2 PROFILE SHEETS (RAZORBACK RD.)

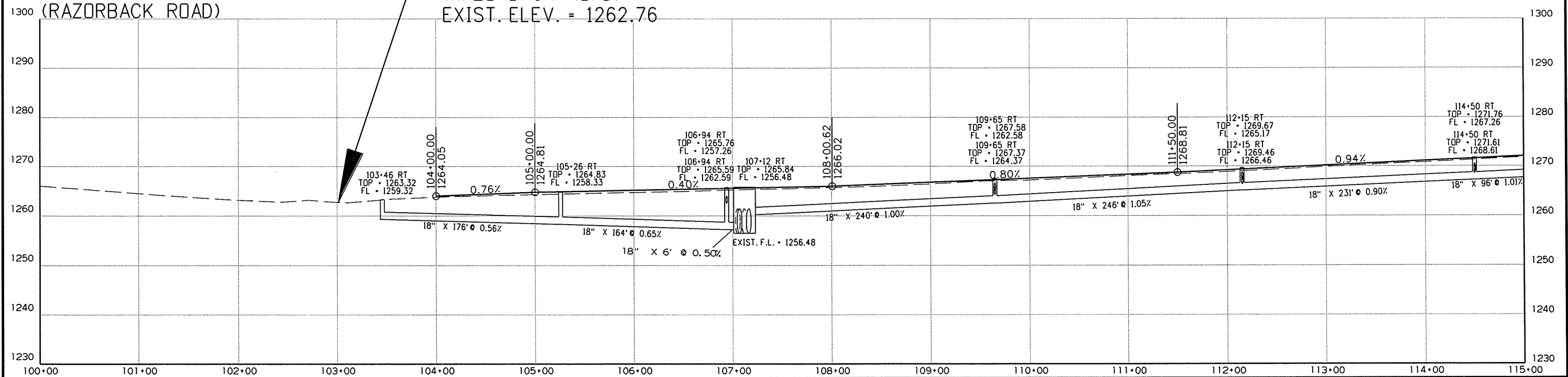


LEFT SIDE OF HWY. 112
(RAZORBACK ROAD)



RIGHT SIDE OF HWY. 112
(RAZORBACK ROAD)

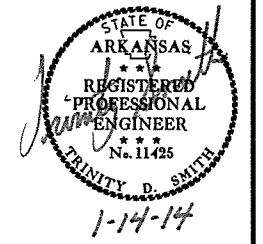
STA. 103+01.10 HWY. 112
BEGIN JOB 040581
(RAZORBACK ROAD)
EXIST. ELEV. = 1262.76



8/20/2013
R040581.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.	040581		28	106

2 PLAN SHEETS (RAZORBACK RD.)



STA. 117+40 CONSTRUCT
DROP INLET ON LT. WITH OPENING IN BACK
& 30" x 236" PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 115+00
TYPE C - 4' x 8'
H - 4'-0"

STA. 118+01 CONSTRUCT
JUNCTION BOX ON LT.
CONNECT TO EXIST. 12" PIPE CULVERT
WITH 30" x 57" PIPE CULVERT
CONNECT TO DROP INLET ON LT. @ STA. 117+40
TYPE E - 5' x 5'
H - 4'-0"

STA. 117+21 IN PLACE
18" x 17" R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 117+60 IN PLACE
18" x 40" R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 119+18 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 113" PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 118+01
TYPE C - 4' x 8'
H - 4'-0"

STA. 119+48 IN PLACE
DROP INLET ON LT.
18" x 15" R.C. PIPE CULVERT
REMOVE

STA. 119+48 CONSTRUCT
DROP INLET ON LT.
CONNECT TO EXIST. 18" PIPE CULVERT
WITH 18" x 34" PIPE CULVERT
CONNECT TO DROP INLET ON LT. @ STA. 119+18
TYPE MO - 4'
TYPE C - 4' x 4'
H - 4'-0"

STA. 119+45 IN PLACE
DROP INLET ON LT.
18" x 7" R.C. PIPE CULVERT
REMOVE

STA. 119+74.56 CONSTRUCT
DROP INLET ON LT. WITH 4' EXTENSION
& OPENING IN BACK
& CONNECT TO EXIST. 24" PIPE CULVERT
& 30" x 36" PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT. @ STA. 120+03
TYPE C - 4' x 7'
H - 4'-1"

STA. 119+80 IN PLACE
24" x 27" R.C. PIPE CULVERT
ON LT.
REMOVE

STA. 119+78 IN PLACE
DROP INLET ON LT.
24" x 17" R.C. PIPE CULVERT
REMOVE

STA. 119+91 IN PLACE
DROP INLET ON LT.
24" x 38" R.C. PIPE CULVERT
REMOVE

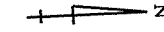
STA. 120+03 CONSTRUCT
DROP INLET ON LT.
WITH 30" x 52" R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING)
CONNECT TO DROP INLET ON RT. @ STA. 120+03
TYPE MO - 5'
TYPE C - 5' x 5'
H - 5'-6"
050 - 28 CFS
D.A. - 7 ACRES

STA. 120+57 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 52" PIPE CULVERT
CONNECT TO DROP INLET ON LT. @ STA. 120+03
TYPE ST - 4' x 4'
H - 3'-11"

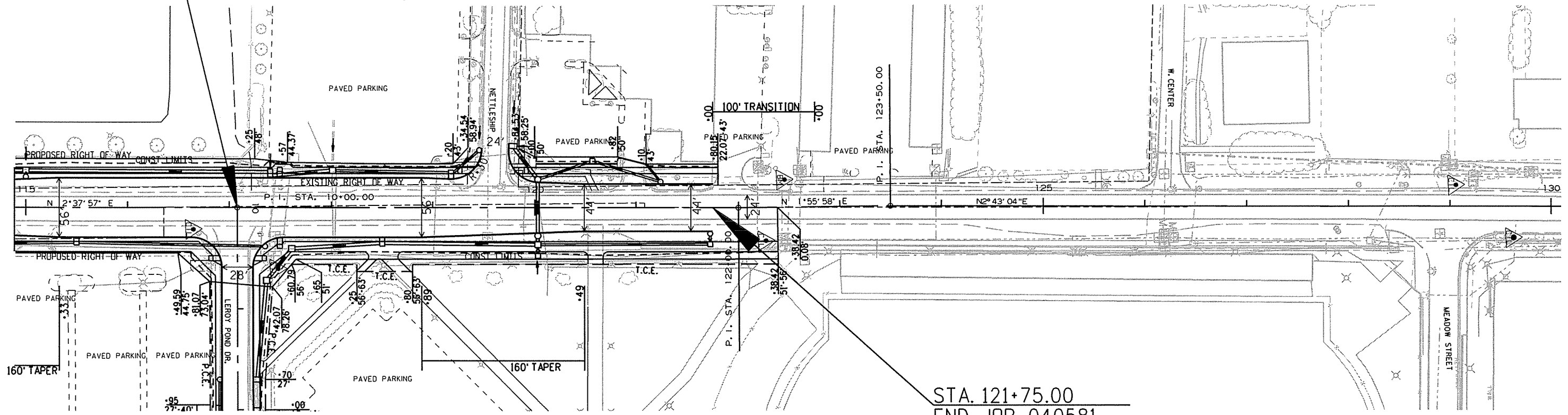
P. I. = 122+00.00
Δ = 0°41'59" LT.

STA. 121+11 INSTALL
YARD DRAIN ON LT.
WITH 12" x 18" SIDE DRAIN
CONNECT TO DROP INLET ON LT. @ STA. 121+24
H - 1'-6"

STA. 121+24 CONSTRUCT
DROP INLET ON LT.
WITH 18" x 66" PIPE CULVERT
CONNECT TO DROP INLET ON LT. @ STA. 120+57
TYPE MO - 4'
TYPE C - 4' x 4'
H - 4'-8"



STA. 117+04.94 HWY. 112
STA. 10+00 LEROY POND DR.
∠ 90°00'00"



STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)

STA. 115+50 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 96" PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 114+50
TYPE C - 4' x 7'
H - 4'-3"

STA. 117+35 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 181" PIPE CULVERT
CONNECT TO DROP INLET ON RT. @ STA. 115+50
TYPE MO - 4'
TYPE C - 4' x 4'
H - 4'-3"

STA. 117+61 CONSTRUCT
JUNCTION BOX ON RT.
WITH 30" x 36" PIPE CULVERT
CONNECT TO DROP INLET ON LEROY POND ON LT. @ STA. 10+72
TYPE E - 5' x 5'
H - 5'-8"

STA. 118+50 CONSTRUCT
DROP INLET ON RT. WITH 4' EXTENSION
& 30" x 85" PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 117+61
TYPE C - 4' x 8'
H - 5'-3"

STA. 115+09 IN PLACE
24" x 33" R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 116+86 IN PLACE
12" x 20" R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 120+03 CONSTRUCT
DROP INLET ON RT.
WITH 30" x 4" PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 120+03
TYPE MO - 5'
TYPE C - 5' x 5'
H - 5'-8"

STA. 120+03 CONSTRUCT
JUNCTION BOX ON RT.
WITH 30" x 148" PIPE CULVERT
CONNECT TO DROP INLET ON RT. @ STA. 118+50
TYPE E - 5' x 5'
H - 6'-0"

STA. 120+03 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 7" PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 120+03
TYPE E - 4' x 4'
H - 4'-0"

STA. 121+72.50 CONSTRUCT
DROP INLET ON RT.
WITH 18" x 7" PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 121+72.50
TYPE MO - 4'
TYPE C - 4' x 4'
H - 3'-0"

STA. 121+72.50 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 165" PIPE CULVERT
CONNECT TO JUNCTION BOX ON RT. @ STA. 120+03
TYPE E - 4' x 4'
H - 4'-6"

STA. 120+58 IN PLACE
18" x 65" R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

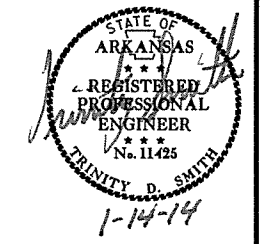
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8/20/2013

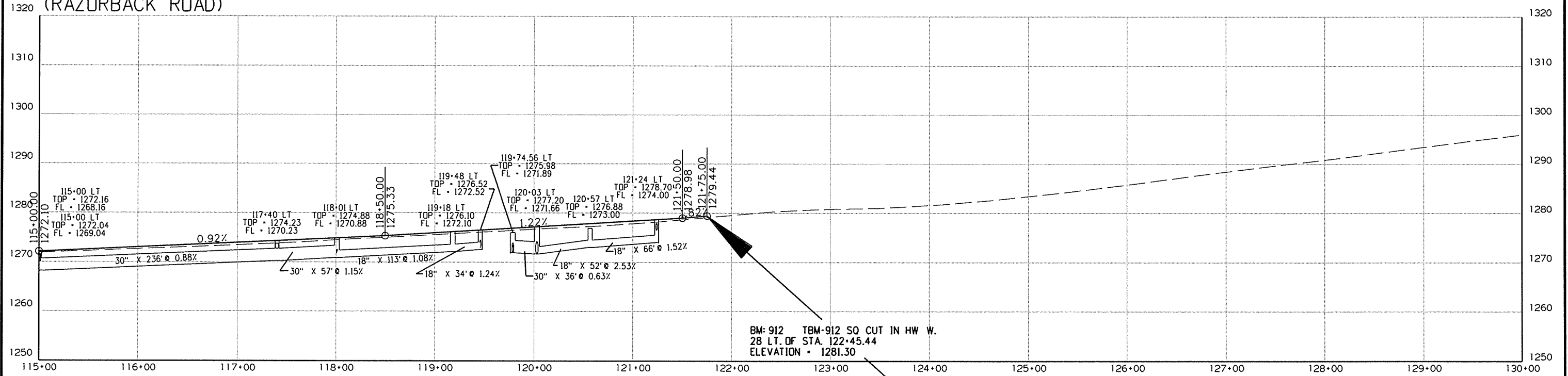
R040581.DGN

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.	040581		29	106

2 PROFILE SHEETS (RAZORBACK RD.)



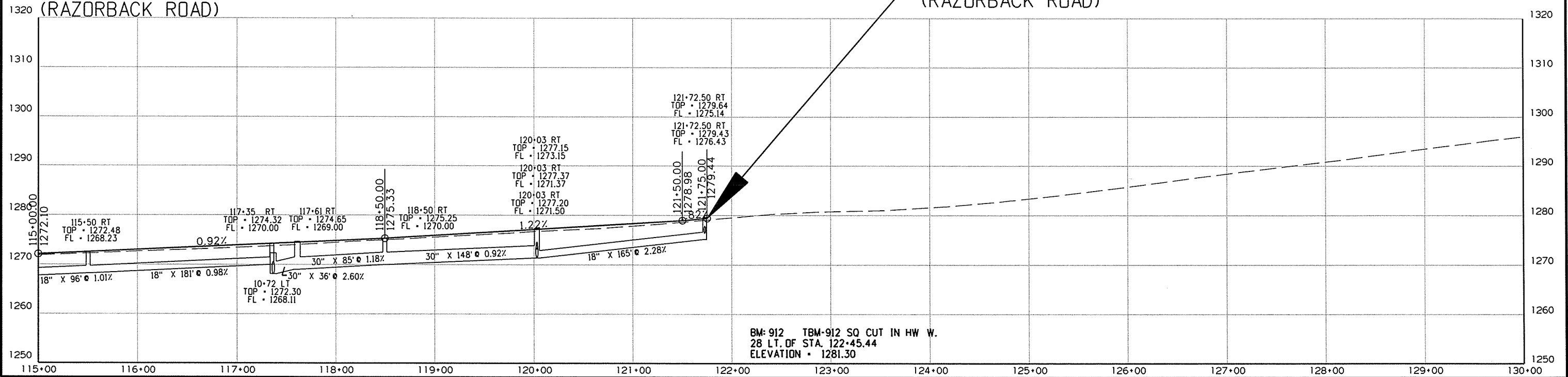
LEFT SIDE OF HWY. 112
(RAZORBACK ROAD)



BM: 912 TBM-912 SQ CUT IN HW W.
28 LT. OF STA. 122+45.44
ELEVATION = 1281.30

STA. 121+75.00
END JOB 040581
(RAZORBACK ROAD)

RIGHT SIDE OF HWY. 112
(RAZORBACK ROAD)

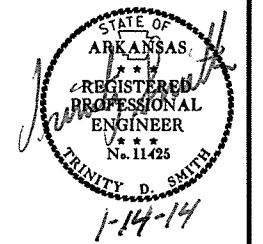


BM: 912 TBM-912 SQ CUT IN HW W.
28 LT. OF STA. 122+45.44
ELEVATION = 1281.30

8/20/2013
R040581.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.	040581		30	106

2 PLAN SHEETS (LEROY POND DR.)



STA. 10+72 CONSTRUCT
DROP INLET ON LT.
WITH 30" x 95' PIPE CULVERT
CONNECT TO DROP INLET ON LT. @ STA. 11+70
TYPE E - 5' x 5'
H - 4'-2"

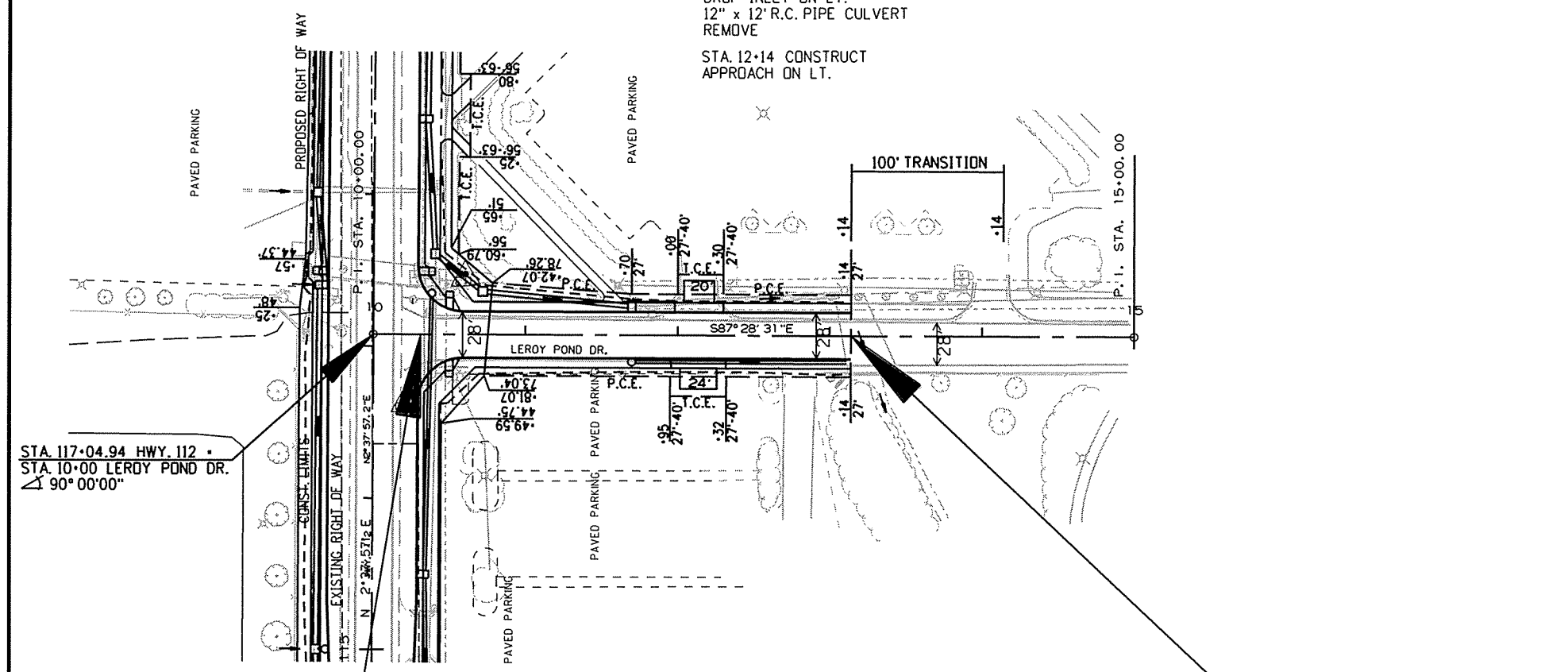
STA. 11+70 CONSTRUCT
DROP INLET ON LT. WITH 4' EXTENSION
& CONNECT TO EXIST. 30" PIPE CULVERT
TYPE C - 4' x 7'
H - 5'-9"

STA. 10+72 IN PLACE
DROP INLET ON LT.
30" x 96' R.C. PIPE CULVERT
REMOVE

STA. 11+70 IN PLACE
DROP INLET ON LT.
REMOVE

STA. 11+83 IN PLACE
DROP INLET ON LT.
12" x 12' R.C. PIPE CULVERT
REMOVE

STA. 12+14 CONSTRUCT
APPROACH ON LT.



STA. 117+04.94 HWY. 112
STA. 10+00 LEROY POND DR.
∠ 90° 00' 00"

STA. 10+28.00
BEGIN CONSTRUCTION
LEROY POND

STA. 11+70 CONSTRUCT
DROP INLET ON RT. WITH 4' EXTENSION
& 18" x 139' PIPE CULVERT
CONNECT TO EXIST. BOX CULVERT
TYPE MD - 4'
TYPE C - 4' x 4'
H - 5'-0"

STA. 13+20 IN PLACE
TRIP. 4' x 10' R.C. BOX CULVERT
RETAIN

STA. 12+14 CONSTRUCT
APPROACH ON RT. - 5 CU. YDS.

STA. 13+14.00
END CONSTRUCTION
LEROY POND

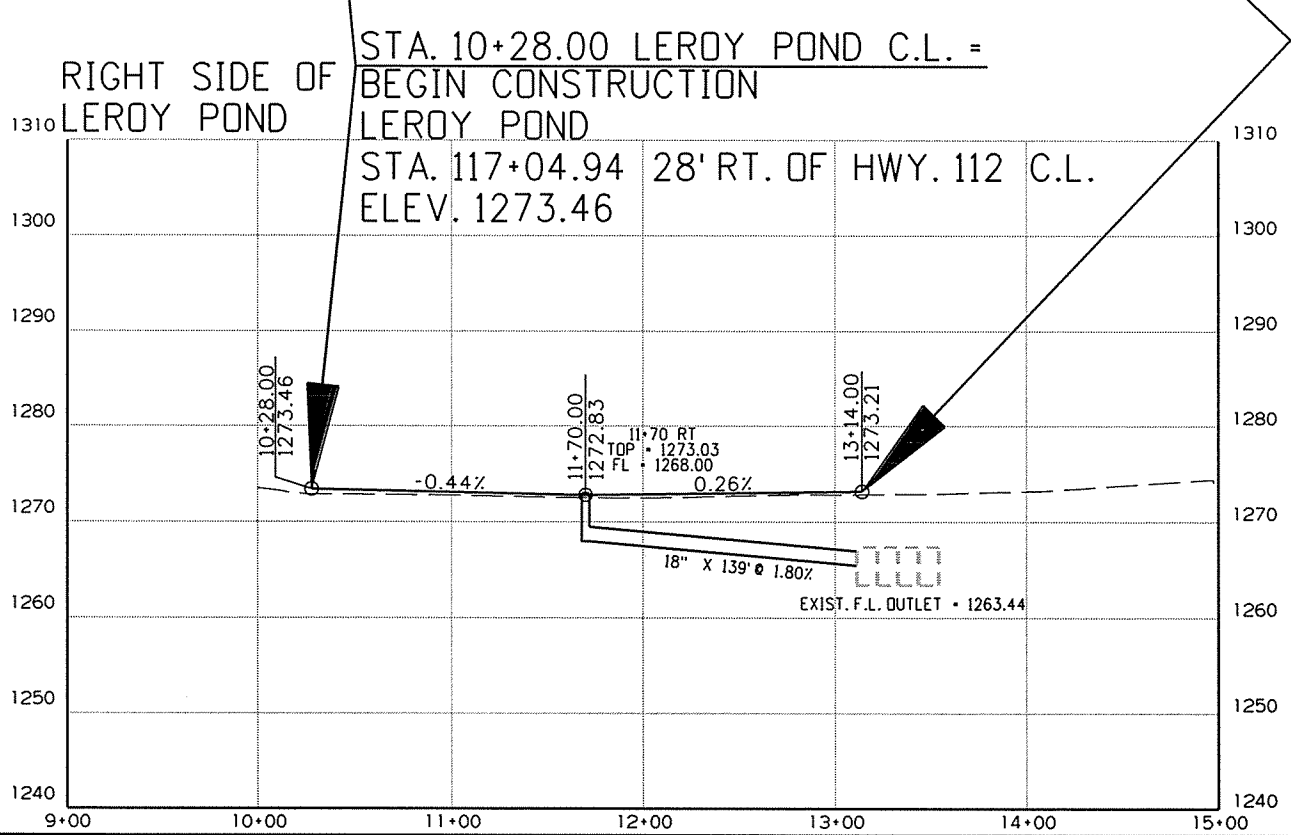
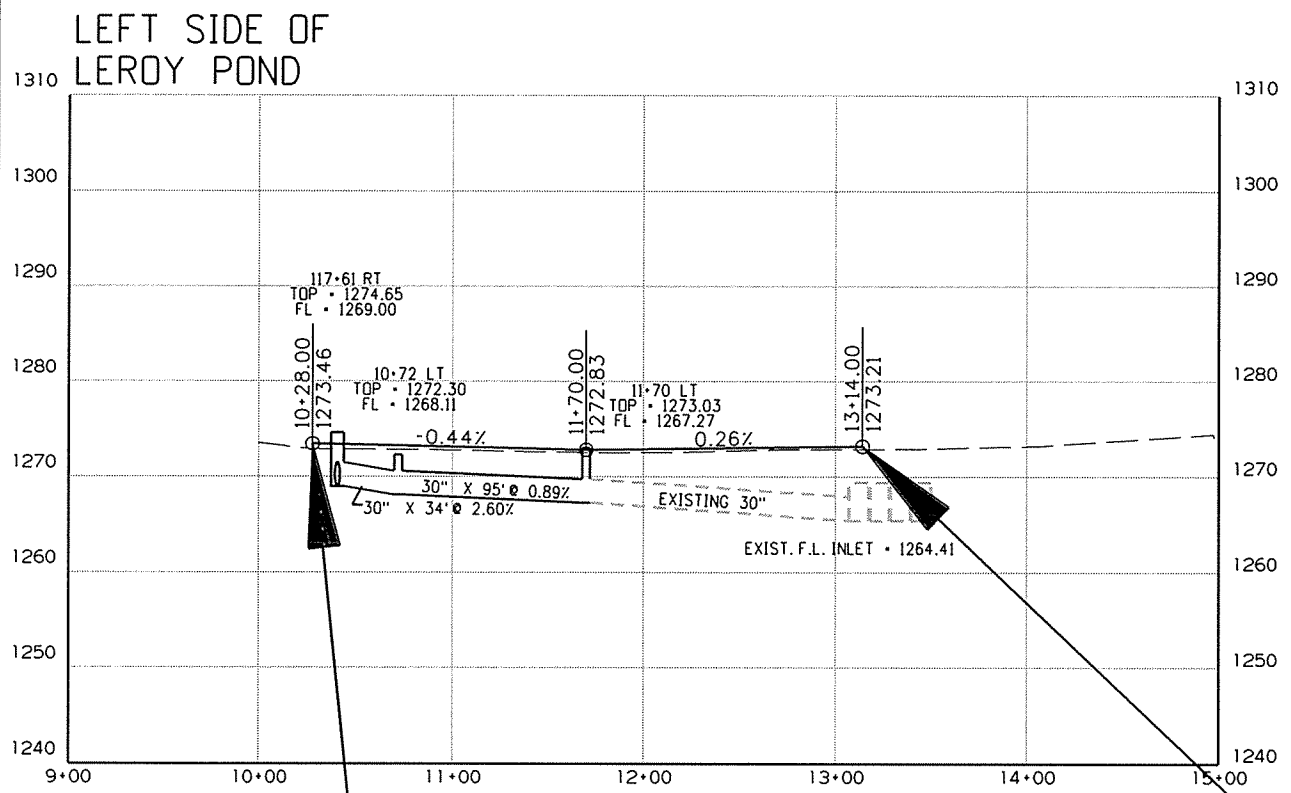
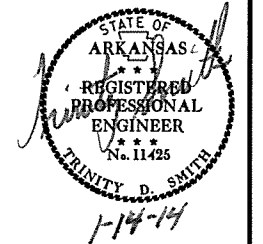
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				6	ARK.			
				JOB NO.	040581		31	106

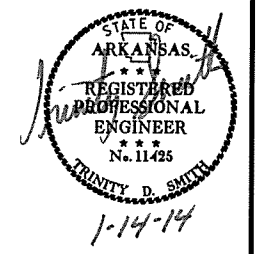
2 PROFILE SHEETS (LEROY POND DR.)



8/20/2013
R040581.DGN

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				6	ARK.			
				JOB NO.	040581		32	106

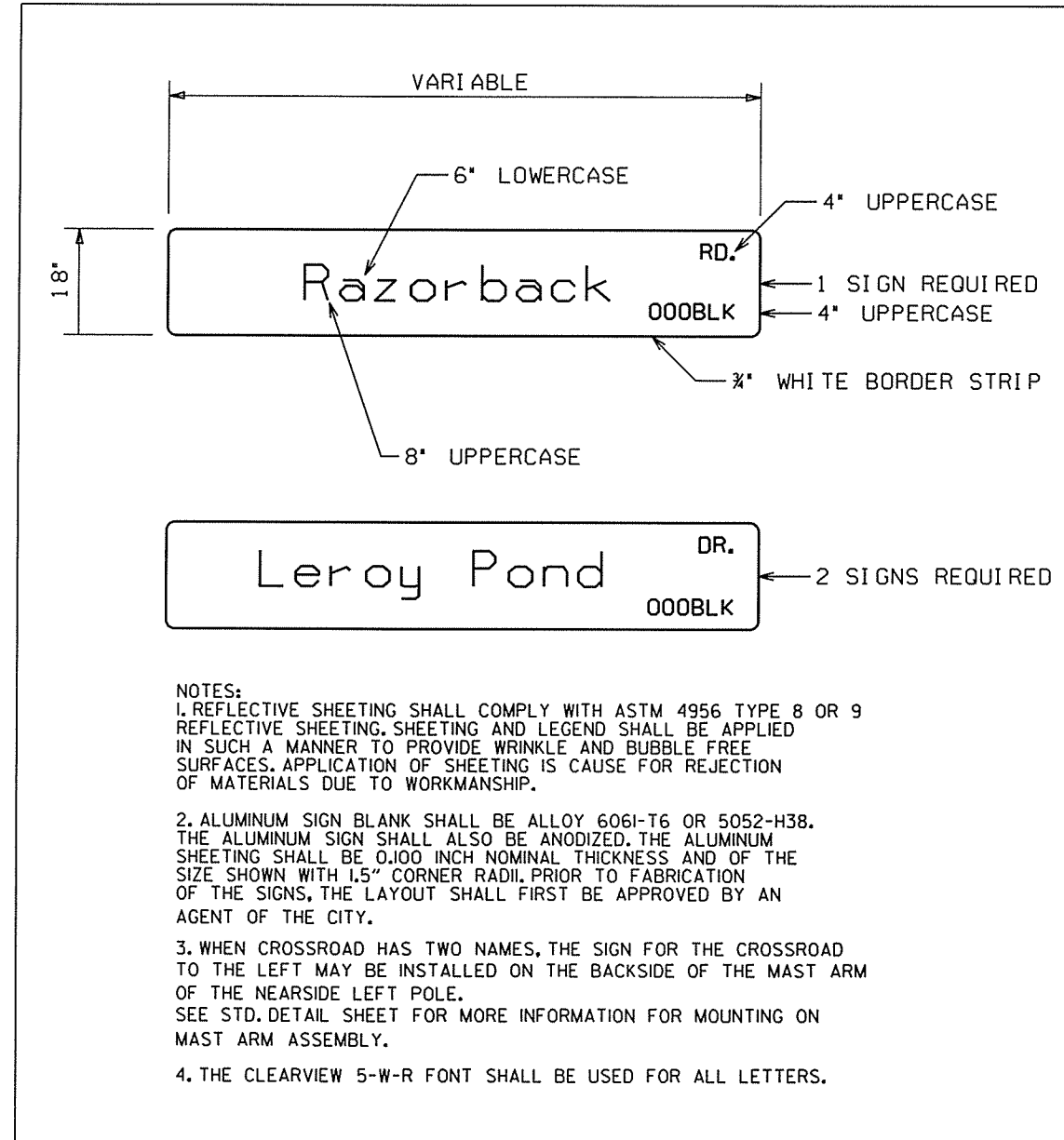
2 SIGNALIZATION PLAN SHEET



TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2 - TYPE 2 (8 PHASE)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)	6	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY)	1	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1194	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	59	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	245	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	125	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	389	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SS&711	CONCRETE PULL BOX (TYPE 2)	2	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (20')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44'-44')	1	EACH
SS&715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	2	EACH
733	VIDEO CABLE	720	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	6	EACH
SP&733	VIDEO EDGE CARD EXTENDER	1	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	411	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	416	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	135	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	LUMINAIRE ASSEMBLY	3	EACH
SP	18" STREET NAME SIGN	3	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

• QUANTITIES INCLUDE ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR.



LOCATION: HWY. 112 (RAZORBACK RD.) / LEROY POND DR.
 CITY: FAYETTEVILLE
 COUNTY: WASHINGTON
 DISTRICT: 4 SCALE: N/A DRAWN BY: GWE

DATE: 12-20-13 FILE NAME: t040581.dgn

TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101(2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAIN TIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/*6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/*12 AWG UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
5. TRAFFIC CONTROLLER CABINET SHALL HAVE 16 LOAD BAYS AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.
11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY. THE EXISTING SYSTEM CONSISTS OF A PEEK CLOSED LOOP TRAFFIC CONTROL SYSTEM WITH COMMUNICATIONS UTILIZING A MDS 9710 FIXED FREQUENCY RADIOS.
17. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, 38 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF 21' SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS 6 FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.
20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION.
21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.
22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		33	106

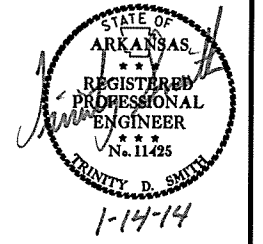
2 SIGNALIZATION PLAN SHEET



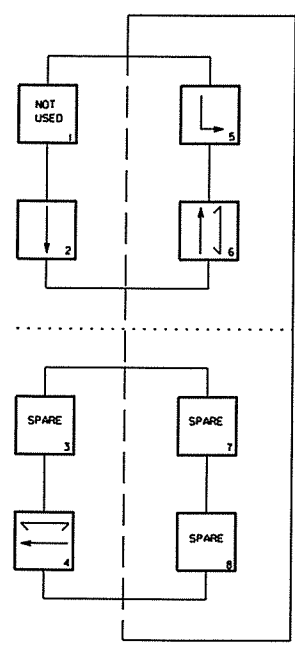
LOCATION: HWY. 112 (RAZORBACK RD.) / LEROY POND DR.
 CITY: FAYETTEVILLE
 COUNTY: WASHINGTON
 DISTRICT: 4 SCALE: N/A DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 040581	34	106

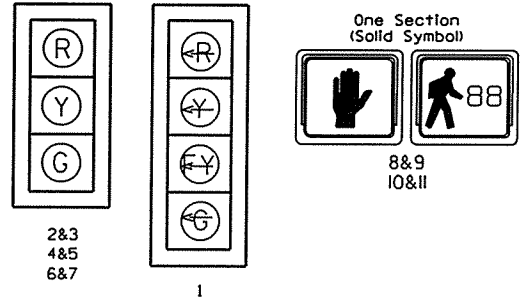
② SIGNALIZATION PLAN SHEET



PHASING DIAGRAM



SIGNAL FACES
12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS

DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH NORTH AND SOUTH APPROACH
25 MPH EAST APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

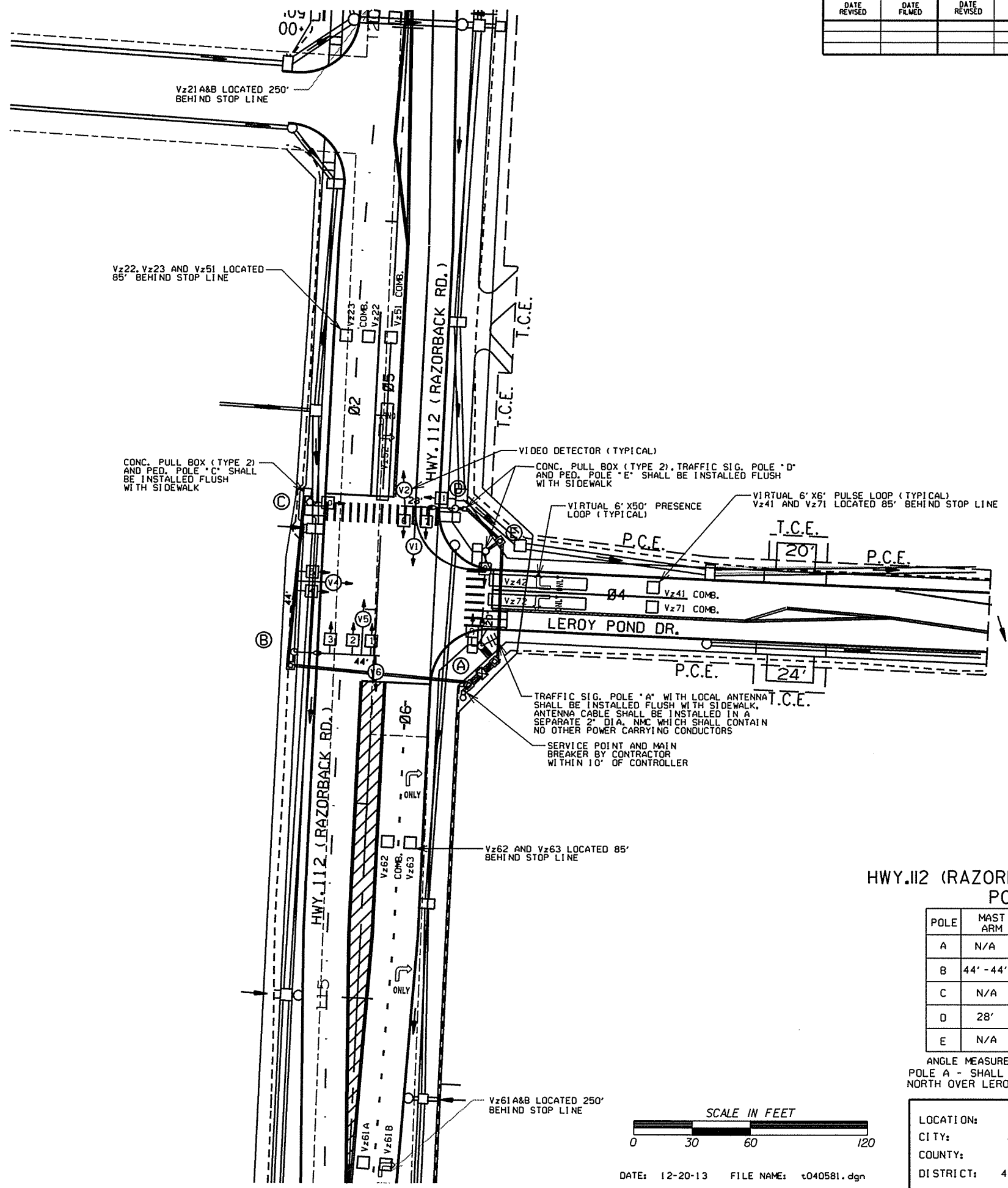
LOCATION OF STOP LINES
SHOWN ON PAVEMENT MARKING PLAN.
SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE
CONTROLLER -1.5 FEET FROM HWY. 112
POLE A - 1.5 FEET FROM HWY. 112
POLE B - 1.5 FEET FROM HWY. 112
POLE C - 1.5 FEET FROM HWY. 112
POLE D - 1.5 FEET FROM HWY. 112
POLE E - 1.5 FEET FROM HWY. 112

INTERVAL CHART

SIGNAL FACES	HWY. 112/ LEROY POND DR.						FLASH SEQ.
	2+5	CLR.	2+6	CLR.	4	CLR.	
1	G		W	...	R	R	R
2&3	G	..	G	..	R	R	R
4&5	R	R	R	R	G	..	R
6&7	R	R	G	..	R	R	R
8&9	DW	DW	W	FDW	DW	DW	BLK
10&11	DW	DW	DW	DW	W	FDW	BLK

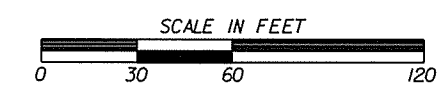
• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
.. DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
... DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE



HWY. 112 (RAZORBACK RD.)/ LEROY POND DR. POLE DIMENSIONS

POLE	MAST ARM	MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	LUM. ANGLE
A	N/A	270°	35'	10'	270°
B	44' - 44'	90° - 180°	35'	10'	180°
C	N/A	N/A	15'	N/A	N/A
D	28'	180°	35'	10'	180°
E	N/A	N/A	15'	N/A	N/A

ANGLE MEASURED CLOCKWISE FROM HAND HOLE.
POLE A - SHALL BE DESIGNED FOR A 26' MAST ARM EXTENDING NORTH OVER LEROY POND DR. TO BE INSTALLED IN THE FUTURE.

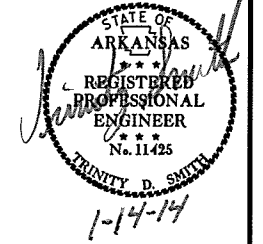


DATE: 12-20-13 FILE NAME: t040581.dgn

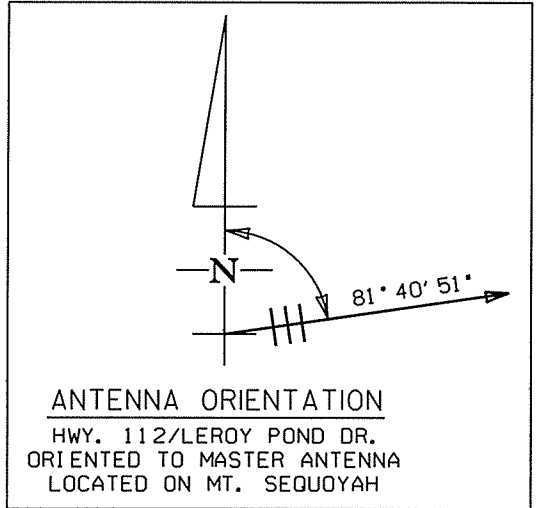
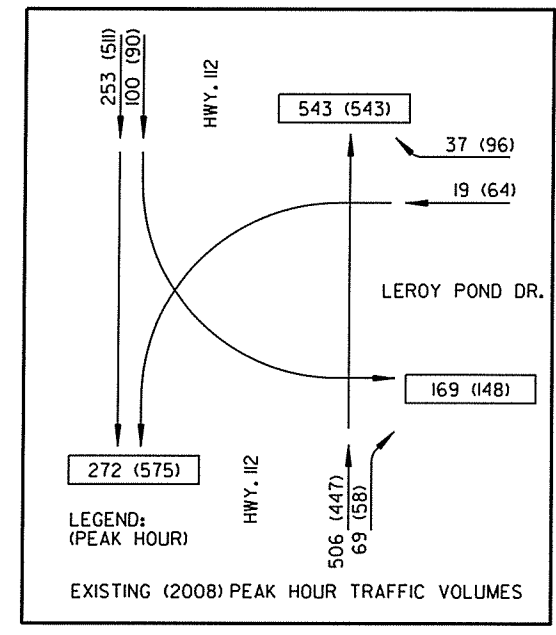
LOCATION: HWY. 112 (RAZORBACK RD.)/ LEROY POND DR.
CITY: FAYETTEVILLE
COUNTY: WASHINGTON
DISTRICT: 4 SCALE: 1" = 60' DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 040581							35	106

② SIGNALIZATION PLAN SHEET



TRAFFIC FLOW DIAGRAM

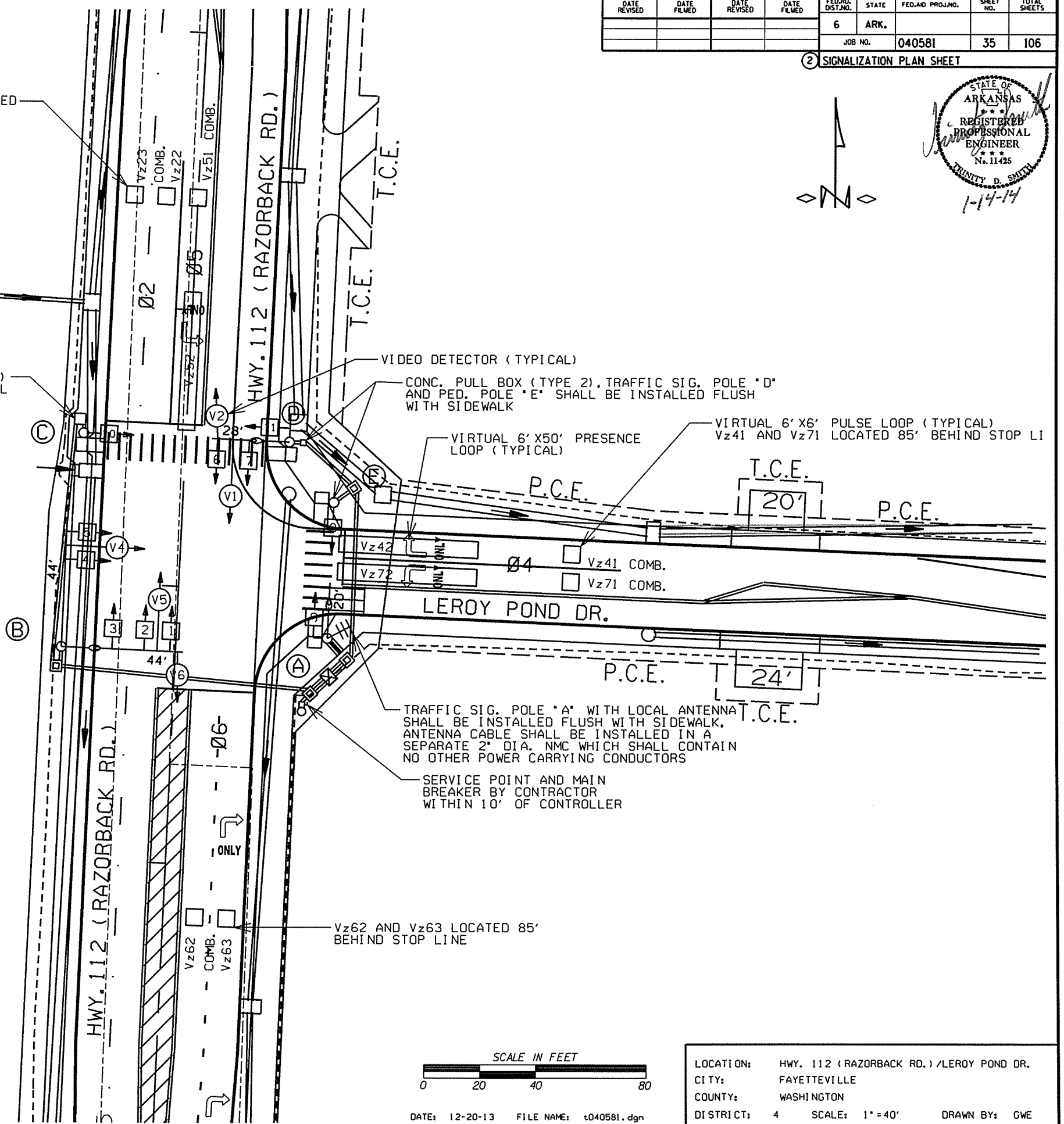


**HWY. 112 (RAZORBACK RD.)/LEROY POND DR.
POLE LOCATIONS**

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 112 - STA. 116+83.70	55' RT.	668045.60, 635888.54
B	HWY. 112 - STA. 116+76.45	42' LT.	667949.70, 635885.51
C	HWY. 112 - STA. 117+53.70	37' LT.	667957.48, 635962.50
D	HWY. 112 - STA. 117+53.74	38' RT.	668031.88, 635959.26
E	HWY. 112 - STA. 117+32.65	55' RT.	668047.84, 635937.44

Vz22, Vz23 AND Vz51 LOCATED
85' BEHIND STOP LINE

CONC. PULL BOX (TYPE 2)
AND PED. POLE *C* SHALL
BE INSTALLED FLUSH
WITH SIDEWALK

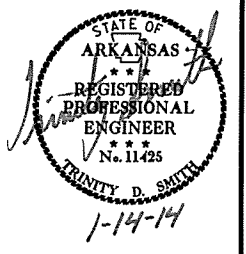


LOCATION: HWY. 112 (RAZORBACK RD.)/LEROY POND DR.
CITY: FAYETTEVILLE
COUNTY: WASHINGTON
DISTRICT: 4
SCALE: 1" = 40'
DRAWN BY: GWE

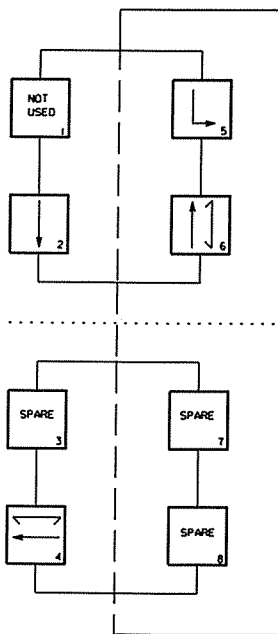
DATE: 12-20-13 FILE NAME: t040581.dgn

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. 040581						36	106	

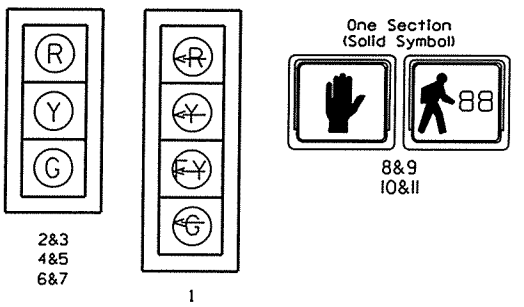
2 SIGNALIZATION PLAN SHEET



PHASING DIAGRAM



SIGNAL FACES

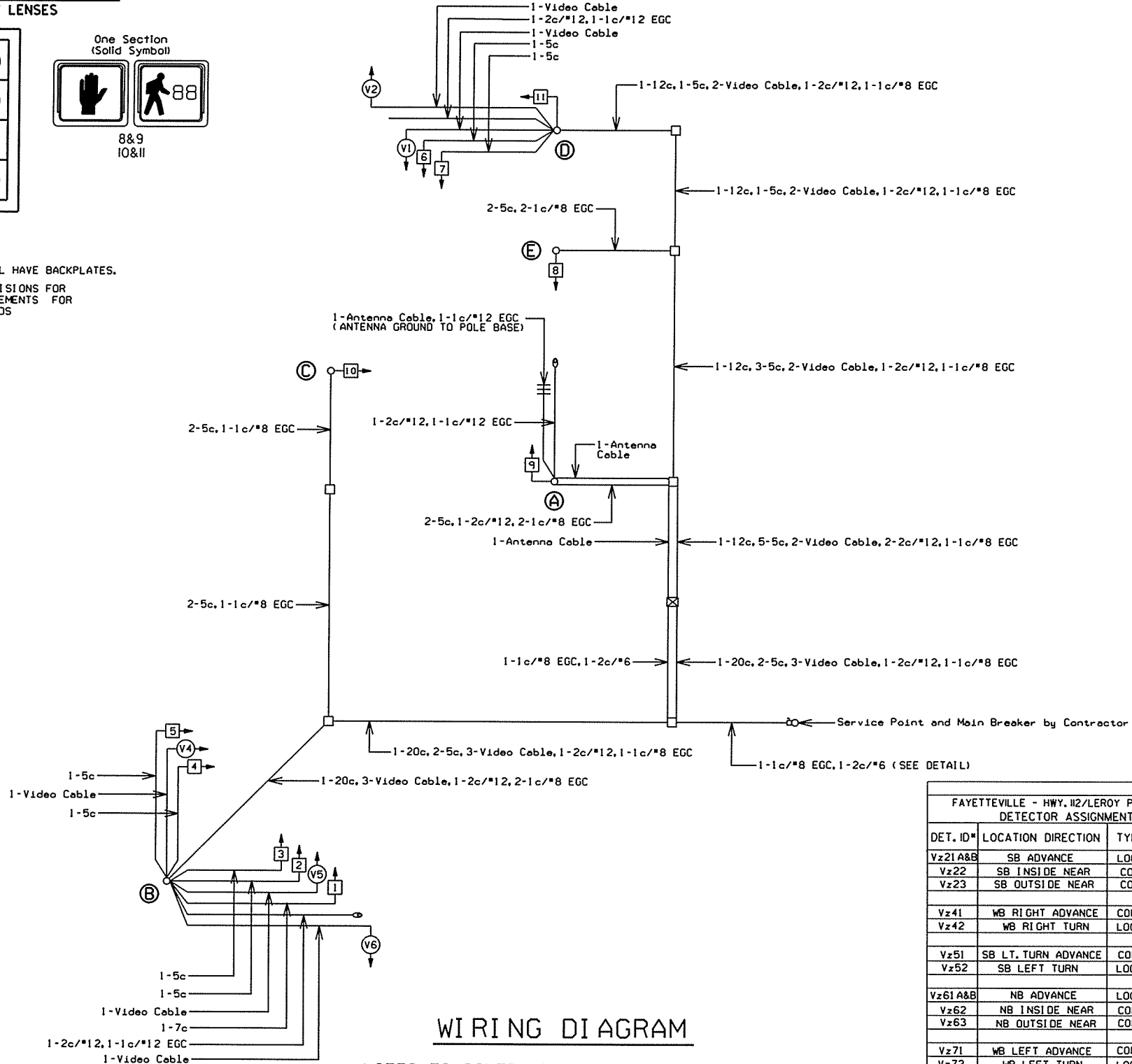


NOTES:
 1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
 2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS

INTERVAL CHART

SIGNAL FACES	HWY. 112/LEROY POND DR.						FLASH SEQ.
	2+5	CLR.	2+6	CLR.	4	CLR.	
1	G	*	W	...	R	R	R
2&3	G	**	G	**	R	R	R
4&5	R	R	R	R	G	**	R
6&7	R	R	G	**	R	R	R
8&9	DW	DW	W	FDW	DW	DW	BLK
10&11	DW	DW	DW	DW	W	FDW	BLK

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
 ** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
 ... DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE



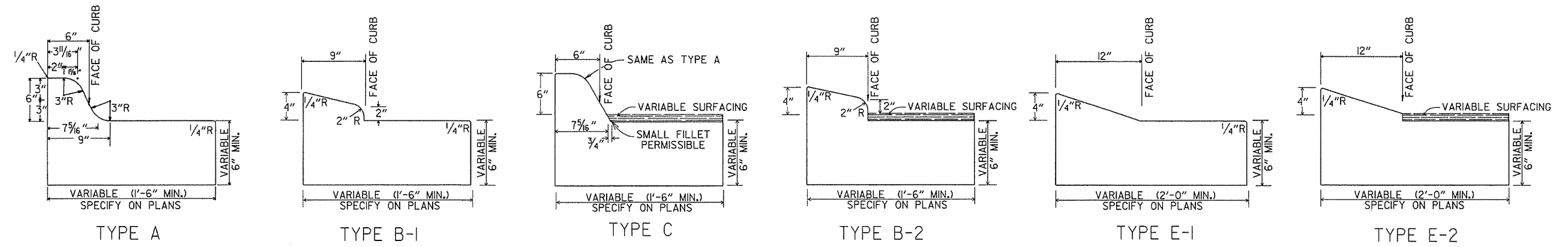
WIRING DIAGRAM

- NOTES TO CONTRACTOR:
- ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
 - ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
 - THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

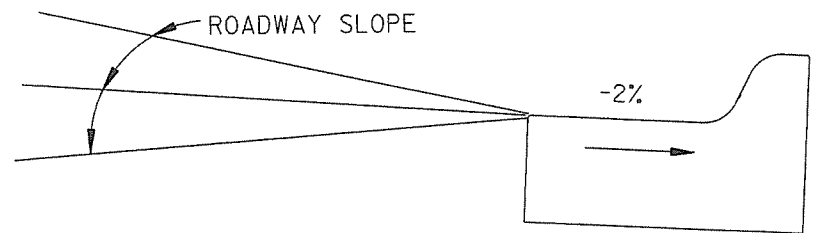
SYSTEM DESCRIPTION: JOB 040581										COMMENTS	TUBE LENGTH	
DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS					
DET. ID#	LOCATION	DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP. CHN. #	CON. INP. #	PHS	SYSTEM DET. #	MASTER SYSTEM DETECTOR NUMBERS		
Vz21A&B	SB ADVANCE		LOCAL			1	V2	2			CAMERA V2	74'
Vz22	SB INSIDE NEAR		COMB.			2	V10	2	2		CAMERA V5	23'
Vz23	SB OUTSIDE NEAR		COMB.			3	V11	2	3		CAMERA V5	23'
Vz41	WB RIGHT ADVANCE		COMB.			11	V12	4	4		CAMERA V4	23'
Vz42	WB RIGHT TURN		LOCAL			12	V4	4			CAMERA V4	23'
Vz51	SB LT. TURN ADVANCE		COMB.			5	V13	5	5		CAMERA V5	23'
Vz52	SB LEFT TURN		LOCAL			6	V5	5			CAMERA V5	23'
Vz61A&B	NB ADVANCE		LOCAL			13	V6	6			CAMERA V6	74'
Vz62	NB INSIDE NEAR		COMB.			14	V14	6	6		CAMERA V1	23'
Vz63	NB OUTSIDE NEAR		COMB.			15	V16	6	8		CAMERA V1	23'
Vz71	WB LEFT ADVANCE		COMB.			9	V15	4	7		CAMERA V4	23'
Vz72	WB LEFT TURN		LOCAL			10	V7	4			CAMERA V4	23'
PB4A&B	LEROY POND DR.		PED.						4			
PB6A&B	HWY. 112 N. LEG		PED.						6			

CONTROLLER INPUT ABBREVIATIONS:
 V = VEHICLE INPUT
 D = SYSTEM OR AUXILIARY INPUT
 P = PEDESTRIAN INPUT
 NOTE: *AMP CHN* REFERS TO THE DETECTOR RACK OUTPUT POSITION. THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.

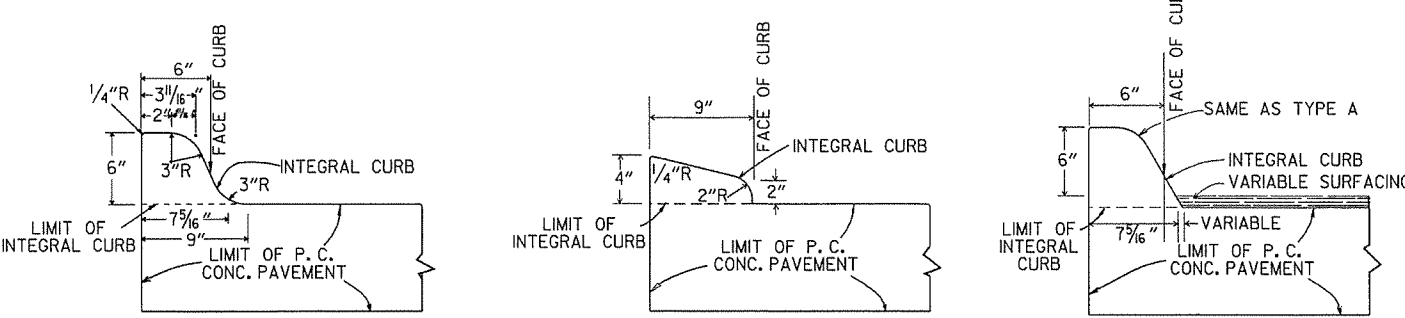
LOCATION: HWY. 112 (RAZORBACK RD.) / LEROY POND DR.
 CITY: FAYETTEVILLE
 COUNTY: WASHINGTON
 DISTRICT: 4 SCALE: N/A DRAWN BY: GWE



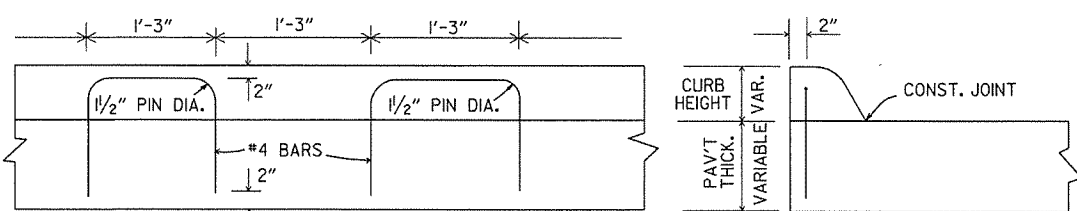
CONCRETE COMBINATION CURB AND GUTTER



DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.

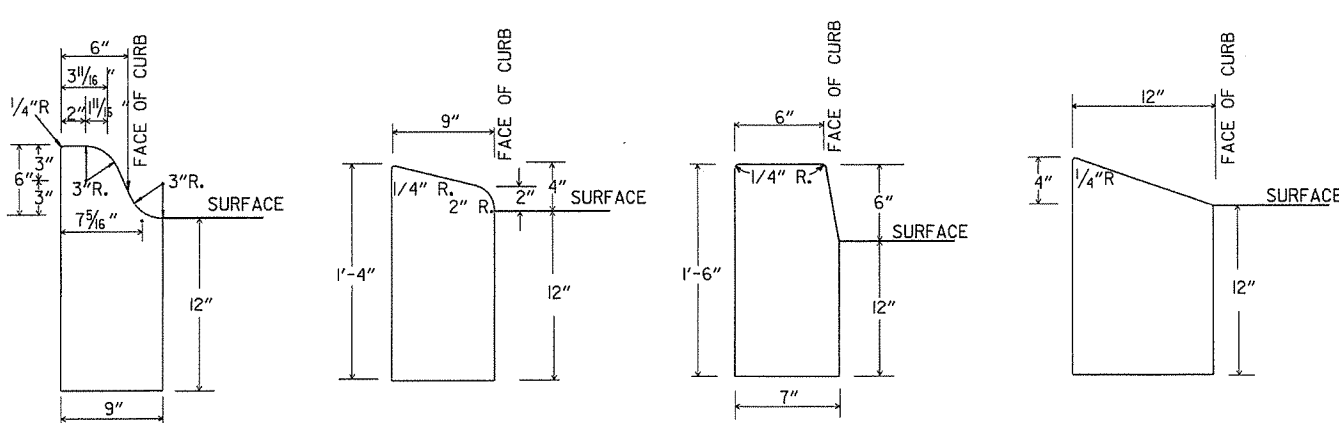


INTEGRAL CURB

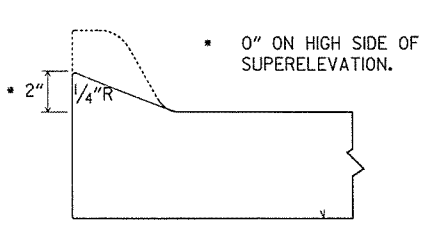


LONGITUDINAL SECTION
ELEVATION

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



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.

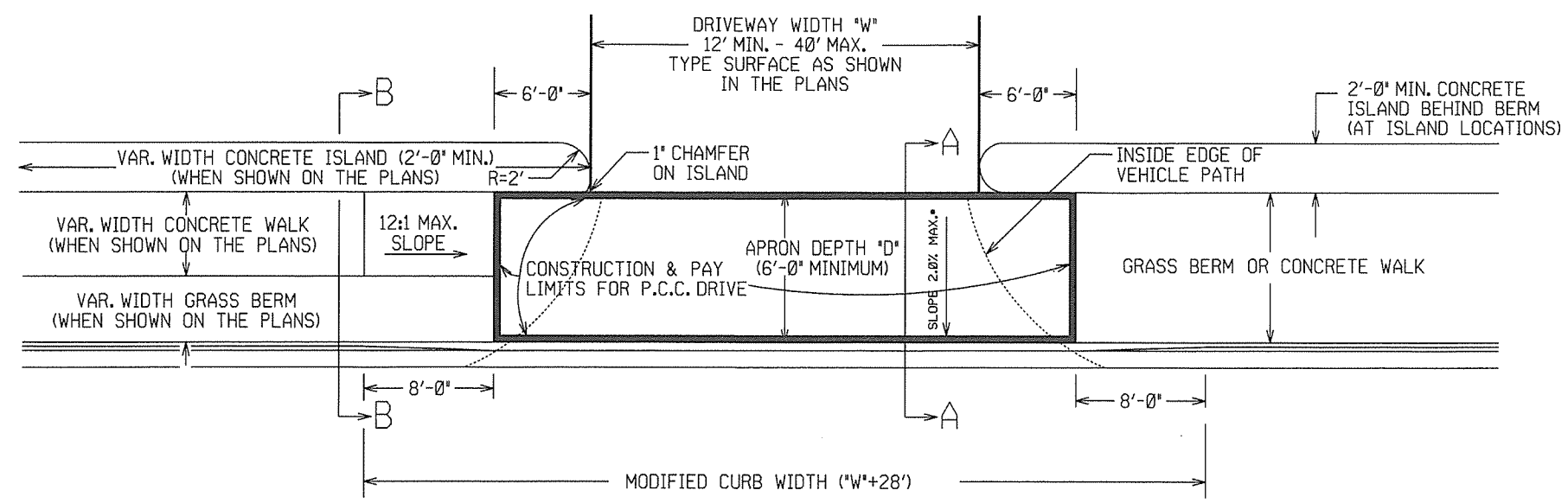
DETAILS OF MODIFIED CURB

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	VARIABLE 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

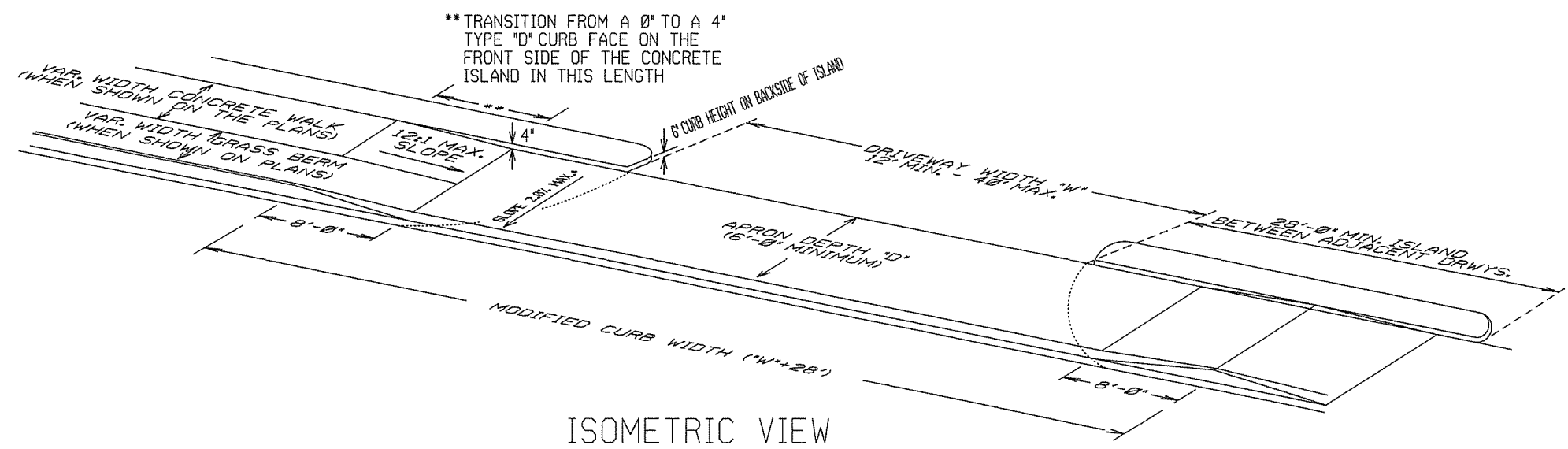
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

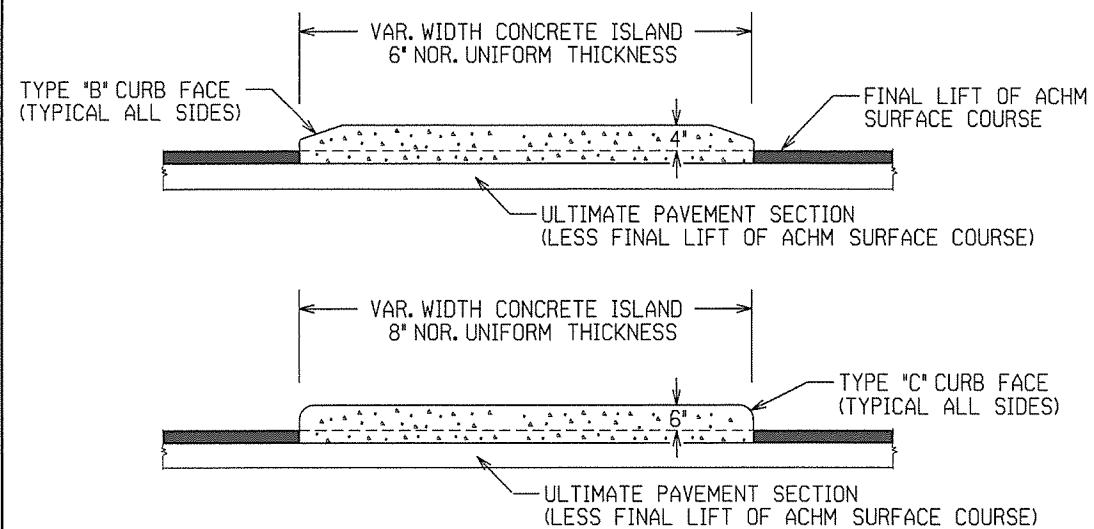
STANDARD DRAWING CG-1



PLAN VIEW

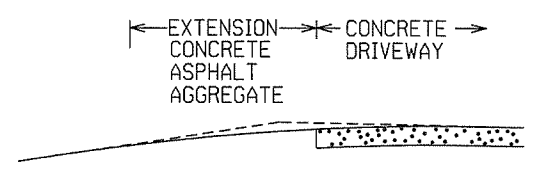


ISOMETRIC VIEW



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".

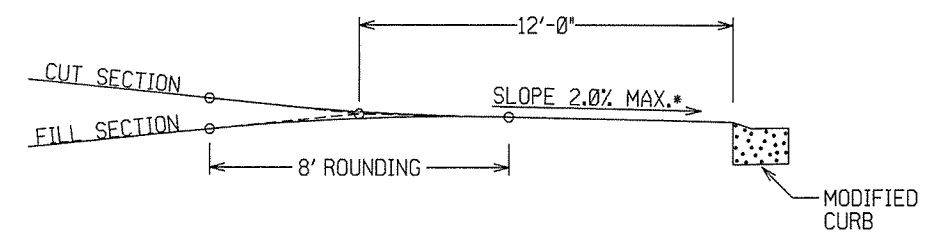


EXTENSION TYPICAL SECTIONS

- 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

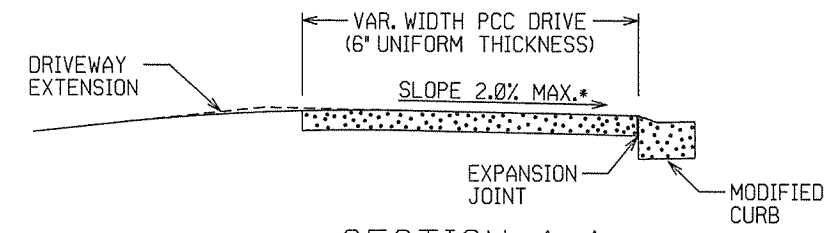
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS.
THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER,
SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU
OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL
COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

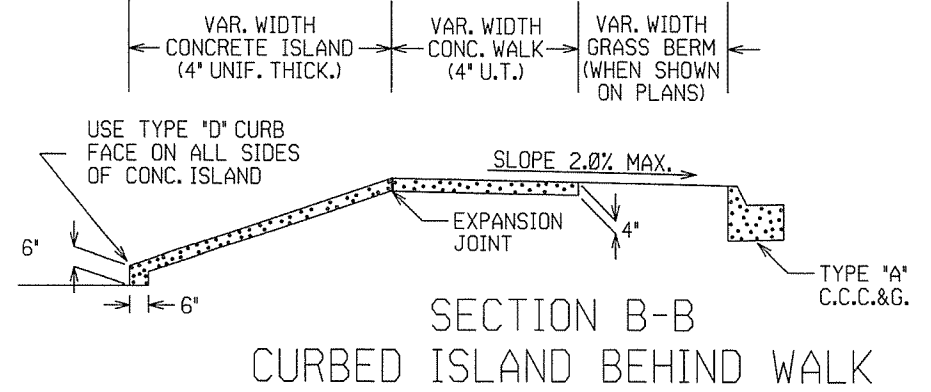


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY
FROM THE ROADWAY UNLESS APPROVED
BY THE ENGINEER.



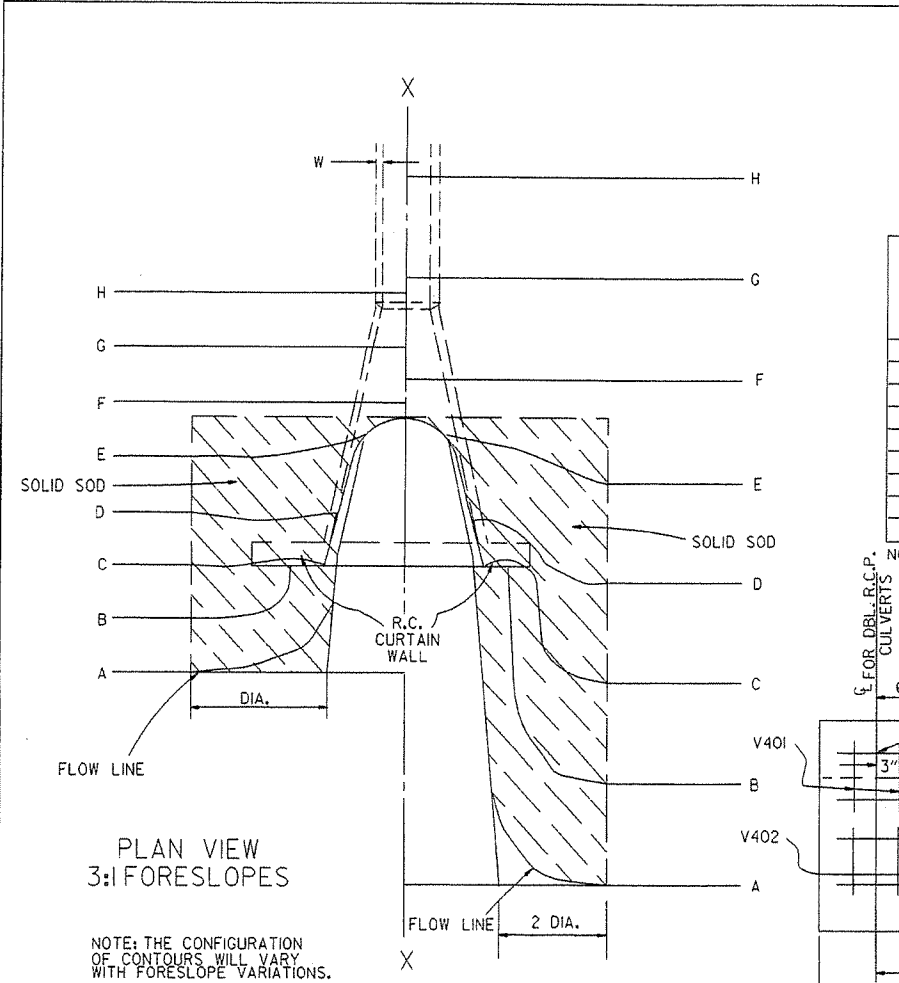
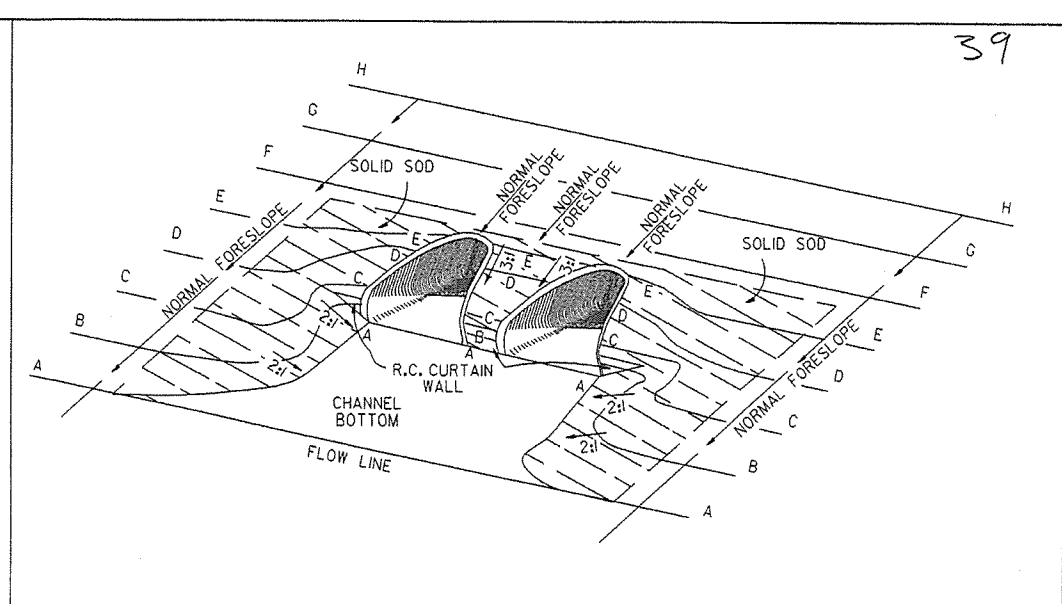
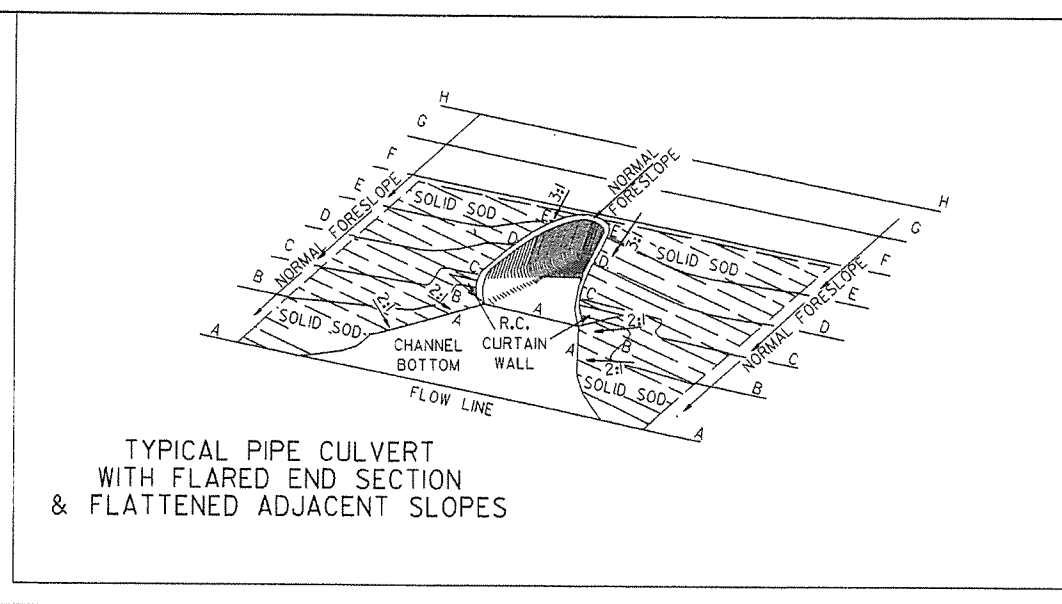
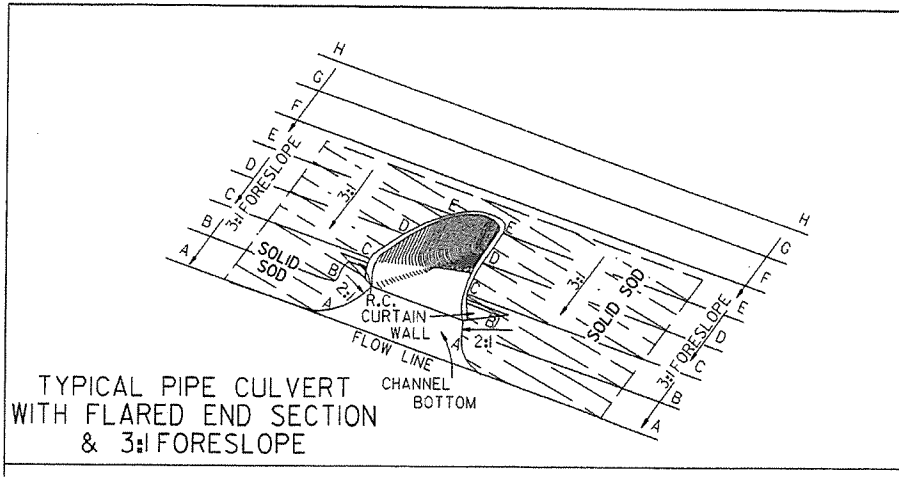
SECTION A-A



SECTION B-B
CURBED ISLAND BEHIND WALK

DATE	REVISED	DATE FILMED	DESCRIPTION
11-29-07			ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05			REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02			ADDED ISLAND DETAILS & NOTES
3-30-00			REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98			REVISED NOTES
11-18-98			REDRAWN AND REISSUED

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

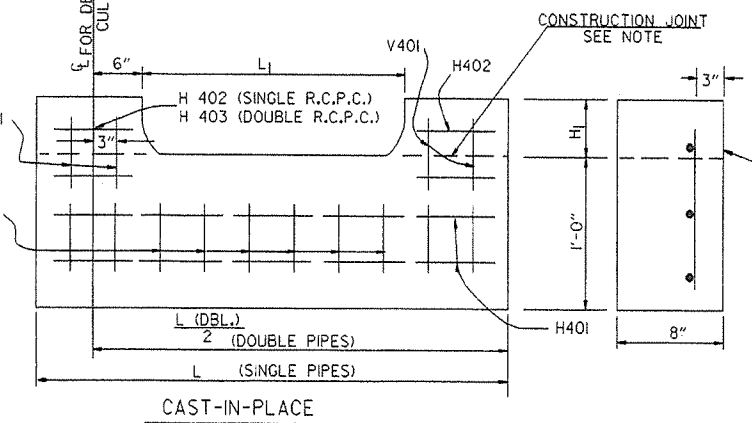
PIPE DIA.	H ₁	L ₁	L	L (DBL.) 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
18"	11 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1 1/2"	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'-9 1/2"	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.

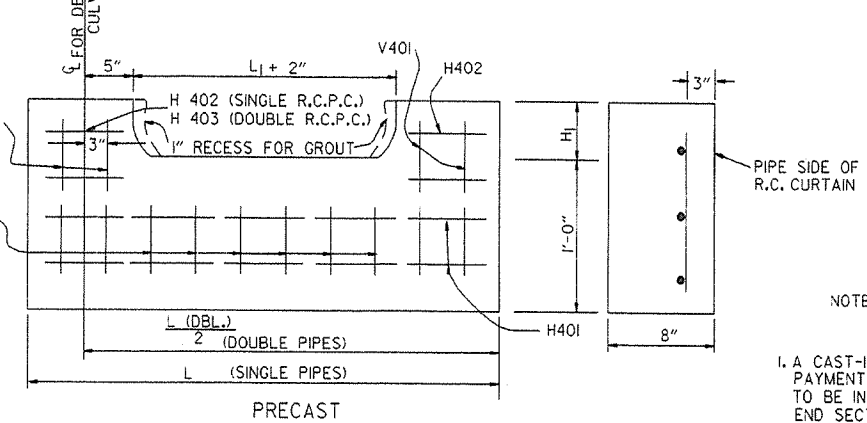
REINFORCING STEEL SCHEDULE

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'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8 1/2"	12	8"	18
30"	10'-8"	2	2'-4 1/2"	4	1'-11 1/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11 1/2"	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'-9 1/2"	8	2'-9 1/2"	16	8"	15	23'-8"	2	3'-9 1/2"	8	8"	4	2'-9 1/2"	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'-8 1/2"	12	3'-5 1/2"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5 1/2"	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.



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.



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.

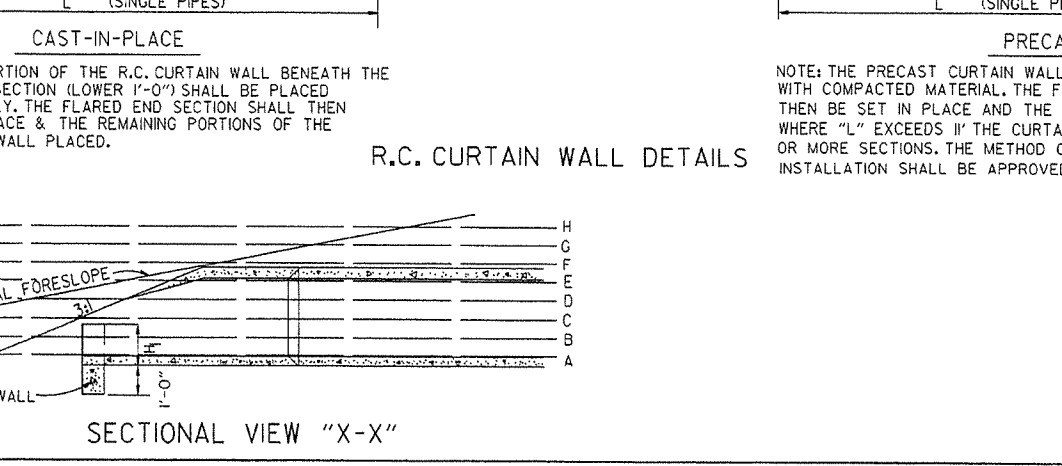
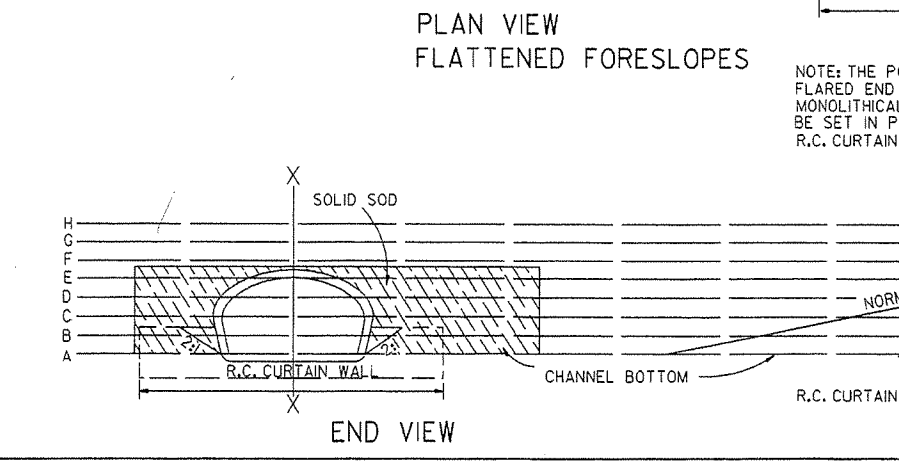
R.C. CURTAIN WALL DETAILS

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	
18"	5	7	12	6	8	13	5	7	12	6	8	13
24"	8	12	19	9	13	20	8	12	19	9	13	20
30"	13	18	29	14	19	30	13	18	29	14	19	30
36"	17	26	41	18	28	43	17	26	41	18	28	43
42"	23	35	55	25	37	57	23	35	55	25	37	57
48"	29	46	68	31	48	70	29	46	68	31	48	70
54"	35	57	85	37	59	87	35	57	85	37	59	87
60"	45	62	104	48	65	107	45	62	104	48	65	107
72"	64	92	156	67	95	159	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

- GENERAL NOTES
- 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.
 - ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 - 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.
 - WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
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		
DATE	REVISION	FILMED	STANDARD DRAWING FES-1

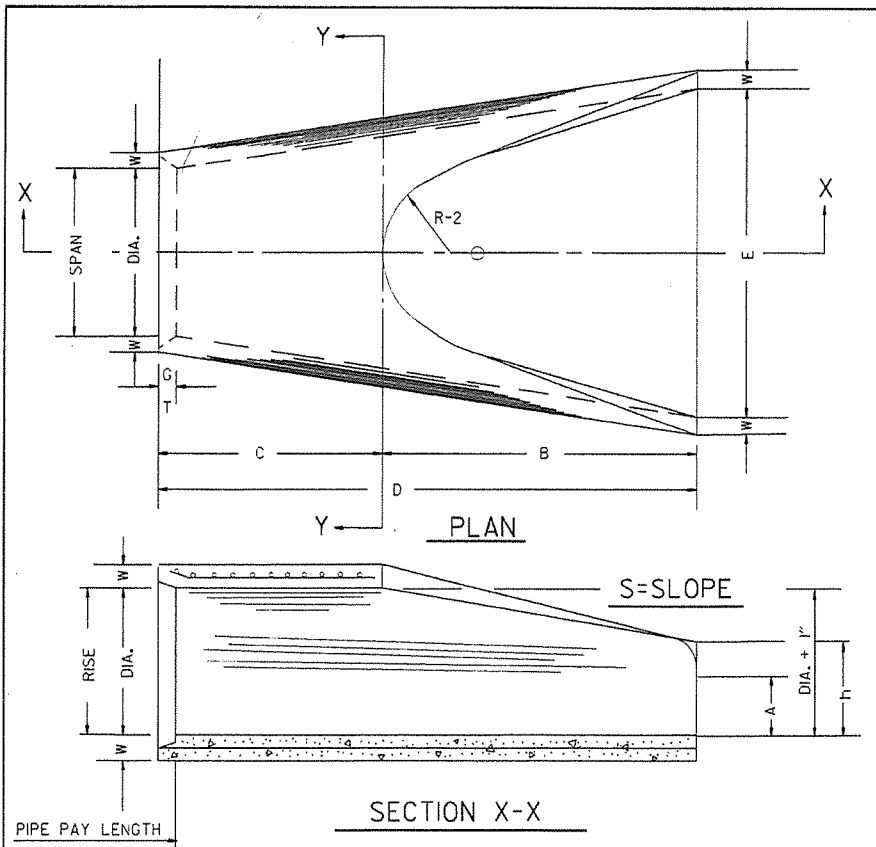


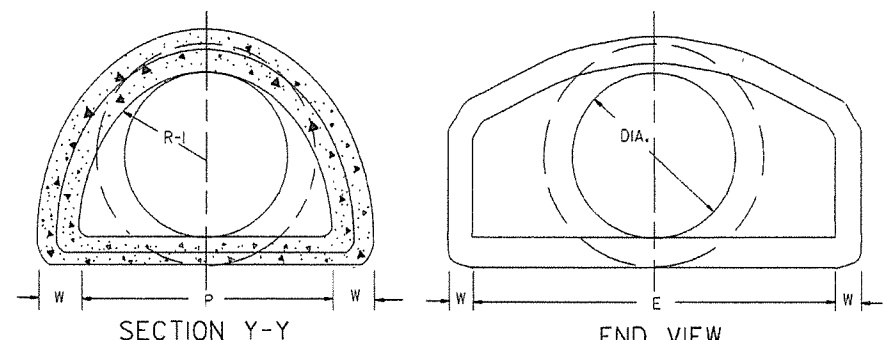
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA., "	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/8"	16 1/8"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 3/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 1/8"	24 5/8"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 3/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 3/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 1/8"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 1/8"	38 5/8"	24"	5"	13250	4'-6"

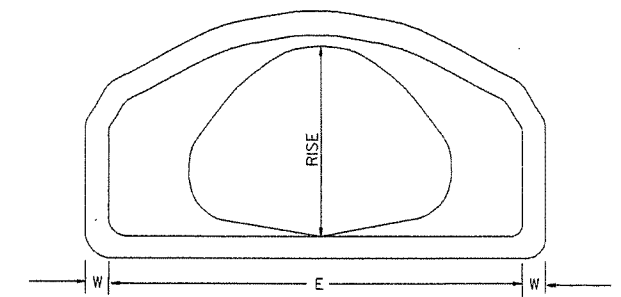
ARCH PIPE

EQUIV. DIA.	SPAN		RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2:1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2:1
21	26	26	15 1/2	16	2 3/4"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2:1
24	28 1/2	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 1/8"	15"	2 1/2"	2 1/2:1
30	36 1/4	36	22 1/2	23	3 1/2"	10"	3'-1"	3'-0 1/2"	6'-1 1/2"	6'-0"	47 1/8"	20"	3"	2 1/2:1
36	43 3/4	44	26 5/8	27	4"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	6'-6"	54 1/8"	22"	3 1/2"	2 1/2:1
42	51 1/8	51	31 1/8	31	4 1/2"	11 1/2"	4'-7"	1'-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2:1
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	7'-10"	70 1/8"	24"	4 1/4"	2 1/2:1
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/8"	24"	4 3/4"	2 1/2:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/8"	24"	5"	2 1/2:1

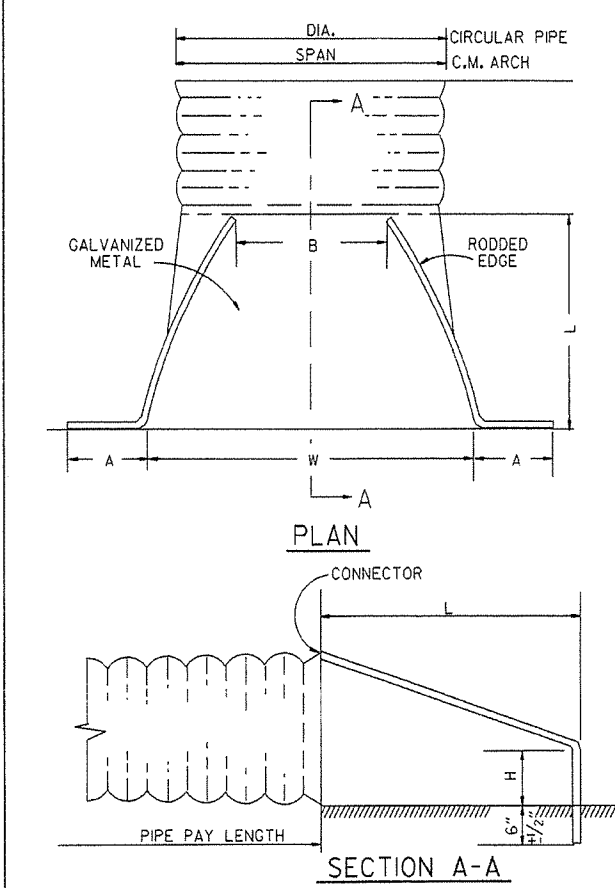
* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



END VIEW
CONCRETE ARCH PIPE

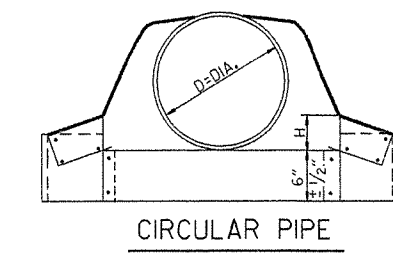


NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

CIRCULAR PIPE

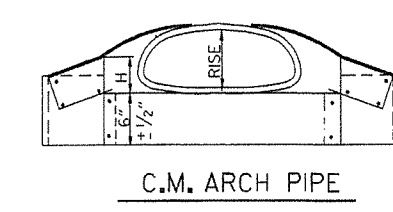
D. DIA.	GAUGE	A	B. MAX.	H	L	W	S
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1 3/4:1
66	12	18	36	12	87	120	1 1/2:1
72	12	18	39	12	87	126	1 1/3:1



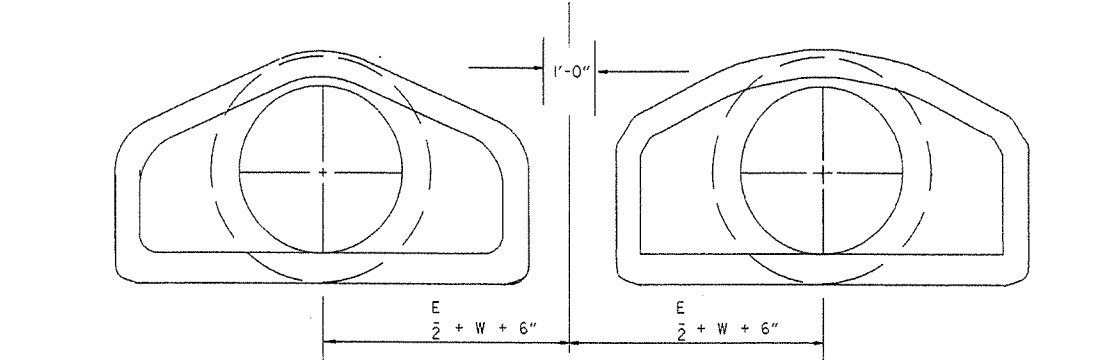
CIRCULAR PIPE

C.M. ARCH PIPE

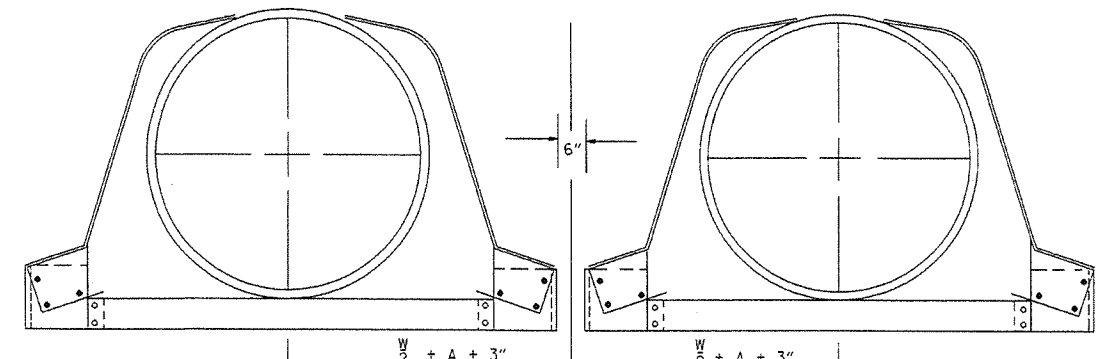
EQUIV. DIA.	SPAN	RISE	A	B. MAX.	H	L	W	S	GAUGE
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85	2 1/2:1	12
48"	57	38	18	26	12	63	90	2 1/2:1	12
54"	64	43	18	30	12	70	102	2 1/4:1	12
60"	71	47	18	33	12	77	114	2 1/4:1	12



C.M. ARCH PIPE



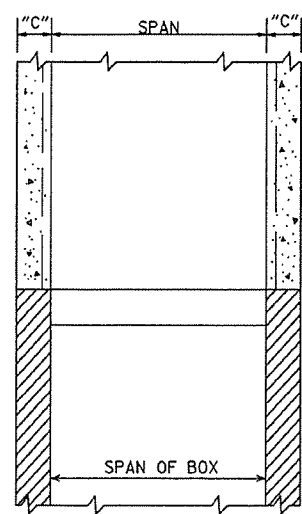
MULTIPLE R.C. PIPE CULVERTS



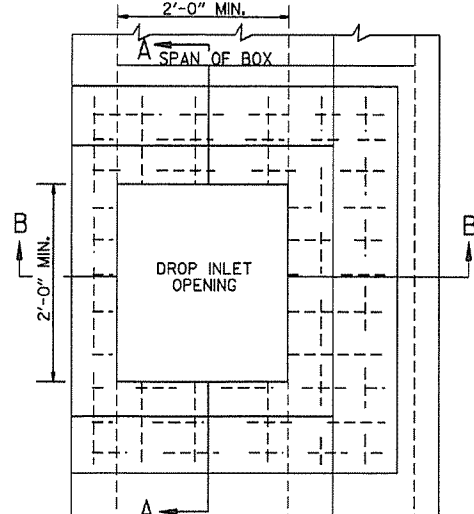
MULTIPLE C.M. PIPE CULVERTS

10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
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	
DATE	REVISION	FILMED	

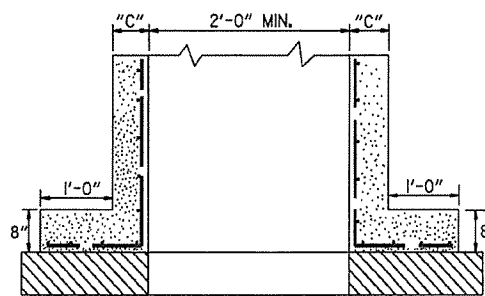
FLARED END SECTION
STANDARD DRAWING FES-2



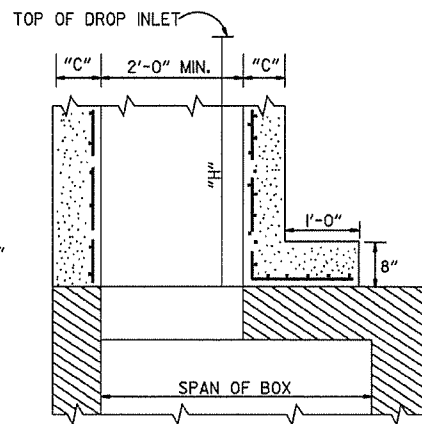
SECTION B-B



PLAN

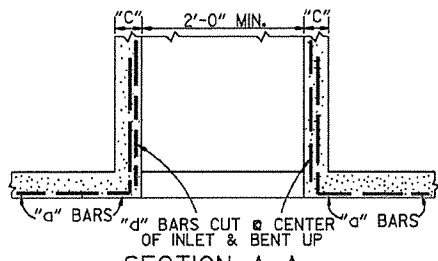


SECTION A-A

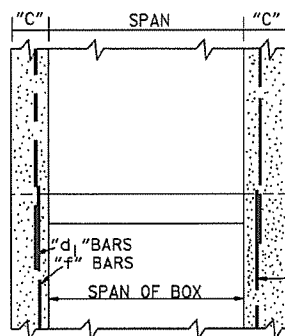


SECTION B-B

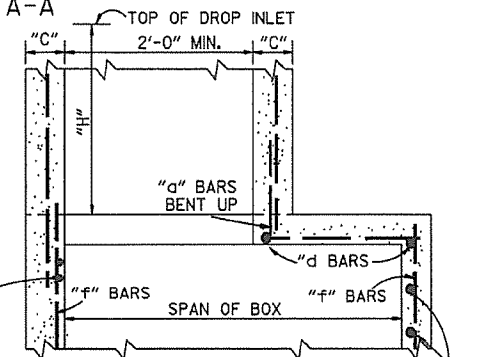
METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



SECTION A-A



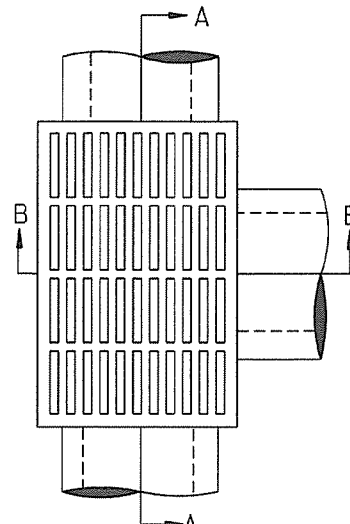
SECTION B-B



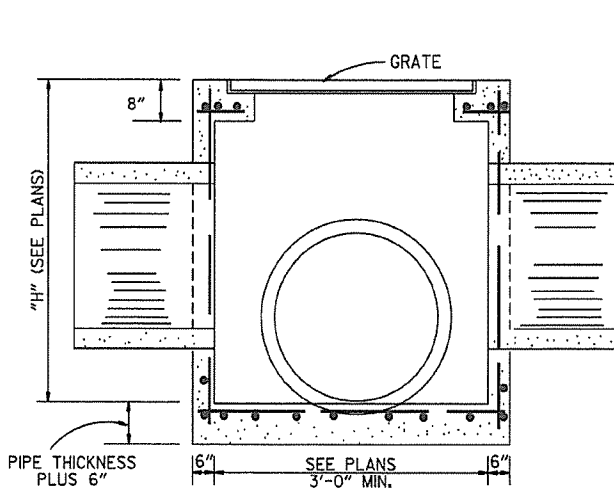
SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



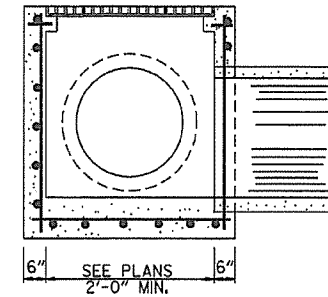
PLAN



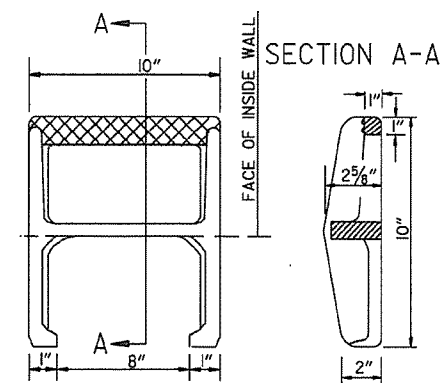
SECTION A-A

DROP INLET (TYPE E)

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

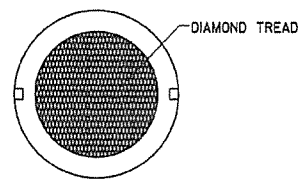


APPROX. WEIGHT = 11 LBS. (CAST IRON)

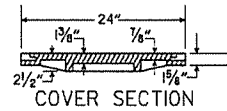
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

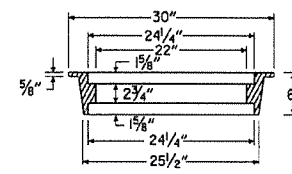
DETAIL OF STEP FOR DROP INLET



COVER FACE



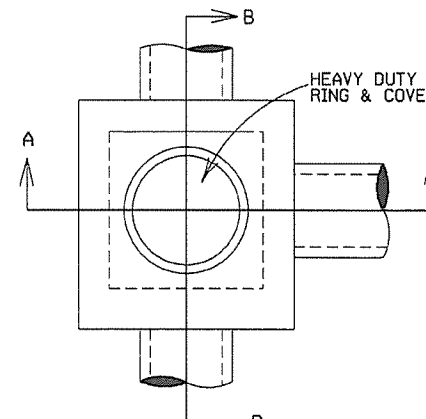
COVER SECTION



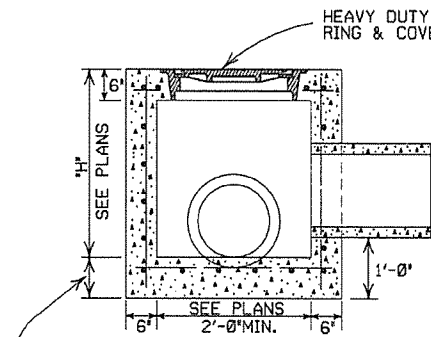
RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



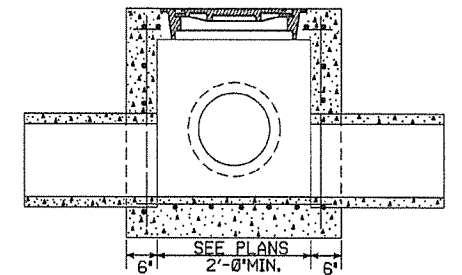
PLAN



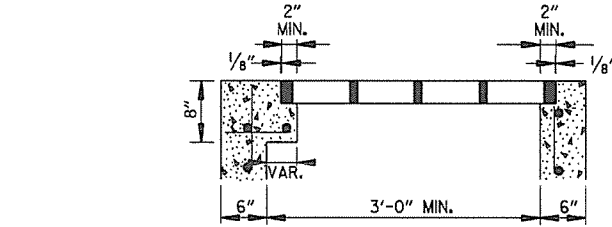
SECTION A-A

JUNCTION BOX (TYPE E)

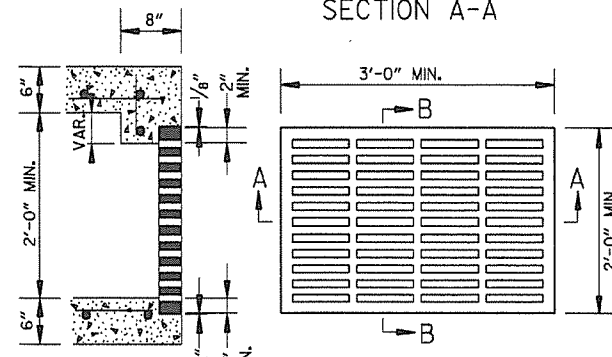
NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B



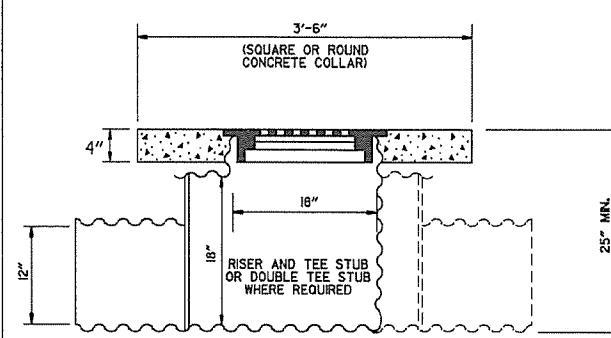
SECTION A-A



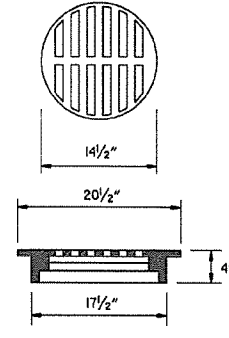
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS "12" SIDE DRAIN".



USE NEENAH R-530I-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

- GENERAL NOTES:
1. ALL EXPOSED CORNERS SHALL BE 3/4" CHAMFERED.
 2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
 3. EXPANSION JOINT MATERIAL SHALL BE 3/4" PREFORMED FIBER.
 4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
 5. GRATE AND FRAME SHALL NOT BE PAINTED.
 6. GRATE SHALL BE BICYCLE SAFE.
 7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
 8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
 9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
 10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE	REV.	REVISION	DATE FILMED
11-16-01		ADDED NOTE 10	
1-12-00		REVISED HEAVY DUTY RING & COVER	
7-02-98		CHANGED GRATE DETAIL, DELETED DI (TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97		ADDED DIMENSION TO TYPE IV-A	
10-18-96		ADDED DETAIL OF YARD DRAIN	
8-15-91		DELETE TYPE IV GRATE	
7-15-88		REVISED STEP DETAIL	
5-20-83		REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83		ADDED GENERAL NOTE NO. 4	
3-2-81		ADDED TYPE IV-A GRATE	
5-22-74		DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72		REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

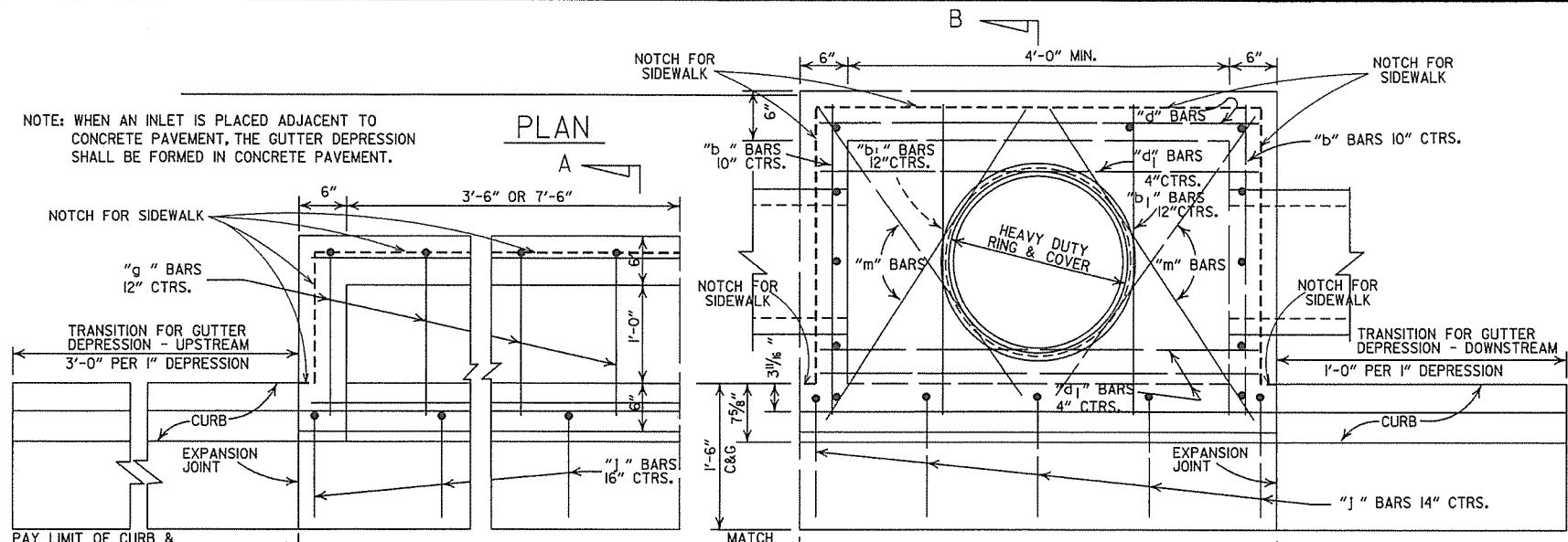
STANDARD DRAWING FPC-9

4'-0" LENGTH DROP INLET DROP INLET EXTENSION 42

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0"		PLUS OR MINUS PER LIN. FT. OF HEIGHT		4'-0"		8'-0"	
		CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS
18"	2'-6"	1.77	156	0.28	22	0.58	38	0.87	72
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				
						DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
						0.04	3		

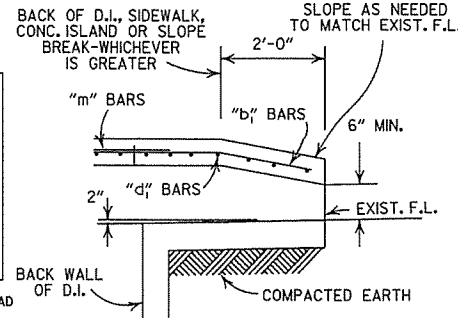
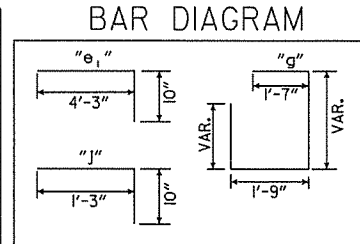
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

NOTE: WHEN AN INLET IS PLACED ADJACENT TO CONCRETE PAVEMENT, THE GUTTER DEPRESSION SHALL BE FORMED IN CONCRETE PAVEMENT.

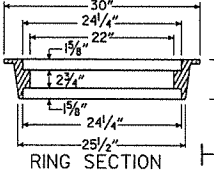
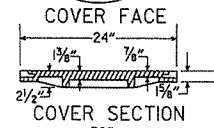
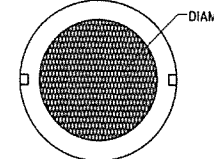


DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8



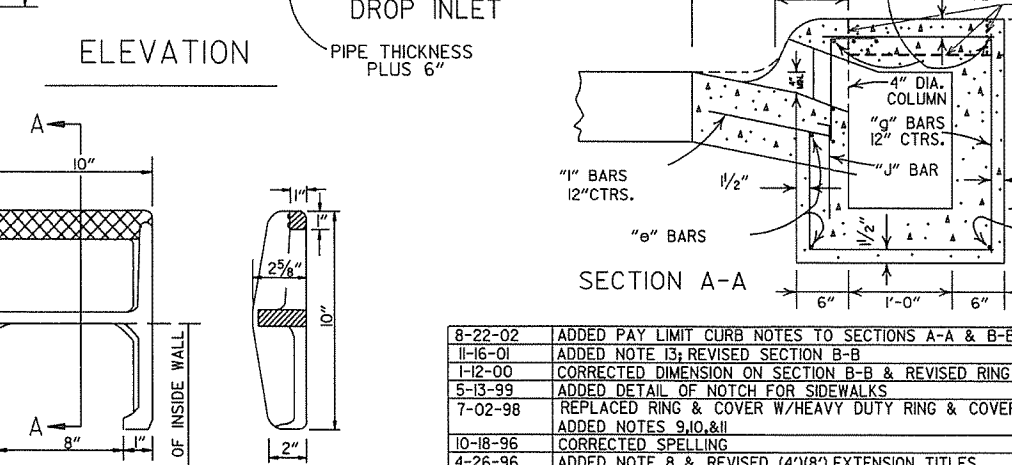
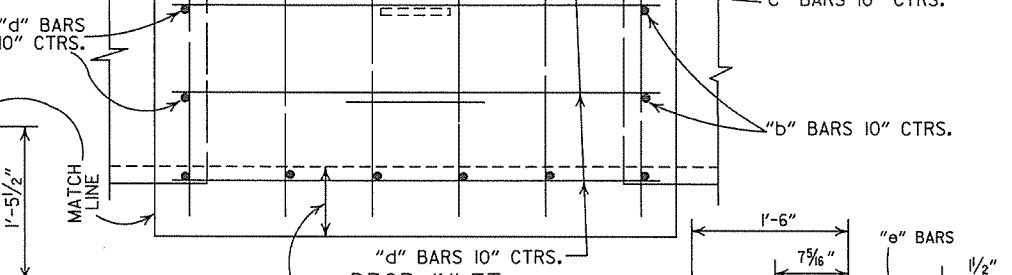
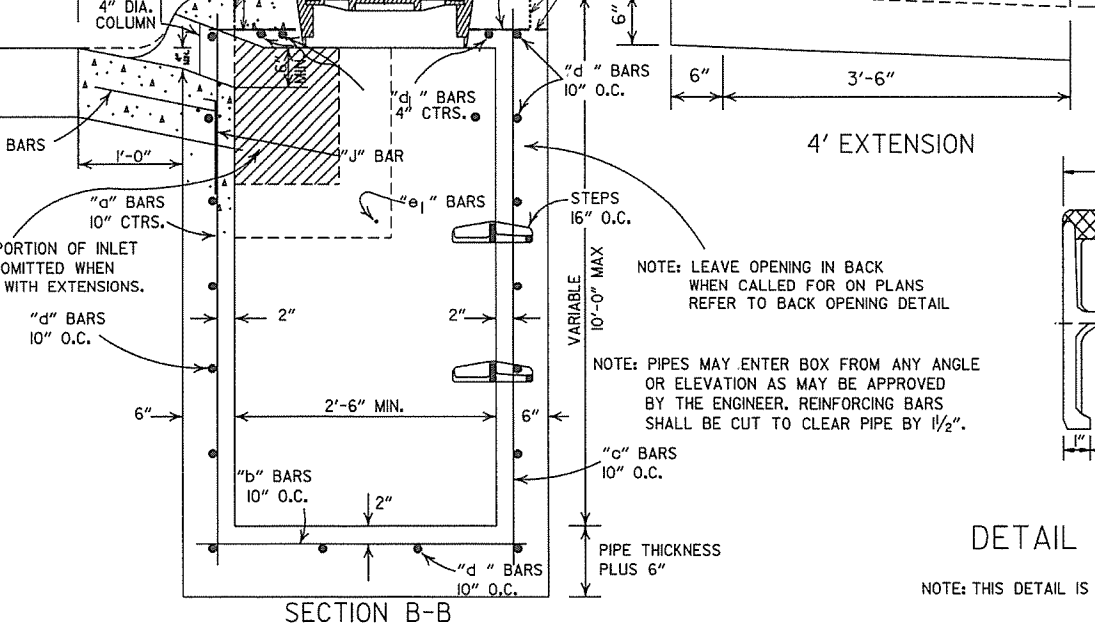
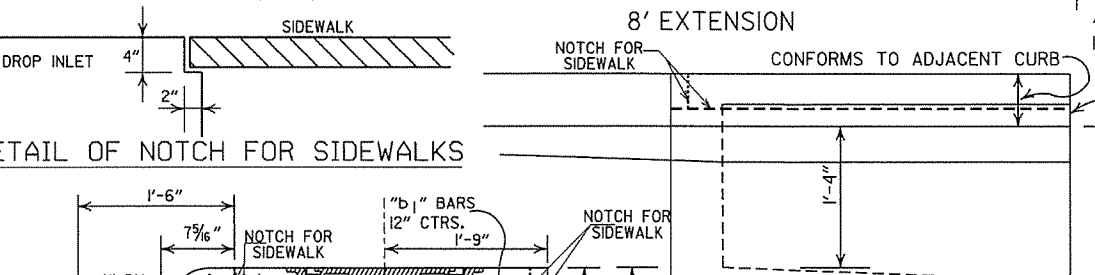
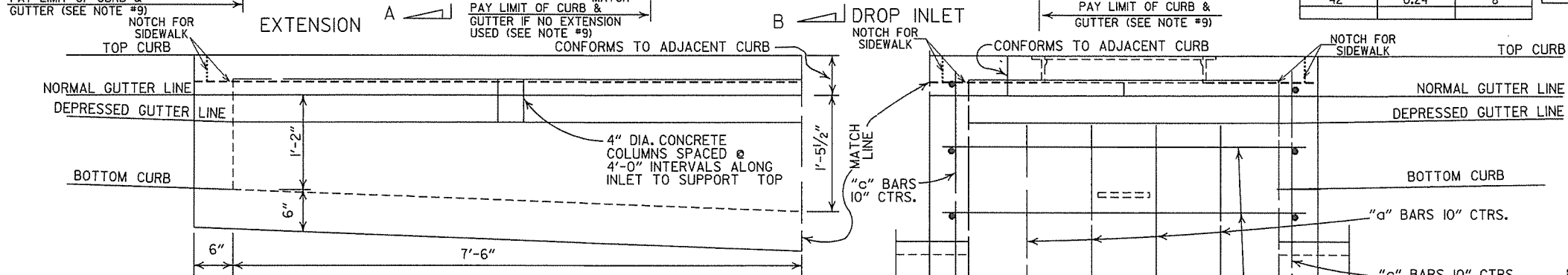
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

- GENERAL NOTES:
- ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
 - STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
 - ALL REINF. BARS SHALL BE #4 AND HAVE 1/2" COVER.
 - DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
 - THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
 - 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).
 - HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
 - DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
 - 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.
 - 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.
 - HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
 - 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
 - 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.

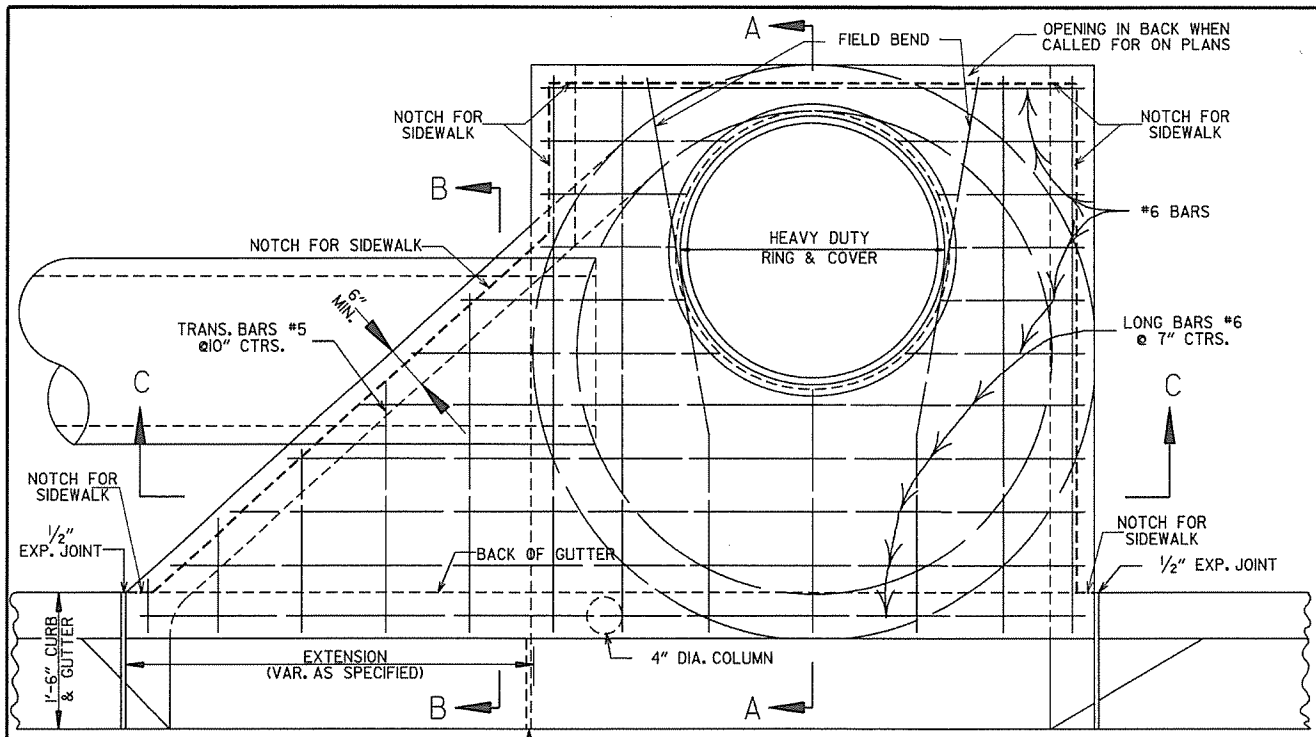


PLAN SECTION A-A
DETAIL OF STEP FOR DROP INLET

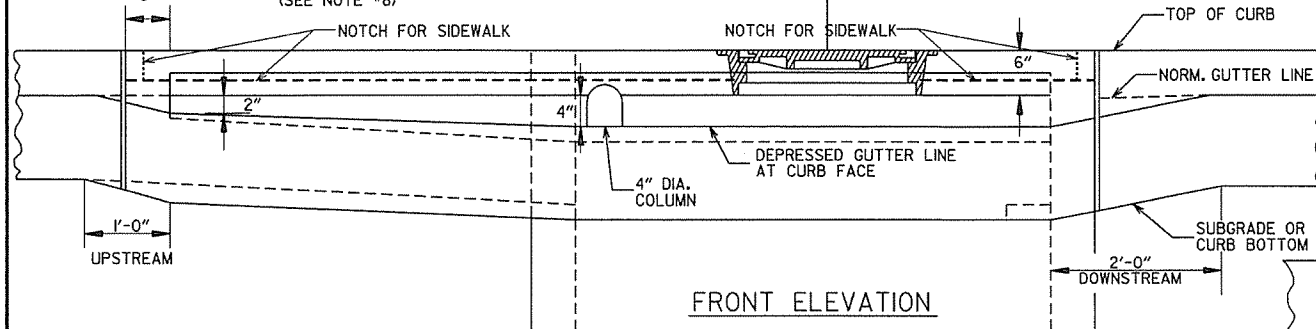
APPROX. WEIGHT = 11 LBS. (CAST IRON)
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DATE	REV.	REVISION	DATE FILED
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'x8') 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	

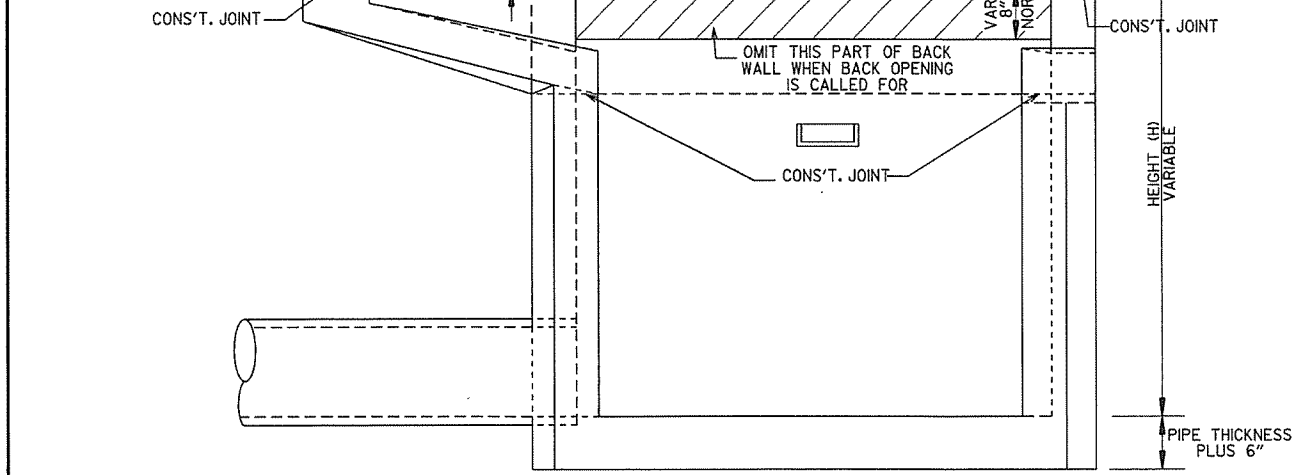
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DROP INLETS
(TYPE C)
STANDARD DRAWING FPC-9E



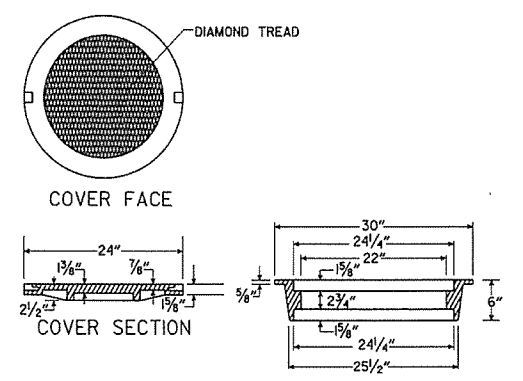
PLAN - W/SINGLE EXTENSION
 PAY LIMIT OF CURB & GUTTER (SEE NOTE #8)
 PAY LIMIT OF CURB & GUTTER IF NO EXTENSION USED (SEE NOTE #8)
 PAY LIMIT OF CURB & GUTTER (IF NO EXTENSION USED)
 NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.
 EXP. JOINT
 1/2" EXP. JOINT
 4" DIA. COLUMN
 1/2" EXP. JOINT
 PAY LIMIT OF CURB & GUTTER (SEE NOTE #8)



FRONT ELEVATION
 NOTCH FOR SIDEWALK
 NOTCH FOR SIDEWALK
 TOP OF CURB
 NORM. GUTTER LINE
 DEPRESSIONED GUTTER LINE AT CURB FACE
 4" DIA. COLUMN
 SUBGRADE OR CURB BOTTOM
 2'-0" DOWNSTREAM
 1'-0" UPSTREAM

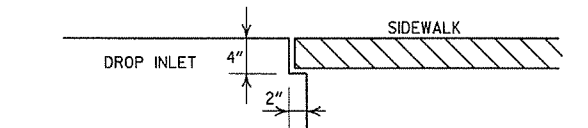


SECTION C-C
 NOTCH FOR SIDEWALK
 CONS'T. JOINT
 CONS'T. JOINT
 CONS'T. JOINT
 OMIT THIS PART OF BACK WALL WHEN BACK OPENING IS CALLED FOR
 VAR. 6" NOR.
 HEIGHT (H) VARIABLE
 PIPE THICKNESS PLUS 6"

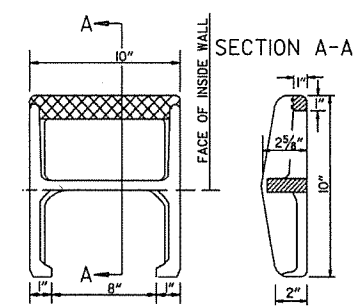


COVER FACE
COVER SECTION
RING SECTION
 APPROXIMATE TOTAL WEIGHT = 333 LBS.
HEAVY DUTY RING & COVER

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.

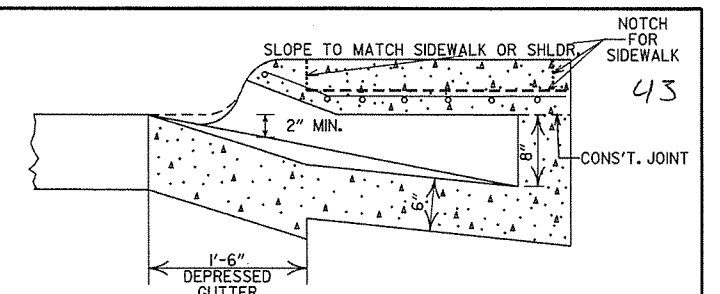


DETAIL OF NOTCH FOR SIDEWALKS

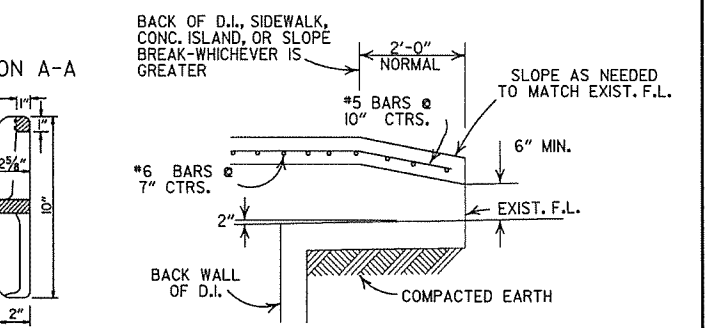


SECTION A-A
 FACE OF INSIDE WALL
 APPROX. WEIGHT = 11 LBS. (CAST IRON)
PLAN
 NOTE: THIS DETAIL IS TYPICAL, OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B
 SLOPE TO MATCH SIDEWALK OR SHLDR.
 2" MIN.
 CONS'T. JOINT
 1'-6" DEPRESSIONED GUTTER
 NOTCH FOR SIDEWALK
 43

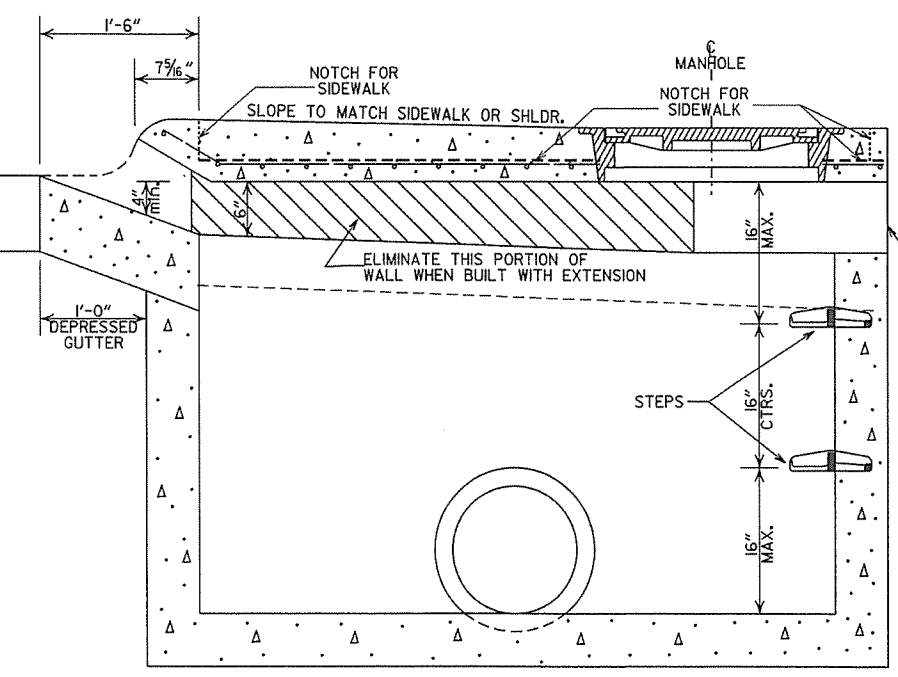


BACK OPENING
 BACK OF D.I., SIDEWALK, CONC. ISLAND, OR SLOPE BREAK-WHICHEVER IS GREATER
 2'-0" NORMAL
 SLOPE AS NEEDED TO MATCH EXIST. F.L.
 #5 BARS @ 10" CTRS.
 #6 BARS @ 7" CTRS.
 6" MIN.
 EXIST. F.L.
 BACK WALL OF D.I.
 COMPACTED EARTH
 WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

- GENERAL NOTES:**
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
 2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
 3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1/2" COVER.
 4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
 5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
 6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
 7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
 8. PAYMENT FOR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
 9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
 10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
 11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
 12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
 13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

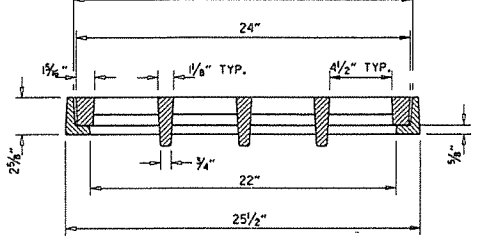
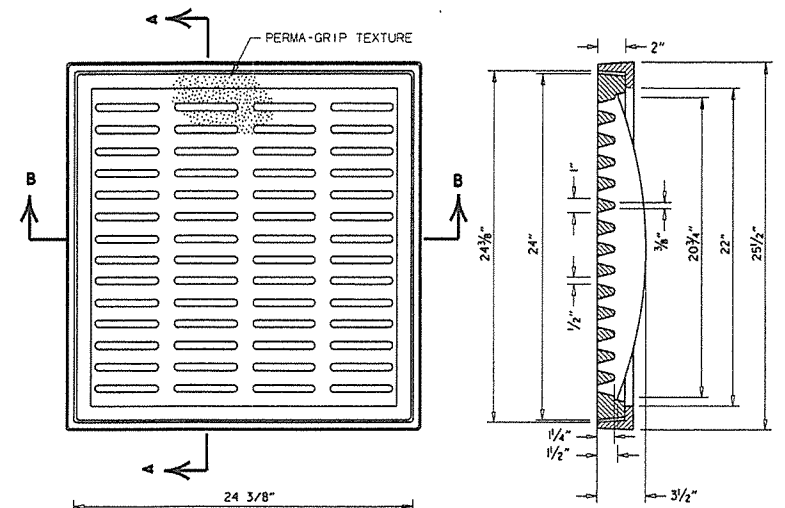
MINIMUM WALL THICKNESS			
DIA. OF D.I.	DIA. OF OUTLET PIPE	CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"



SECTION A-A
 1'-6"
 7 5/16"
 NOTCH FOR SIDEWALK
 SLOPE TO MATCH SIDEWALK OR SHLDR.
 NOTCH FOR SIDEWALK
 MANHOLE
 ELIMINATE THIS PORTION OF WALL WHEN BUILT WITH EXTENSION
 16" MAX.
 16" MAX.
 STEPS
 16" CTRS.
 16" MAX.
 HEIGHT (H) VARIABLE
 PIPE THICKNESS PLUS 6"

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 ADD. OPENING DIMENSION	
10-23-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
7-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN DETAIL & NOTE	8-3-91
8-15-91	REVISED NOTES #12 & ADDED BK. OPEN DETAIL	8-3-91
11-30-89	ADDED NOTE NO. 12	11-30-89
3-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	5-13-89
12-15-88	ADDED EXTEND NOTE TO SECTION A-A	6-27-88
1-14-87	MODIFIED WALL THICKNESS	1-2-87
1-12-87	ISSUED	4-2-87

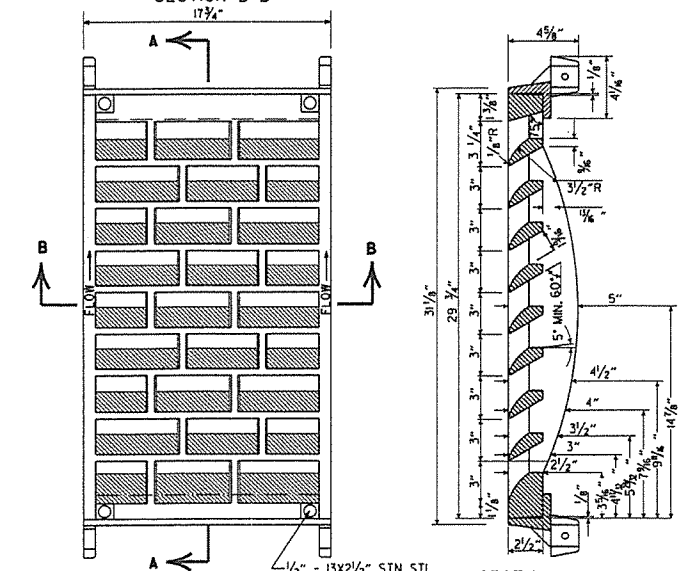
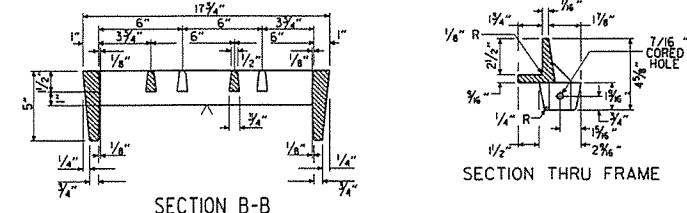
ARKANSAS STATE HIGHWAY COMMISSION
 DETAILS OF DROP INLET (TYPE MO)
 STANDARD DRAWING FPC-9M



SECTION B-B
DETAILS OF PEDESTRIAN GRATE AND FRAME

SECTION A-A
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

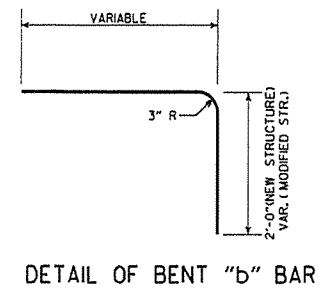
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/2" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS 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 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.



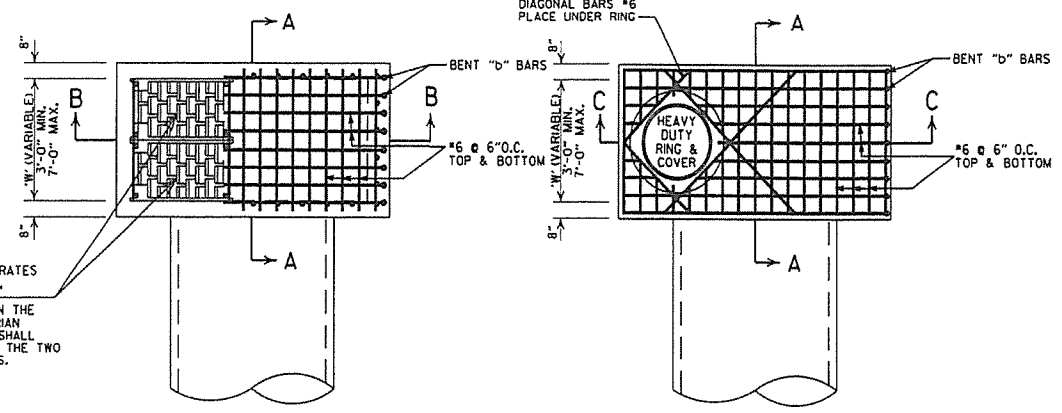
SECTION B-B
DETAILS OF RIBBED VANE GRATE AND FRAME

SECTION A-A
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

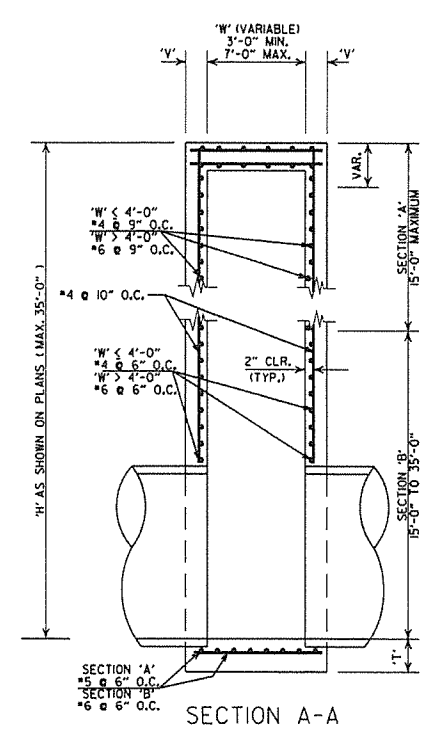
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



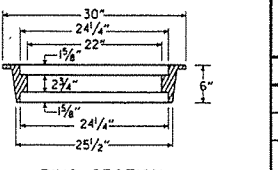
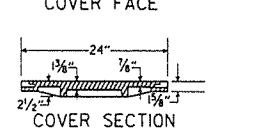
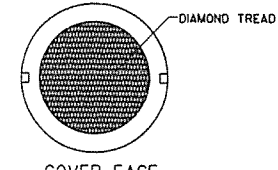
DETAIL OF BENT "b" BAR



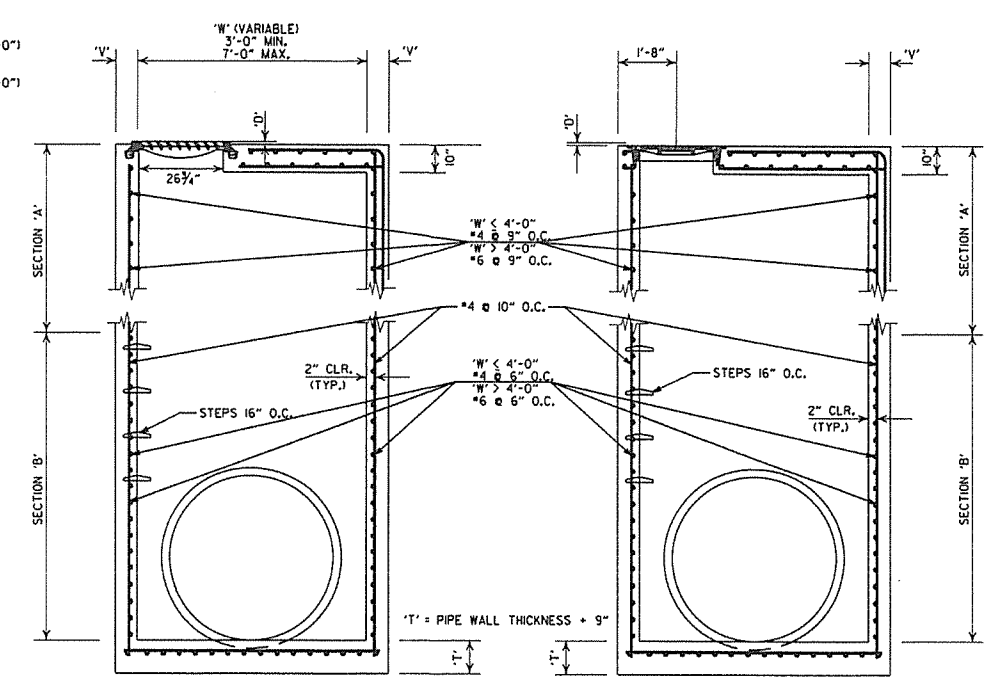
TWO RIBBED VANE GRATES WITH FRAME NORMAL.
WHEN CALLED FOR IN THE PLANS, ONE PEDESTRIAN GRATE WITH FRAME SHALL BE USED IN LIEU OF THE TWO RIBBED VANE GRATES.



SECTION A-A
DETAILS OF DROP INLET (TYPE ST)



RING SECTION
HEAVY DUTY RING & COVER
APPROXIMATE TOTAL WEIGHT = 333 LBS.



SECTION B-B
SECTION C-C
DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

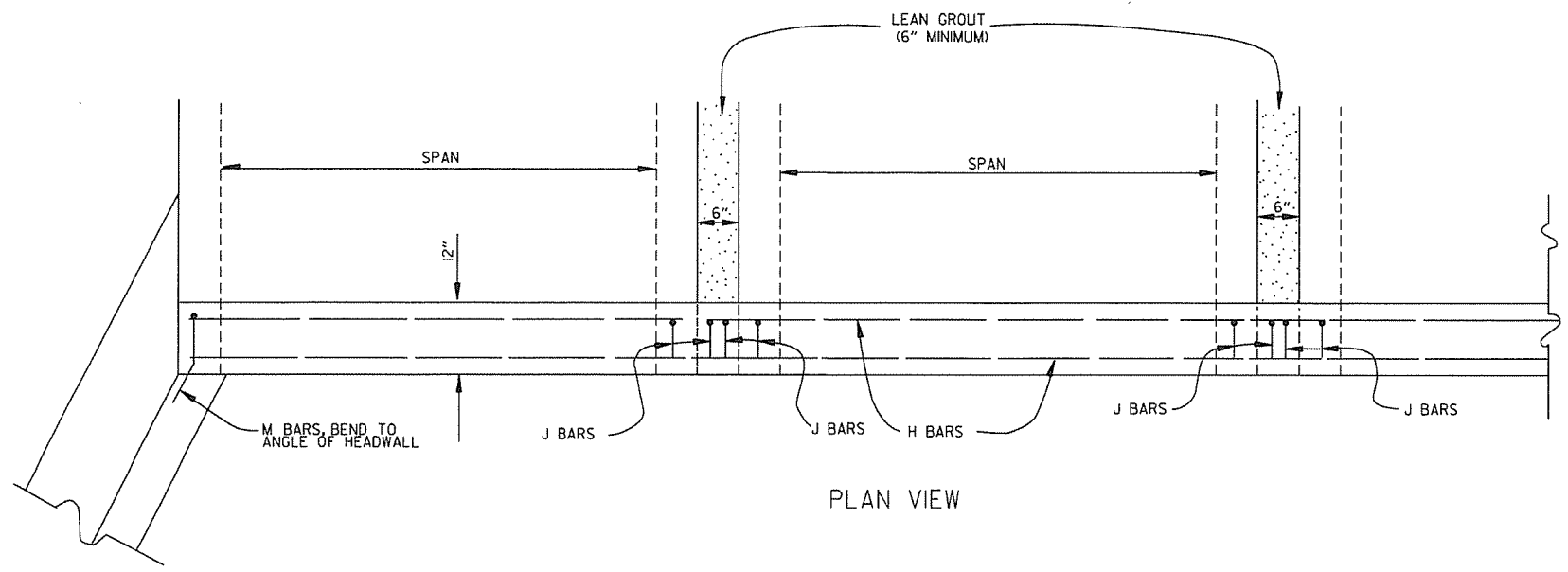
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)
STANDARD DRAWING FPC-9S



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 B15 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

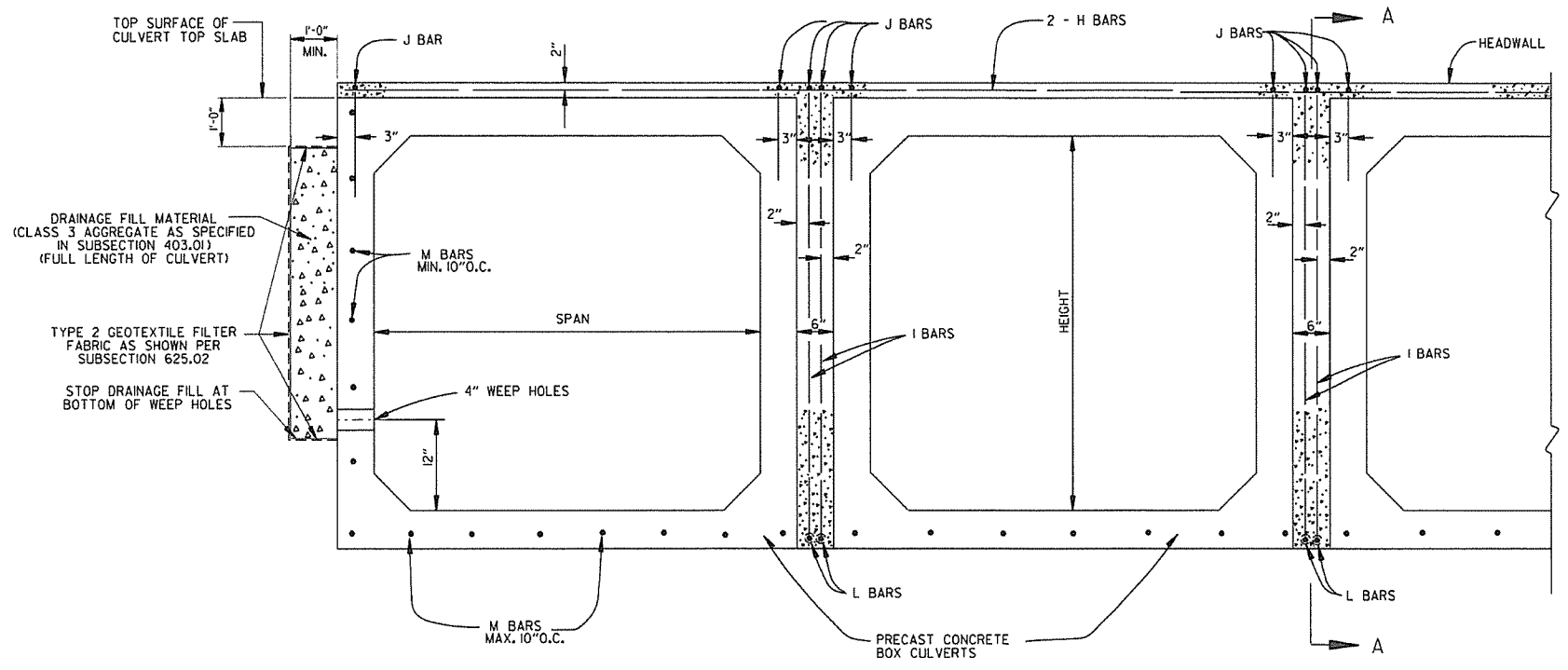
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

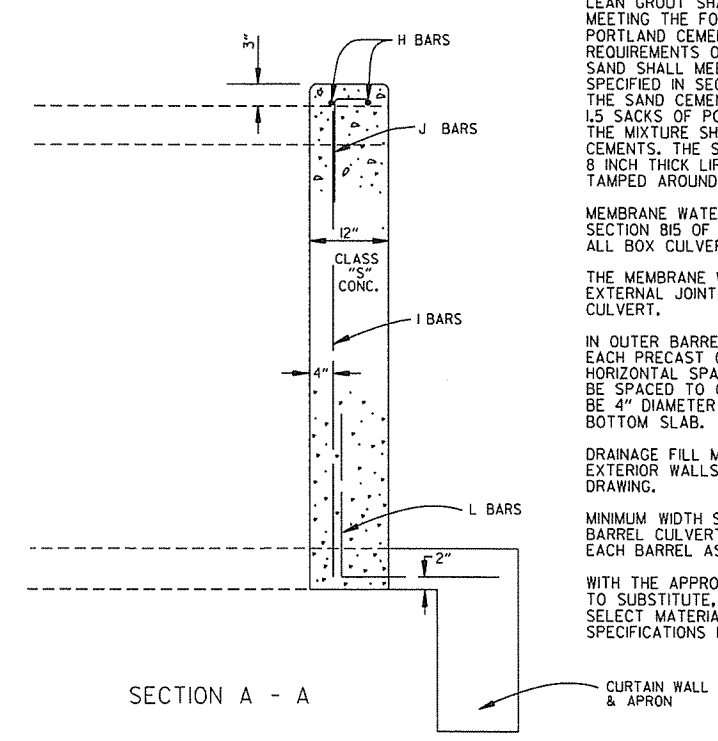
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

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
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	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/8	44	26 3/8	27
42	51 1/8	51	31 1/8	31
48	58 1/2	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	77 1/2	77
108	138	138	87 1/8	87
120	154	154	96 1/8	97
132	168 3/4	169	106 1/2	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.(FKI).

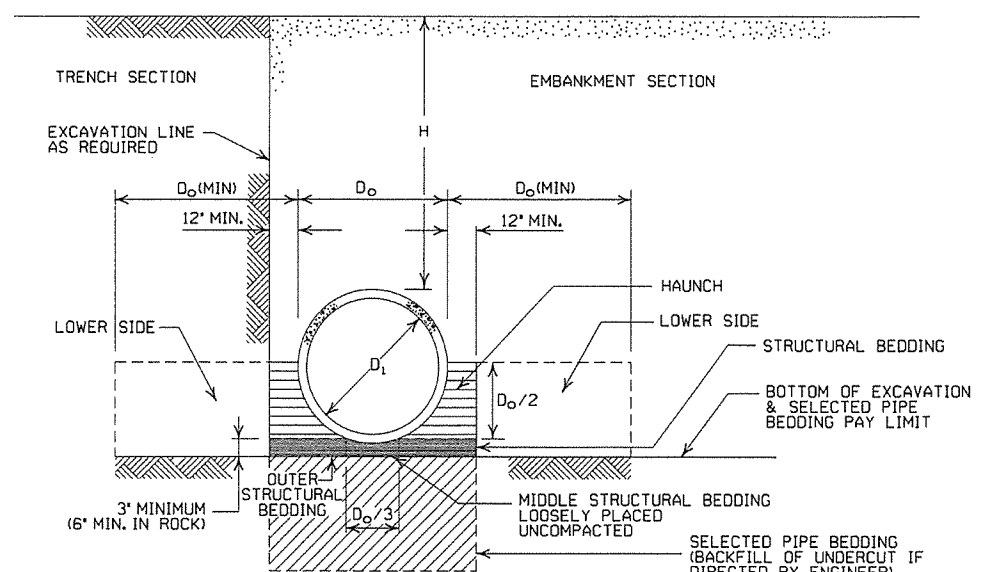
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

- D₁ = NORMAL INSIDE DIAMETER OF PIPE
- D_o = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- [Hatched Pattern] = 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 (2003 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

INSTALLATION TYPE	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
	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

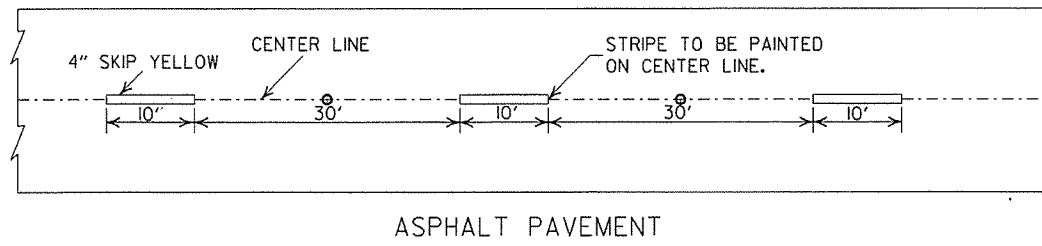
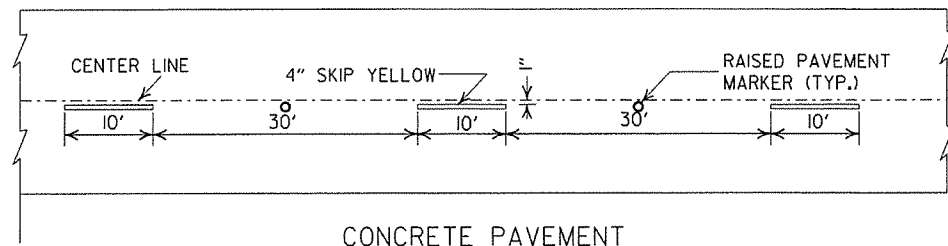
NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
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	

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CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING

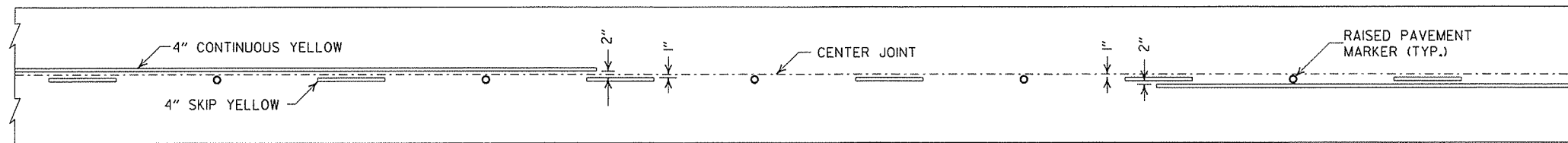
STANDARD DRAWING PCC-1



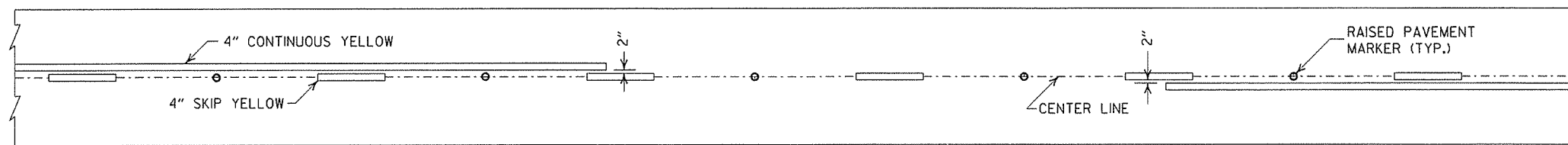
CONCRETE PAVEMENT

ASPHALT PAVEMENT

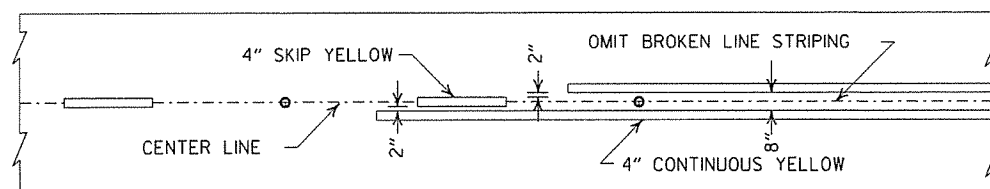
BROKEN LINE STRIPING



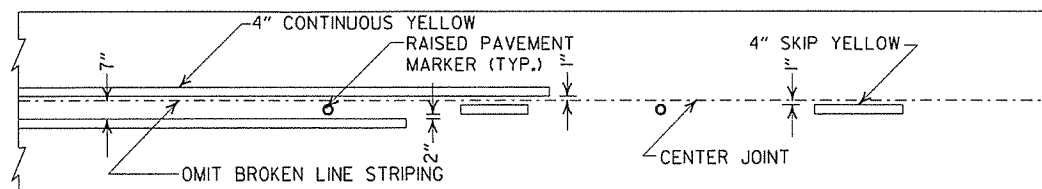
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

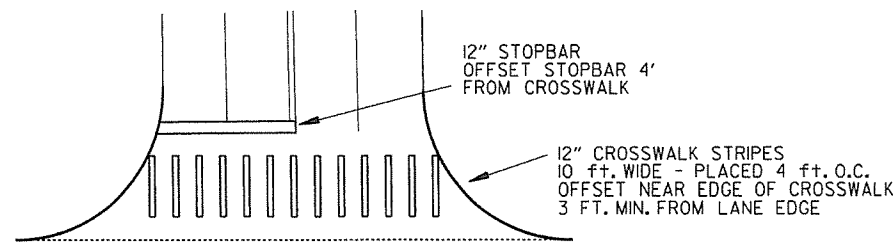


ASPHALT PAVEMENT



CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

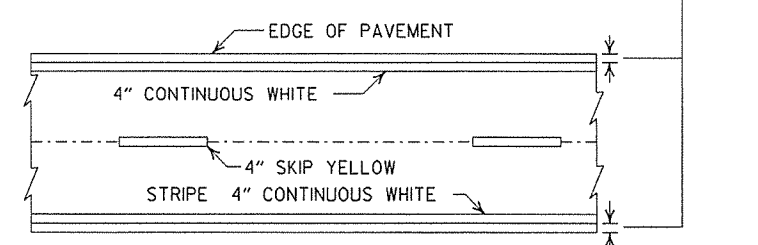


CROSSWALK AND STOPBAR DETAILS

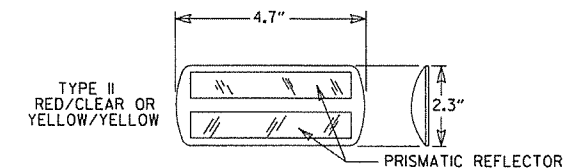
NOTES:

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.

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.

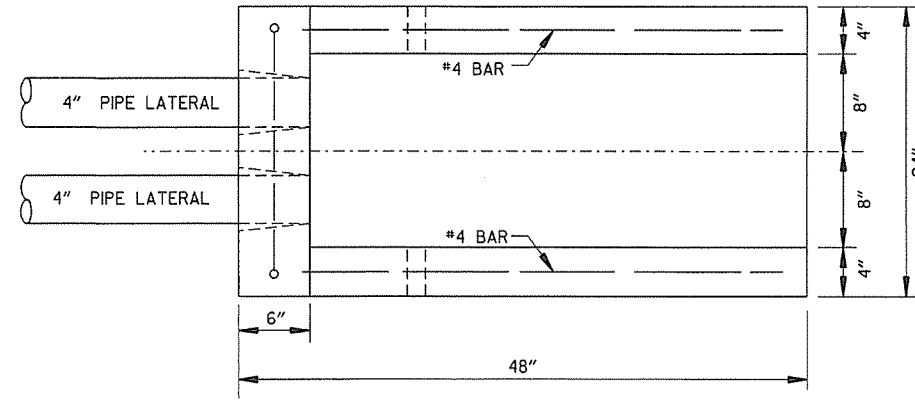
DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED FLOWABLE PAVT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

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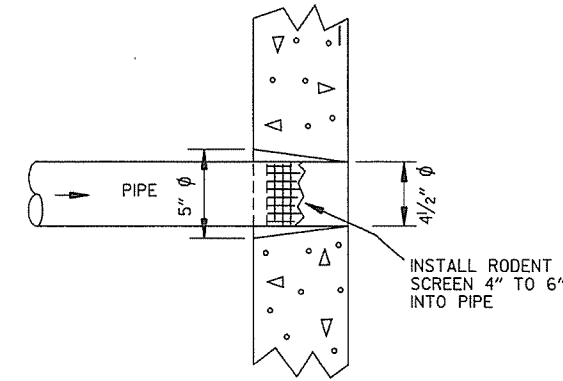
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

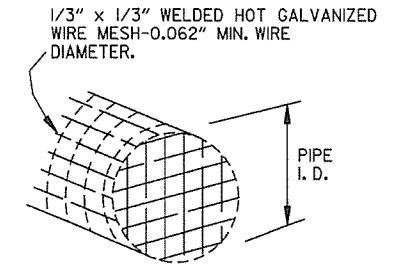
NOTE:
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



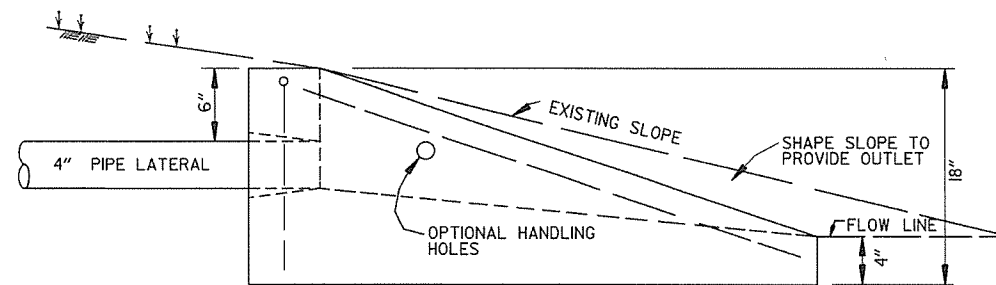
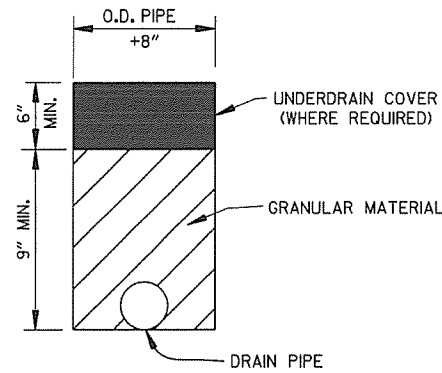
PLAN VIEW



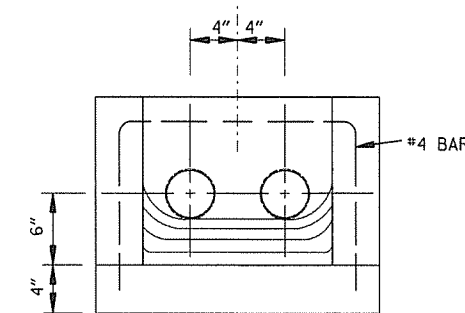
DETAIL OF HOLE FOR 4" PIPE



DETAIL OF RODENT SCREEN



SIDE VIEW

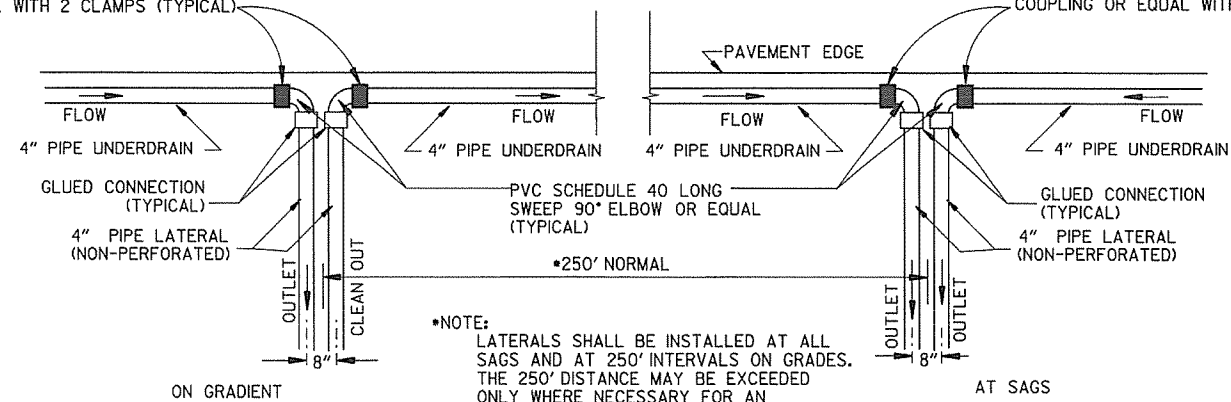


FRONT VIEW

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

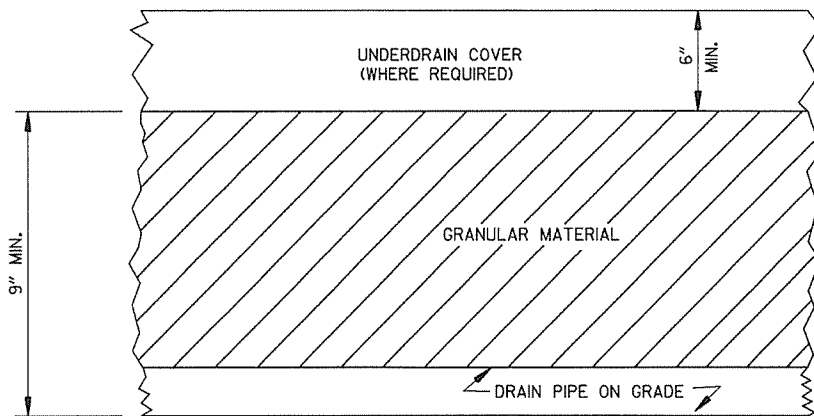
FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



*NOTE: LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

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.



DETAILS OF PIPE UNDERDRAIN

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; 5 1/2" 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 POLYETHYLENE 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
DATE	REVISION	DATE FILMED

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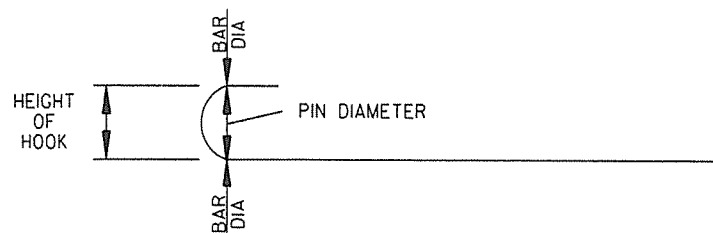
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3"	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	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 2 3/4 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

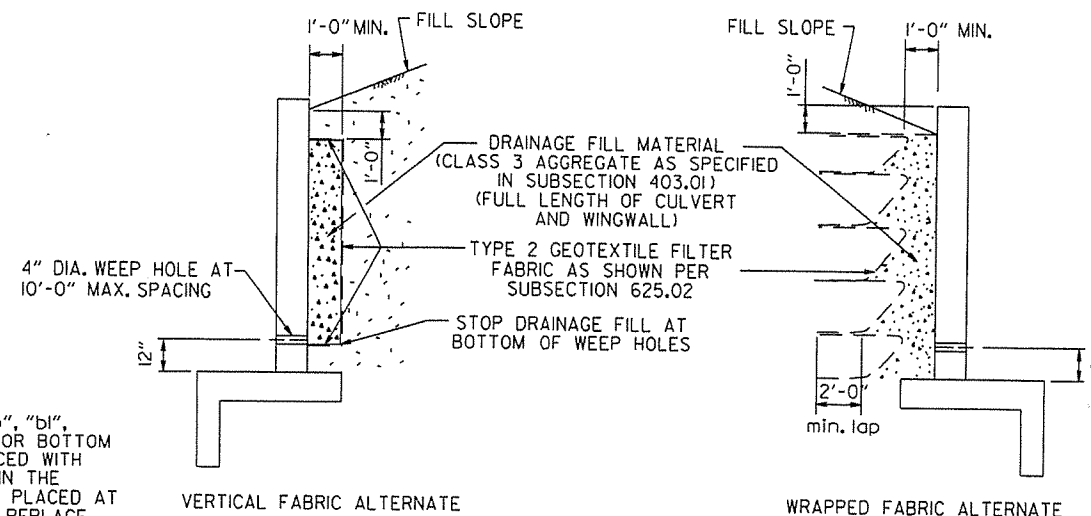
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

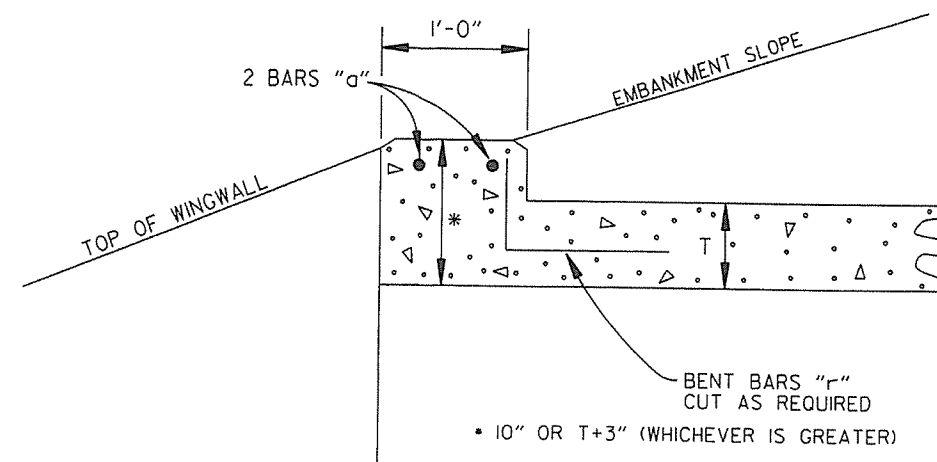
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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 1/2 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.

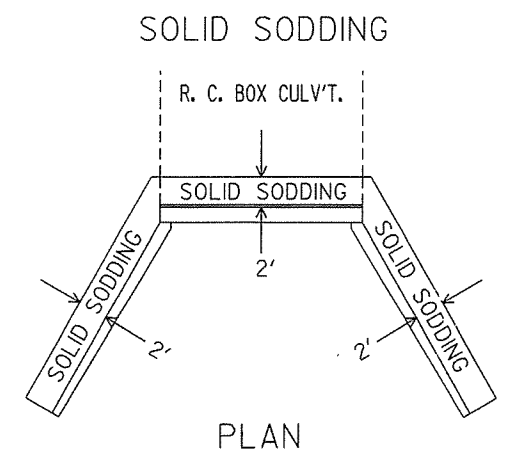
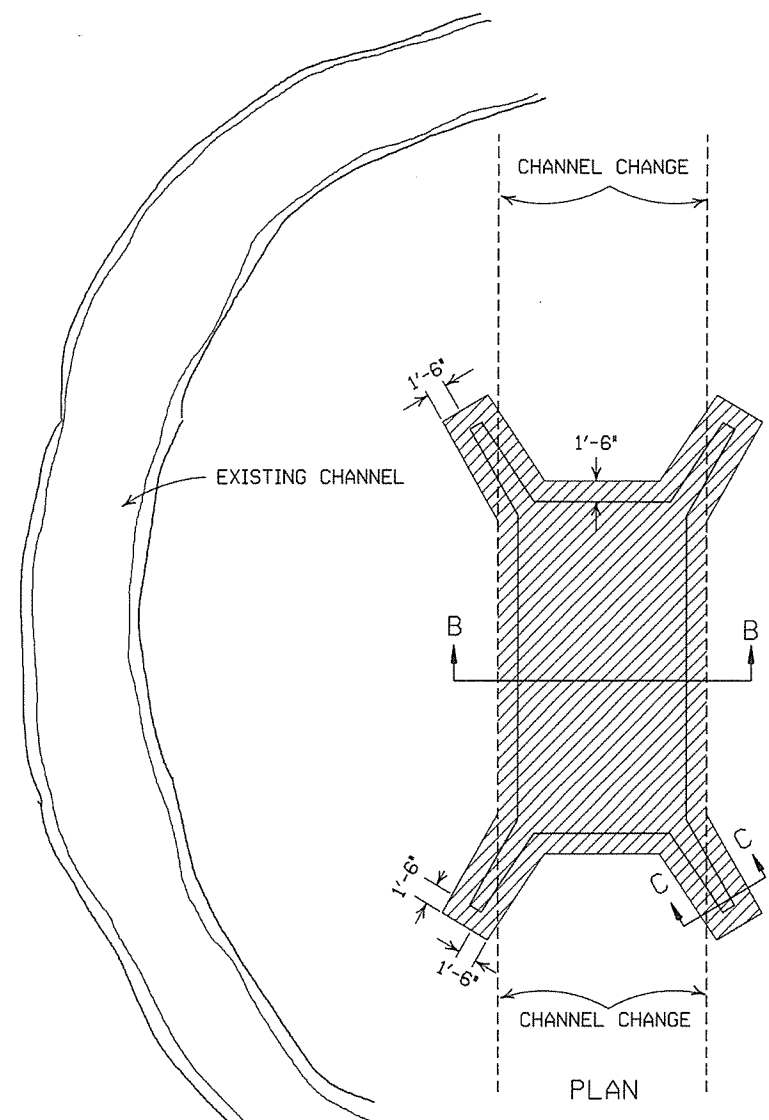
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

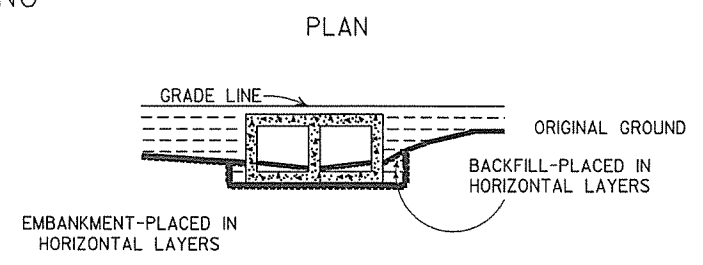
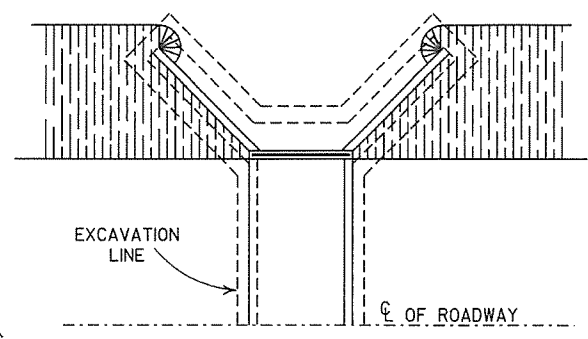
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1

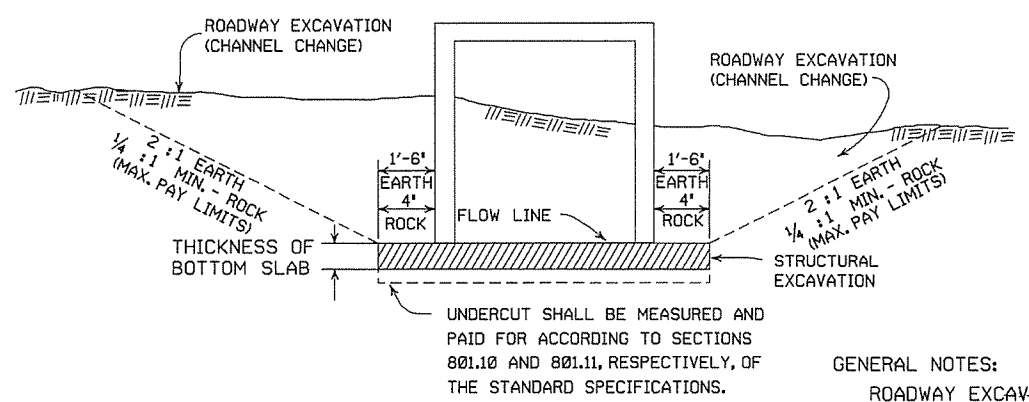
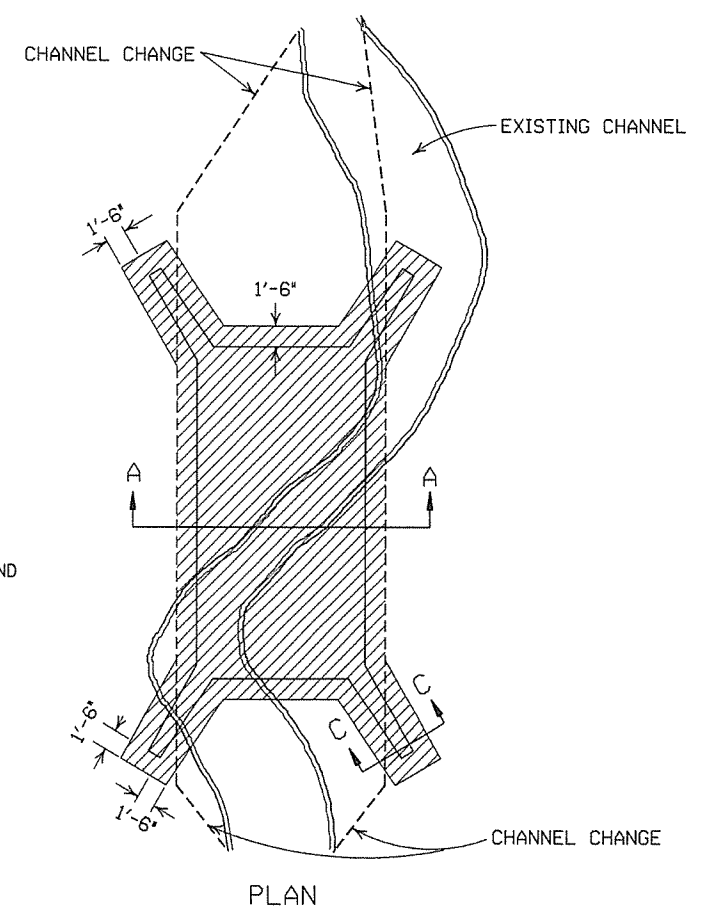


PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

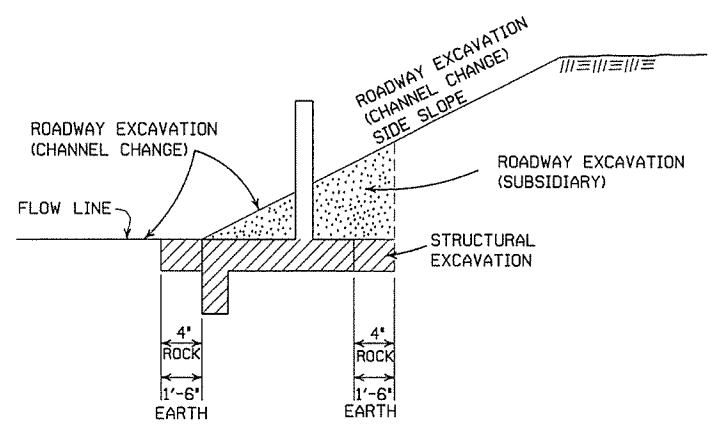
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



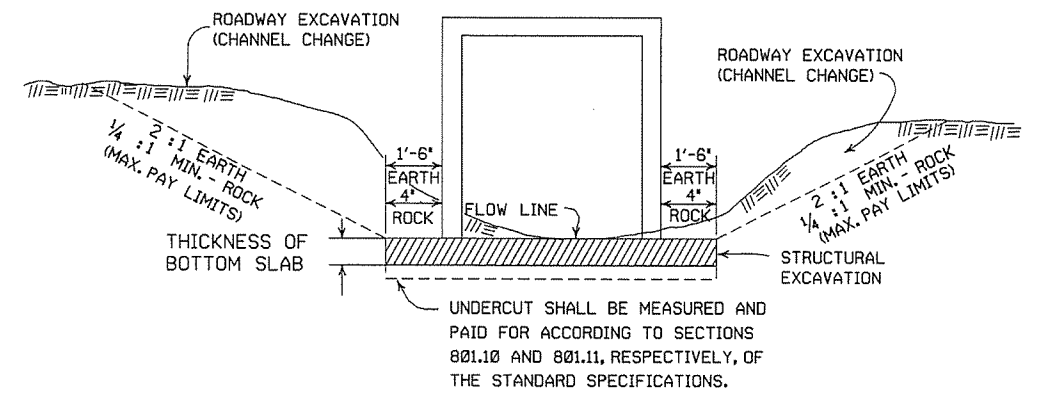
LONGITUDINAL SECTION
BACKFILL DETAILS FOR BOX CULVERT



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

LOOP DETECTOR INSTALLATION AND TESTING

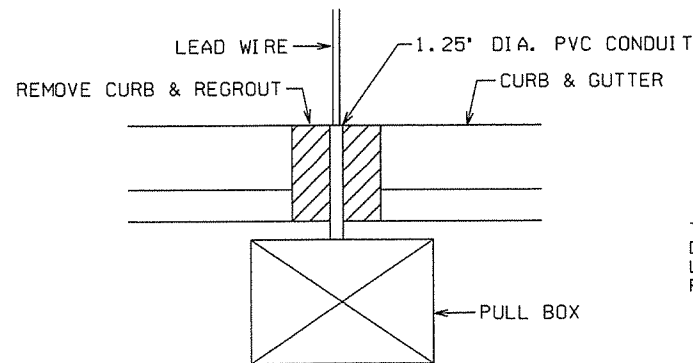
NOTES:

1. LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
2. LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
3. THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
4. CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
5. EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
6. ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1") CONDUIT.
7. LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
8. WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
9. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
10. "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
11. WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
12. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
13. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

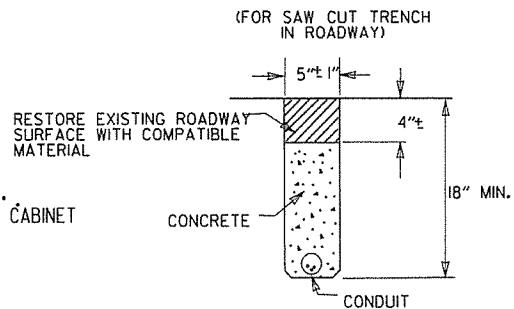
TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

- 1 DISCONNECT AND TEST CONTINUITY (< 10 OHMS) IF CONTINUITY IS BAD, GO TO TEST 3
- 2 TEST INSULATION (@ 500 VOLT TEST > 10 MEG-OHM) IF TESTS 1 & 2 ARE GOOD, NO FURTHER TESTING IS NECESSARY. RECORDED RESULTS CONSIST OF TESTS 1 & 2 FROM CONTROL CABINET WITH FEEDER WIRE CONNECTED TO LOOP.
- 3 OPEN SPLICE (DO NOT BREAK CONNECTION) REPEAT TEST 1 & 2 IF TEST 3 IS BAD, GO TO TEST 4
- 4 BREAK SPLICE, INSTALL JUMPER IN CABINET, REPEAT TESTS 1 & 2 SEPARATELY FOR FEEDER AND FOR LOOP

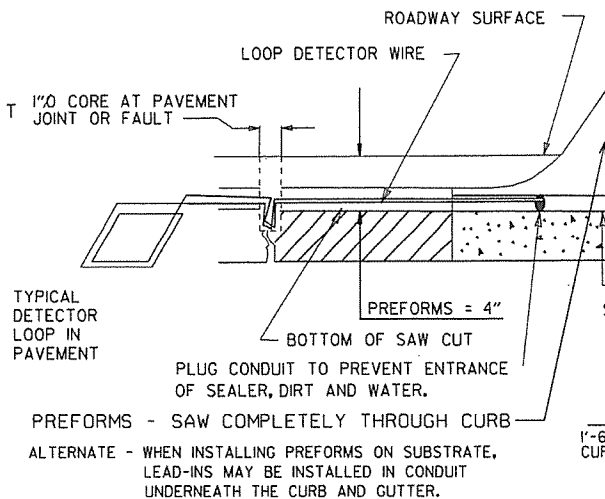
FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.



TRENCHING DETAIL

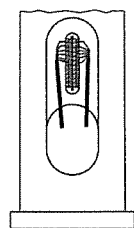


NOTE: CONDUIT SHALL BE INSTALLED IN CURB AS SHOWN OR AS DIRECTED BY THE ENGINEER. END OF CONDUIT SHALL BE WATER-TIGHT.

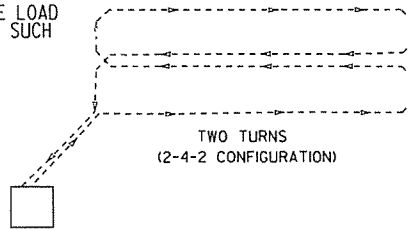


SECTION A-A
1'-6" CONCRETE COMBINATION CURB AND GUTTER
PREFORMS - SAW COMPLETELY THROUGH CURB
ALTERNATE - WHEN INSTALLING PREFORMS ON SUBSTRATE, LEAD-INS MAY BE INSTALLED IN CONDUIT UNDERNEATH THE CURB AND GUTTER.

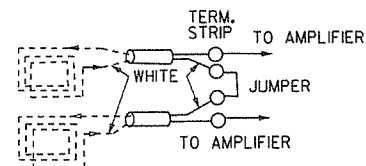
HANDHOLE TERMINAL



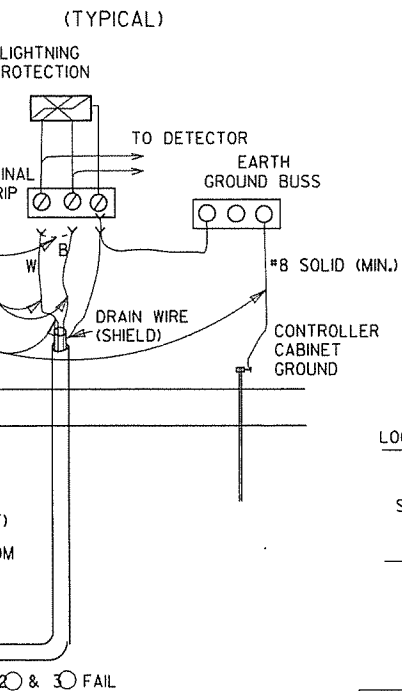
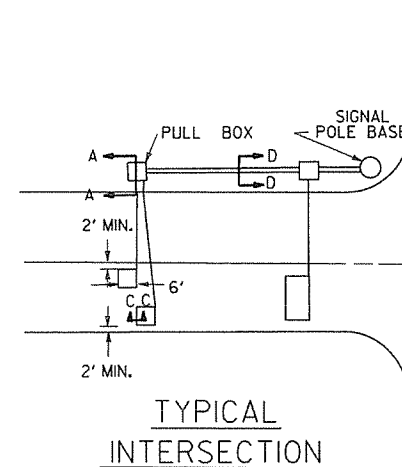
QUADRUPOLE LOOP



SERIES CONNECTED LOOPS

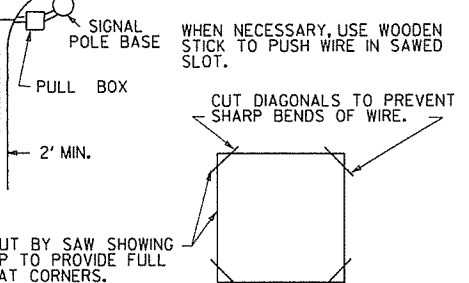
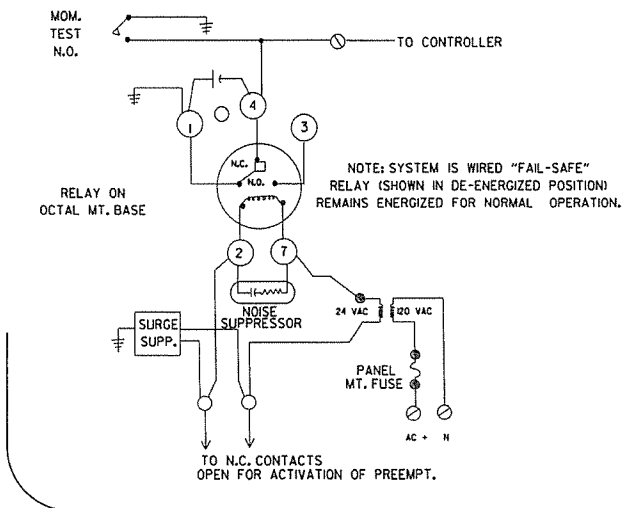


WIND LOOPS COUNTERCLOCKWISE; TAG WIRE EXITING SLOT AND TIE TO WHITE LEAD OF FEEDER WIRE; WHEN LOOPS ARE TIED TO SAME VEHICLE DETECTOR, SERIES CONNECT IN CABINET AS SHOWN.

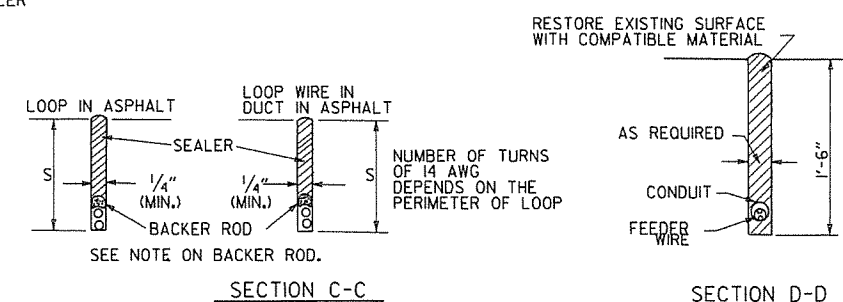


SPECIAL NOTE
IF FEEDER WIRE JACKET IS LEFT UNSEALED AND WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM

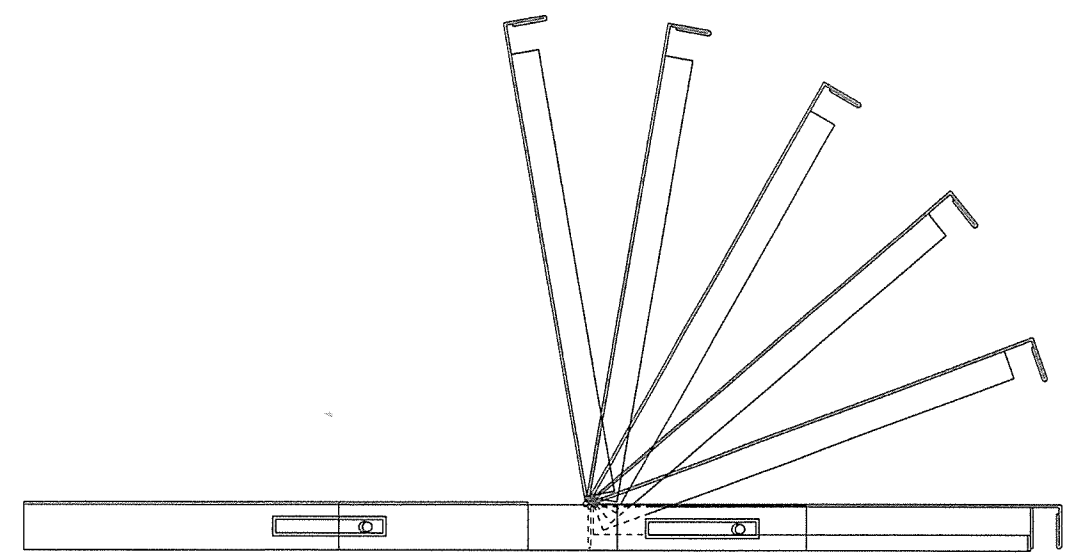
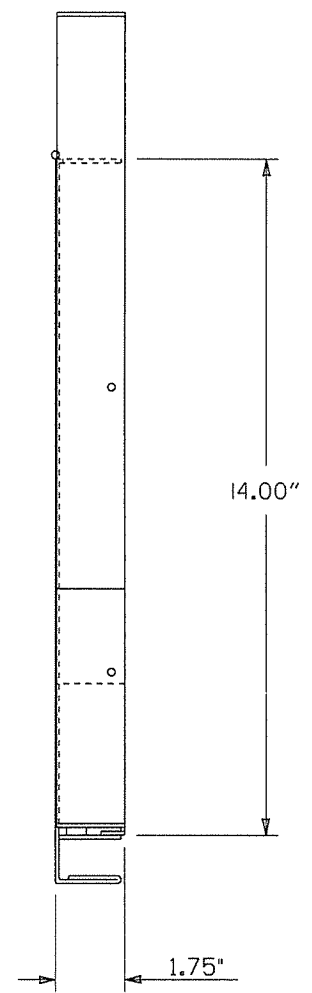
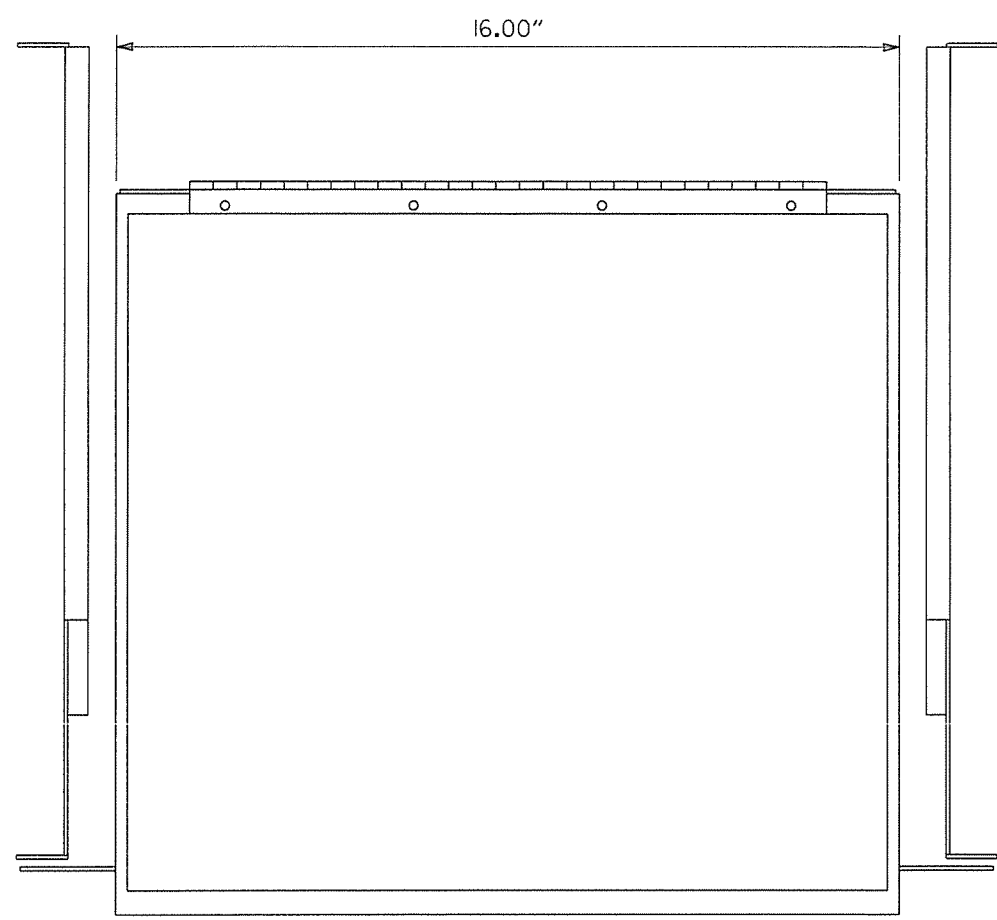


TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS

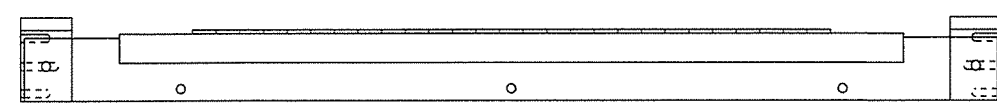


DATE	REVISION	DATE FILM	STANDARD DRAWING SD-4
9-12-13	ISSUED AS STANDARD DRAWING		
5-17-01	REVISED		ARKANSAS STATE HIGHWAY COMMISSION
4-11-01	REVISED		
2-4-00	REVISED PRE-EMPTION TEST SWITCH		LOOP DETECTOR INSTALLATION
11-18-98	REVISED NOTES		
11-21-95	ISSUED		

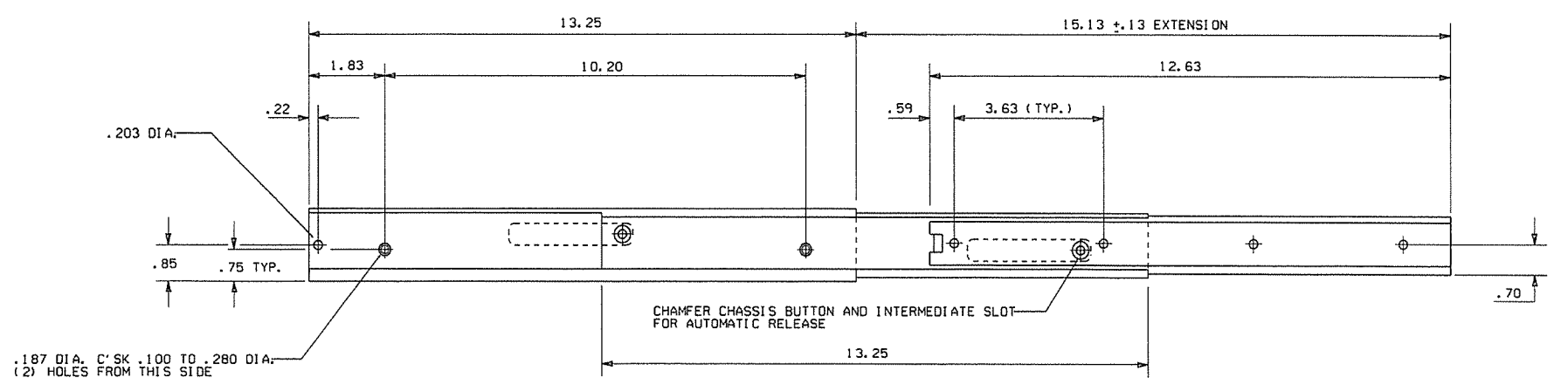
DRAWER PLAN VIEW



- NOTES:
 1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
 2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
 3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



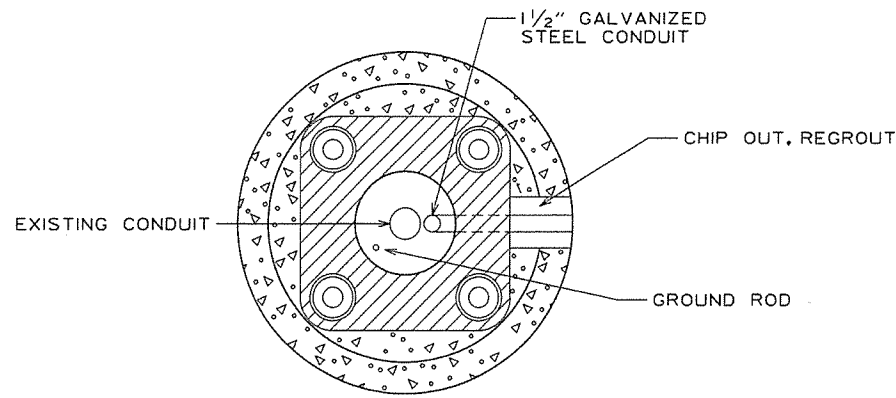
FRONT VIEW



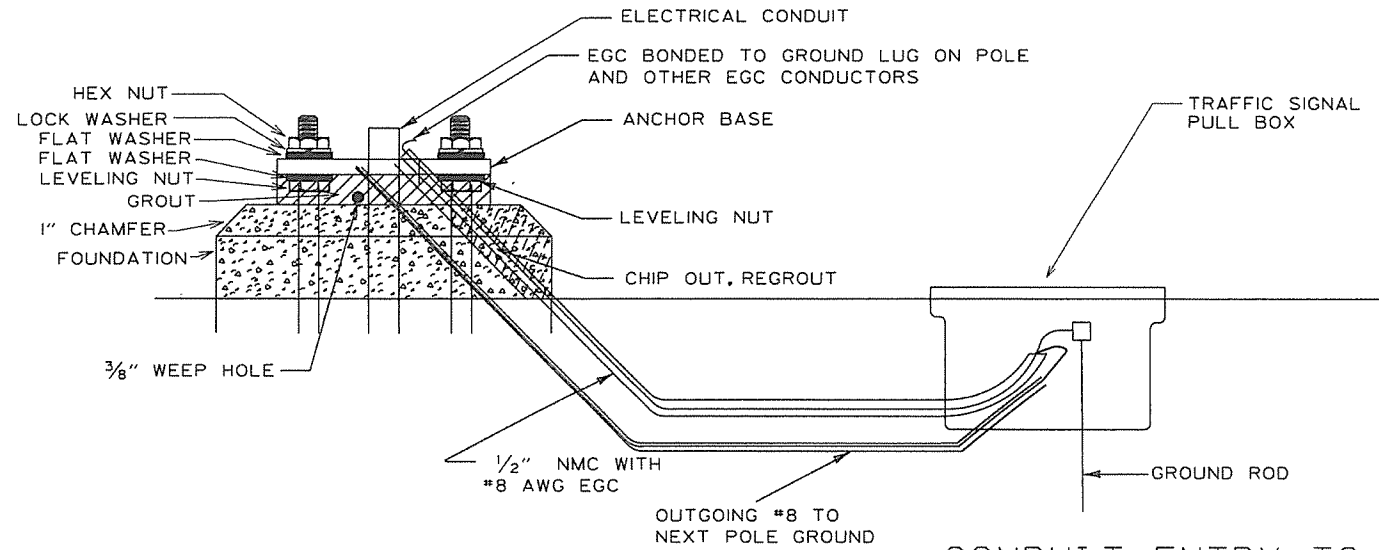
RIGHT SIDE ASSEMBLY

			ARKANSAS STATE HIGHWAY COMMISSION
			CONTROLLER CABINET UTILITY DRAWER
9-12-13	ISSUED AS STANDARD DRAWING		
6-15-05	ISSUED		
DATE	REVISION	DATE FILM	STANDARD DRAWING SD-5

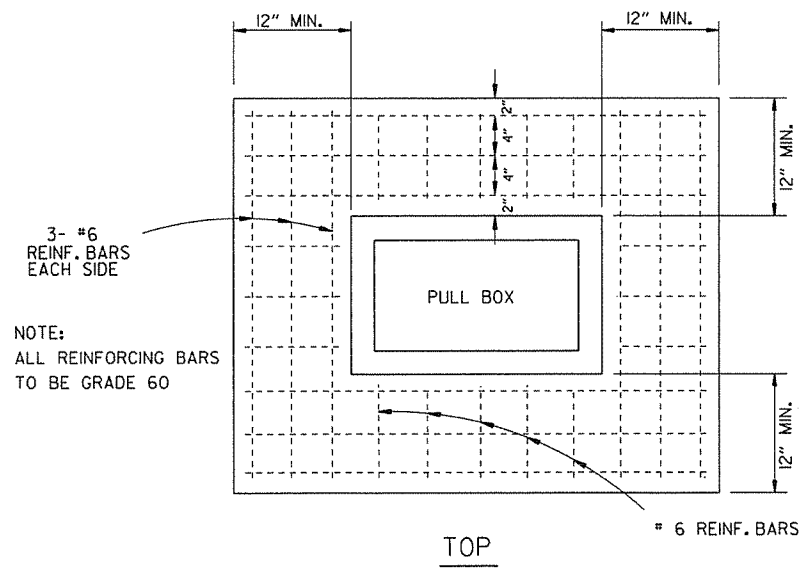
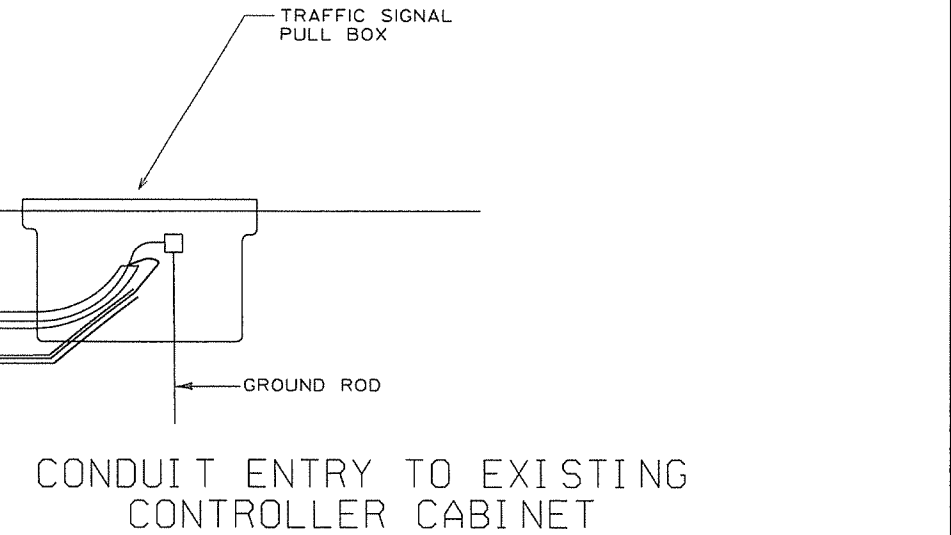
CONDUIT ENTRY TO EXISTING POLE BASE



ANCHOR BASE

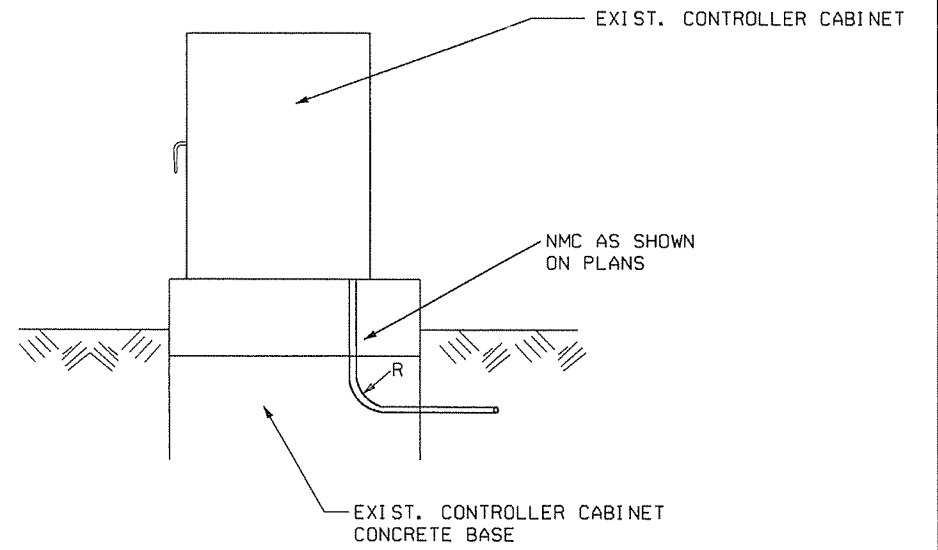
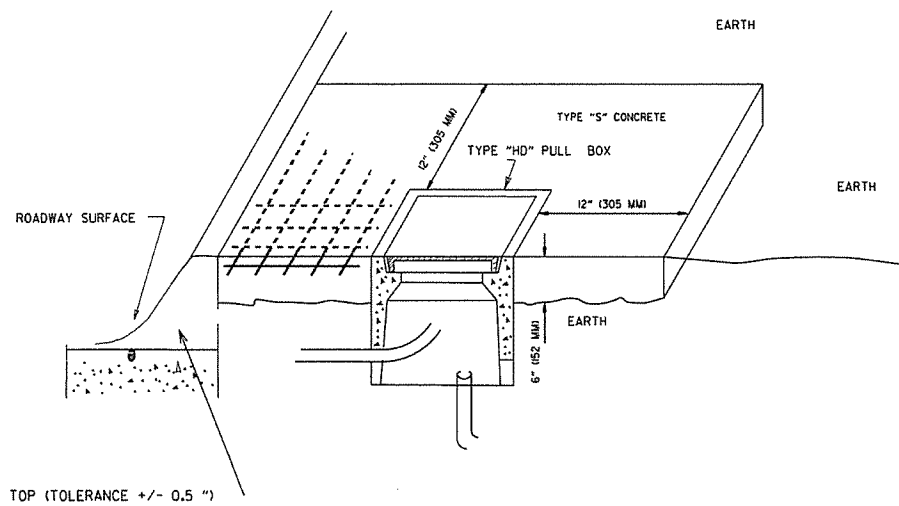


CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

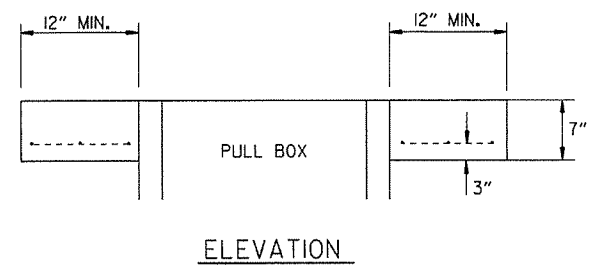


NOTE:
ALL REINFORCING BARS TO BE GRADE 60

TYPE "HD" CONCRETE PULL BOX DETAIL



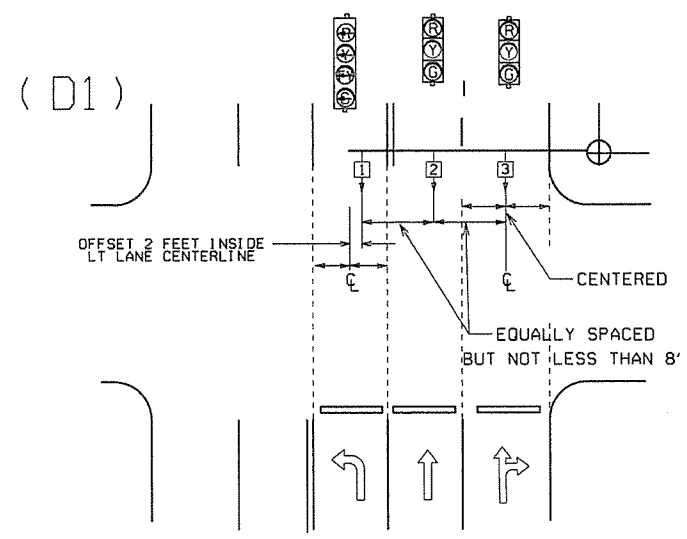
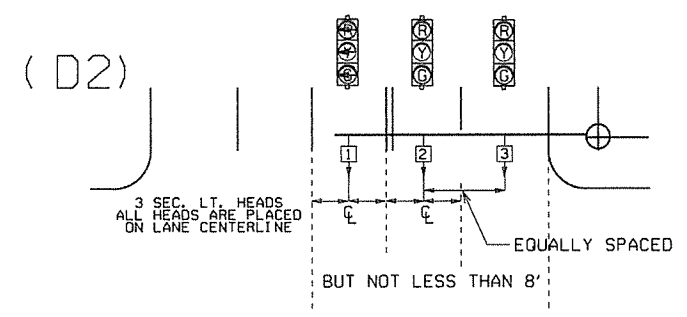
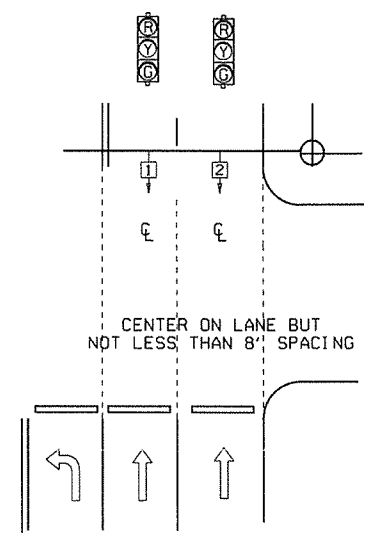
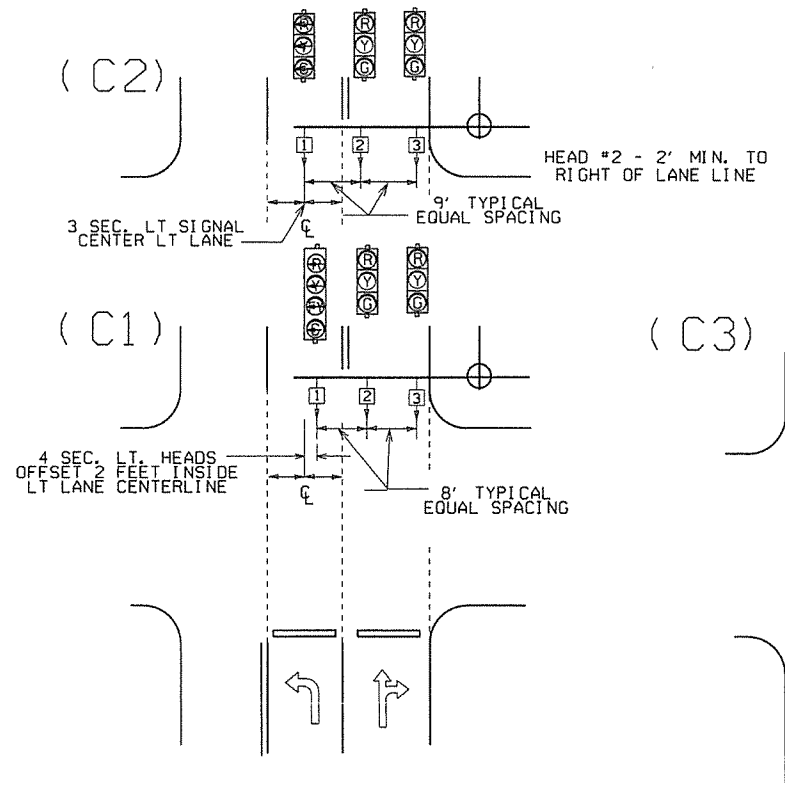
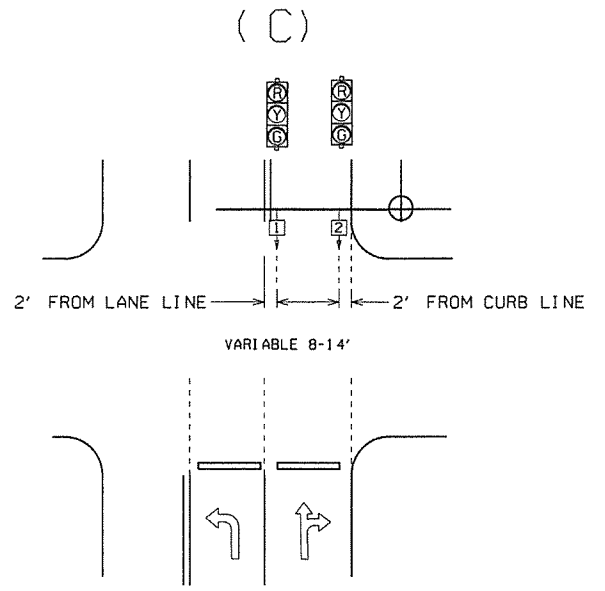
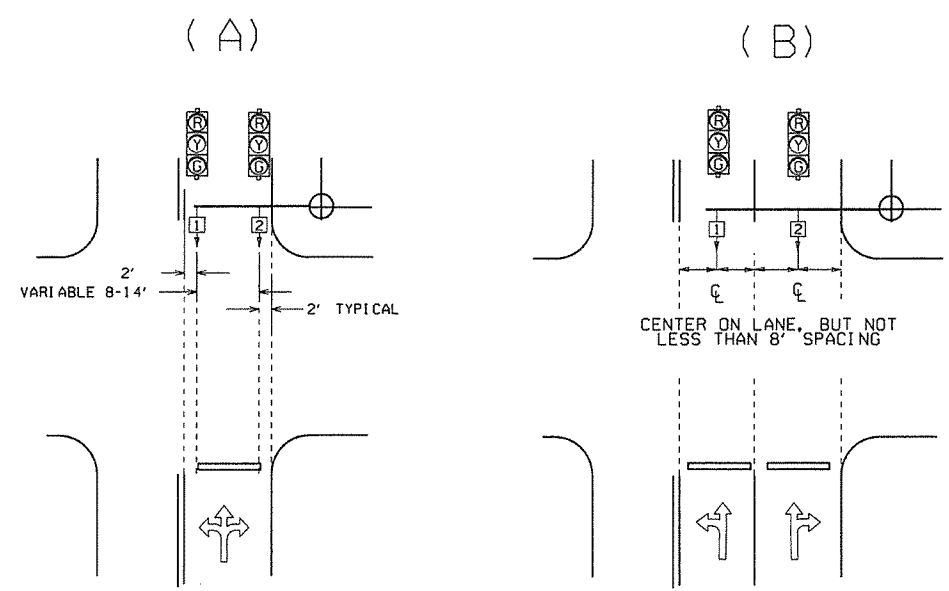
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 6" (152 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	
DATE	REVISION	DATE FILM

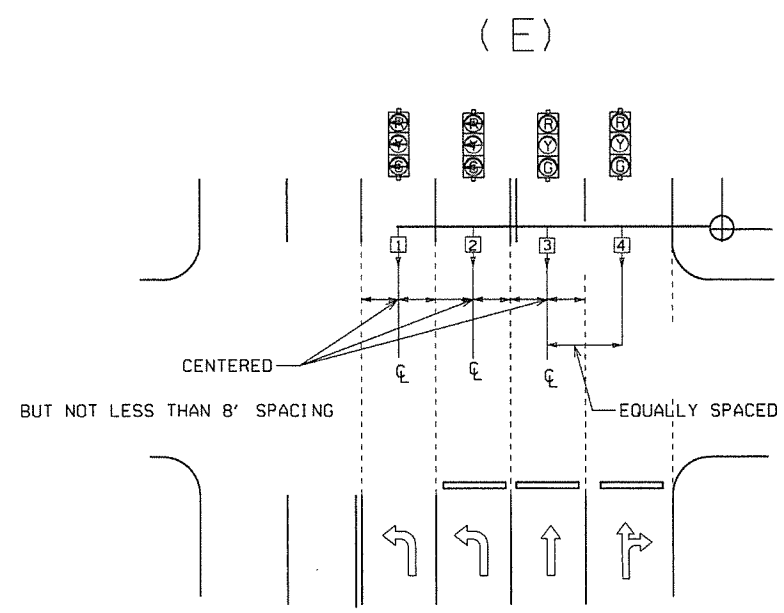
ARKANSAS STATE HIGHWAY COMMISSION
HEAVY DUTY PULL BOX
STANDARD DRAWING SD-6



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

GENERAL NOTES:

- FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.
- SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.
- ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.
- MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 40-1 OF 2009 MUTCD.



℄ = CENTER OF LANE FROM APPROACH SIDE

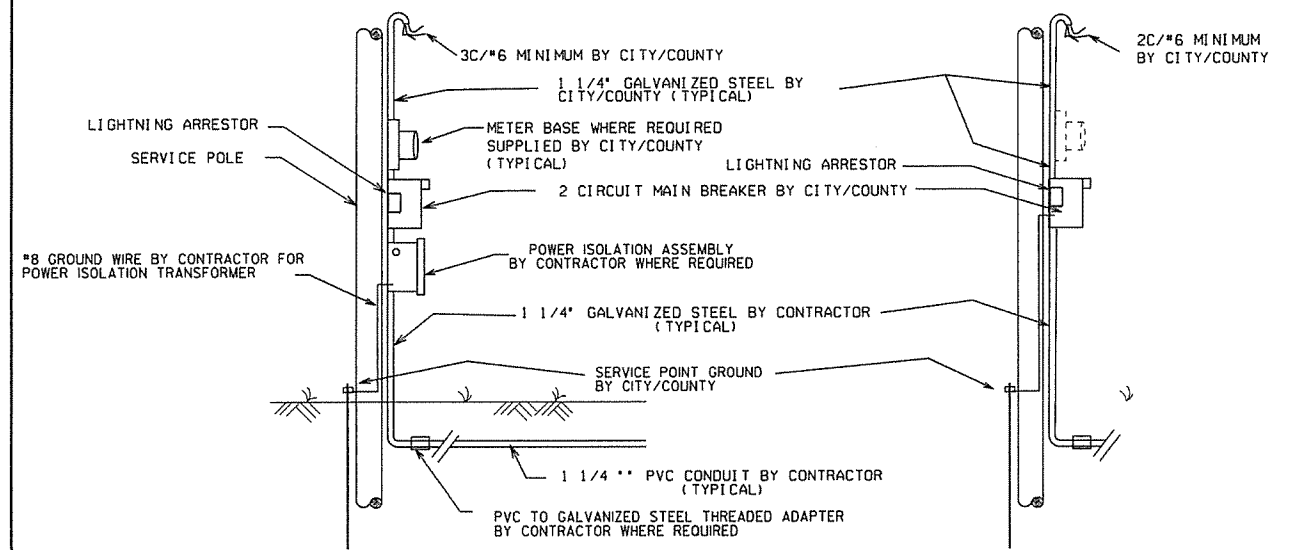
			ARKANSAS STATE HIGHWAY COMMISSION
9-12-13	ISSUED AS STANDARD DRAWING		SIGNAL HEAD PLACEMENT
3-11-10	2009 MUTCD		
12-9-99	ISSUED		STANDARD DRAWING SD-8
DATE	REVISION	DATE FILM	

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

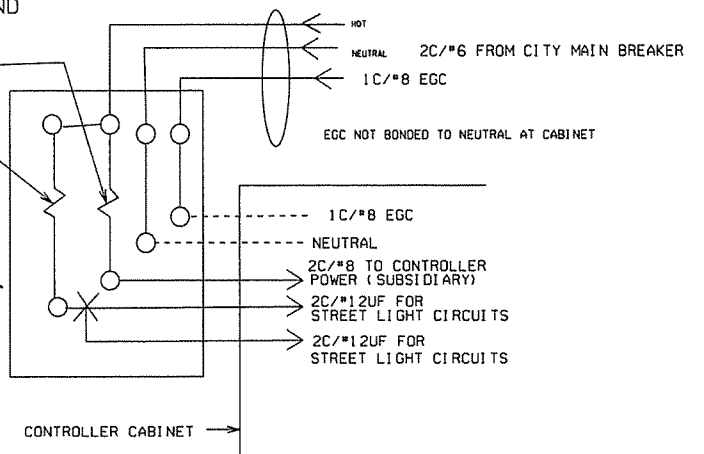
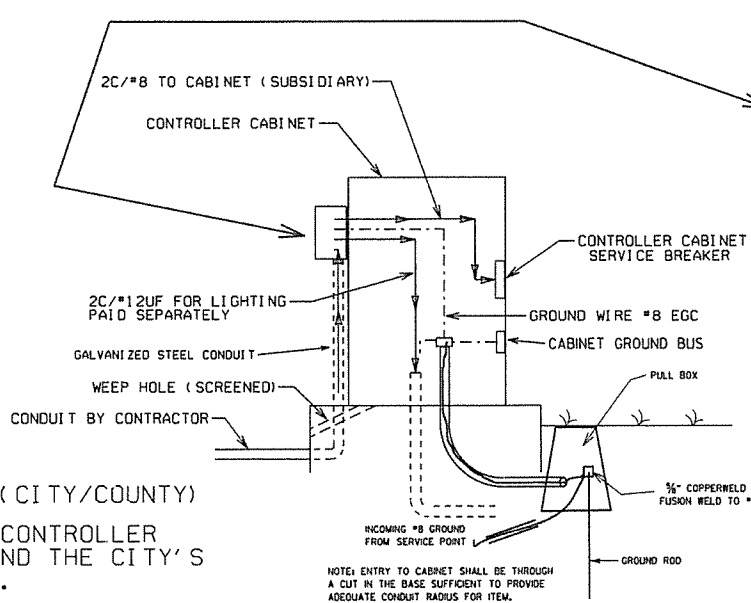
GROUND ROD-A 10' X 3/4" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

WITH POWER ISOLATION ASSEMBLY

WITHOUT POWER ISOLATION ASSEMBLY



SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

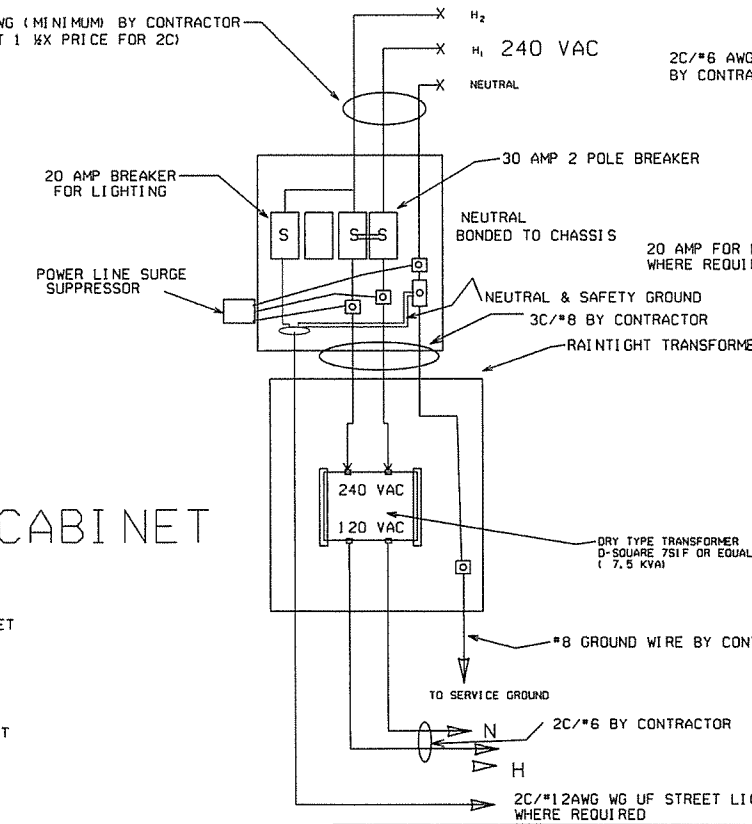
ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S OR COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN TIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2C/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

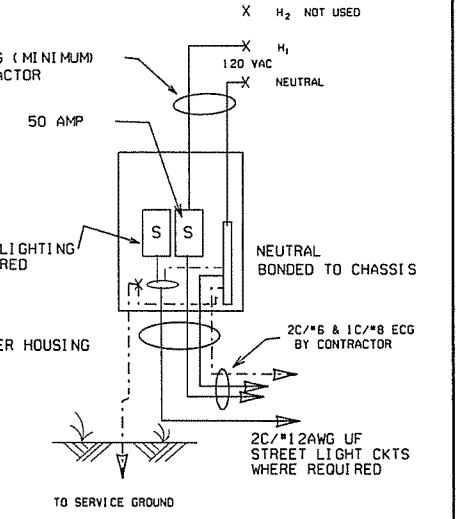
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

3. MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

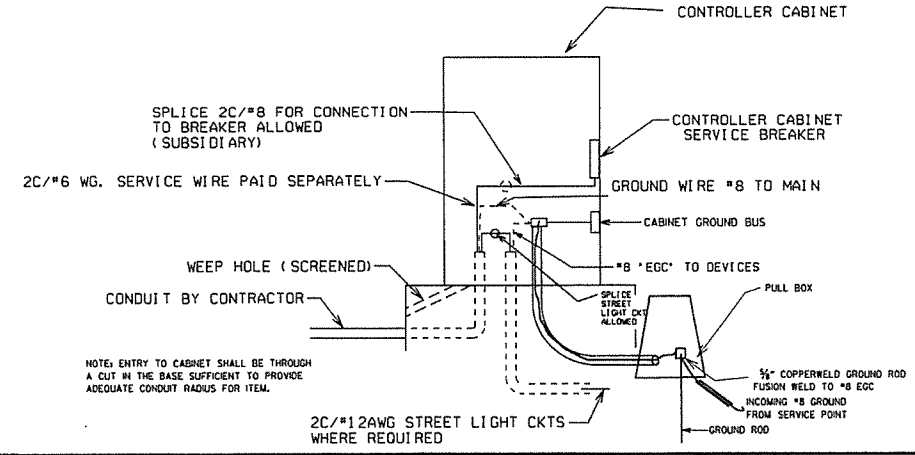
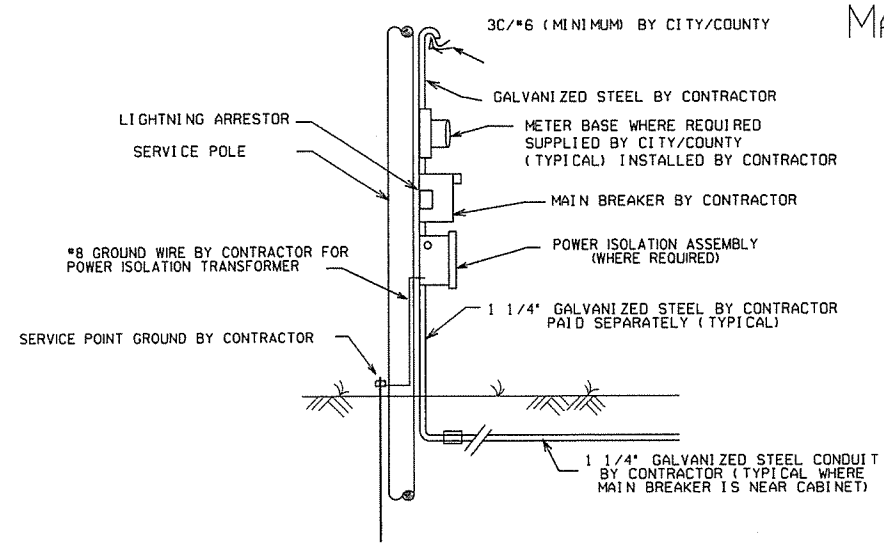
3C/#6 AWG (MINIMUM) BY CONTRACTOR (PAID AT 1 1/2 X PRICE FOR 2C)



WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED



DATE	REVISION	DATE	FILM
9-12-13	ISSUED AS STANDARD DRAWING		
4-18-13	ADDED LIGHTNING ARRESTOR		
5-21-09	REVISED GROUNDING		
7-31-08	REVISED GROUNDING		
3-3-03	ADDED EGC NOTE		
9-26-01	REVISED		
12-27-99	REVISED		
7-28-99	REVISED		
2-5-99	ISSUED		

NOTE: ELECTRICAL GROUND CONDUCTOR (EGC) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE 111) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL * 2' X 0' X 2' * 6", 20 LB. REMAINING HEADS SPACED A 8 FT. * 3 SEC., 56 LB., TWO 5 SEC.:

14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING 2 HEADS FOR ARMS 10 TO 16 FT., 2 HEADS FOR ARMS 10 TO 16 FT., INCLUDING LB. 3 HEADS FOR 18 TO 24 FT. ARMS, 4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE, DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) * VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

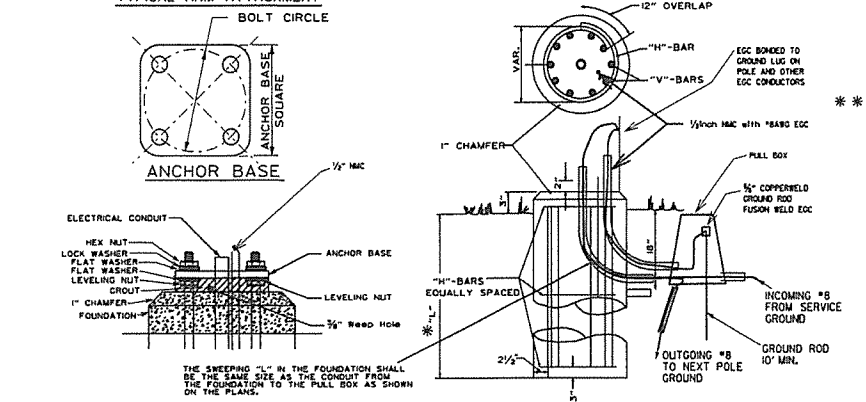
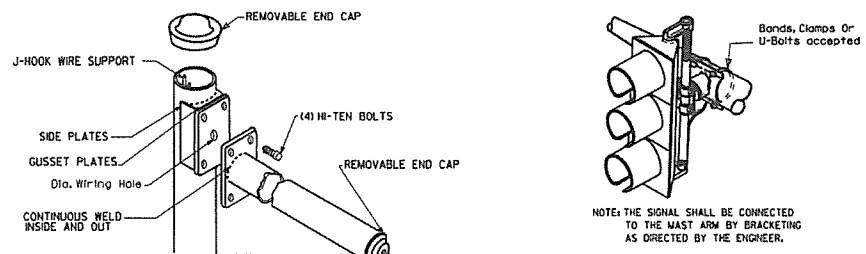
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES, MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.

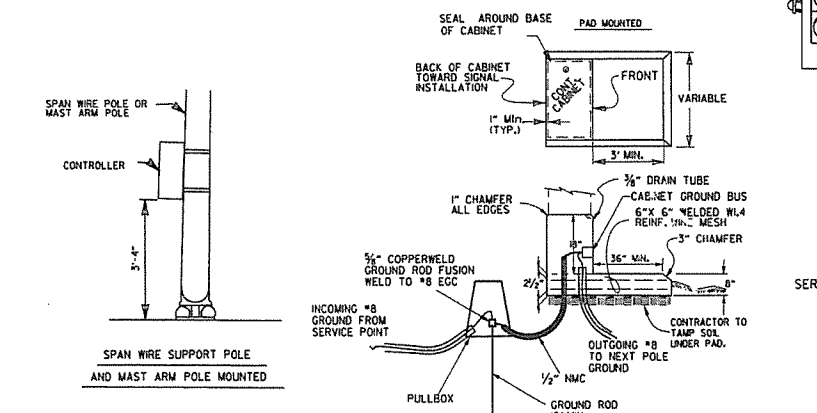


THE GROUND ROD SHALL BE FUSION WELDED TO A 1/2\"/>

TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	DIAMETER	FDN. * L * #	STEEL		
			VERT.	HORZ.	O/C.
PED	30"	7'-0"	12-*7 (6'-6")	10-*4	8.44'
2' to 12'	30"	10'-6"	12-*7 (10'-0")	15-*4	8.42'
over 12' to 20'	30"	11'-6"	12-*7 (11'-0")	16-*4	8.66'
over 20' to 35'	36"	12'-6"	13-*8 (12'-0")	17-*4	8.88'
over 35' to 50'	36"	13'-6"	13-*8 (13'-0")	19-*4	8.56'
over 50' to 72'	42"	14'-6"	18-*8 (14'-0")	20-*4	8.74'
Twins to 20'	30"	16'-0"	12-*6 (15'-6")	22-*4	8.76'
Twins over 20' to 44'	36"	16'-0"	13-*8 (15'-6")	22-*4	8.76'
Twins over 44' to 50'	42"	16'-0"	18-*8 (15'-6")	22-*4	8.76'
Twins over 50' to 72'	42"	16'-6"	18-*8 (16'-0")	23-*4	8.64'



CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS 'S' OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS 'S' OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

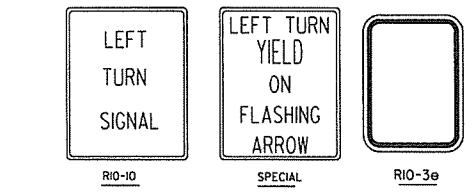
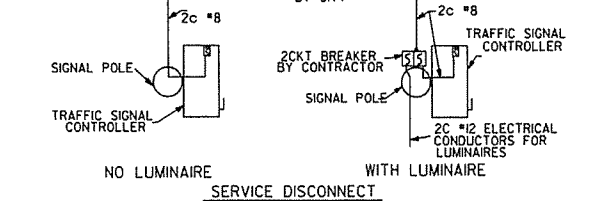
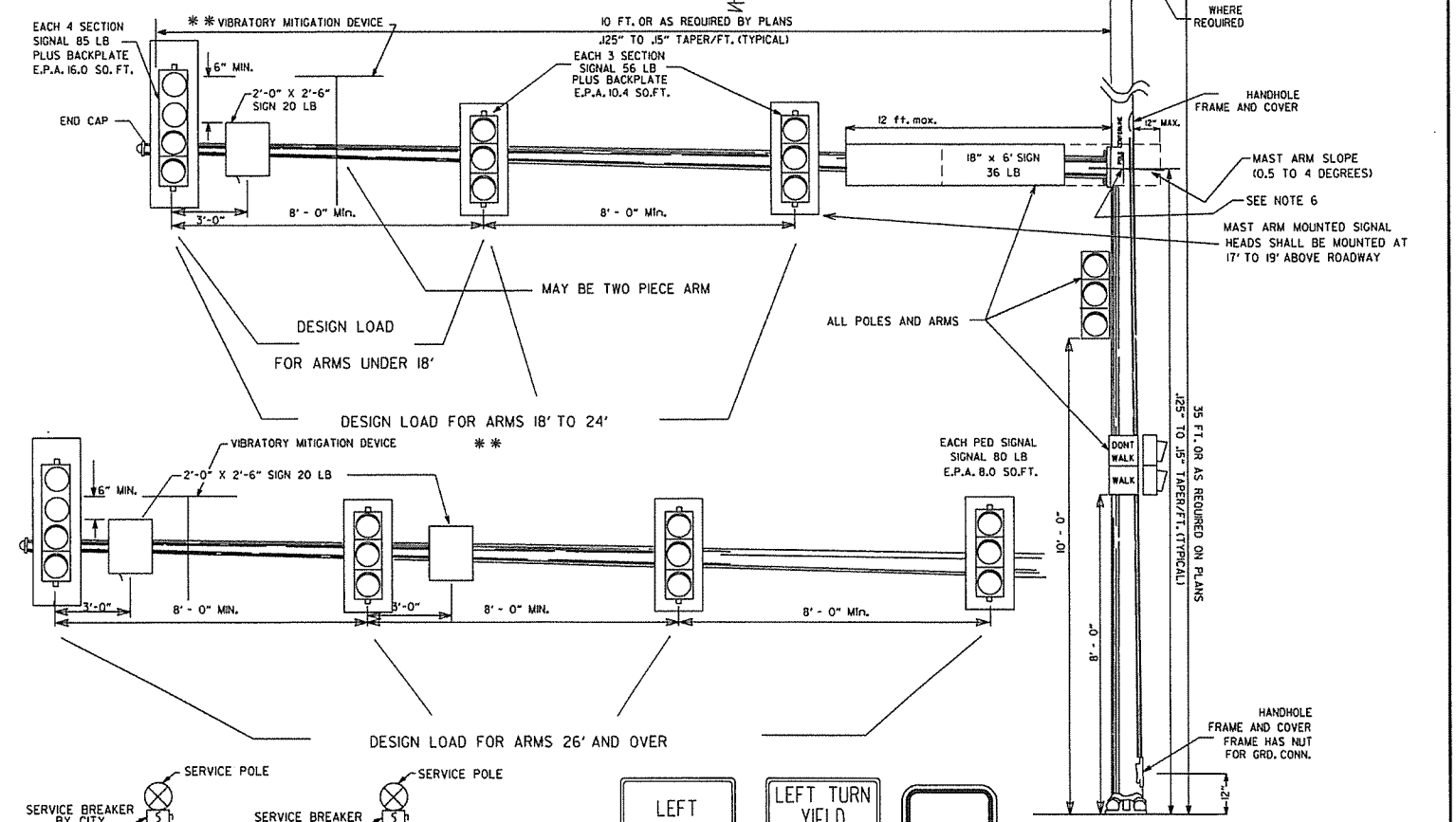
FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD, AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0", FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

* IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"x16"x0.25" SIGN BLANK QUARTER NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.



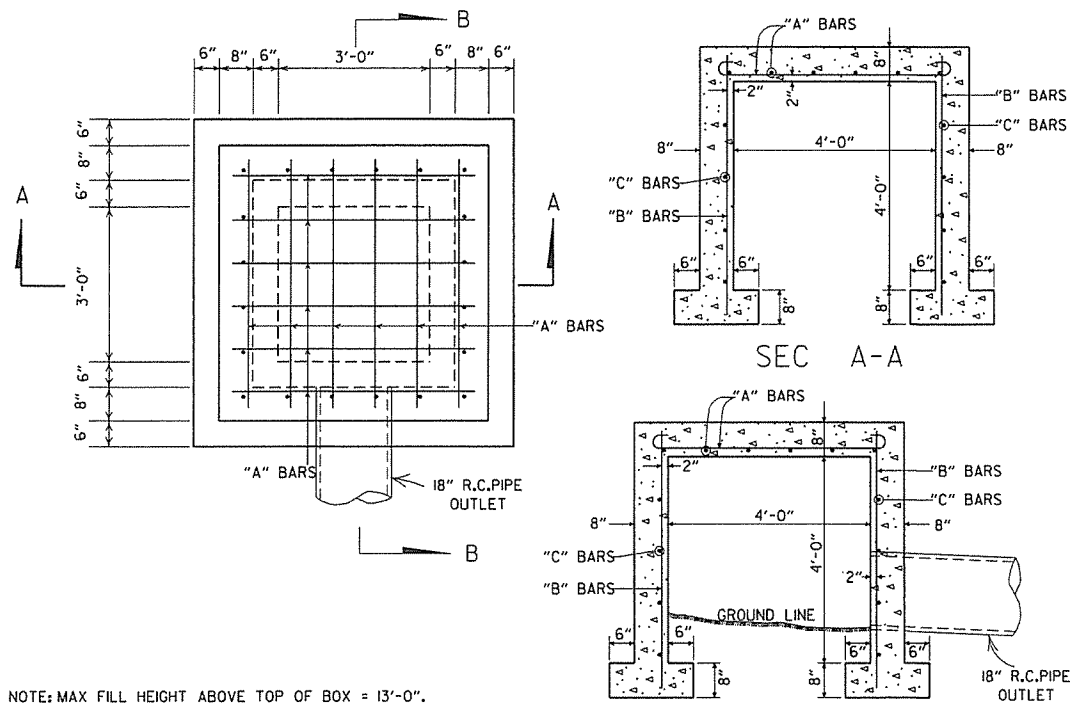
DATE	REVISION	DATE	FILM
9-24-43	ISSUED AS STANDARD DRAWING		
7-21-48	REVISED YMD, SIGNAL HEADS		
5-21-49	REVISED GROUNDING		
7-31-49	REVISED GROUNDING		
4-25-48	ADDED VIBRATORY MITIGATION DEVICE & NOTES		
4-28-48	REVISED AASHTO NOTES		
4-17-48	REVISED TO 2000 AASHTO STANDARDS		
10-12-04	REVISED CABINET ORIENTATION		
6-23-04	REVISED		
5-2-04	REV. NOTE 3/AASHTO REQUIREMENTS		
6-1-01	REV. NOTES & POLE/MAST ARM SLOPE		
4-1-01	REVISED POLE TAPERS		
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT		
1-22-99	REVISED FOUNDATION DETAILS		
11-17-98	REVISED DETAILS AND NOTES		
11-2-95	ISSUED		

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

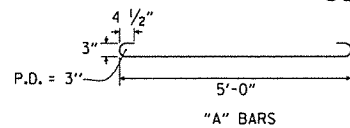
STANDARD DRAWING SD-11



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 1/2"
"C"	16	5'-0"	12"

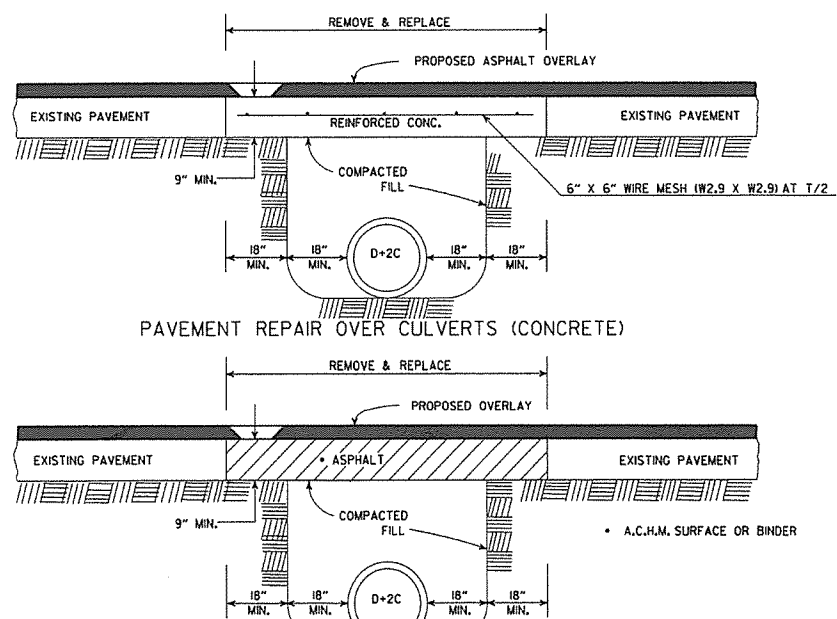
ALL STEEL TO BE #4 BARS



QUANTITIES
CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

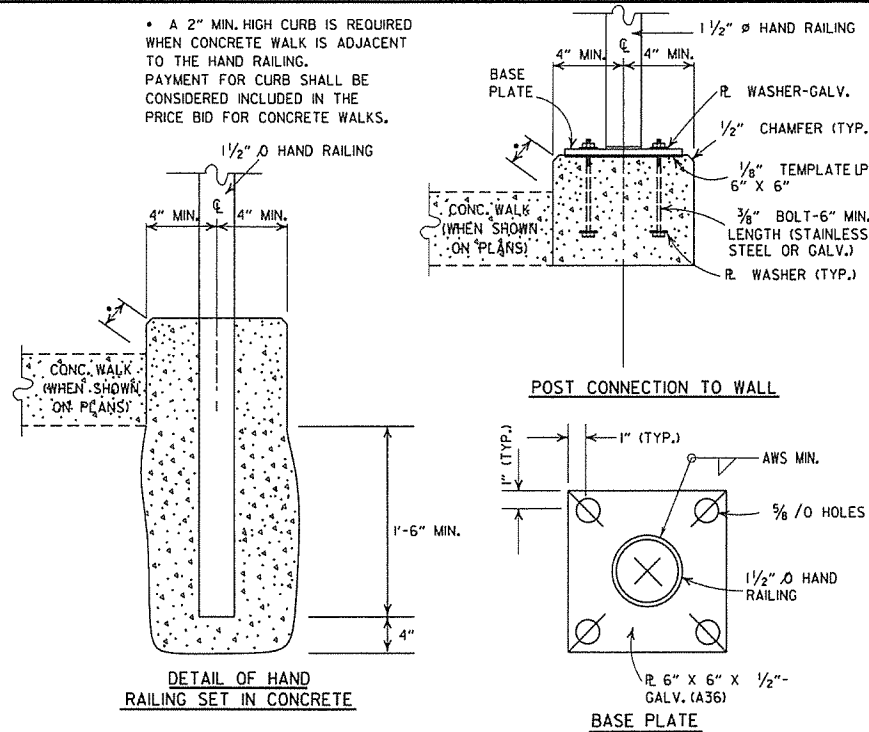
GENERAL NOTE:
THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



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.

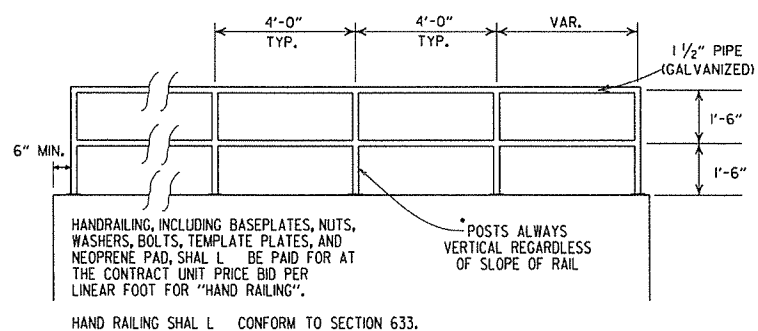


DETAIL OF HAND RAILING SET IN CONCRETE

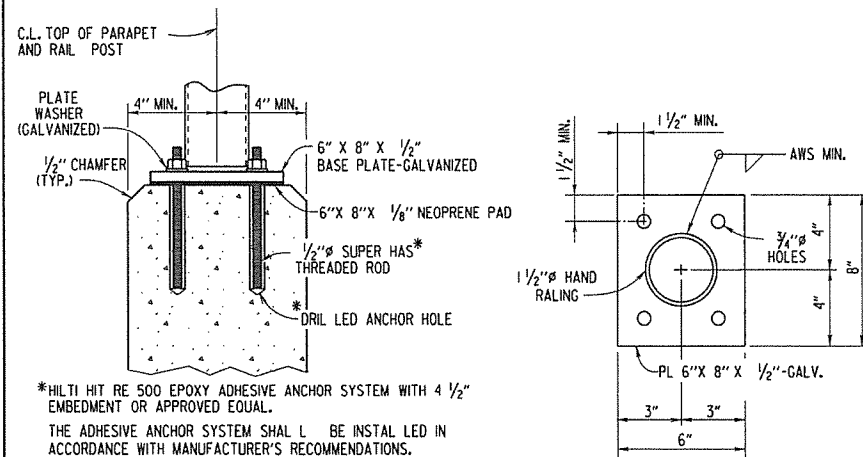
POST CONNECTION TO WALL

BASE PLATE

POST CONNECTION DETAILS



HAND RAILING SHALL CONFORM TO SECTION 633.



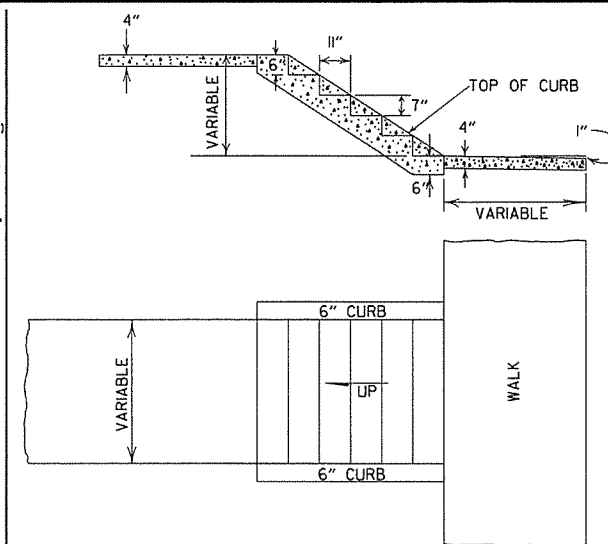
* HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 1/2" EMBEDMENT OR APPROVED EQUAL.
THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

POST CONNECTION TO WALL

BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



DETAILS OF CONCRETE STEPS & WALKS

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.

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


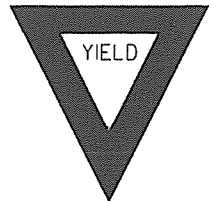



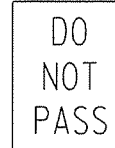

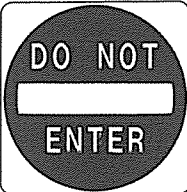

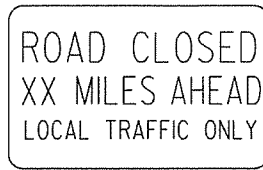
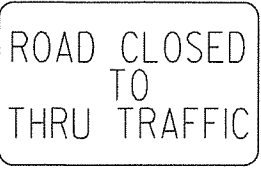

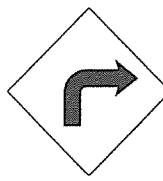
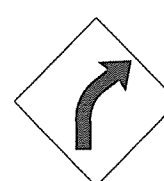
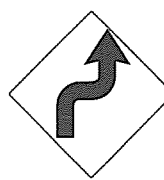
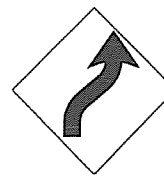
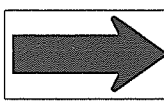
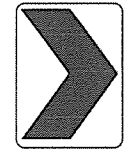
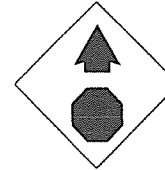
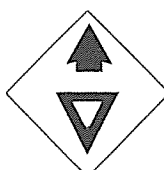
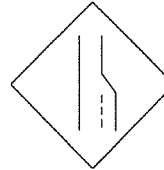

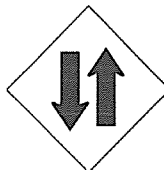

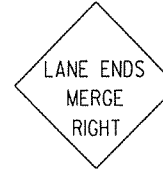


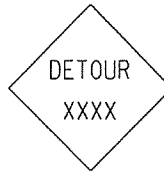


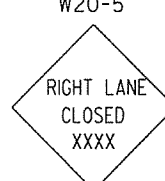



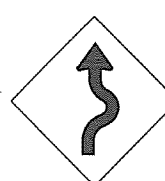



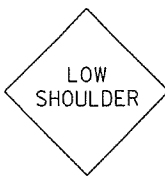
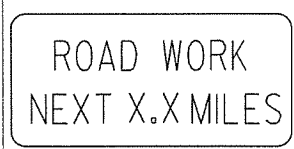
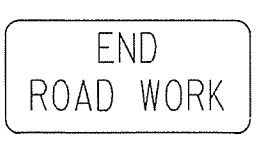
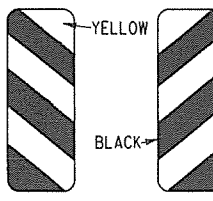
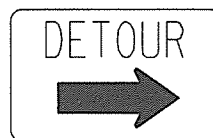

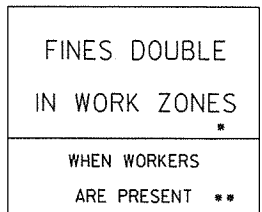
STANDARD DRAWING SI - 1

ADVANCE DISTANCES (XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

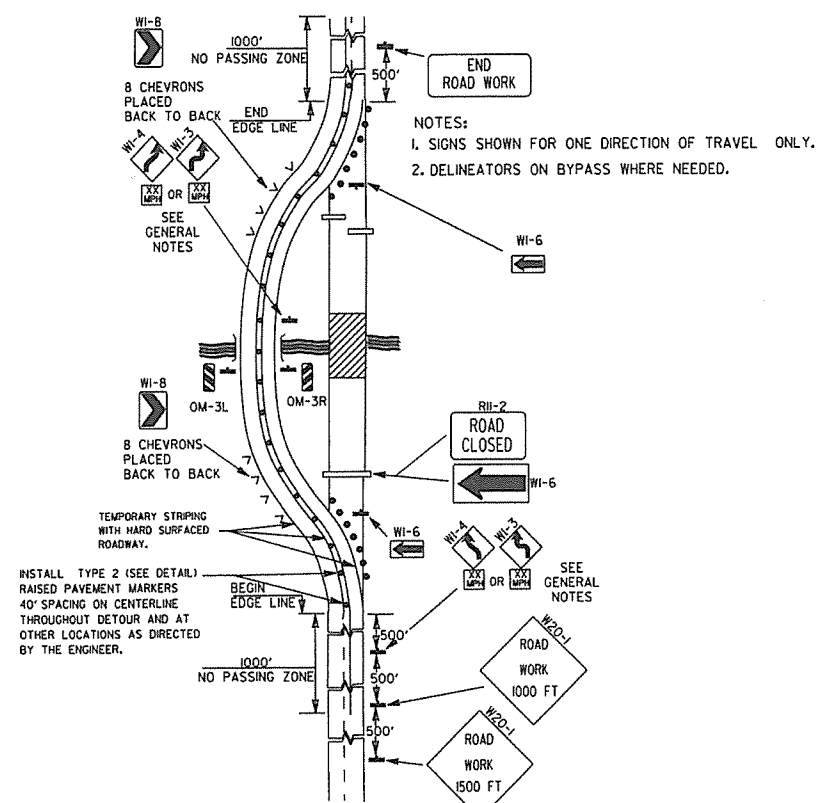
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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.
- 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.
- 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.
- 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.
- 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.
- 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.

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>
<p>W20-3</p>  <p>STD. 48"x48"</p>	<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>500 FEET 24" W20-2 STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>
<p>WI-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>	<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>
<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>WHEN WORKERS ARE PRESENT **</p> <p>* USE 6" C LETTERS ** USE 4" D LETTERS</p>				

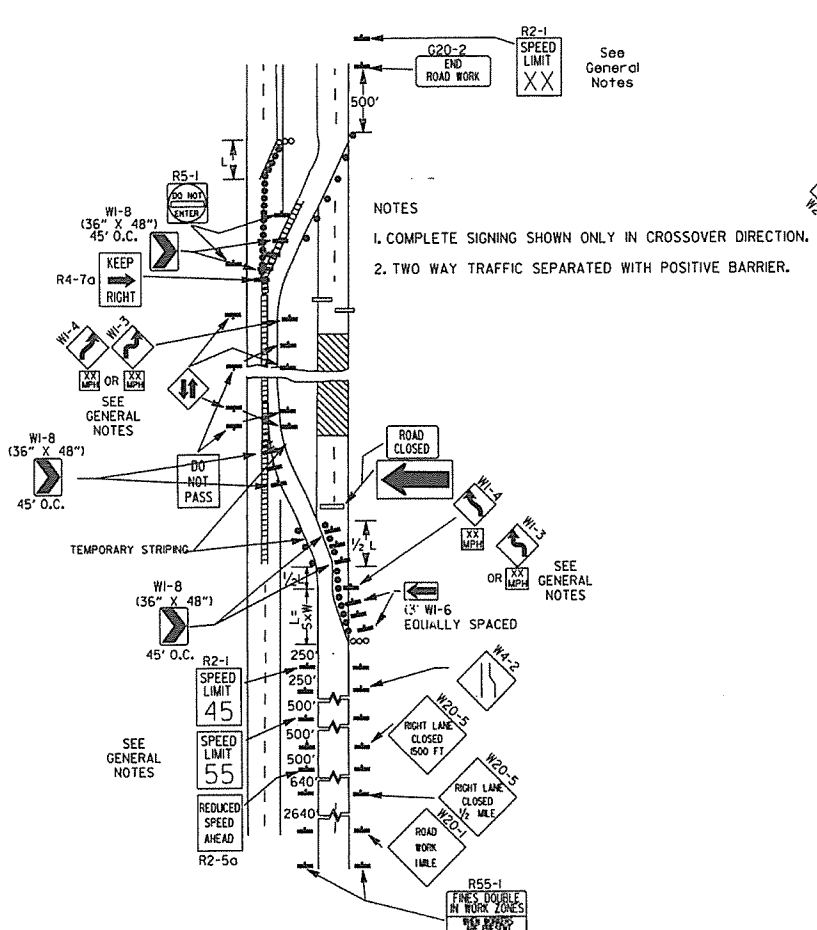
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- MOST OF THE SIGNS ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
- 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.

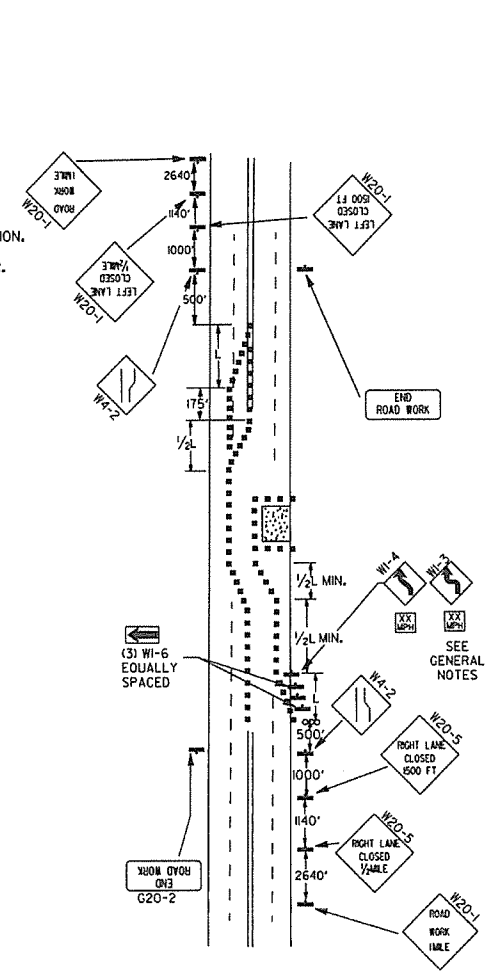
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED 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	
DATE	REVISION	FILMED



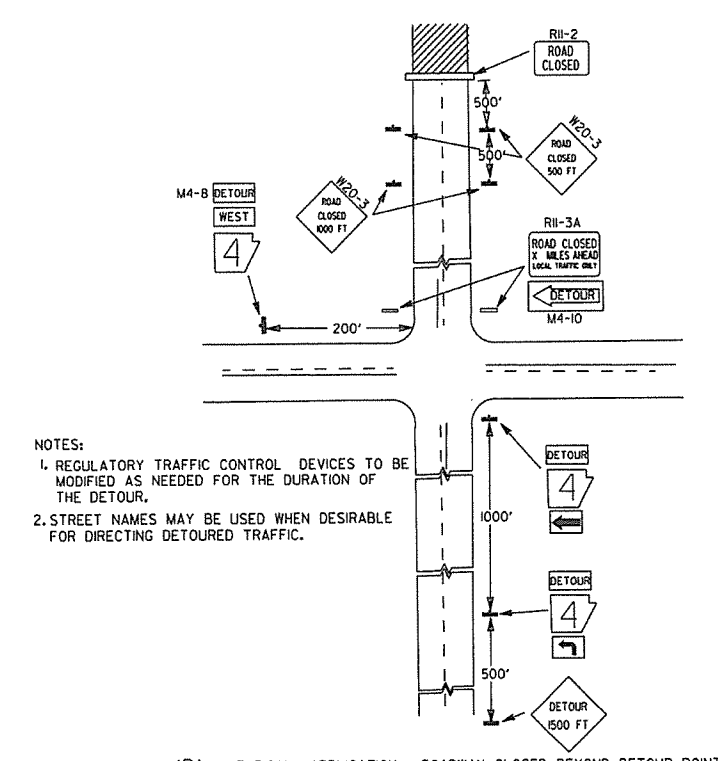
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



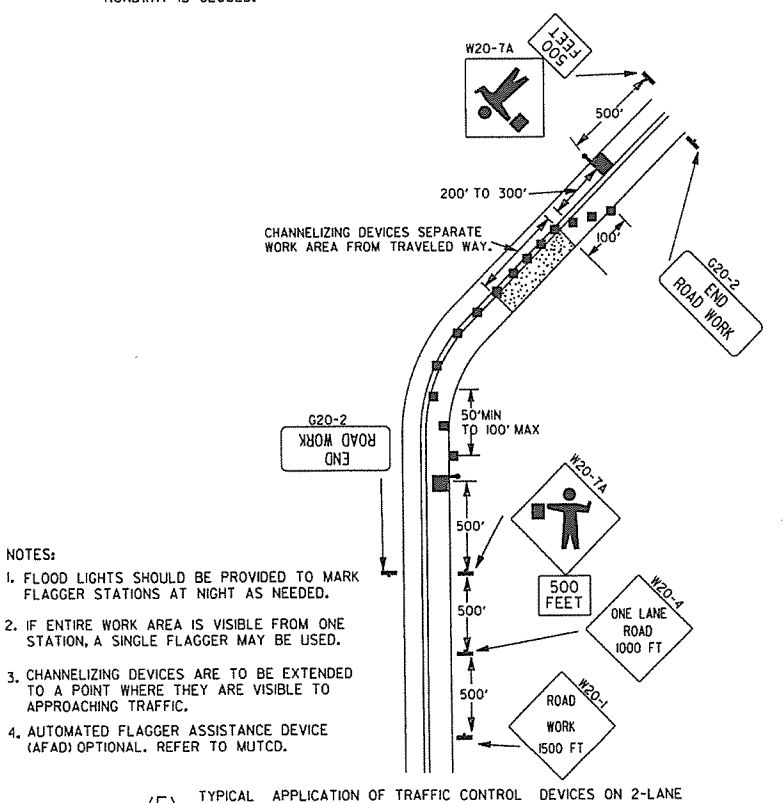
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



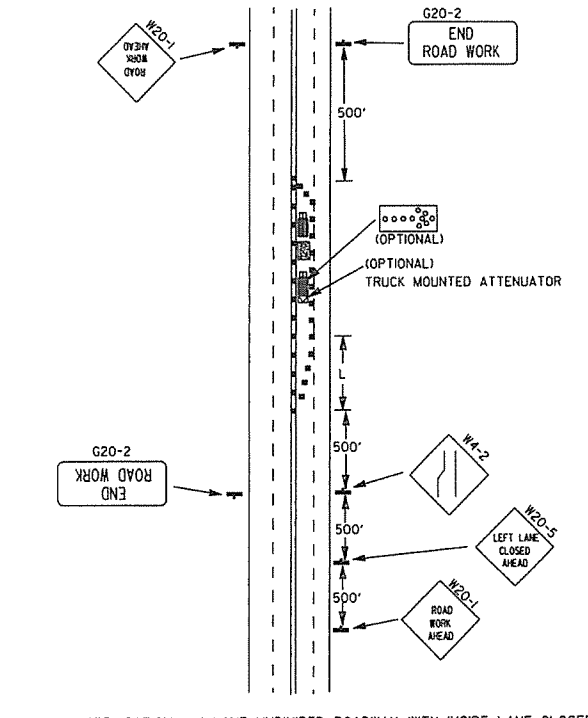
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.

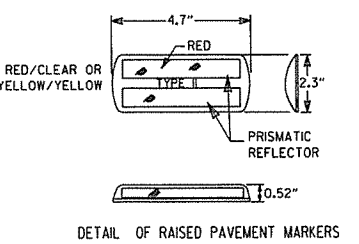


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(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

TAPER FORMULAE:

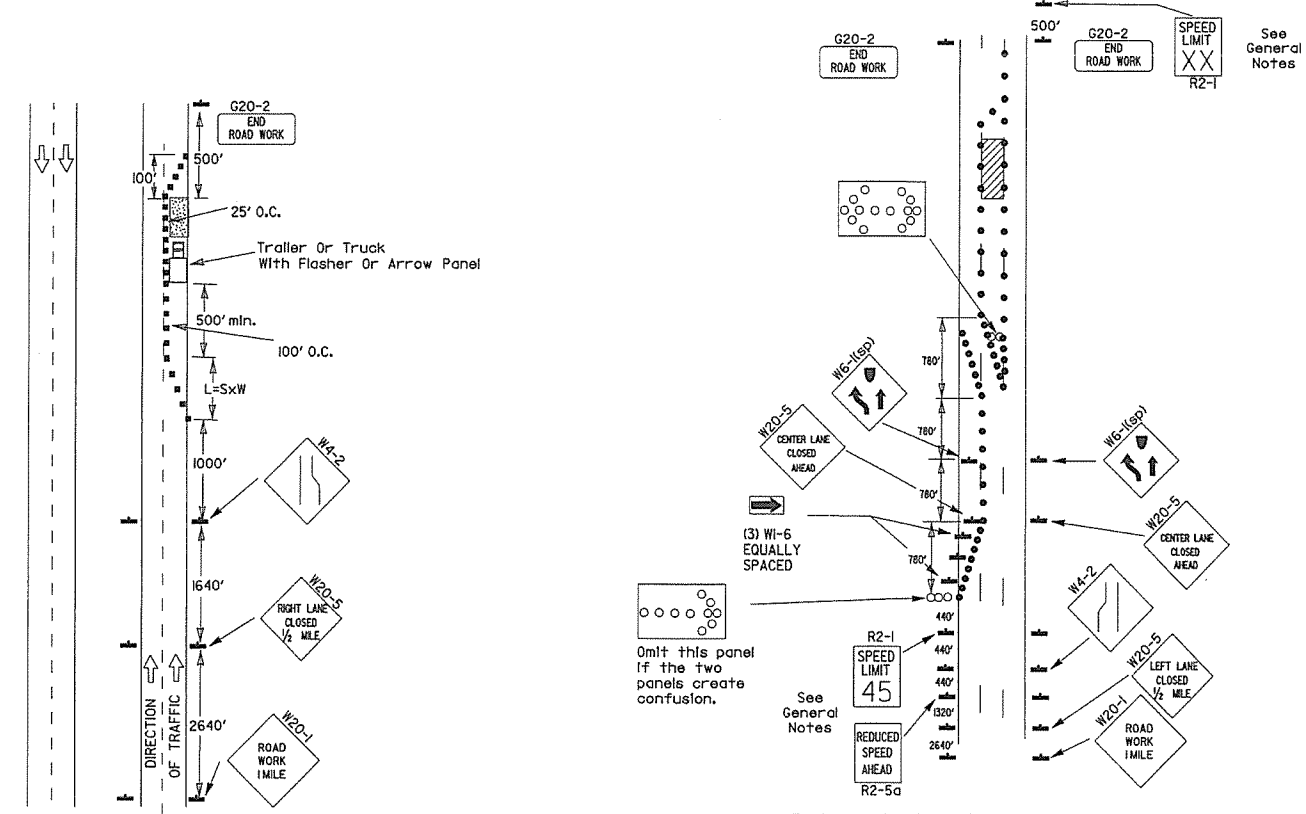
$L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W = WIDTH OF OFFSET.

GENERAL NOTES:

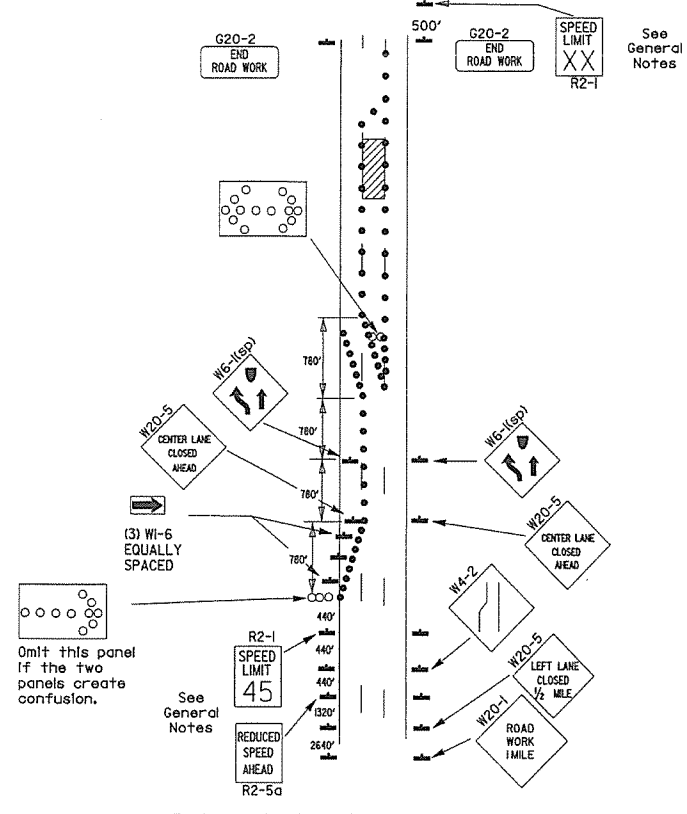
1. ADVISORY SPEED POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(45) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED 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-(45) 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-(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-(45) 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 CONSPICUOUS 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.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON WI-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

Channelizing devices



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.

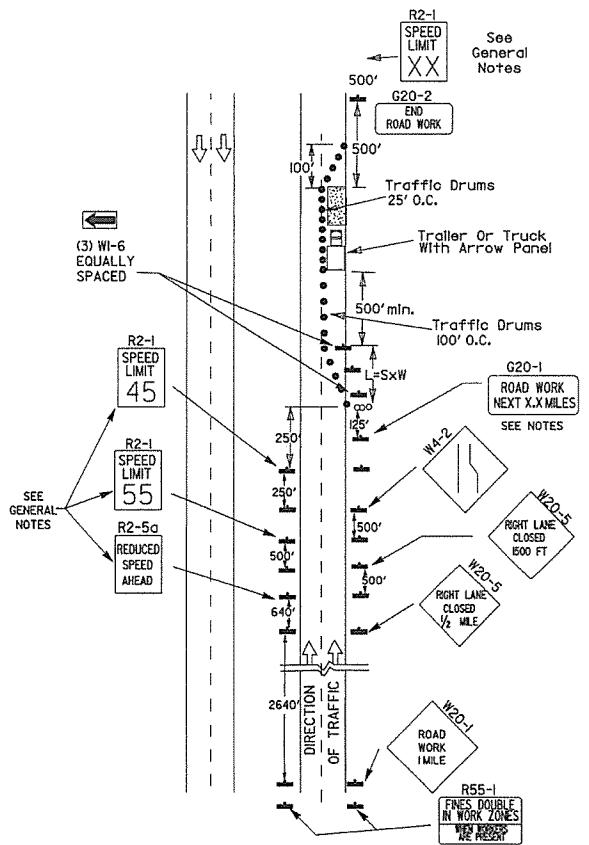


(B) Typical application - 3-lane oneway roadway where center lane is closed.

- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

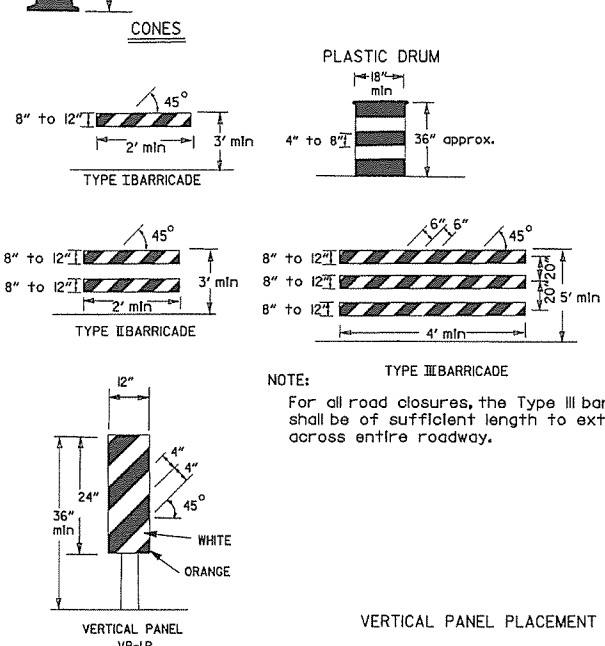
GENERAL NOTES:

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 R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1XX 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 1/2 mile intervals. At the end of the work area a R2-1XX 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 (1/2 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.

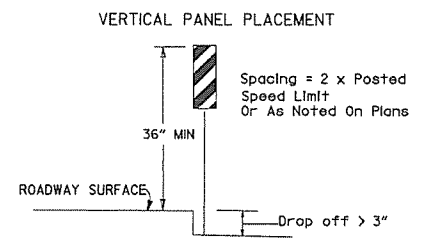


(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.



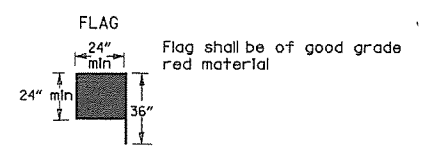
NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



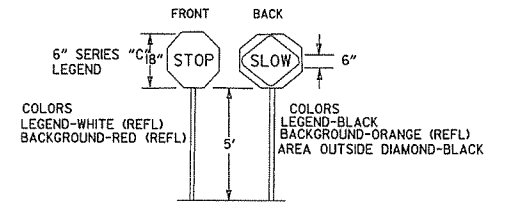
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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

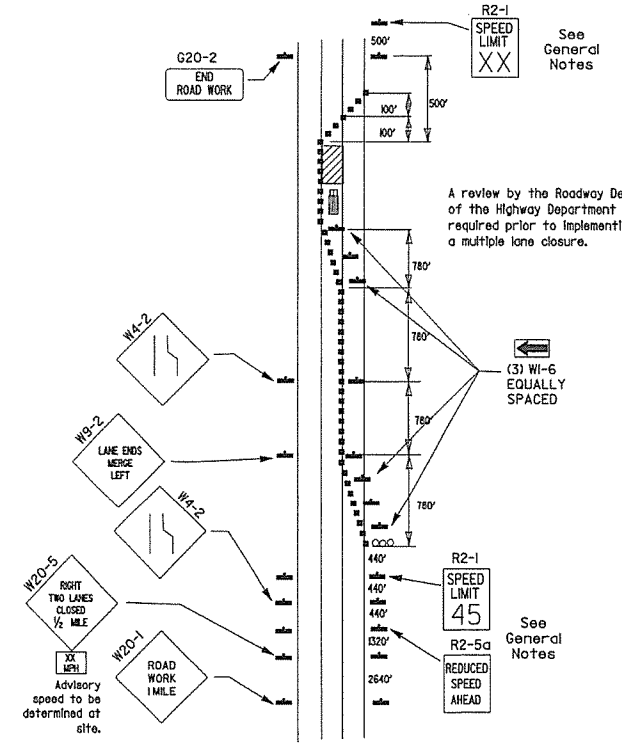
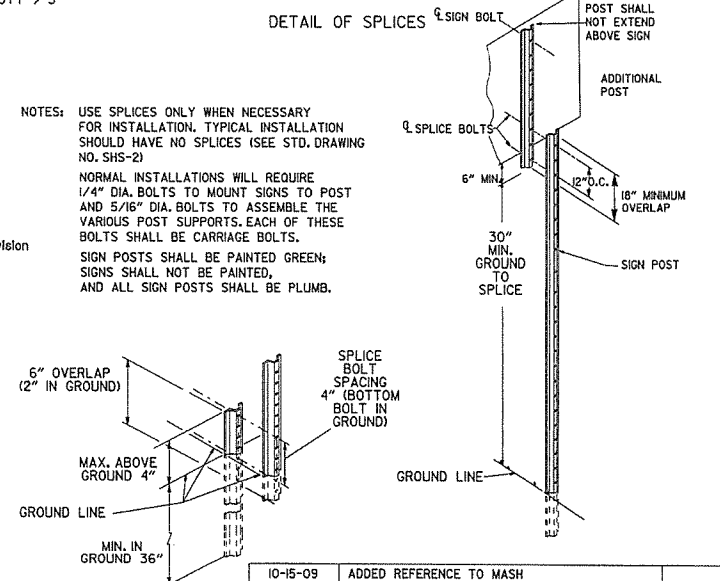
* When shown on the plans concrete barrier will be used. When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE



DETAIL OF SPLICES

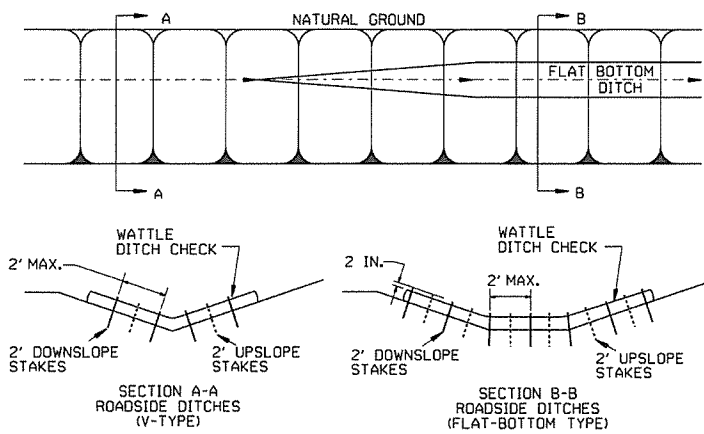


(D) Typical application - closing multiple lanes of a multi-lane highway.

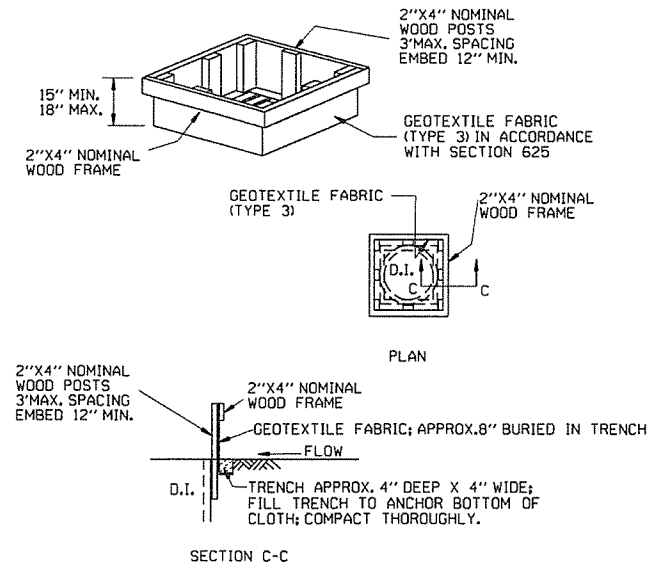
- NOTES:
- USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)
 - NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.
 - SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
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	

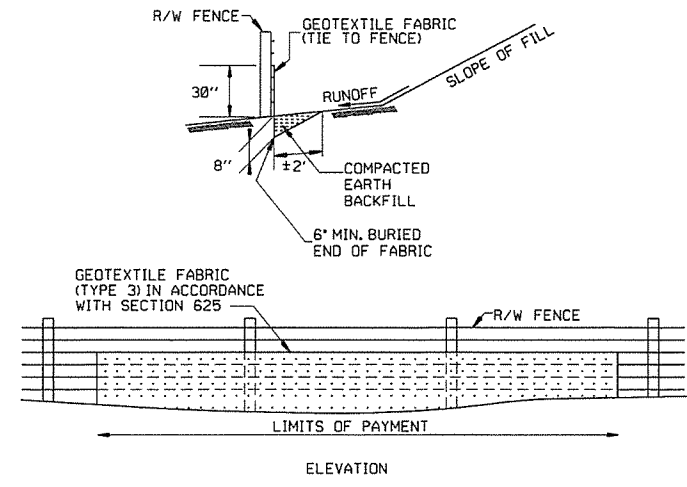
GENERAL NOTES
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



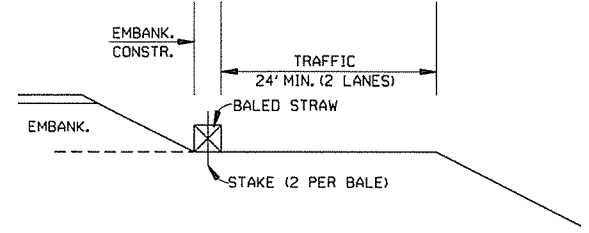
DROP INLET SILT FENCE (E-7)



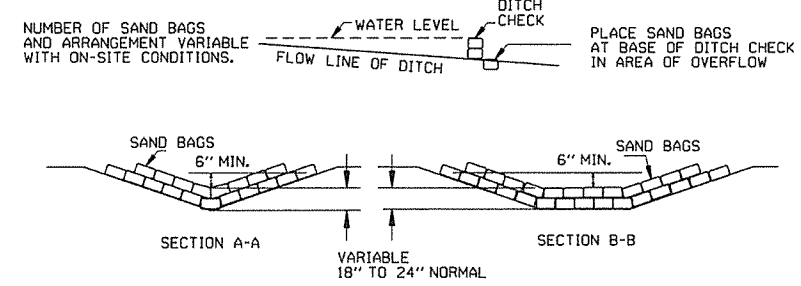
SILT FENCE ON R/W FENCE (E-4)

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.

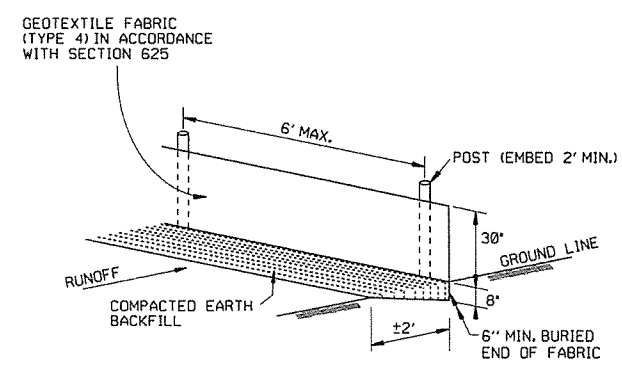
GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL 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)

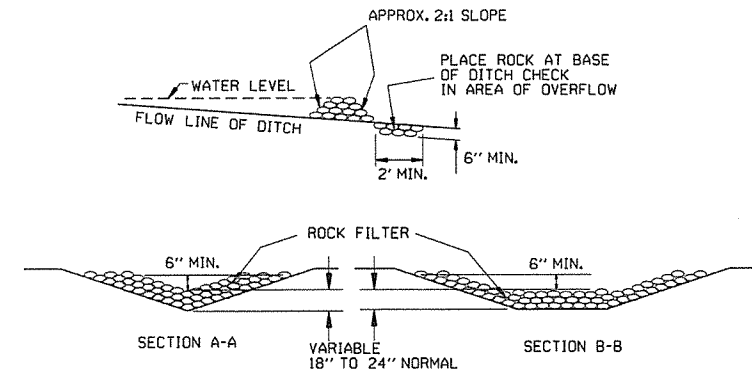


SAND BAG DITCH CHECK (E-5)



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.

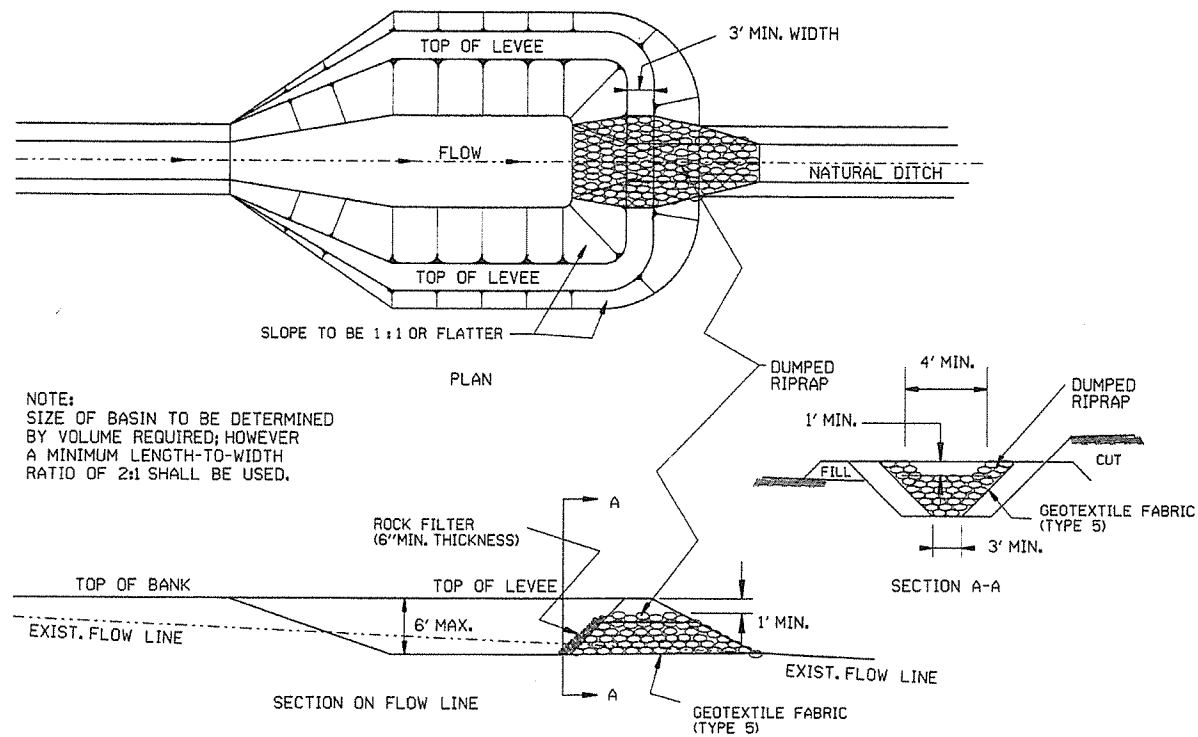


ROCK DITCH CHECK (E-6)

12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
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	
DATE	REVISION	FILMED	

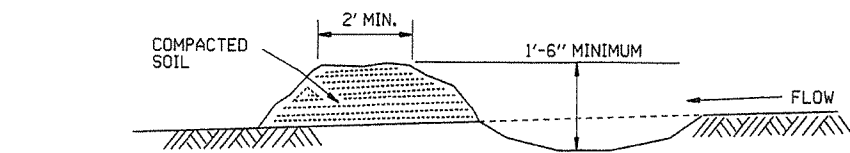
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-1

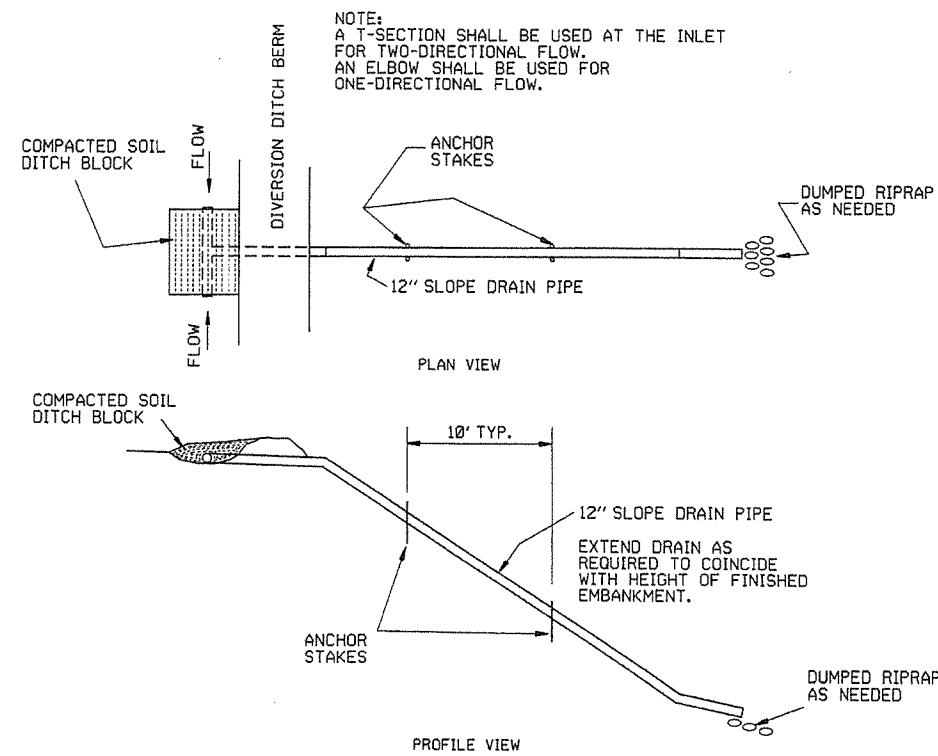


SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

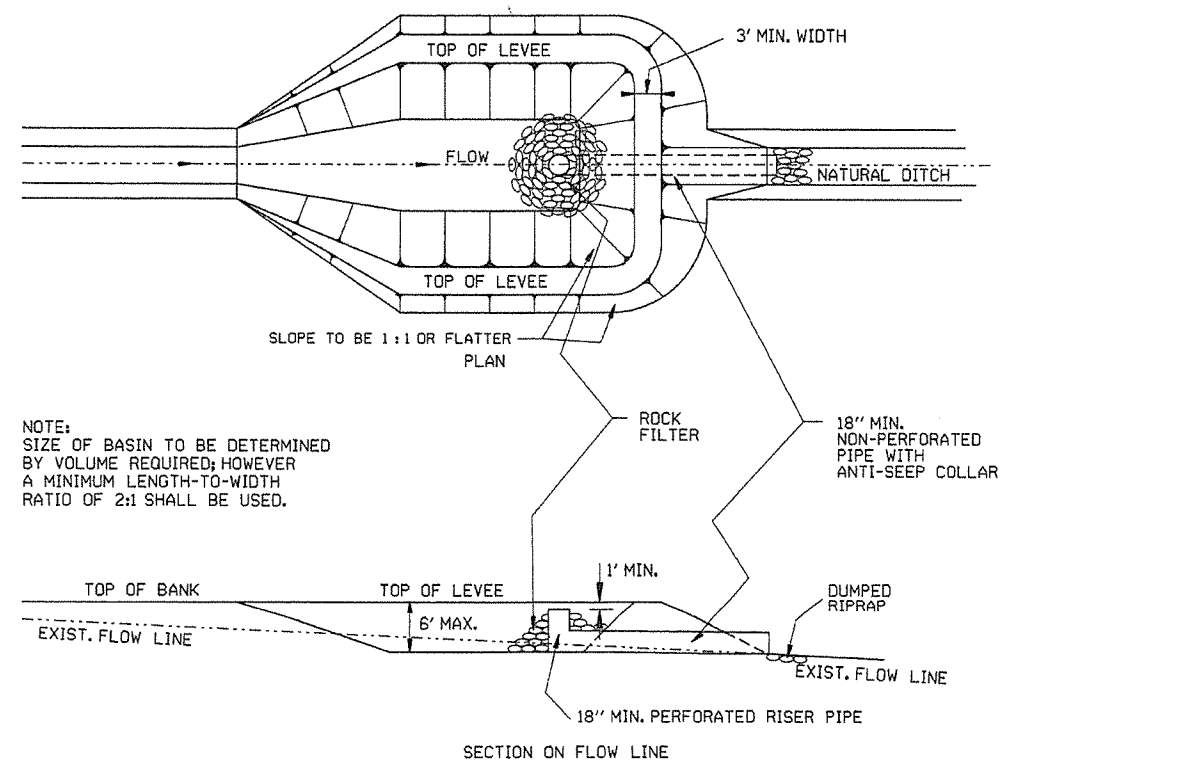


DIVERSION DITCH (E-8)



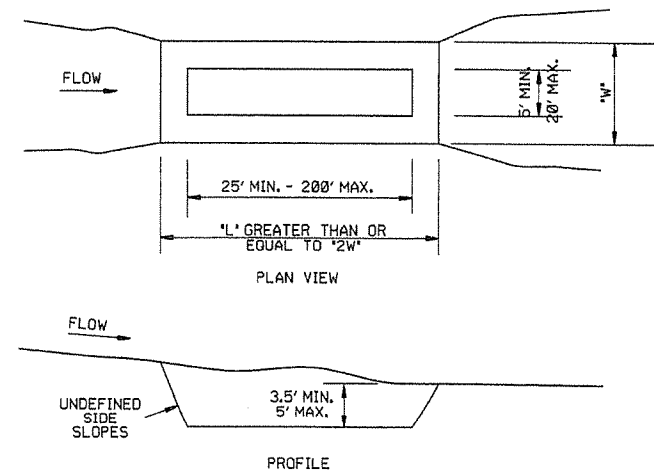
SLOPE DRAIN (E-12)

NOTE:
A T-SECTION SHALL BE USED AT THE INLET
FOR TWO-DIRECTIONAL FLOW.
AN ELBOW SHALL BE USED FOR
ONE-DIRECTIONAL FLOW.



SEDIMENT BASIN WITH PIPE OUTLET (E-10)

NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



SEDIMENT BASIN (E-14)

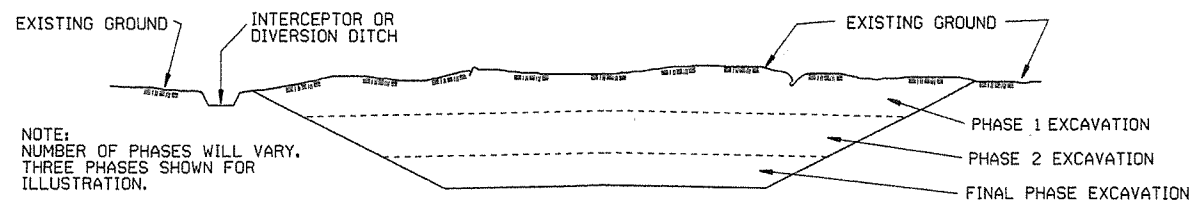
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
		STANDARD DRAWING TEC-2	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

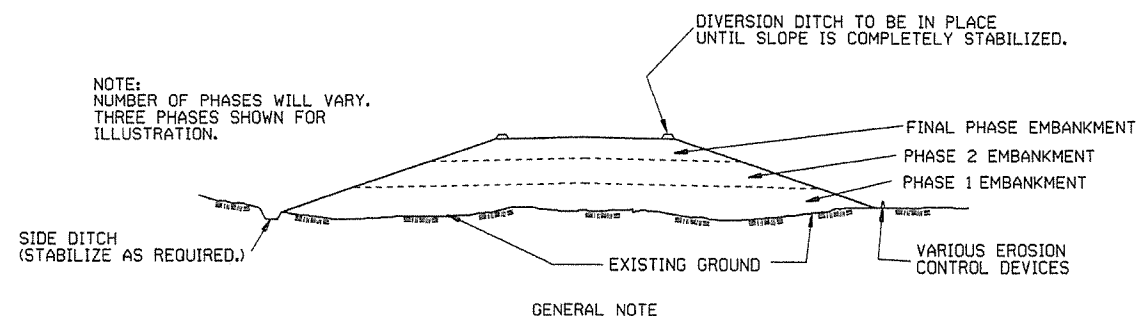
GENERAL NOTE

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

GENERAL NOTE

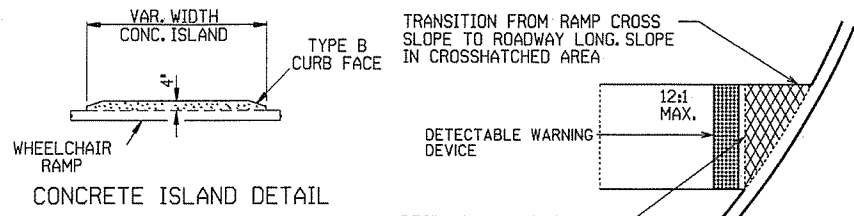
ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

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.

64

			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
11-23-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued		
DATE	REVISION		6-2-94 FILMED
			STANDARD DRAWING TEC-3

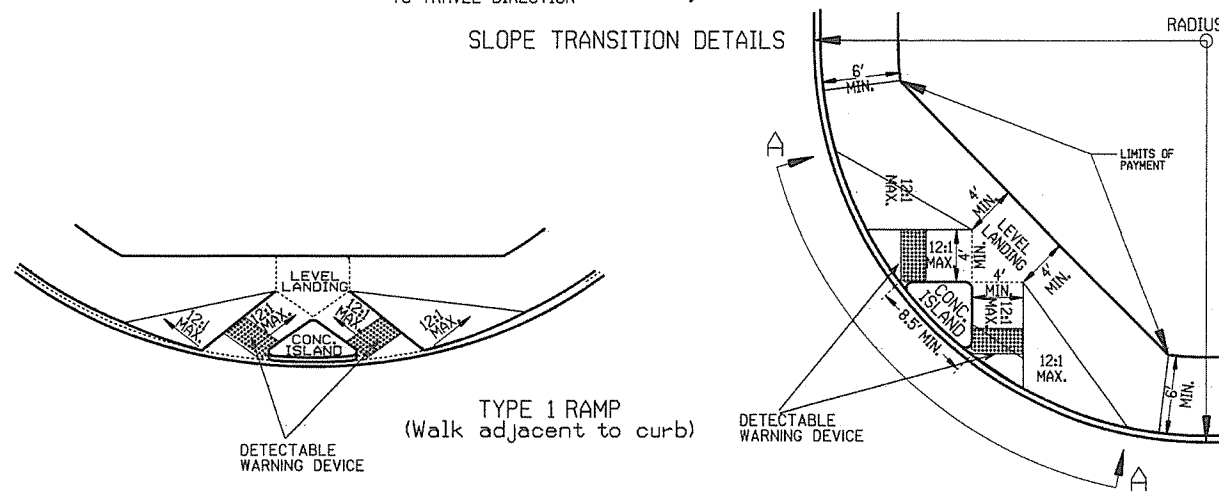


TRANSITION FROM RAMP CROSS SLOPE TO ROADWAY LONG. SLOPE IN CROSSHATCHED AREA

DETECTABLE WARNING DEVICE

BEGIN RAMP SLOPE ON A LINE PERPENDICULAR TO TRAVEL DIRECTION

SLOPE TRANSITION DETAILS

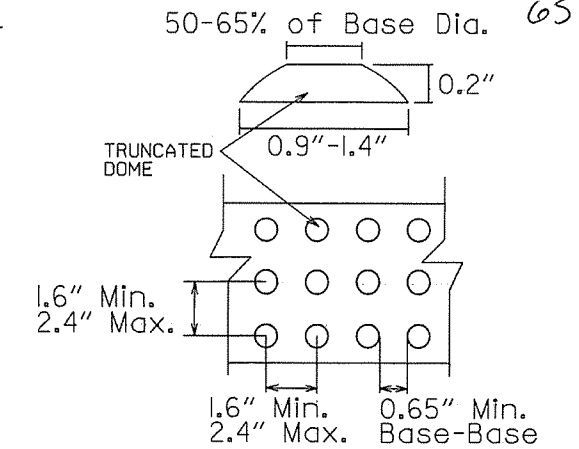


TYPE 1 RAMP DIMENSIONS AND QUANTITIES

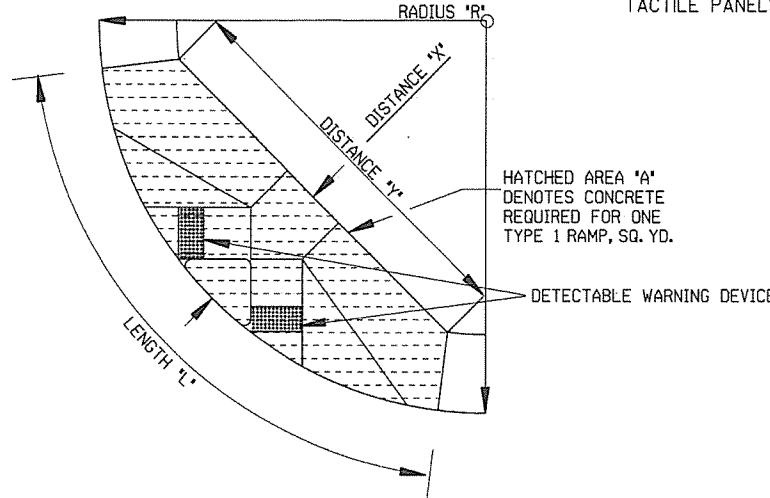
RADIUS "R"	DISTANCE "X"	DISTANCE "Y"	LENGTH "L"	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.02	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

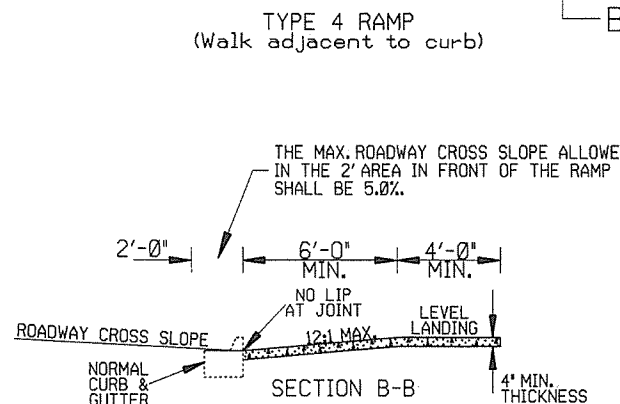
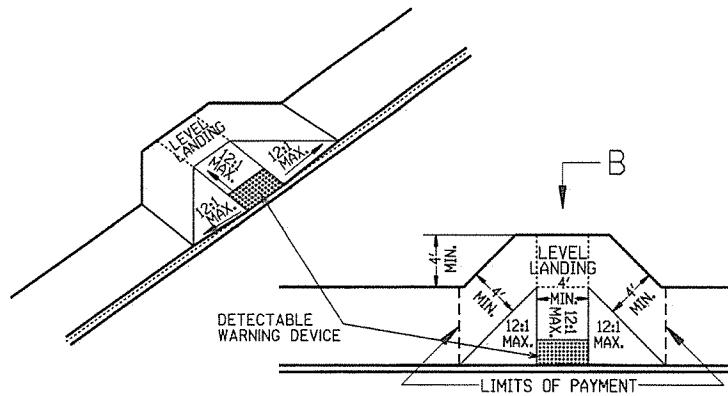
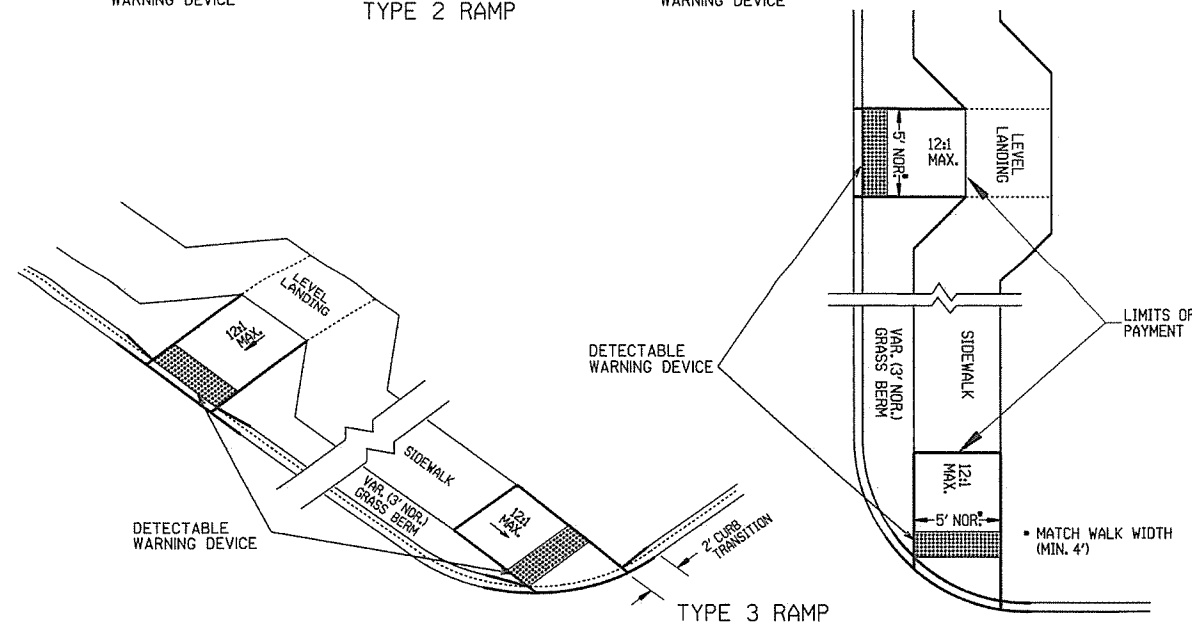
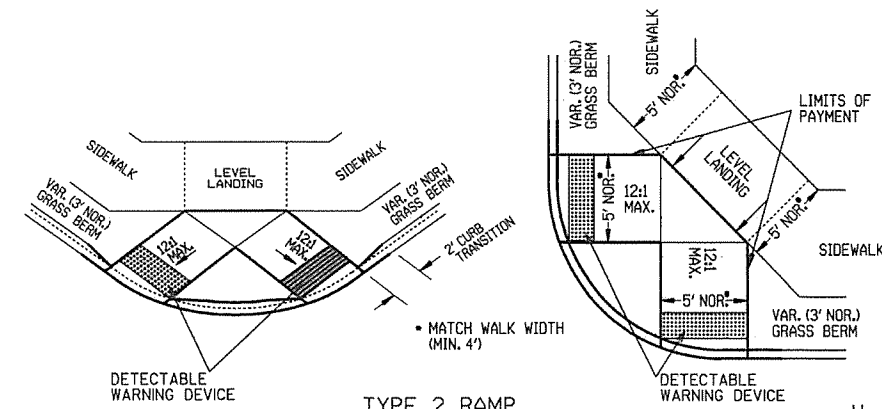
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB. TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE. DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



DETECTABLE WARNING DEVICE DETAIL



NOTE: THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGITUDINAL GRADE.



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 INTERSECTION 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.

RAMP SELECTION CRITERIA

CHOICE	TYPE	DESCRIPTION
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	FROM 8:1 TO 12:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISLAND" IN PAY ITEM	
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

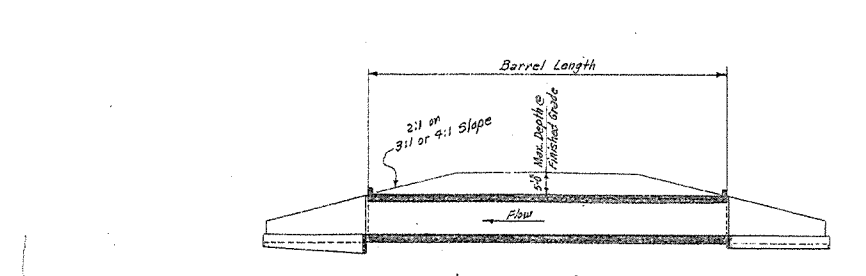
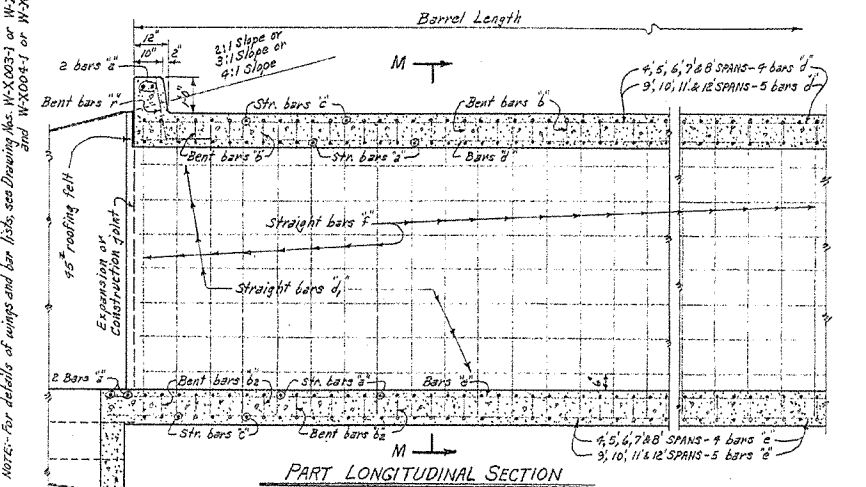
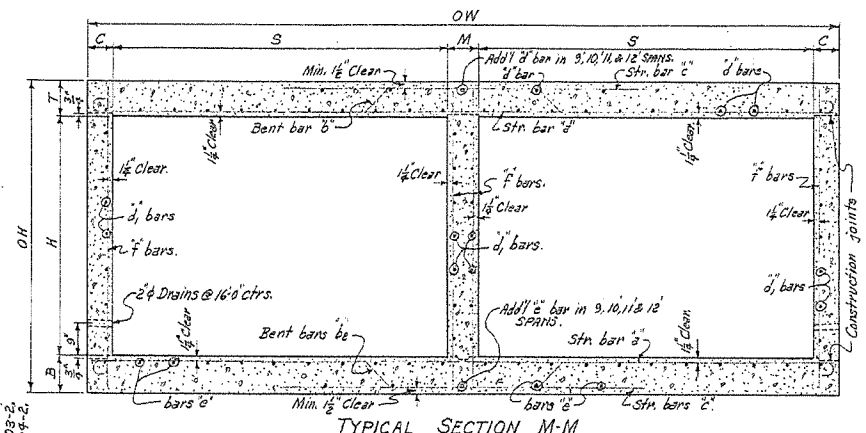
STANDARD DRAWING WR-1

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			67	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars												"b" bars												"c" bars												"d" bars												"e" bars												"f" bars											
			STRAIGHT				BENT - See Diagram below.				BENT - See Diagram below.				STRAIGHT				STRAIGHT				STRAIGHT				STRAIGHT				STRAIGHT				STRAIGHT																																							
D	S	H	SIZE	SPACING	NUMBER REQ'D	LENGTH	SIZE	SPACING	NUMBER REQ'D	LENGTH	X	Y	Z	SIZE	SPACING	NUMBER REQ'D	LENGTH	X	Y	Z	SIZE	SPACING	NUMBER REQ'D	LENGTH	SIZE	SPACING	NUMBER REQ'D	LENGTH	SIZE	SPACING	NUMBER REQ'D	LENGTH	SIZE	SPACING	NUMBER REQ'D	LENGTH																																						
0'-0" TO 5'-0" MAXIMUM.	2 @ 2	12	12B	12B	9'-5"	59	59	10'-6"	0'-3"	2'-2 1/2"	3'-4"				59	59	10'-6"	0'-2 1/2"	2'-3 1/2"	3'-4"				120	120	4'-8"																																																
			12B	12B	9'-5"	59	59	10'-6"	0'-3"	2'-2 1/2"	3'-4"				59	59	10'-6"	0'-2 1/2"	2'-3 1/2"	3'-4"				120	120	4'-8"																																																
			12B	12B	9'-5"	59	59	10'-6"	0'-3"	2'-2 1/2"	3'-4"				59	59	10'-6"	0'-2 1/2"	2'-3 1/2"	3'-4"				120	120	4'-8"																																																

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS										UNIT QUANTITIES				
	D	S	H	A	OW	T	C	M	B	OH	CLASS 5 CONC. PER LIN. FT. OF BARREL	PER LIN. OF BARREL	PER LIN. OF BARREL	PER LIN. OF BARREL	
5'-0"	2	12	12	12	12	12	12	12	12	12	0.496	88.15	4.71	129.56	
	3	12	12	12	12	12	12	12	12	12	0.558	93.49	4.85	123.56	
	4	12	12	12	12	12	12	12	12	12	0.620	98.84	4.99	123.56	
	5	12	12	12	12	12	12	12	12	12	0.682	104.18	5.13	123.56	
	6	12	12	12	12	12	12	12	12	12	0.744	109.52	5.27	123.56	
	7	12	12	12	12	12	12	12	12	12	0.806	114.86	5.41	123.56	
	8	12	12	12	12	12	12	12	12	12	0.868	120.20	5.55	123.56	
	9	12	12	12	12	12	12	12	12	12	0.930	125.54	5.69	123.56	
	10	12	12	12	12	12	12	12	12	12	0.992	130.88	5.83	123.56	
	11	12	12	12	12	12	12	12	12	12	1.054	136.22	5.97	123.56	
	12	12	12	12	12	12	12	12	12	12	1.116	141.56	6.11	123.56	



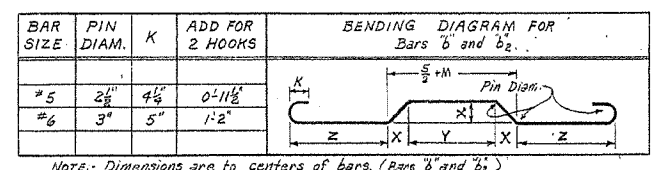
GENERAL NOTES:-
 CONCRETE:- All concrete to be Class S, and shall be poured in the dry.
 All exposed corners to have 3/8 chamfers.
 REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
 BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 22'-0". Lap longitudinal bars 30 diameters.
 CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, division walls 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) 12000 psi
 Reinforcing Steel 20,000 psi

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
 DETAILS OF STANDARD BARREL SECTIONS
 FOR
 REINFORCED CONCRETE BOX CULVERTS
 4, 5, 6, 7, 8, 9, 10, 11 & 12 SPANS
 3:1 OR 4:1 SLOPES
 UNDER 5'-0" COVER
 STANDARD DRAWING NO. R-200X-O.

Checked by: TMS - 5-14-63
 Checked by: BHS - 5-28-63
 Checked by: BHS - 5-29-63
 Designed by: W.C.H. 1-17-63.
 Drawn by: W.C.H. 2-15-63.
 Quantities by: W.C.H. 2-19-63.

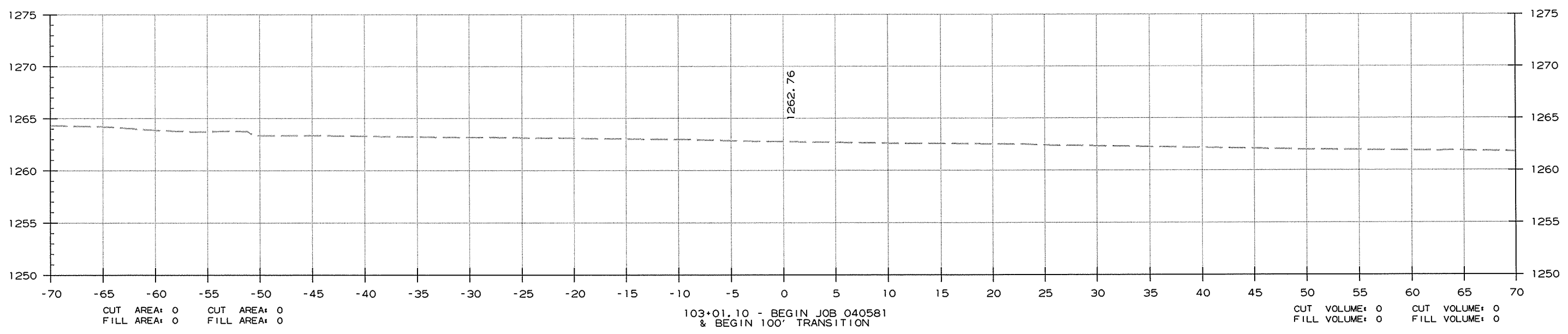
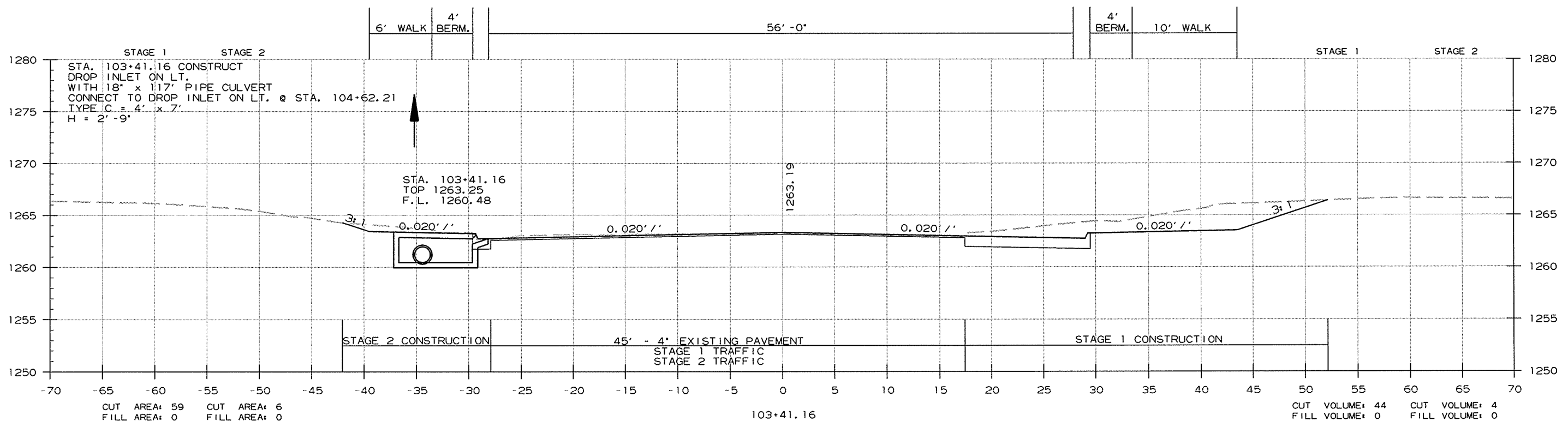


DOWEL BARS FOR TWO HEADWALLS

SPANS @	SIZE	SPACING	No. REQ'D	LENGTH	X
4'	#4	12"	20	2'-5"	1'-2 1/2"
5'	#4	12"	24	2'-6"	1'-3"
6'	#4	12"	28	2'-7"	1'-3 1/2"
7'	#4	12"	32	2'-8"	1'-4"
8'	#4	12"	36	2'-9"	1'-4 1/2"
9'	#4	12"	40	2'-10"	1'-5"
10'	#4	12"	46	2'-11"	1'-5 1/2"
11'	#4	12"	50	3'-0"	1'-6"
12'	#4	12"	54	3'-1"	1'-6 1/2"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 040581	68	106

2 CROSS SECTIONS

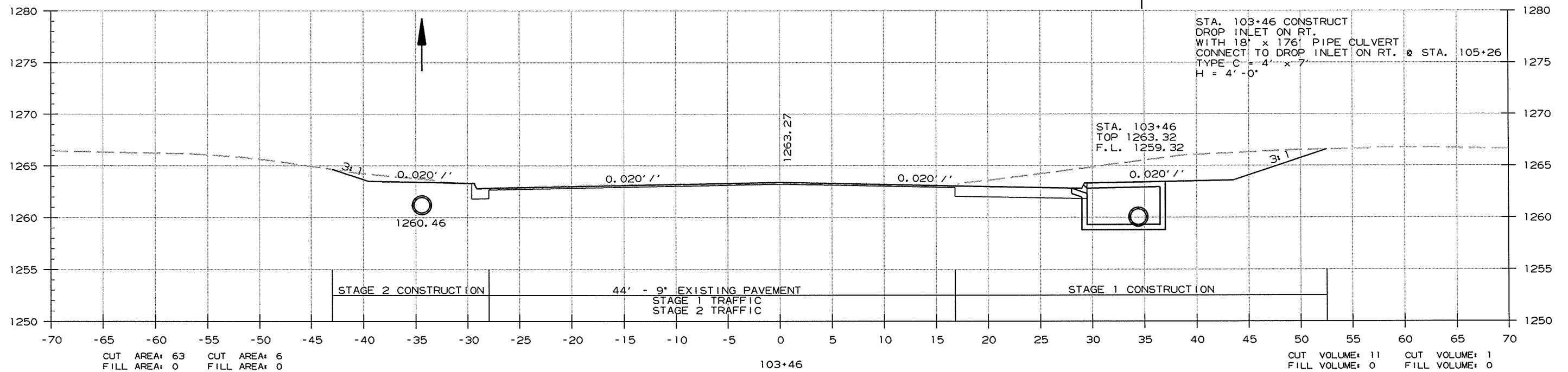
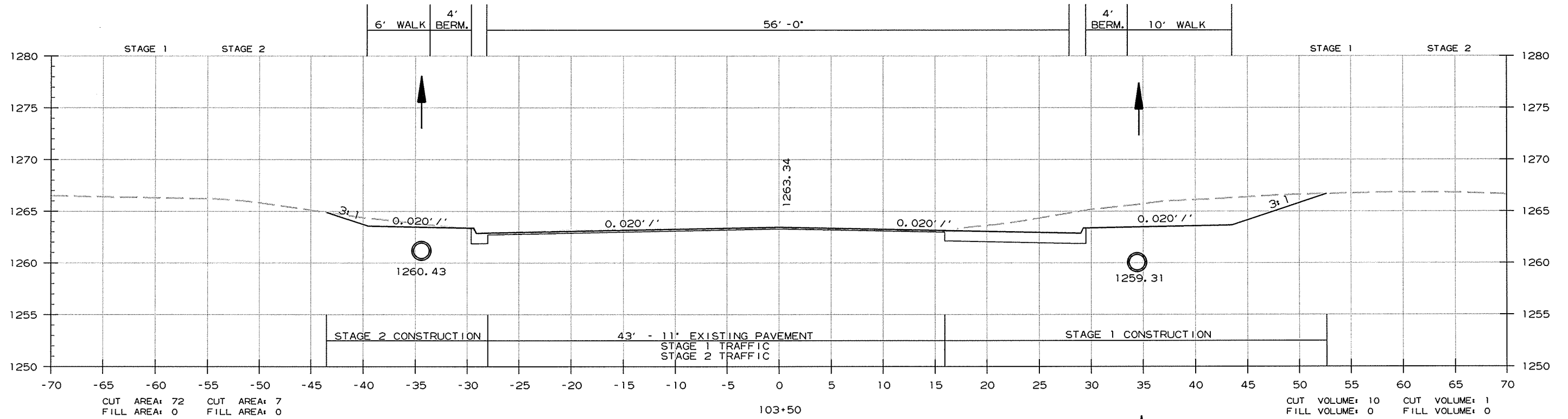


CROSS SECTIONS STA. 103+01.10 TO STA. 103+41.16

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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.	040581
								69
								106

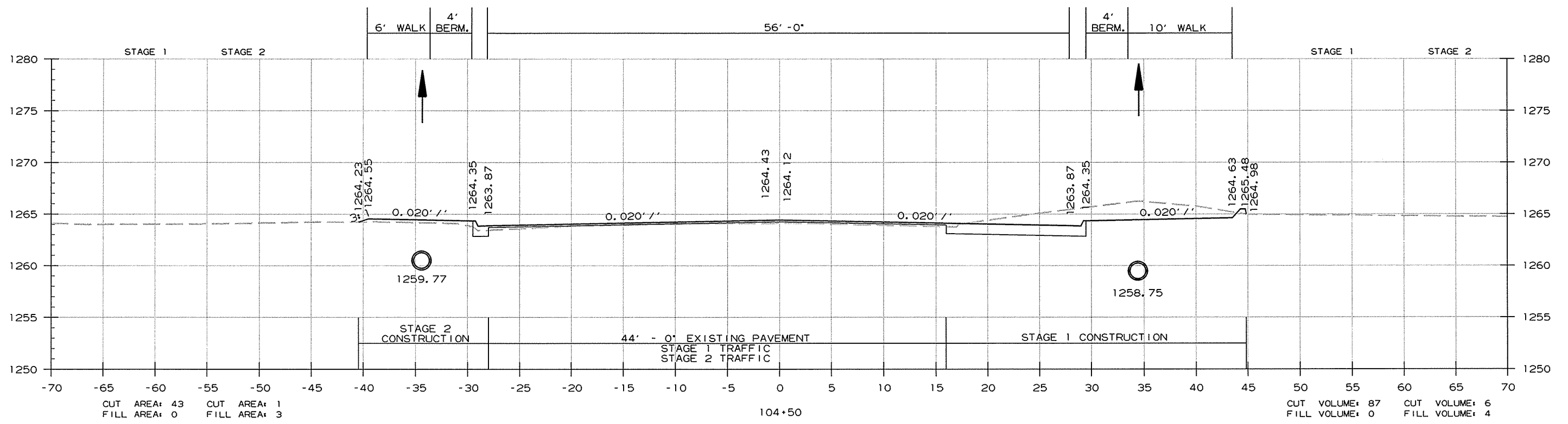
② CROSS SECTIONS



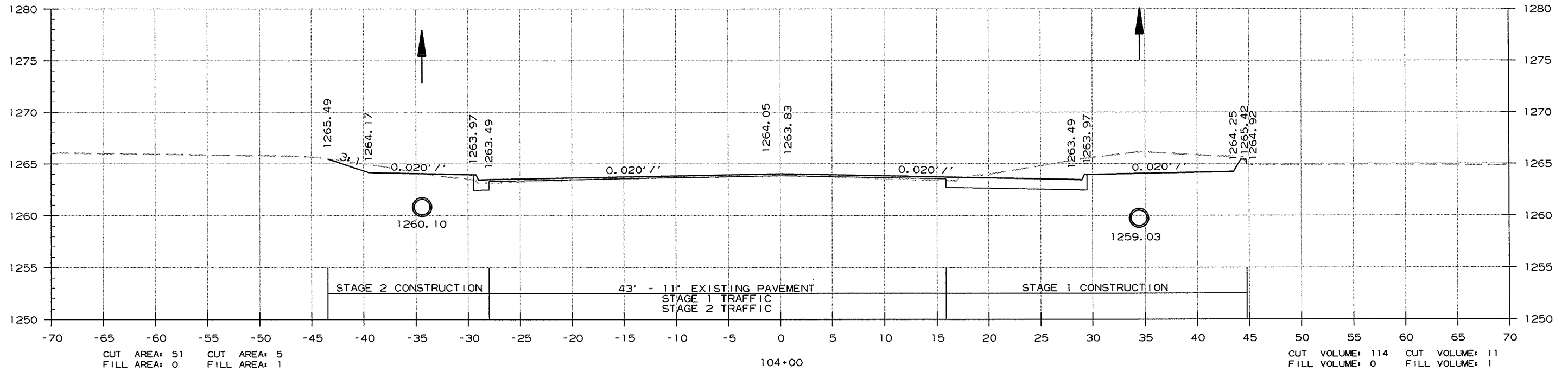
CROSS SECTIONS STA. 103+46 TO STA. 103+50

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.	040581		70	106

2 CROSS SECTIONS



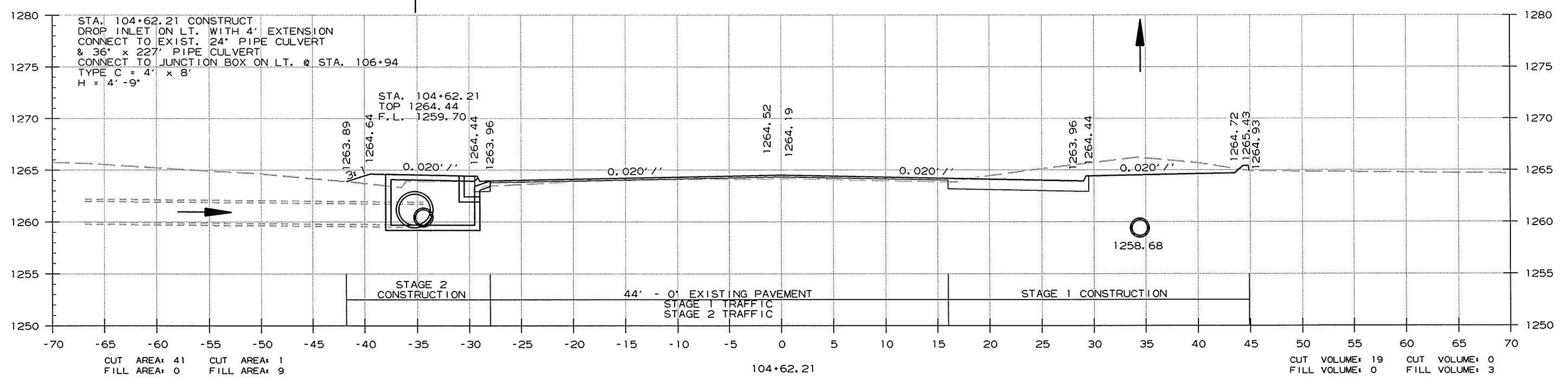
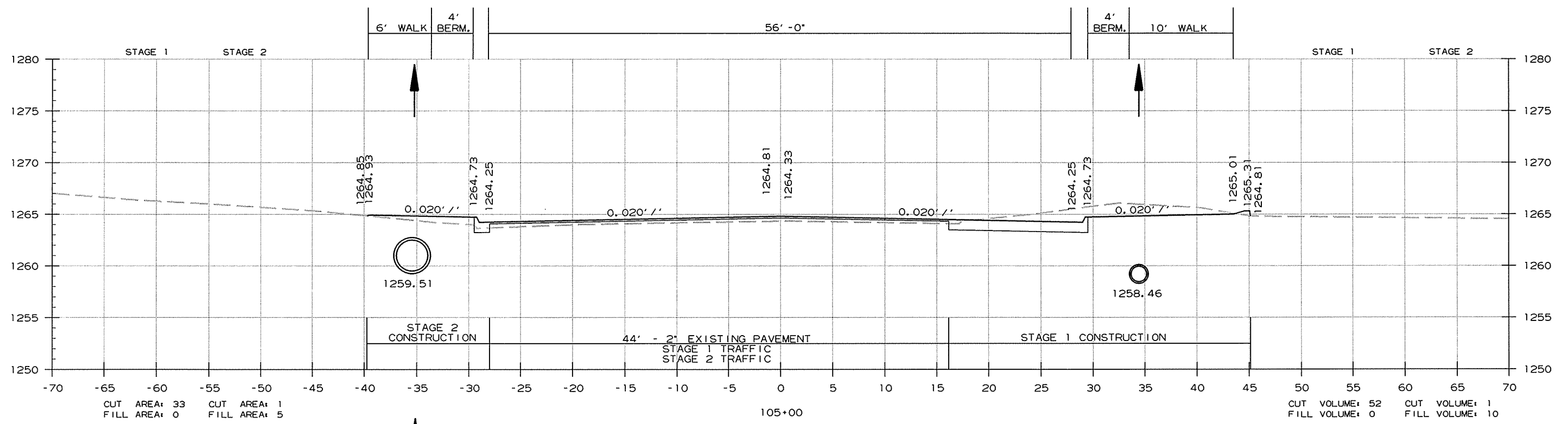
104+01.10 - END 100' TRANSITION



CROSS SECTIONS STA. 104+00 TO STA. 104+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.	040581		71	106

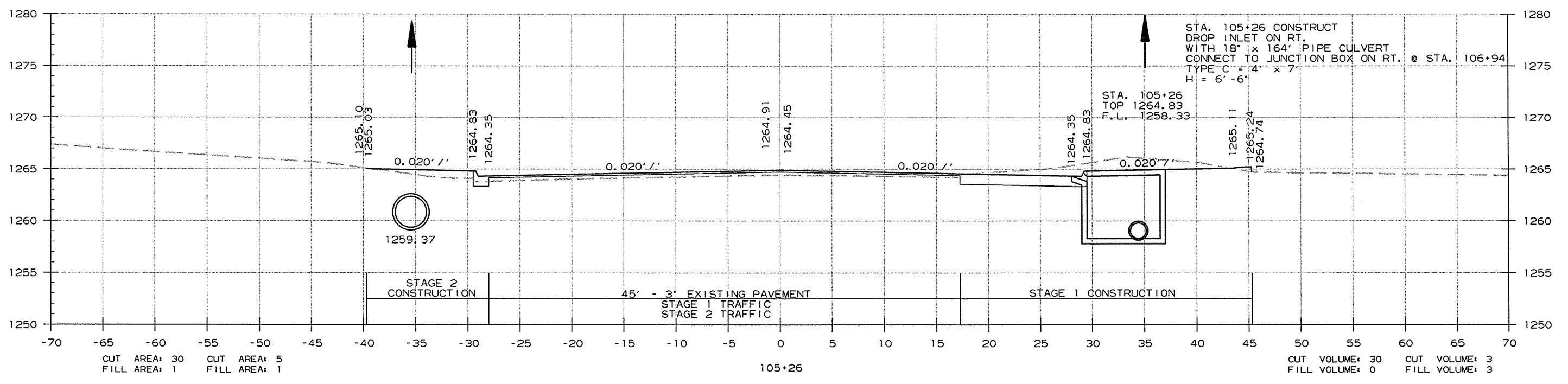
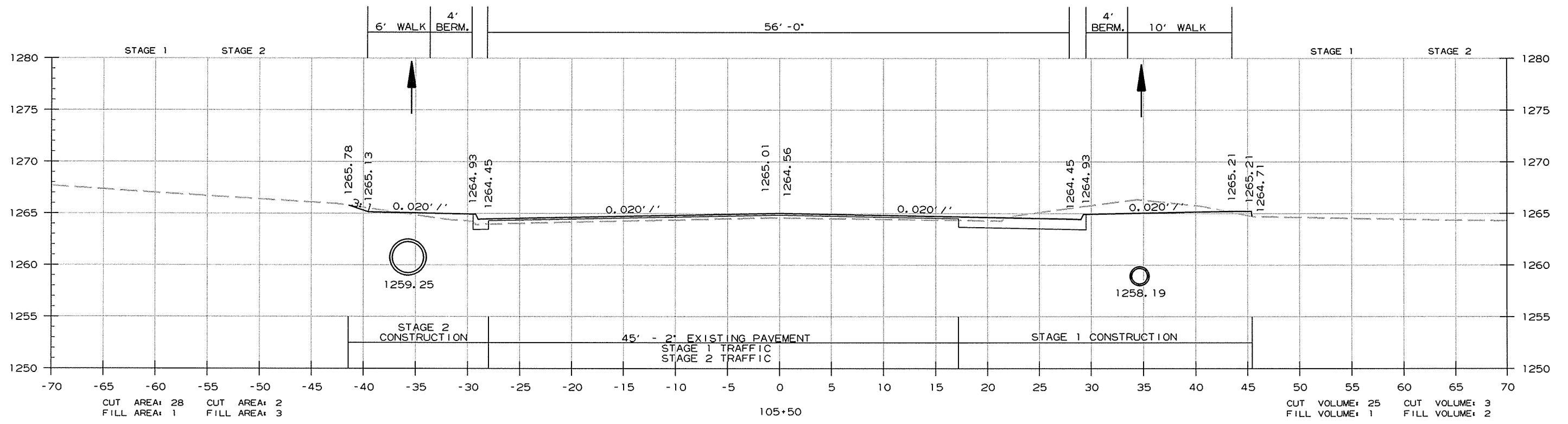
2 CROSS SECTIONS



CROSS SECTIONS STA. 104+62 TO STA. 105+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.	040581		72	106

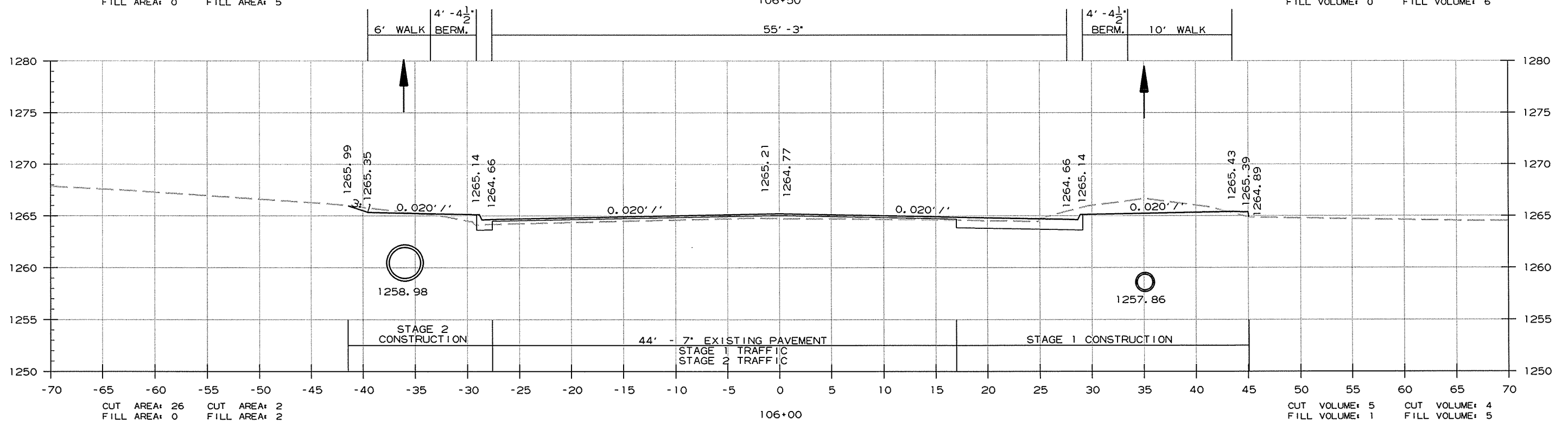
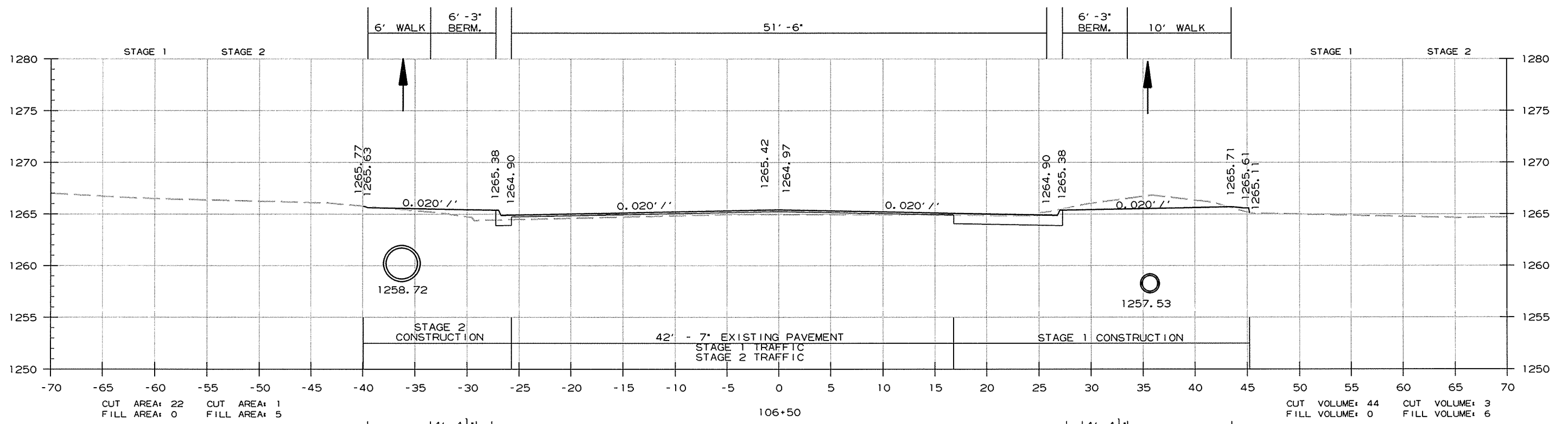
② CROSS SECTIONS



CROSS SECTIONS STA. 105+26 TO STA. 105+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.	040581		73	106

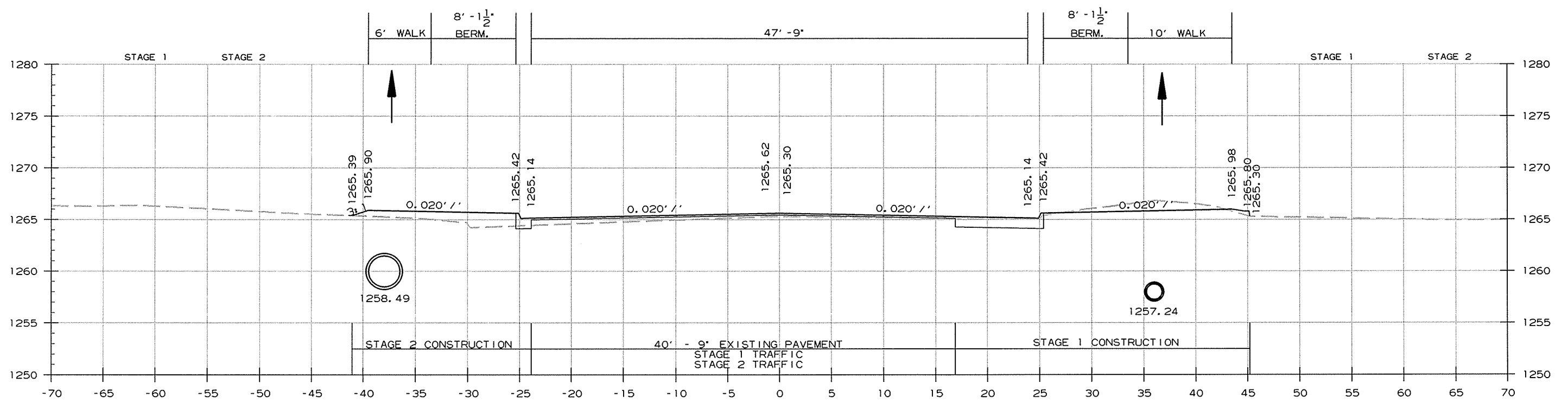
2 CROSS SECTIONS



CROSS SECTIONS STA. 106+00 TO STA. 106+50

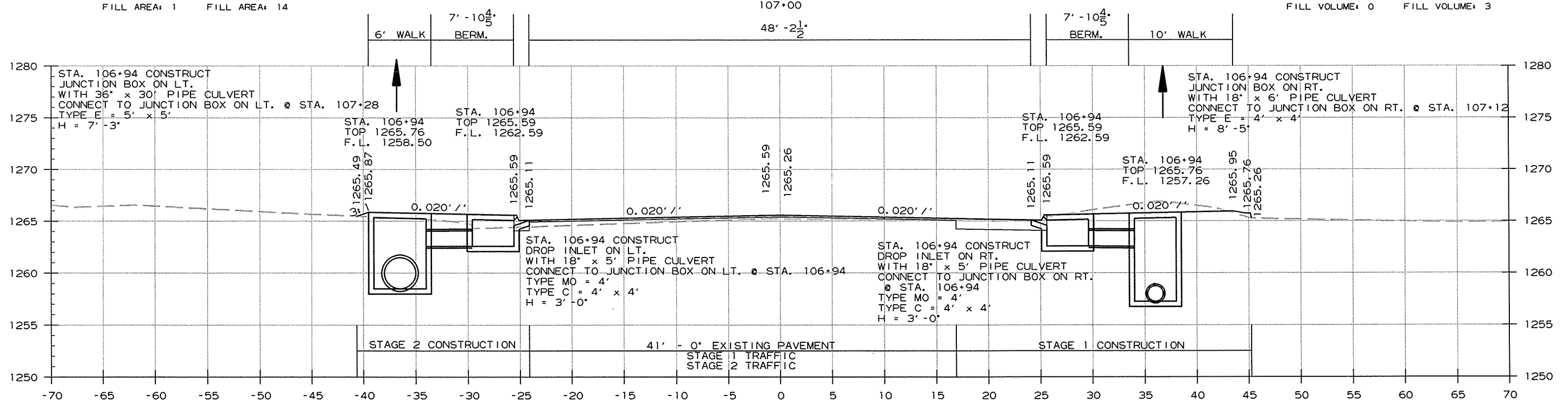
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		74	106

② CROSS SECTIONS



CUT AREA: 16 CUT AREA: 0
 FILL AREA: 1 FILL AREA: 14

CUT VOLUME: 4 CUT VOLUME: 0
 FILL VOLUME: 0 FILL VOLUME: 3



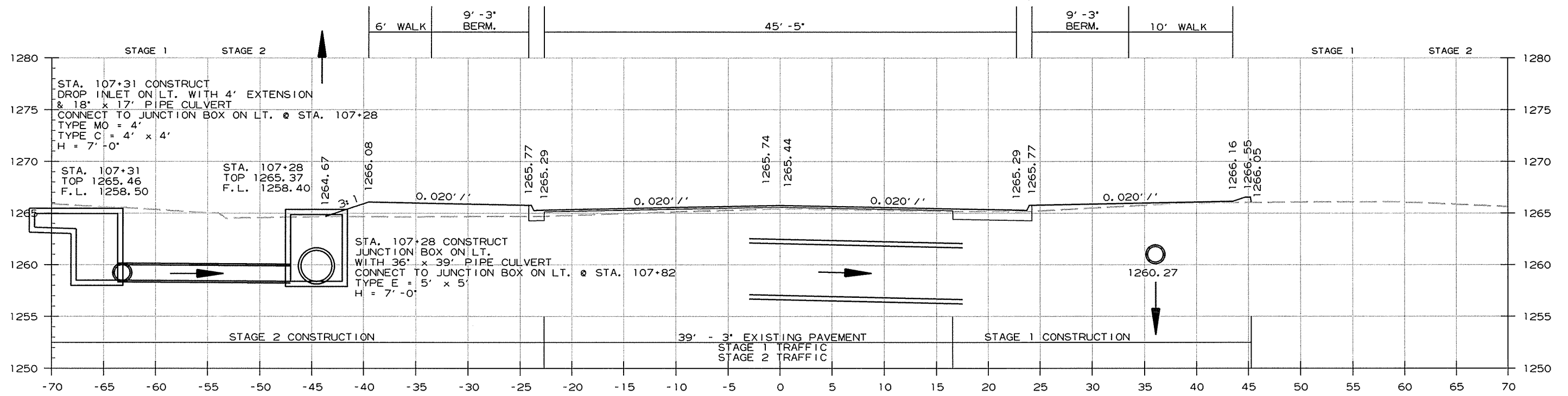
CUT AREA: 18 CUT AREA: 1
 FILL AREA: 1 FILL AREA: 11

CUT VOLUME: 33 CUT VOLUME: 2
 FILL VOLUME: 1 FILL VOLUME: 13

CROSS SECTIONS STA. 106+94 TO STA. 107+00

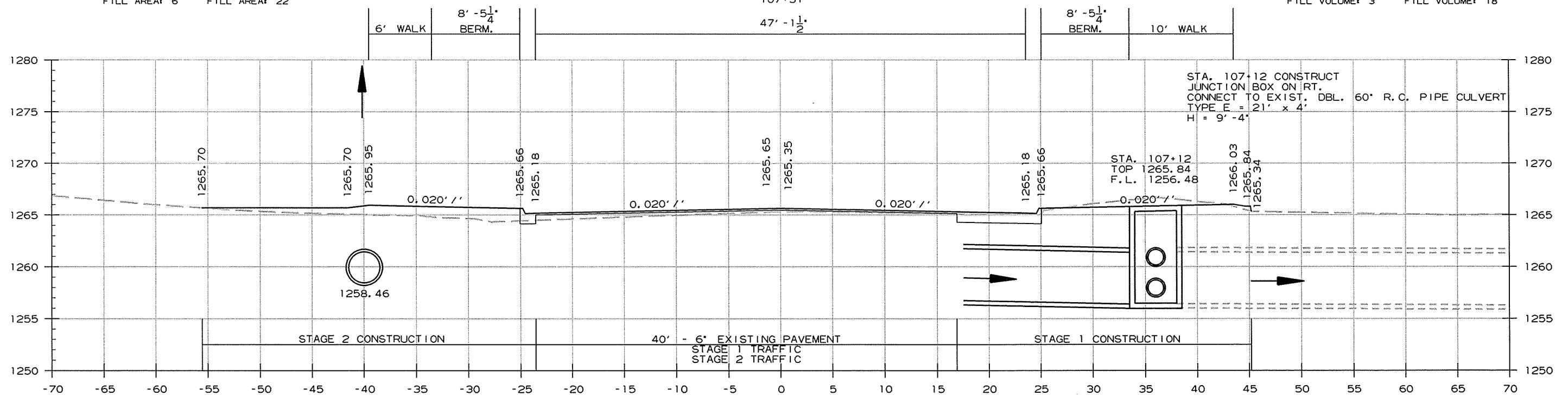
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		75	106

2 CROSS SECTIONS



CUT AREA: 6 CUT AREA: 1
 FILL AREA: 6 FILL AREA: 22

CUT VOLUME: 8 CUT VOLUME: 0
 FILL VOLUME: 3 FILL VOLUME: 18



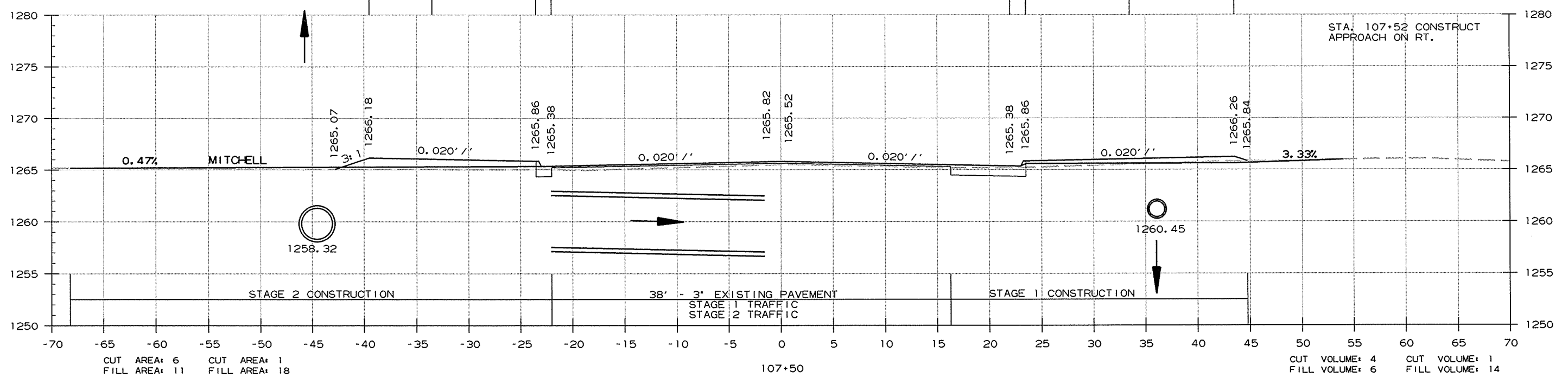
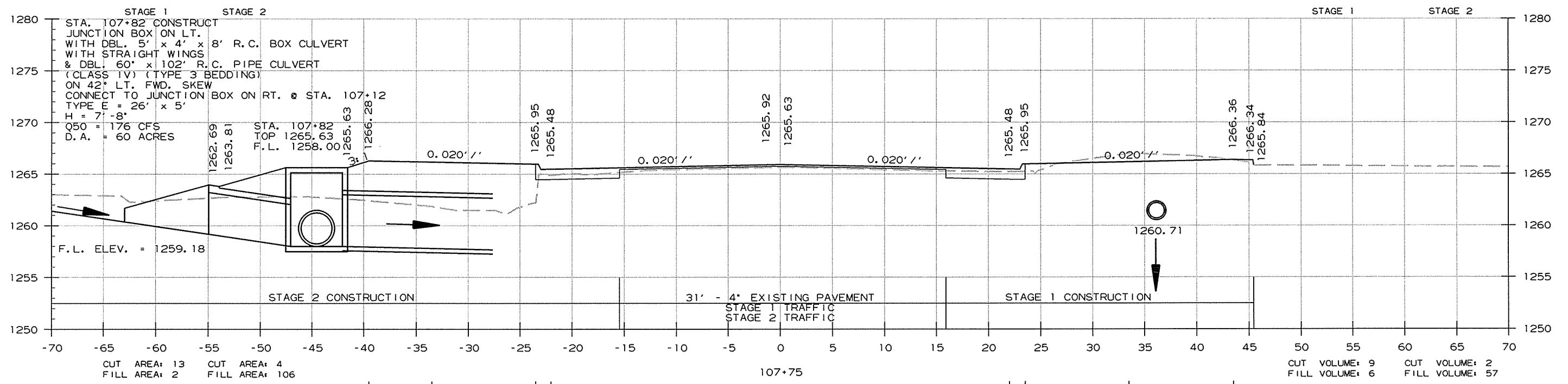
CUT AREA: 14 CUT AREA: 0
 FILL AREA: 1 FILL AREA: 22

CUT VOLUME: 5 CUT VOLUME: 0
 FILL VOLUME: 0 FILL VOLUME: 6

CROSS SECTIONS STA. 107+09 TO STA. 107+31

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 040581	76	106

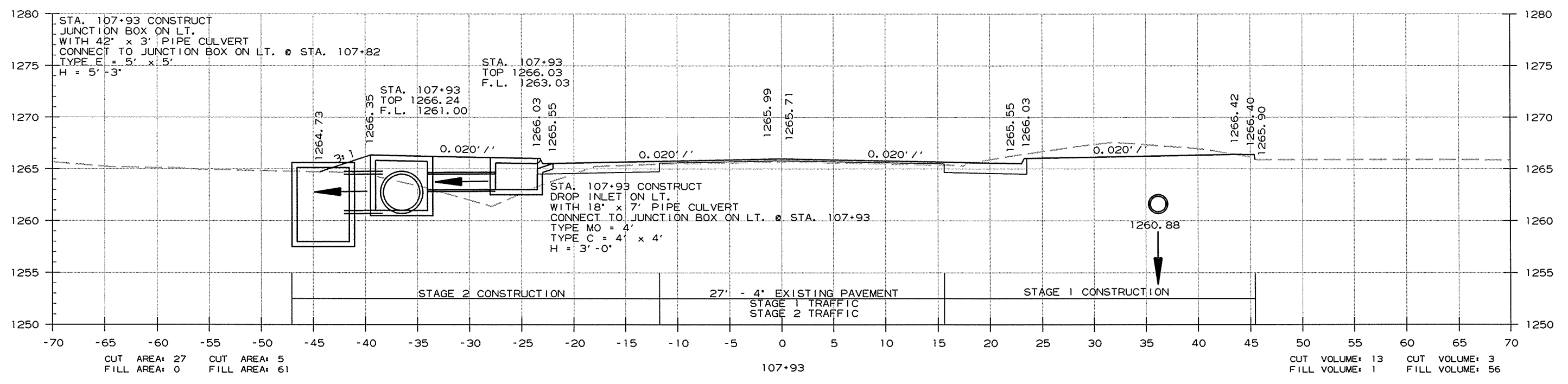
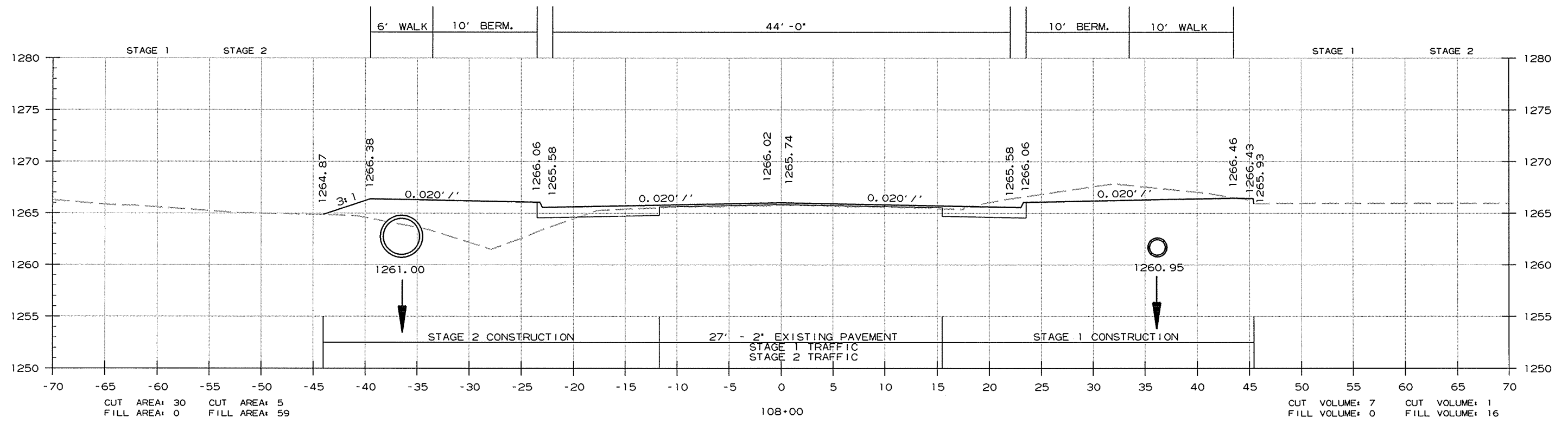
2 CROSS SECTIONS



CROSS SECTIONS STA. 107+50 TO STA. 107+75

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 040581							77	106

2 CROSS SECTIONS

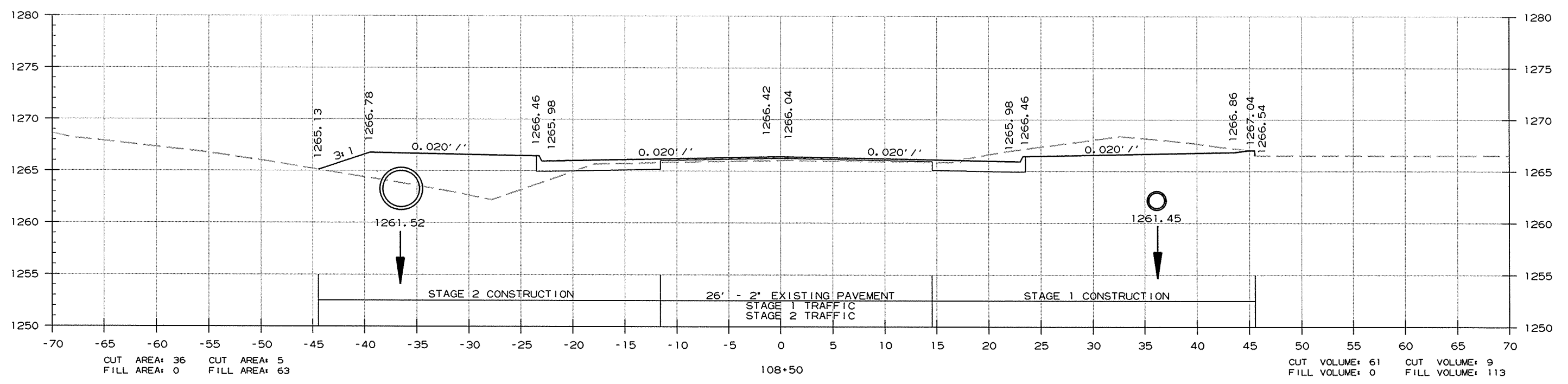
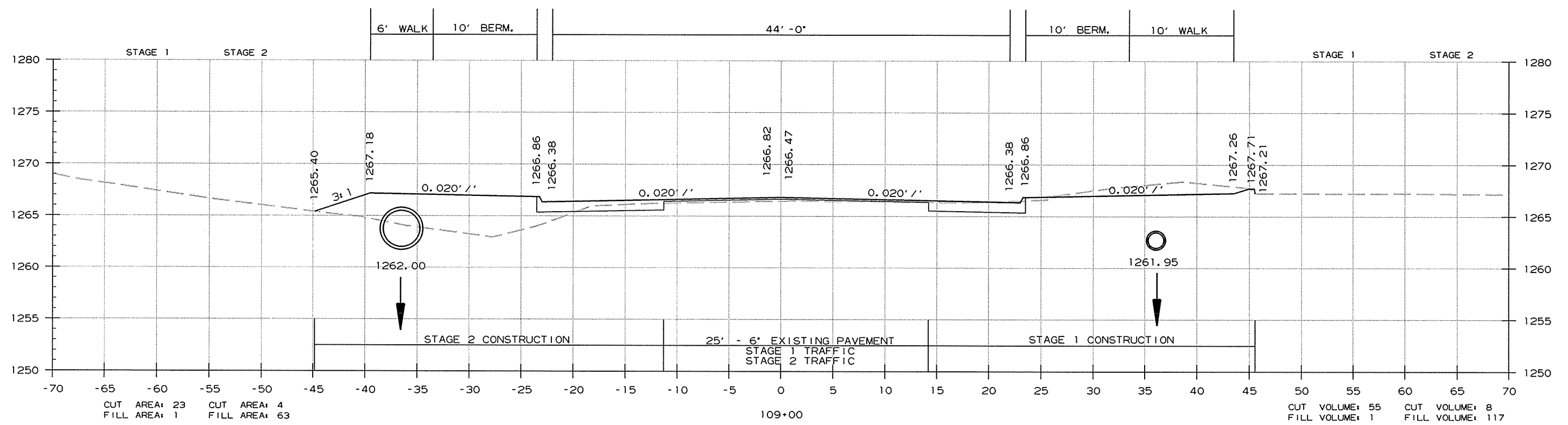


CROSS SECTIONS STA. 107+93 TO STA. 108+00

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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.		040581	78	106

2 CROSS SECTIONS

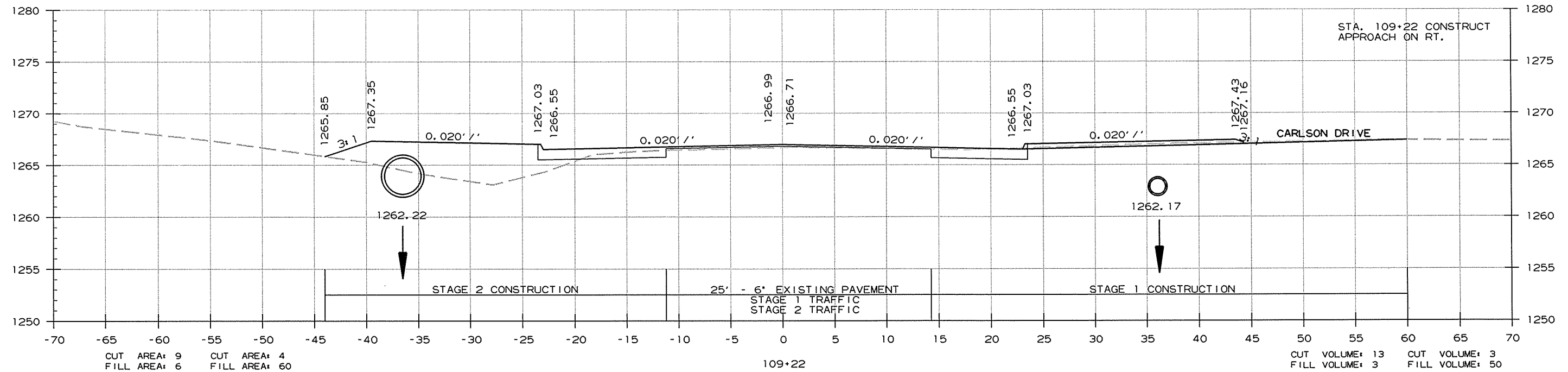
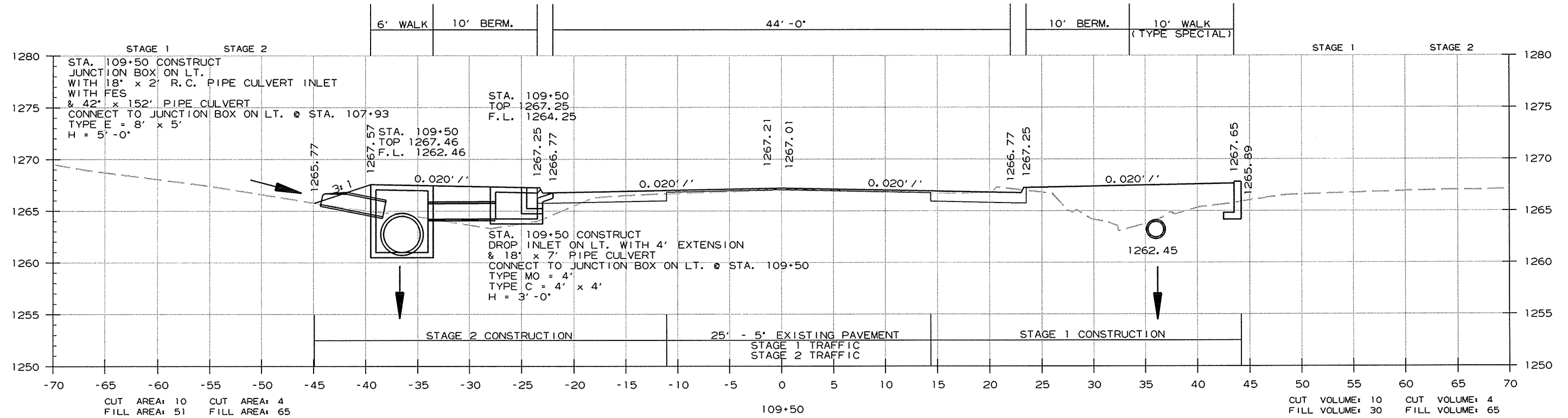


CROSS SECTIONS STA. 108+50 TO STA. 109+00

r040581.dgn 12/15/2010

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO.	040581
							79	106

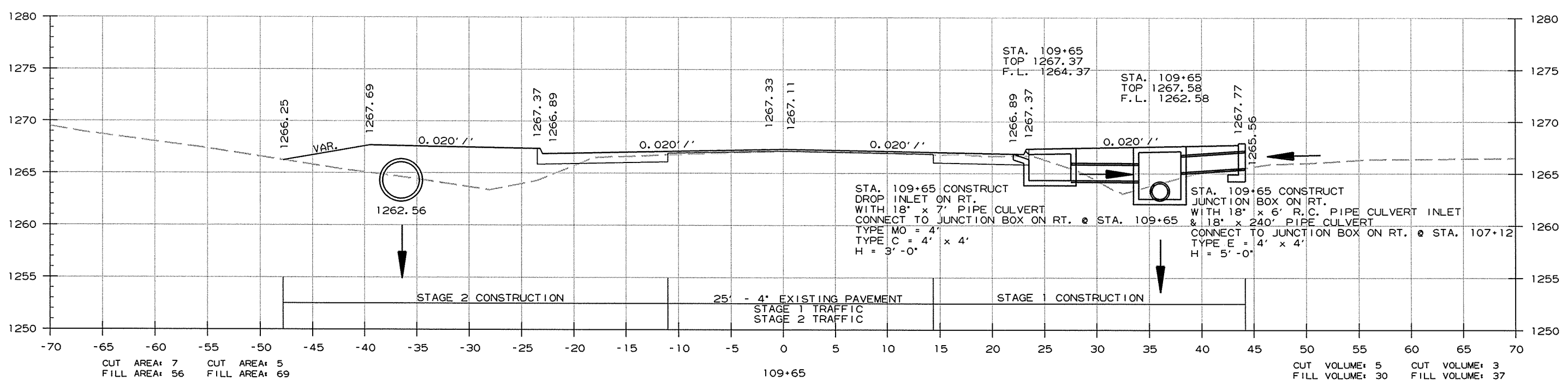
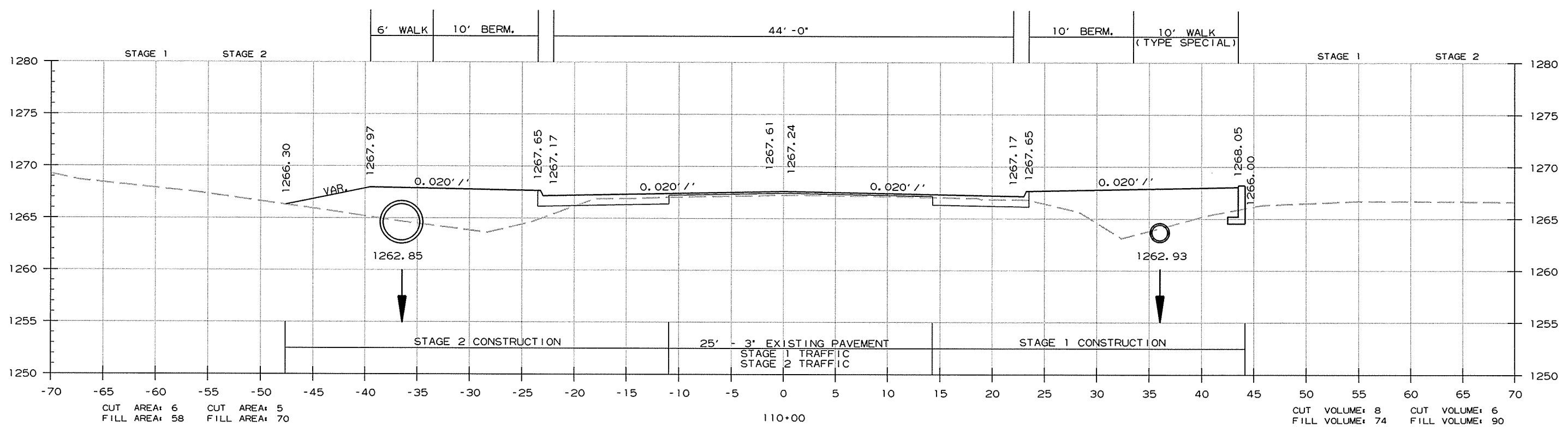
2 CROSS SECTIONS



CROSS SECTIONS STA. 109+22 TO STA. 109+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.		040581	80	106

2 CROSS SECTIONS

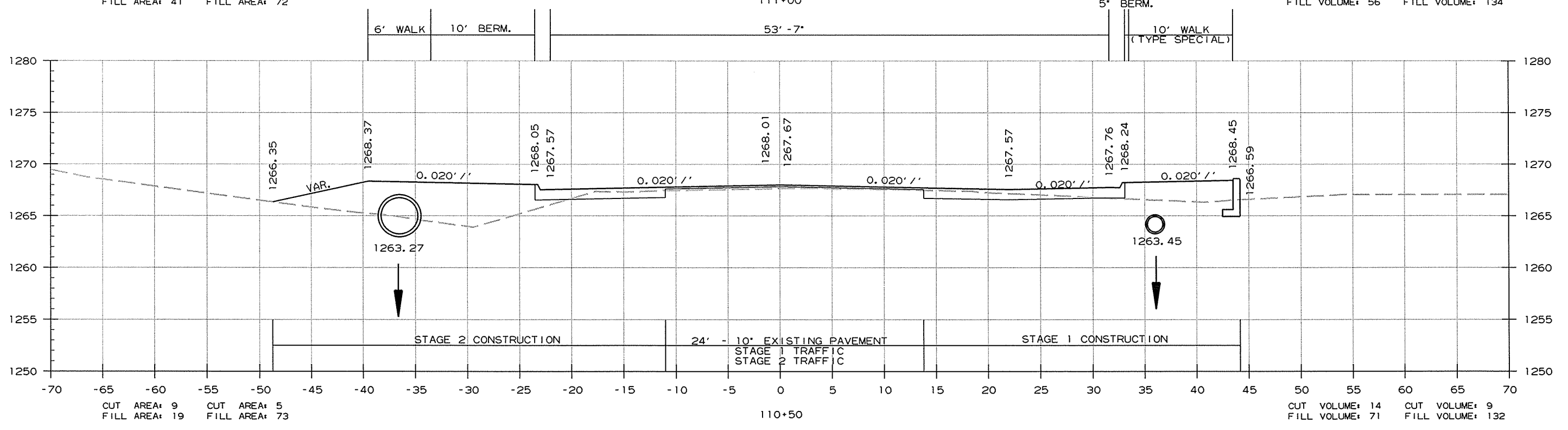
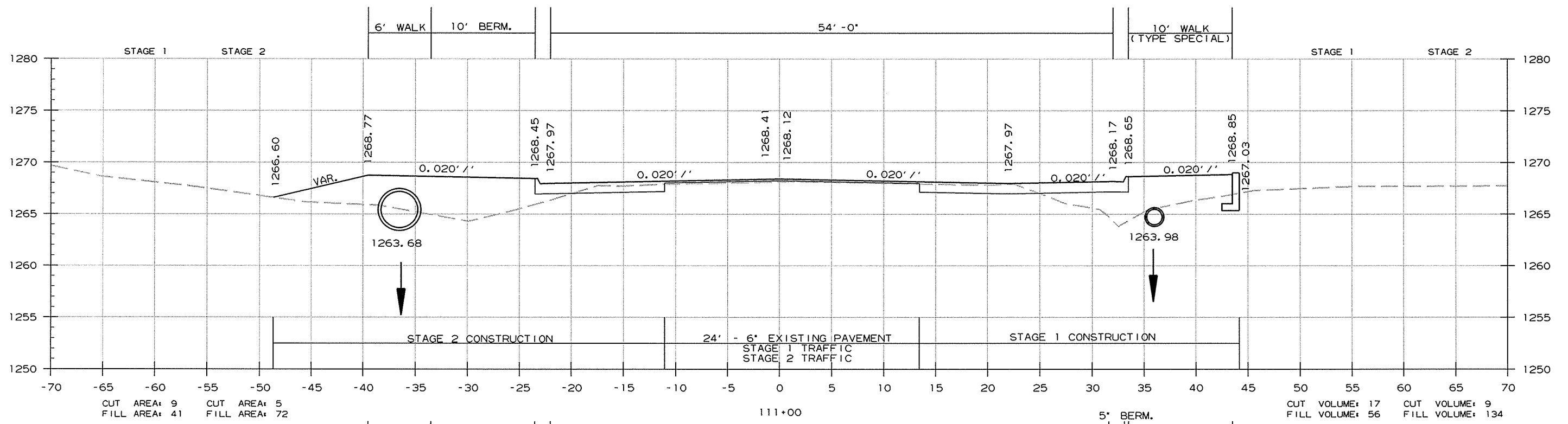


CROSS SECTIONS STA. 109+65 TO STA. 110+00

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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.	040581		81	106

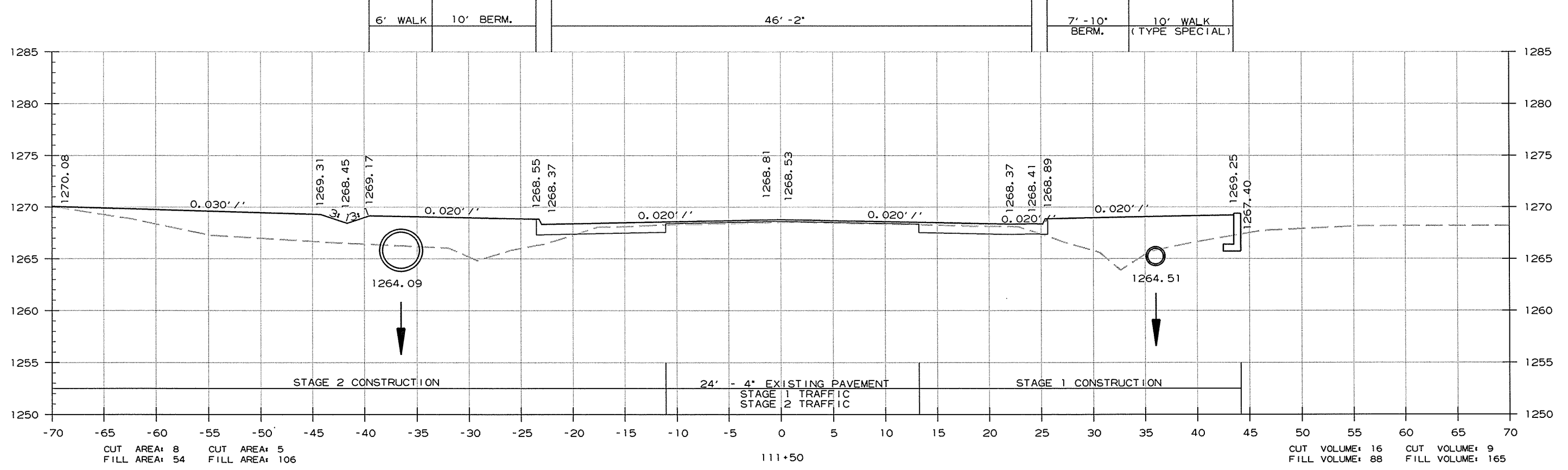
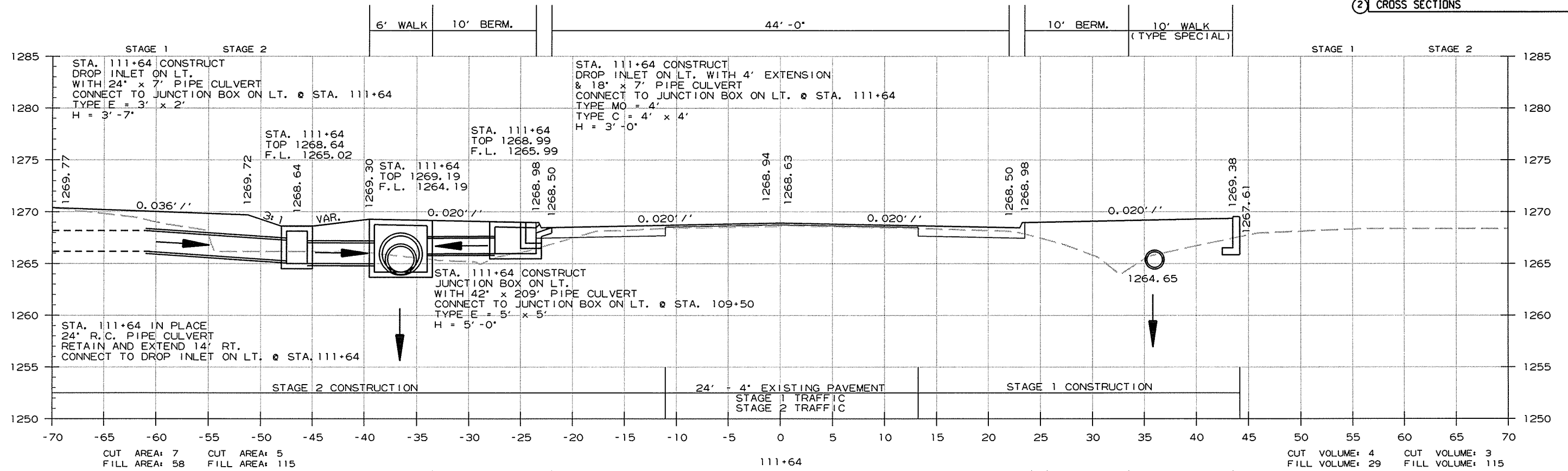
② CROSS SECTIONS



CROSS SECTIONS STA. 110+50 TO STA. 111+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.	040581		82	106

2 CROSS SECTIONS

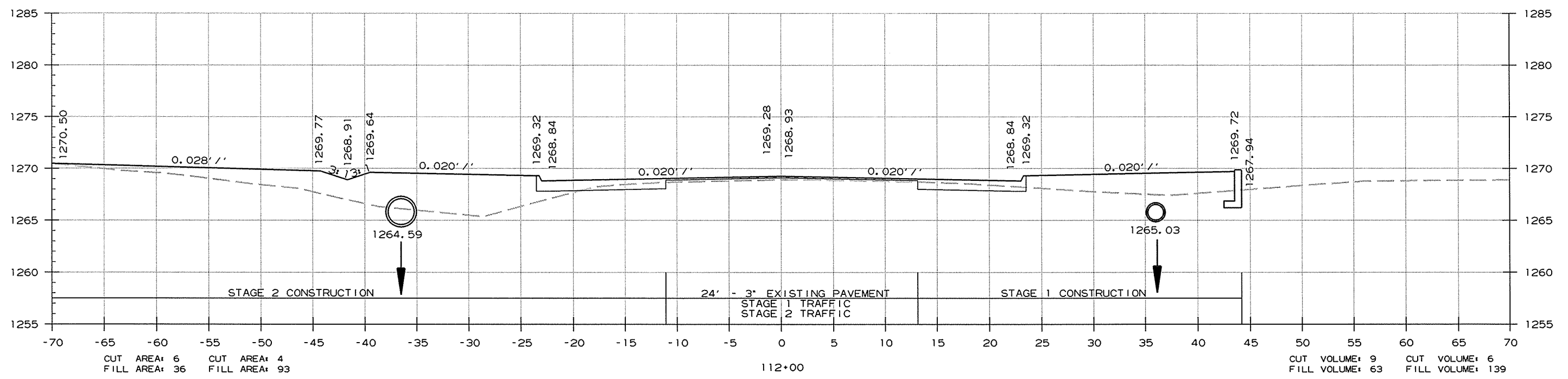
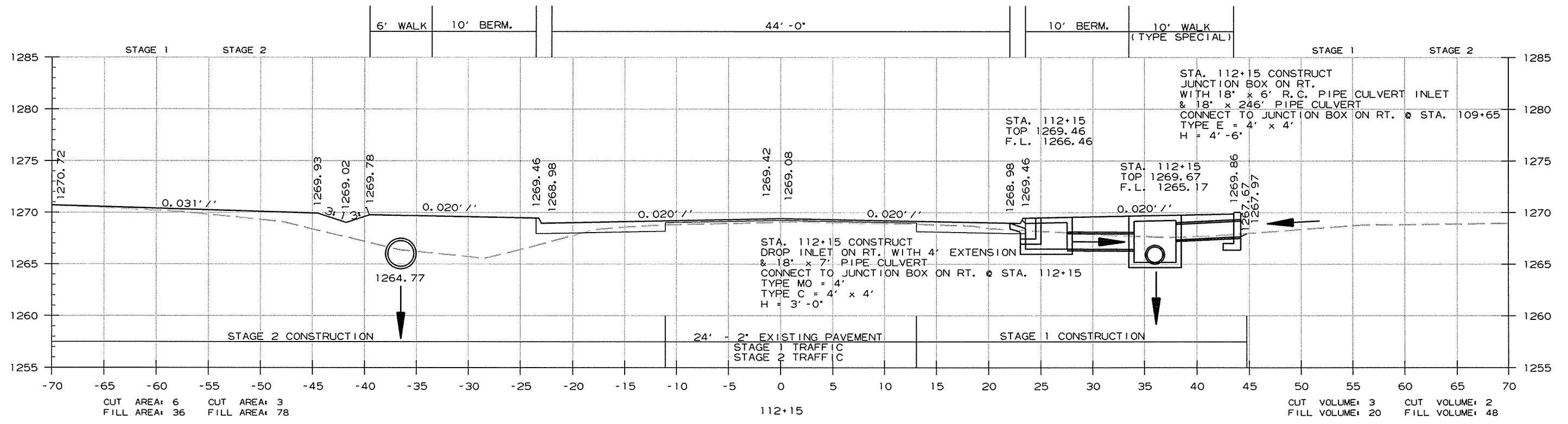


CROSS SECTIONS STA. 111+50 TO STA. 111+64

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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. 040581							83	106

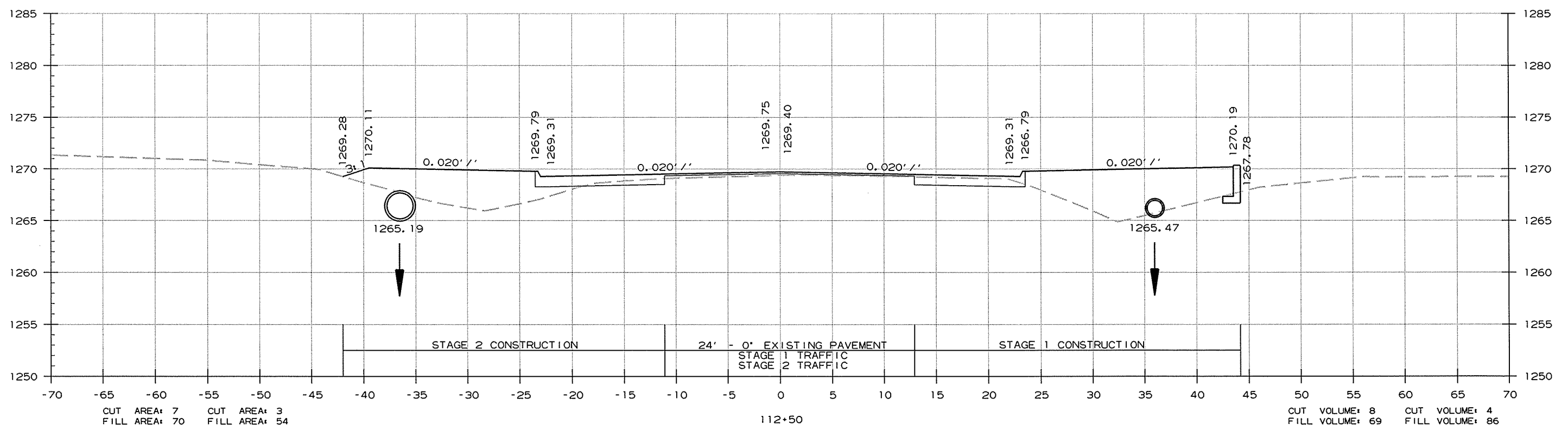
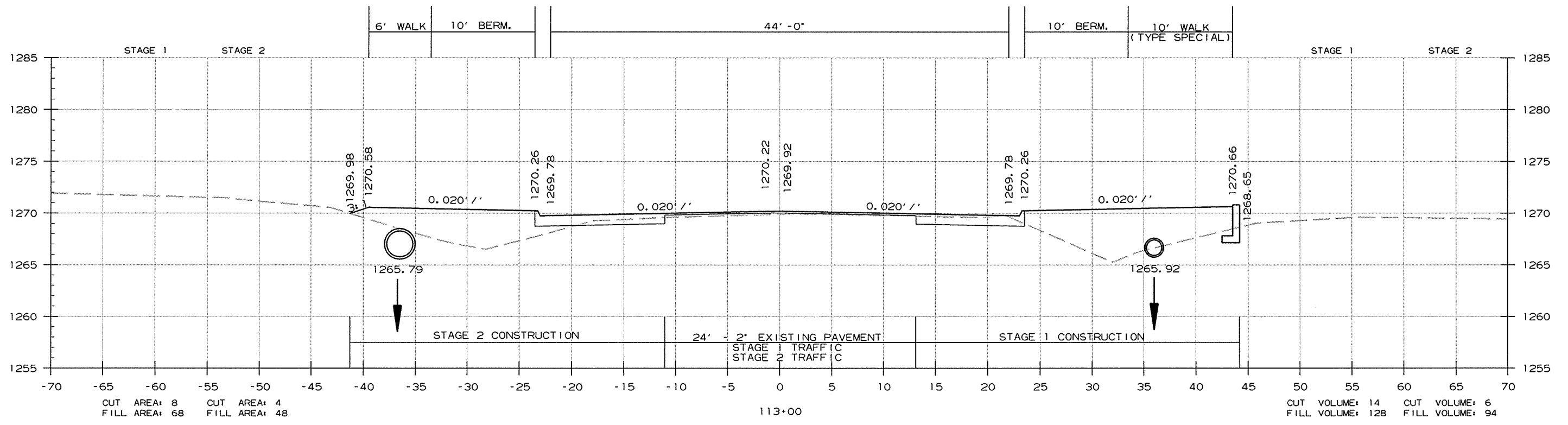
2 CROSS SECTIONS



CROSS SECTIONS STA. 112+00 TO STA. 112+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.	040581		84	106

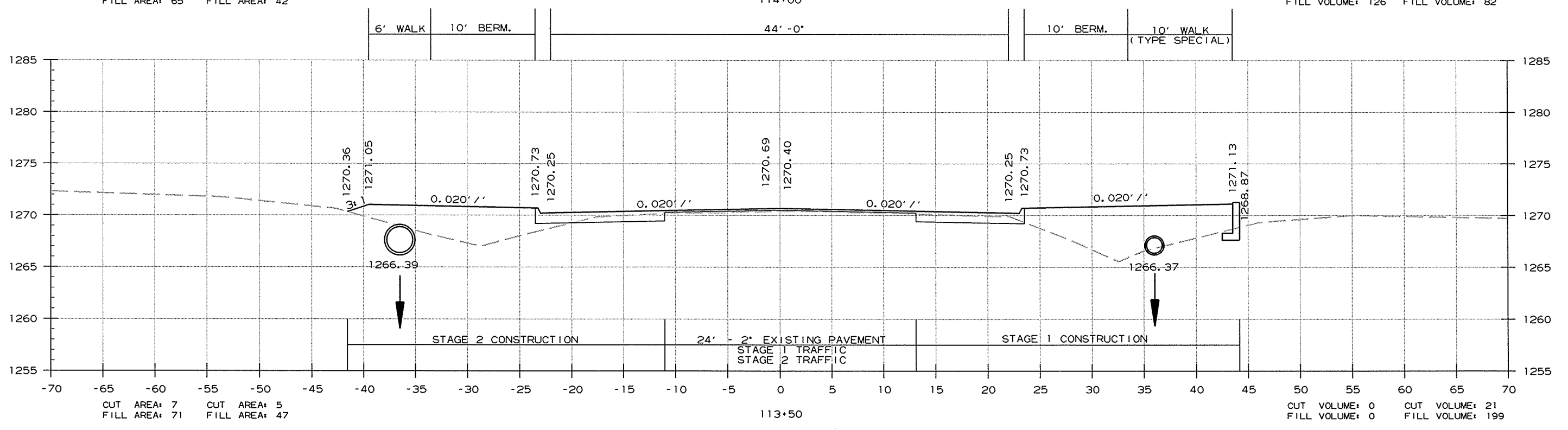
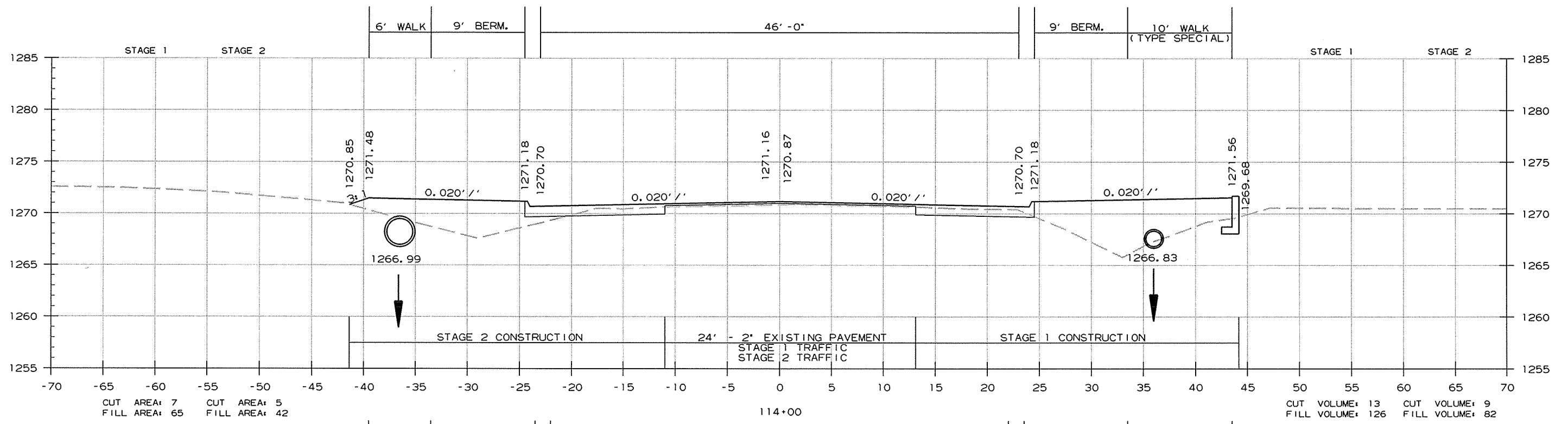
② CROSS SECTIONS



CROSS SECTIONS STA. 112+50 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.	040581		85	106

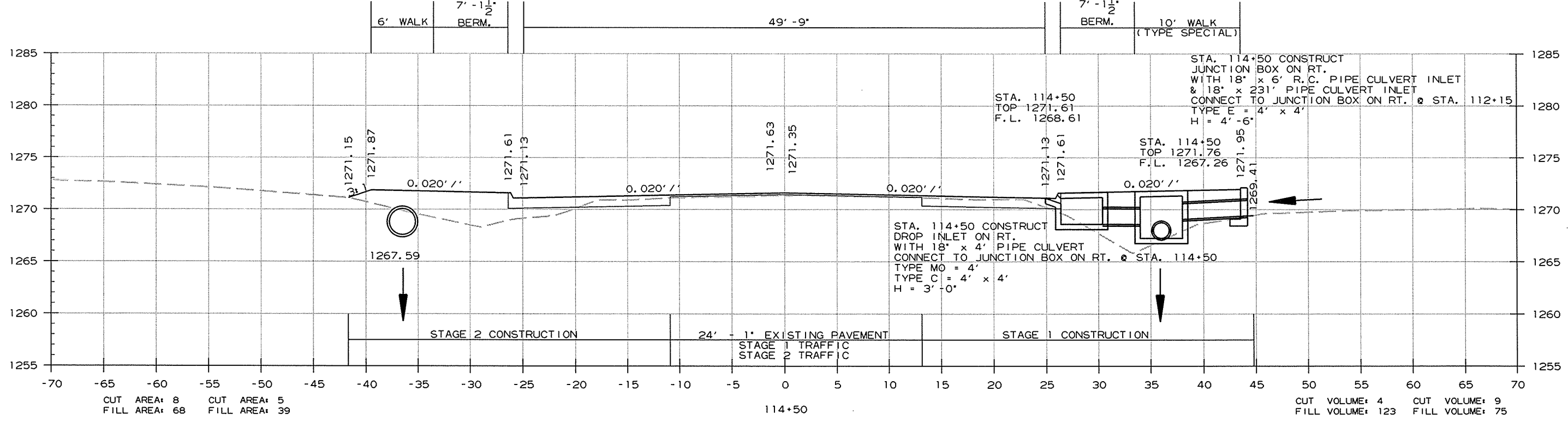
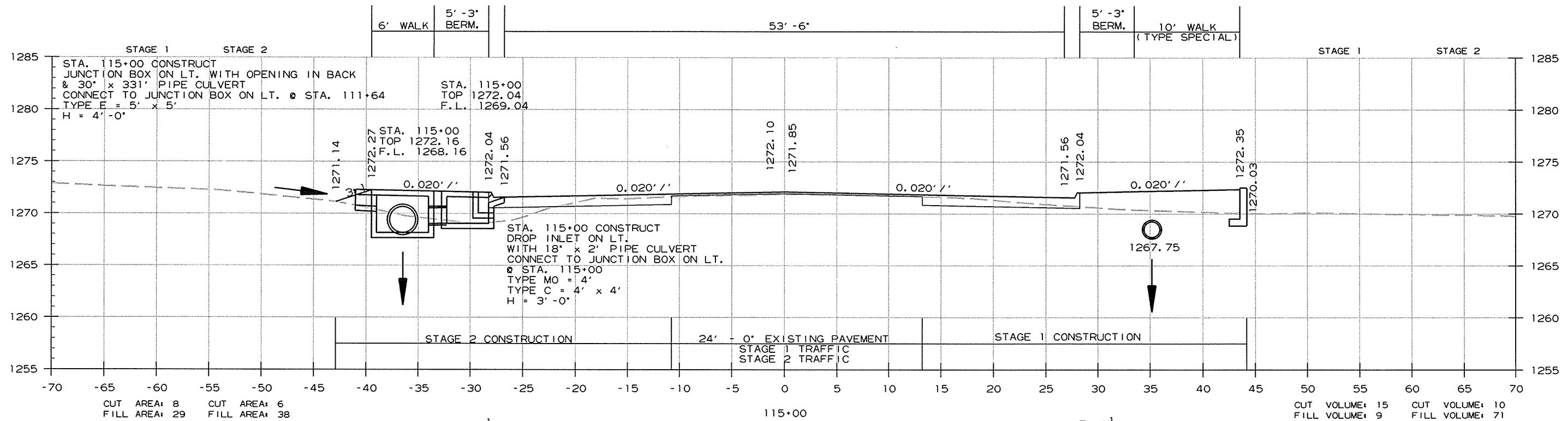
② CROSS SECTIONS



CROSS SECTIONS STA. 113+50 TO STA. 114+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.	040581		86	106

2 CROSS SECTIONS

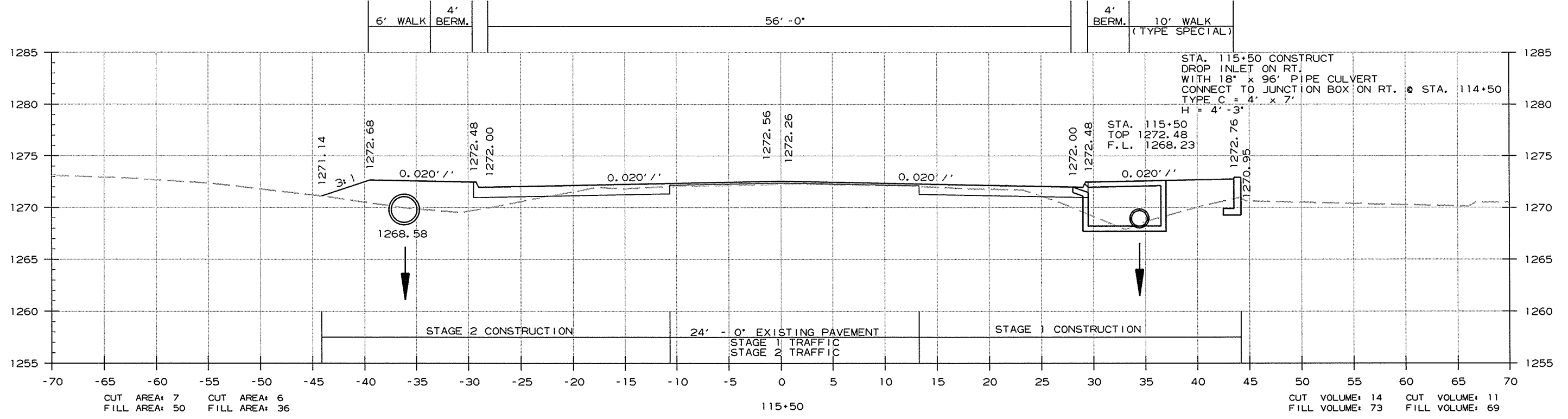
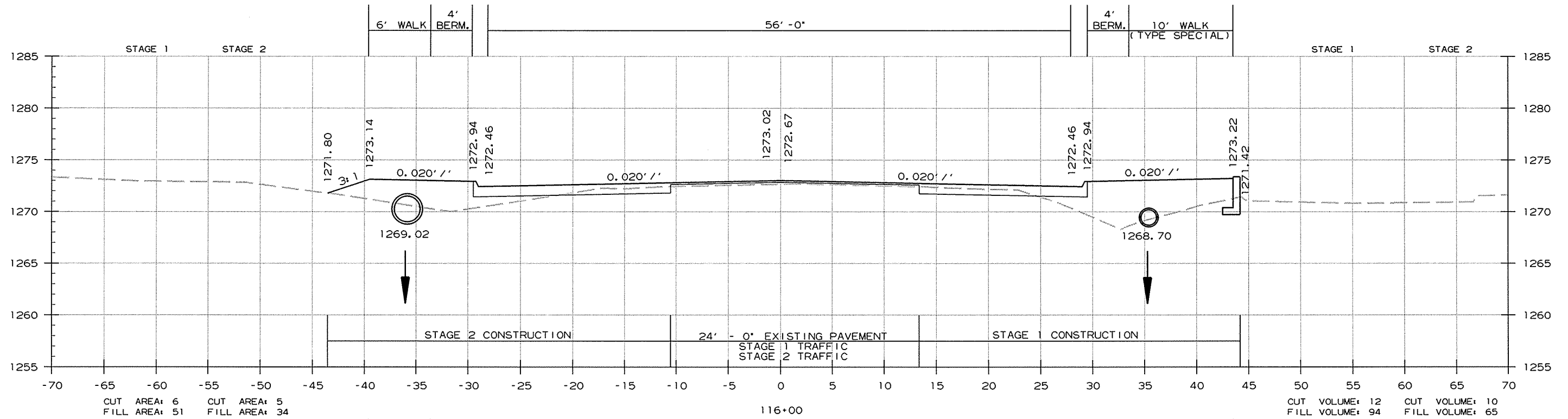


CROSS SECTIONS STA. 114+50 TO STA. 115+00

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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.		040581	87	106

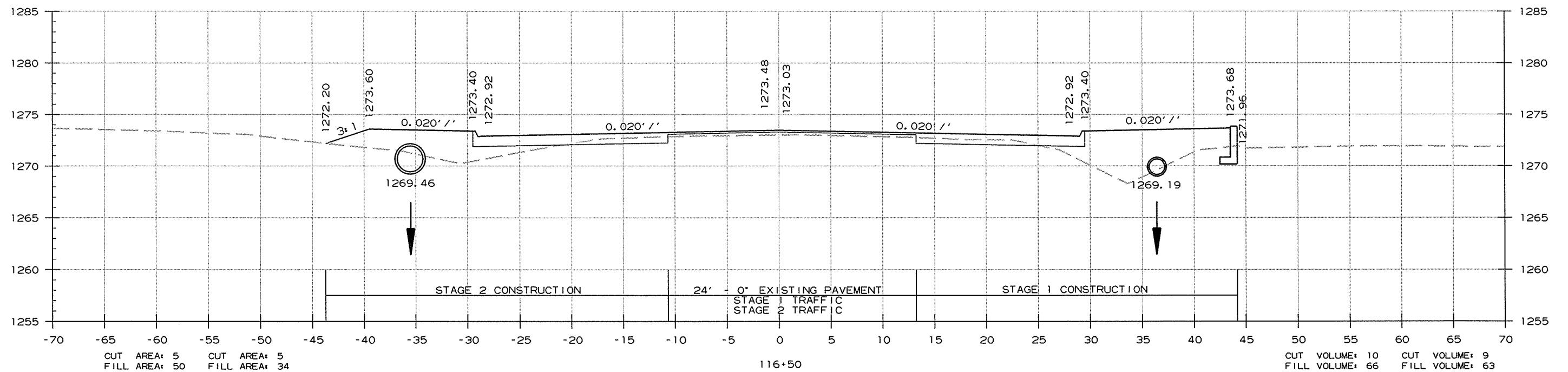
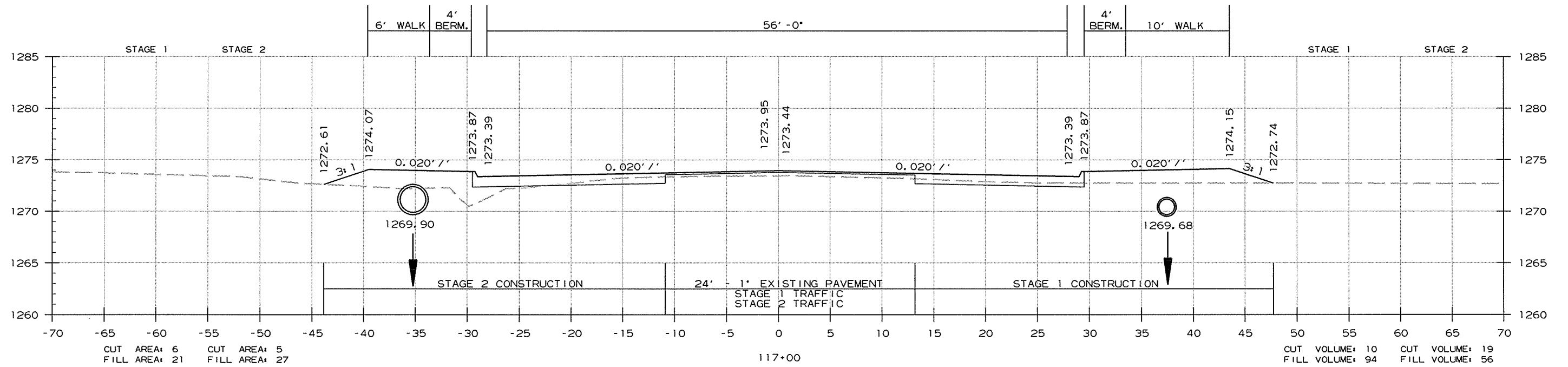
2 CROSS SECTIONS



CROSS SECTIONS STA. 115+50 TO STA. 116+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. 040581							88	106

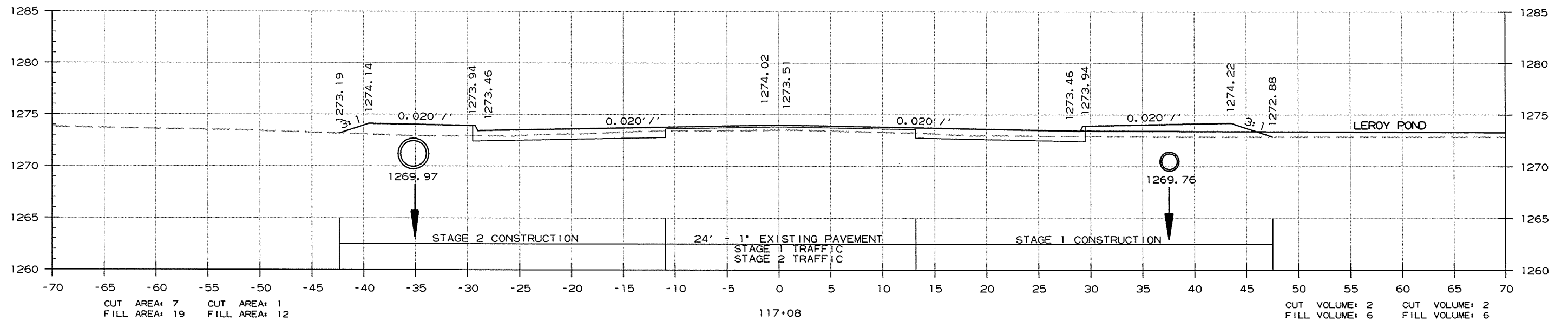
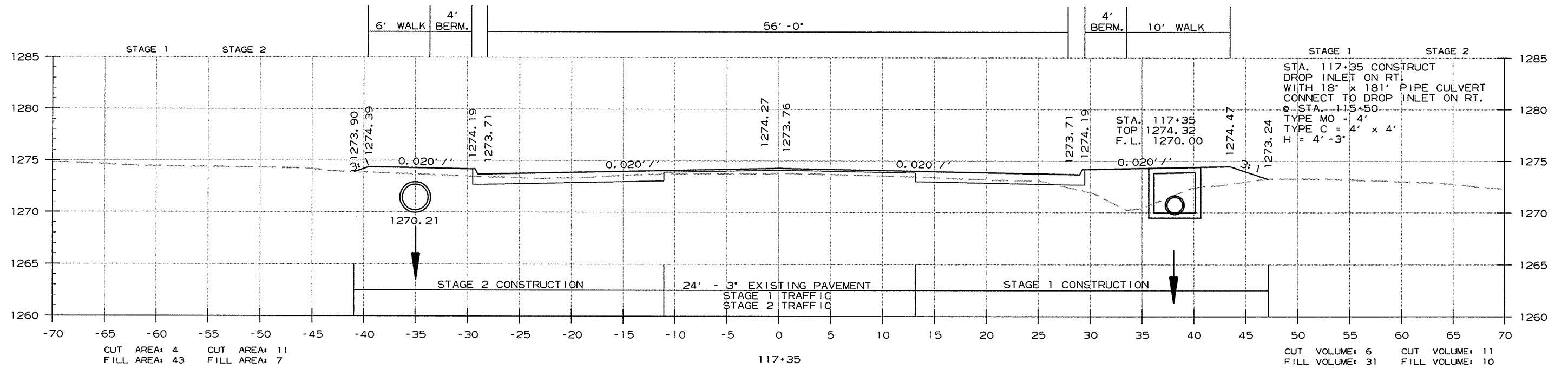
2 CROSS SECTIONS



CROSS SECTIONS STA. 116+50 TO STA. 117+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. 040581							89	106

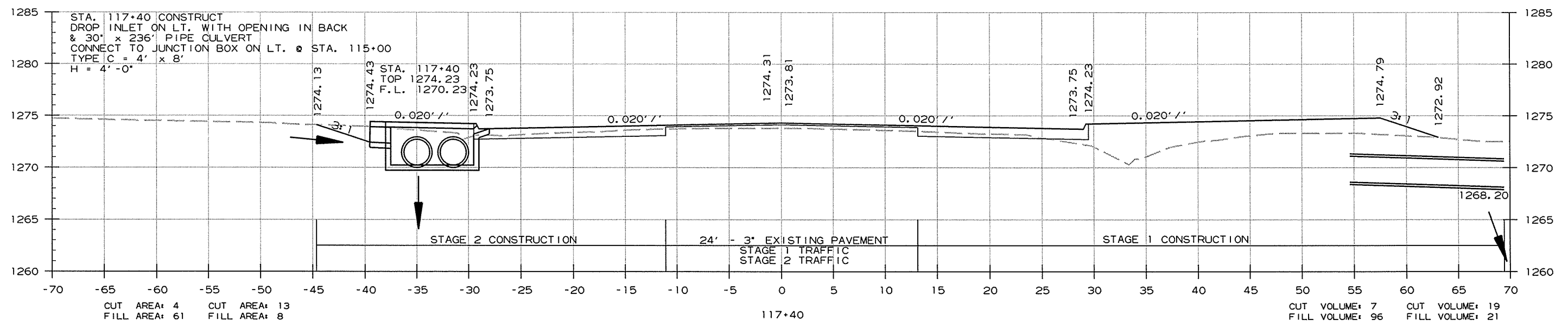
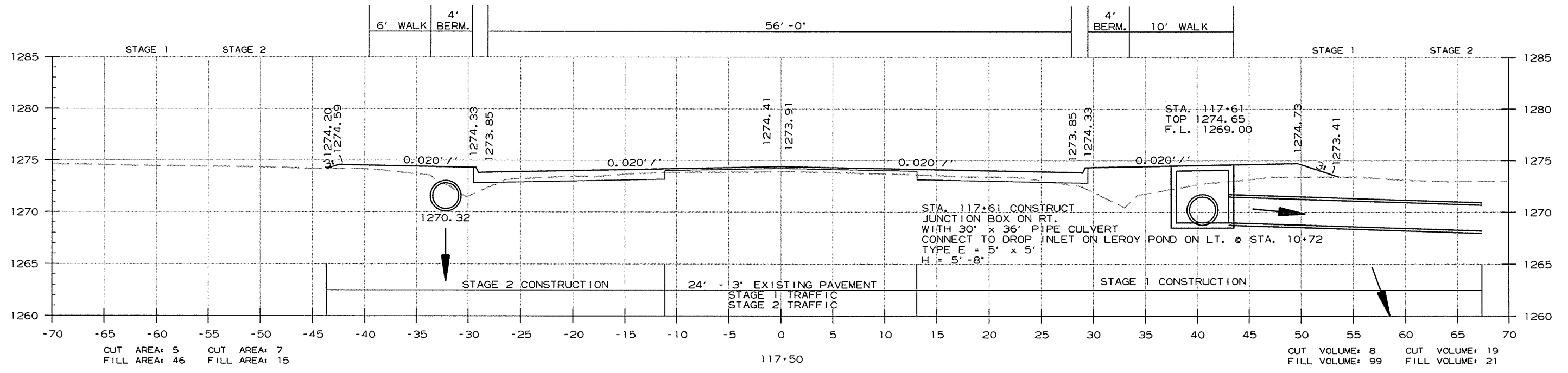
2 CROSS SECTIONS



CROSS SECTIONS STA. 117+08 TO STA. 117+35

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 040581	90	106

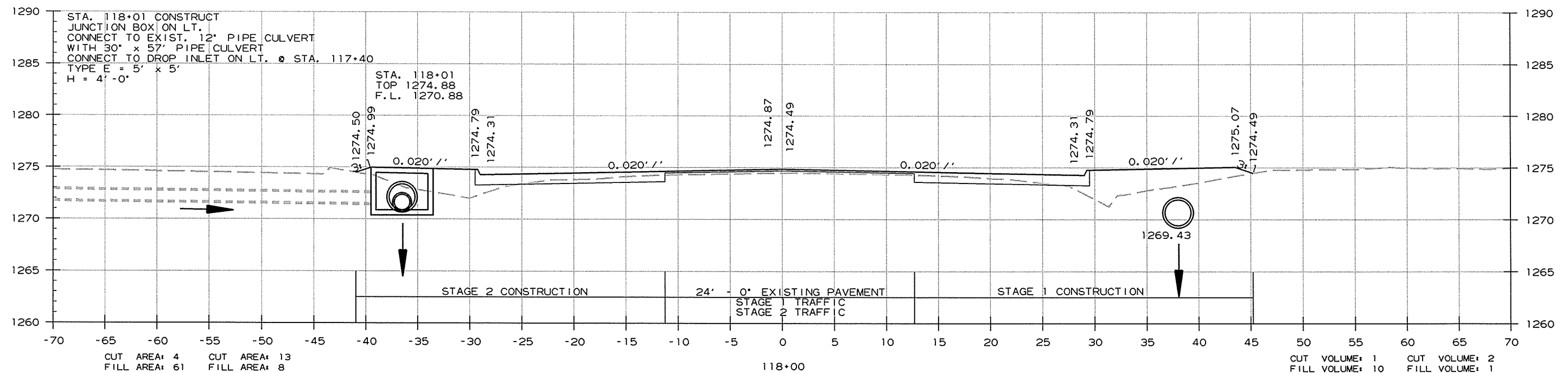
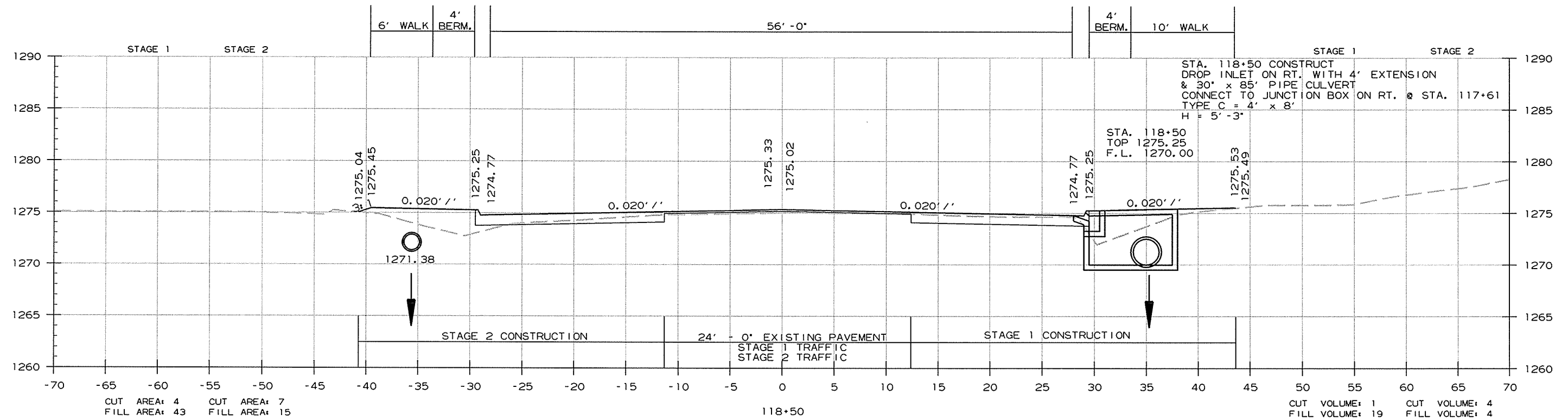
2 CROSS SECTIONS



CROSS SECTIONS STA. 117+40 TO STA. 117+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. 040581	91	106

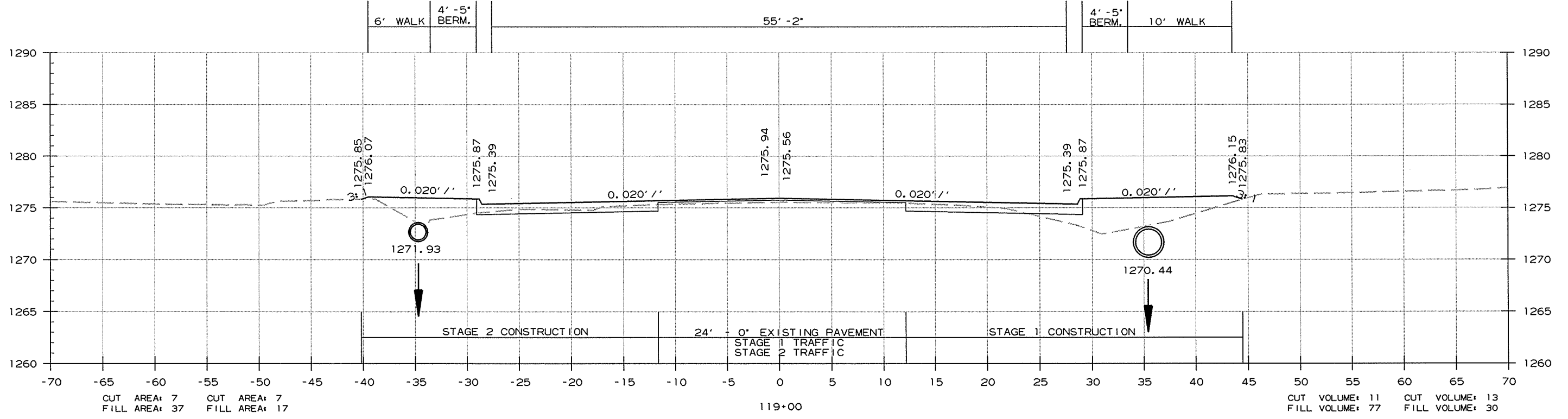
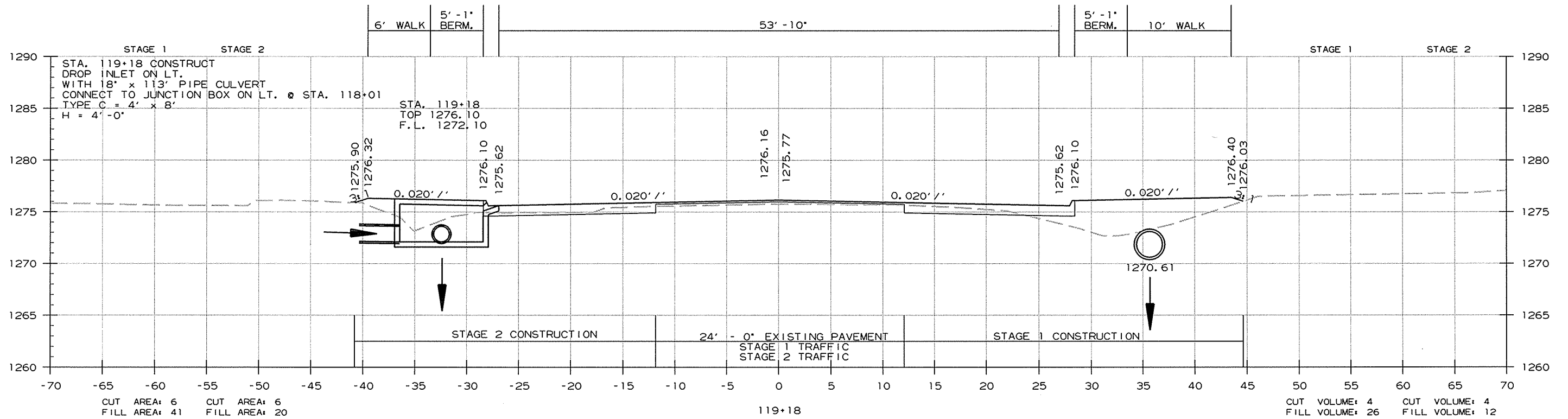
2 CROSS SECTIONS



CROSS SECTIONS STA. 118+00 TO STA. 118+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.	040581		92	106

2 CROSS SECTIONS

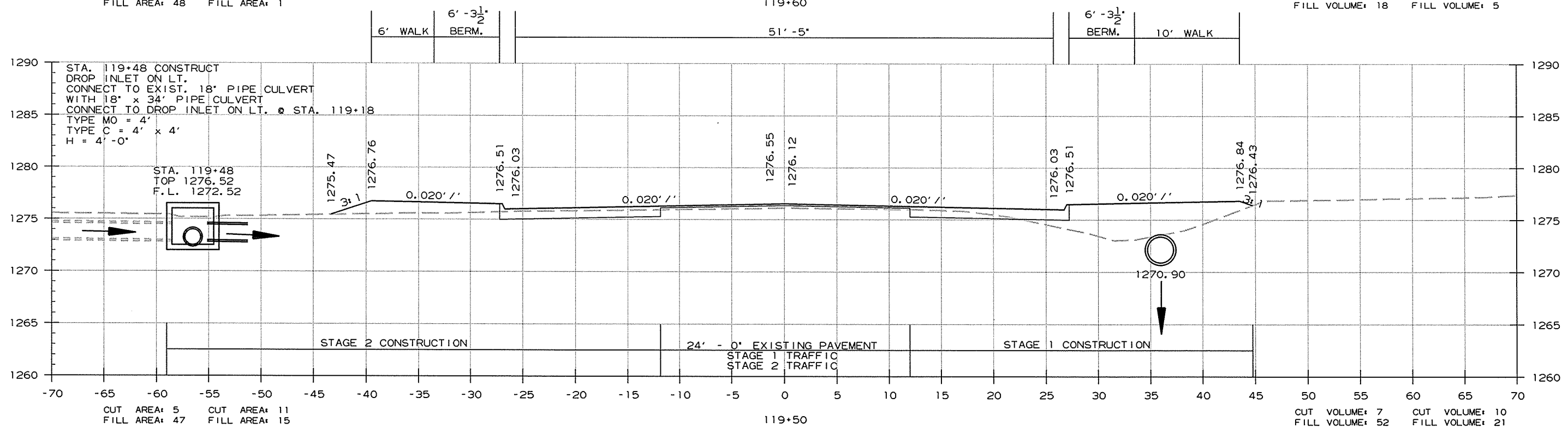
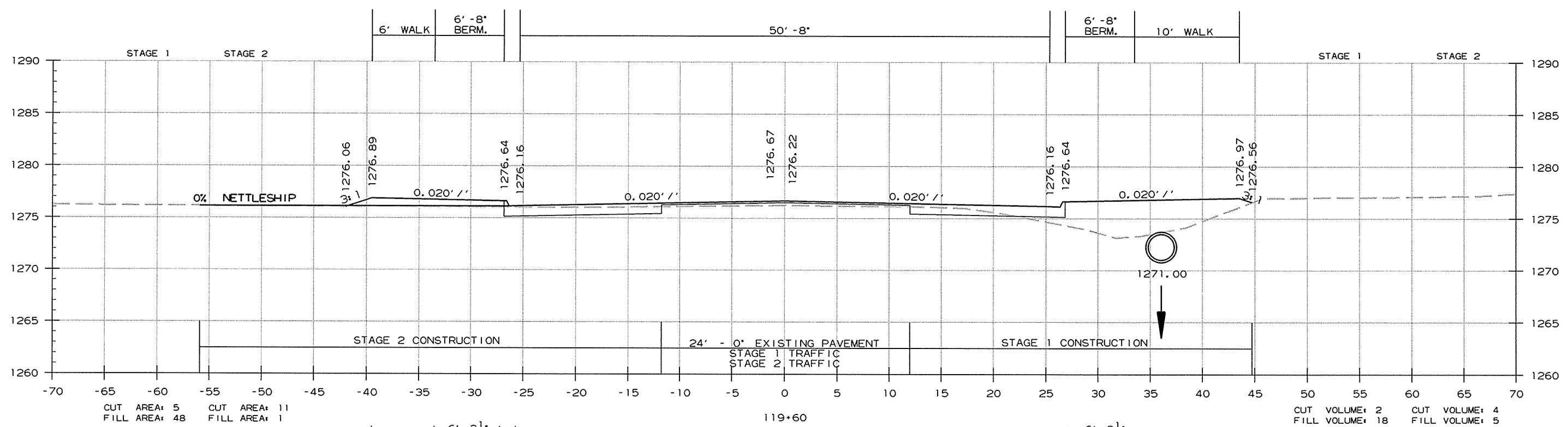


CROSS SECTIONS STA. 119+00 TO STA. 119+18

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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.	040581		93	106

2 CROSS SECTIONS



STA. 119+48 CONSTRUCT
 DROP INLET ON LT.
 CONNECT TO EXIST. 18" PIPE CULVERT
 WITH 18" x 34" PIPE CULVERT
 CONNECT TO DROP INLET ON LT. @ STA. 119+18
 TYPE MO = 4'
 TYPE C = 4' x 4'
 H = 4' - 0"

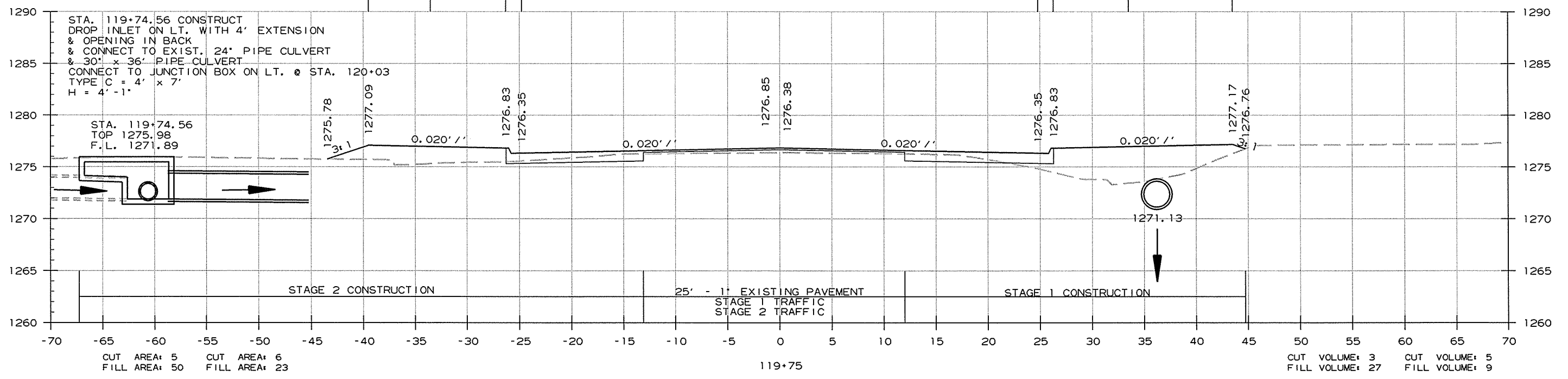
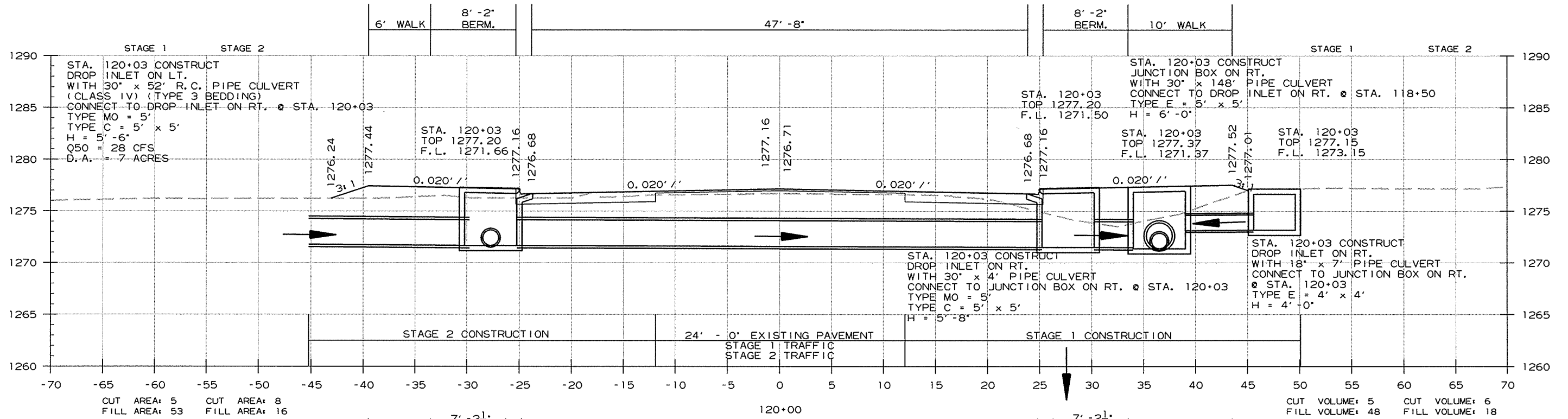
STA. 119-48
 TOP 1276.52
 F.L. 1272.52

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CROSS SECTIONS STA. 119+50 TO STA. 119+60

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 040581							94	106

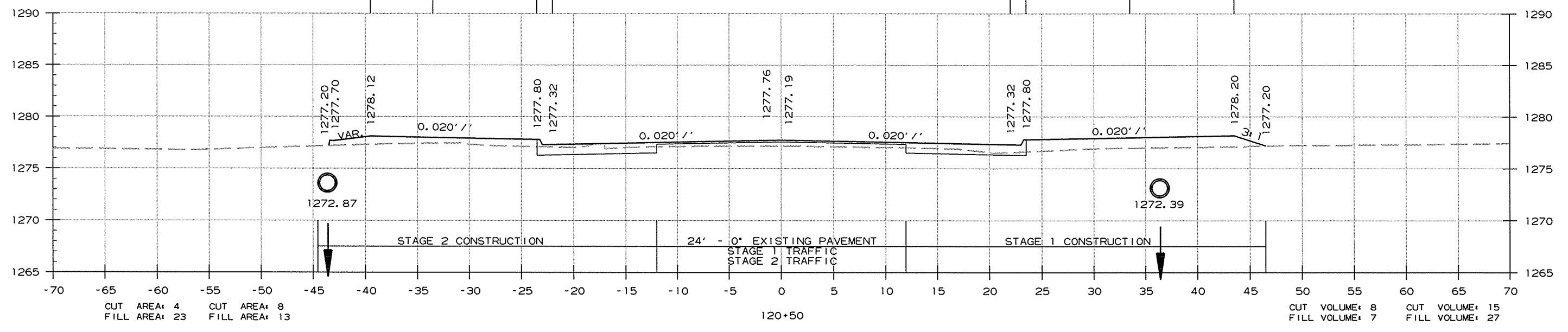
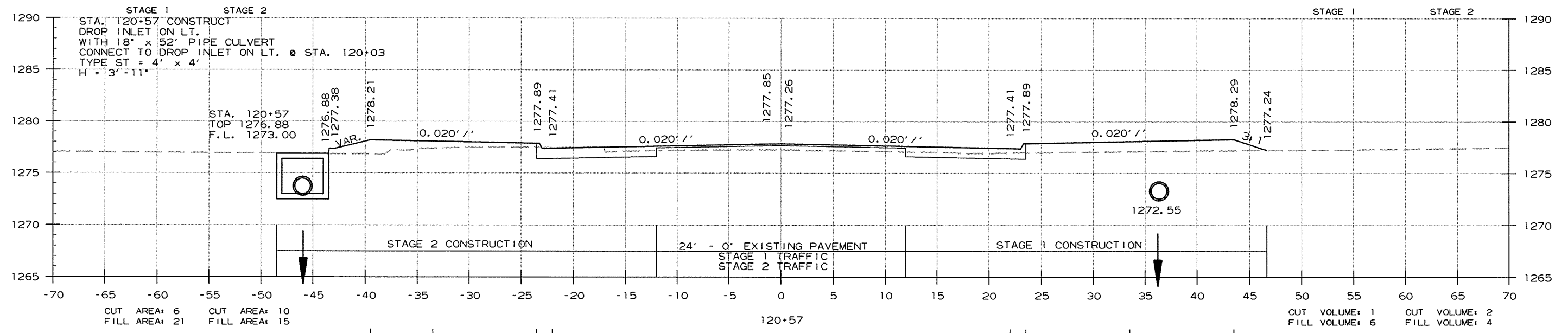
2 CROSS SECTIONS



CROSS SECTIONS STA. 119+75 TO STA. 120+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. 040581							95	106

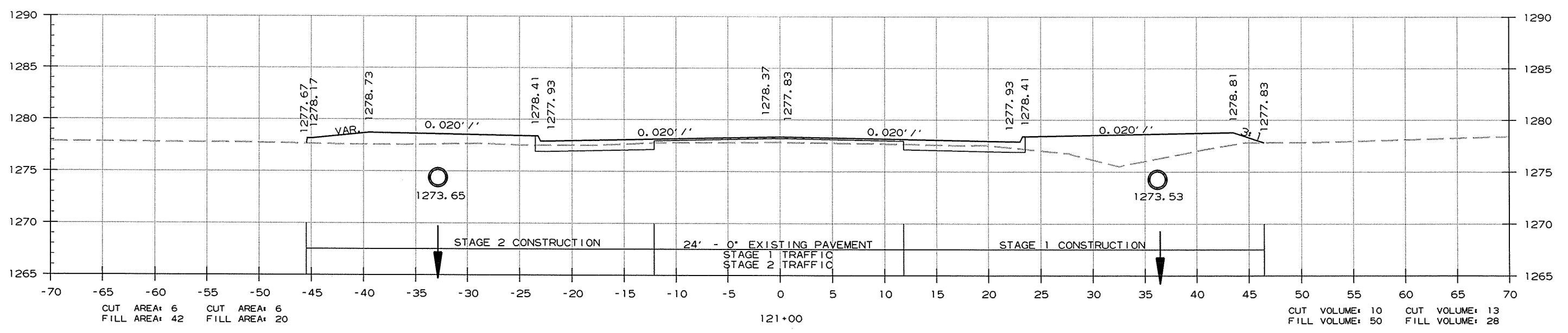
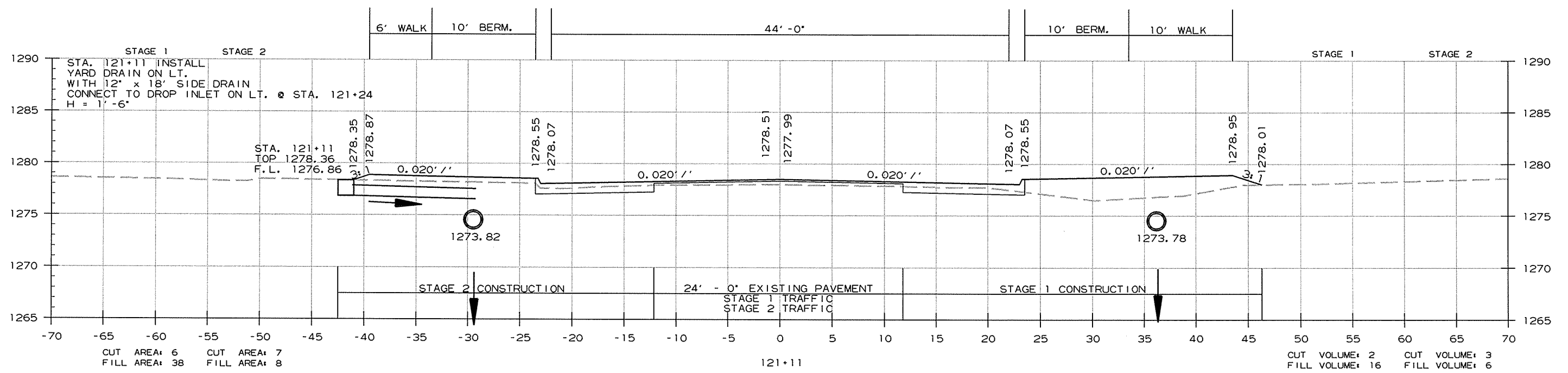
2 CROSS SECTIONS



CROSS SECTIONS STA. 120+50 TO STA. 120+57

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 040581							96	106

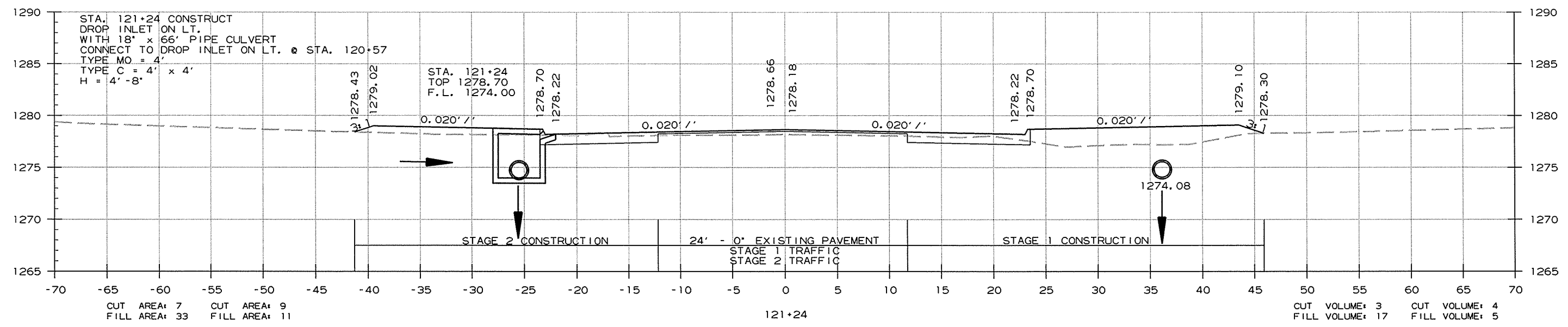
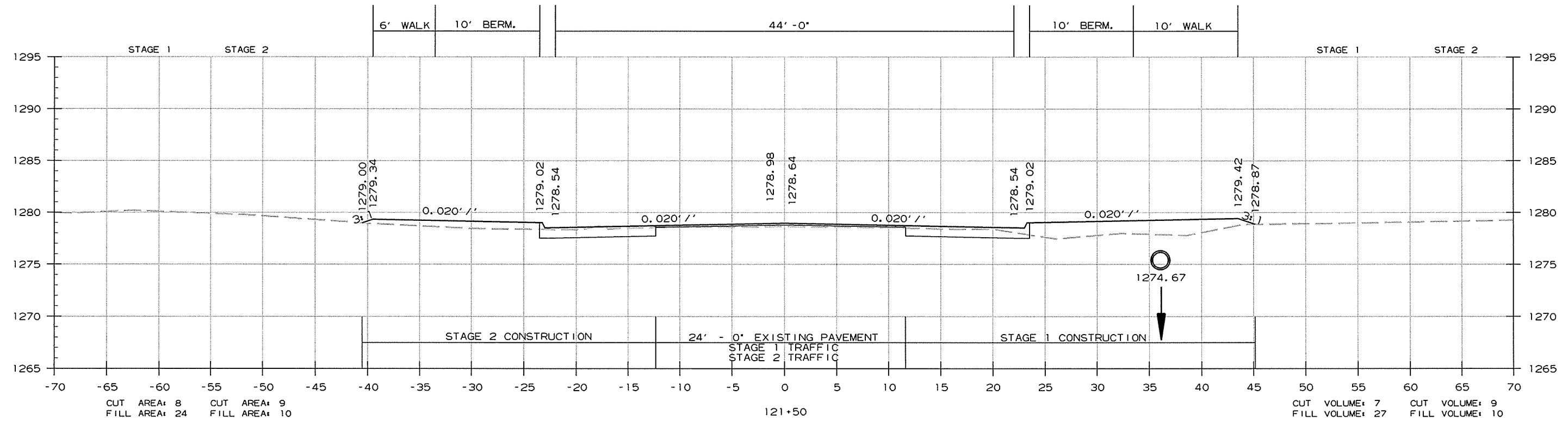
2 CROSS SECTIONS



CROSS SECTIONS STA. 121+00 TO STA. 121+11

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		97	106

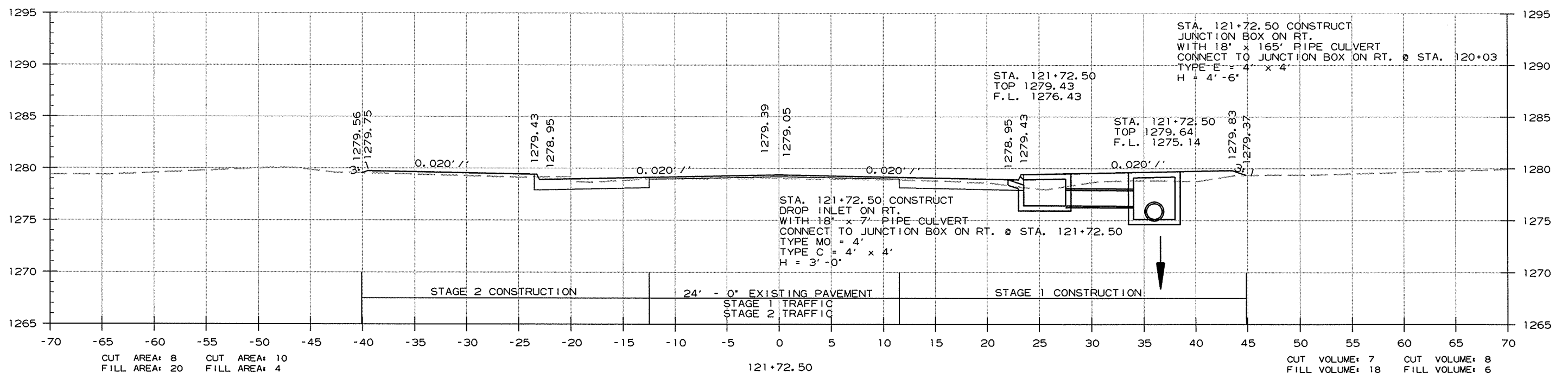
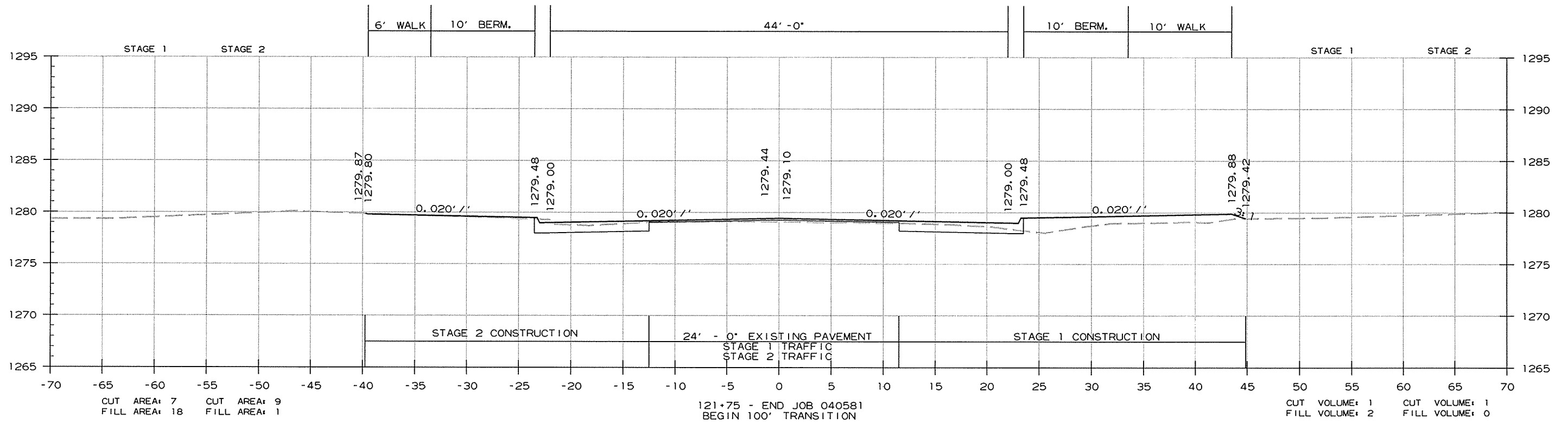
2 CROSS SECTIONS



CROSS SECTIONS STA. 121+24 TO STA. 121+50

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		98	106

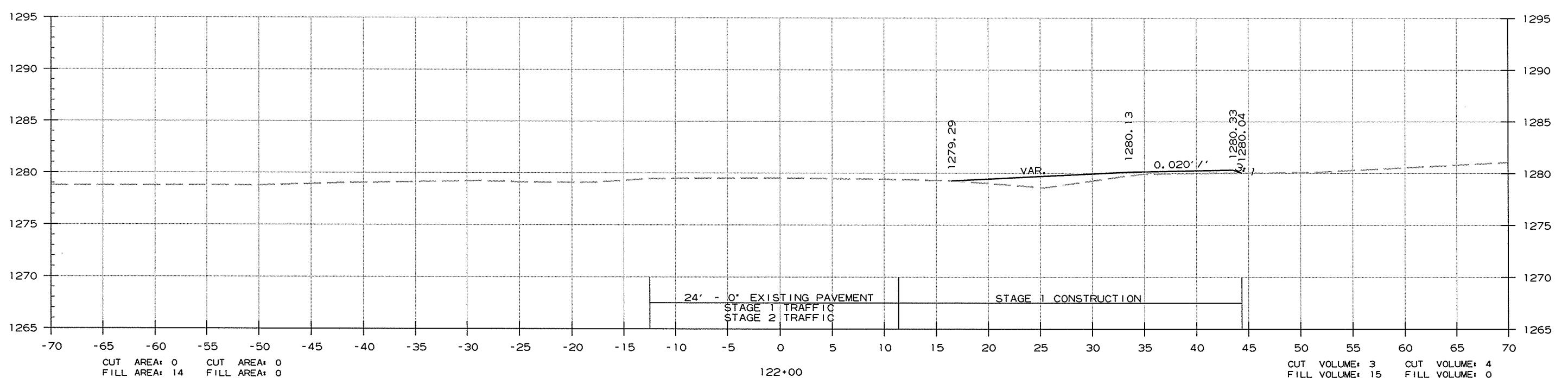
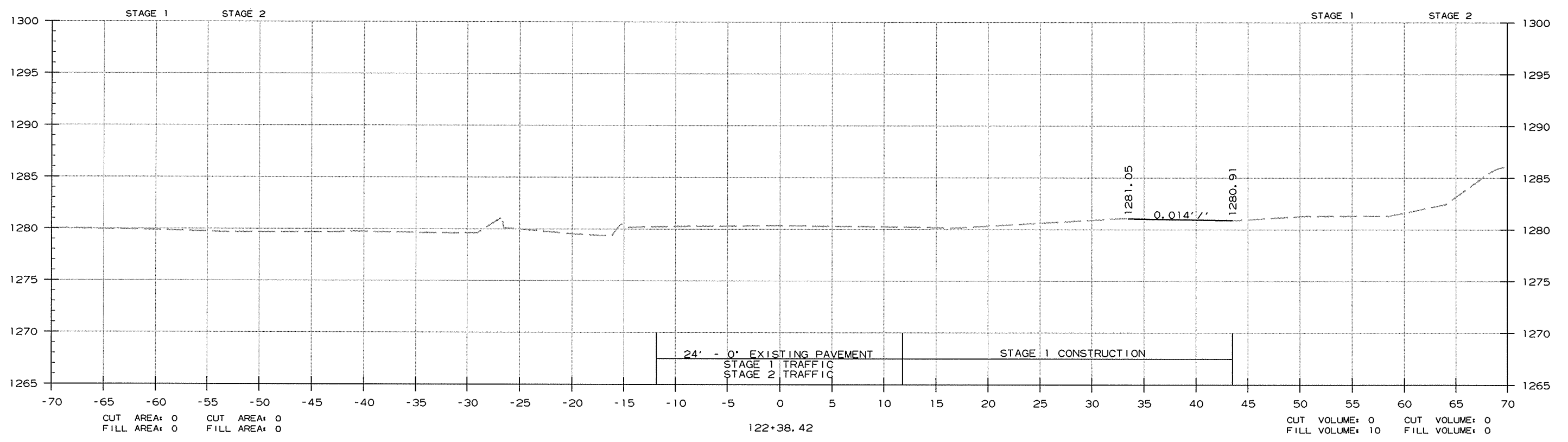
② CROSS SECTIONS



CROSS SECTIONS STA. 121+73 TO STA. 121+75

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	040581	99 106

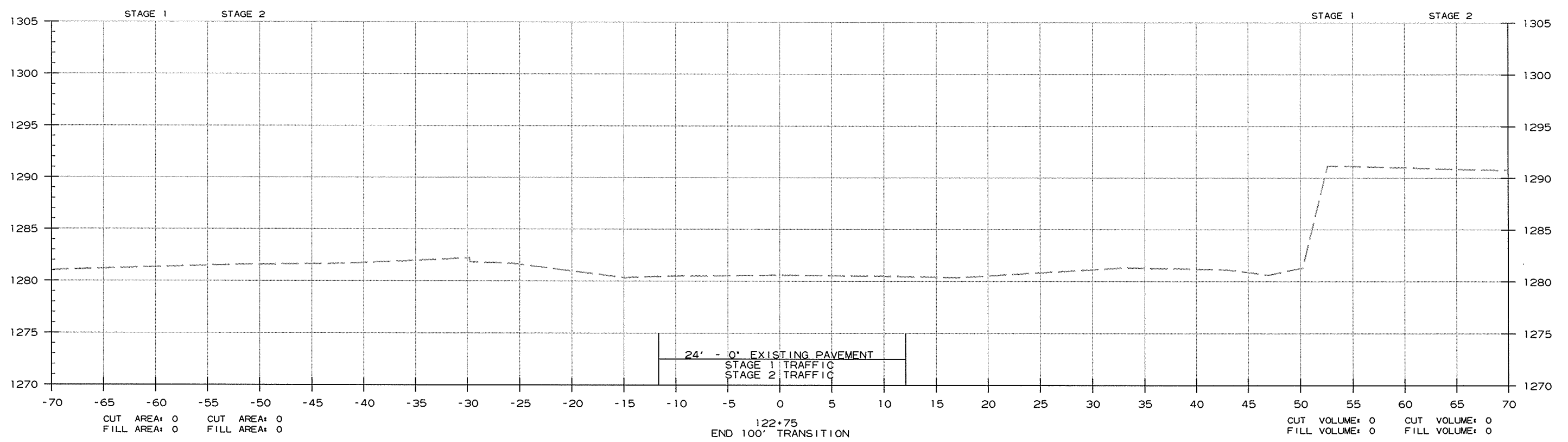
② CROSS SECTIONS



CROSS SECTIONS STA. 122+00 TO STA. 122+38.42

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						040581	100	106

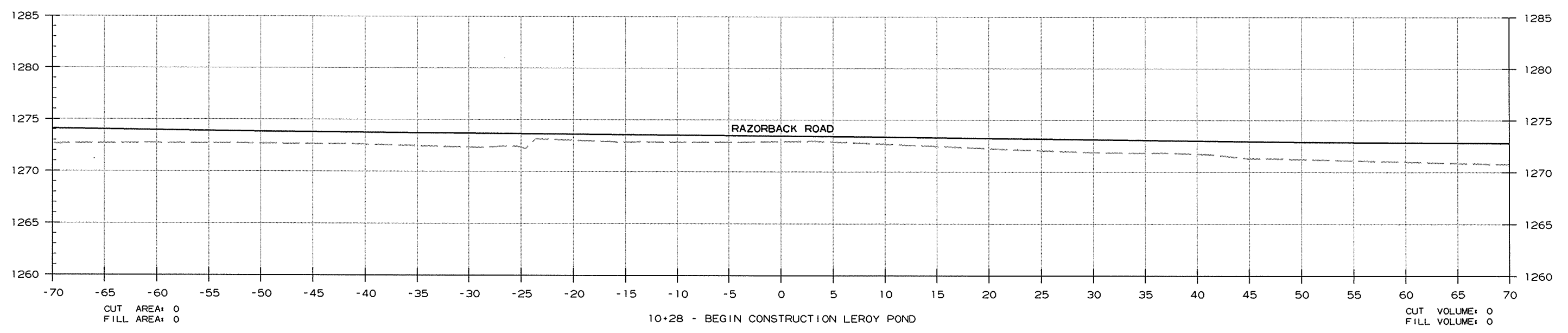
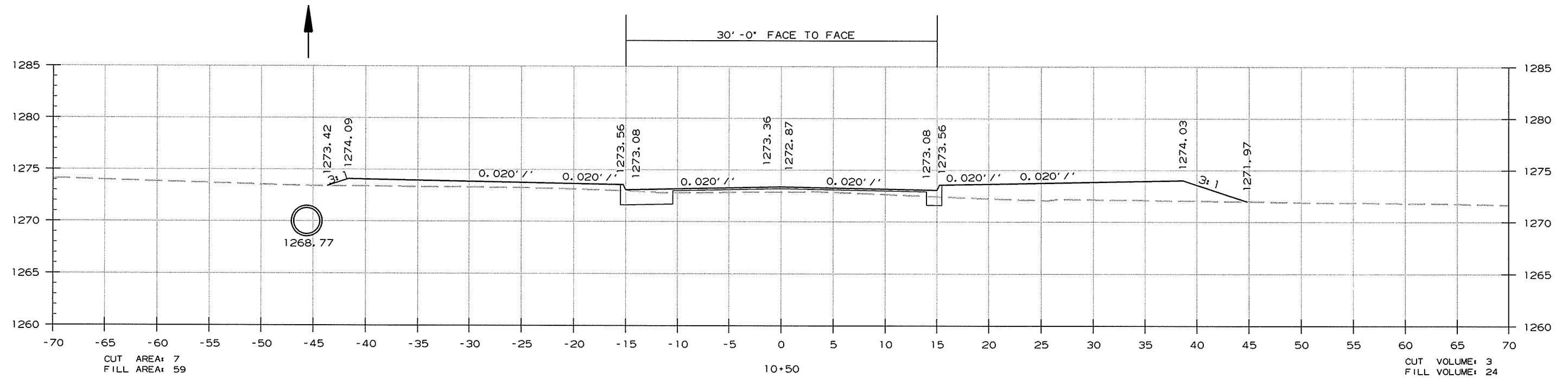
② CROSS SECTIONS



CROSS SECTIONS STA. 122+75 TO STA. 122+75

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		101	106
				JOB NO.		040581		

② CROSS SECTIONS

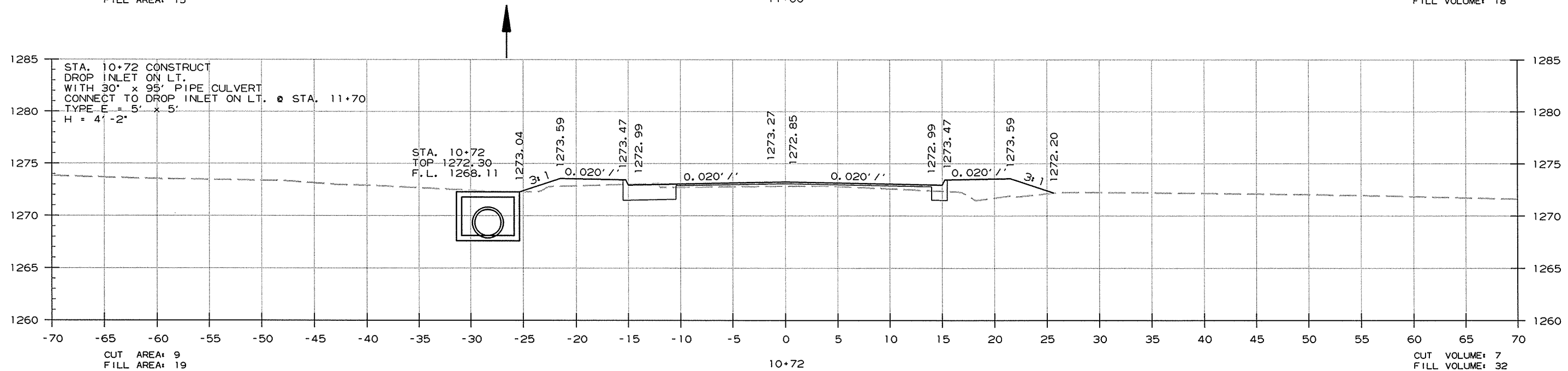
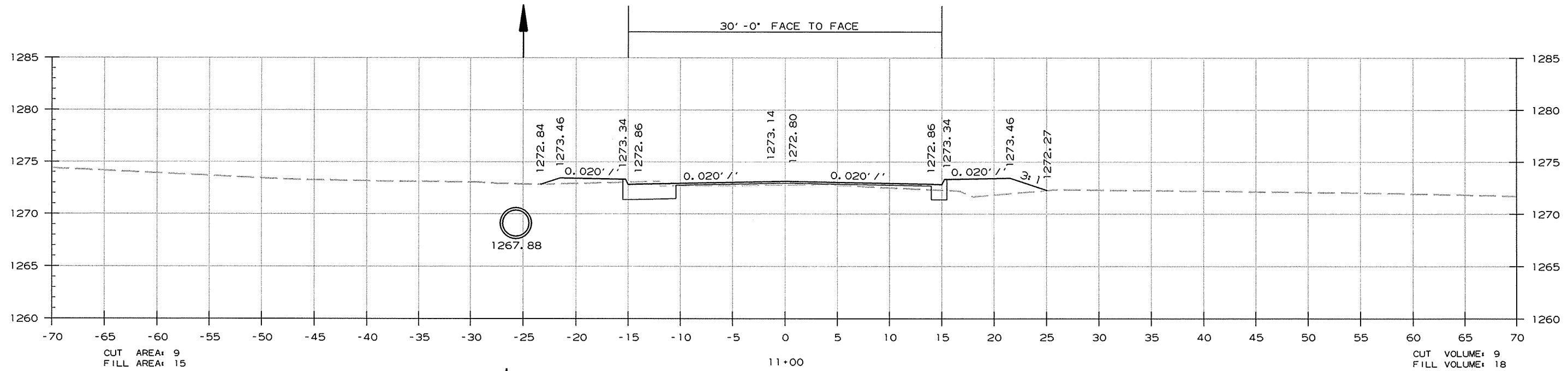


CROSS SECTIONS STA. 10+28 TO STA. 10+50

r040581.dgn 12/15/2010

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		102	106
				JOB NO.		040581		

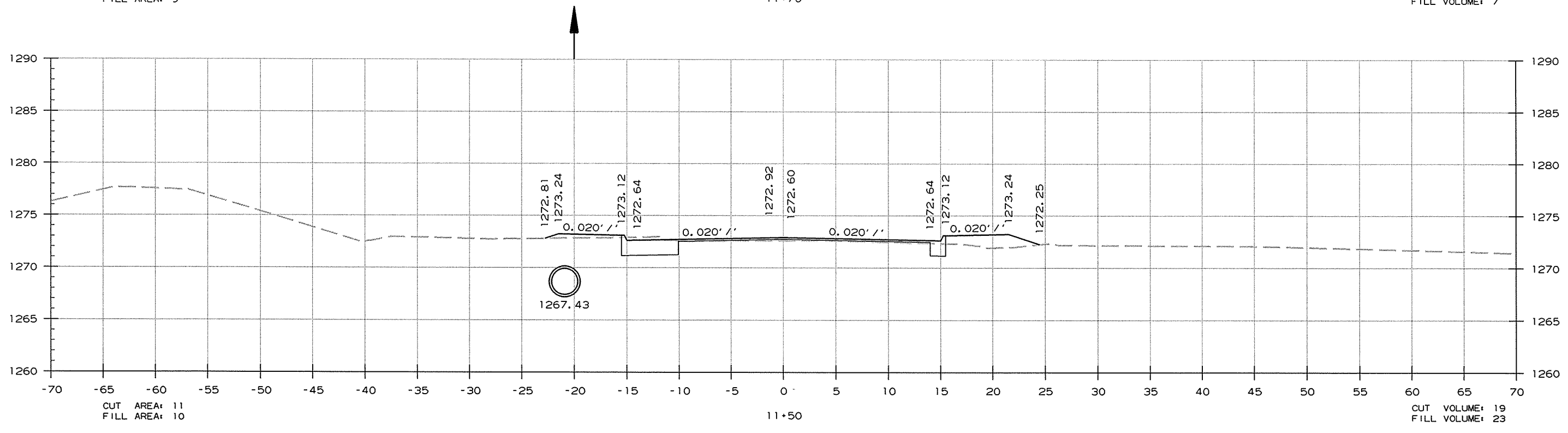
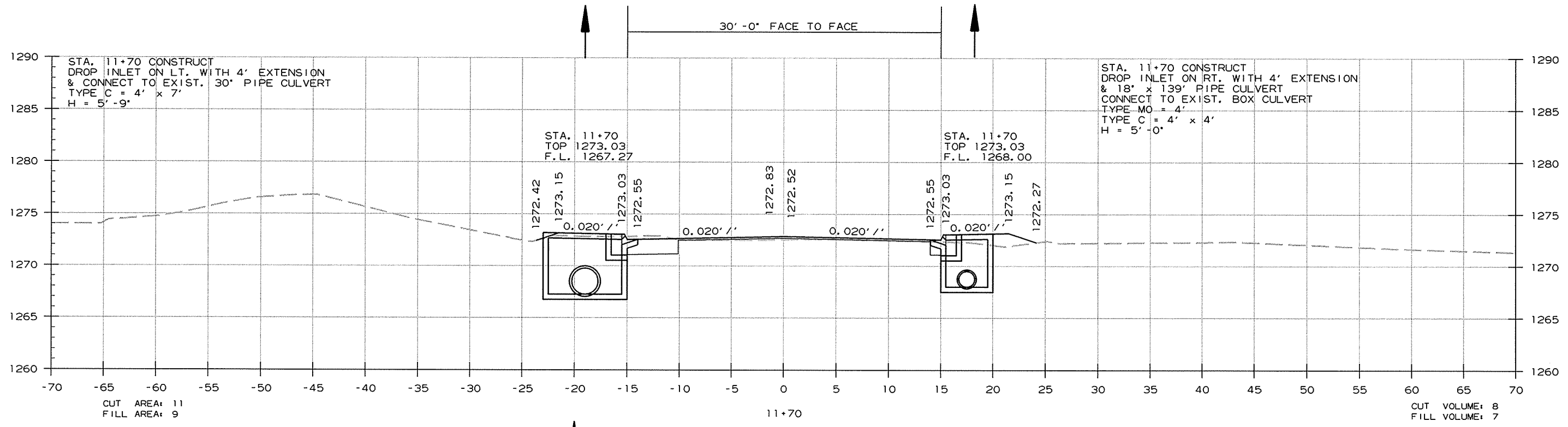
② CROSS SECTIONS



CROSS SECTIONS STA. 10+72 TO STA. 11+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		103	106

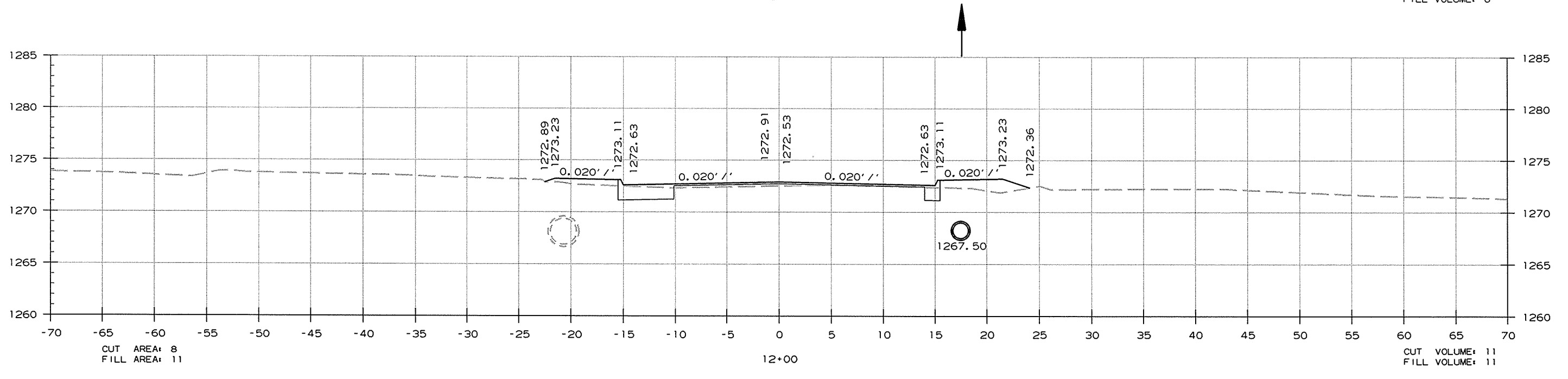
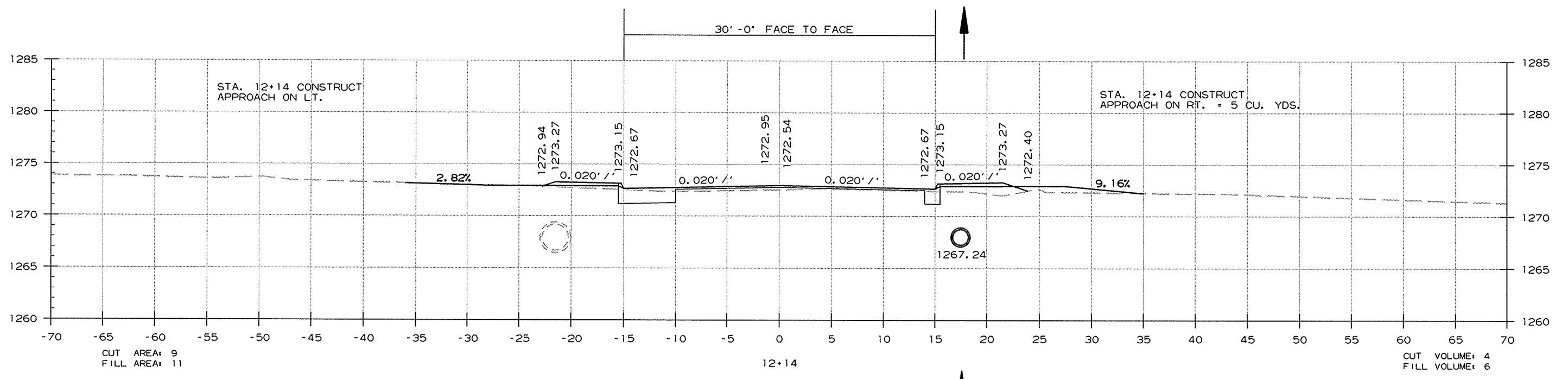
② CROSS SECTIONS



CROSS SECTIONS STA. 11+50 TO STA. 11+70

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	040581		104	106

② CROSS SECTIONS

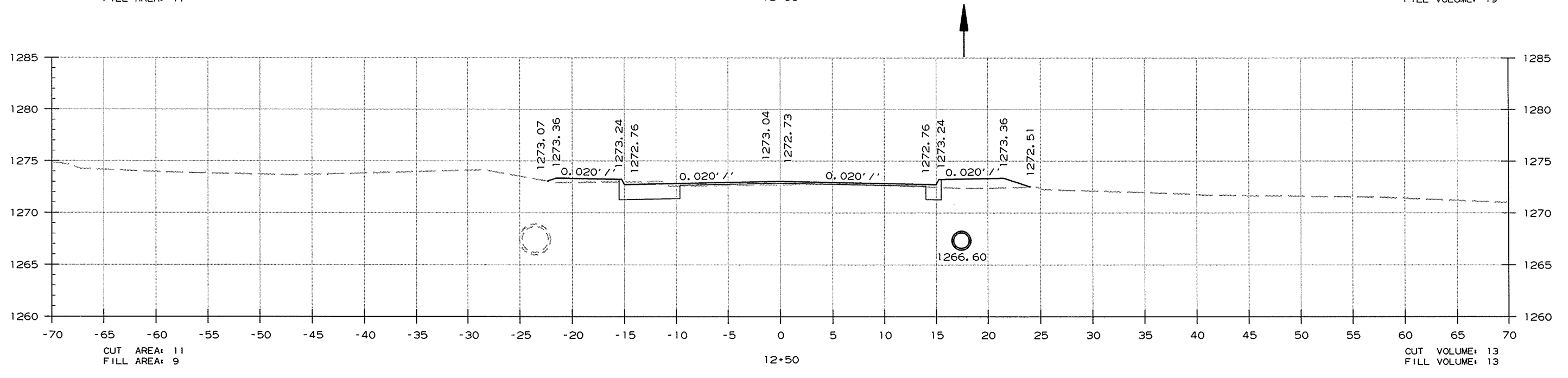
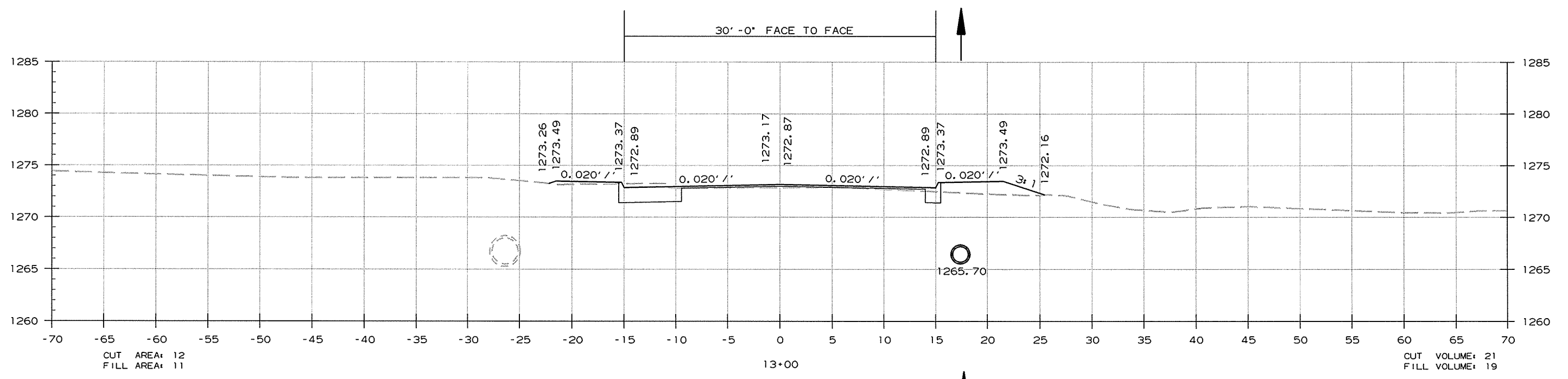


CROSS SECTIONS STA. 12+00 TO STA. 12+14

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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.						040581	105	106

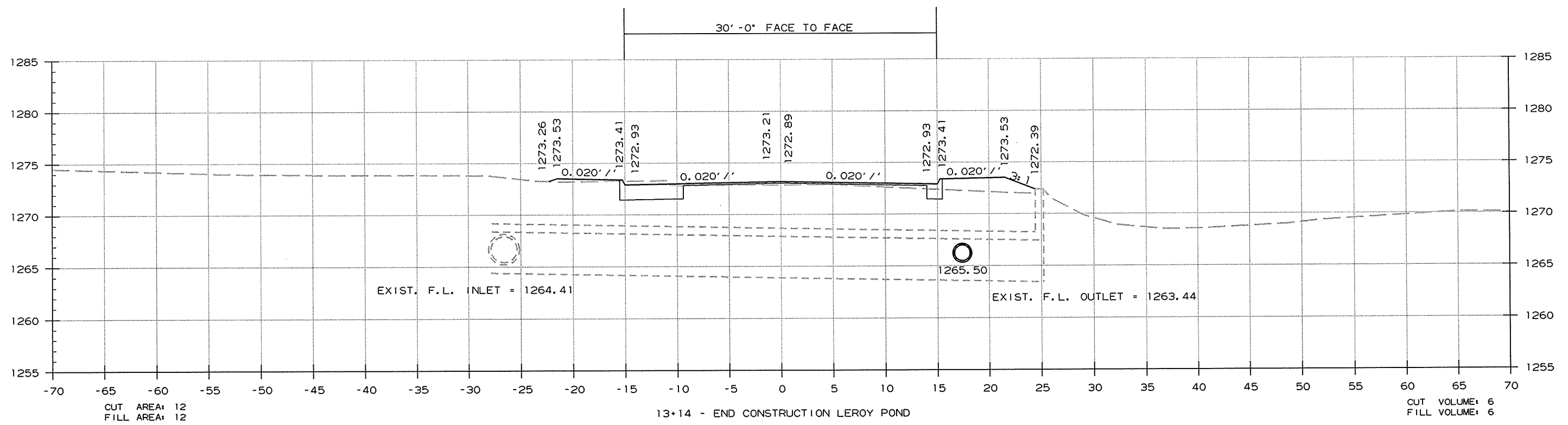
② CROSS SECTIONS



CROSS SECTIONS STA. 12+50 TO STA. 13+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. 040581	106	106

② CROSS SECTIONS



CROSS SECTIONS STA. 13+14 TO STA. 13+14

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