DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	1	120

BASELINE RD. - J.E. DAVIS DR.
(SCOTT HAMILTON DR.) (L.R.) (S)

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR CITY STREET

BASELINE RD. – J.E. DAVIS DR.
(SCOTT HAMILTON DR.) (L.R.) (S)

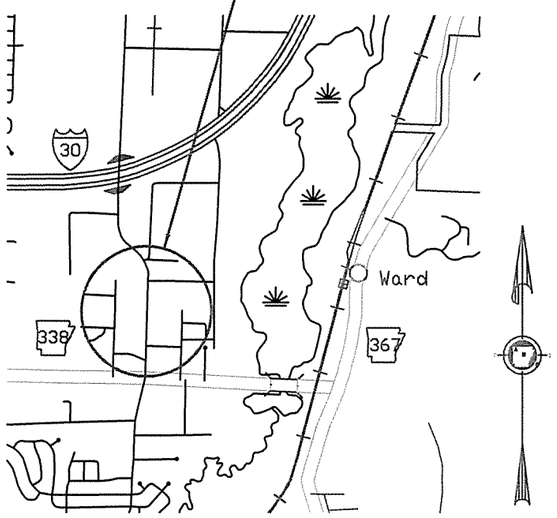
PULASKI COUNTY

F.A.P. STPU–9253(46)

JOB 061094

NOT TO SCALE

PROJECT LOCATION

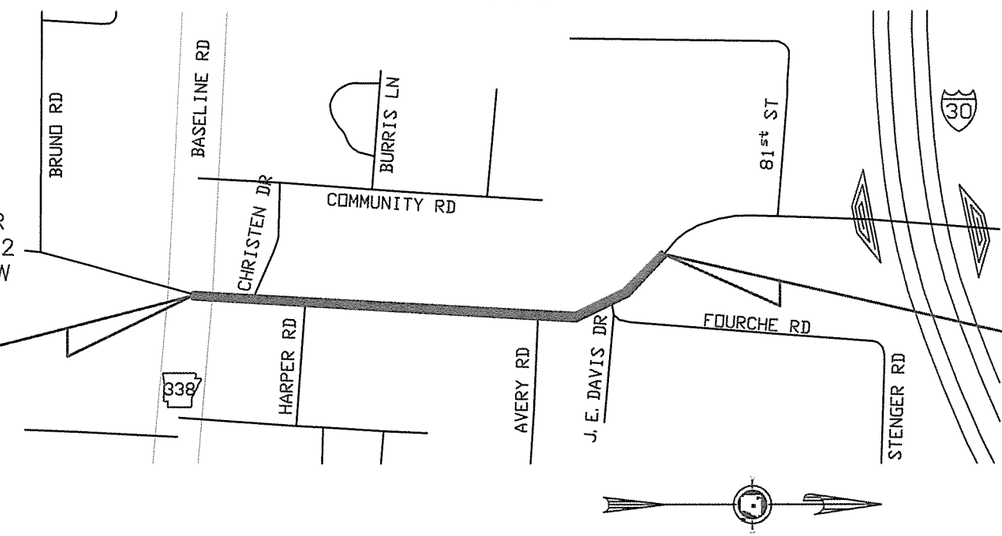


VICINITY MAP

ARKANSAS HIGHWAY DIST. NO. 6

T 1 N

R 12 W



STA. 1+60.22 BEGIN
JOB 061094

STA. 30+00 END
JOB 061094

STA. 1+32.50 = LOG MILE 5.74

DESIGN TRAFFIC DATA

DESIGN YEAR ---------- 2032
2012 ADT ---------- 13,800
2032 ADT ---------- 16,300
2032 DHV ---------- 1,793
DIRECTIONAL DISTRIBUTION -------- 0.60
TRUCKS ---------- 5%
DESIGN SPEED ---------- 40 MPH

DEPARTMENT OF PUBLIC WORKS
CIVIL ENGINEERING
701 WEST MARKHAM STREET
LITTLE ROCK, ARKANSAS 72201

DCI
DEVELOPMENT
CONSULTANTS
INCORPORATED
2200 NORTH RODNEY PARHAM
SUITE 220
(501) 221–7880
LITTLE ROCK, ARKANSAS 72212

CERTIFICATE OF AUTHORIZATION
DEVELOPMENT CONSULTANTS INC.
No.128
ARKANSAS ENGINEERING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
R. C. ANDREWS

BEGIN POINT OF JOB
LAT. N 34°40'05"
LONG. W 92°19'05"

MID-POINT OF JOB
LAT. N 34°40'19"
LONG. W 92°19'04"

END POINT OF JOB
LAT. N 34°40'31"
LONG. W 92°19'09"

GROSS LENGTH OF PROJECT 2839.78 FEET OR 0.538 MILES
NET LENGTH OF ROADWAY 2839.78 FEET OR 0.538 MILES
NET LENGTH OF BRIDGES 0.00 FEET OR 0.000 MILES
NET LENGTH OF PROJECT 2839.78 FEET OR 0.538 MILES

P.E. JOB 061094
F.A.P. H230-9253-046

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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.	FAP STPU-9253(46)		
				JOB NO.		061094	2	120
				INDEX OF SHEETS				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS

INDEX OF SHEETS

SHEET NO.	TITLE	DRAWING NO.	DATE
1	TITLE SHEET		
2	INDEX OF SHEETS		
3	GOVERNING SPECIFICATIONS		
4	GENERAL NOTES		
5-8	TYPICAL SECTIONS OF IMPROVEMENT		
9-11	SPECIAL DETAILS		
12-20	TEMPORARY EROSION CONTROL DETAILS		
21-31	MAINTENANCE OF TRAFFIC DETAILS		
32-34	PERMANENT PAVEMENT MARKING DETAILS		
35-42	QUANTITIES		
43-45	SUMMARY OF QUANTITIES AND REVISIONS		
46-49	SURVEY CONTROL DETAILS		
50-54	PLAN AND PROFILE SHEETS - SCOTT HAMILTON DR.		
55-56	PLAN AND PROFILE SHEETS - SIDE STREETS		
57	TRAFFIC SIGNAL NOTES		
58-59	SIGNALIZATION PLANS		
60	POWER PEDESTAL		
61	CURBING DETAILS	CG-1	11-29-07
62	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	11-29-07
63	FLARED END SECTION	FES-1	10-18-96
64	FLARED END SECTION	FES-2	10-18-96
65	DETAILS OF DROP INLETS & JUNCTION BOXES	FPC-9	11-16-01
66	DETAILS OF DROP INLETS (TYPE C)	FPC-9E	8-22-02
67	DETAILS OF DROP INLET (TYPE MO)	FPC-9M	8-22-02
68	MAILBOX DETAILS	MB-1	11-18-04
69	PRECAST CONCRETE BOX CULVERTS	PBC-1	12-15-11
70	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1	12-15-11
71	PAVEMENT MARKING DETAILS	PM-1	9-12-13
72	REINFORCED CONCRETE BOX CULVERT DETAILS	RCB-1	7-26-12
73	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	RCB-2	11-20-03
74	CONTROLLER CABINET UTILITY DRAWER	SD-5	9-12-13
75	HEAVY DUTY PULL BOX	SD-6	9-12-13
76	SIGNAL HEAD PLACEMENT	SD-8	9-12-13
77	SERVICE POINT	SD-9	9-12-13
78	STEEL POLE WITH MAST ARM	SD-11	9-12-13
79	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	SHS-1	9-12-13
80	U-CHANNEL POST ASSEMBLIES	SHS-2	9-12-13
81	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	12-15-11
82	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-12-13
83	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
84	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
85	TEMPORARY EROSION CONTROL DEVICES	TEC-2	6-2-94
86	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-3-94
87	CHAIN LINK FENCE	WF-3	11-17-10
88	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1	11-10-05
89	DETAILS OF STANDARD BARRELS FOR REINFORCED CONCRETE BOX CULVERTS	R-215X-0	8-23-63
90	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X153-1	5-10-66
91-120	CROSS SECTIONS		

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

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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.	FAP STPU-9253(46)		
				JOB NO.		061094	3	120
				GOVERNING SPECIFICATIONS				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 J.C. ANDREWS

GOVERNING SPECIFICATIONS

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

SHEET NO.	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 IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
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
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS

GOVERNING SPECIFICATIONS (CONT.)

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

SHEET NO.	TITLE
JOB 061094	ANTENNA SUPPORT
JOB 061094	AUDIBLE PEDESTRIAN WARNING SIGNALS
JOB 061094	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 061094	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 061094	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 061094	EDGE CARD VIDEO PROCESSOR
JOB 061094	EDGE CONNECT CARD FOR COMMUNICATIONS
JOB 061094	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 061094	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 061094	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 061094	INTERNET BIDDING
JOB 061094	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 061094	LED TRAFFIC SIGNAL HEAD
JOB 061094	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 061094	PARTNERING REQUIREMENTS
JOB 061094	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 061094	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 061094	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 061094	SYSTEM LOCAL CONTROLLER
JOB 061094	UTILITY ADJUSTMENTS
JOB 061094	VALUE ENGINEERING
JOB 061094	VIDEO DETECTOR (COLOR)
JOB 061094	WARM MIX ASPHALT

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 GUY C. ANDREWS

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210-UNCLASSIFIED EXCAVATION.
8. THIS PROJECT IS PERMITTED UNDER A NATIONWIDE 14 SECTION 404 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003, FOR PERMIT REQUIREMENTS.
9. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
10. THE LOCATION OF THE EXISTING WATER AND GAS UTILITIES ARE BASED ON RECORDS FROM SAID UTILITY COMPANIES AND ARE HORIZONTALLY FIELD LOCATED ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL LOCATION.
11. CONTRACTOR TO UNCOVER AND MARK UTILITY LINES BEFORE CONSTRUCTION.
12. CONTRACTOR SHALL BEAR ALL RESPONSIBILITY AND COST OF REPAIR OR REPLACEMENT OF EXISTING UTILITIES, DAMAGED OR INTERRUPTED, AS A RESULT OF THIS CONSTRUCTION PROJECT.
13. CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE OWNER OF ANY DAMAGED OR INTERRUPTED UTILITIES IMMEDIATELY.
14. CONTRACTOR SHALL NOTIFY PROJECT ENGINEER PRIOR TO BEGINNING WORK.
15. ALL AREAS WITHIN THE ROADWAY ARE TO RECEIVE A GRAVEL BASE TO PROVIDE EROSION CONTROL IF WORK IS NOT PROGRESSING IN A TIMELY MANNER. A RATE OF 135 TONS/ACRE IS TO BE APPLIED WITHIN TWO WEEKS OF FINAL GRADING.
16. ALL AREAS NOT WITHIN THE ROADWAY ARE TO RECEIVE LOOSE STRAW TO PROVIDE EROSION CONTROL IF WORK IS NOT PROGRESSING IN A TIMELY MANNER. A RATE OF 1.5 TONS/ACRE IS TO BE APPLIED WITHIN TWO WEEKS OF FINAL GRADING.
17. AFTER NEW INLETS ARE CONSTRUCTED, STRAW BALES AND GRAVEL FILTER BERMS ARE TO BE PLACED TO ALLOW FLOW THROUGH THE BERM.
18. CONTRACTOR WILL CONTROL AND PREVENT OFF-SITE TRACKING OF CONSTRUCTION RUNOFF AND SEDIMENT TO ADJACENT PROPERTY AND PUBLIC ROADS.
19. CONTRACTOR IS TO PROTECT EXISTING STORM DRAINAGE SYSTEM.

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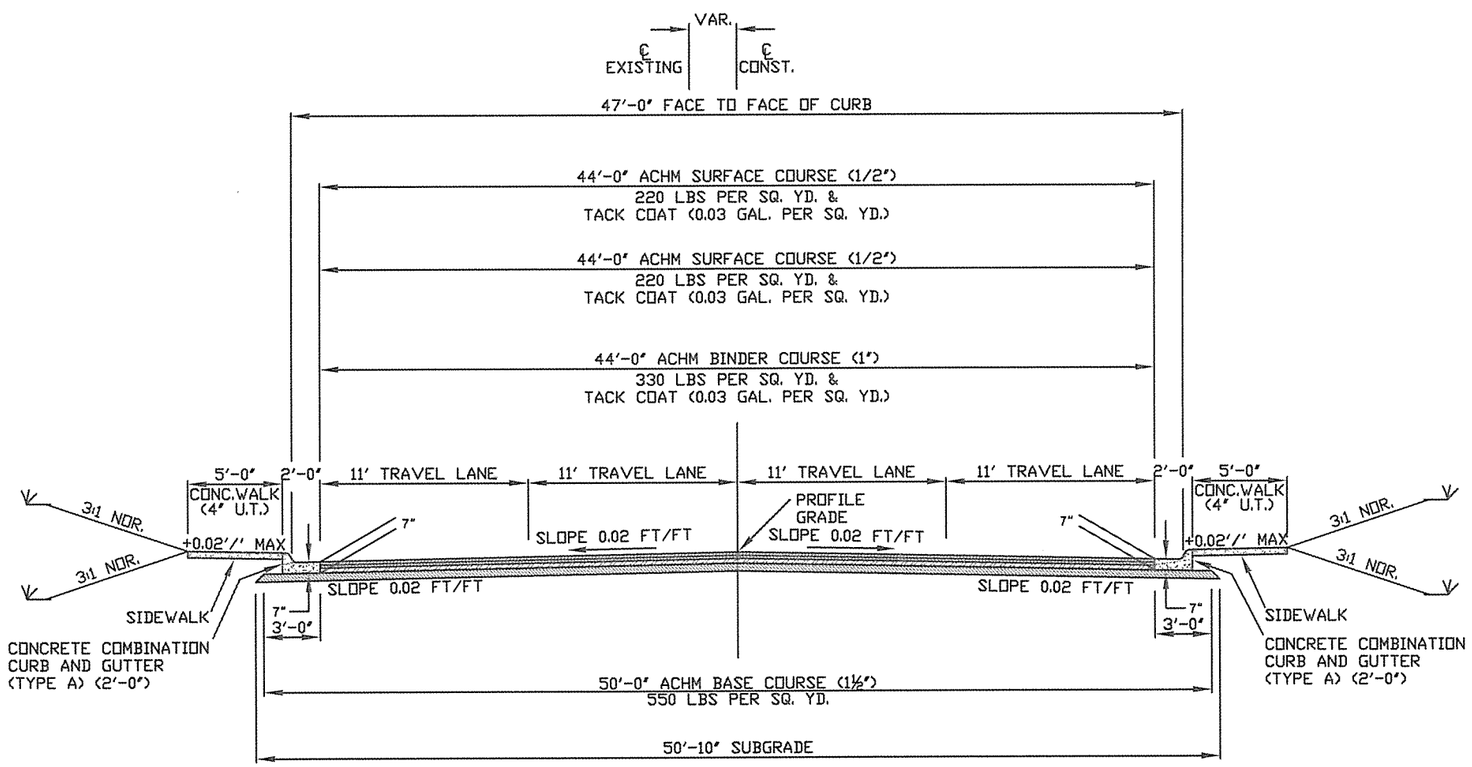
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	5	120
				TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 12707
C. ANDREWS



TANGENT SECTION

STA. 1+60 - 4+92

NOTES:

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

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

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

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

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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
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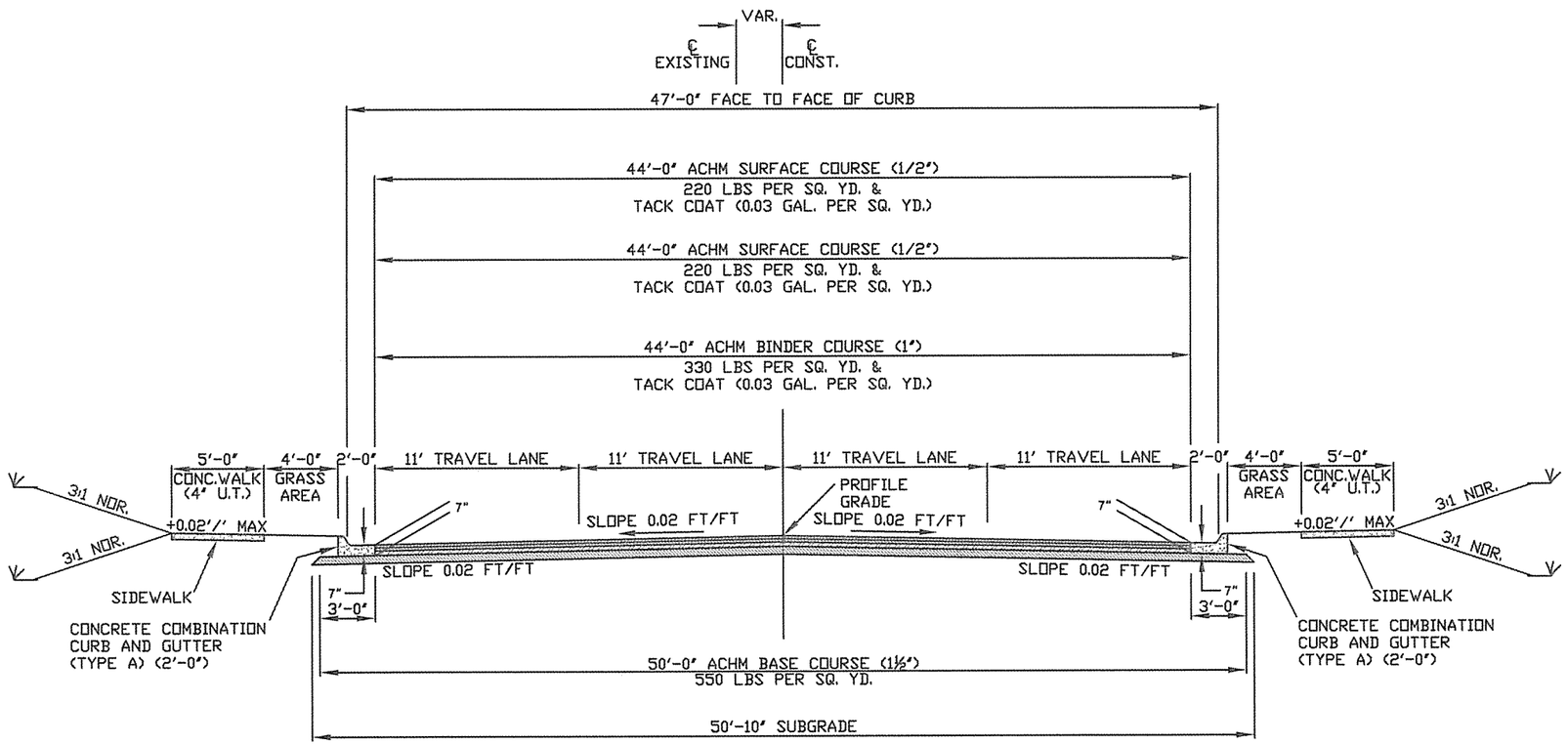
				JOB NO.		061094	6	120
				TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
ROY C. ANDREWS



TANGENT SECTION

STA. 4+92 - 17+92

NOTES:

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

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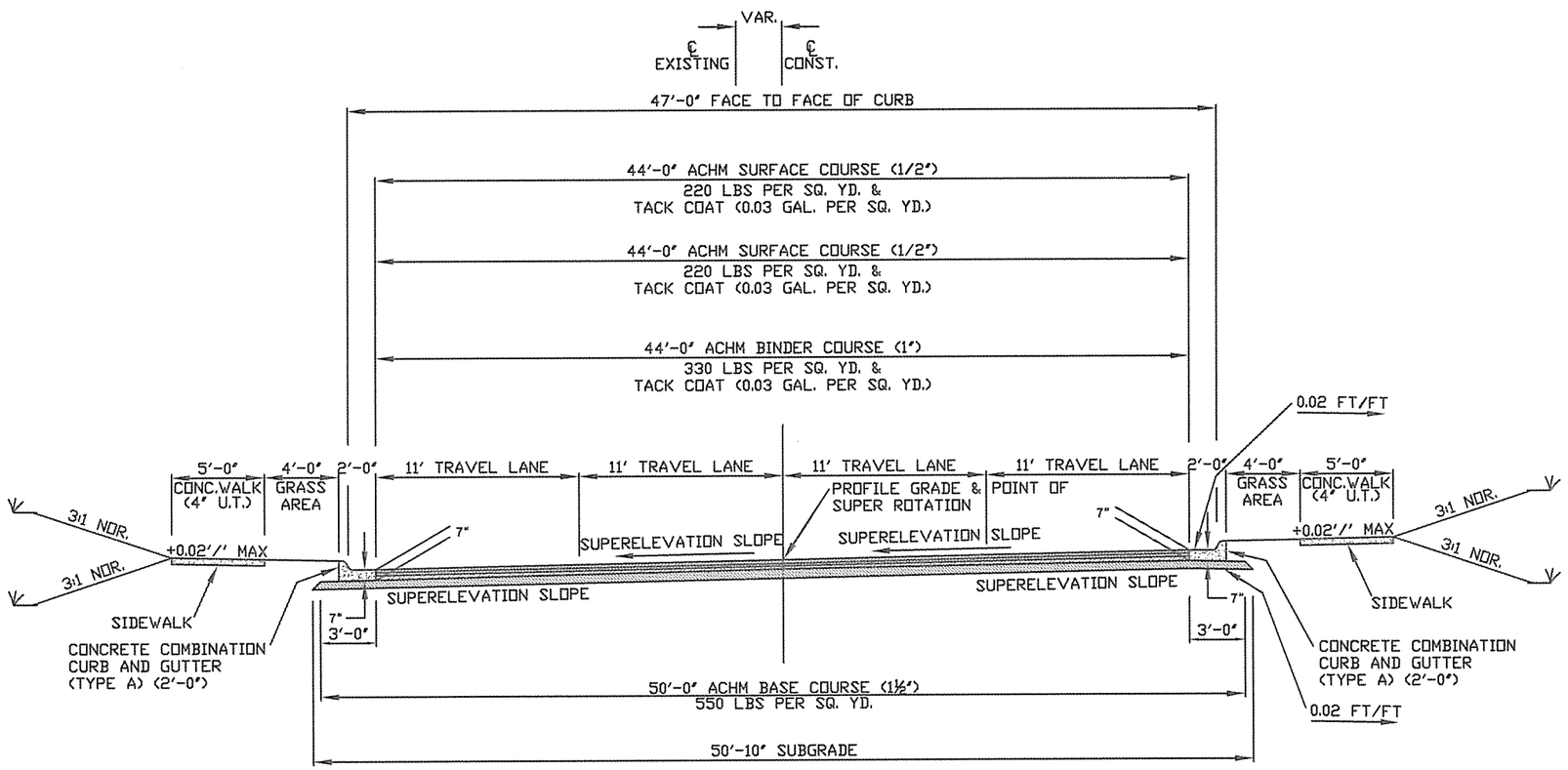
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	7	120
				TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
ROY C. ANDREWS



SUPERELEVATION SECTION

STA. 17+92 - 20+57

STA. 17+57 - STA. 20+57 TRANSITION
FROM 47' FACE TO FACE OF CURB & GUTTER SECTION
TO 58' FACE TO FACE OF CURB & GUTTER SECTION

NOTES:

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

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.

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

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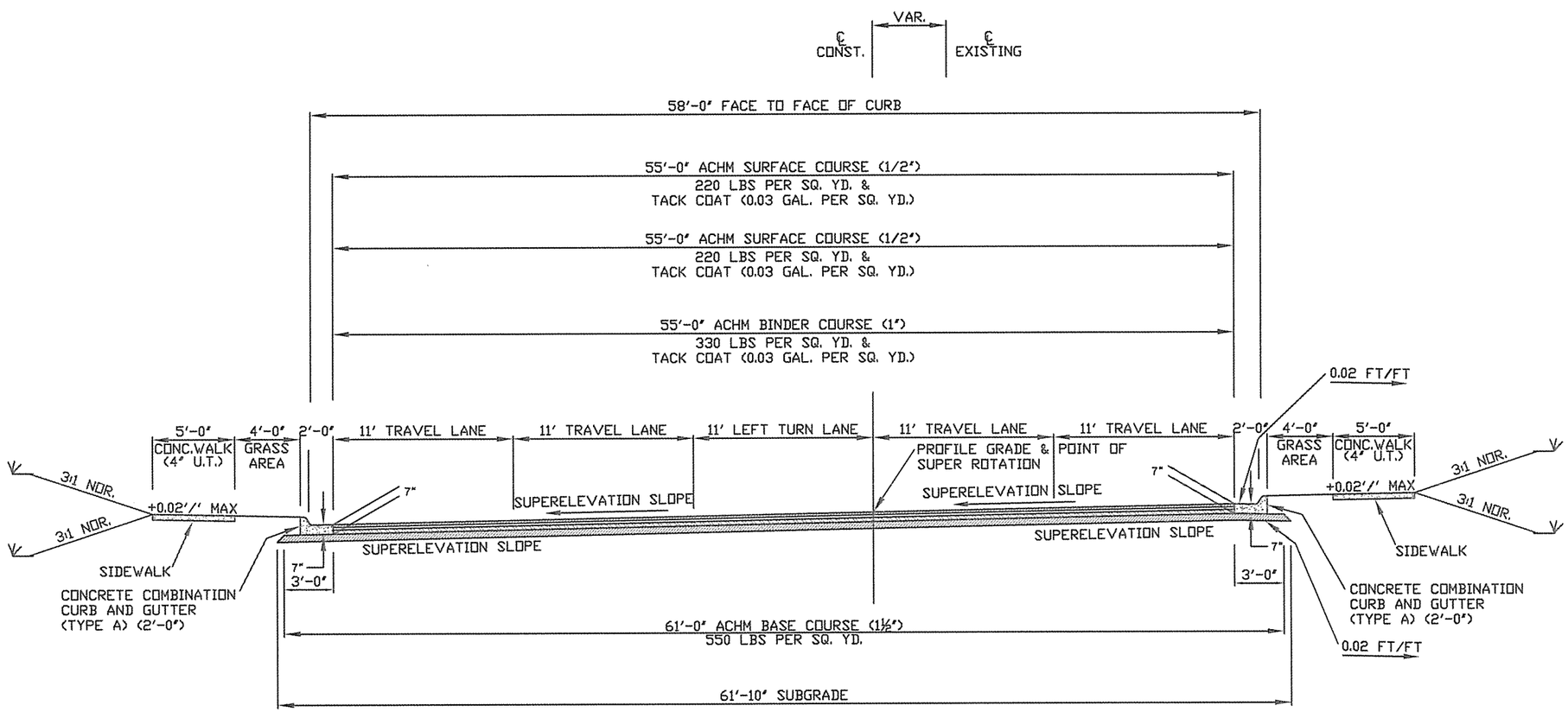
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0283(46)		
				JOB NO.		061094	8	120
				TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
GUY C. ANDREWS



SUPERELEVATION SECTION

STA. 20+57 - 30+00

NOTES:

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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.

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

STA. 27+00 - STA. 30+00 TRANSITION
FROM 58' FACE TO FACE OF CURB & GUTTER SECTION
TO 48' FACE TO FACE OF CURB & GUTTER SECTION

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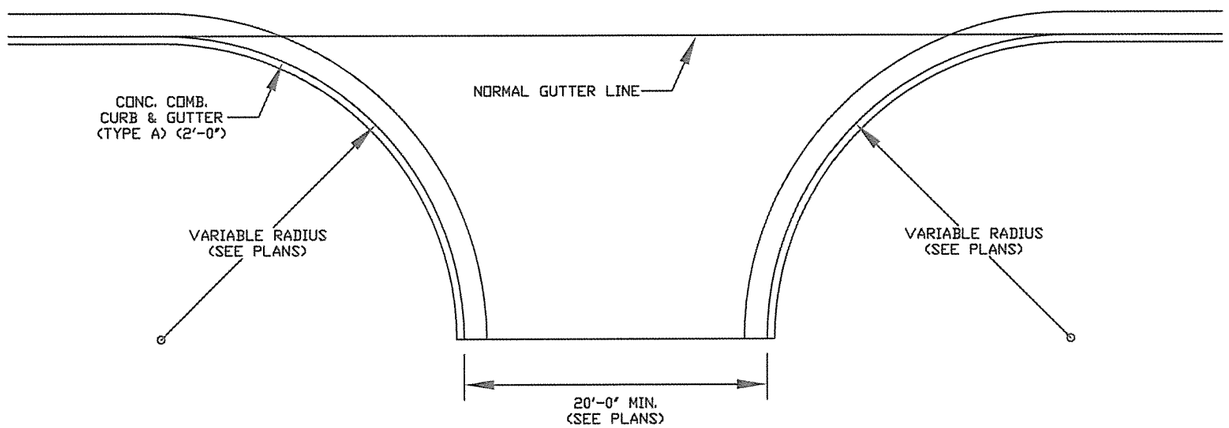
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	9	120
				SPECIAL DETAILS				

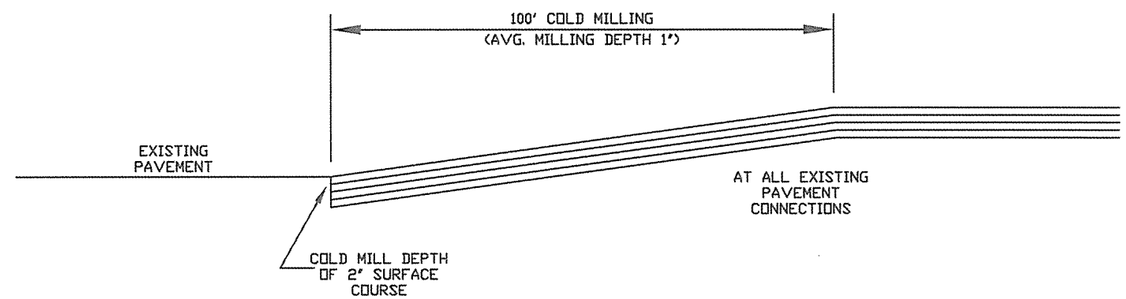
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
F.L.S. ANDREWS



DETAIL OF TURNOUTS ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS

NOTES:
REFER TO PLAN SHEETS FOR WIDTHS OF CITY STREETS.

PAVEMENT STRUCTURE TO BE THE SAME AS MAIN LANES.



COLD MILLING

AT ALL EXISTING PAVEMENT CONNECTIONS

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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
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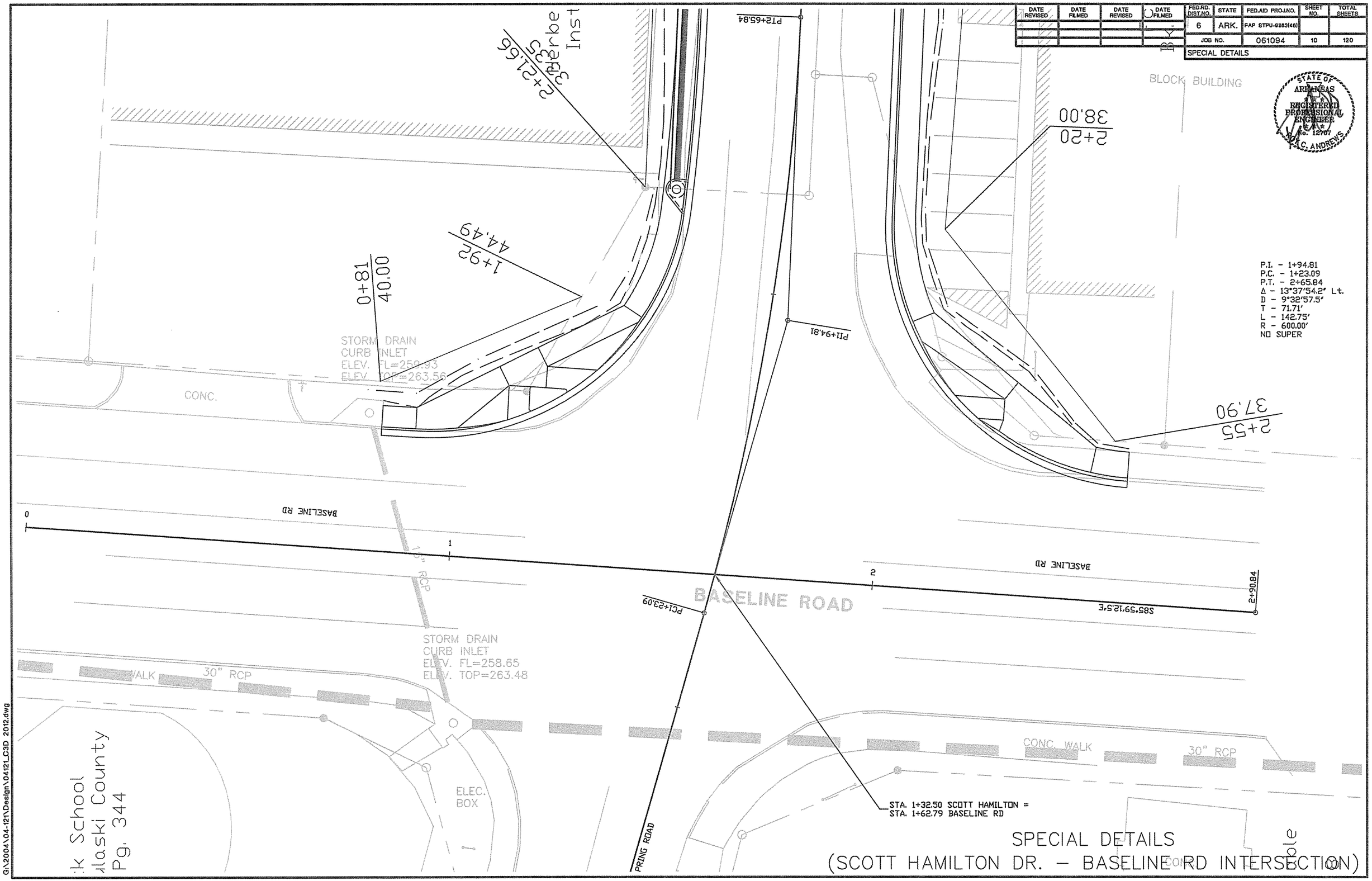
				SPECIAL DETAILS				



SPECIAL DETAILS
(SCOTT HAMILTON DR. – BASELINE RD INTERSECTION)

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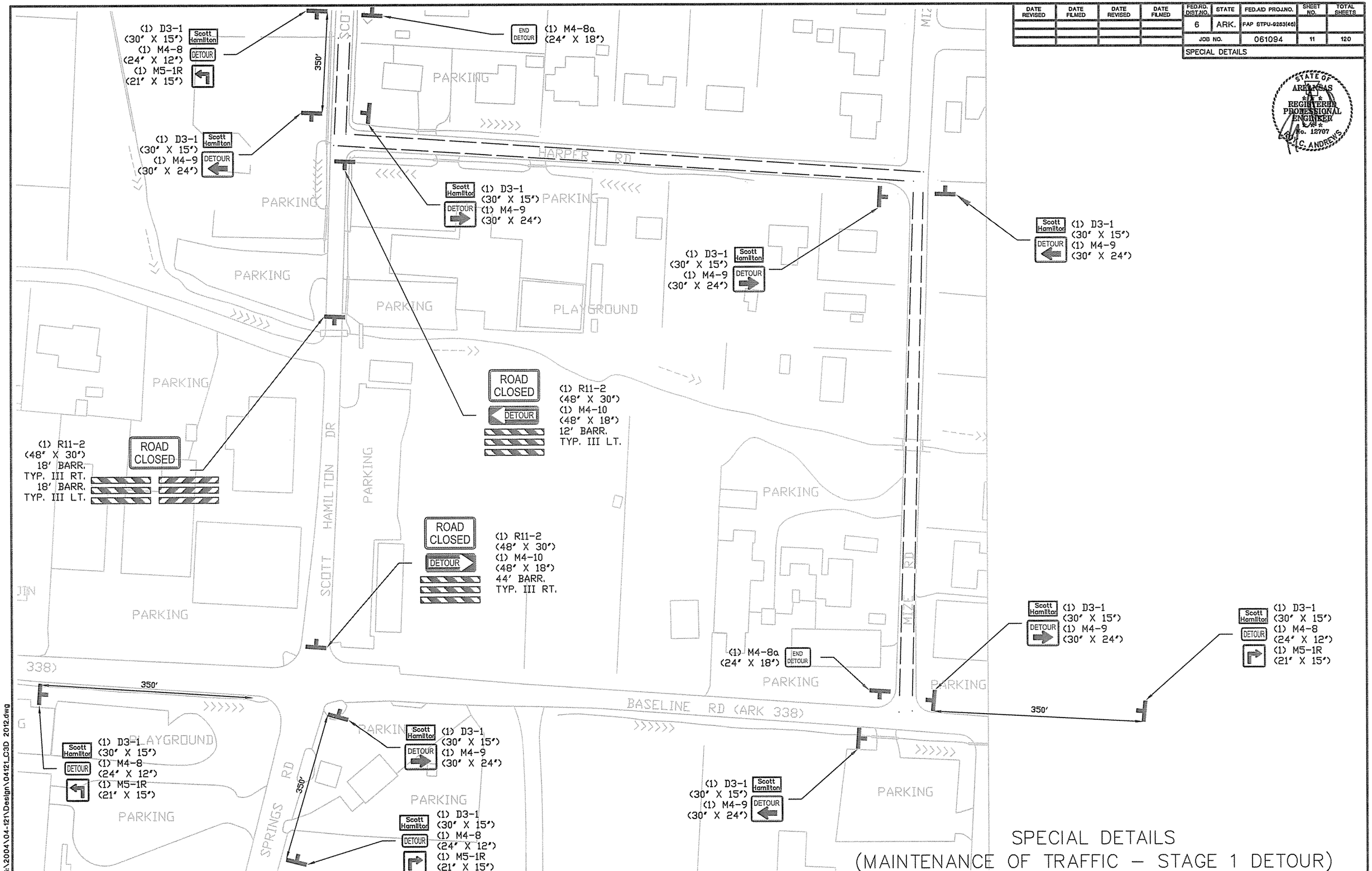
				6	ARK.	FAP STPU-9263(46)		
				JOB NO.		061094	11	120
				SPECIAL DETAILS				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 LARRY C. ANDREWS



SPECIAL DETAILS
(MAINTENANCE OF TRAFFIC – STAGE 1 DETOUR)

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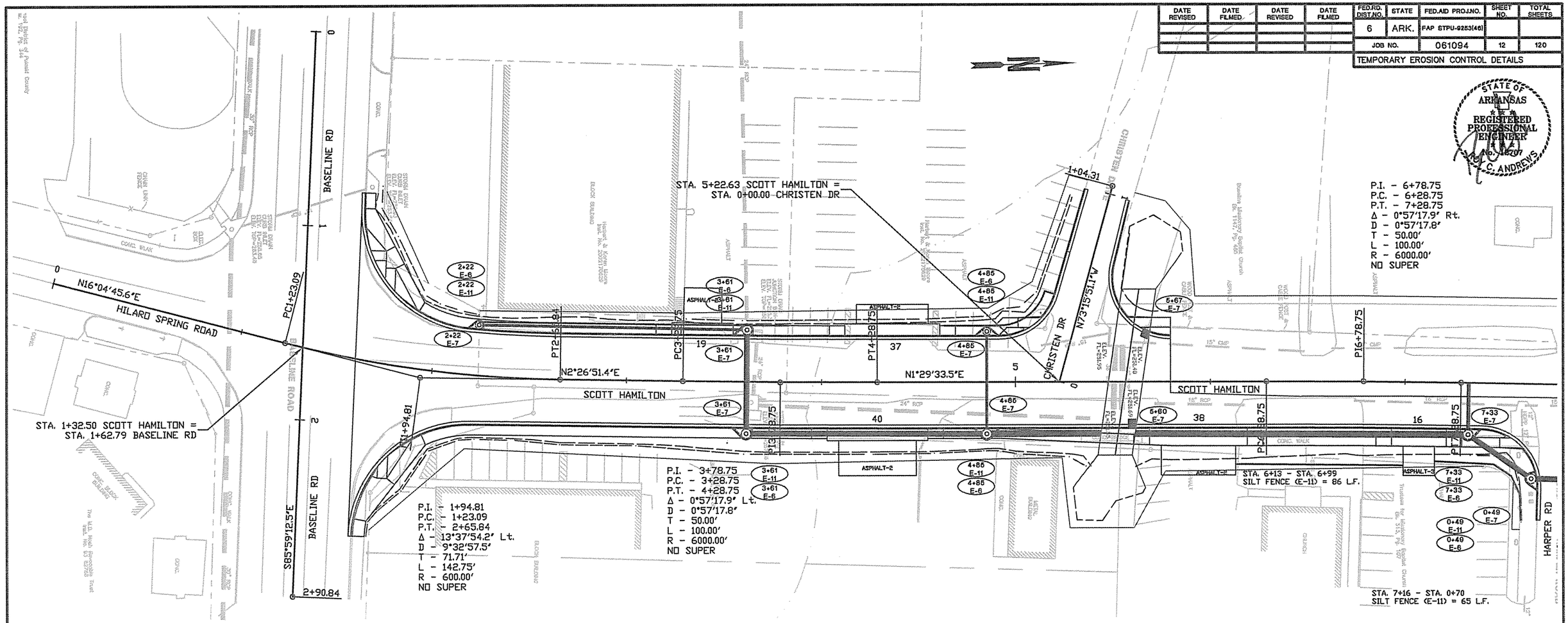
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	12	120

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 16207
C. ANDREWS



EROSION CONTROL GENERAL NOTES

ROCK DITCH CHECKS (TYPE E-6) ARE ESTIMATED AT 5 CU. YD. PER DITCH CHECK.

DROP INLET SILT FENCE ESTIMATED AT 25 LIN. FT. PER DROP INLET.

SILT FENCE AROUND FLARED END SECTIONS AND OPENINGS IN BACK ESTIMATED AT 20 LIN. FT. PER LOCATION.

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

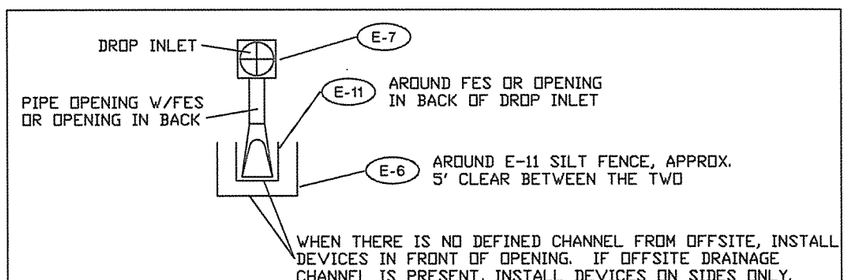
REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

TEMPORARY EROSION CONTROL ITEMS

SILT FENCE = 1011 LIN. FT.
ROCK DITCH CHECKS = 90 CU. YD.
EROSION CONTROL MATTING (CLASS 2) = 30 SQ. YD.
EROSION CONTROL MATTING (CLASS 3) = 30 SQ. YD.
SEDIMENT REMOVAL AND DISPOSAL = 15 CU. YD.

REVISIONS

DATE	REVISION



TYPICAL DEVICE PLACEMENT AT DROP INLETS

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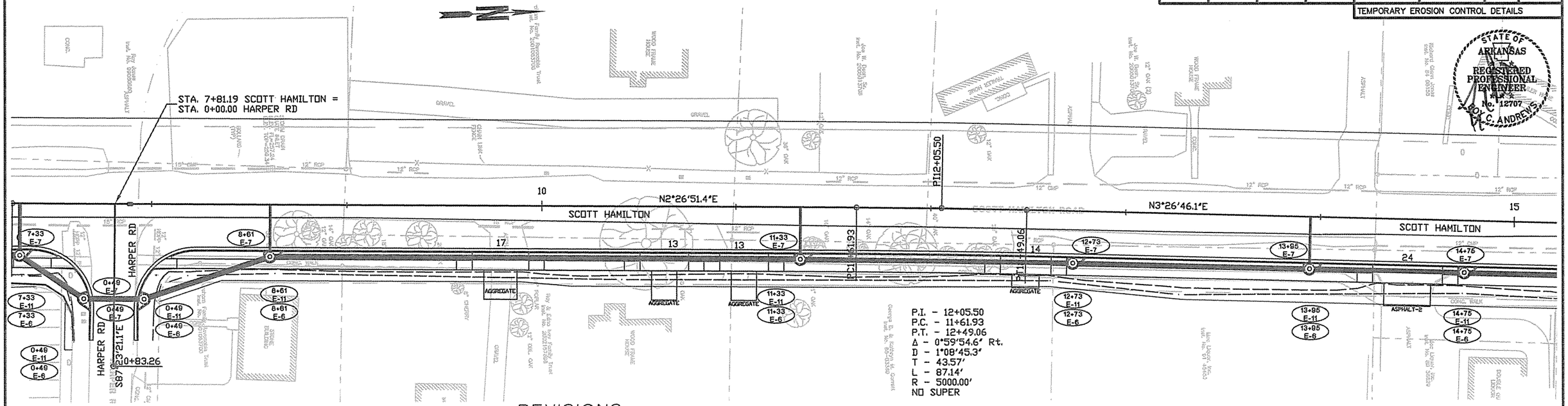
TEMPORARY EROSION CONTROL DETAILS – STAGE 1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	13	120

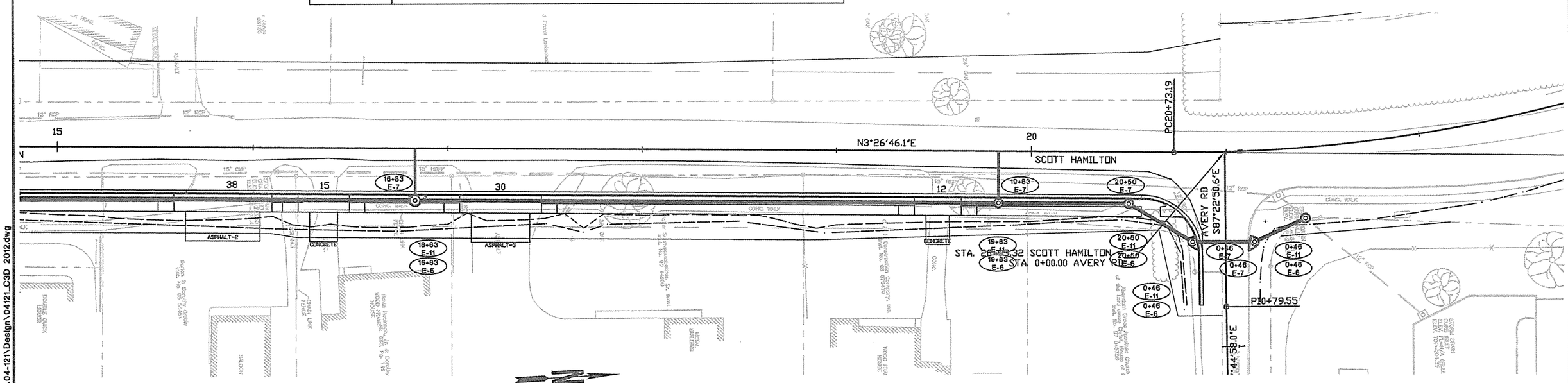
TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS



REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS – STAGE 1

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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
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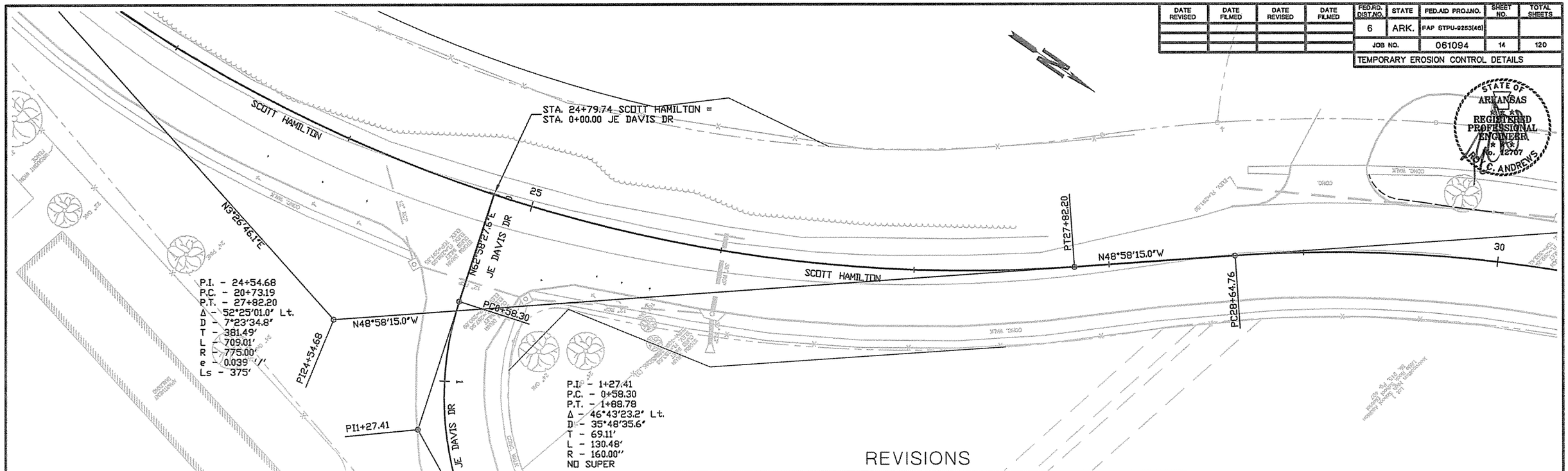
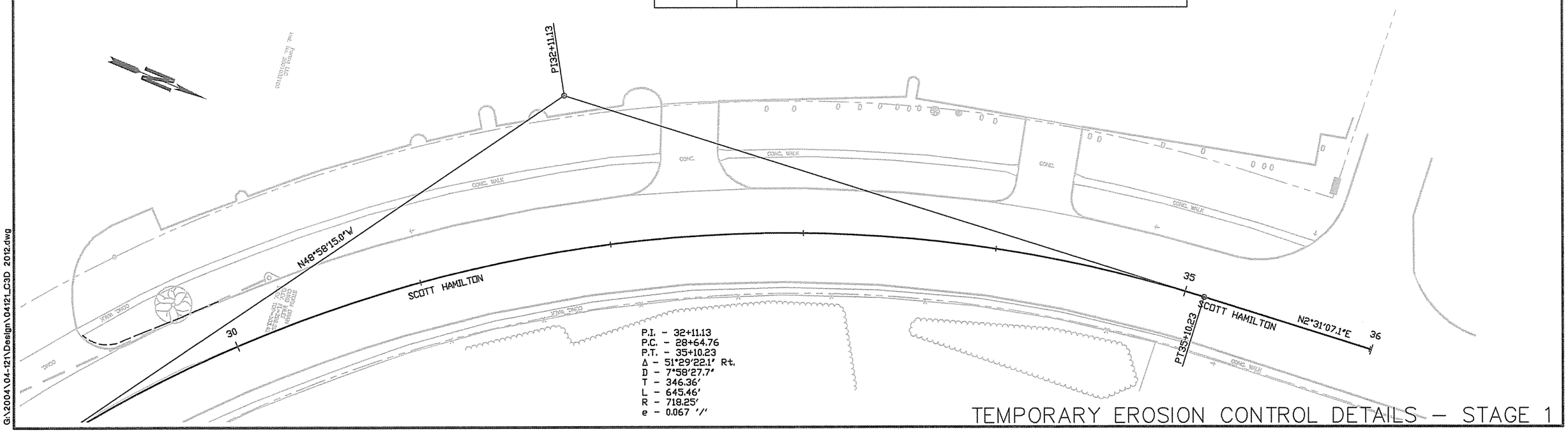
				JOB NO.		061094	14	120

TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS – STAGE 1

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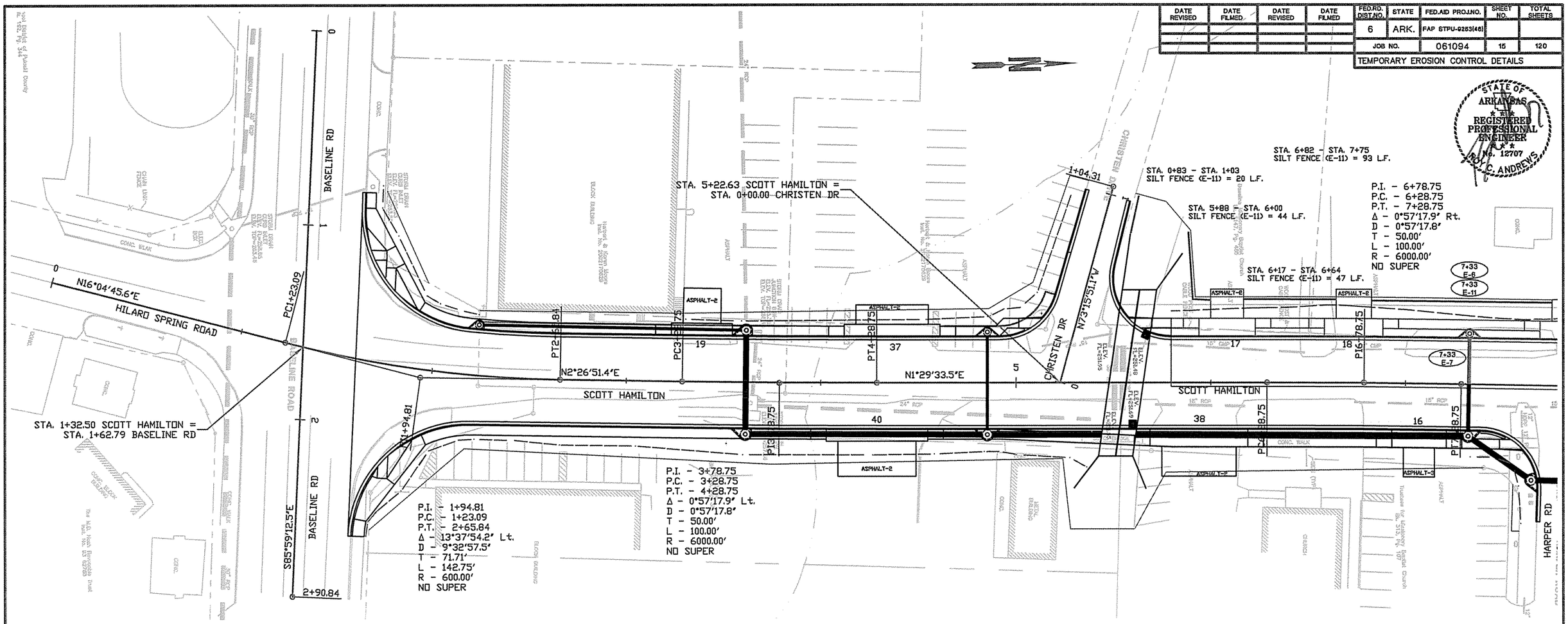
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	15	120

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
ROY C. ANDREWS



TEMPORARY EROSION CONTROL ITEMS

SILT FENCE = 2425 LIN. FT.
ROCK DITCH CHECKS = 45 CU. YD.
EROSION CONTROL MATTING (CLASS 2) = 10 SQ. YD.
EROSION CONTROL MATTING (CLASS 3) = 10 SQ. YD.
SEDIMENT REMOVAL AND DISPOSAL = 30 CU. YD.

EROSION CONTROL GENERAL NOTES

ROCK DITCH CHECKS (TYPE E-6) ARE ESTIMATED AT 5 CU. YD. PER DITCH CHECK.

DROP INLET SILT FENCE ESTIMATED AT 25 LIN. FT. PER DROP INLET.

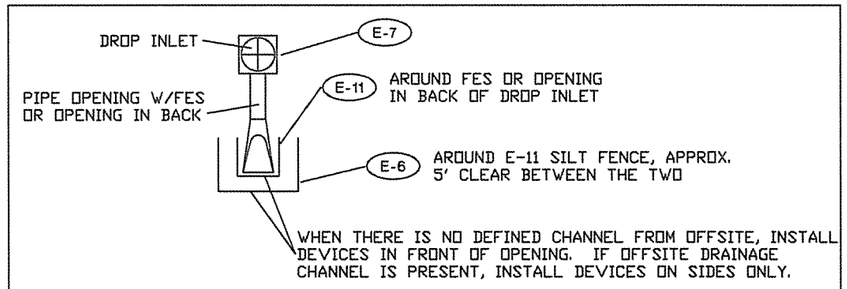
SILT FENCE AROUND FLARED END SECTIONS AND OPENINGS IN BACK ESTIMATED AT 20 LIN. FT. PER LOCATION.

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

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

REVISIONS

DATE	REVISION



TYPICAL DEVICE PLACEMENT AT DROP INLETS

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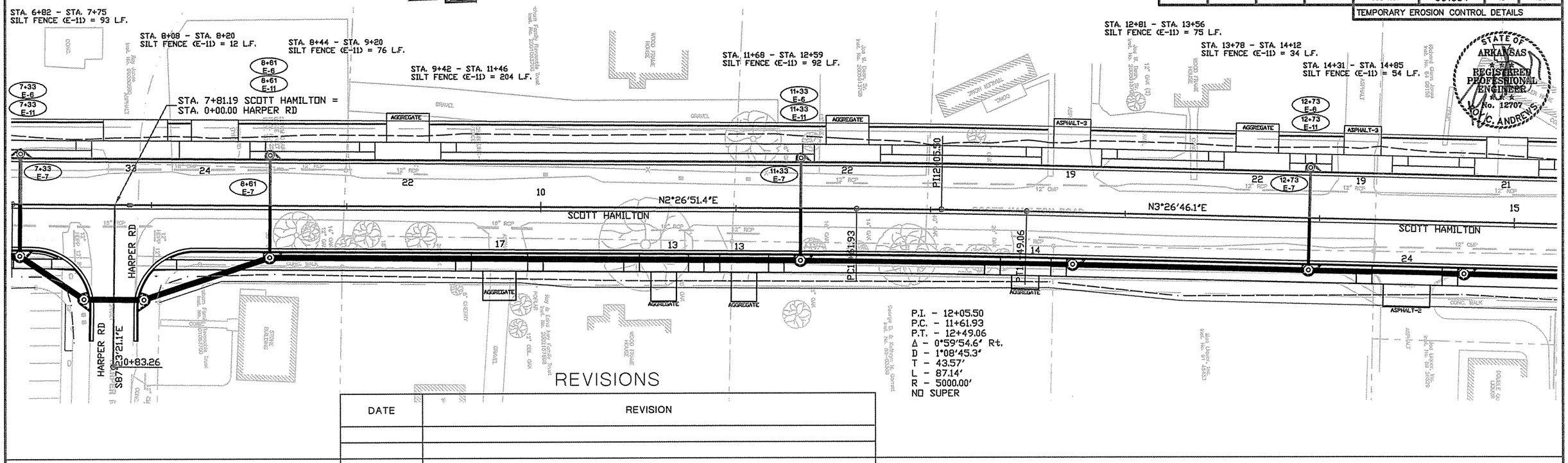
TEMPORARY EROSION CONTROL DETAILS – STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	16	120

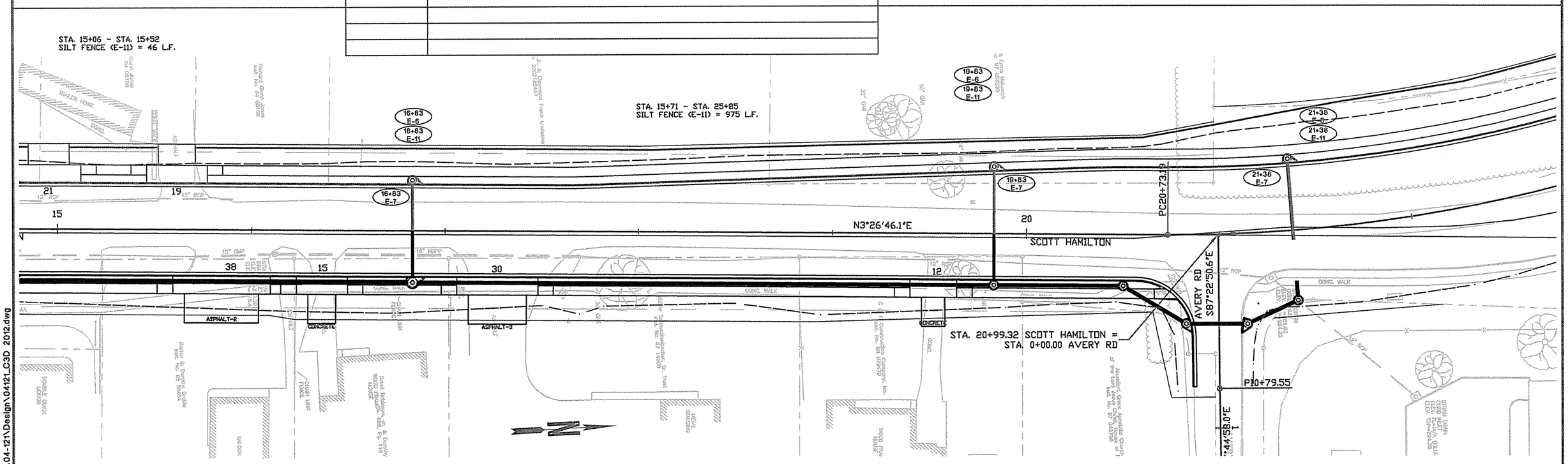
TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 W.C. ANDREWS



REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS — STAGE 2

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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
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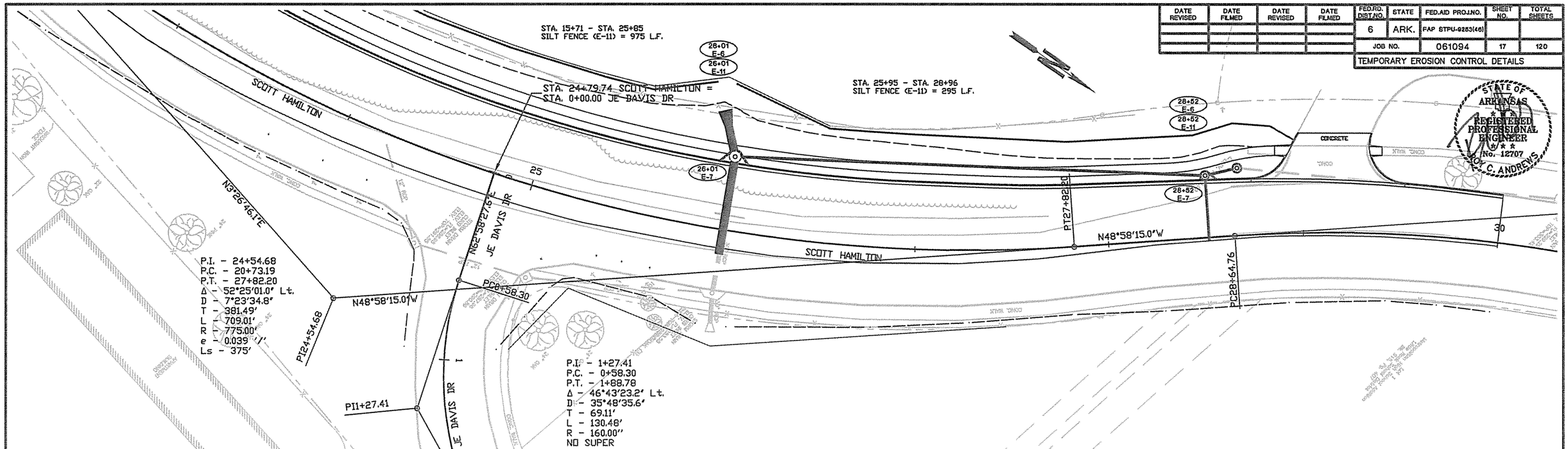
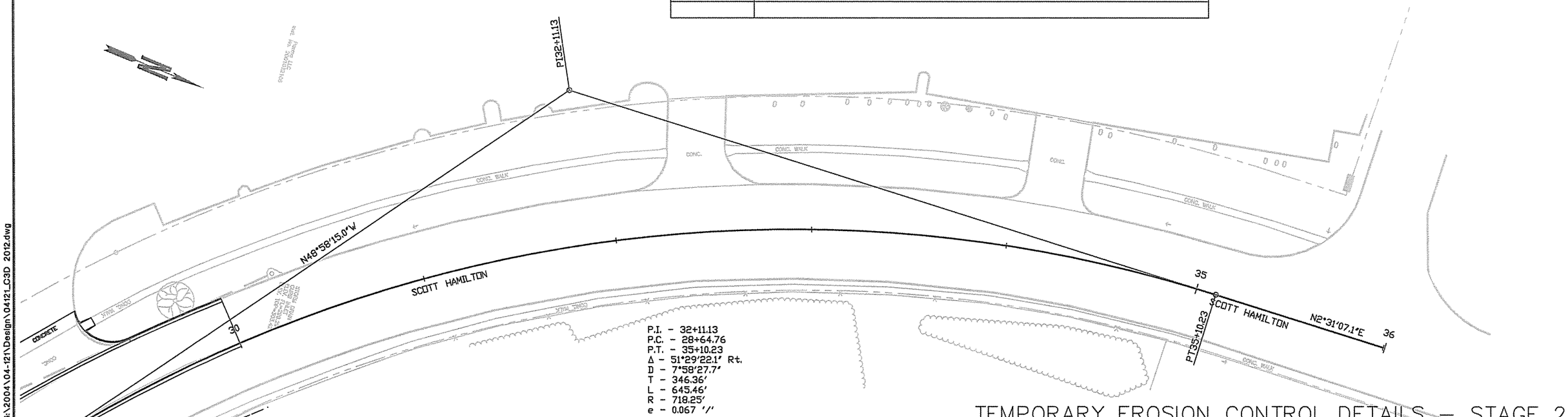
				JOB NO.		061094	17	120
				TEMPORARY EROSION CONTROL DETAILS				



REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS – STAGE 2

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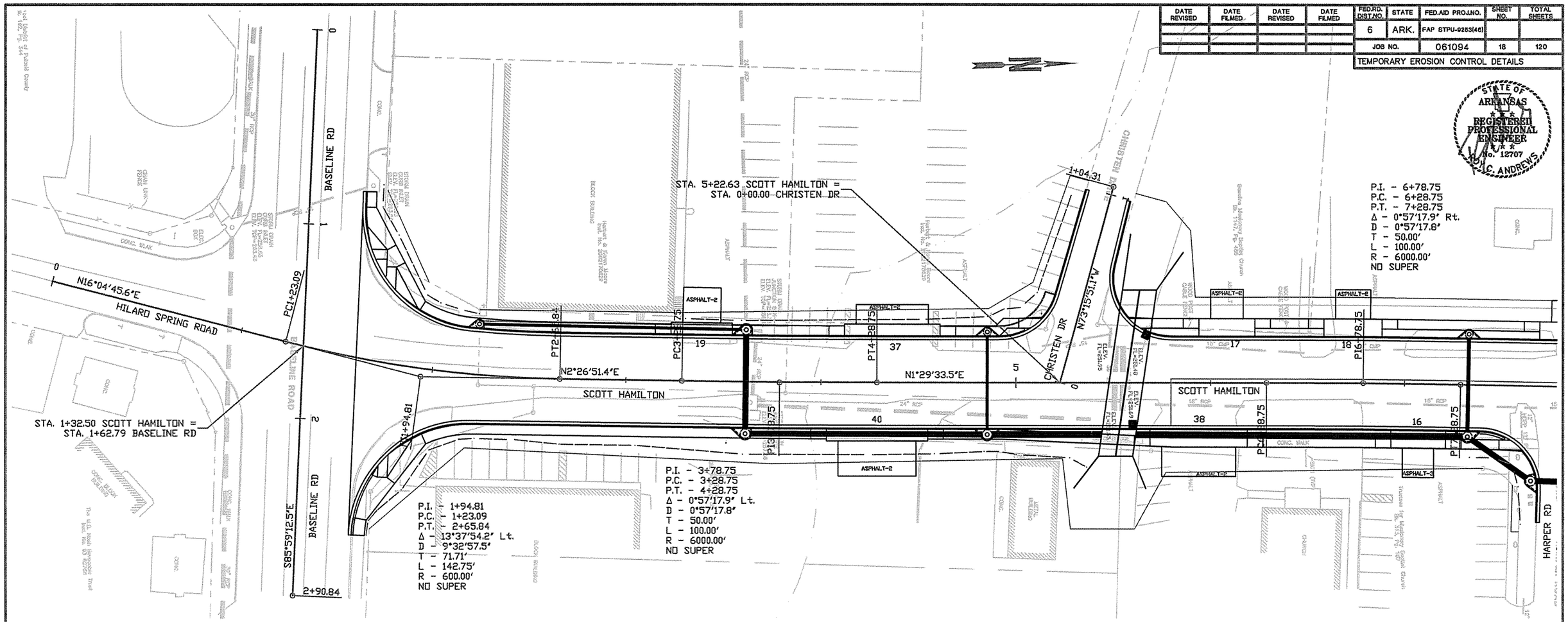
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	18	120
				TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
J.C. ANDREWS



TEMPORARY EROSION CONTROL ITEMS

SILT FENCE = 514 LIN. FT.
ROCK DITCH CHECKS = 20 CU. YD.
EROSION CONTROL MATTING (CLASS 2) = 10 SQ. YD.
EROSION CONTROL MATTING (CLASS 3) = 10 SQ. YD.
SEDIMENT REMOVAL AND DISPOSAL = 5 CU. YD.

EROSION CONTROL GENERAL NOTES

ROCK DITCH CHECKS (TYPE E-6) ARE ESTIMATED AT 5 CU. YD. PER DITCH CHECK.

DROP INLET SILT FENCE ESTIMATED AT 25 LIN. FT. PER DROP INLET.

SILT FENCE AROUND FLARED END SECTIONS AND OPENINGS IN BACK ESTIMATED AT 20 LIN. FT. PER LOCATION.

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

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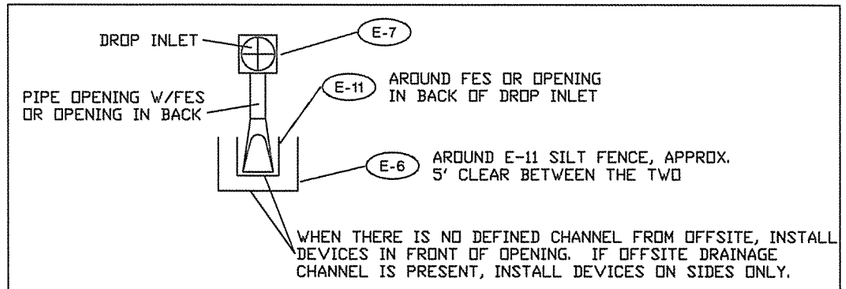
REVISIONS

DATE	REVISION



TYPICAL DEVICE PLACEMENT AT DROP INLETS

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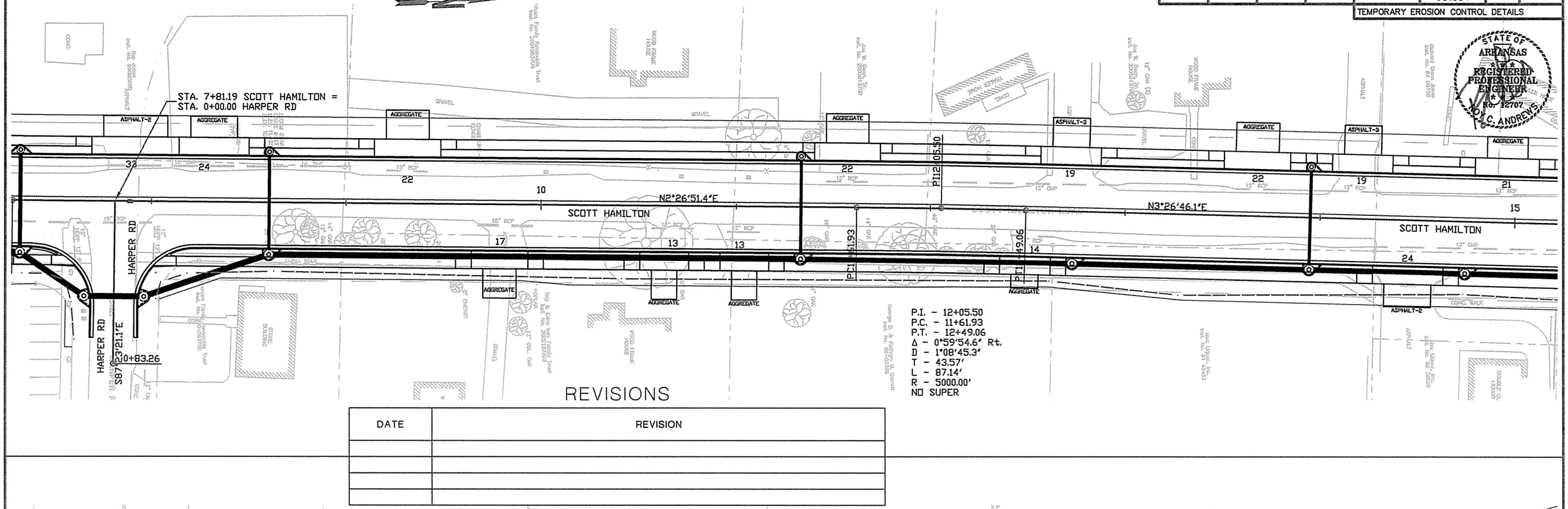
TEMPORARY EROSION CONTROL DETAILS – STAGE 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	19	120

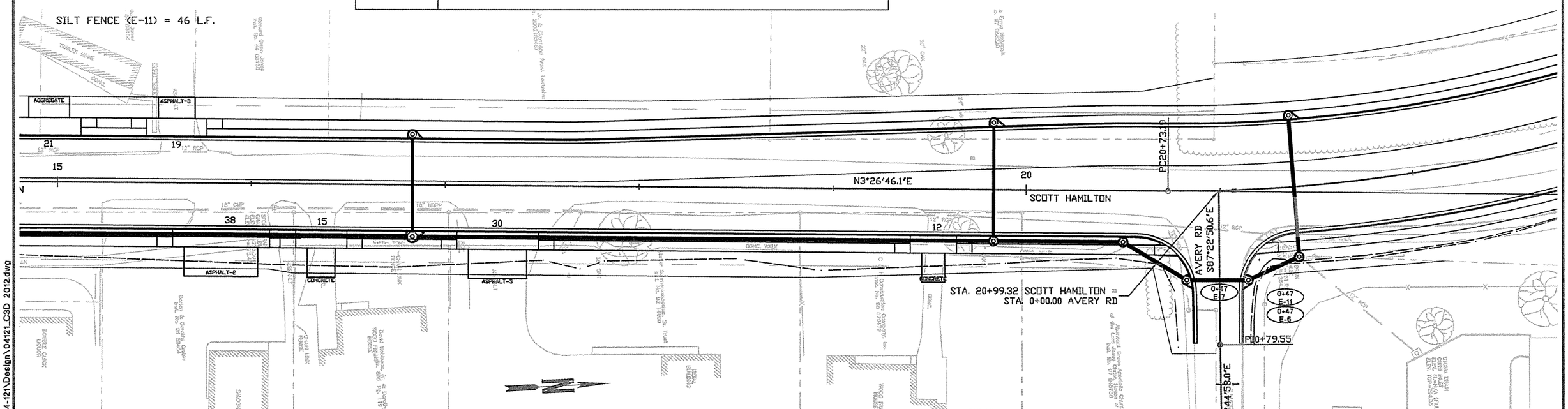
TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 12707 D. C. ANDREWS



REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS – STAGE 3

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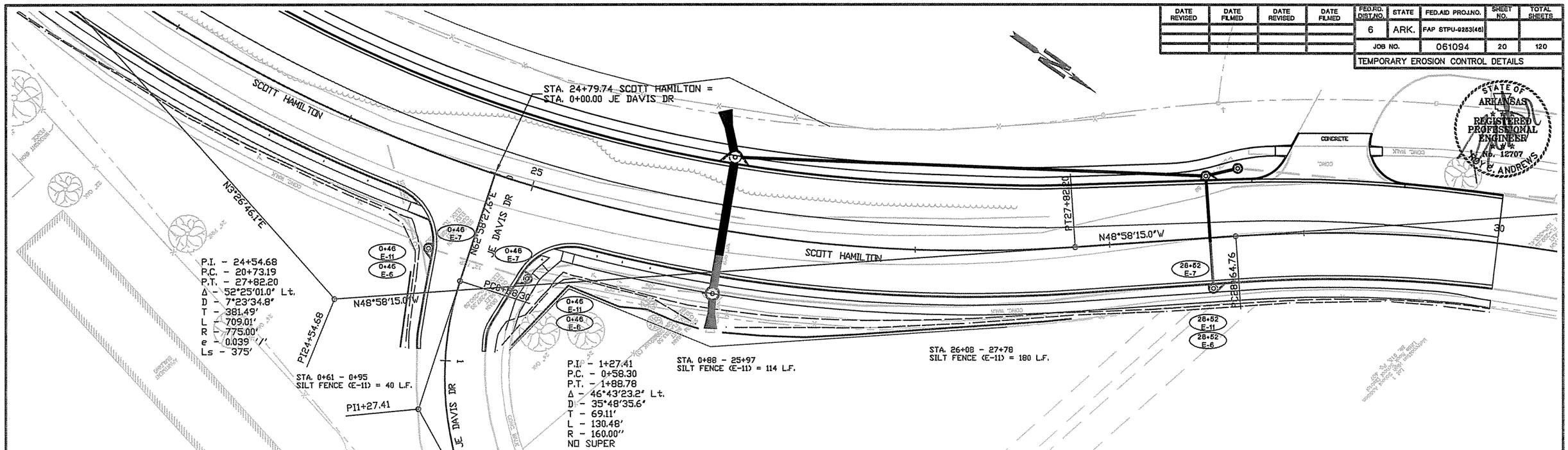
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.		061094	20	120

TEMPORARY EROSION CONTROL DETAILS



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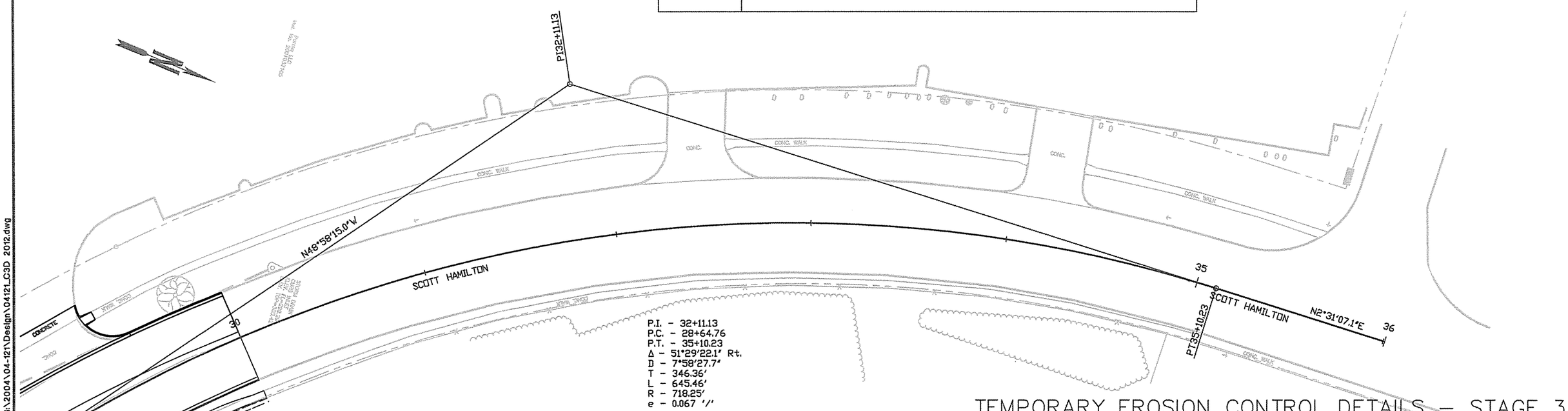
DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS – STAGE 3

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	21	120
				MAINTENANCE OF TRAFFIC DETAILS				

MAINTENANCE OF TRAFFIC NOTES

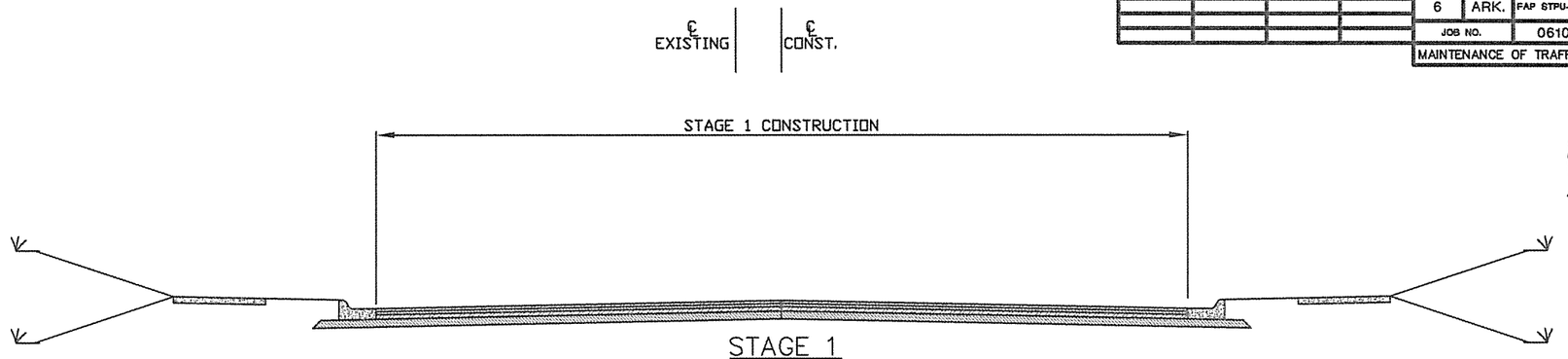
VERTICAL PANELS TO BE PLACED ON THE SIDE BEING WIDENED, AND TRAFFIC DRUMS ONCE WIDENING IS BROUGHT TO GRADE (PLACED 30' ON CENTER).

R4-1 SIGNS ARE TO BE PLACED THROUGH THE WORK ZONES AT 1/2 MI. INTERVALS. W20-1 (AHEAD) SIGNS ARE TO BE PLACED AT CITY STREET INTERSECTIONS THROUGH THE WORK ZONE.

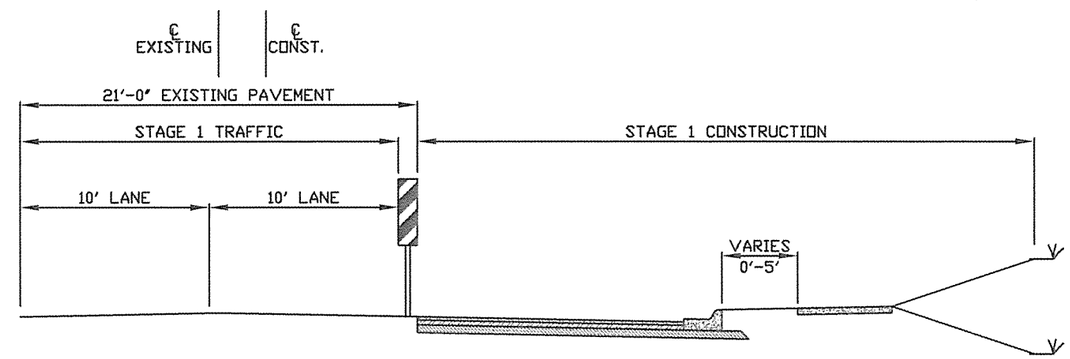
ALL CITY STREET INTERSECTIONS AND DRIVEWAYS ON THE SIDE BEING WIDENED ARE TO BE DELINEATED USING TRAFFIC DRUMS (6 EACH) UNLESS OTHERWISE NOTED.

SIGNS = 162 SQ. FT.
VERTICAL PANELS = 95 EACH
TRAFFIC DRUMS = 348 EACH
BARRICADES = 352 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 646 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 3670 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 16497 LIN. FT.

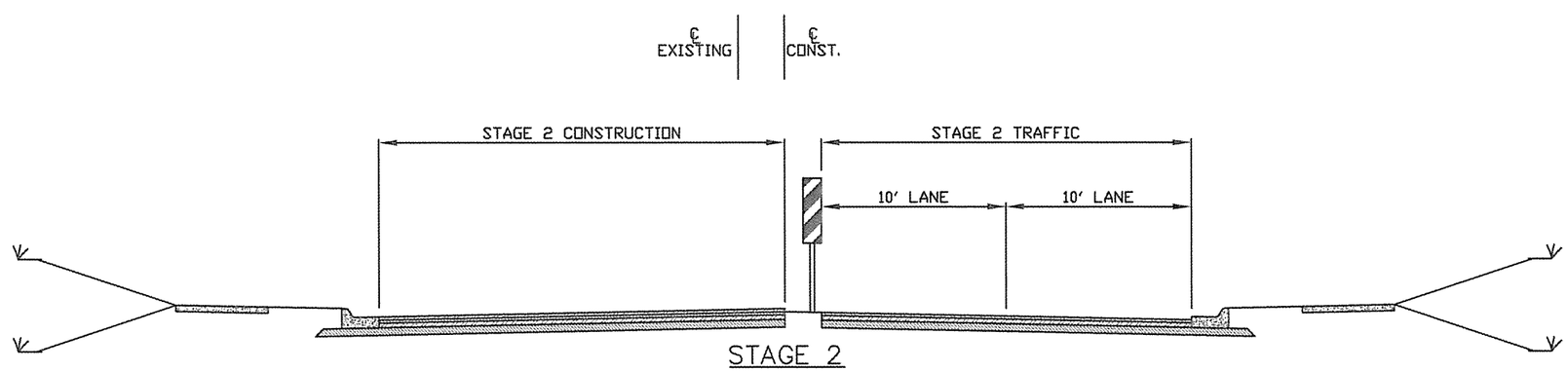
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 12707 R. C. ANDREWS



STAGE 1
STA. 1+60 - STA. 5+80



STAGE 1
STA. 5+80 - STA. 20+87



STAGE 2
STA. 5+80 - STA. 20+87

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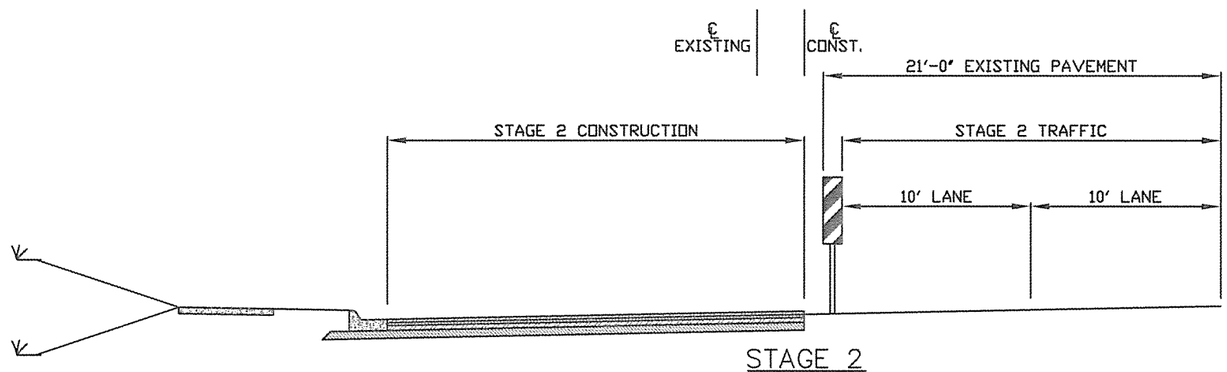
MAINTENANCE OF TRAFFIC DETAILS

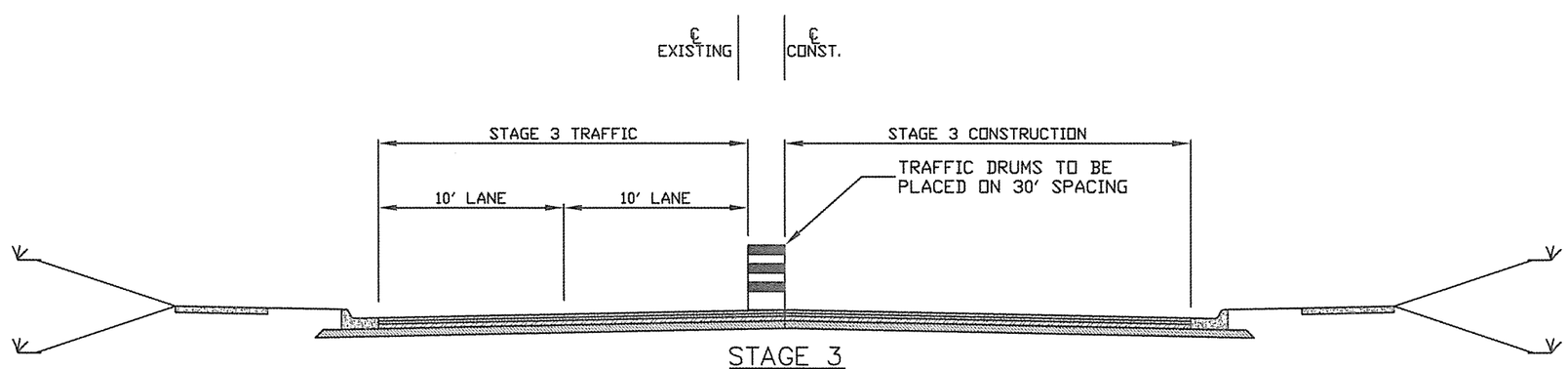
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	22	120
				MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
JERRY C. ANDREWS



STAGE 2

STA. 20+87 - STA. 30+00



STAGE 3

STA. 5+80 - STA. 30+00

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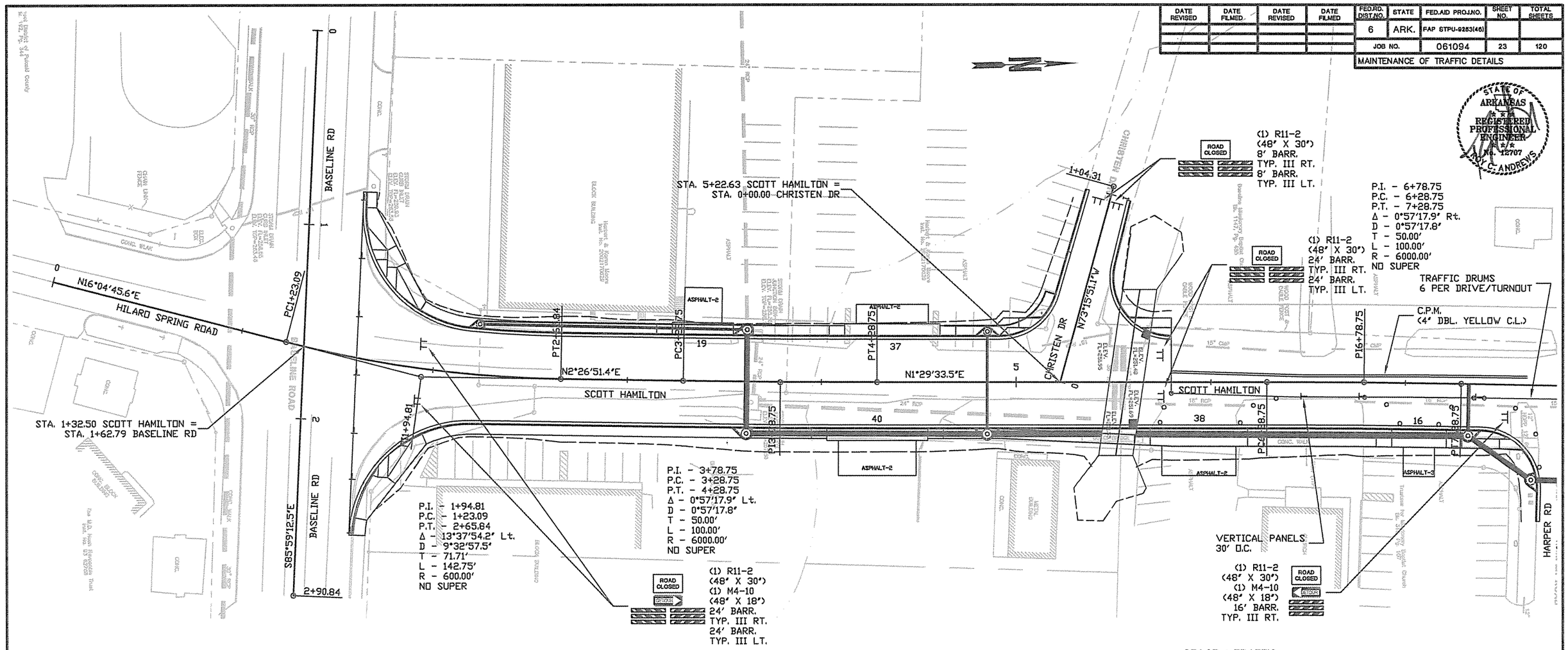
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	23	120

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS



END ROAD WORK — (1) G20-2 (48" X 24")

ROAD WORK 500 FT. — (1) G20-1 (48" X 48")

ROAD WORK 1000 FT — (1) G20-1 (48" X 48")

ROAD WORK 1500 FT — (1) G20-1 (48" X 48")

DETAIL OF SIGN PLACEMENT AT BEGINNING AND END OF JOB (ALL STAGES)

STAGE 1 TRAFFIC
MAINTAIN TRAFFIC IN THE EXISTING LANES.
CLOSE ROAD FROM STA. 1+60 TO STA. 5+80
DETOUR TRAFFIC TO MIZE RD. TO HARPER RD. TO SCOTT HAMILTON
CONSTRUCT FULL SECTION FROM STA. 1+60 TO STA. 5+80
CONSTRUCT WIDENING ON RIGHT FROM STA. 5+80 TO STA 20+87

STAGE 1 QUANTITIES:
- SIGNS = 317 SQ. FT.
- VERTICAL PANELS = 40 EACH
- TRAFFIC DRUMS = 71 EACH
- BARRICADES = 152 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS = 2877 LIN. FT.

MAINTENANCE OF TRAFFIC DETAILS (STAGE 1)

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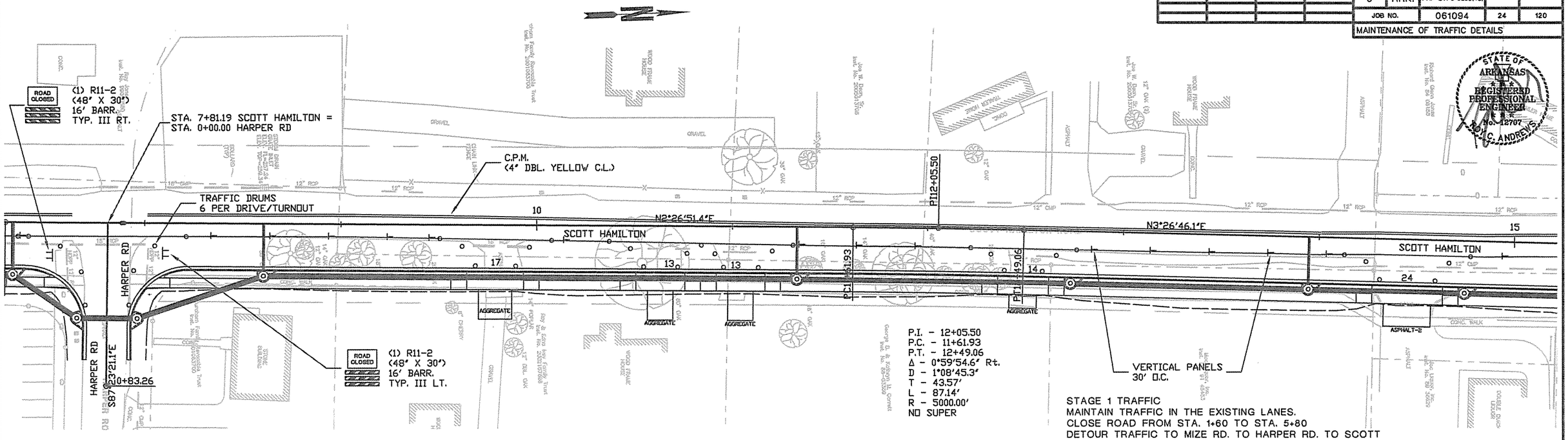
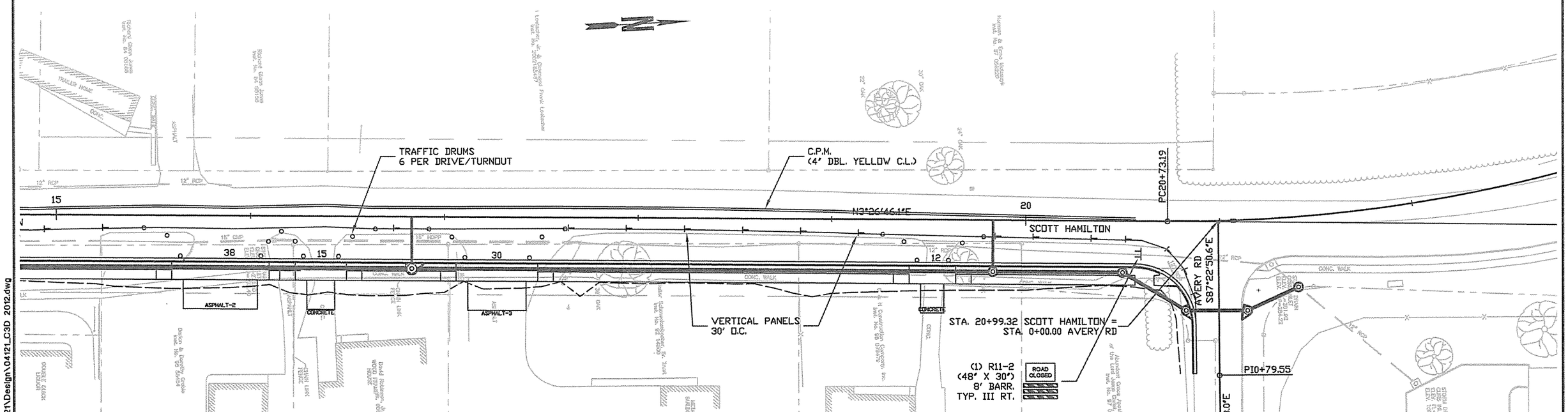
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9283(46)		
				JOB NO.		061094	24	120

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS



STAGE 1 TRAFFIC
MAINTAIN TRAFFIC IN THE EXISTING LANES.
CLOSE ROAD FROM STA. 1+60 TO STA. 5+80
DETOUR TRAFFIC TO MIZE RD. TO HARPER RD. TO SCOTT HAMILTON
CONSTRUCT FULL SECTION FROM STA. 1+60 TO STA. 5+80
CONSTRUCT WIDENING ON RIGHT FROM STA. 5+80 TO STA 20+87



MAINTENANCE OF TRAFFIC DETAILS (STAGE 1)

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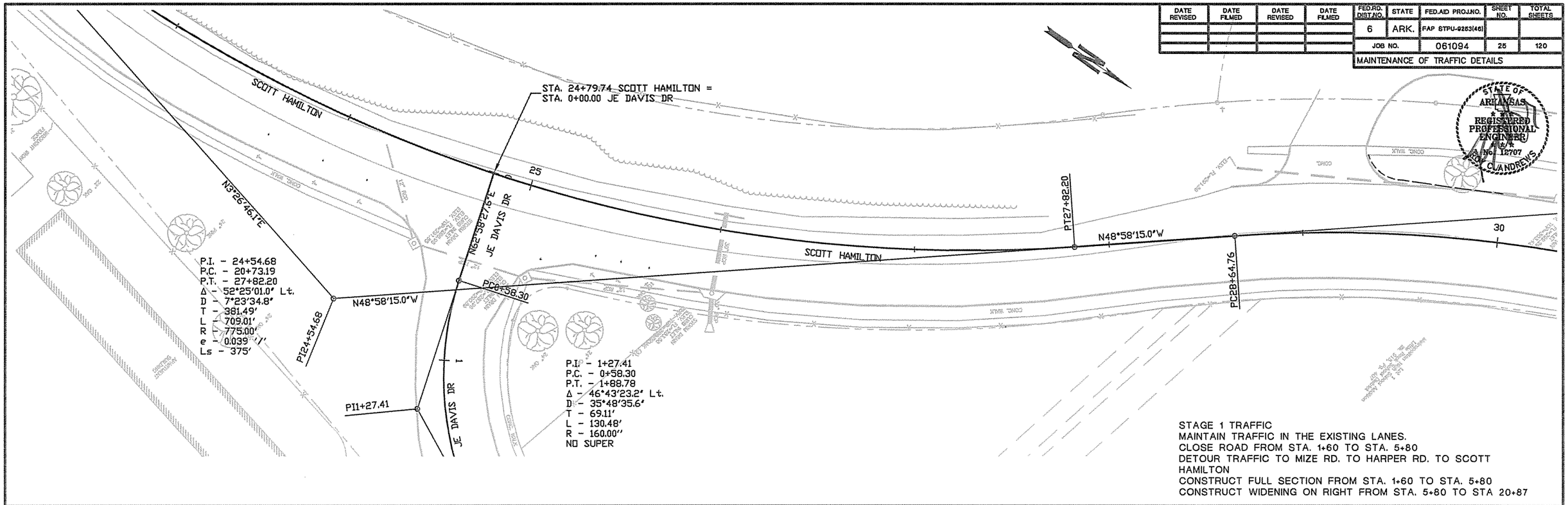
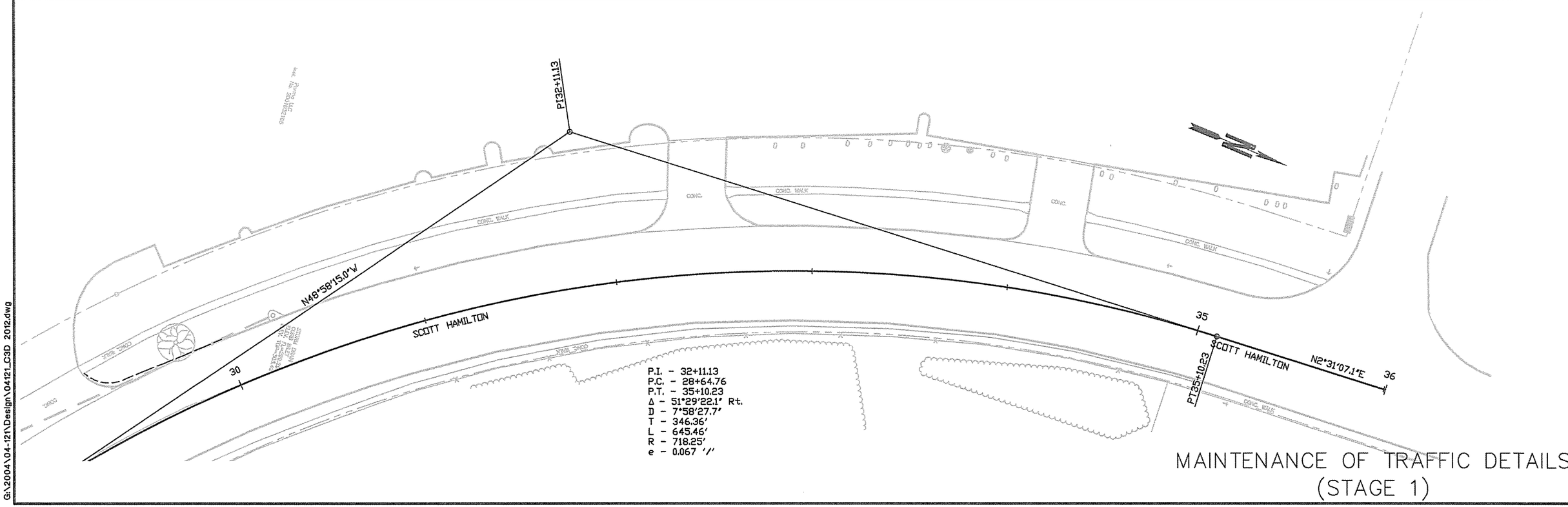
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	25	120

MAINTENANCE OF TRAFFIC DETAILS



STAGE 1 TRAFFIC
MAINTAIN TRAFFIC IN THE EXISTING LANES.
CLOSE ROAD FROM STA. 1+60 TO STA. 5+80
DETOUR TRAFFIC TO MIZE RD. TO HARPER RD. TO SCOTT HAMILTON
CONSTRUCT FULL SECTION FROM STA. 1+60 TO STA. 5+80
CONSTRUCT WIDENING ON RIGHT FROM STA. 5+80 TO STA 20+87



MAINTENANCE OF TRAFFIC DETAILS
(STAGE 1)

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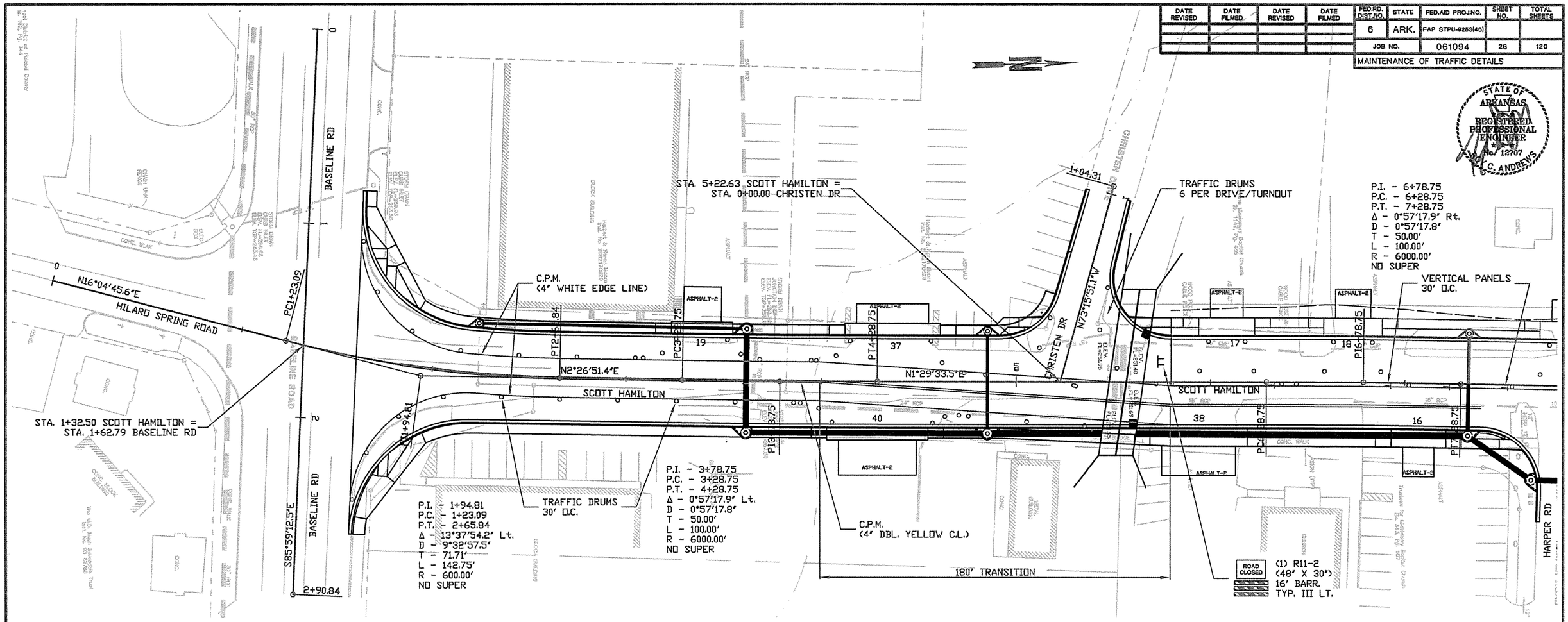
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	26	120

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 R.C. ANDREWS



STAGE 2 TRAFFIC
PLACE TRAFFIC ON RIGHT ON NEW WIDENING AND EXISTING LANES.
CONSTRUCT WIDENING ON LEFT FROM STA. 5+80 TO STA. 30+00.

STAGE 2 QUANTITIES:
- SIGNS = 20 SQ. FT.
- VERTICAL PANELS = 55 EACH
- TRAFFIC DRUMS = 126 EACH
- BARRICADES = 40 LIN. FT.
- REMOVAL OF PERMANENT PAVEMENT MARKINGS = 451 LIN. FT.
- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 2401 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS = 6746 LIN. FT.

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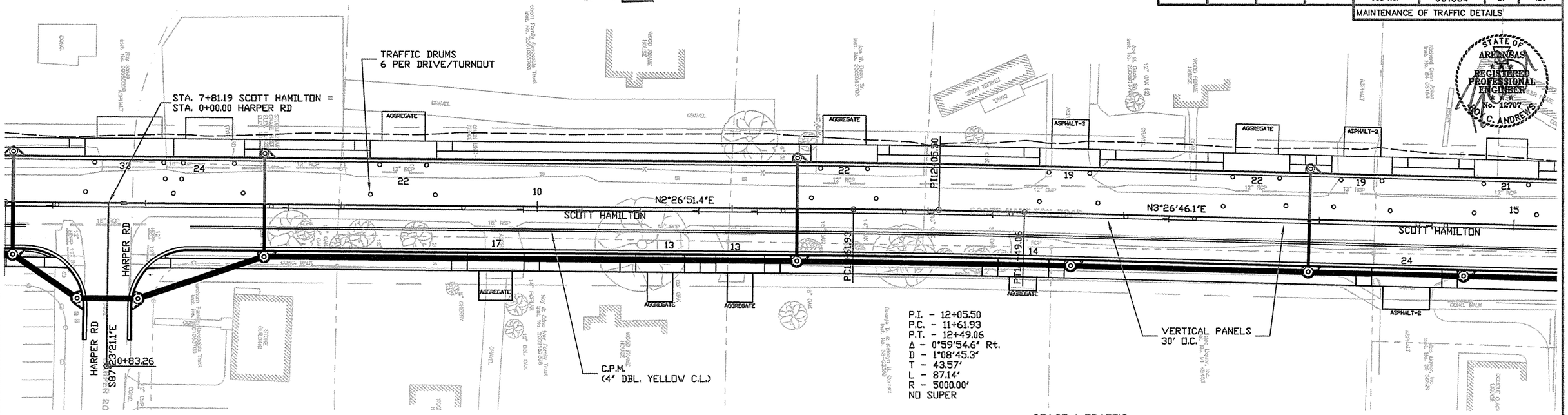
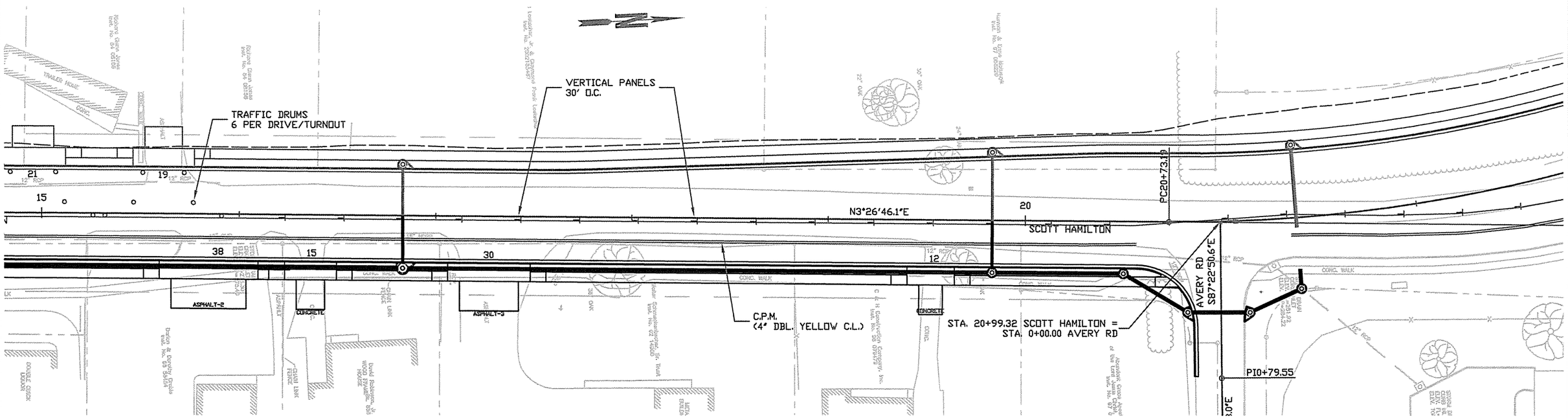
MAINTENANCE OF TRAFFIC DETAILS (STAGE 2)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	27	120

MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 TRAFFIC
PLACE TRAFFIC ON RIGHT ON NEW WIDENING AND EXISTING LANES.
CONSTRUCT WIDENING ON LEFT FROM STA. 5+80 TO STA. 30+00.



MAINTENANCE OF TRAFFIC DETAILS
(STAGE 2)

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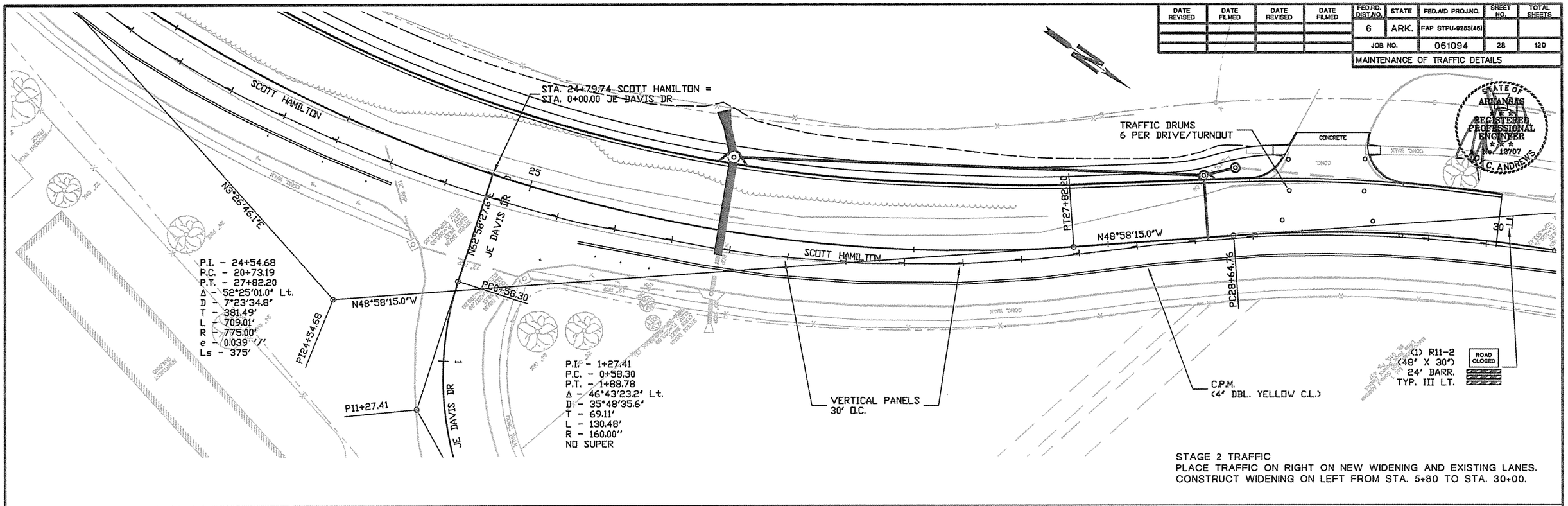
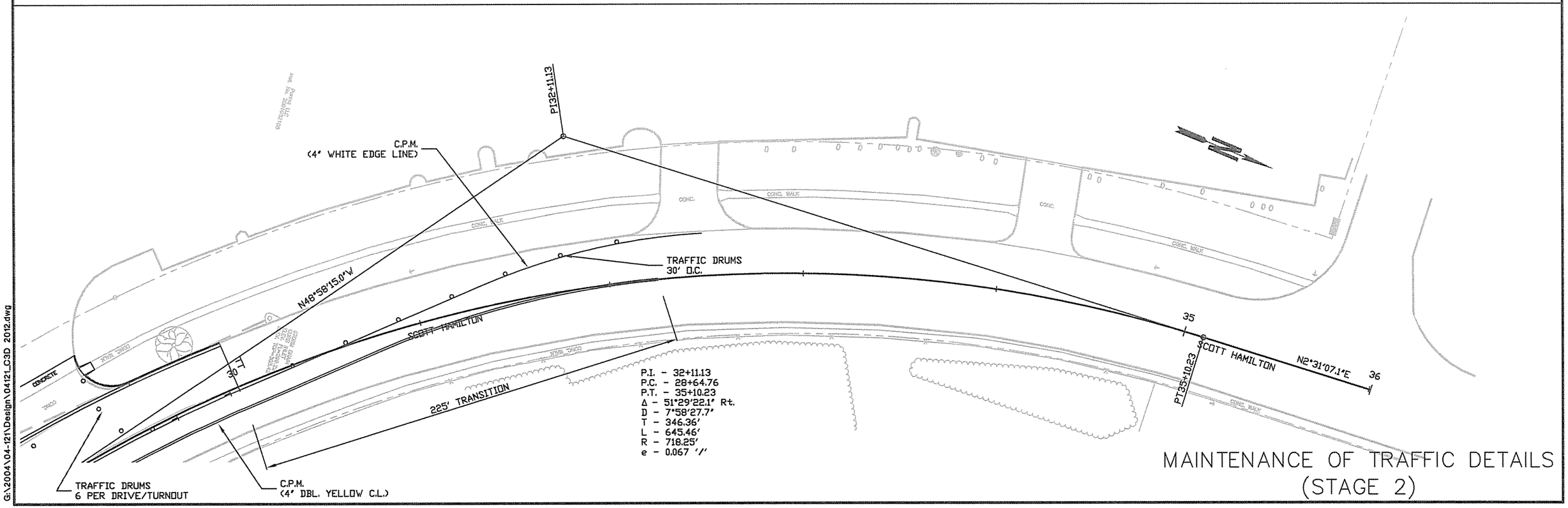
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	28	120

MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 TRAFFIC
PLACE TRAFFIC ON RIGHT ON NEW WIDENING AND EXISTING LANES.
CONSTRUCT WIDENING ON LEFT FROM STA. 5+80 TO STA. 30+00.



MAINTENANCE OF TRAFFIC DETAILS
(STAGE 2)

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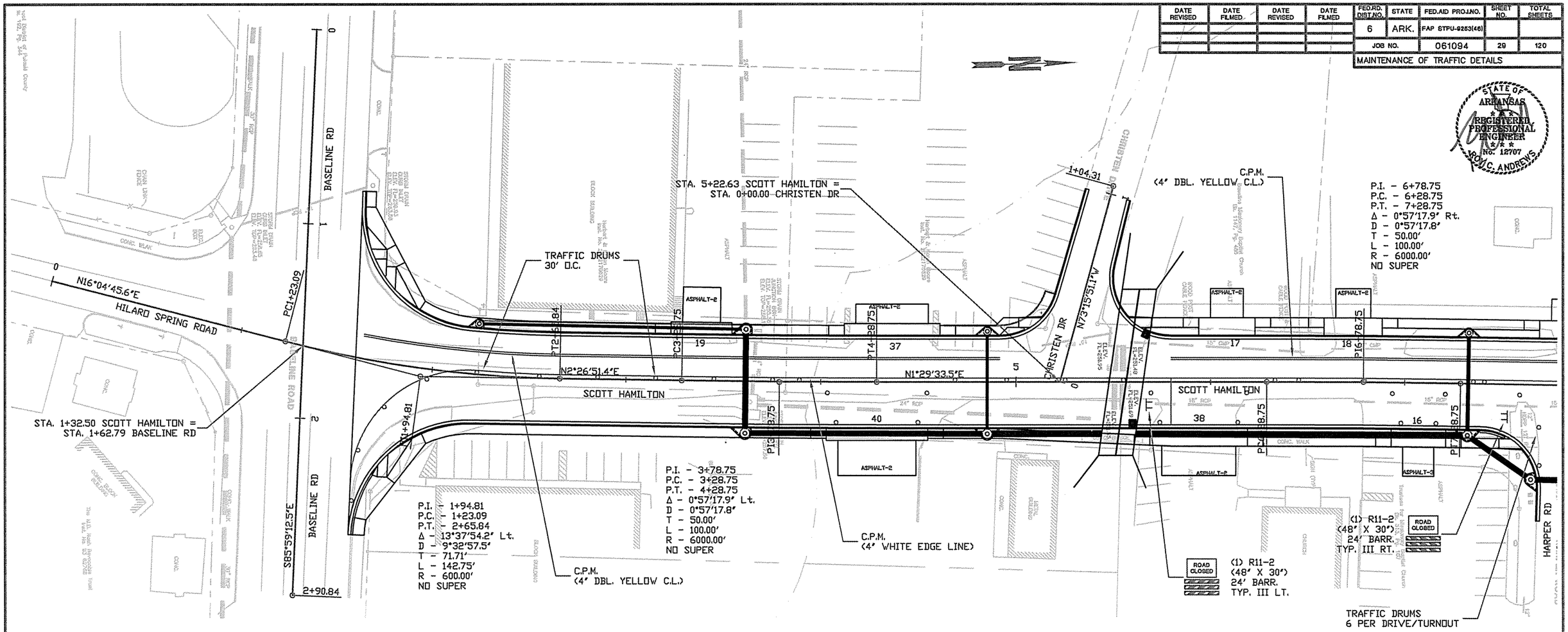
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	29	120

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 JOHN C. ANDREWS



STAGE 3 TRAFFIC
PLACE TRAFFIC ON LEFT SIDE ON NEW WIDENING.
CONSTRUCT WIDENING ON LEFT FROM STA. 5+80 TO STA. 30+00.

STAGE 3 QUANTITIES:
- SIGNS = 70 SQ. FT.
- TRAFFIC DRUMS = 151 EACH
- BARRICADES = 224 LIN. FT.
- REMOVAL OF PERMANENT PAVEMENT MARKINGS = 195 LIN. FT.
- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 1269 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS = 6875 LIN. FT.

MAINTENANCE OF TRAFFIC DETAILS (STAGE 3)

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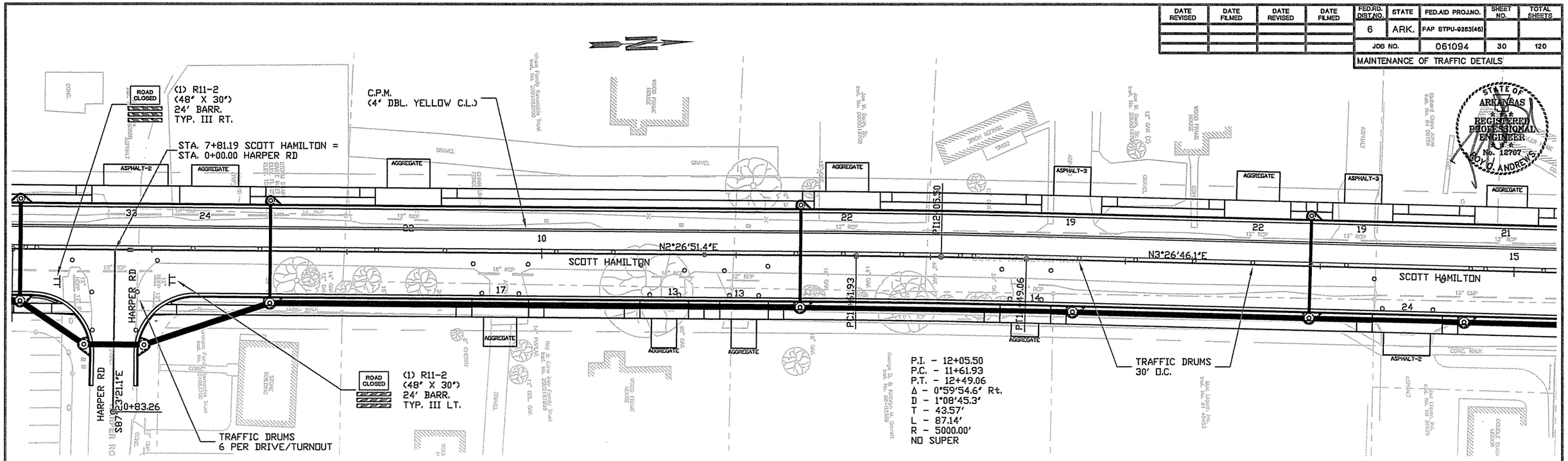
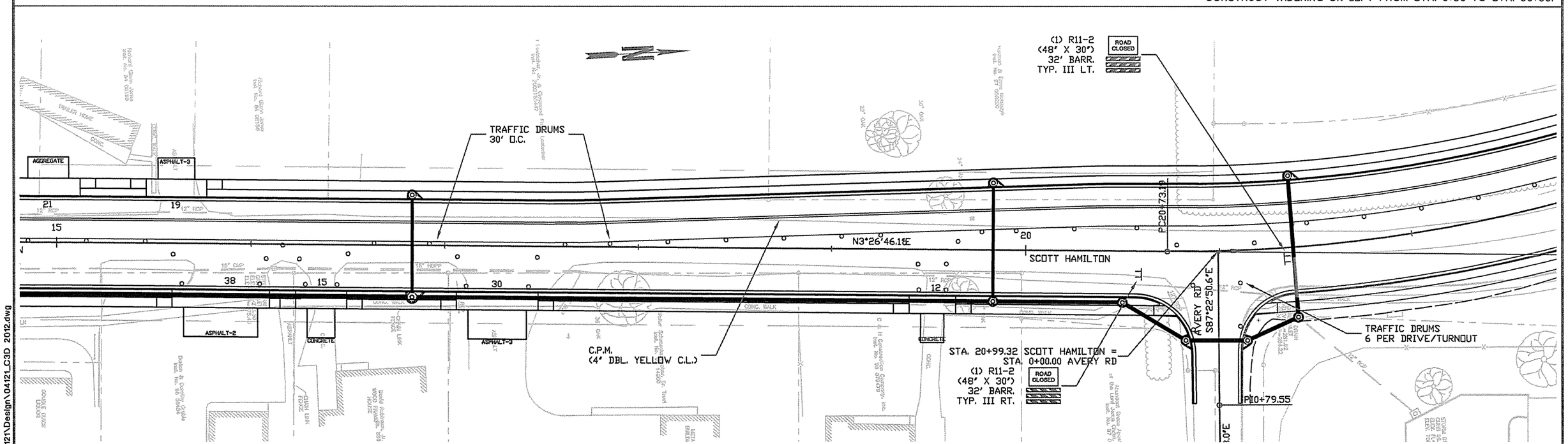
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9283(46)		
				JOB NO.		061094	30	120

MAINTENANCE OF TRAFFIC DETAILS



STAGE 3 TRAFFIC
PLACE TRAFFIC ON LEFT SIDE ON NEW WIDENING.
CONSTRUCT WIDENING ON LEFT FROM STA. 5+80 TO STA. 30+00.



MAINTENANCE OF TRAFFIC DETAILS
(STAGE 3)

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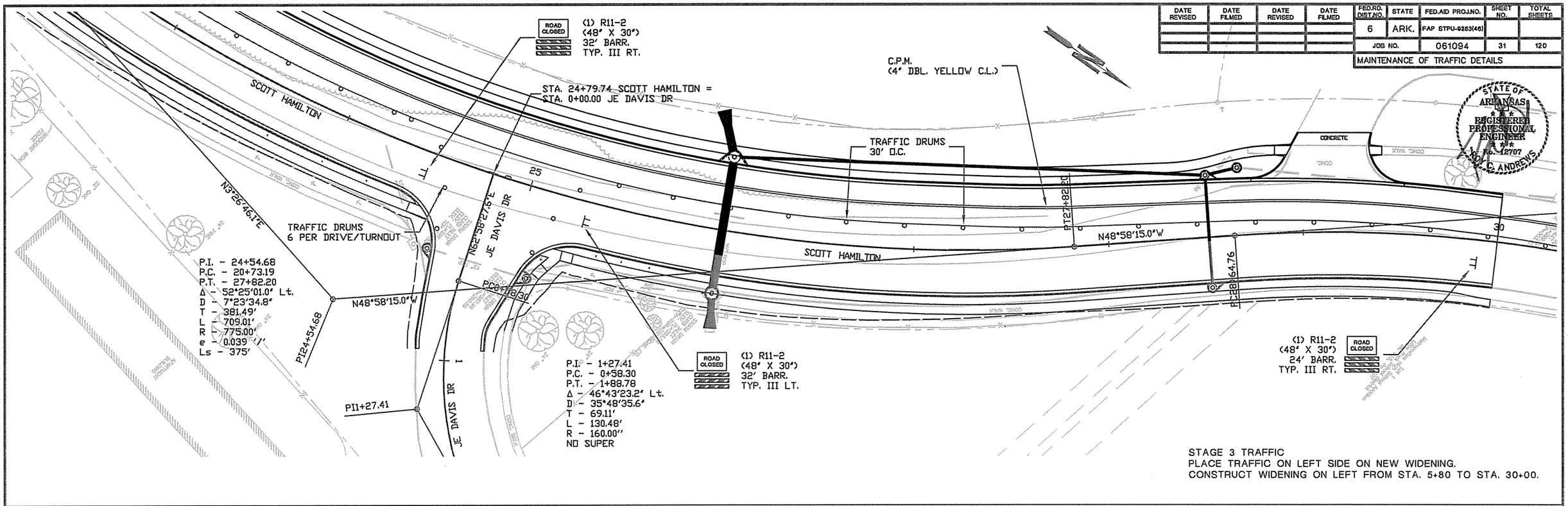
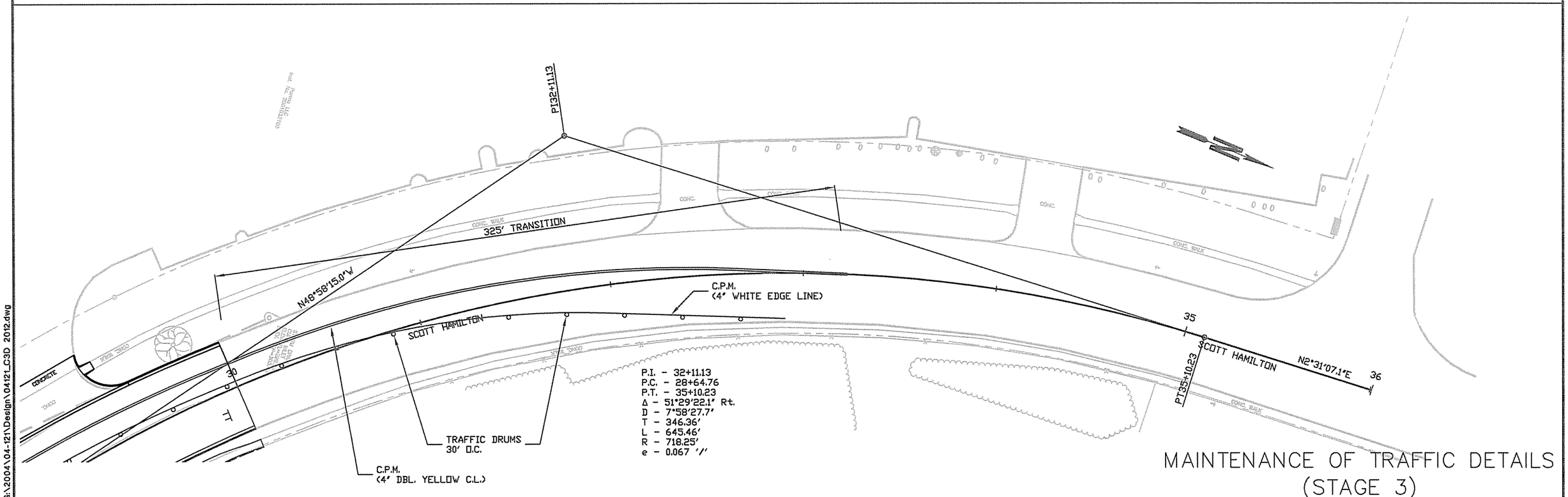
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9263(46)		
				JOB NO.		061094	31	120

MAINTENANCE OF TRAFFIC DETAILS



STAGE 3 TRAFFIC
PLACE TRAFFIC ON LEFT SIDE ON NEW WIDENING.
CONSTRUCT WIDENING ON LEFT FROM STA. 5+80 TO STA. 30+00.



MAINTENANCE OF TRAFFIC DETAILS
(STAGE 3)

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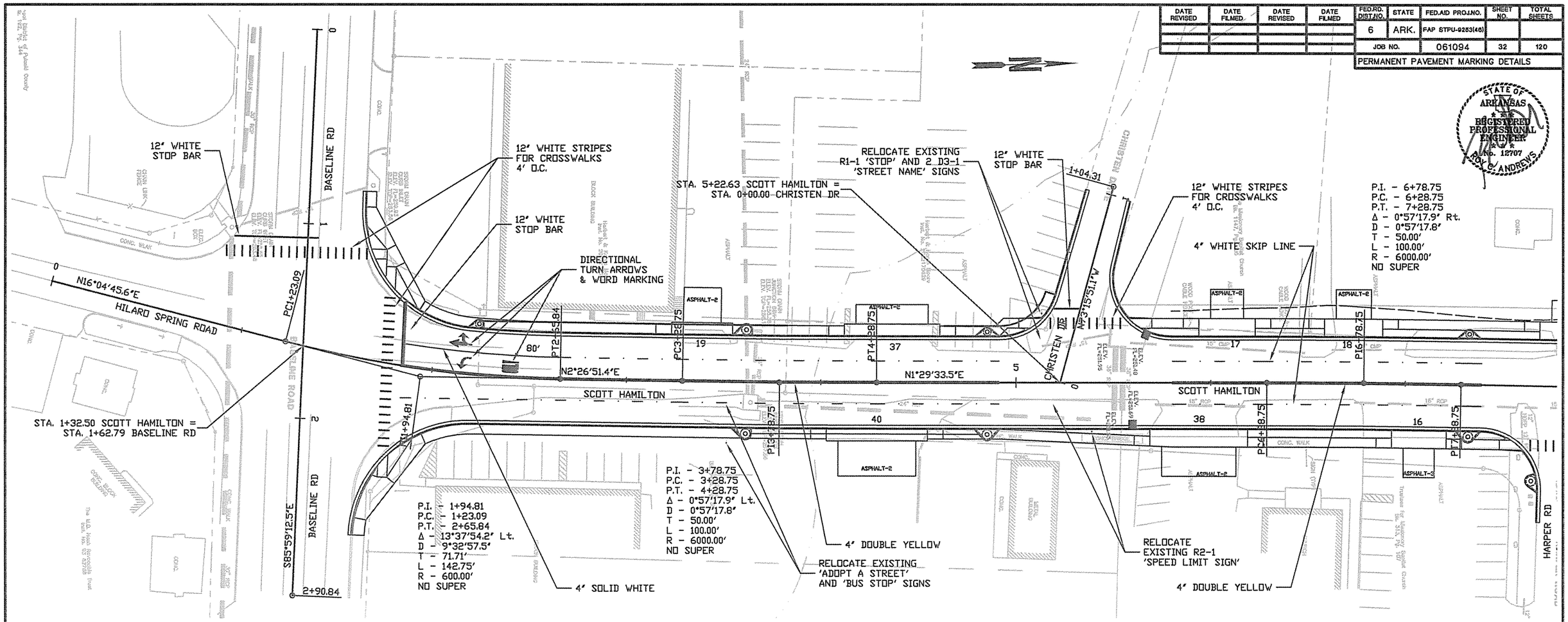
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9283(46)		
				JOB NO.		061094	32	120

PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
ROY C. ANDREWS
REG. NO. 12707



FINAL STRIPING QUANTITIES:
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4") = 1528 LIN.FT.
THERMOPLASTIC PAVEMENT MARKINGS WHITE (12") = 540 LIN.FT.
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4") = 6773 LIN.FT.
THERMOPLASTIC PAVEMENT MARKINGS WORDS = 4 EACH
THERMOPLASTIC PAVEMENT MARKINGS ARROWS = 6 EACH

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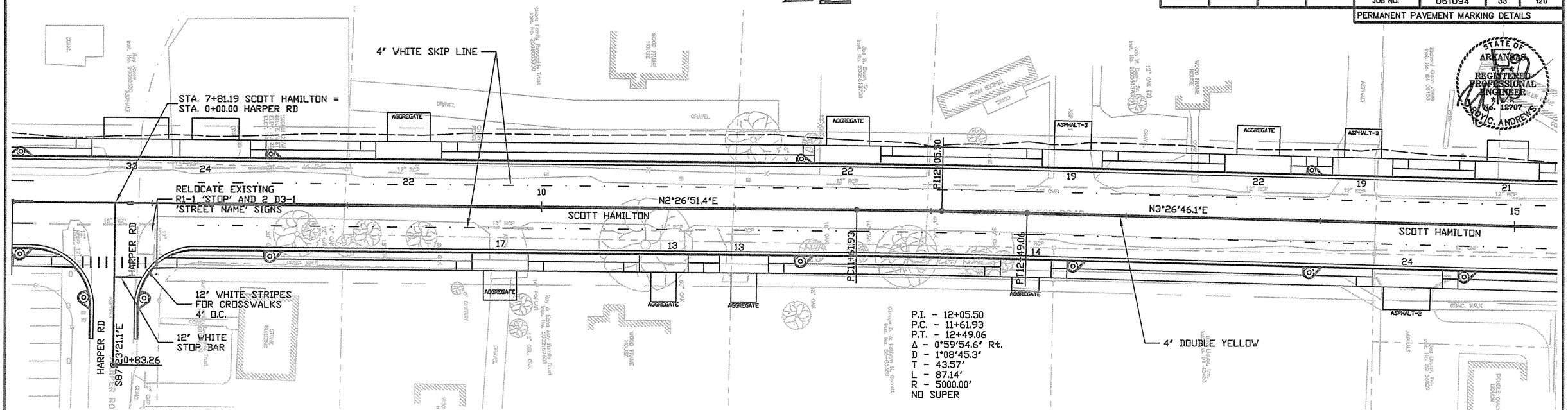
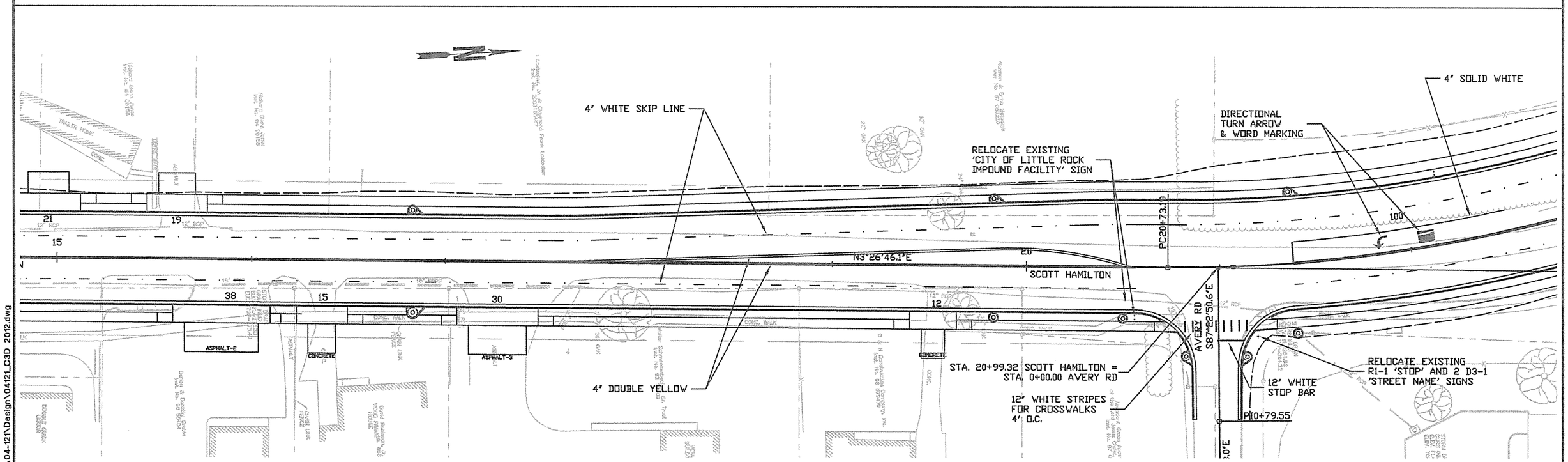
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9263(46)		
				JOB NO.		061094	33	120

PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS





PERMANENT PAVEMENT MARKING DETAILS

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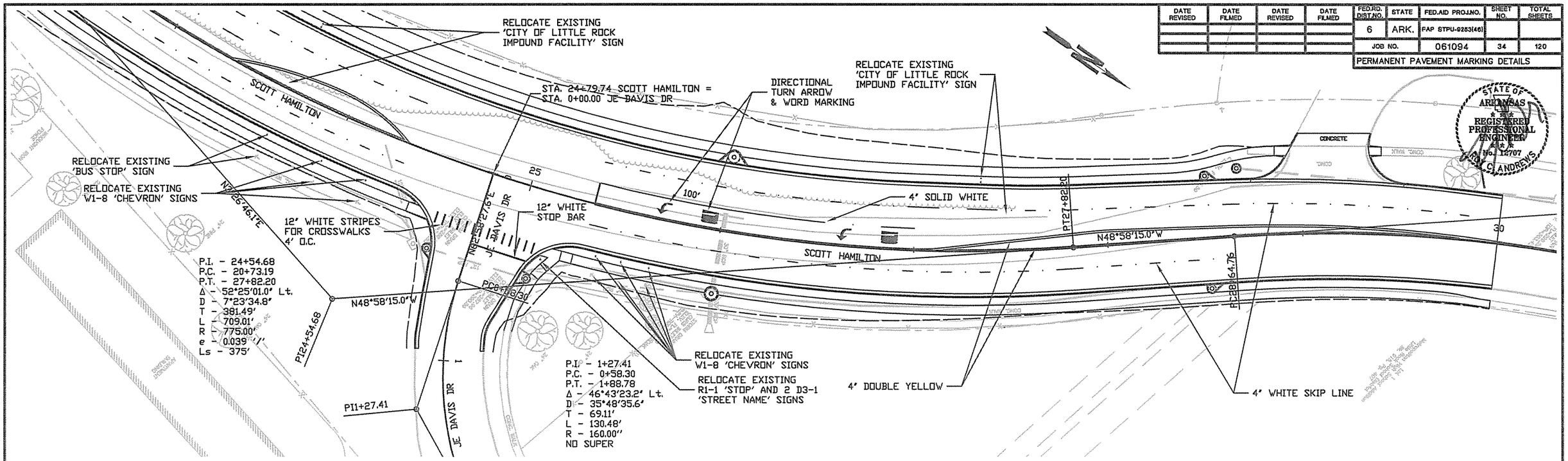
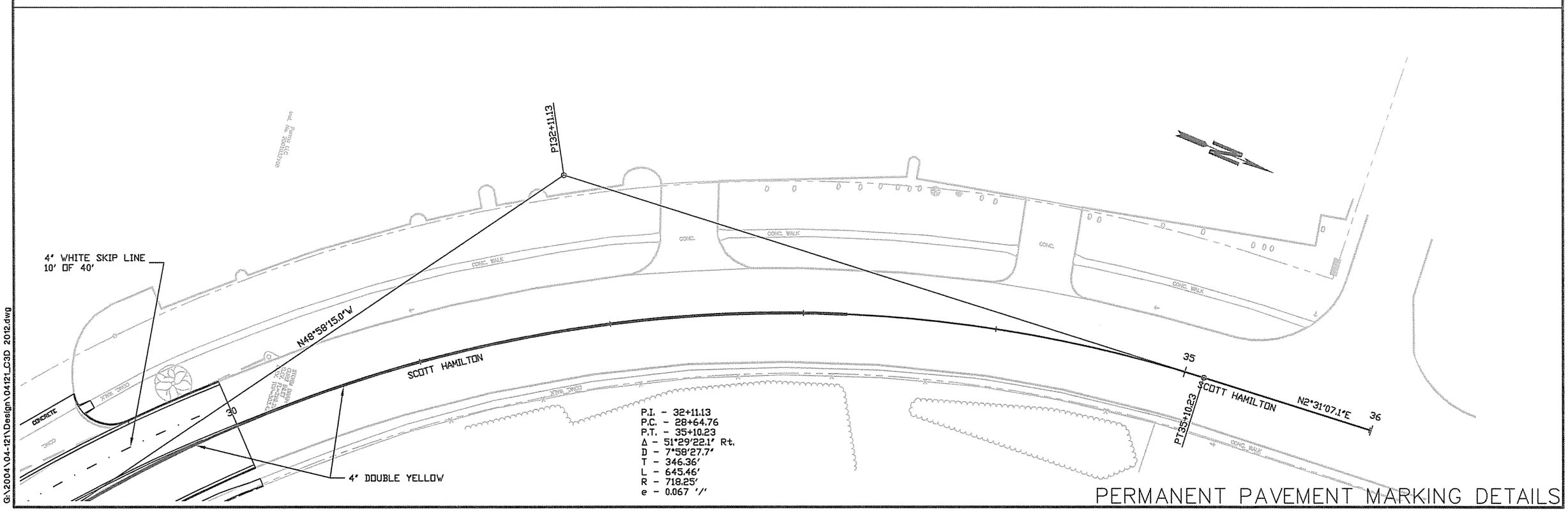
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	34	120

PERMANENT PAVEMENT MARKING DETAILS





PERMANENT PAVEMENT MARKING DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	35	120
				QUANTITY SHEET				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 JOHN C. ANDREWS

REMOVAL AND DISPOSAL ITEMS (BOX 1 OF 2)

STATION	STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS	JUNCTION BOXES	CURB	CURB & GUTTER	CONCRETE DRIVEWAYS	CONCRETE WALKS	GUARD CABLE	HANDRAIL	FOOT BRIDGE
			EACH			LIN. FT.		SQ.YD.		LIN. FT.		EACH
1+47	2+13	CURB AND GUTTER AND WALK LT. & RT.					193		172			
3+27	3+69	WALK ON RT.							23			
3+39		DRIVE ON LT.						20				
3+62		24" X 28' R.C.P.	1									
3+64		JUNCTION BOX			1							
3+65		JUNCTION BOX			1							
3+65		24" X 33' R.C.P.	1									
4+29		24" X 171' R.C.P. - R.S.D	1									
4+36		DRIVE ON LT.						35				
4+53		24" X 172' R.C.P.	1									
4+60	5+34	WALK ON RT.							42			
5+34	5+65	FOOTBRIDGE ON RT.										1
5+57		DBL. 36" X 34' R.C.P.	2									
5+65	7+70	WALK ON RT.							115			
5+67	6+50	WOOD POST & CABLE ON LT.								85		
5+94		18" X 46' R.C.P. - R.S.D	1									
6+08		18" X 90' R.C.P. - L.S.D	1									
6+50	9+00	STEEL POST & CABLE ON LT.								250		
6+73		12" X 40' C.M.P. - L.S.D	1									
6+78	7+03	STEEL POST & CABLE ON RT.								26		
7+27	7+49	STEEL POST & CABLE ON RT.								22		
7+60		12" X 13' R.C.P. - R.S.D	1									
7+60		12" X 9' HDPE PIPE CULVERT - R.S.D	1									
7+81		15" X 39' R.C.P. - R.S.D	1									
7+92		15" X 41' C.M.P. - L.S.D	1									
7+93	19+49	WALK ON RT.							625			
8+00		12" X 12' R.C.P. - R.S.D	1									
8+01		12" X 6' HDPE PIPE CULVERT - R.S.D	1									
8+32		15" X 41' C.M.P. - L.S.D	1									
8+61		DROP INLET ON LT.		1								
8+82		12" X 40' R.C.P. - L.S.D	1									
9+31		12" X 22' R.C.P. - L.S.D	1									
9+79		18" X 29' R.C.P. - R.S.D	1									
10+63		12" X 22' R.C.P. - R.S.D	1									
11+04		12" X 17' R.C.P. - R.S.D	1									
11+57		12" X 22' R.C.P. - L.S.D	1									
12+49		12" X 23' R.C.P. - R.S.D	1									
12+61		WALK ON LT.							9			
12+72		12" X 101' R.C.P. - L.S.D	1									
13+35		WALK ON LT.							10			
13+67		12" X 22' R.C.P. - L.S.D	1									
14+21		12" X 28' R.C.P. - L.S.D	1									
14+46		12" X 97' C.M.P. - R.S.D	1									
SUBTOTALS THIS SHEET			27	1	2	0	193	55	996	383	0	1

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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.	FAP STPU-0283(46)		
				JOB NO.		061094	36	120
				QUANTITY SHEET				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 J. C. ANDREWS

REMOVAL AND DISPOSAL ITEMS (BOX 2 OF 2)

STATION	STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS	JUNCTION BOXES	CURB	CURB & GUTTER	CONCRETE DRIVEWAYS	CONCRETE WALKS	GUARD CABLE	HANDRAIL	FOOT BRIDGE
			EACH			LIN. FT.		SQ.YD.		LIN. FT.		EACH
14+48		DRIVE ON RT.						45				
14+64		WALK ON LT.							1			
14+68	15+23	CURB ON RT.				55						
14+95		12" X 21' R.C.P. - L.S.D	1						1			
15+30	15+71	CURB ON RT.				52						
15+30	15+51	WALK ON LT.							9			
15+61		12" X 39' R.C.P. - L.S.D	1									
15+85		15" X 85' C.M.P. - R.S.D	1									
16+11		DROP INLET ON RT.		1								
16+11		CURB ON RT.				13						
16+36		18" X 79' HDPE PIPE CULVERT - R.S.D	1									
17+06		12" X 13' R.C.P. - R.S.D	1									
17+27		18" X 79' HDPE PIPE CULVERT - R.S.D	1									
17+61		12" X 13' R.C.P. - R.S.D	1									
17+62	17+77	METAL HANDRAIL									30	
18+23		12" X 20' R.C.P. - R.S.D	1									
19+56		DRIVE ON RT.						40				
19+58	20+83	WALK ON RT.							69			
20+74		12" X 13' R.C.P. - R.S.D	1									
20+97		12" X 51' R.C.P. - R.S.D	1									
21+08	24+72	CURB AND GUTTER AND WALK ON RT.					469		157			
21+24		DROP INLET ON RT.		1								
24+51		DROP INLET ON RT.		1								
24+99	30+00	CURB AND GUTTER AND WALK ON LT.					547		231			
25+09		DROP INLET ON RT.		1								
25+97		DROP INLET ON RT.		1								
26+01		36" X 41' R.C.P.	1									
28+64	28+95	CURB AND GUTTER AND WALK ON LT.					14		9			
29+12		DRIVE ON LT.						104				
29+32	29+39	WALK ON LT.							4			
29+47	30+00	CURB AND GUTTER ON LT.					55					
SUBTOTALS PREVIOUS SHEET			27	1	2	0	193	55	996	383	0	1
SUBTOTALS THIS SHEET			11	5	0	120	1085	189	481	0	30	0
TOTALS			38	6	2	120	1278	244	1477	383	30	1

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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.	FAP STPU-9283(46)		
				JOB NO.		061094	37	120
				QUANTITY SHEET				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 JON C. ANDREWS

SOIL LOG

STATION	LOCATION	DEPTH (FEET)	LIQUID LIMIT	PLASTICITY INDEX	AASHTO SOIL GROUP	COLOR
2+78	20' LT	0.5-2.5	38	22	A-6(7)	BROWN
2+78	20' LT	2.5-4			A-6	RD TAN/GR
2+78	20' LT	4-6.5			A-2-4	GRAY
2+78	20' LT	6.5-10			A-6	GRAY
10+68	8' LT	1.5-2.5	19	4	A-2-4(0)	BROWN
10+68	8' LT	2.5-10	32	13	A-6(5)	GRAY/TAN
17+56	14' LT	1.5-2.5	17	1	A-2-4(0)	GRAY/TAN
17+56	14' LT	2.5-8			A-6	GRAY/TAN
17+56	14' LT	8-10			A-7-6	GRAY/TAN
24+43	8' LT	0-0.5			A-5	BROWN
24+43	8' LT	0.5-2	35	18	A-4(7)	TAN
24+43	8' LT	2-10			A-6	TAN/RD TAN
28+41	12' LT	1-2	28	10	A-4(2)	GRAY
28+41	12' LT	2-5.5			A-6	TAN
28+41	12' LT	5.5-8			A-7-6	GRAY/TAN
28+41	12' LT	8-10			A-6	GR/RD TAN

NOTE: 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 ABOVE TABULATIONS.

EARTHWORK

STATION	STATION	LOCATION	UNCLASS. EXCAVATION (CU.YDS.)	COMPACTED EMBANK. (CU.YDS.)
1+60	30+00	SCOTT HAMILTON DR. - MAIN LANES	3379	3856
ENTIRE	PROJECT	DRIVES	139	34
ENTIRE	PROJECT	DRIVE APPROACHES	125	91
0+23	0+99	CHRISTEN RD.	21	149
0+22	0+70	HARPER RD.	56	26
0+22	0+79	AVERY RD.	51	40
0+23	0+95	J.E. DAVIS DR.	41	67
5+57		CHANNEL CHANGE FOR BOX CULVERT	616	5
ENTIRE	PROJECT	UNDERCUT AREAS ×	1000	1000
TOTALS			5428	5268

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE EXCEPT UNDERCUT AREAS ARE TO BE PAID AS PLAN QUANTITY.
×UNDERCUT QUANTITIES ARE ESTIMATED AND ARE TO USED IF AND WHERE DIRECTED BY THE ENGINEER.

FENCE REMOVED AND RECONSTRUCTED

STATION	STATION	SIDE	CHAIN LINK (LIN. FT.)
5+35	5+63	RT.	28
9+01	11+98	LT.	297
TOTAL			325

BENCH MARKS

LOCATION	BENCH MARKS (EACH)
STA. 5+51 R.C. BOX CULVERT	1
HEADWALL ON RT.	

SHOWN FOR INFORMATIONAL PURPOSES ONLY. BENCH MARKS ARE TO BE FURNISHED, PLACED AND RECORDED BY STATE FORCES.

CLEARING AND GRUBBING

STATION	STATION	CLEARING (STATION)	GRUBBING (STATION)
8+00	29+00	12	17
TOTALS		12	17

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	ACHM PATCHING (TON)	TACK COAT (GALLON)
ENTIRE PROJECT - IF AND WHERE	14	28
DIRECTED BY THE ENGINEER		
TOTALS	14	28

BASIS OF ESTIMATE:
A.C. PATCHING - 25 TONS PER MILE
TACK COAT - 50 GALLONS PER MILE

NOTE: QUANTITIES ESTIMATED - SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

MAILBOXES

STATION	MAILBOXES (EACH)	MAILBOX SUPPORTS (SINGLE) (EACH)
ENTIRE PROJECT	6	6
TOTALS	6	6

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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.	FAP STPU-9253(46)		
				JOB NO.		061094	38	120
				QUANTITY SHEET				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 J. C. ANDREWS

MAINTENANCE OF TRAFFIC

LOCATION	TRAFFIC DRUMS	VERTICAL PANELS	BARRICADES	CONSTR. PAVEMENT MARKINGS	REMOVAL OF PERM. PVMT. MARKINGS	REMOVAL OF CONST.PVMT. MARKINGS
	EACH		LIN. FT.			
ENTIRE PROJECT AS SHOWN	348	95	416	16497	646	3670
ON THE MAINT. OF						
TRAFFIC DETAILS						
TOTALS	348	95	416	16497	646	3670

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

PERMANENT PAVEMENT MARKINGS

LOCATION	THERMOPLASTIC PAVEMENT MARKINGS				
	4" WHITE	12" WHITE	4" YELLOW	WORDS	ARROWS
	LIN. FT.			EACH	
ENTIRE PROJECT AS SHOWN	1528	540	6773	4	6
IN THE PERMANENT PAVEMENT					
MARKING DETAILS					
TOTALS	1528	540	6773	4	6

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

MAINTENANCE OF TRAFFIC

LOCATION	SIGN	SQ. FT.
ENTIRE PROJECT	D3-1	35
AS SHOWN ON	G20-1	16
THE MAINT. OF	G20-2	24
TRAFFIC DETAILS	M4-8	8
	M4-8a	6
	M4-9	35
	M4-10	12
	M5-1R	9
	R11-2	70
	W20-1	112
TOTAL		327

TEMPORARY EROSION CONTROL

LOCATION	SILT FENCE (E-11)	DROP INLET SILT FENCE (E-7)	ROCK DITCH CHECKS (E-6)	×SEDIMENT REMOVAL & DISPOSAL	×EROSION CONTROL MATTING (CLASS 2)	×EROSION CONTROL MATTING (CLASS 3)	TEMPORARY SEEDING	WATER	MULCH
	LIN. FT.		CU.YD.		SQ.YD.		ACRE	M.GAL.	ACRE
ENTIRE PROJECT AS SHOWN	3125	825	155	50	50	50	0.48	9.8	0.48
IN THE TEMPORARY EROSION									
CONTROL DETAILS									
TOTALS	3125	825	155	50	50	50	0.48	9.8	0.48

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

BASIS OF ESTIMATE: WATER= 20.4 M.G. PER ACRE (TEMPORARY SEEDING)
× QUANTITIES ESTIMATED - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STD. SPECS.

EROSION CONTROL

LOCATION	LIME	MULCH COVER	SEEDING	SECOND SEEDING APPLICATION	SOLID SODDING	TOPSOIL	WATER
	TON	ACRE			SQ.YD.	CU.YD.	M.GAL.
ENTIRE PROJECT	1.0	0.96	0.48	0.48	2008	112	74.3
TOTALS	1.0	0.96	0.48	0.48	2008	112	74.3

BASIS OF ESTIMATE: LIME= 2 TONS PER ACRE (SEEDING)
WATER= 102.0 M.G. PER ACRE (SEEDING); 12.6 GAL. PER SQ. YD. (SOLID SODDING)

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT - IF AND WHERE	100
DIRECTED BY THE ENGINEER	
TOTALS	100

NOTE: QUANTITIES ESTIMATED - SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

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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.	FAP STPU-9283(46)		
JOB NO.		061094	39	120

QUANTITY SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 D. C. ANDREWS

CONCRETE ITEMS

STATION	STATION	SIDE	CONCRETE COMBINATION CURB & GUTTER (TYPE A)(2'-0")	CONCRETE WALKS	WHEELCHAIR RAMPS	
					TYPE 1	TYPE 3
			LIN. FT.	SQ.YDS.	SQ.YDS.	
1+47	5+13	LT.	371	107	67	5
5+58	30+00	LT.	2395	1081		13
1+73	7+61	RT.	612	205	62	5
8+01	20+78	RT.	2830	454		10
21+16	24+56	RT.	307	183		10
25+13	30+00	RT.	469	259		16
CHRISTEN DR.		LT.	95			
CHRISTEN DR.		RT.	88			
HARPER RD.		LT.	63			
HARPER RD.		RT.	64			
AVERY RD.		LT.	71			
AVERY RD.		RT.	72			
J.E. DAVIS DR.		LT.	83	15		
J.E. DAVIS DR.		RT.	91			
TOTALS			7611	2304	129	59

COLD MILLING ASPHALT PAVEMENT

LOCATION	COLD MILLING
	SQ. YD.
ENTIRE PROJECT - IF AND WHERE	500
DIRECTED BY THE ENGINEER ×	
TOTAL	500

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

HAND RAILING

STATION	STATION	SIDE	HAND RAILING
			LIN. FT.
5+43	5+60	RT.	17
5+55	5+72	LT.	17
TOTAL			34

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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.	FAP STPU-9263(46)		
				JOB NO.		061094	40	120
				QUANTITY SHEET				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS

DRIVEWAYS

STATION	SIDE	WIDTH	EXTENSION LENGTH			PCC DRIVEWAY		AGG. BASE COURSE (CLASS 7) (7" DEPTH)	ACHM SURFACE CRSE.(1/2") 220 LB/SQ.YD. (PG70-22)	ACHM BINDER CRSE.(1") 440 LB/SQ.YD. (PG70-22)
			PCC	ACHM	AGG.	TURNOUT	EXTENSION			
			LIN. FT.			SQ.YD.		TON		
3+39	LT.	19		18		20.92			4.2	8.4
4+29	RT.	40		18		34.66			8.8	17.6
4+37	LT.	37		10		32.67			4.5	9.0
5+94	RT.	38		15		49.72			7.0	14.0
6+08	LT.	17		15		28.83			3.1	6.2
6+73	LT.	18		15		30.02			3.3	6.6
7+07	RT.	16		15		28.02		10.9	2.9	
7+92	LT.	33		11		45.00			4.4	8.9
8+32	LT.	24			11	36.00		12.0		
9+31	LT.	22			15	34.00		14.9		
9+79	RT.	17			15	29.00		11.6		
10+63	RT.	13			15	25.00		8.9		
11+04	RT.	13			15	25.00		8.9		
11+57	LT.	22			15	33.99		14.9		
12+49	RT.	14			7	25.99		4.4		
12+72	LT.	19		15		31.00		13.0	3.5	
13+67	LT.	22			15	34.00		14.9		
14+21	LT.	19		15		31.00		13.0	3.5	
14+46	RT.	24		12		36.00			3.5	7.0
14+95	LT.	21			11	33.00		10.5		
15+61	LT.	19		11		31.00		9.5	2.6	
15+85	RT.	38		15		50.00			7.0	14.0
16+36	RT.	15	15			26.42	24.03			
17+27	RT.	30		15		42.00		20.5	5.5	
19+52	RT.	12	15			24.00	20.00			
29+13	LT.	38				141.82				
ENTIRE	PROJECT	TEMPORARY	DRIVES					100.0		
TOTALS						959.06	44.03	267.9	63.8	91.7

BASIS OF ESTIMATE:

VOLUME CONTROL OF MINERAL AGGEGATE AND ASPHALT BINDER IN:

ACHM SURFACE COURSE (1/2")	94.2% MIN. AGGR.	5.8% ASPH. BNDR.
ACHM BINDER COURSE (1")	94.8% MIN. AGGR.	5.2% ASPH. BNDR.

Nmax=160

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FOR CONCRETE PIPE CULVERT DETAILS, REFER TO STD. DRWG. NO. PCC-1.
FOR FLARED END SECTION DETAILS, REFER TO STD. DRWG. NOS. FES-1 & FES-2.
FOR DROP INLET DETAILS, REFER TO STD. DRWG. NOS. FPC-9, FPC-9M, & FPC-9E.
FOR R.C. BOX CULVERT DETAILS, REFER TO STD. DRWG. NOS. R-215X-0, W-X153-1, RCB-1, & RCB-2..

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15402 ANDREW W. FULLER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12/05/13				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	41	120
				QUANTITY SHEET				

STRUCTURES

STATION	DESCRIPTION	DROP INLETS TYPE MO	DROP INLETS TYPE C	JCT. BOX TYPE E	DROP INLET EXT. 4'	R.C. PIPE CULVERTS (CLASS III) 18"	24"	30"	36"	42"	48"	54"	ALT. PIPE CULVERTS 18"	24"	30"	36"	42"	F.E.S. FOR R.C. PIPE CULVT. 48"	54"	UNCLASSIFIED EXCAV. FOR STRUCTURES ROADWAY	CLASS S CONCRETE-ROADWAY	REINFORCING STEEL-ROADWAY GRADE (60)	SOLID SODDING AND WATER FOR BOX CULVERT	
		EACH				LIN. FT.							LIN. FT.					EACH		CU.YD.		POUND	SQ.YD.	M.GAL.
	SCOTT HAMILTON																							
2+22	CONST. D.I. LT. & PIPE OUTLET	1			1								133											
3+61	CONST. D.I. LT. & PIPE OUTLET	1			1				48															
3+61	CONST. D.I. RT. & PIPE OUTLET	1			1											119								
4+85	CONST. D.I. LT. & PIPE OUTLET	1			2	48																		
4+85	CONST. D.I. RT. & PIPE OUTLET	1			2												57							
5+57	CONST. DBL. 8'X5'X84' R.C. BOX 10° RT. FWD. SKEW W/3:1 WINGS LT. & RT.																			67	133.82	21004	15	0.2
5+60	CONST. D.I. RT.		1																					
5+67	CONST. D.I. LT.		1																					
7+33	CONST. D.I. LT. & PIPE OUTLET	1			2		48																	
7+33	CONST. D.I. RT. & PIPE OUTLET	1			2												168							
8+61	CONST. D.I. LT. & PIPE OUTLET	1			1	48																		
8+61	CONST. D.I. RT. & PIPE OUTLET	1			1											63								
11+33	CONST. D.I. LT. & PIPE OUTLET	1			1	48																		
11+33	CONST. D.I. RT. & PIPE OUTLET	1			1											268								
12+73	CONST. D.I. RT. & PIPE OUTLET	1			1										135									
13+95	CONST. D.I. LT. & PIPE OUTLET	1			1	48																		
13+95	CONST. D.I. RT. & PIPE OUTLET	1			1										117									
14+75	CONST. D.I. LT. & PIPE OUTLET	1			1										75									
16+83	CONST. D.I. LT. & PIPE OUTLET	1			1	48																		
16+83	CONST. D.I. RT. & PIPE OUTLET	1			1										204									
19+83	CONST. D.I. LT. & PIPE OUTLET	1			1	56																		
19+83	CONST. JCT. BOX RT. & PIPE OUTLET			1										295										
20+50	CONST. JCT. BOX RT. & PIPE OUTLET			1										63										
21+38	CONST. D.I. LT. & PIPE OUTLET	1			1		69																	
21+38	CONST. JCT. BOX RT. & PIPE OUTLET			1										25										
26+01	CONST. D.I. LT. & PIPE OUT. W/FES	1			2							13							1					
26+01	CONST. JCT. BOX RT. & PIPE INL. W/FES & OUT.			1							10	65						1						
28+52	CONST. D.I. LT. & PIPE OUTLET	1			1								237											
28+52	CONST. D.I. RT. & PIPE OUTLET	1			1	54																		
28+68	CONST. JCT. BOX LT. & PIPE OUTLET			1									13											
					1																			
	HARPER RD.																							
0+49	CONST. D.I. LT. & PIPE OUTLET	1			1				26															
0+49	CONST. D.I. RT. & PIPE OUTLET	1			1											35								
	AVERY RD.																							
0+46	CONST. D.I. LT. & PIPE OUTLET	1			1		28																	
0+46	CONST. D.I. RT. & PIPE OUTLET	1			1									34										
	J.E. DAVIS DR.																							
0+47	CONST. D.I. LT. & PIPE OUTLET	1			1																			
0+47	CONST. D.I. RT. & PIPE OUTLET	1			1																			
TOTALS		28	2	5	34	302	145	0	74	0	10	78	383	417	531	485	225	1	1	67	133.82	21004	15	0.2

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.

BASIS OF ESTIMATE: WATER= 12.6 GAL. PER SQ. YD. (SOLID SODDING)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	42	120
				QUANTITY SHEET				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS

BASE AND SURFACING

STATION	STATION	DESCRIPTION	LENGTH	TACK COAT			ACHM BASE CRSE. (1 1/2") (550 LBS. PER SQ. YD.) (PG70-22)			ACHM BINDER CRSE. (1") (330 LBS. PER SQ. YD.) (PG70-22)			ACHM SURF. CRSE. (1/2") (440 LBS. PER SQ. YD.) (PG70-22)		
			FEET	×AVG. WIDTH	SQ.YD.	GALLON	××AVG. WIDTH	SQ.YD.	TON	××AVG. WIDTH	SQ.YD.	TON	××AVG. WIDTH	SQ.YD.	TON
1+60	3+29	M.L. - FULL - 4 LANES	168.53	54.27	3054.4	91.6	61.54	1154.7	317.5	54.27	1018.1	168.0	54.27	1018.1	224.0
3+29	17+56	M.L. - FULL - 4 LANES	1427.87	44.00	20942.2	628.3	50.00	7932.6	2181.5	44.00	6980.7	1151.8	44.00	6980.7	1535.8
17+56	20+73	M.L. - FULL - TRANS.	316.57	49.50	5255.3	157.7	55.50	1962.9	539.8	49.50	1751.8	289.0	49.50	1751.8	385.4
20+73	27+00	M.L. - FULL - 5 LANES	626.81	55.00	11409.9	342.3	61.00	4218.2	1160.0	55.00	3803.3	627.4	55.00	3803.3	836.7
27+00	30+00	M.L. - FULL - TRANS.	300.00	49.94	4994.4	149.8	55.94	1864.7	512.8	49.94	1664.8	274.7	49.94	1664.8	366.3
0+23	0+99	CHRISTEN DR.	76.46	28.02	714.1	21.4	31.73	269.6	74.1	28.02	238.0	39.3	28.02	238.0	52.4
0+22	0+70	HARPER RD.	47.88	29.63	472.9	14.2	32.35	172.1	47.3	29.63	157.6	26.0	29.63	157.6	34.7
0+22	0+79	AVERY RD.	56.61	28.87	544.7	16.3	32.12	202.0	55.6	28.87	181.6	30.0	28.87	181.6	40.0
02+23	0+94	J.E. DAVIS DR.	71.74	42.87	1025.2	30.8	45.89	365.8	100.6	42.87	341.7	56.4	42.87	341.7	75.2
TOTALS					48413.1	1452.4		18142.6	4989.2		16137.6	2662.6		16137.6	3550.5

× TACK COAT------0.03 GAL. PER SQ.YD.
×× 110 LBS. PER SQ.YD. PER INCH DEPTH

BASIS OF ESTIMATE:
VOLUME CONTROL OF MINERAL AGGREGATE AND ASPHALT BINDER IN:

ACHM SURFACE COURSE (1/2")	94.2% MIN. AGGR.	5.8% ASPH. BNDR.
ACHM BINDER COURSE (1")	94.8% MIN. AGGR.	5.2% ASPH. BNDR.
ACHM BASE COURSE (1 1/2")	95.8% MIN. AGGR.	4.2% ASPH. BNDR.

Nmax=160

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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
12/05/13				6	ARK.	FAP STPU-9283(46)		
				JOB NO.		061094	43	120
				SUMMARY OF QUANTITIES				

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 16402 ANDREW W. FULLER

SUMMARY OF QUANTITIES (BOX 1 OF 3)

ITEM NO.	ITEM	QUANTITY	UNIT
201	CLEARING	12	STATION
201	GRUBBING	17	STATION
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	244	SQ.YD.
202	REMOVAL AND DISPOSAL OF CURB	120	LIN. FT.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	1278	LIN. FT.
202	REMOVAL AND DISPOSAL OF DROP INLETS	6	EACH
202	REMOVAL AND DISPOSAL OF FOOT BRIDGE	1	EACH
202	REMOVAL AND DISPOSAL OF GUARD CABLE	383	LIN. FT.
202	REMOVAL AND DISPOSAL OF HANDRAIL	30	LIN. FT.
202	REMOVAL AND DISPOSAL OF JUNCTION BOXES	2	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	38	EACH
202	REMOVAL AND DISPOSAL OF WALKS	1477	SQ.YD.
208	FENCE REMOVED AND RECONSTRUCTED	325	LIN. FT.
210	COMPACTED EMBANKMENT	5268	CU.YD.
210	UNCLASSIFIED EXCAVATION	5428	CU.YD.
SS&303	AGGREGATE BASE COURSE (CLASS 7)	268	TON
401	TACK COAT	1480	GAL
SP,SS,&405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	4779	TON
SP,SS,&405	ASPHALT BINDER (PG70-22) IN ACHM BASE COURSE (1 1/2")	210	TON
SP,SS,&406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	2611	TON
SP,SS,&406	ASPHALT BINDER (PG70-22) IN ACHM BINDER COURSE (1")	143	TON
SP,SS,&407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	3404	TON
SP,SS,&407	ASPHALT BINDER (PG70-22) IN ACHM SURFACE COURSE (1/2")	210	TON
412	COLD MILLING ASPHALT PAVEMENT	500	SQ.YD.
SP,SS,&414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	14	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY	1003.09	SQ.YD.
601	MOBILIZATION	1.00	LUMP SUM
SP&602	FURNISHING FIELD OFFICE	1	EACH
SS&603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS&604	SIGNS	327	SQ. FT.
SS&604	TRAFFIC DRUMS	348	EACH
SS&604	VERTICAL PANELS	95	EACH
SS&604	BARRICADES	416	LIN. FT.
SS&604	CONSTRUCTION PAVEMENT MARKINGS	16497	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	3670	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	646	LIN. FT.
SS&606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	302	LIN. FT.
SS&606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	145	LIN. FT.
SS&606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	74	LIN. FT.
SS&606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	10	LIN. FT.
SS&606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	78	LIN. FT.
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
606	54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH

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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
12/06/13				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	44	120
				SUMMARY OF QUANTITIES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 16402
ANDREW W. FULLER

SUMMARY OF QUANTITIES (BOX 2 OF 3)

	ITEM NO.	ITEM	QUANTITY	UNIT
×	SS&606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALTERNATE. NO. 1	383	LIN. FT.
×	606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE ALTERNATE. NO. 2	383	LIN. FT.
×	SS&606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALTERNATE. NO. 1	417	LIN. FT.
×	606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE ALTERNATE. NO. 2	417	LIN. FT.
×	SS&606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALTERNATE. NO. 1	531	LIN. FT.
×	606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE ALTERNATE. NO. 2	531	LIN. FT.
×	SS&606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALTERNATE. NO. 1	485	LIN. FT.
×	606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE ALTERNATE. NO. 2	485	LIN. FT.
×	SS&606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALTERNATE. NO. 1	225	LIN. FT.
×	606	42" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE ALTERNATE. NO. 2	225	LIN. FT.
	606	SELECTED PIPE BEDDING	100	CU.YD.
	609	DROP INLET EXTENSIONS (4')	34	EACH
	609	DROP INLETS (TYPE C)	2	EACH
	609	DROP INLETS (TYPE MO)	28	EACH
	609	JUNCTION BOXES (TYPE E)	5	EACH
	620	LIME	1	TON
	SS&620	MULCH COVER	1.44	ACRE
	620	SEEDING	0.48	ACRE
	SS&620	WATER	84.3	MGAL
	621	DROP INLET SILT FENCE	825	LIN. FT.
	621	ROCK DITCH CHECKS	155	CU.YD.
	621	SEDIMENT REMOVAL AND DISPOSAL	50	CU.YD.
	621	SILT FENCE	3125	LIN. FT.
	621	TEMPORARY SEEDING	0.48	ACRE
	623	SECOND SEEDING APPLICATION	0.48	ACRE
	624	SOLID SODDING	2023	SQ.YD.
	626	EROSION CONTROL MATTING (CLASS 2)	50	SQ.YD.
	626	EROSION CONTROL MATTING (CLASS 3)	50	SQ.YD.
	628	TOPSOIL FURNISHED AND PLACED	112	CU.YD.
	633	CONCRETE WALKS	2304	SQ.YD.
	633	HAND RAILING	34	LIN. FT.
	634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (2'0")	7611	LIN. FT.
	635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
	637	MAILBOXES	6	EACH
	637	MAILBOX SUPPORTS (SINGLE)	6	EACH
	641	WHEELCHAIR RAMPS (TYPE 1)	129	SQ.YD.
	641	WHEELCHAIR RAMPS (TYPE 3)	59	SQ.YD.

× DENOTES ALTERNATE BID ITEMS.

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12/05/13			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-0283(46)		
JOB NO.		061094	45	120

SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 16402 ANDREW W. FULLER

SUMMARY OF QUANTITIES (BOX 3 OF 3)

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1	EACH
SP	ANTENNA CABLE (TYPE 6)	60	LIN. FT.
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)	6	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1WAY)	4	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	6	EACH
SP	AUDIBLE PEDESTRIAN WARNING SIGNALS	6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	920	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	350	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	520	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	780	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	225	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	75	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	831	LIN. FT.
710	NON-METALLIC CONDUIT (3")	690	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (55')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	2	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SP	LUMINAIRE ASSEMBLY	3	EACH
SP	18" STREET NAME SIGN	6	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
SS&719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	6	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	4	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	1528	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	540	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	6773	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO CABLE	995	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	3	EACH
SP&733	VIDEO EDGE CARD EXTENDER	1	EACH
SP&733	EDGE CONNECT CARD FOR COMMUNICATIONS	1	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	67	CU.YD.
802	CLASS S CONCRETE-ROADWAY	133.82	CU.YD.
SS&804	REINFORCING STEEL-ROADWAY (GRADE 60)	21004	LB

REVISIONS

DATE	REVISION	SHEET NOS.
12/05/13	CLARIFICATION TO R.C. PIPE CULVERTS AND ALT. PIPE CULVERTS	41,43,44,45

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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.	FAP STPU-9253(46)		
				JOB NO.		061094	46	120

SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ADAM C. ANDREWS

CONTROL POINT DATA

ARKANSAS STATE PLANE, NORTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND, U.S. FOOT UNITS

POINT	EASTING	NORTHING	ELEVATION*	FEATURE	DESCRIPTION
1	1216638.1300	121904.1500	263.51	CTL	PAGIS 2024 AZM
3	1216747.1213	122167.6279	257.22	CTL	PK NAIL
4	1216773.6689	122797.6212	263.55	CTL	60d NAIL
5	1216806.8685	123279.8475	273.78	CTL	60d NAIL
6	1216805.2300	124236.5485	292.76	CTL	60d NAIL
7	1216290.4263	124759.7678	309.90	CTL	60d NAIL

*ELEVATIONS DETERMINED BY DIFFERENTIAL LEVELING

USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 1.000054340 HAS BEEN USED TO COMPUTE THE ABOVE COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF
HORIZONTAL DATUM: NAD83 (1986)
VERTICAL DATUM: NGVD29 (VERTCON94) (FOR NAVD88, SUBTRACT 0.16 FROM ELEVATION)

BASIS OF BEARINGS
GRID BASED ON GPS CONTROL AT POINT NUMBER 1.
LATITUDE 34° 40′ 04.2″ N LONGITUDE 92° 19′ 05.6″ W
ARKANSAS STATE PLANE GRID COORDINATES NORTH ZONE
NORTHING 121904.1500 EASTING 1216638.1300
CONVERGENCE ANGLE -0° 11′ 06.61″ RIGHT
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE

BASIS OF ELEVATION
PAGIS MONUMENT - PAGIS 2024 AZM
ELEVATION 263.51 (DETERMINED BY DIFFERENTIAL LEVELING)

CONSTRUCTION ALIGNMENTS

LOCATION	POINT	FEATURE	STATION	EASTING	NORTHING	DESCRIPTION
SCOTT HAMILTON DR.	8000	CD	0+00.00	1216665.3595	121809.7144	POT
	8001	CD	1+23.09	1216699.4522	121927.9914	PC
	8002	CD	1+94.81	1216719.3147	121996.9000	PI
	8003	CD	2+65.84	1216722.3773	122068.5487	PT
	8004	CD		1216122.9247	122094.1723	CC
	8005	CD	3+28.75	1216725.0638	122131.3970	PC
	8006	CD	3+78.75	1216727.1993	122181.3548	PI
	8007	CD	4+28.75	1216728.5018	122231.3413	PT
	8008	CD		1210730.5377	122387.6336	CC
	8009	CD	6+28.75	1216733.7113	122431.2665	PC
	8010	CD	6+78.75	1216735.0139	122481.2530	PI
	8011	CD	7+28.75	1216737.1493	122531.2109	PT
	8012	CD		1222731.6754	122274.9742	CC
	8013	CD	11+61.93	1216755.6486	122963.9926	PC
	8014	CD	12+05.50	1216757.5093	123007.5219	PI
	8015	CD	12+49.06	1216760.1282	123051.0122	PT
	8016	CD		1221751.0870	122750.4621	CC
	8017	CD	20+73.19	1216809.6666	123873.6512	PC
	8018	CD	24+54.68	1216832.5980	124254.4510	PI
	8019	CD	27+82.20	1216544.8116	124504.8774	PT
	8020	CD		1216036.0680	123920.2364	CC
	8021	CD	28+59.10	1216486.8022	124555.3561	PC
	8022	CD	32+11.13	1216221.2413	124786.4422	PI
	8023	CD	35+15.12	1216236.7110	125138.1296	PT
	8024	CD		1216966.0058	125106.0501	CC
	8025	CD	36+00.00	1216240.4409	125222.9263	POT
BASELINE RD.	8026	CD	0+00.00	1216539.5986	121948.4414	POT, BEGIN
	8027	CD	2+90.84	1216829.7212	121928.0869	POT, END
CHRISTEN DR.	8028	CD	0+00.00	1216730.9472	122325.1867	POT, BEGIN
	8029	CD	1+04.31	1216631.0545	122355.2240	POT, END
HARPER RD.	8030	CD	0+00.00	1216739.3886	122583.5971	POT, BEGIN
	8031	CD	0+83.26	1216822.5658	122579.8043	POT, END
AVERY RD.	8032	CD	0+00.00	1216810.7615	123899.7502	POT, BEGIN
	8033	CD	0+79.55	1216890.2326	123896.1147	PI
	8034	CD	1+31.13	1216941.7673	123894.0894	PI
	8035	CD	1+82.27	1216992.8157	123890.9278	PI
	8036	CD	2+37.31	1217047.7957	123888.4284	POT, END
J. E. DAVIS DR.	8037	CD	0+00.00	1216728.5097	124267.1395	POT, BEGIN
	8038	CD	0+58.30	1216780.4473	124293.6323	PC
	8039	CD	1+27.41	1216842.0114	124325.0356	PI
	8040	CD	1+88.78	1216861.3520	124391.3849	PT
	8041	CD		1216707.7449	124436.1608	CC
	8042	CD	1+89.71	1216861.6118	124392.2763	POT, END

CONSTRUCTION ALIGNMENTS - CURVE DATA

LOCATION	PI	PC	PT	DELTA	D	T	L	R
SCOTT HAMILTON DR.	1+94.81	1+23.09	2+65.8	13° 37′ 54″ L	9° 32′ 58″	71.71′	142.75′	600.00′
	3+78.75	3+28.75	4+28.75	0° 57′ 18″ L	0° 57′ 18″	50.00′	100.00′	6000.00′
	6+78.75	6+28.75	7+28.75	0° 57′ 18″ R	0° 57′ 18″	50.00′	100.00′	6000.00′
	12+05.50	11+61.93	12+49.06	0° 59′ 55″ R	1° 08′ 45″	43.57′	87.14′	5000.00′
	24+54.68	20+73.19	27+82.20	52° 25′ 01″ L	7° 23′ 35″	381.49′	709.01′	775.00′
	32+11.13	28+59.10	35+15.12	51° 29′ 22″ R	7° 50′ 56″	352.03′	656.02′	730.00′
J. E. DAVIS DR.	1+27.41	0+58.30	1+88.78	46° 43′ 23″ L	35° 48′ 36″	69.11′	130.48	160.00

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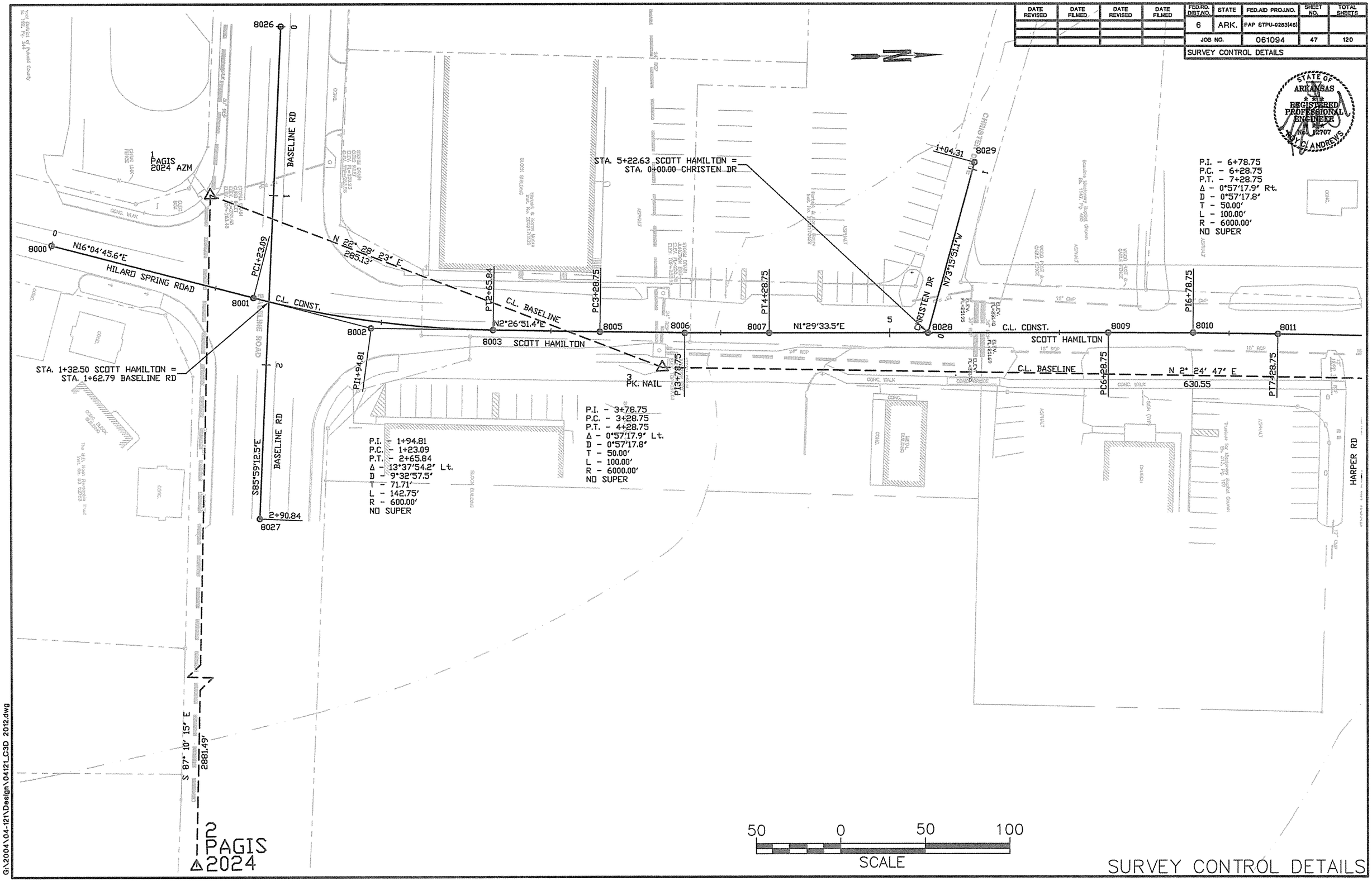
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0283(46)		
				JOB NO.		061094	47	120

SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	48	120

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
JOEL C. ANDREWS

STA. 7+81.19 SCOTT HAMILTON =
STA. 0+00.00 HARPER RD

8011 8030 C.L. CONST. 10 N2°26'51.4"E 8013 8014 8015 N3°26'46.1"E 15

SCOTT HAMILTON

HARPER RD

N 2° 24' 47" E
630.55

4
60d NAIL

PC11+61.93

PT12+49.06

PI12+05.50

N 3° 56' 18" E
483.37'

C.L. BASELINE

5
60d NAIL
956.70'
N 0° 05' 53" W

P.I. - 12+05.50
P.C. - 11+61.93
P.T. - 12+49.06
Δ - 0°59'54.6" Rt.
D - 1°08'45.3"
T - 43.57'
L - 87.14'
R - 5000.00'
NO SUPER

HARPER RD
S87°23'21.1"E
20+83.26
8031

PC20+73.19

15 C.L. CONST. N3°26'46.1"E 20 C.L. BASELINE

ON

SCOTT HAMILTON 8017 8032

5
60d NAIL

N 0° 05' 53" W
956.70'

AVERY RD
S87°22'50.6"E

STA. 20+99.32 SCOTT HAMILTON =
STA. 0+00.00 AVERY RD

8033 PI0+79.55

S87°44'58.0"E
1

8034 PI1+31.13

AVERY RD

S86°27'21.6"E

8035 PI1+82.27

S87°23'49.6"E
2

8036

50 0 50 100
SCALE

SURVEY CONTROL DETAILS

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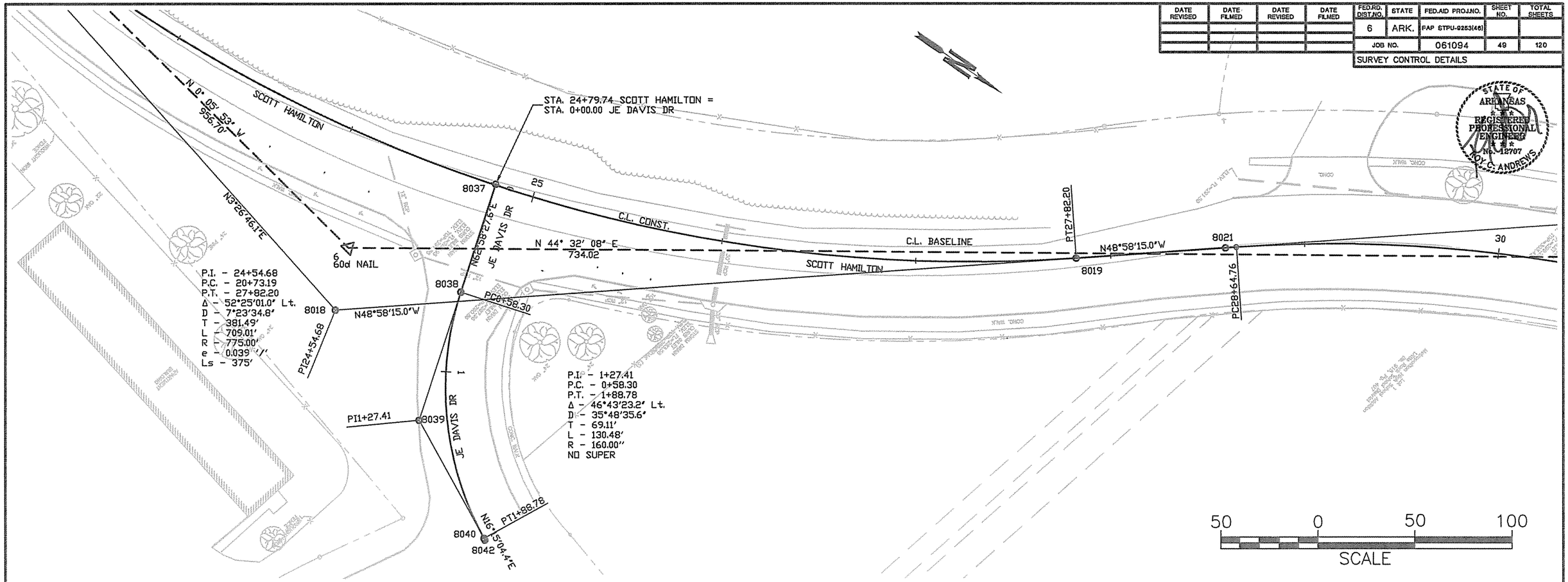
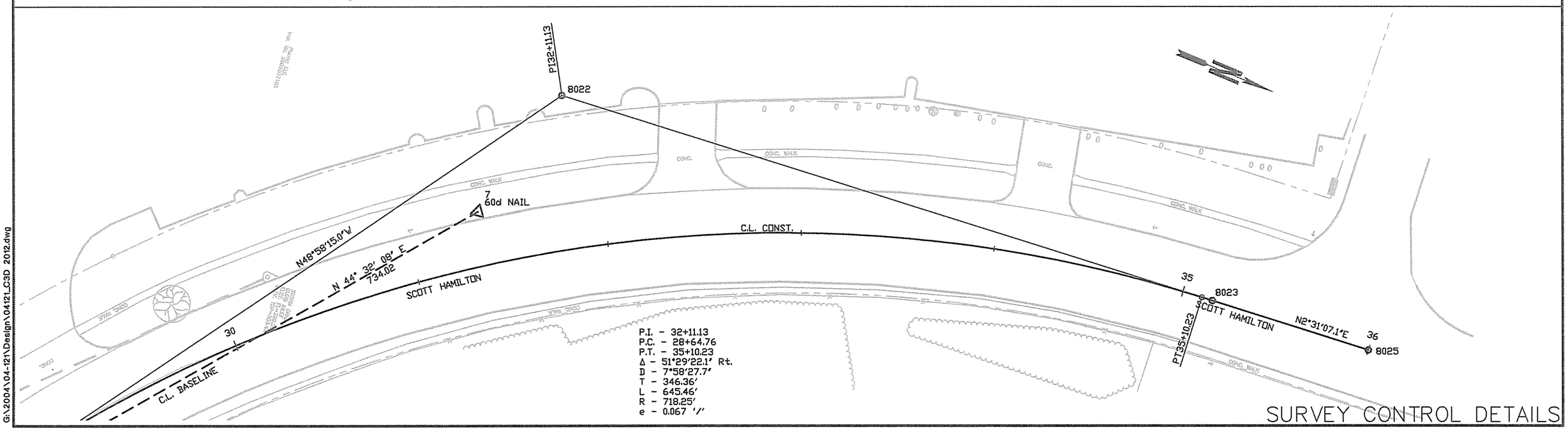
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	49	120

SURVEY CONTROL DETAILS





SURVEY CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DISTN.O.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	50	120

PLAN & PROFILE SHEET

BEGIN JOB 061094
STA. 1+60.06

STA. 2+22 CONSTRUCT
DROP INLET ON LT. H=4.28'
W/4' EXTENSION, OPEN BACK AND
18" x 133' R.C. PIPE CULVERT OUTLET
TYPE MO DROP INLET = 4' DIA.

STA. 4+29 IN PLACE
24" x 171' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 29 CU.YDS.

STA. 3+61 CONSTRUCT
DROP INLET ON LT. H=5.98'
W/4' EXTENSION, OPEN BACK AND
36" x 48' R.C. PIPE CULVERT OUTLET
TYPE MO DROP INLET = 5' DIA.
CONNECT TO INLET FROM WEST

STA. 4+85 CONSTRUCT
DROP INLET ON LT. H=6.15'
WITH 2 - 4' EXTENSIONS, OPEN BACK
AND 18" x 50' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 6+08 IN PLACE
15" x 90' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 8 CU.YDS.

STA. 5+31 IN PLACE
15" x 37' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 6+73 IN PLACE
12" x 40' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 9 CU.YDS.

STA. 5+22.63 SCOTT HAMILTON =
STA. 0+00.00 CHRISTEN DR

APPROXIMATE LIMITS
100 YEAR FLOOD PLAIN
(ZONE AE)

STA. 5+67 CONSTRUCT
DROP INLET ON LT.
OVER R.C. BOX CULVERT
TYPE TH DROP INLET = 2.5'x3'

STA. 3+65 LT. IN PLACE
JUNCTION BOX
REMOVE

STA. 7+33 CONSTRUCT
DROP INLET ON LT. H=5.60'
W/2 - 4' EXTENSIONS, OPEN BACK AND
24" x 48' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

P.I. - 6+78.75
P.C. - 6+28.75
P.T. - 7+28.75
Δ - 0°57'17.9" Rt.
D - 0°57'17.8"
T - 50.00'
L - 100.00'
R - 6000.00'
NO SUPER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
12707
C. ANDREWS

N16°04'45.6"E
HILARO SPRING ROAD
PC1+23.09
BASELINE RD
CONST. LIMITS
W.C. RAMPS
PROPOSED R/W
R=60'
77°56'1.9"
N2°26'51.4"E
SCOTT HAMILTON
N1°29'33.5"E
CHRISTEN DR
N73°15'51.1"W
W.C. RAMP
HAND RAILING
T.C.E
ASPHALT-2
EXISTING R/W
PROPOSED R/W
STA. 1+32.50 SCOTT HAMILTON =
STA. 1+62.79 BASELINE RD
S85°59'12.5"E
2+90.84
69°50'12.5"
HARPER RD

STA. 3+61 CONSTRUCT
DROP INLET ON RT. H=6.34'
W/4' EXTENSION, OPEN BACK AND
36" x 119' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 5' DIA.

STA. 3+62 IN PLACE
24" x 28' R.C. PIPE CULVERT
REMOVE

STA. 3+65 IN PLACE
24" x 33' R.C. PIPE CULVERT
REMOVE

STA. 4+53 IN PLACE
24" x 172' R.C. PIPE CULVERT
REMOVE

P.I. - 1+94.81
P.C. - 1+23.09
P.T. - 2+65.84
Δ - 13°37'54.2" Lt.
D - 9°32'57.5'
T - 71.71'
L - 142.75'
R - 600.00'
NO SUPER

P.I. - 3+78.75
P.C. - 3+28.75
P.T. - 4+28.75
Δ - 0°57'17.9" Lt.
D - 0°57'17.8"
T - 50.00'
L - 100.00'
R - 6000.00'
NO SUPER

STA. 5+60 CONSTRUCT
DROP INLET ON RT.
OVER R.C. BOX CULVERT
TYPE TH DROP INLET = 2.5' x 3'

STA. 5+94 IN PLACE
18" x 46' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 19 CU.YDS.

APPROXIMATE LIMITS
100 YEAR FLOOD PLAIN
(ZONE AE)

STA. 4+85 CONSTRUCT
DROP INLET ON RT. H=6.52'
WITH 2 - 4' EXTENSIONS, OPEN BACK AND
42" x 57' R.C. PIPE CULVERT OUTLET
TO R.C. BOX CULVERT
TYPE MO JUNCTION BOX = 5' DIA.

STA. 3+64 RT. IN PLACE
JUNCTION BOX
REMOVE

STA. 7+07 IN PLACE
15" x 85' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU.YDS.

STA 5+57 IN PLACE
DBL 36" X 34' R.C. PIPE CULVERT
REMOVE AND CONSTRUCT
DBL 8' X 5' X 86'
RC BOX CULVERT
10° LT. FORWARD SKEW
W/31 WINGS LT. & RT.
QS0= 647.88 CFS DA= 221.20 ACRES

STA. 7+60 IN PLACE
12" x 13' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 7+60 IN PLACE
12" x 9' HDPE PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 7+33 CONSTRUCT
DROP INLET ON RT. H=6.25'
W/2 - 4' EXTENSIONS, OPEN BACK AND
42" x 168' R.C. PIPE CULVERT OUTLET
TO R.C. BOX CULVERT
TYPE MO DROP INLET = 5' DIA.

STA. 0+49 HARPER RD CONSTRUCT
DROP INLET ON RT. H=5.93'
W/4' EXTENSION, OPEN BACK AND
36" x 35' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 5' DIA.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STREAM	STATION	STREAM TYPE	STREAM BANK ELEVATION
UNNAMED	5+57	PERENNIAL	259.60

2+22
TOP= 261.11
FL= 256.83
18" X 133' @ 2.68%

3+61
TOP= 259.25
FL= 253.27

4+85
TOP= 258.74
FL= 252.59

5+60
TOP 258.49
FL 250.92

5+67
TOP 258.41
FL 251.31

VC=50.00'
e=0.06'

7+33
TOP= 259.13
FL= 253.53

1+60.22
262.03

-1.92%

-0.50%

0.50%

-0.50%

2+91.16
259.52

VC=100.00'
e=-0.178'

36" X 119' @ 0.57%

3+61
TOP= 259.25
FL= 252.91

4+85
TOP= 258.75
FL= 252.23

VC=100.00'
e=-0.125'

4+65.00
258.55

42" X 57'
@ 1.61%

42" RCP
OUTLET
FL= 251.31

5+57
FL LT= 251.52
FL RT= 250.76

42" RCP
OUTLET
FL= 251.31

6+50.00
259.37

42" X 168' @ 0.95%

36" X 35'
@ 0.77%

7+33
TOP= 259.15
FL= 252.90

BM 1: CTL PT 1, PAGIS 2024 AZM MK, ALUMINUM CAP SET IN SIDEWALK 3' WEST OF STORMWATER MANHOLE ON SOUTHWEST CORNER OF THE INTERSECTION OF SCOTT HAMILTON, BASELINE AND HILARO SPRINGS ROAD.
STA. 0+83.20 52.32' LT
ELEV. 263.51

BM 1: CTL PT 3, PK NAIL.
STA. 3+65.76 20.61' RT
ELEV. 257.22

270 260 250 240 230

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+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.	FAP STPU-9253(46)		
				JOB NO.		061094	51	120

PLAN & PROFILE SHEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER 12707 ROY C. ANDREWS

STA. 7+92 IN PLACE
15' x 41' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 2 CU.YDS.

STA. 8+61 CONSTRUCT
DROP INLET ON LT. H=5.60'
WITH 4' EXTENSION, OPEN BACK AND
18' x 48' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 9+31 IN PLACE
12' x 22' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 4
CU.YDS.

STA. 11+33 CONSTRUCT
DROP INLET ON LT. H=5.60'
WITH 4' EXTENSION, OPEN BACK
AND 18' x 49' R.C. PIPE CULVERT
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 13+95 CONSTRUCT
DROP INLET ON LT. H=5.06'
WITH 4' EXTENSION, OPEN BACK AND
18' x 49' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 14+21 IN PLACE
12' x 28' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU.YDS.

STA. 14+95 IN PLACE
12' x 21' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 2 CU.YDS.

APPROXIMATE LIMITS
100 YEAR FLOOD PLAIN
(ZONE AE)

STA. 8+60 LT. IN PLACE
STORM GRATE DRAIN INLET
REMOVE

STA. 8+82 IN PLACE
12' x 40' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 8+32 IN PLACE
15' x 41' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 1 CU.YDS.

STA. 11+57 IN PLACE
12' x 22' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 4 CU.YDS.

STA. 13+67 IN PLACE
12' x 22' R.C. PIPE CULVERT LT.
SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 4 CU.YDS.

STA. 12+72 IN PLACE
12' x 101' R.C. PIPE CULVERT LT.
SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 3 CU.YDS.

STA. 7+81.19 SCOTT HAMILTON =
STA. 0+00.00 HARPER RD

PROPOSED R/W

CONST. LIMITS

EXISTING R/W

SCOTT HAMILTON

N2°26'51.4"E

N3°26'46.1"E

W.C. RAMP

HARPER RD

S87°23'21.1"E

69°50'12.5"

P.I. - 12+05.50
P.C. - 11+61.93
P.T. - 12+49.06
Δ - 0°59'54.6" RT
D - 1°08'45.3'
T - 43.57'
L - 87.14'
R - 5000.00'
NO SUPER

STA. 0+49 HARPER RD. CONSTRUCT
DROP INLET ON LT. H=5.93'
W/4' EXTENSION, OPEN BACK
AND 36' x 26' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 5' DIA.

STA. 8+00 IN PLACE
12' x 12' R.C. PIPE CULVERT RT.
SIDE DRAIN
REMOVE

STA. 8+01 IN PLACE
12' x 6' HDPE PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 7+81 IN PLACE
15' x 39' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

APPROXIMATE LIMITS
100 YEAR FLOOD PLAIN
(ZONE AE)

STA. 8+61 CONSTRUCT
DROP INLET ON RT. H=5.97'
WITH 4' EXTENSION, OPEN BACK AND
36' X 63' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 5' DIA.

STA. 9+79 IN PLACE
18' x 29' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 3 CU.YDS.

STA. 11+33 CONSTRUCT
DROP INLET ON RT. H=5.97'
WITH 4' EXTENSION, OPEN BACK AND
36' X 268' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 5' DIA.

STA. 10+63 IN PLACE
12' x 22' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 4 CU.YDS.

STA. 11+04 IN PLACE
12' x 17' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 3 CU.YDS.

STA. 12+49 IN PLACE
12' x 23' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 1 CU.YDS.

STA. 12+73 CONSTRUCT
DROP INLET ON RT. H=5.44'
WITH 4' EXTENSION, OPEN BACK AND
30' X 135' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 5' DIA.

STA. 13+95 CONSTRUCT
DROP INLET ON RT. H=5.44'
WITH 4' EXTENSION, OPEN BACK AND
30' X 117' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 5' DIA.

STA. 14+75 CONSTRUCT
DROP INLET ON RT. H=5.44'
WITH 4' EXTENSION, OPEN BACK AND
30' X 75' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 5' DIA.

STA. 14+46 IN PLACE
12' x 97' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 3 CU.YDS.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE
CULVERTS ARE TO BE CLASS III WITH
A TYPE 3 BEDDING. ALL METAL PIPES ARE
TO HAVE A TYPE 2 BEDDING.

8+61
TOP= 260.08
FL= 254.48

11+33
TOP= 266.71
FL= 261.11

VC=100.00'
e=0.11'

12+05.36
268.55

13+95
TOP= 272.00
FL= 266.94

2.64%

36' X 268' @ 2.47%

30' X 135' @ 2.71%

30' X 117' @ 1.85%

30' X 75' @ 1.89%

36' X 26'
@ 1.54%

8+25.00
268.50

36' X 63'
@ 0.87%

36' X 35'
@ 0.77%

VC=270.00'
e=-1.061'

8+61
TOP= 260.09
FL= 254.12

0+49
HARPER ROAD
TOP= 259.10
FL= 253.17

0+49
HARPER ROAD
TOP= 259.51
FL= 253.57

11+33
TOP= 266.72
FL= 260.75

12+73
TOP= 269.85
FL= 264.41

13+95
TOP= 272.02
FL= 266.58

14+75
TOP= 273.44
FL= 268.00

BM 3: CTL PT 4, 60d NAIL.
STA. 9+96.48 25.11' RT
ELEV. 263.55

BM 4: CTL PT 5, 60d NAIL.
STA. 14+80.30 32.90' RT
ELEV. 273.78

280 270 260 250 240

8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+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.	FAP STPU-0253(46)		
				JOB NO.		061094	52	120

PLAN & PROFILE SHEET

STA. 15+61 IN PLACE
12" x 39' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 1 CU.YDS.

STA. 16+83 CONSTRUCT
DROP INLET ON LT. H=5.06'
WITH 4' EXTENSION, OPEN BACK AND
18' x 48' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 19+83 CONSTRUCT
DROP INLET ON LT. H=4.30'
WITH 4' EXTENSION, OPEN BACK AND
18' x 56' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 21+38 CONSTRUCT
DROP INLET ON LT. H=4.91,
WITH 8' EXTENSION, OPEN BACK AND
24' x 69' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 19+83 CONSTRUCT
JUNCTION BOX ON RT. H=5.52'
WITH 24' X 295' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 4' DIA.

STA. 16+36 IN PLACE
18' x 79' HDPE PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 8 CU.YDS.

STA. 20+97 IN PLACE
12" x 51' R.C. PIPE CULVERT RT.
SIDE DRAIN
REMOVE

STA. 21+24 RT. IN PLACE
CURB INLET
REMOVE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12267 G. ANDREWS

PROPOSED R/W
CONST. LIMITS
EXISTING R/W
N3°26'46.1"E
SCOTT HAMILTON
STA. 20+99.32 SCOTT HAMILTON =
STA. 0+00.00 AVERY RD
W.C. RAMP
AVERY RD
S87°22'50.6"E
89°10'23.3"
PC20+73.19
PI0+79.55
ASPHALT-2
ASPHALT-3
CONCRETE
T.C.E

STA. 20+50 CONSTRUCT
JUNCTION BOX ON RT. H=6.14'
WITH 24' X 63' R.C. PIPE CULVERT OUTLET
TO JUNCTION BOX ON RT.
TYPE MO JUNCTION BOX = 4' DIA.

STA. 16+11 RT. IN PLACE
STORM GRATE DRAIN INLET
REMOVE

STA. 15+85 IN PLACE
15' x 41' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 16 CU.YDS.

STA. 16+83 CONSTRUCT
DROP INLET ON RT. H=5.72'
WITH 8' EXTENSION AND
30' X 206' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO JUNCTION BOX = 5' DIA.

STA. 17+06 IN PLACE
12' x 13' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 17+61 IN PLACE
12" x 13' R.C. PIPE CULVERT RT. SIDE
DRAIN
REMOVE

STA. 17+27 IN PLACE
18' x 79' HDPE PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 12 CU.YDS.

STA. 21+29 CONSTRUCT
JUNCTION BOX ON RT. H=8.33'
WITH 24' X 22' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON LT.
TYPE MO JUNCTION BOX = 4' DIA.

STA. 18+23 IN PLACE
12" x 20' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 0+46 AVERY ROAD CONSTRUCT
DROP INLET ON RT. H=7.50'
WITH 4' EXTENSION, OPEN BACK AND
24' X 35' R.C. PIPE CULVERT OUTLET
TO JUNCTION BOX ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 0+46 AVERY ROAD CONSTRUCT
DROP INLET ON LT. H=7.32'
WITH 4' EXTENSION, OPEN BACK AND
24' X 28' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON RT.
TYPE MO DROP INLET = 4' DIA.

STA. 20+74 IN PLACE
12" x 13' R.C. PIPE CULVERT RT.
SIDE DRAIN
REMOVE

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 17+91.94 BEGIN SUPERELEVATION
STA. 21+66.94 MAX. SUPERELEVATION (0.039 FT./FT.)
STA. 26+39.68 MAX. SUPERELEVATION (0.039 FT./FT.)
STA. 28+55.29 END SUPERELEVATION

16+83
TOP= 277.15
FL= 272.09

16+83
TOP= 277.16
FL= 271.73

19+83
TOP= 282.36
FL= 278.08

19+83
TOP= 283.18
FL= 277.66

20+50
TOP= 284.60
FL= 278.46

0+46
AVERY ROAD
TOP= 286.37
FL= 278.87

21+00.00
284.52

24' X 28'
@ 1.32%
VC=100.00'
e=-0.131'

0+46
AVERY ROAD
TOP= 286.56
FL= 279.24

21+38
TOP= 285.98
FL= 279.53

21+38
TOP= 284.96
FL= 280.05

1.79%
30' X 204' @ 1.83%
24' X 295' @ 2.01%
24' X 63' @ 1.27%
24' X 34'
@ 1.21%
24' X 25'
@ 1.16%
2.83%

300
290
280
270
260

15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00

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				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	53	120
				PLAN & PROFILE SHEET				

STA. 24+51 RT. IN PLACE
CURB INLET
REMOVE

STA. 26+01 CONSTRUCT
DROP INLET ON LT. H=7.65'
WITH 2 - 8' EXTENSIONS AND
54' x 14' R.C. PIPE CULVERT OUTLET
W/FES ON LT.
TYPE MO DROP INLET = 6' DIA.

STA. 28+52 CONSTRUCT
DROP INLET ON LT. H=4.29
WITH 4' EXTENSION, OPEN BACK AND
18' X 237' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON LT.
TYPE MO DROP INLET = 4' DIA.

STA. 28+68 CONSTRUCT
JUNCTION ON LT. H=3.68
WITH 18' X 13' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON LT.
TYPE MO DROP INLET = 4' DIA.

STA. 25+09 RT. IN PLACE
CURB INLET
REMOVE

STA. 30+00
END JOB 061094

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12707
ROY C. ANDREWS

EXISTING R/W
PROPOSED R/W
CONST. LIMITS
EXISTING R/W
SCOTT HAMILTON
STA. 24+79.74 SCOTT HAMILTON =
STA. 0+00.00 JE DAVIS DR
25+50
65.76
25+90
78.00
26+50
60.28
CONCRETE
N48°58'15.0"W
PT27+82.20
PC28+64.76
+00
47.90
30
N3°26'46.1"E
90°00'00"
N62°38'27.6"E
JE DAVIS DR
W.C. RAMPS
W.C. RAMP
+35
58'
25
+00
58'
PC0+08.30
N48°58'15.0"W
+81
13.51
+81
18.26
0+91.01
32.43
25+31.41
45.84
PT24+54.68
26+04
60.00
27+45.95
39.46

STA. 0+47 JE. DAVIS DRIVE CONSTRUCT
DROP INLET ON RT. H=4.61'
WITH 4' EXTENSION AND OPEN BACK
OVER EXISTING 12" R.C. PIPE CULVERT

P.I. - 24+54.68
P.C. - 20+73.19
P.T. - 27+82.20
Δ - 52°25'01.0" Lt.
D - 7°23'34.8"
T - 381.49'
L - 709.01'
R - 775.00'
e - 0.039 '/'
Ls - 375'

P.I. - 1+27.41
P.C. - 0+58.30
P.T. - 1+88.78

STA. 0+47 JE. DAVIS DRIVE CONSTRUCT
DROP INLET ON LT. H=3.89'
WITH 4' EXTENSION AND OPEN BACK
OVER EXISTING 12" R.C. PIPE CULVERT

STA. 25+97 RT. IN PLACE
CURB INLET
REMOVE

STA. 26+01 CONSTRUCT
JUNCTION BOX ON RT. H=13.87'
WITH 54' X 65' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON LT.
TYPE MO JUNCTION BOX = 6' DIA.

STA. 26+01 IN PLACE
36" X 41' R.C. PIPE CULVERT
REMOVE AND CONSTRUCT
48" x 8' R.C. PIPE CULVERT
WITH FES RT.
Q_{50} = 74.92 CFS D.A = 14.86 ACRES

STA. 30+00
MATCH EXISTING SECTION
SEE CROSS SECTIONS

STA. 28+52 CONSTRUCT
DROP INLET ON RT. H=4.28'
WITH 8' EXTENSION, OPEN BACK AND
18' X 54' R.C. PIPE CULVERT OUTLET
TO DROP INLET ON LT.
TYPE MO DROP INLET = 4' DIA.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.

STA. 17+91.94 BEGIN SUPERELEVATION
STA. 21+66.94 MAX. SUPERELEVATION (0.039 FT./FT.)
STA. 26+39.68 MAX. SUPERELEVATION (0.039 FT./FT.)
STA. 28+55.29 END SUPERELEVATION

310
300
290
280
270

VC=150.00'
e=0.62'
23+40.00
291.32

-0.50%

EXISTING 12" RCP

0+46
JE DAVIS DRIVE
TOP= 292.72
FL= 288.83

0+46
JE DAVIS DRIVE
TOP= 292.57
FL= 287.96

EXISTING 12" RCP

26+01
TOP= 289.32
FL= 281.67

54" FES
FL= 281.57

18" X 237' @ 3.62%

28+52
TOP= 294.54
FL= 290.25

18" X 13'
@ 10.31%

28+68
TOP= 295.27
FL= 291.59

30+00.00

5.40%

28+52
TOP= 294.94
FL= 290.66

27+63.00
289.21

VC=390.00'
e=-2.877'

48" FES
FL= 284.64

26+01
TOP= 291.60
FL IN= 283.43
FL OUT= 282.93

BM 5: CTL PT 6, 60d NAIL.
STA. 24+22.18 56.66' RT
ELEV. 292.76

23+00
24+00
25+00
26+00
27+00
28+00
29+00
30+00

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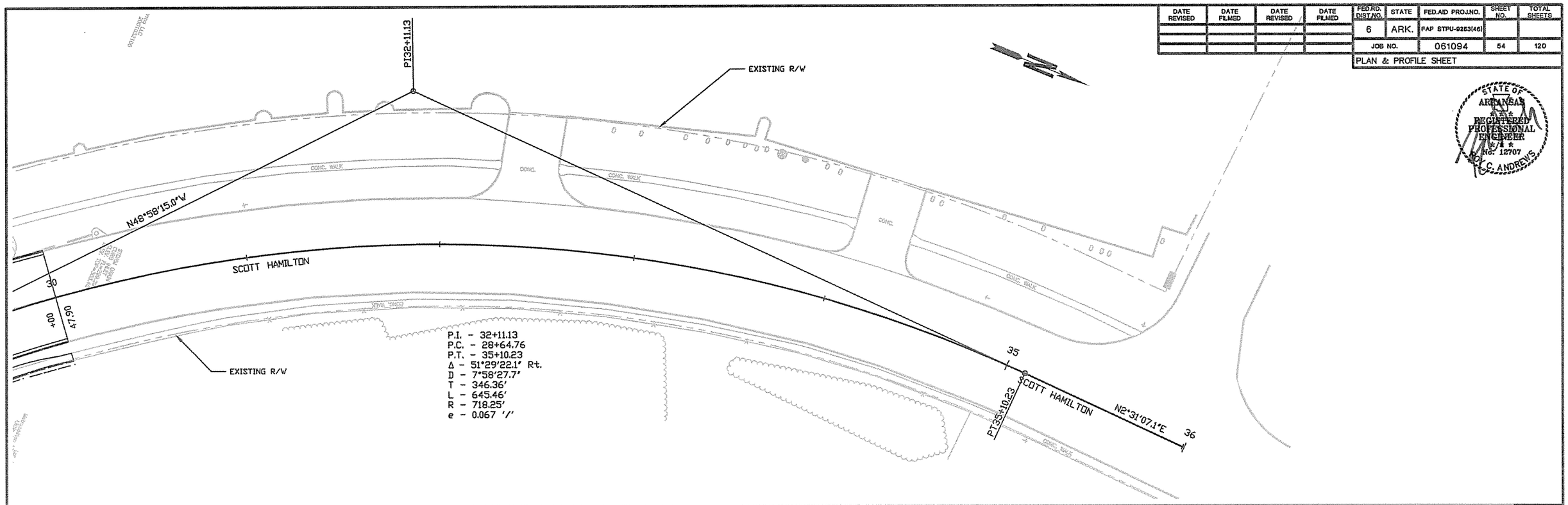
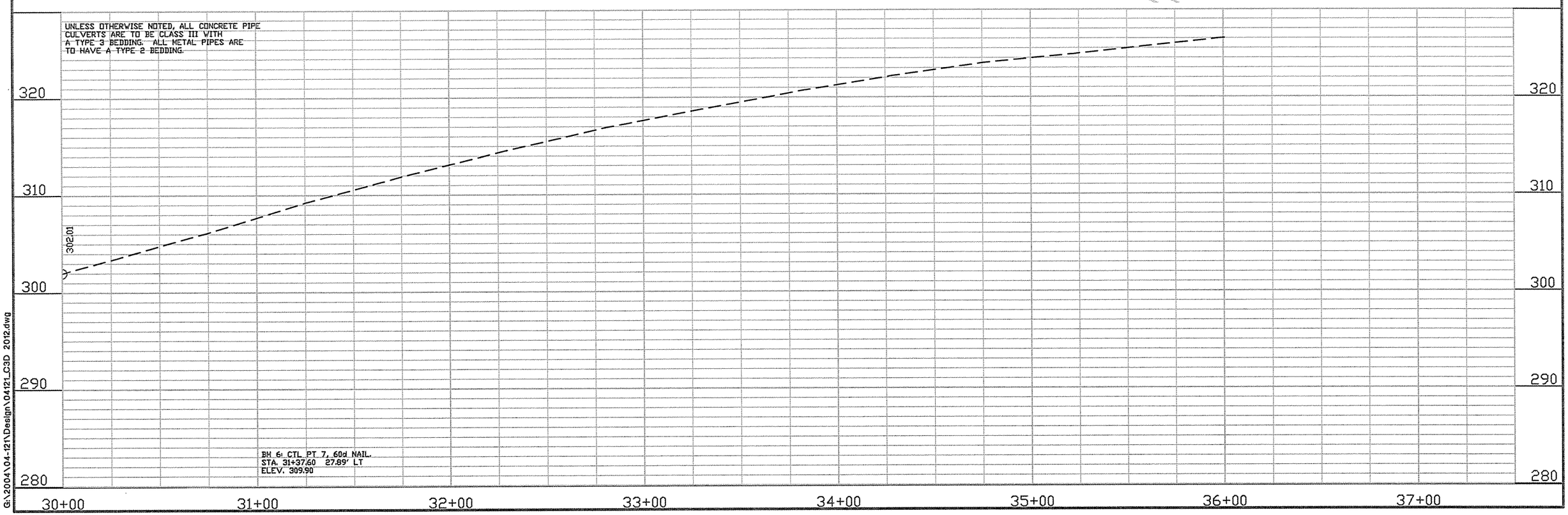
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	54	120
				PLAN & PROFILE SHEET				

STATE OF ARKANSAS
DAVID C. ANDREWS
REGISTERED PROFESSIONAL ENGINEER
No. 12707



UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.



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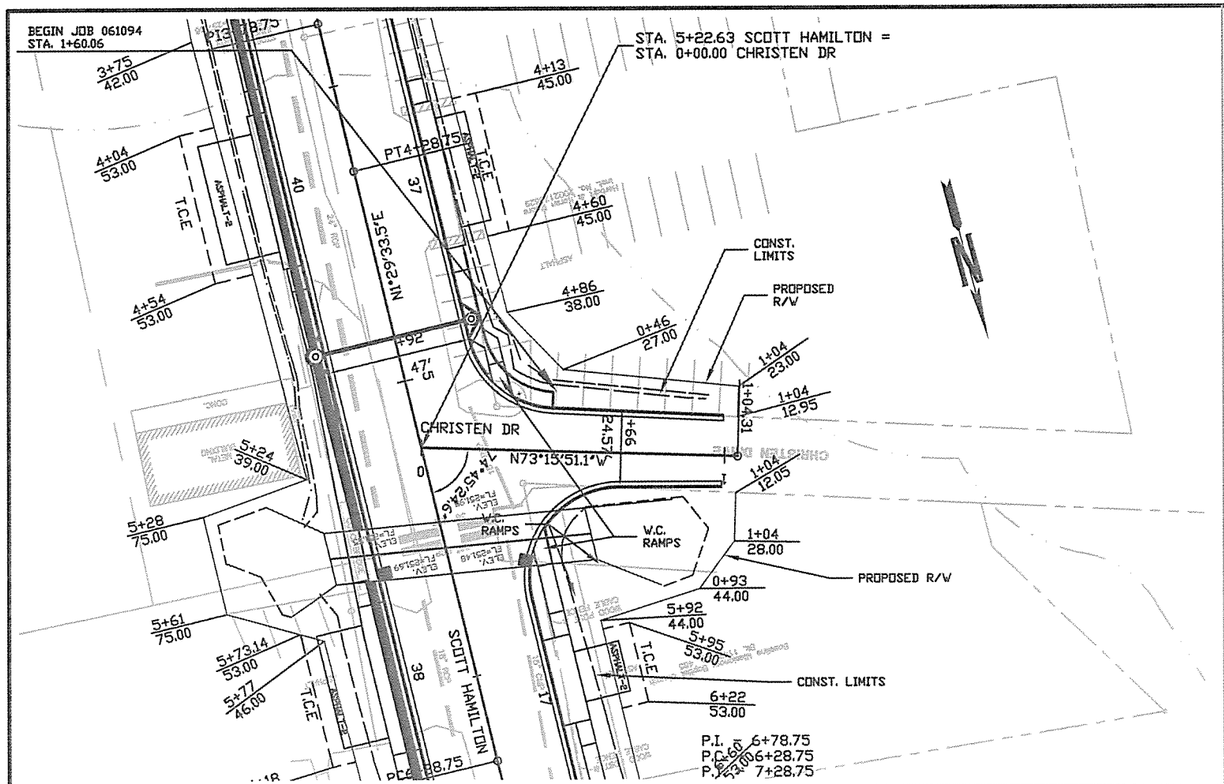
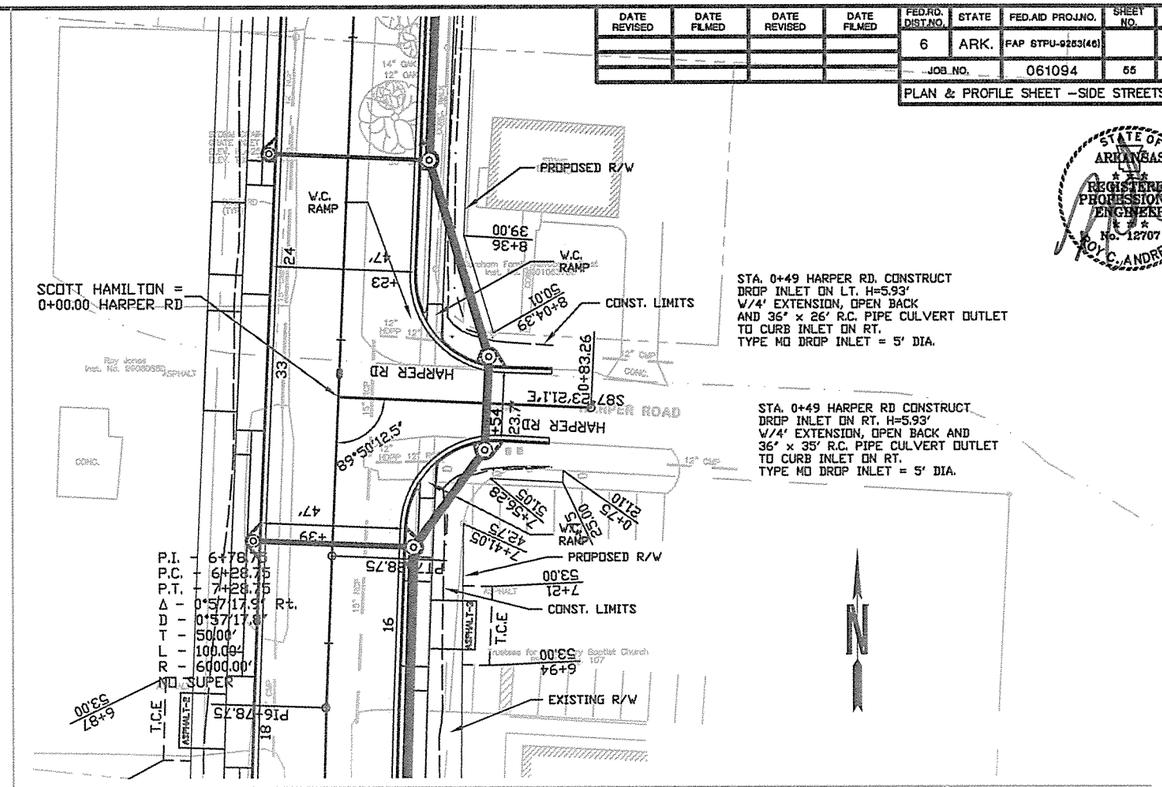
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9263(46)		
				JOB NO.		061094	55	120

PLAN & PROFILE SHEET - SIDE STREETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12707 ROY C. ANDREWS

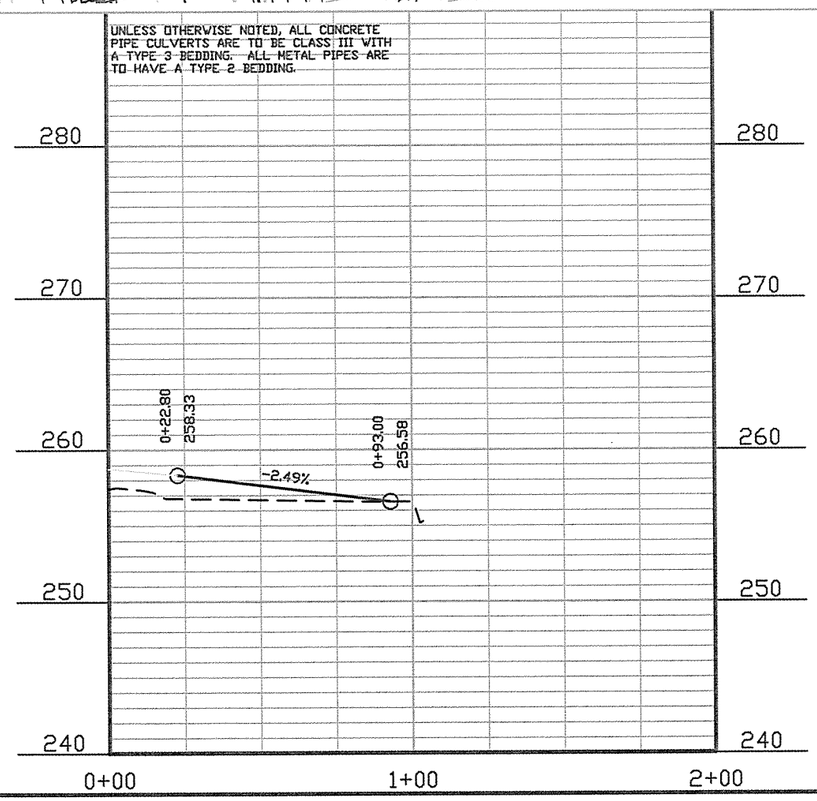




STA. 0+49 HARPER RD. CONSTRUCT
DROP INLET ON LT. H=5.93'
W/4' EXTENSION, OPEN BACK
AND 36" x 26' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 5' DIA.

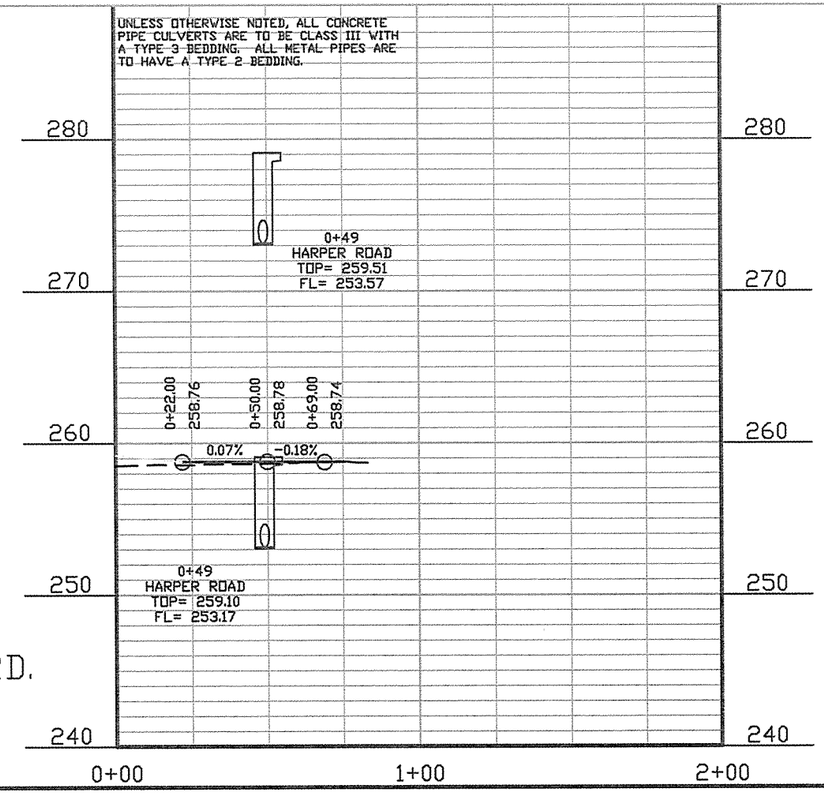
STA. 0+49 HARPER RD CONSTRUCT
DROP INLET ON RT. H=5.93'
W/4' EXTENSION, OPEN BACK AND
36" x 35' R.C. PIPE CULVERT OUTLET
TO CURB INLET ON RT.
TYPE MO DROP INLET = 5' DIA.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.



CHRISTEN DR.

UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE CULVERTS ARE TO BE CLASS III WITH A TYPE 3 BEDDING. ALL METAL PIPES ARE TO HAVE A TYPE 2 BEDDING.



HARPER RD.

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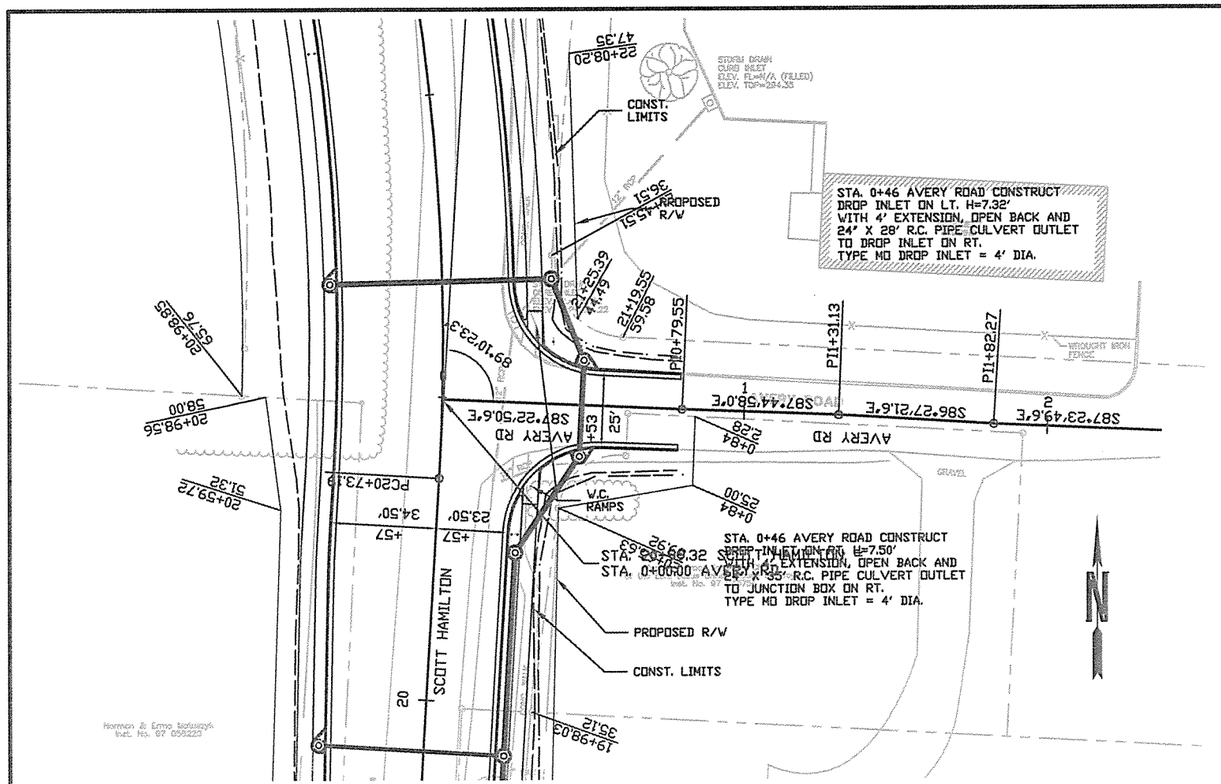
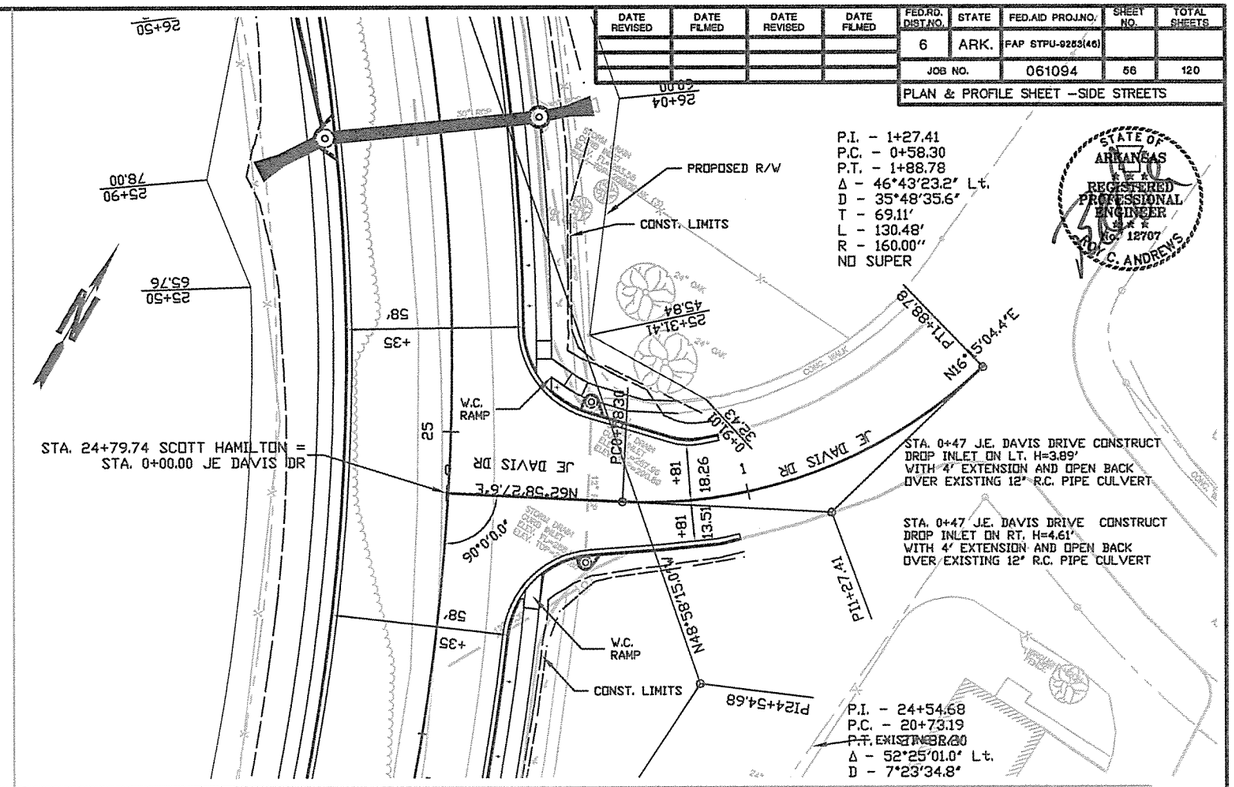
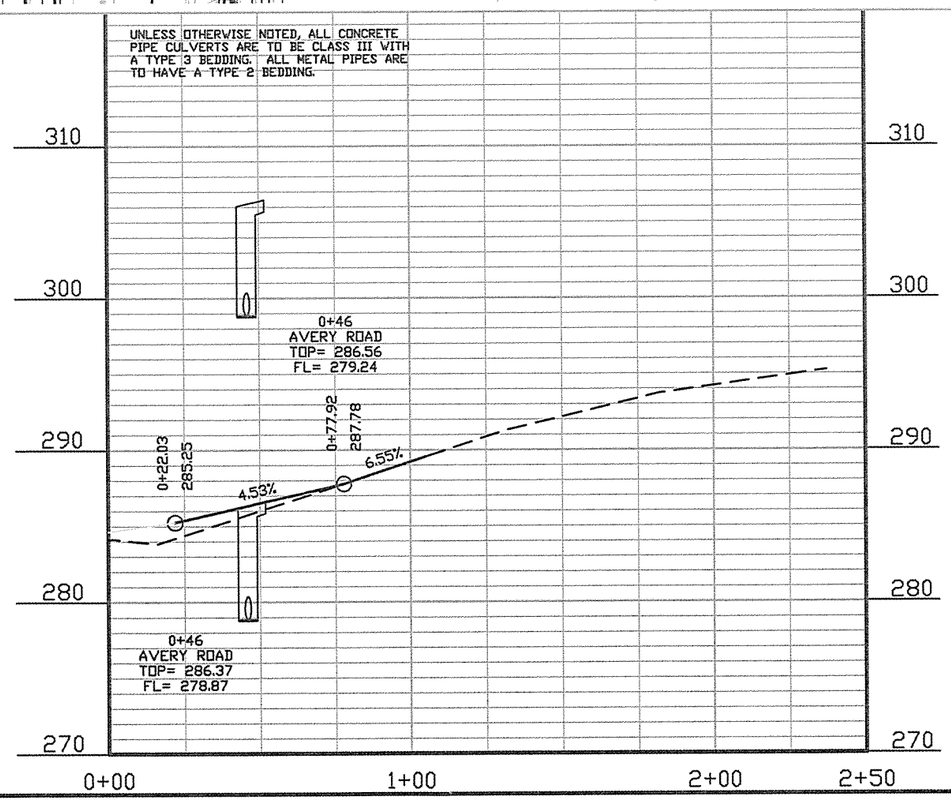
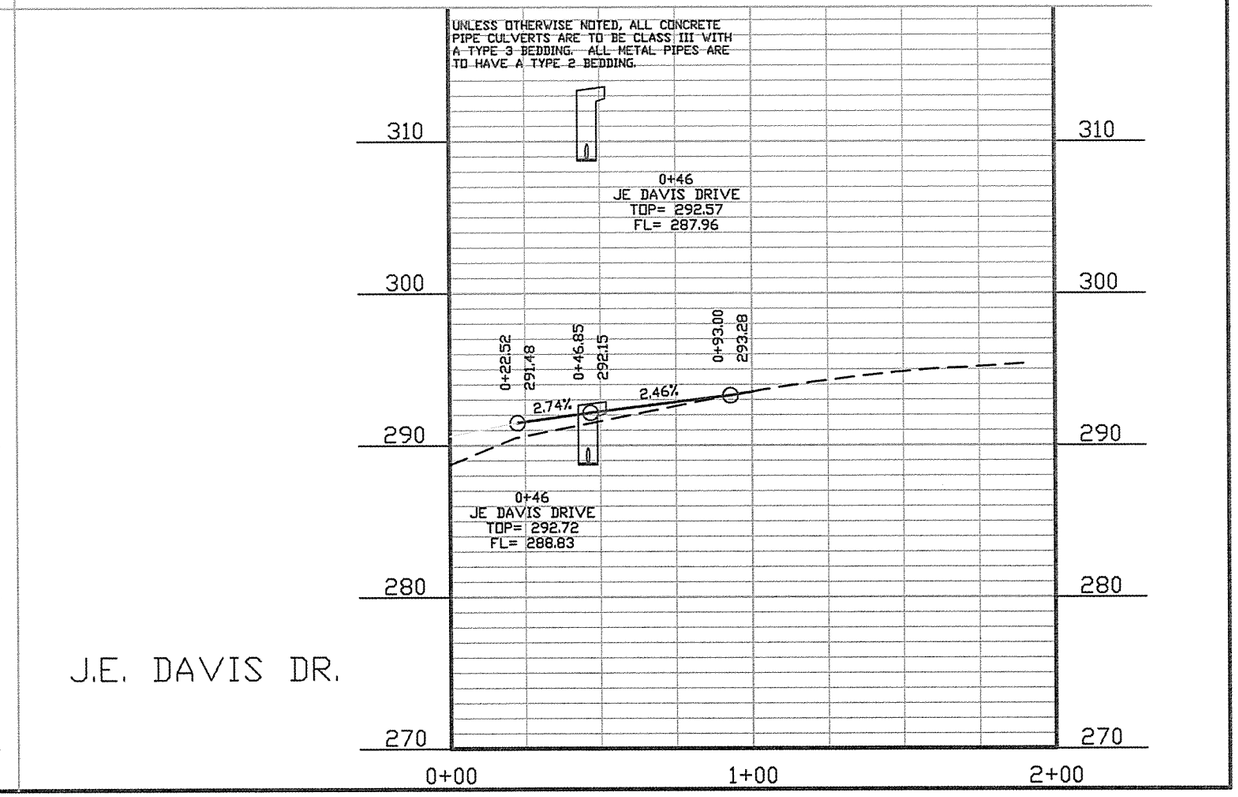
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	56	120

PLAN & PROFILE SHEET – SIDE STREETS









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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.	FAP STPU-9253(46)		
				JOB NO.		061094	57	120
				② TRAFFIC SIGNAL NOTES				

TRAFFIC SIGNAL NOTES

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2002) NATIONAL ELECTRICAL CODE, NFPA 101 (2000) 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 CONTRACTOR TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. 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 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 AS SHOWN IN THE DETAILS 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 ENCOM 5200 WHICH IS COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY.

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. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

21. 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.

22. 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.

23. 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.

24. ALL HANDHOLD COVERS TO BE GALVANIZED STEEL. PLASTIC IS NOT ACCEPTABLE.

25. INSTALL RADIO SUPPRESSION ON LMR600 CABLE TO RADIO ANTENNA.

26. MARK ALL FIELD WIRING FOR LOAD SWITCHES WITH APPROPRIATE PHASES.

27. MARK ALL SIGNAL CABLE IN JUNCTION BOXES WITH POLE DESIGNATION.

28. ALL GROUND WIRES TO BE GREEN OR PHASED TAPED IN ALL JUNCTION BOXES.

29. ALL NUETRALS TO BE WHITE OR PHASE TAPED IN ALL JUNCTION BOXES.

PETERS & ASSOCIATES ENGINEERS, INC. CORPORATE SEAL 1983 ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER ERNEST J. PETERS No. 4682

10-10-13

CITY OF LITTLE ROCK EQUIPMENT NOTES

1. CONTROLLER SHALL BE THE LATEST VERSION OF THE TS2, TYPE 2 EAGLE GENESIS MODEL M52.

2. CONTRACTOR SHALL DELIVER CONTROLLER TO THE CITY FOR PROGRAMMING A MINIMUM OF 7 DAYS PRIOR TO INSTALLATION IN THE FIELD.

3. CONTRACTOR SHALL PROVIDE AS-BUILT PLANS.

4. STREET LIGHT FIXTURES SHALL BE MOUNTED ON 25' ARMS AND SHALL BE COOPER FIXTURES, MODEL NO. OVF25SWW3D4, 250 WATT TYPE II WITH FLAT GLASS LENS OR APPROVED EQUAL. FIXTURES AND MAST ARMS SHALL BE SAME COLOR AS POLES.

5. STREET LIGHT FIXTURES TO BE GROUNDED TO POLE BASE VIA 1C-#12EGC SOLID COPPER WIRE SUBSIDIARY TO INSTALLATION OF 2C-#12 STREET FEEDER WIRE.

6. TRAFFIC SIGNAL CABINET SHALL BE EAGLE P44 WITH TF4016 BACKPANEL WITH 16 POSITION LOAD BAY TO ACCOMMODATE 8 VEHICLE LOAD SWITCHES, 4 OVERLAP LOAD SWITCHES AND 4 PEDESTRIAN LOAD SWITCHES. CABINET SHALL HAVE EDCO RS-232-9 SUPPRESSORS FOR RADIO.

7. CABINET BASE SHALL BE QUAZITE WITH POURED CONCRETE 4' X 6' PAD IN FRONT OF BASE.

8. VIDEO PROCESSOR SHALL BE TRAVIS BRAND AND SHALL BE RACK MOUNT AND SUPPORT 6 CAMERAS AND 6 4-CHANNEL EXPANDER CARDS. RACK SHALL HAVE A MINIMUM OF TWELVE SLOTS.

9. CONTRACTOR SHALL FURNISH COLOR LCD VIDEO MONITOR IN CABINET FOR CONFIGURING VIDEO DETECTION ZONES.

10. LOCKABLE SWITCH SHALL BE 100 AMP, SQUARE D, PART NUMBER Q02000 NRBEH.

11. PAVEMENT MARKINGS SHALL BE THERMOPLASTIC. SEE PLANS BY DEVELOPMENT CONSULTANTS, INC..

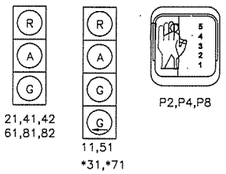
SCALE: NTS

LOCATION	BASELINE RD. / J.E. DAVIS DR.
CITY	LITTLE ROCK
COUNTY	PULASKI
DISTRICT	6

DRAWN BY: GBS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	58	120
				②	SIGNALIZATION PLANS			

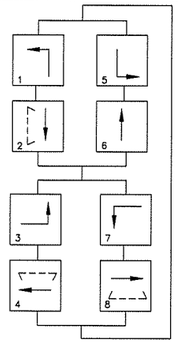
12" LED SIGNAL FACES



* SIGNAL HEADS 31 AND 71 TO BE LOUVERED FOR DALLAS PROTECTED/PERMISSIVE DISPLAY.

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A. STANDARDS.
4. PEDESTRIAN POLES AND BUTTONS TO BE WITHIN 8 FEET OF ALL RAMPS (ADA REQUIREMENT).

PHASING DIAGRAM



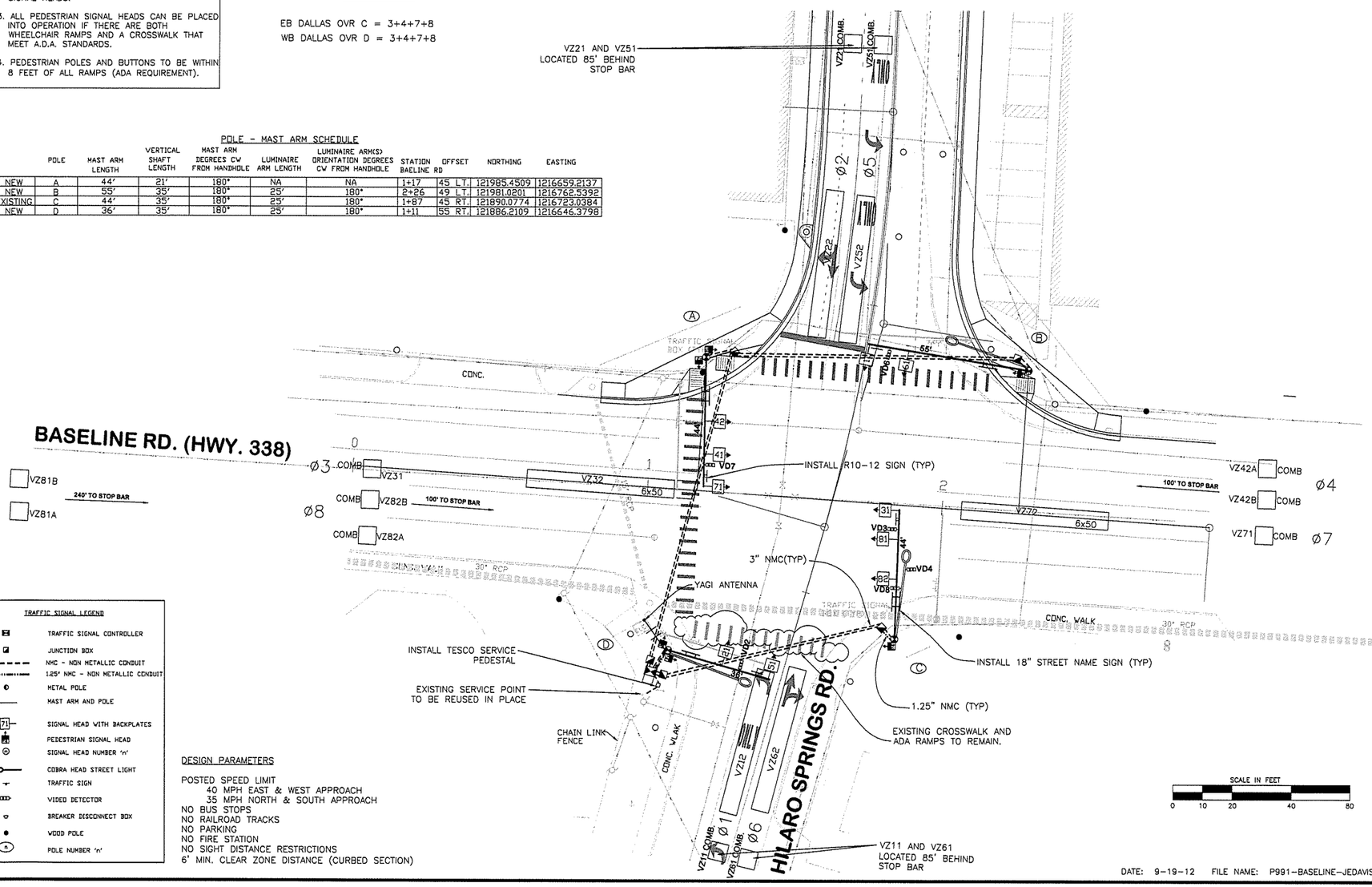
EB DALLAS OVR C = 3+4+7+8
WB DALLAS OVR D = 3+4+7+8

REMOVAL OF EXISTING EQUIPMENT

EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL REMAIN OPERATIONAL UNTIL NEW TRAFFIC SIGNAL EQUIPMENT IS INSTALLED AND MADE OPERATIONAL. AT THAT TIME, EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED AND DELIVERED TO THE CITY AT A LOCATION SPECIFIED BY THE CITY.

POLE - MAST ARM SCHEDULE

	POLE	MAST ARM LENGTH	VERTICAL SHAFT LENGTH	MAST ARM DEGREES CW FROM HANDHOLE	LUMINAIRE ARM LENGTH	LUMINAIRE ARM(S) ORIENTATION DEGREES CW FROM HANDHOLE	STATION BASELINE RD	OFFSET	NORTHING	EASTING
NEW	A	44'	21'	180°	NA	NA	1+17	45 LT.	1219854.4509	1216659.2137
NEW	B	55'	35'	180°	25'	180°	2+26	49 LT.	1219814.0201	1216762.5392
EXISTING	C	44'	35'	180°	25'	180°	1+87	45 RT.	1218904.0774	1216723.0384
NEW	D	36'	35'	180°	25'	180°	1+11	55 RT.	1218862.2109	1216646.3798



TRAFFIC SIGNAL LEGEND

- TRAFFIC SIGNAL CONTROLLER
- JUNCTION BOX
- NMC - NON METALLIC CONDUIT
- 1.25" NMC - NON METALLIC CONDUIT
- METAL POLE
- MAST ARM AND POLE
- 71 SIGNAL HEAD WITH BACKPLATES
- PEDESTRIAN SIGNAL HEAD
- SIGNAL HEAD NUMBER 'n'
- COBRA HEAD STREET LIGHT
- TRAFFIC SIGN
- VIDEO DETECTOR
- BREAKER DISCONNECT BOX
- WOOD POLE
- A POLE NUMBER 'n'

DESIGN PARAMETERS

POSTED SPEED LIMIT
40 MPH EAST & WEST APPROACH
35 MPH NORTH & SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
NO SIGHT DISTANCE RESTRICTIONS
6' MIN. CLEAR ZONE DISTANCE (CURBED SECTION)

SCALE IN FEET
0 10 20 40 80

PETERS & ASSOCIATES ENGINEERS, INC. CORPORATE SEAL 1983 ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER ERNEST R. PETERS No. 4652

10-10-13

ITEM NO.	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASES)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	4	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	6	EACH
SP	AUDIBLE PEDESTRIAN WARNING SIGNALS	6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	920	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	350	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	520	LIN. FT.
710	NON-METALLIC CONDUIT (3")	690	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (55')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT)	1	EACH
SP & 733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO CABLE	995	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA	1	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	3	EACH
SP & 733	VIDEO EDGE CARD EXTENDER	1	EACH
SP & 733	EDGE CONNECT CARD FOR COMMUNICATIONS	1	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ANTENNA CABLE (TYPE 6)	60	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	75	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	780	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	225	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	831	LIN. FT.
SP	18" STREET NAME SIGN	6	EACH
SP	LUMINAIRE ASSEMBLY	3	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM

DATE: 9-19-12 FILE NAME: P991-BASELINE-JEDAVIS-SIGNAL-DESIGN-7-17-12.DWG

LOCATION	BASELINE RD. / J.E. DAVIS DR.		
CITY	LITTLE ROCK		
COUNTY	PULASKI		
DISTRICT	6	SCALE: AS SHOWN	DRAWN BY: GBS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	59	120
				②	SIGNALIZATION PLANS			

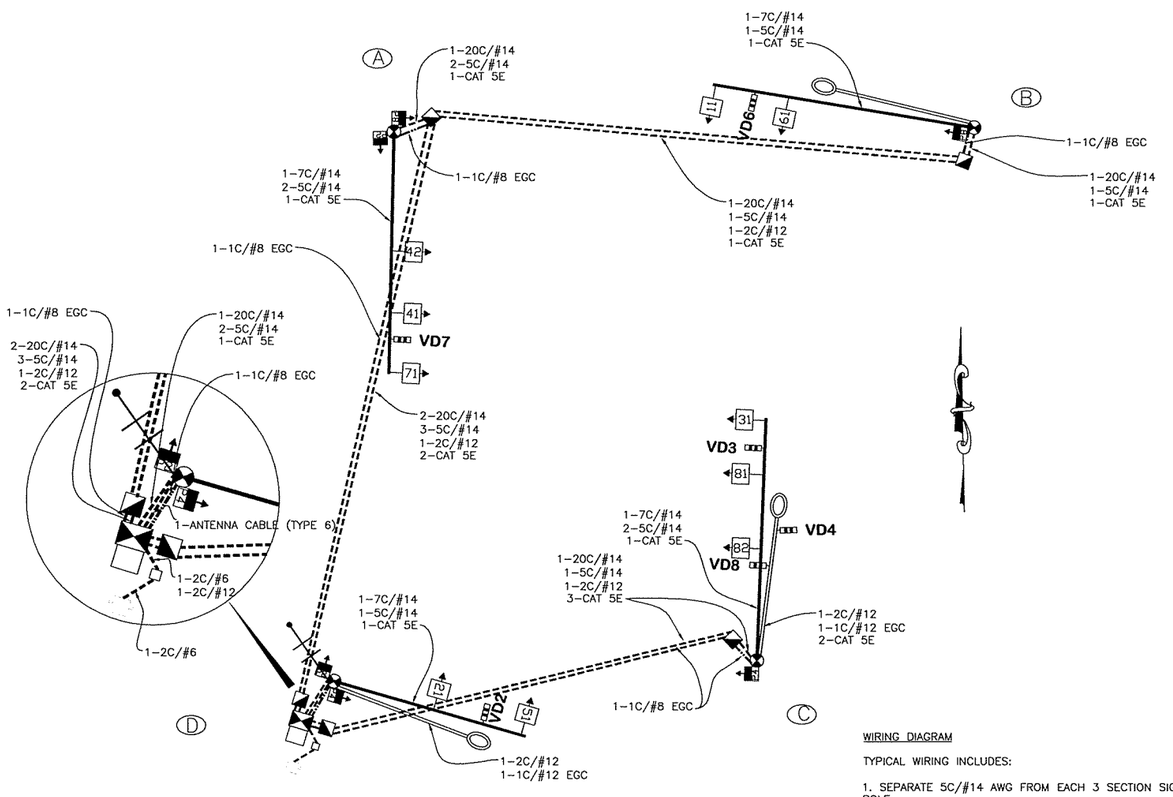
DETECTOR CHART

DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER		PROGRAM ASSIGNMENTS				
						LOCAL				
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS.	SYS. DET. #	MSTR. SYS. DET. #	CAMERA	TUBE LENGTH
Vz11	NB LEFT FAR	COMB.			1	V9	1	1		VD6	74'
Vz12	NB LEFT NEAR	LOCAL			2	V1	1			VD6	74'
Vz21	SB FAR	COMB.			5	V10	2	2		VD2	74'
Vz22	SB NEAR	LOCAL			6	V2	2	2		VD2	74'
Vz31	EB LEFT FAR	COMB.			13	V11	3	3		VD3	74'
Vz32	EB LEFT NEAR	LOCAL			14	V3	3			VD3	74'
Vz41A	WB ADV. (OUTSIDE)	LOCAL			9	V4	4			VD4	74'
Vz41B	WB ADV. (INSIDE)	LOCAL			9	V4	4			VD4	74'
Vz42A	WB NEAR (OUTSIDE)	COMB.			10	V12	4	4		VD7	74'
Vz42B	WB NEAR (INSIDE)	COMB.			10	V12	4	4		VD7	74'
Vz51	SB LEFT FAR	COMB.			7	V13	5	5		VD2	74'
Vz52	SB LEFT NEAR	LOCAL			8	V5	5			VD2	74'
Vz61	NB FAR	COMB.			3	V14	6	6		VD6	74'
Vz62	NB NEAR	LOCAL			4	V6	6			VD6	74'
Vz71	WB LEFT FAR	COMB.			11	V5	7	7		VD7	74'
Vz72	WB LEFT NEAR	LOCAL			12	V7	7			VD7	74'
Vz81A	EB ADV. (OUTSIDE)	LOCAL			15	V8	8			VD8	74'
Vz81B	EB ADV. (INSIDE)	LOCAL			15	V8	8			VD8	74'
Vz82A	EB NEAR (OUTSIDE)	COMB.			16	V16	8	8		VD8	74'
Vz82B	EB NEAR (INSIDE)	COMB.			16	V16	8	8		VD8	74'

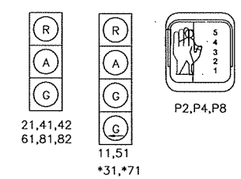
INTERVAL CHART

SIGNAL FACES	BASELINE RD. AND SCOTT HAMILTON RD. / HILARO SPRINGS RD.																FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	4+8	CLR.	3+8	CLR.	4+7	CLR.	
11	~~G~~	*	~~G~~	*	~~R~~	~~R~~	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
21	R	R	R	R	G	**	G	**	R	R	R	R	R	R	R	R	R
31	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~FY~~	***	~~G~~	***	~~R~~	~~R~~	~~R~~
41&42	R	R	R	R	R	R	R	R	R	R	G	**	R	R	G	**	R
51	~~G~~	*	~~R~~	~~R~~	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	R
61	R	R	G	**	R	R	G	**	R	R	R	R	R	R	R	R	R
71	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~G~~	***	~~R~~
81&82	R	R	R	R	R	R	R	R	R	R	G	**	G	**	R	R	R
P2	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FDW	DW	DW	DW	DW	BLK
P8	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	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

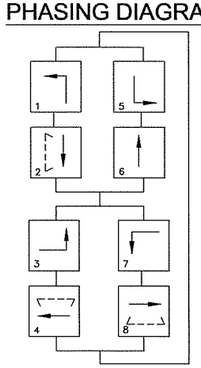


12" LED SIGNAL FACES



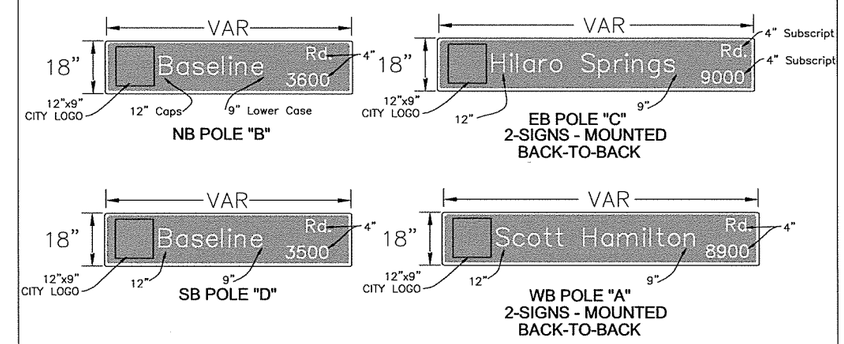
* SIGNAL HEADS 31 AND 71 TO BE LOUVERED FOR DALLAS PROTECTED/PERMISSIVE DISPLAY.

PHASING DIAGRAM



EB DALLAS OVR C = 3+4+7+8
WB DALLAS OVR D = 3+4+7+8

TYPICAL OVERHEAD STREET NAME MARKER MAST ARM MOUNTED



NOTES:

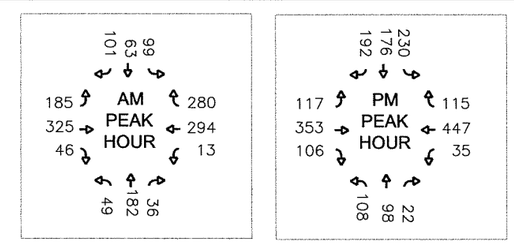
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION ON THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY OF LITTLE ROCK.

3. SEE STANDARD DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING TO MAST ARM ASSEMBLY.

4. THE CLEARVIEW 3W FONT SHALL BE USED FOR ALL LETTERS AS PER 2009 MUTCD..

5. SIGN DESIGN LAYOUT PLAN SHALL BE SUBMITTED BY CONTRACTOR FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION.



NOTE: 2007 TRAFFIC VOLUMES

WIRING DIAGRAM

TYPICAL WIRING INCLUDES:

1. SEPARATE 5C/#14 AWG FROM EACH 3 SECTION SIGNAL HEAD TO BASE OF POLE.

2. SEPARATE 7C/#14 AWG FROM EACH 5 SECTION SIGNAL HEAD TO BASE OF POLE.

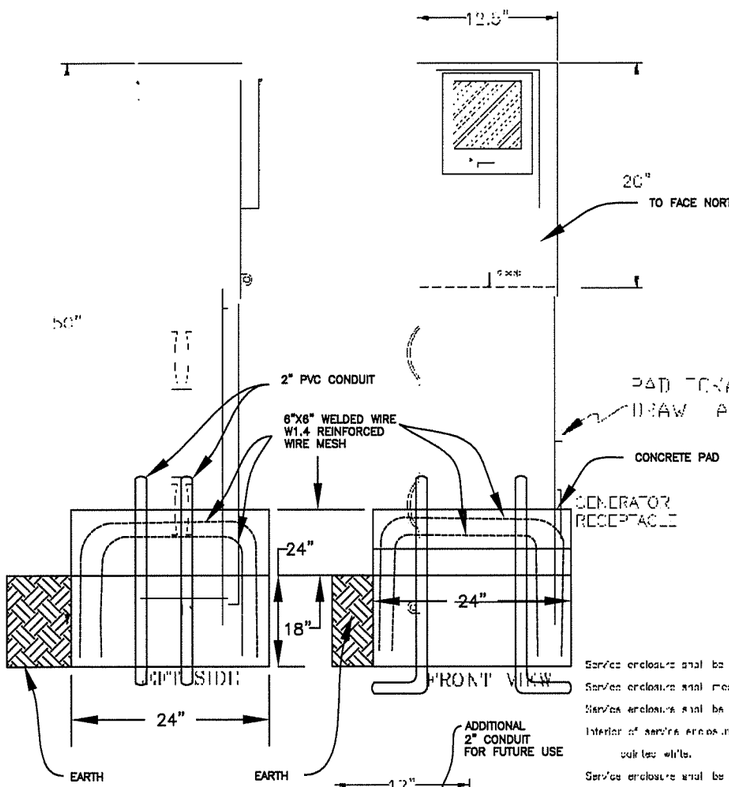
3. SEPARATE 5C/#14 AWG FROM EACH PEDESTRIAN SIGNAL HEAD TO CONTROLLER.

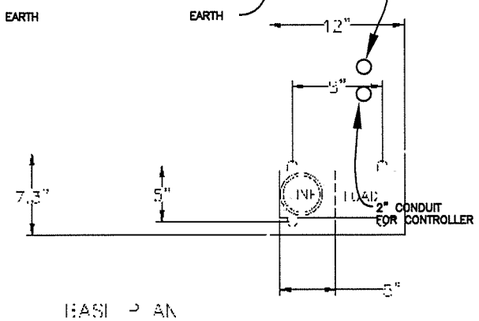
4. PROVIDE SEPARATE CONDUIT TO ANTENNA.

DATE: 7-17-2012 FILE NAME: P991-WIRING-DIAGRAM-BASELINE-JEDAVIS-7-17-12.DWG

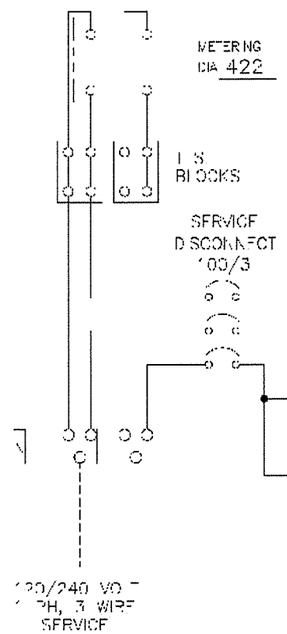
LOCATION	BASELINE RD. / J.E. DAVIS DR.		
CITY	LITTLE ROCK		
COUNTY	PULASKI		
DISTRICT	6	SCALE: AS SHOWN	DRAWN BY: GBS

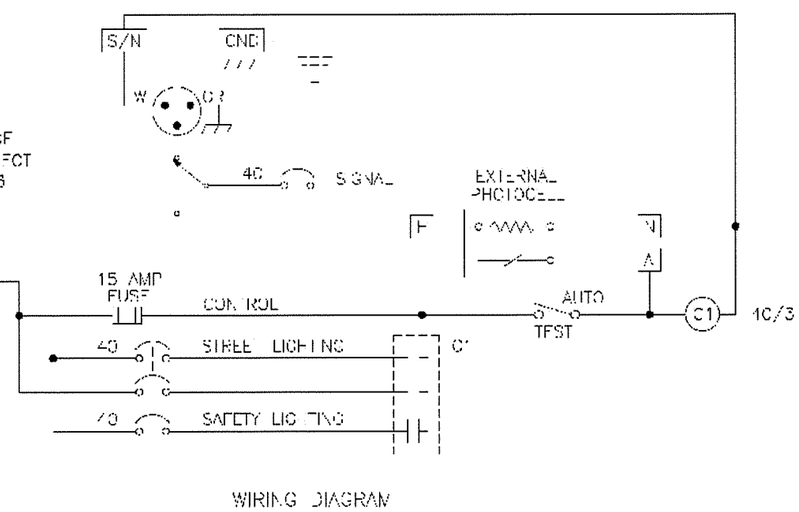
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	60	120
				② POWER PEDESTAL				





BASE PLAN





WIRING DIAGRAM

ENCLOSURE CONSTRUCTION NOTES

Service enclosure shall be 12" Wide X 50" High X 7 1/4" Deep.

Service enclosure shall meet ELSPEC requirements.

Service enclosure shall be fabricated from 12 gauge H.R. galvanized steel.

Interior of service enclosure shall be fabricated from 14 gauge hot rolled steel & painted white.

Service enclosure shall be painted with an oven baked polyurethane powder coated finish for lasting durability.

Service enclosure shall have continuous welded seams.

Service enclosure shall have full length deadfront with stainless steel hinge.

Service enclosure shall be UL 508 Industrial control panel listed for service entrance equipment.

Service enclosure shall have pull handle with removable strap.

Service enclosure shall have fully formed side hinged outer door with swaged close tolerance sides for flush fit with top drip lip & closed cell neoprene flange compression gaskets.

Service enclosure shall have hinged deadfront with ¼ turn latch & keyless knobs.

Deadfront door shall be hinged on the same side as exterior door & open a minimum of

Removable backpan shall be mounted on 4 welded ¼" studs.

Circuit breakers shall be of the cable-in cable-out type.

All circuit breakers shall be labeled in vertical position, with "On" or "Off" marked down for "Off".

Service enclosure shall consist of absolutely no "Bolt On" or "Plug In" circuit breakers.

Service enclosure shall be completely prewired in the factory.

Wiring will be to NEMA 13 standards showing external connectors & external equipment.

All wiring shall be UL approved copper THHN cable wiring, fully rated.

No function of all circuit breakers, switches & other components as required shall be identified by laminated engraved plastic nameplates with minimum 1/4" letters fastened with minimum of two #4-40 stainless steel machine screws.

Control wiring will be marked at both ends by permanent wire markers.

Wiring schematics will be Computer Aided Drafting & include all external equipment & connections per NFPA 79.

A plastic covered wiring diagram will be attached to the inside of the front door.

As Built factory drawings shall be enclosed in clear plastic & held inside the outer door by velcro tabs.

Manufacturers will be required to furnish independent laboratory certification of metal preparation & finish & to confirm that the overall product meets these specifications.

If this agency wishes to witness this testing, all costs to be paid by contractor.

Service enclosure shall be a Tesco, Inc. Model XB 500 or City approved equal, prior to bid.

Construction will be NEMA 3R, Raintight.

All nuts, bolts and screws will be stainless steel.

Nuts, bolts and screws will not be visible from outside of enclosure.

Color to be French Green.

Underwriters Laboratories Inc.
File No. E62062

TESCO CONTROLS, INC.
3131 52ND AVENUE
SACRAMENTO, CA 95820
(916) 383-9800

INDUSTRIAL CONTROL PANEL

VOLTAGE	PHASE	WIRES	RATING AMPERES	Hz
120/240	1	3	60	60

SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NO MORE THAN

AMPERES	AT	VOLTAGE	
10,000	RMS SYM.	240	V

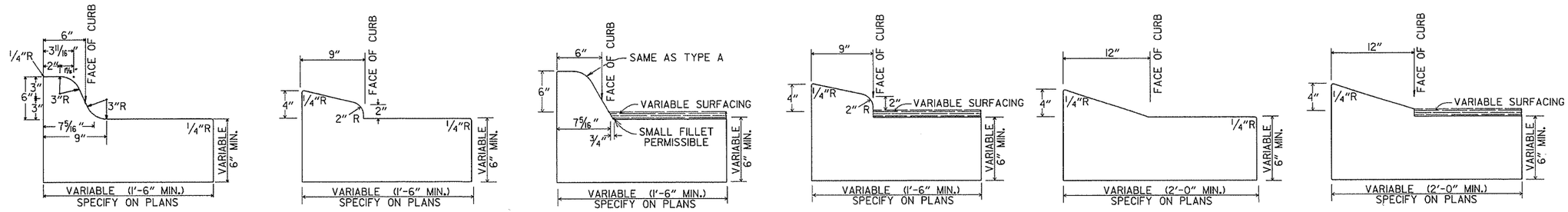
WHEN PROTECTED BY NO MORE THAN 60 AMP CLASS J FUSES

ENCLOSURE TYPE 3R

SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT

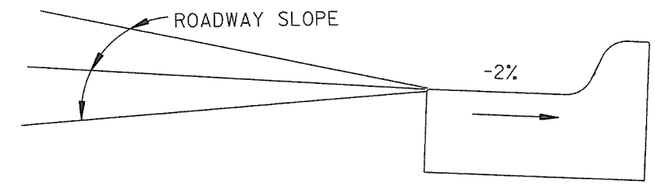
CITY OF LITTLE ROCK
ELECTRICAL SCHEMATICS

DATE	DESIGNED	DRAWN BY	CHECKED BY	SHEET	DRAWING #



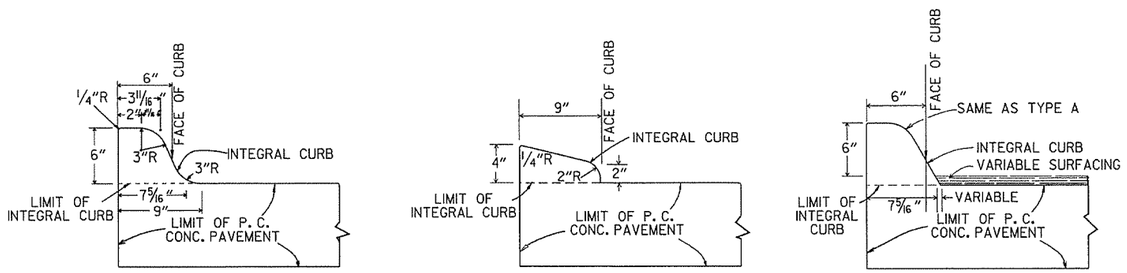
TYPE A TYPE B-1 TYPE C TYPE B-2 TYPE E-1 TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER



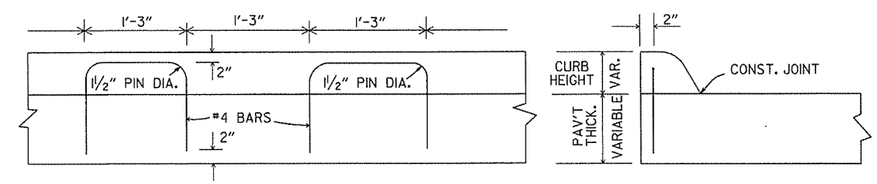
DETAIL OF GUTTER SLOPE

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



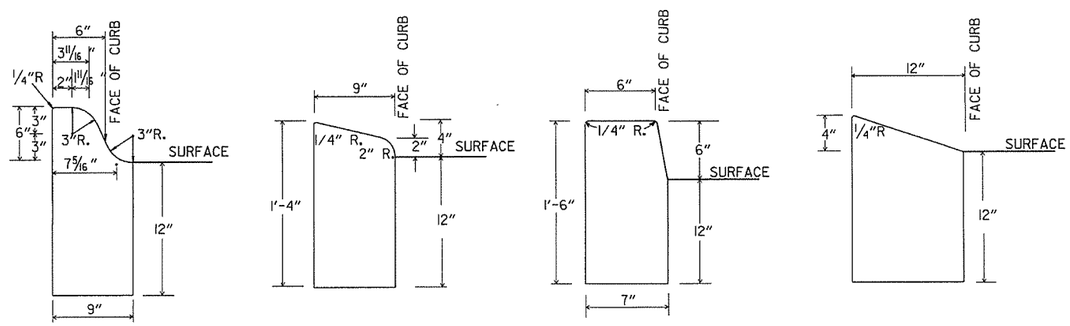
TYPE A TYPE B TYPE C

INTEGRAL CURB



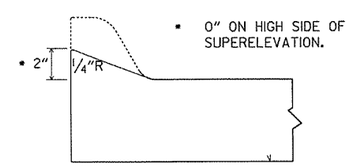
LONGITUDINAL SECTION ELEVATION

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



TYPE A TYPE B TYPE D TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

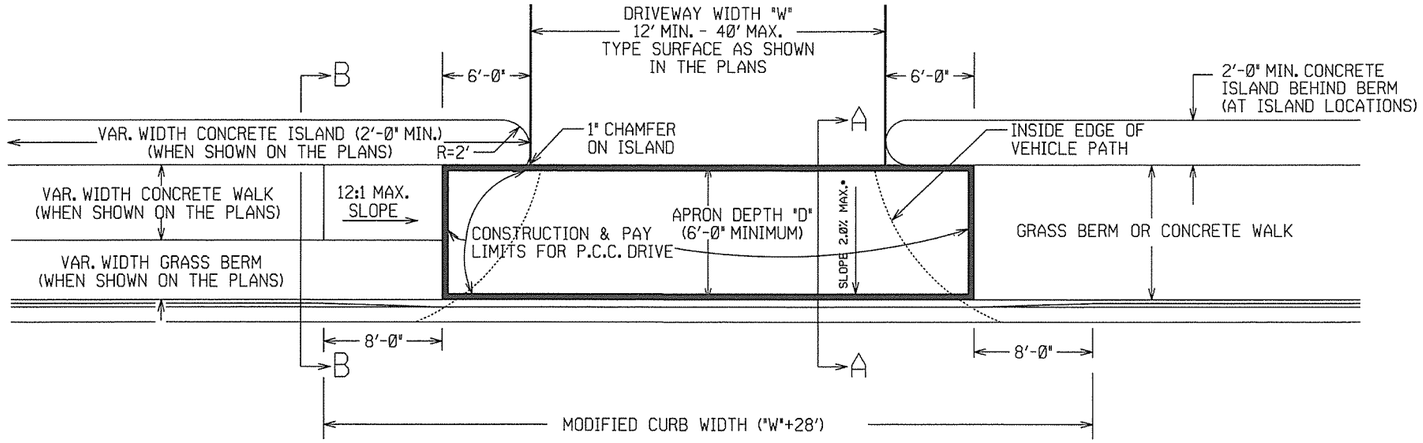
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

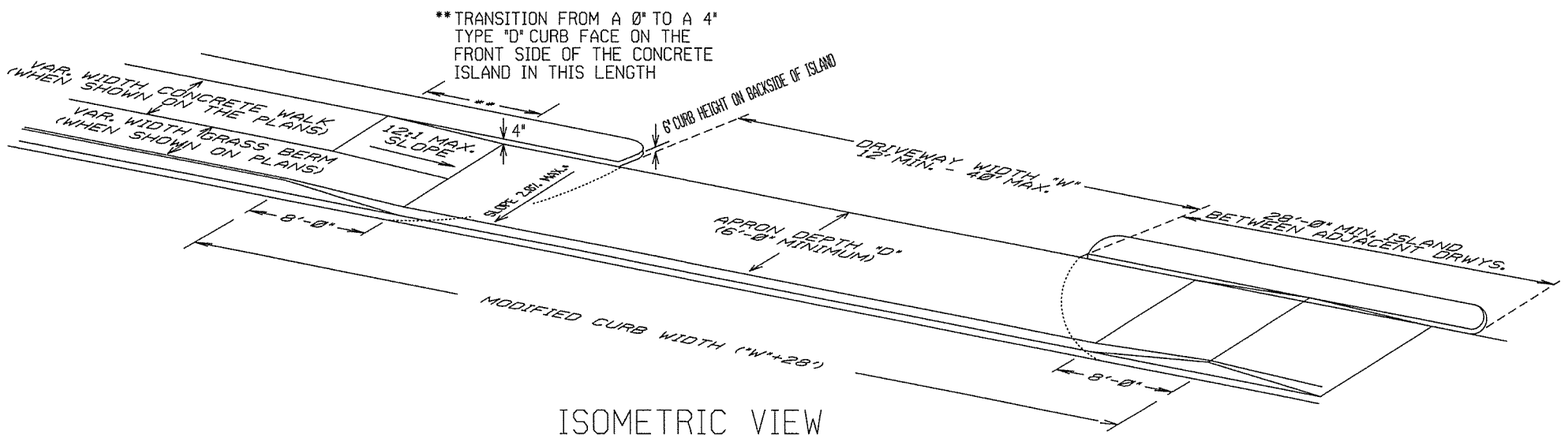
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

STANDARD DRAWING CG-1

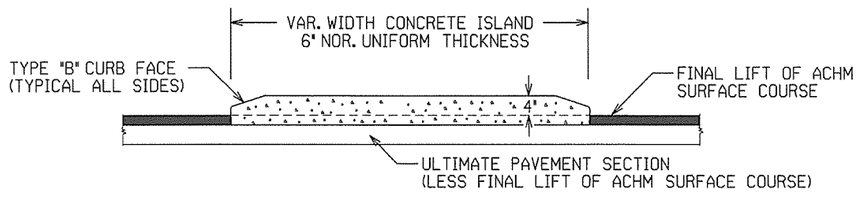


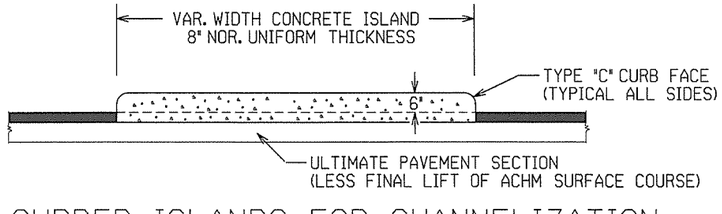
PLAN VIEW



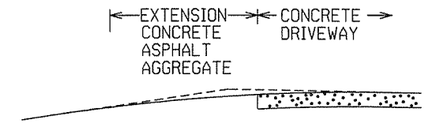
ISOMETRIC VIEW

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".





CURBED ISLANDS FOR CHANNELIZATION



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

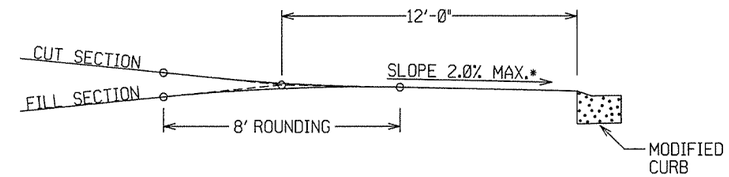
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

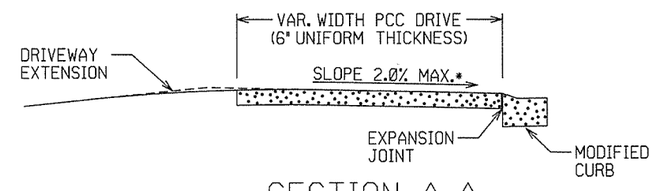
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

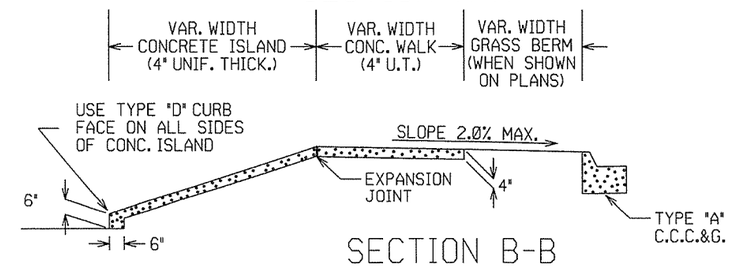


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



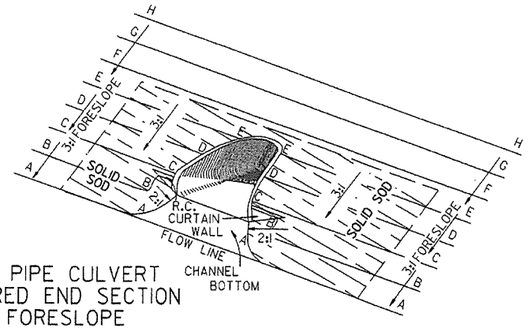
SECTION A-A



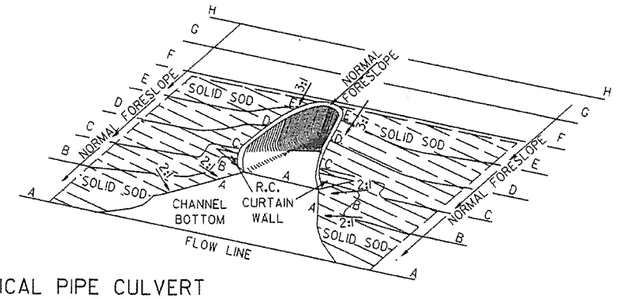
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	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

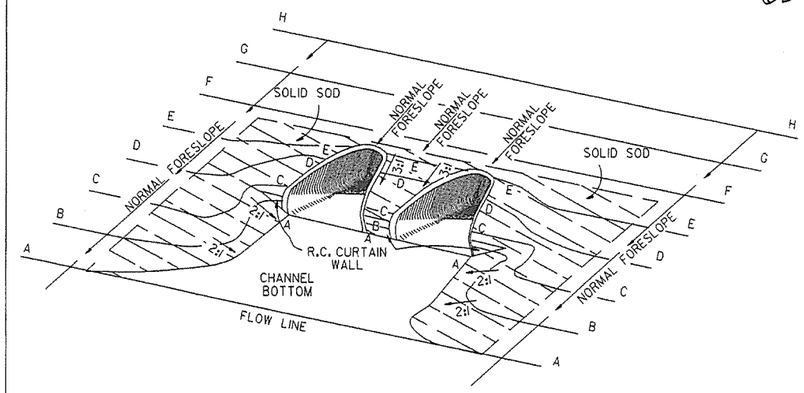
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



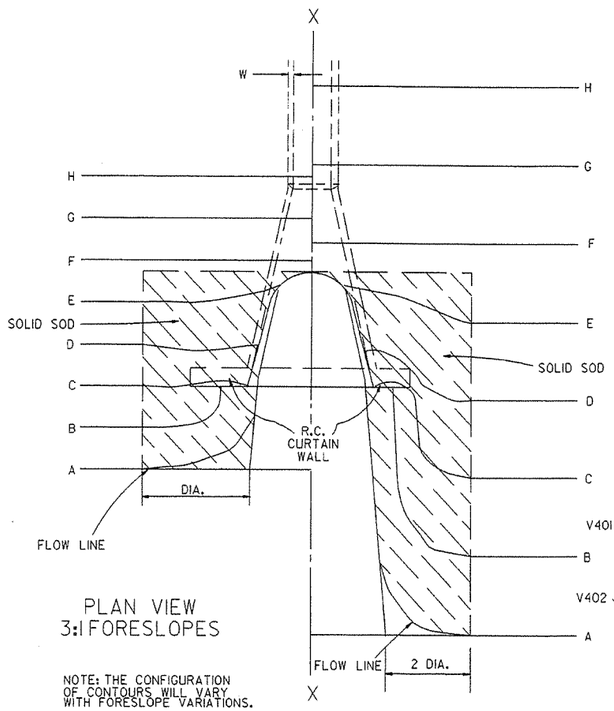
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES



PLAN VIEW
3:1 FORESLOPES

NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

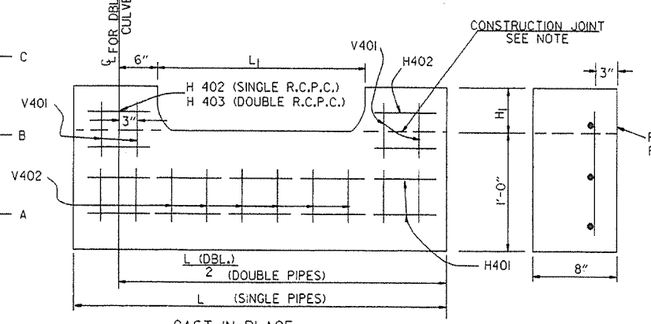
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

REINFORCING STEEL SCHEDULE

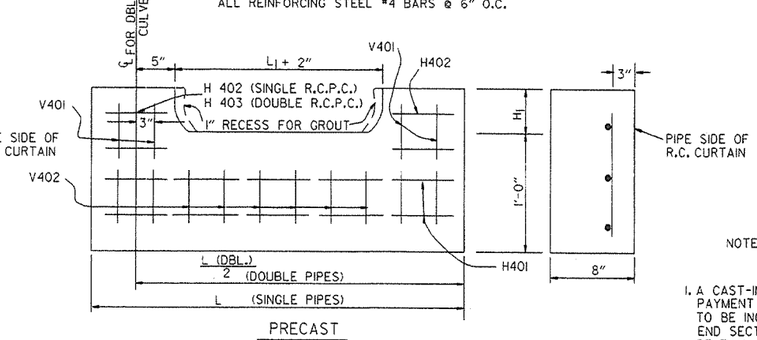
PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.



CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

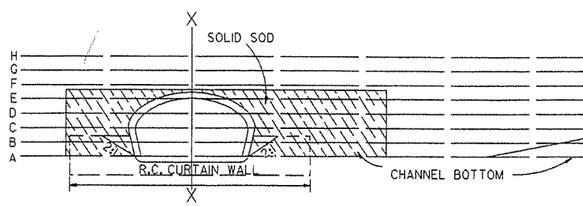
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	SINGLE R.C.P.C. 4:1	SINGLE R.C.P.C. 6:1	DOUBLE R.C.P.C. 3:1	DOUBLE R.C.P.C. 4:1	DOUBLE R.C.P.C. 6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

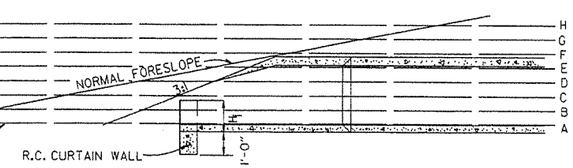
NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW



SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96
10-12-95	CORRECTED SPELLING	
11-3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

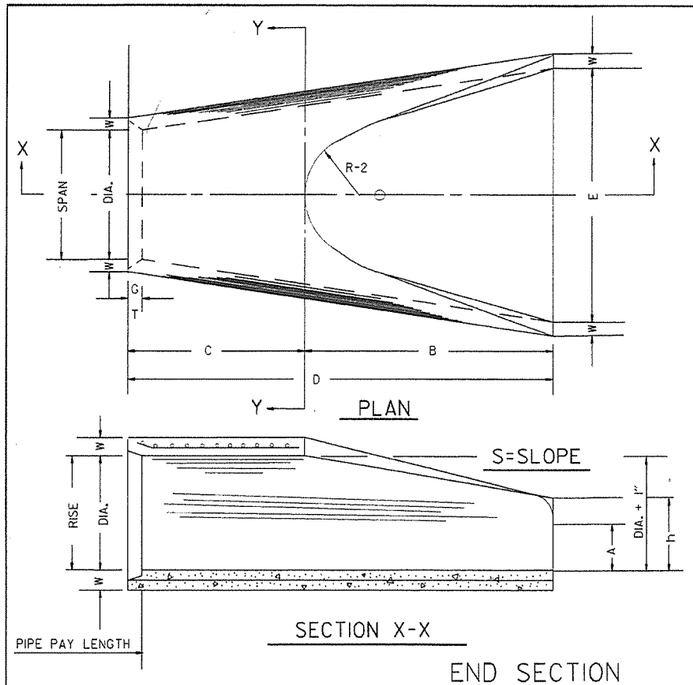


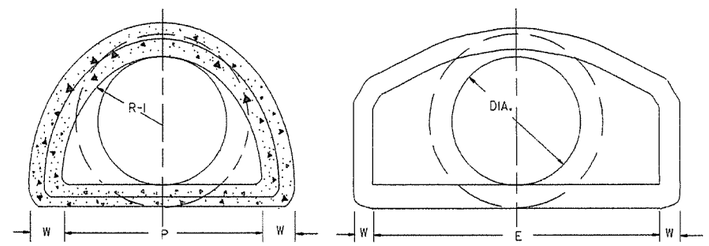
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. ± 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 11/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

ARCH PIPE

EQUIV. DIA.	• SPAN		• 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"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 3/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

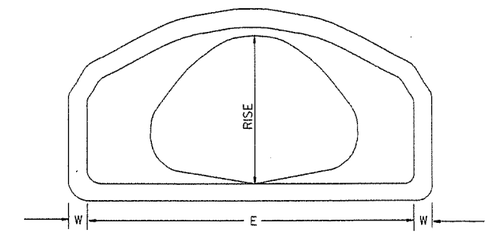
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



SECTION Y-Y

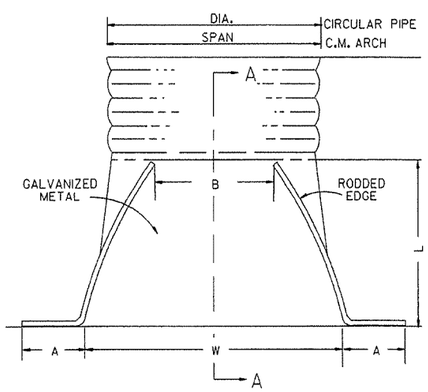
END VIEW

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

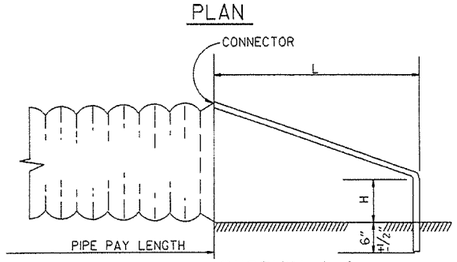


END VIEW
CONCRETE ARCH PIPE

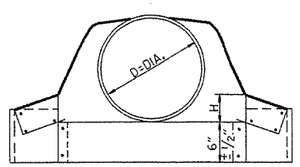
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS



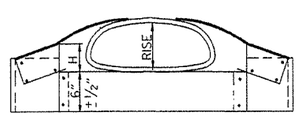
PLAN



SECTION A-A



CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

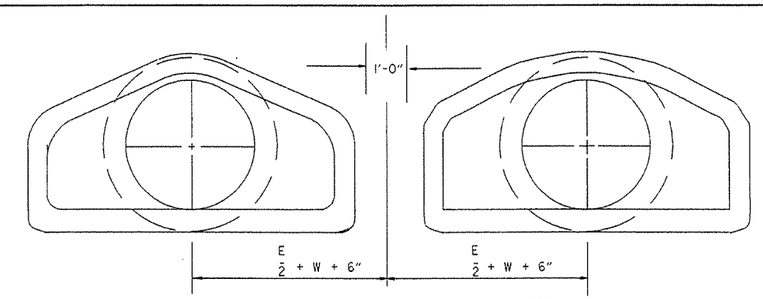
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

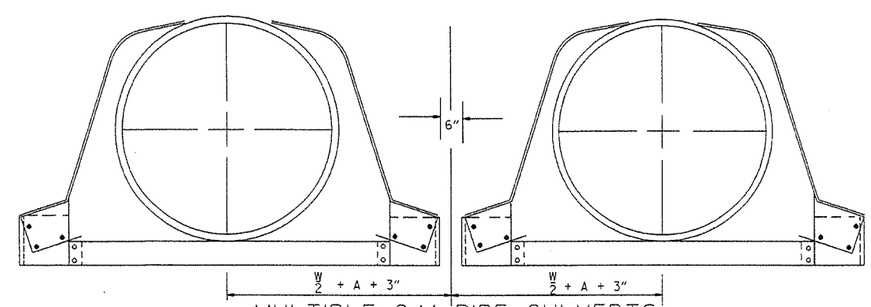
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	16	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



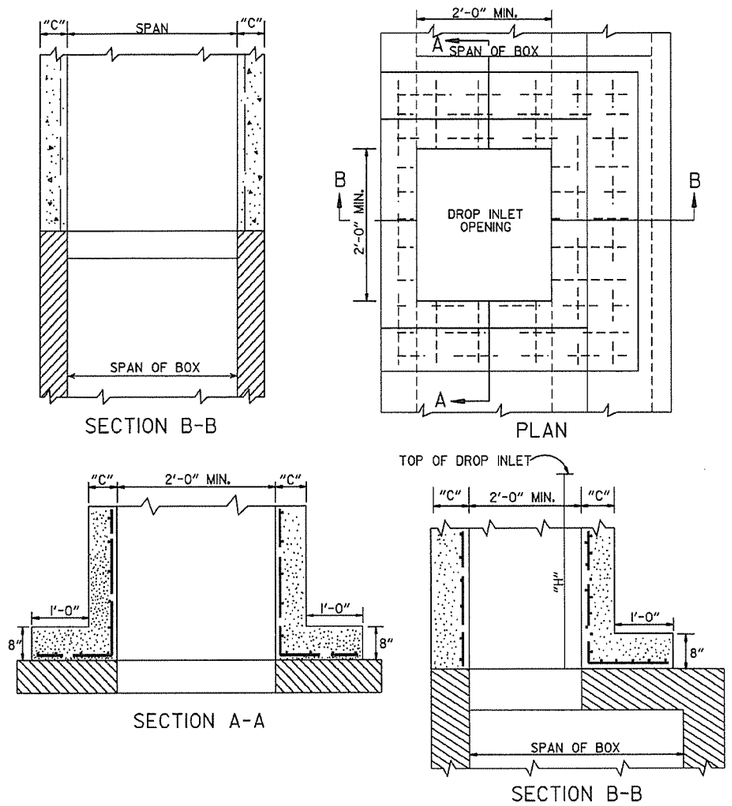
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

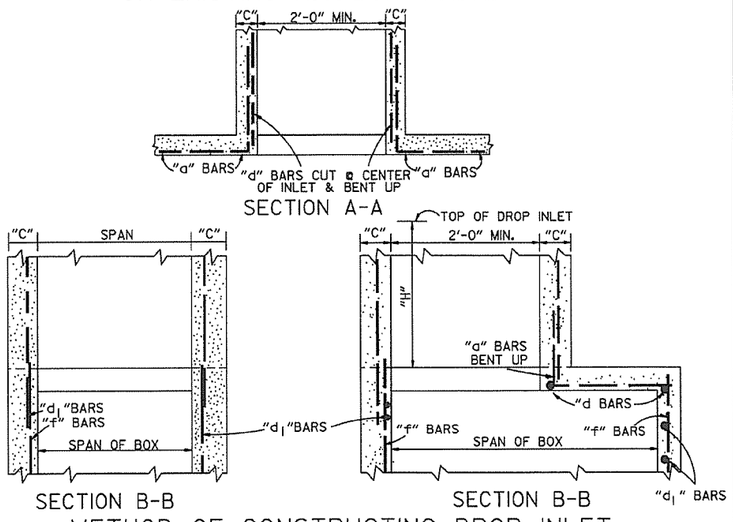
ARKANSAS STATE HIGHWAY COMMISION

FLARED END SECTION

STANDARD DRAWING FES-2

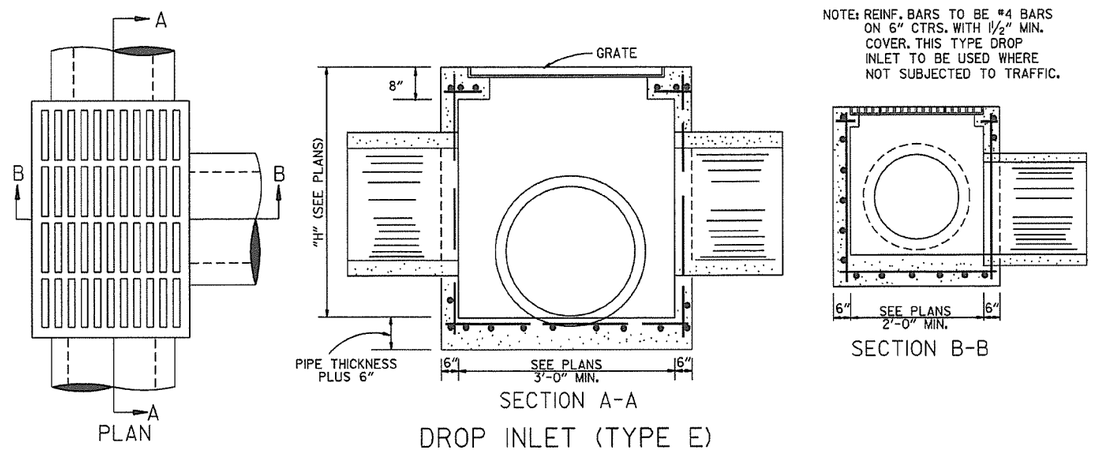


METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT

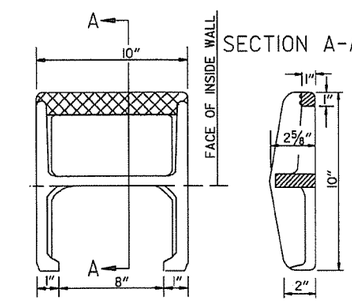


METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

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



DROP INLET (TYPE E)

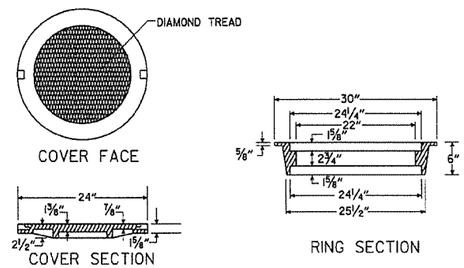


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

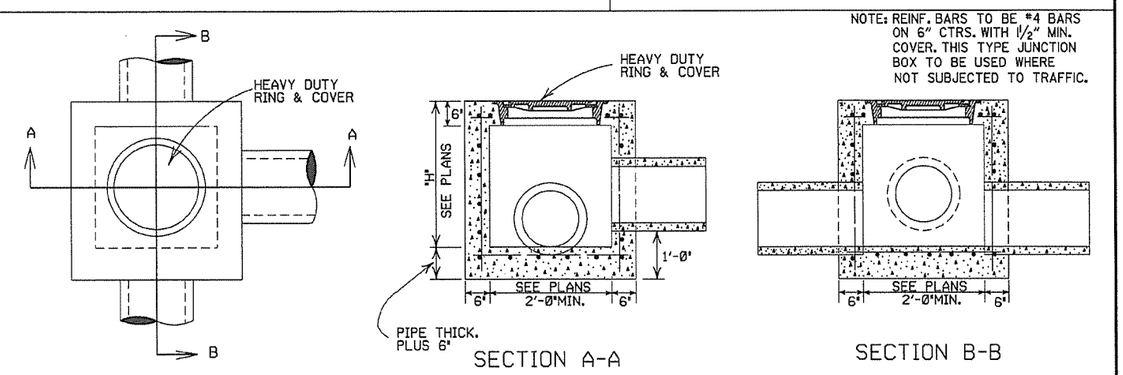
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

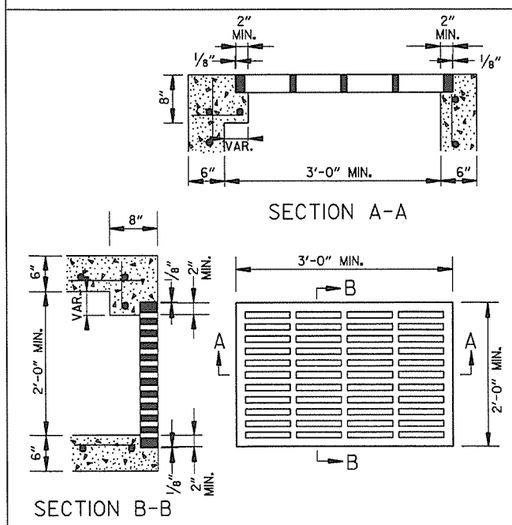


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

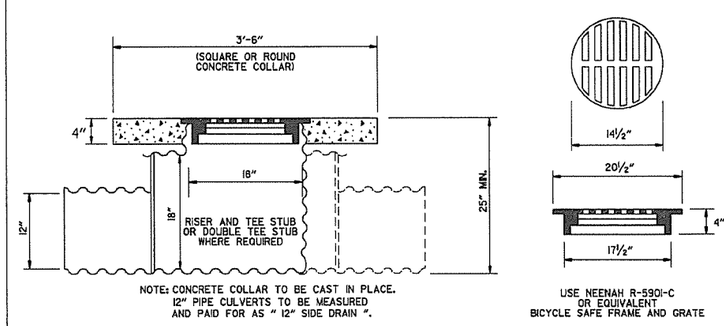


JUNCTION BOX (TYPE E)



APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

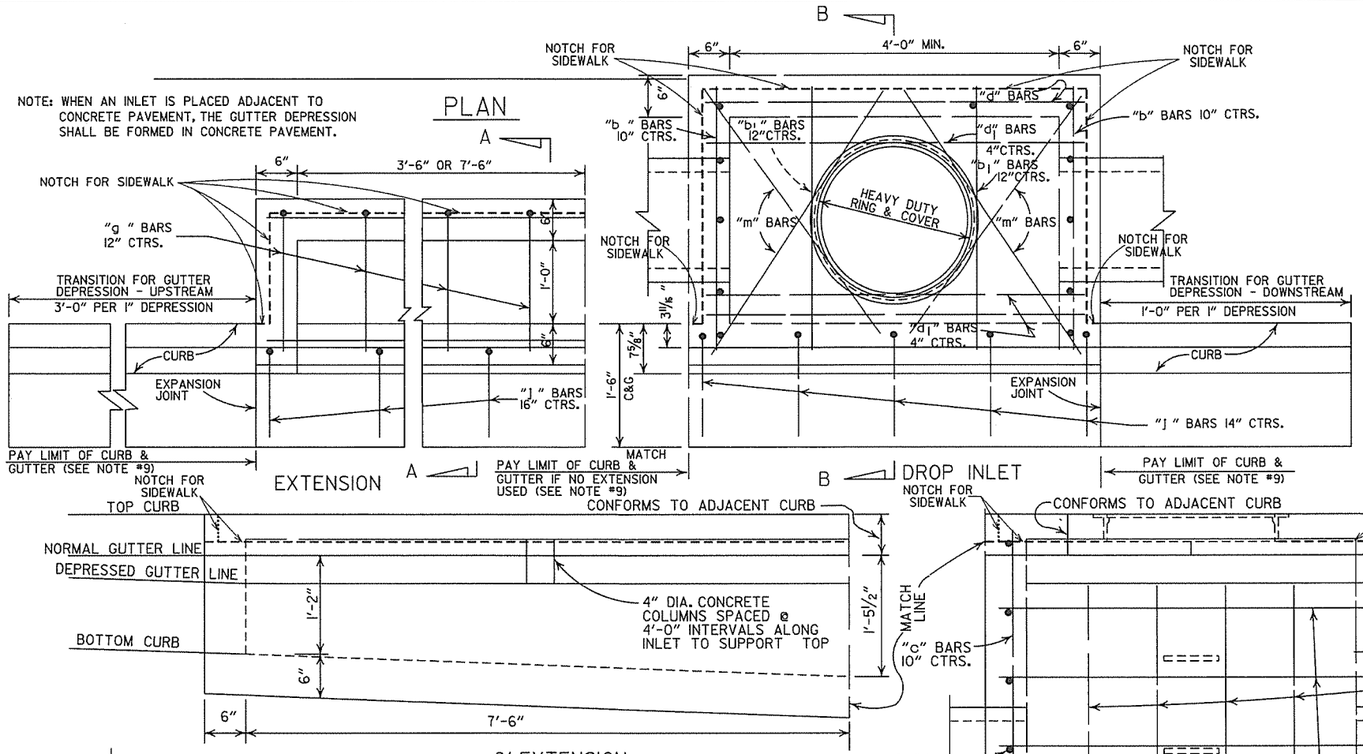
DROP INLET EXTENSION

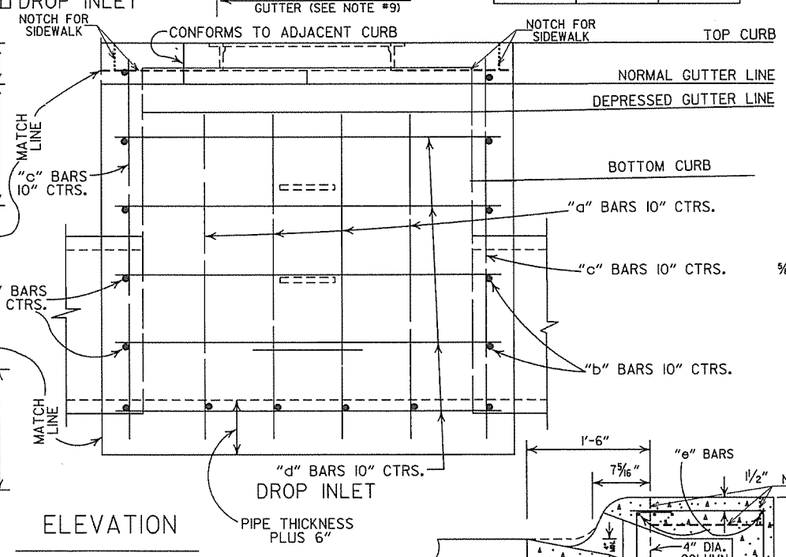
4'-0" LENGTH DROP INLET

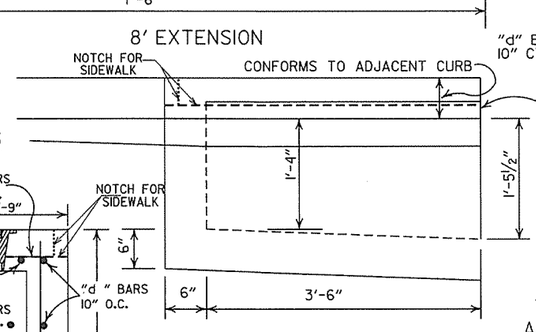
PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC. CU. YDS.	HEIGHT 5'-0" REINF. STEEL POUNDS	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. CU. YDS.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL POUNDS	4'-0" CLASS A CONC. CU. YDS.	4'-0" REINF. STEEL POUNDS	8'-0" CLASS A CONC. CU. YDS.	8'-0" REINF. 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	DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
42"	4'-4"	2.95	250	0.34	30				
48"	4'-10"	3.21	265	0.36	32				
						0.04	3		

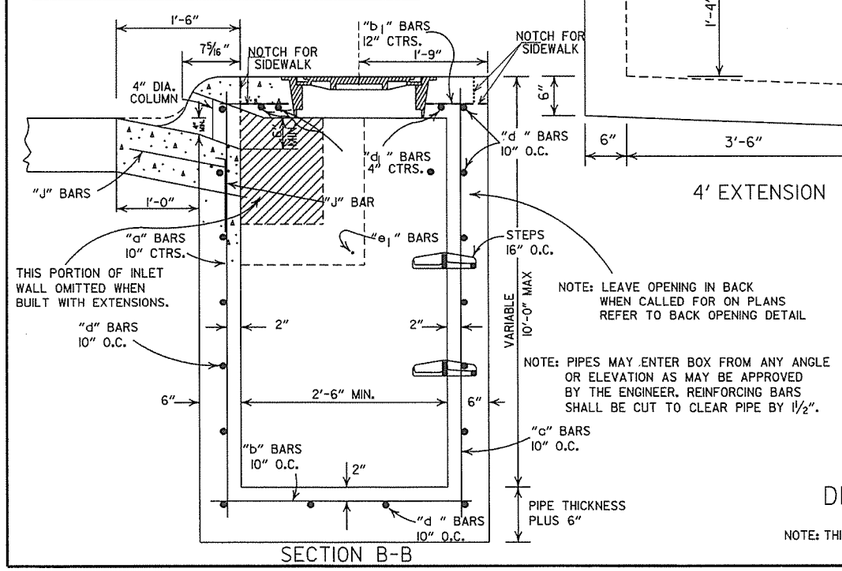
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

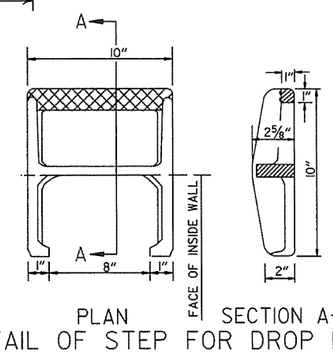
DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET		
INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8







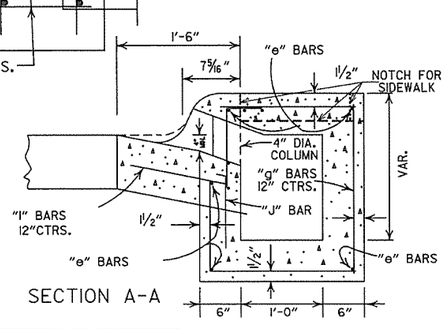




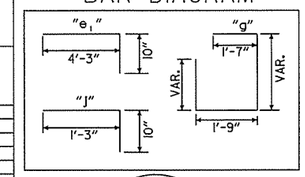
DETAIL OF STEP FOR DROP INLET

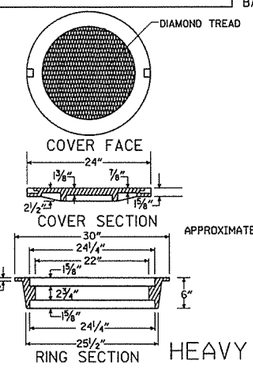
APPROX. WEIGHT = 11 LBS. (CAST IRON)

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

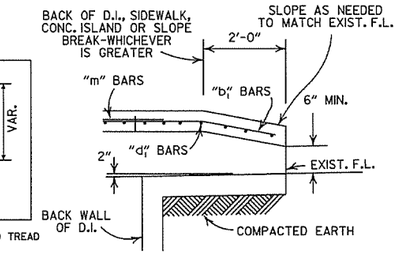


BAR DIAGRAM





HEAVY DUTY RING & COVER



BACK OPENING

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

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

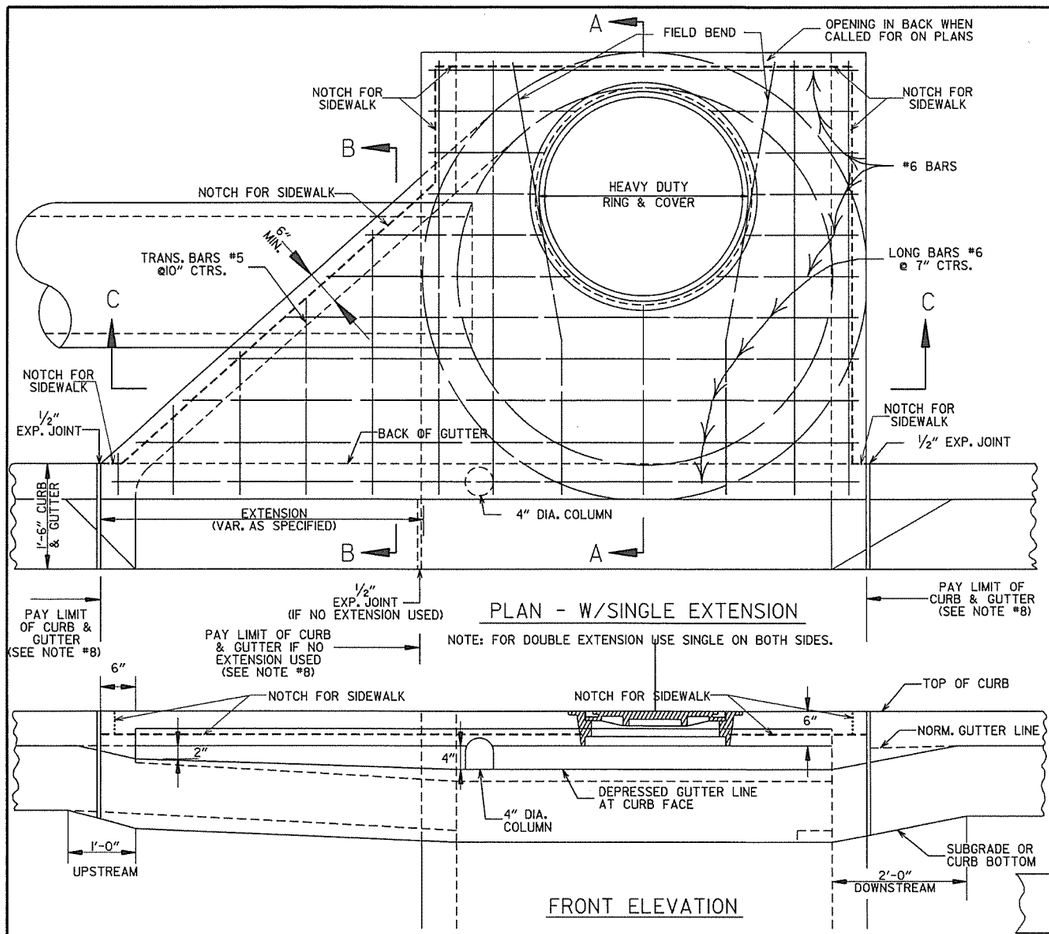
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

(TYPE C)

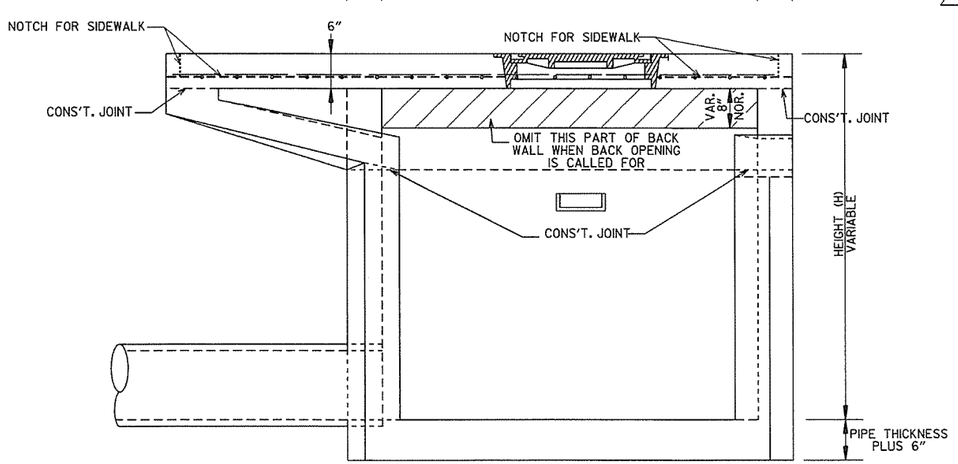
STANDARD DRAWING FPC-9E



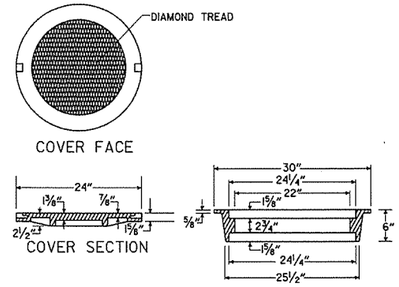
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



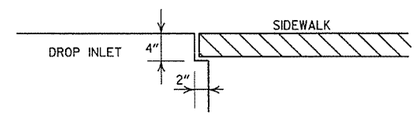
SECTION C-C



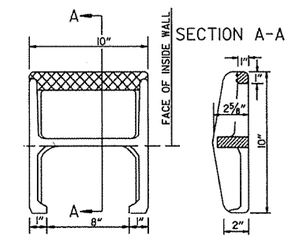
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

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



DETAIL OF NOTCH FOR SIDEWALKS



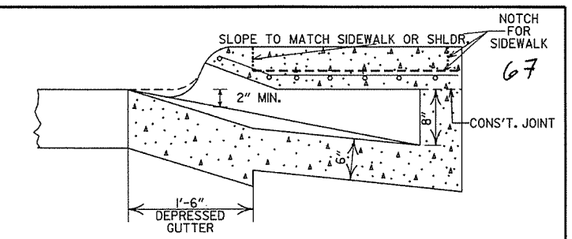
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

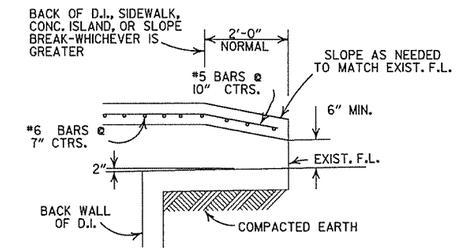
PLAN

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

DETAIL OF STEP FOR DROP INLET



SECTION B-B

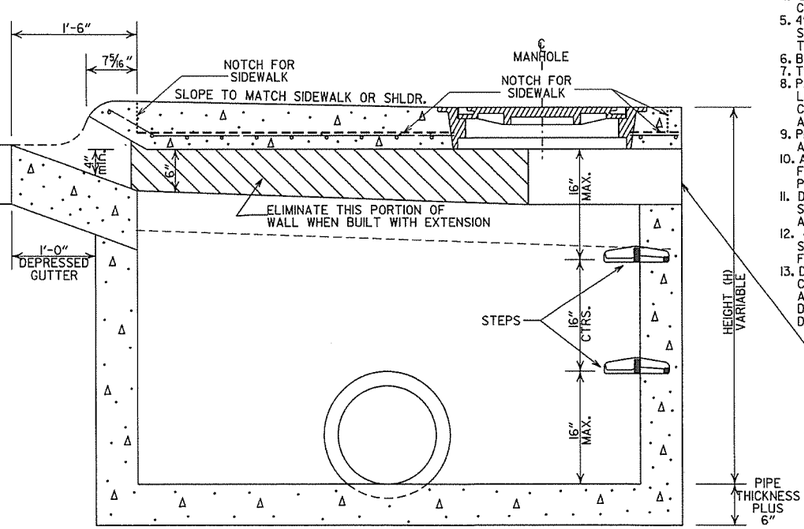


BACK OPENING

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

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"×2" 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.



SECTION A-A

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

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

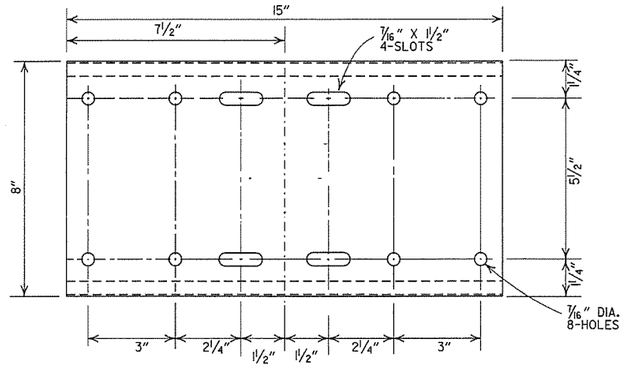
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11; ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN, BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	639-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
5-12-87	ISSUED	4-6-12-87

ARKANSAS STATE HIGHWAY COMMISSION

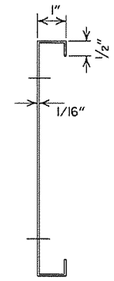
DETAILS OF DROP INLET (TYPE MO)

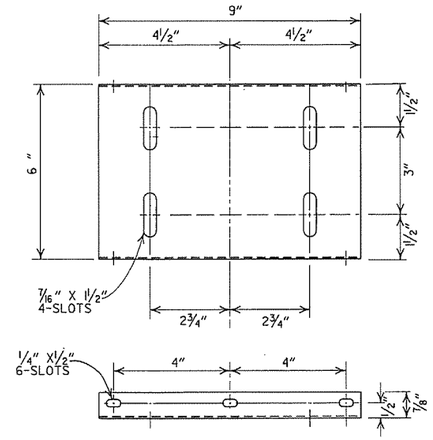
STANDARD DRAWING FPC-9M

67

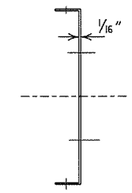


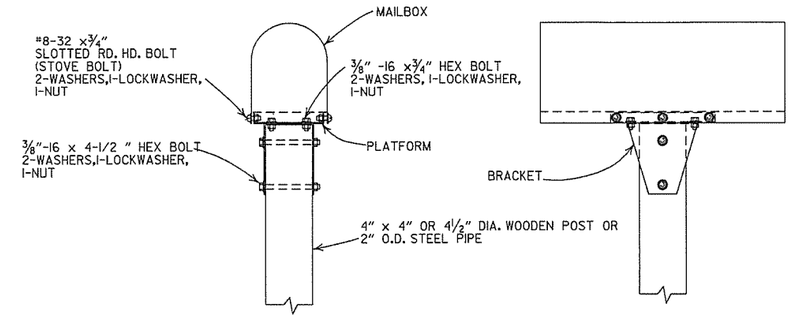
SHELF



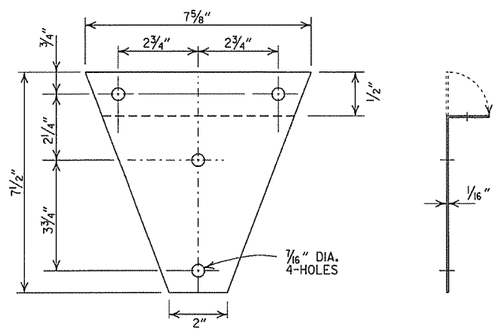


PLATFORM





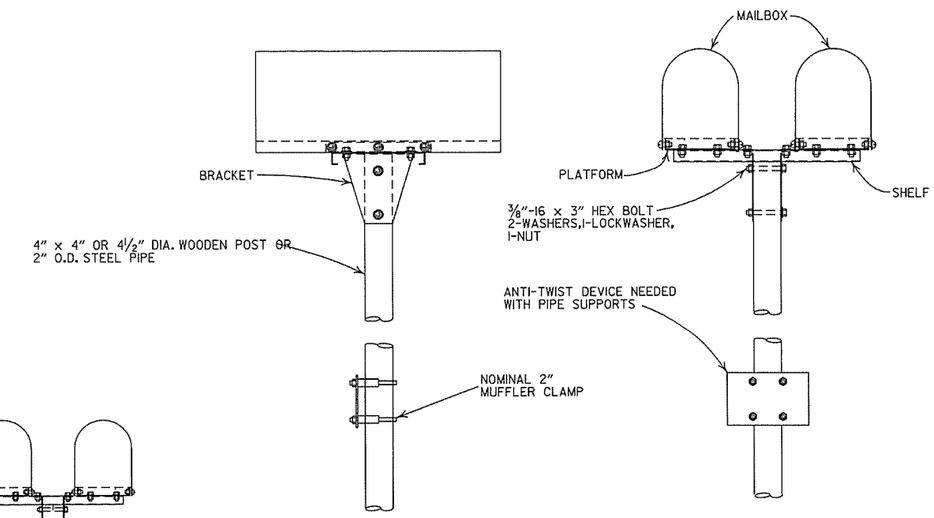
SINGLE INSTALLATION



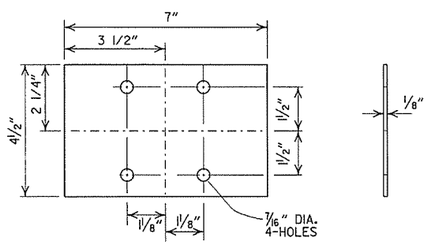
BRACKET

GENERAL NOTES

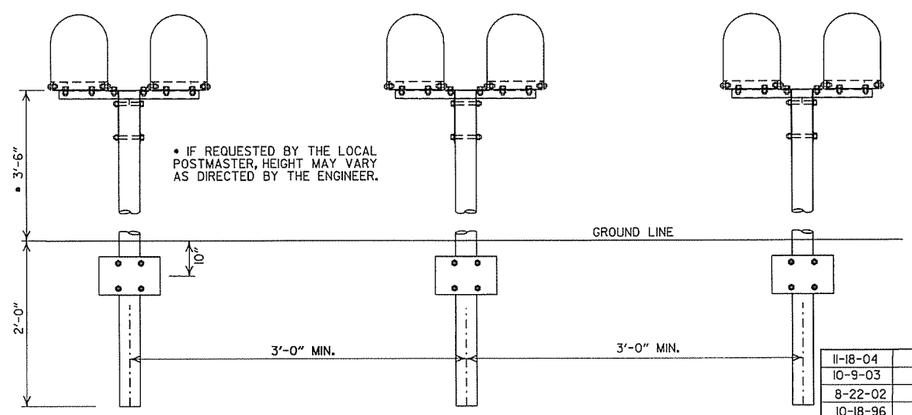
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X ¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



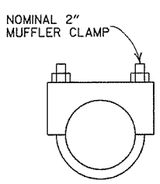
DOUBLE INSTALLATION



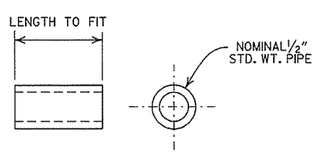
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



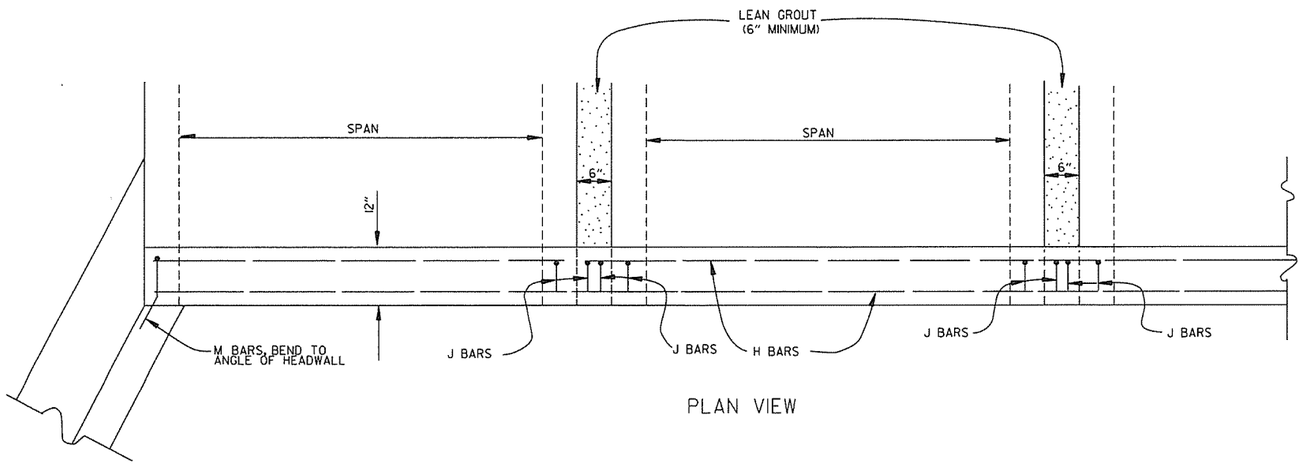
SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	120-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

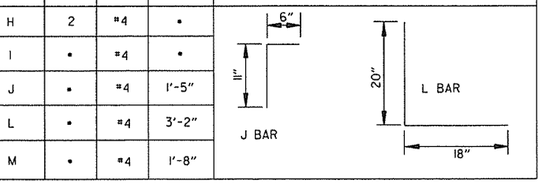
STANDARD DRAWING MB-1



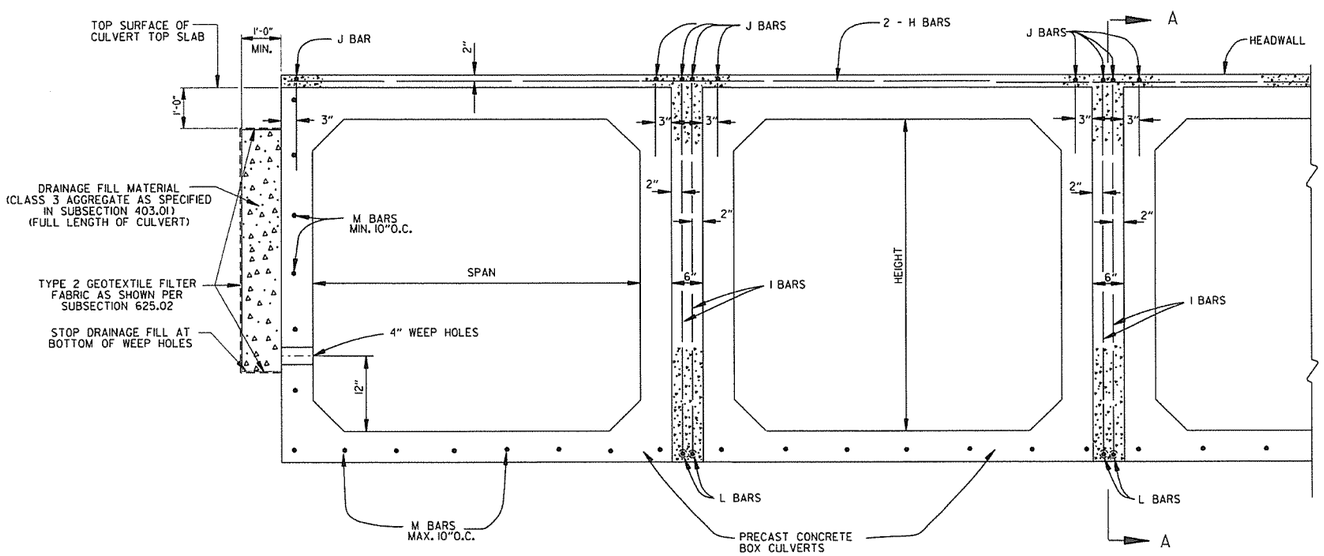
PLAN VIEW

BAR LIST

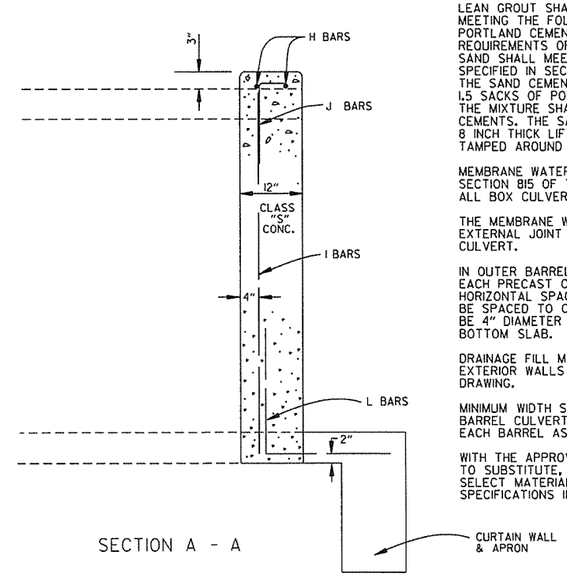
BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT



END VIEW



SECTION A - A

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

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

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

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

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.

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	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

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

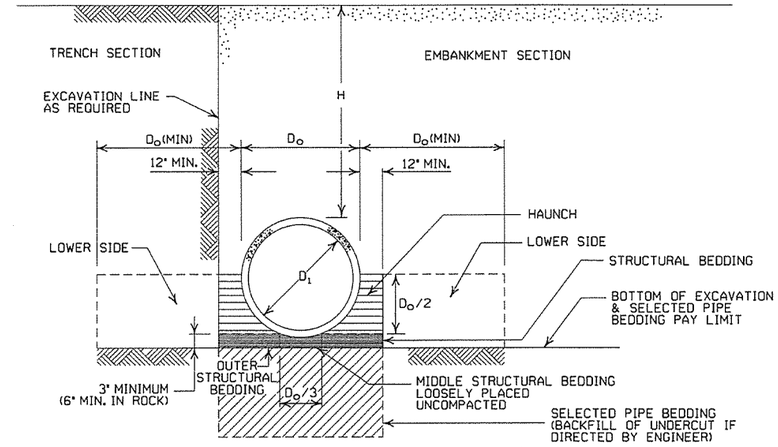
- LEGEND -

D_i = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

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

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

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

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."

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	

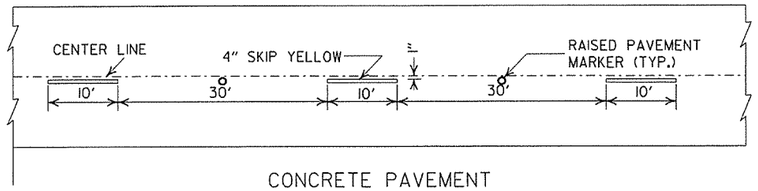
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

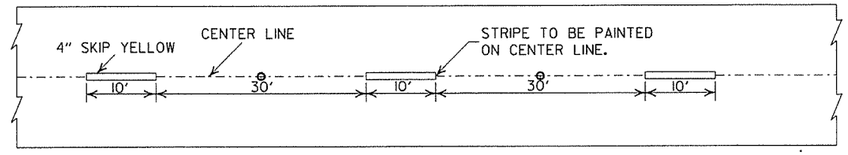
STANDARD DRAWING PCC-1

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

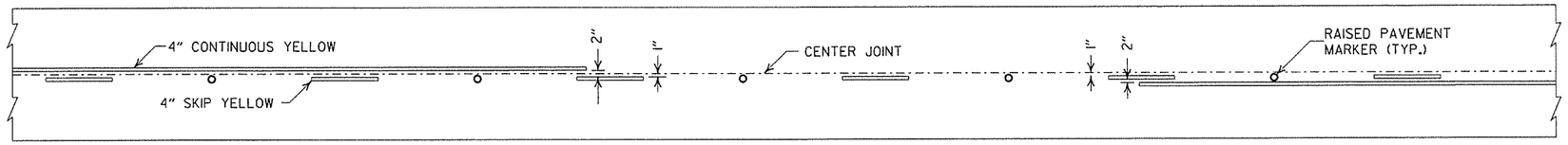


CONCRETE PAVEMENT

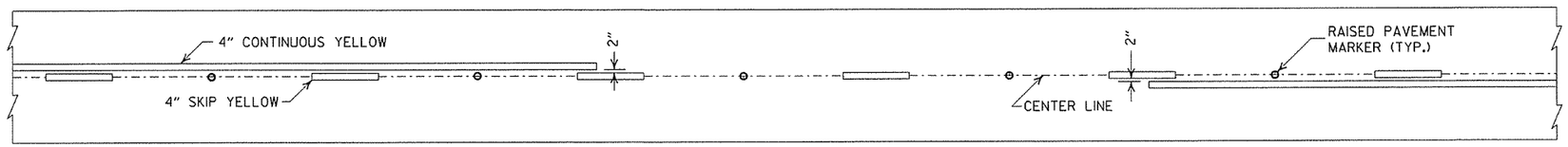


ASPHALT PAVEMENT

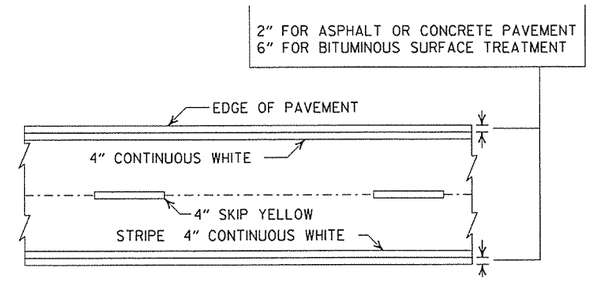
BROKEN LINE STRIPING



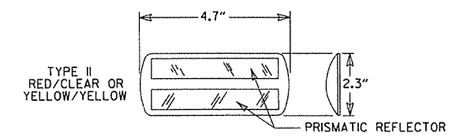
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

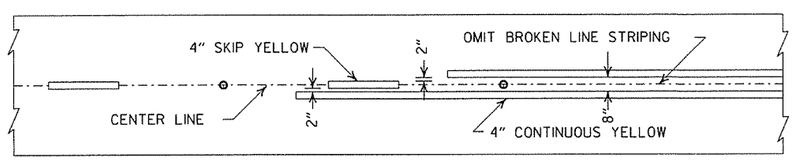


PAVEMENT EDGE LINE MARKING

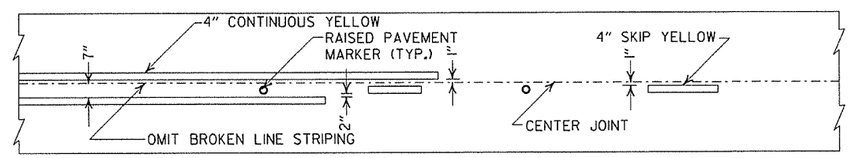


NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS



ASPHALT PAVEMENT



CONCRETE PAVEMENT

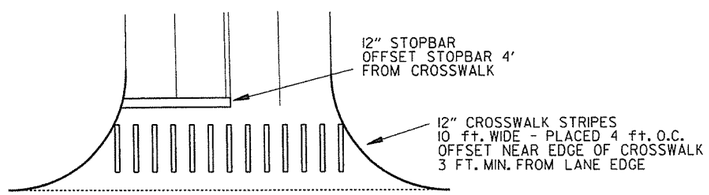
STRIPING AT ADJACENT NO PASSING LANES

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.



CROSSWALK AND STOPBAR DETAILS

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

ARKANSAS STATE HIGHWAY COMMISSION

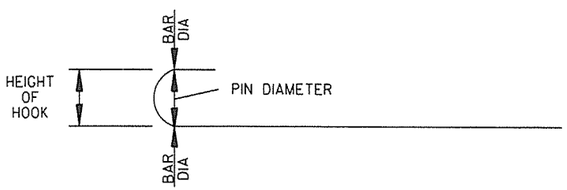
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

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

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

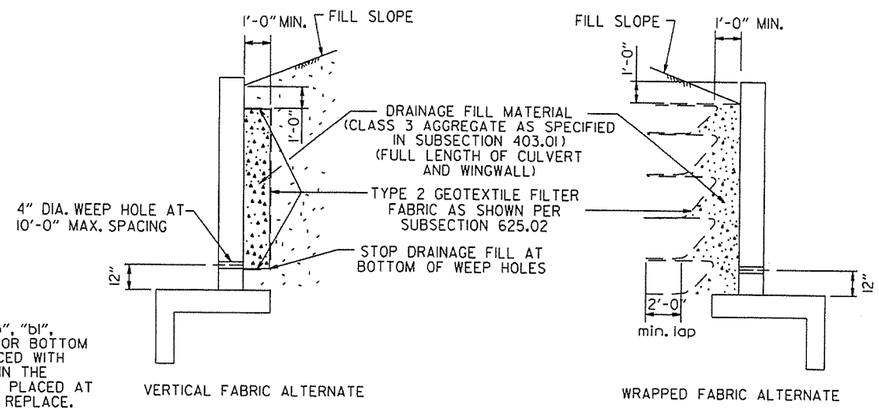
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

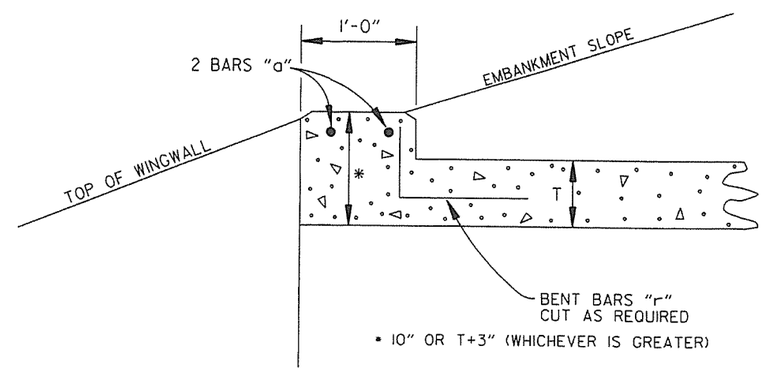
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

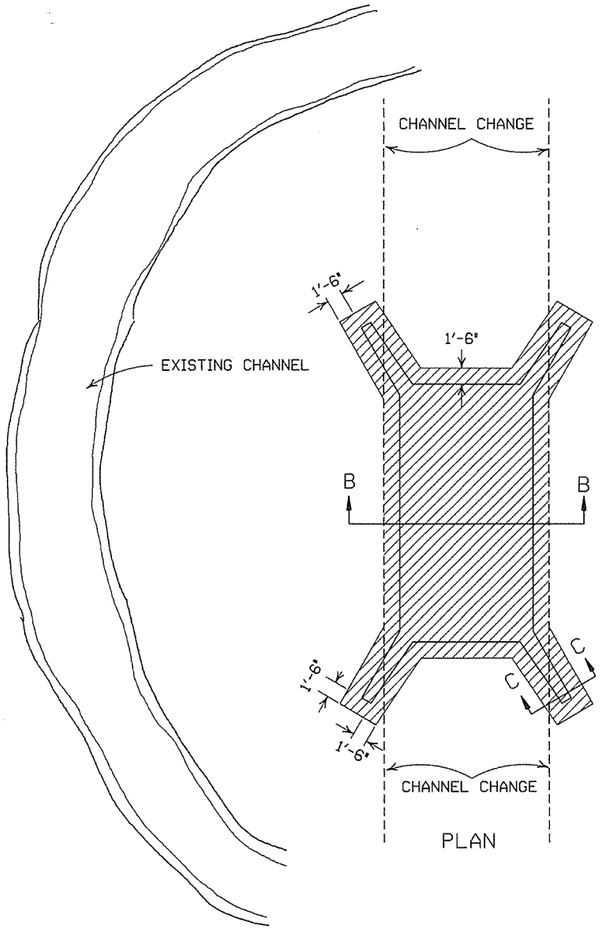
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

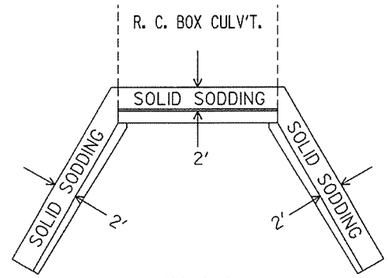
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

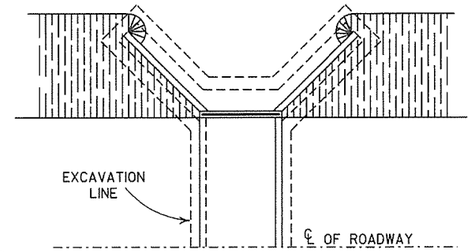
SOLID SODDING



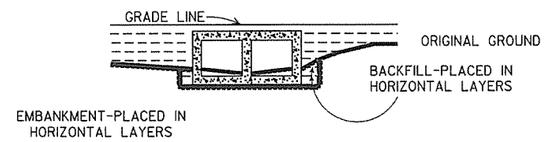
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

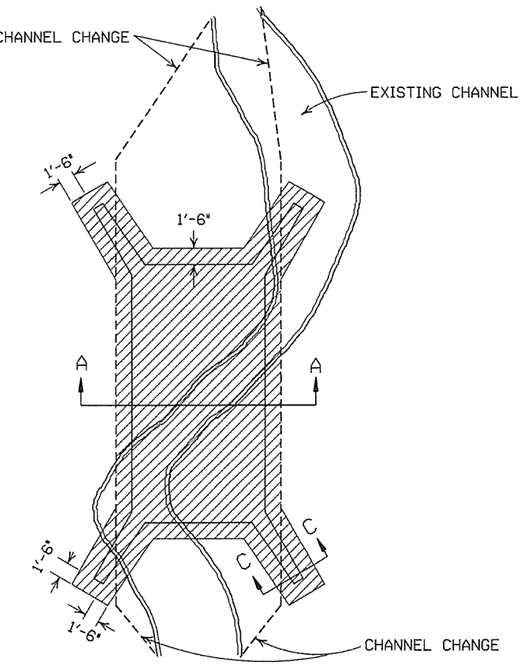


PLAN

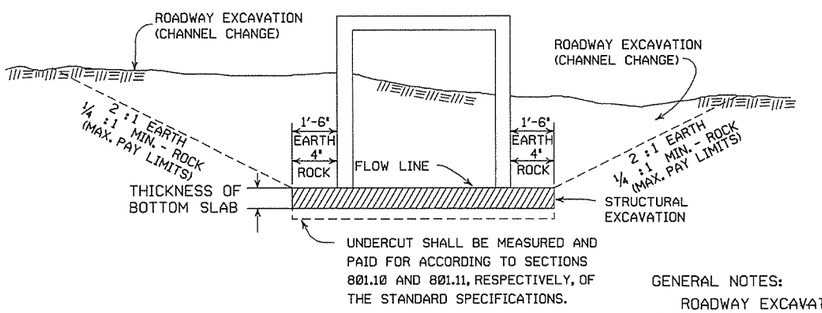


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

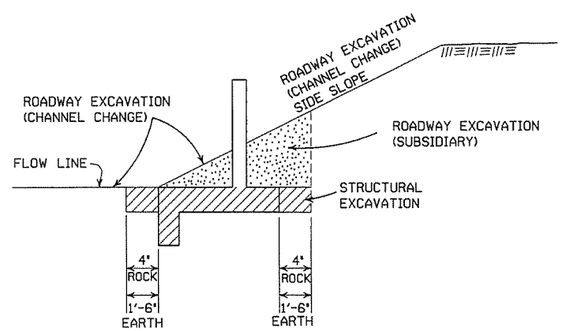


PLAN

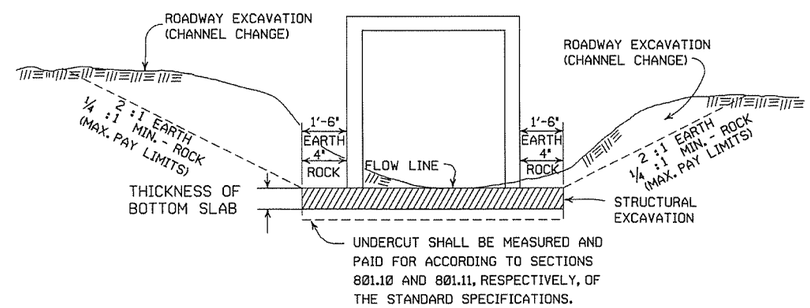


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

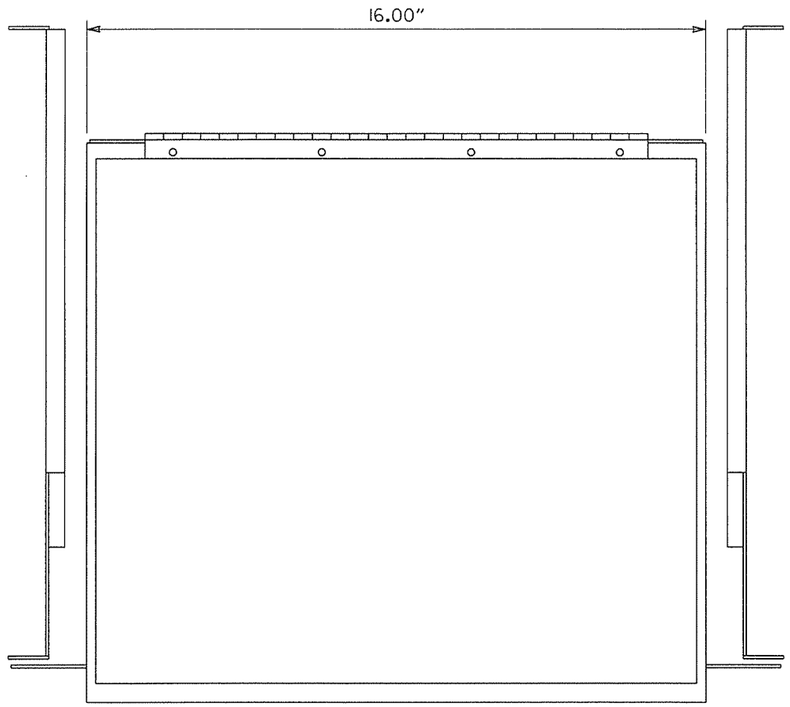
DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

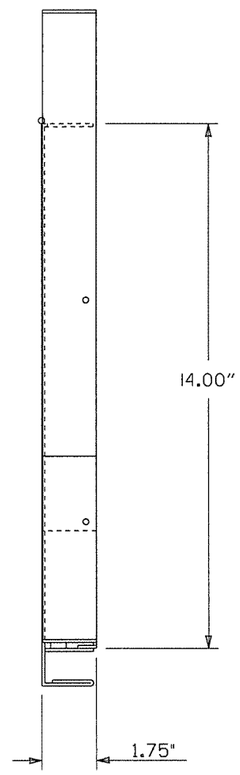
ARKANSAS STATE HIGHWAY COMMISSION

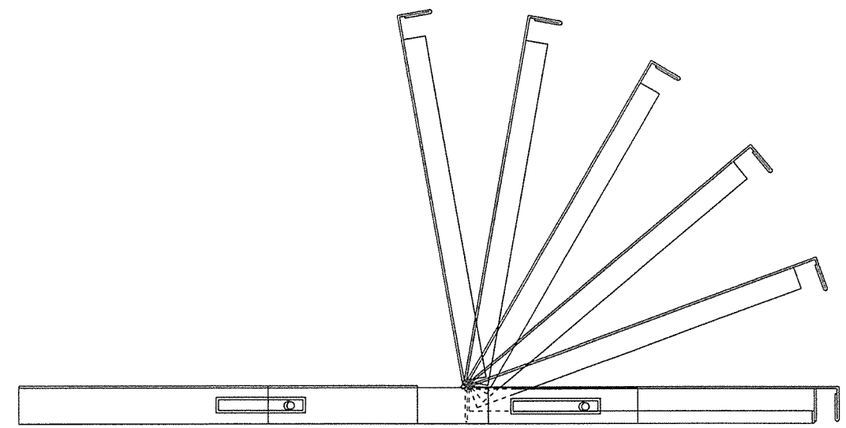
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

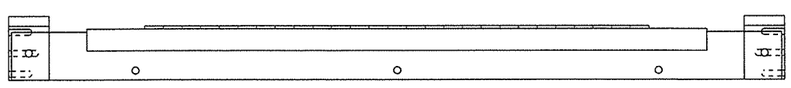
DRAWER PLAN VIEW



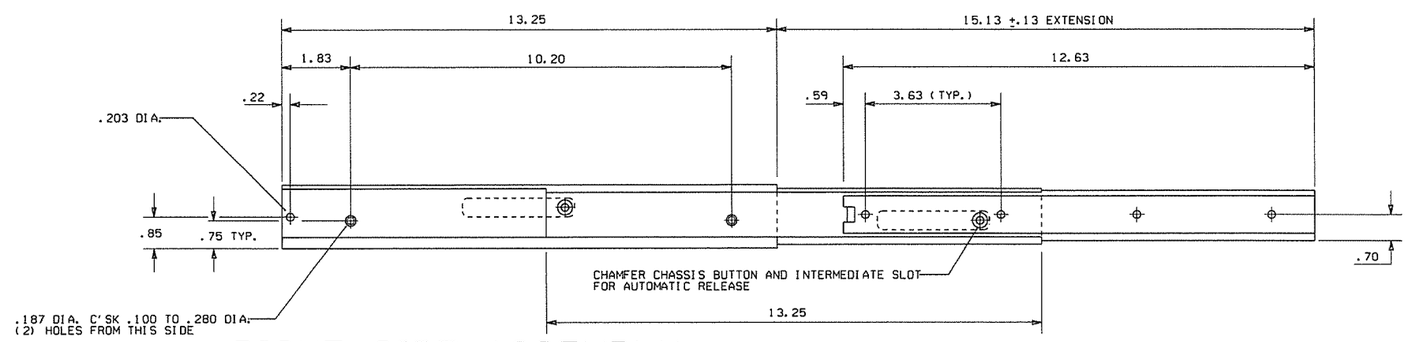




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

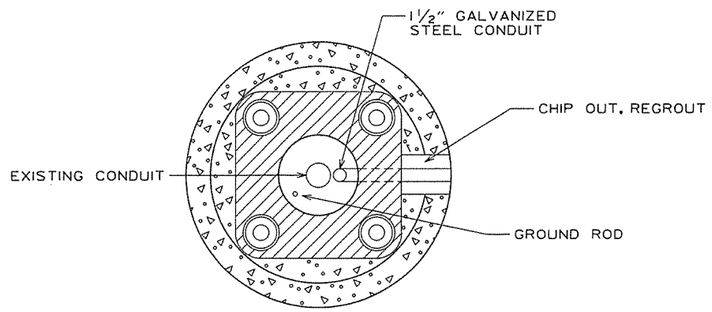
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

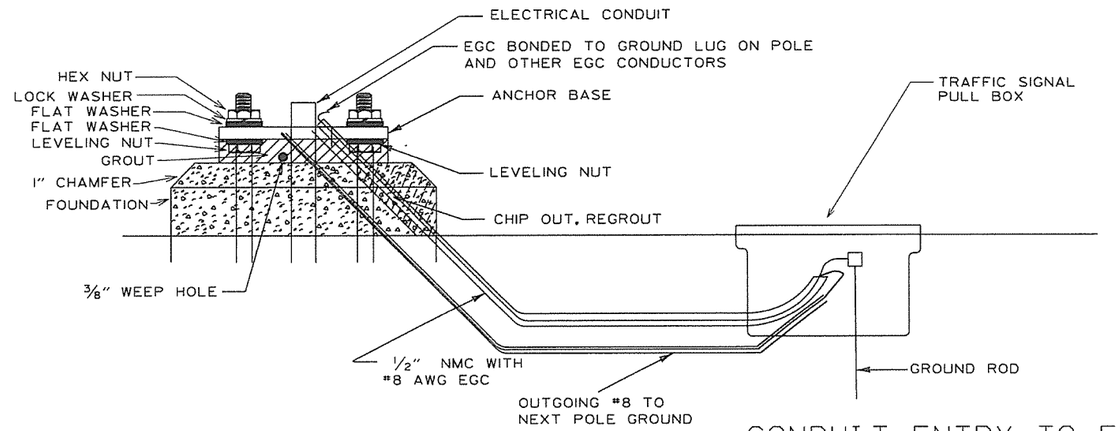
CONTROLLER CABINET UTILITY DRAWER

STANDARD DRAWING SD-5

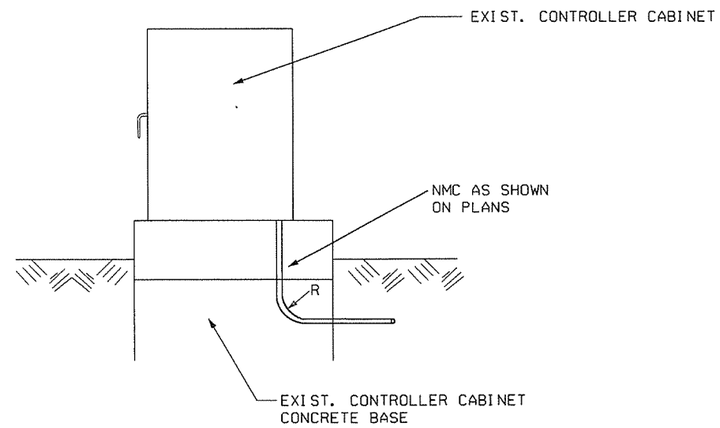
CONDUIT ENTRY TO EXISTING POLE BASE



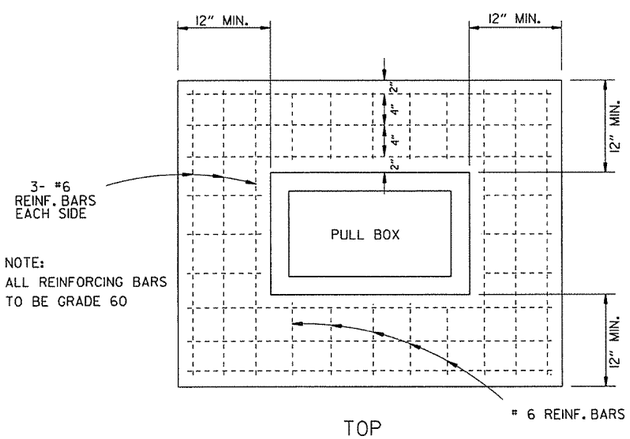
ANCHOR BASE



CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

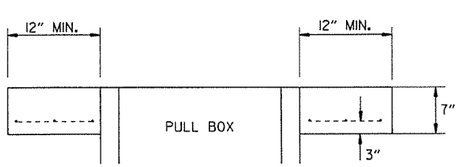


NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



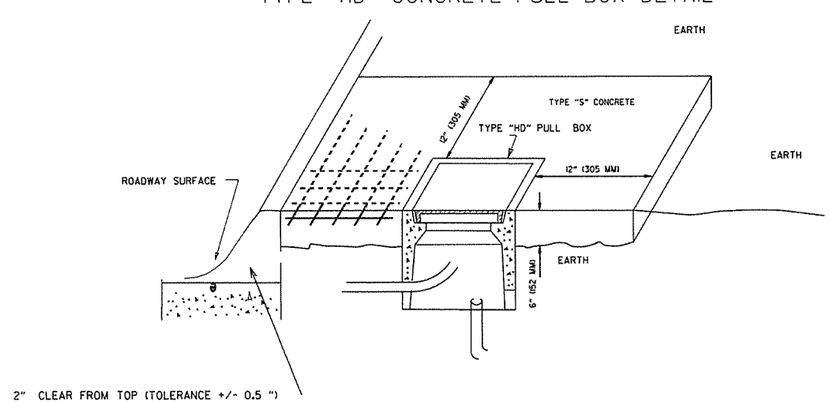
NOTE:
ALL REINFORCING BARS TO BE GRADE 60

TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



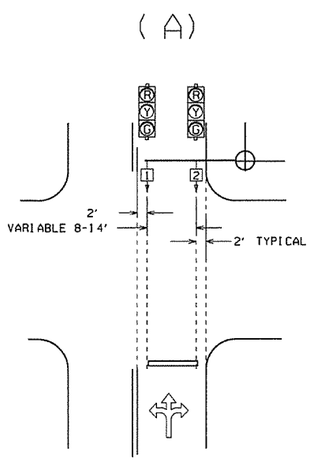
NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 6" (152 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE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

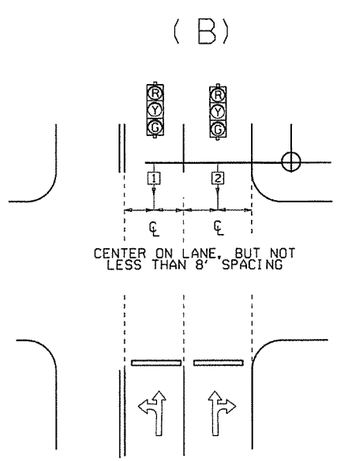
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

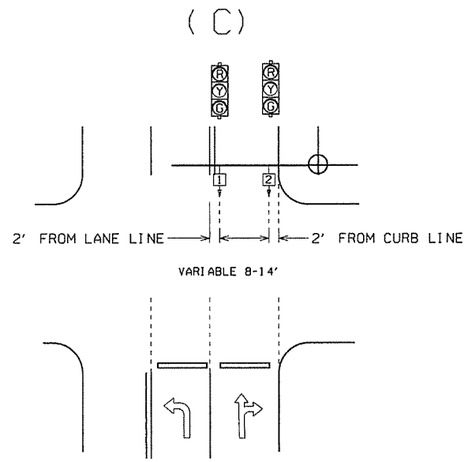
ARKANSAS STATE HIGHWAY COMMISSION

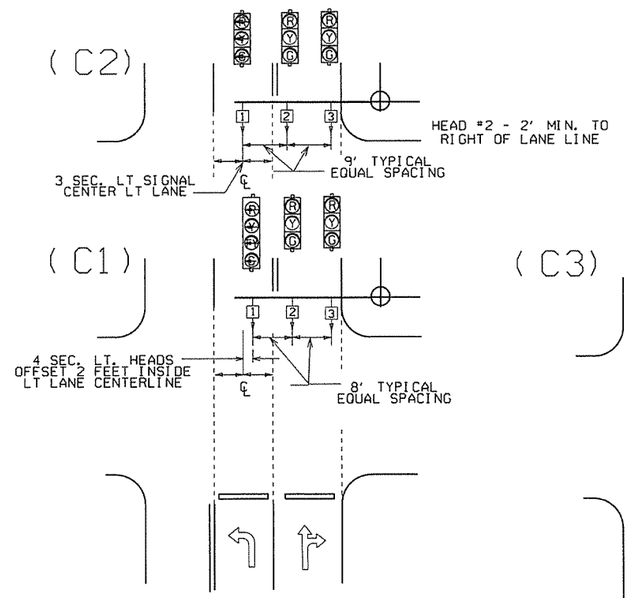
HEAVY DUTY PULL BOX

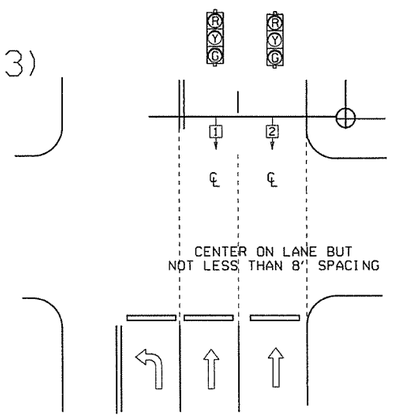
STANDARD DRAWING SD-6

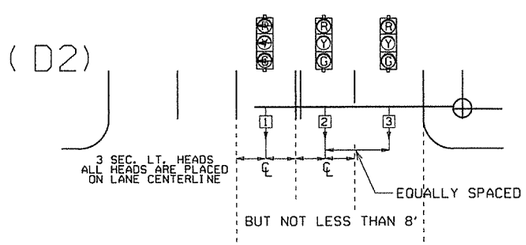


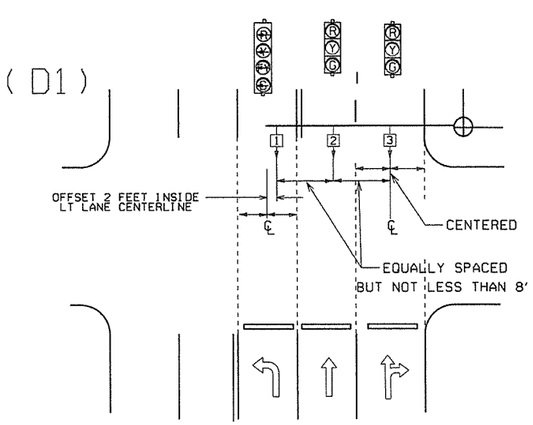




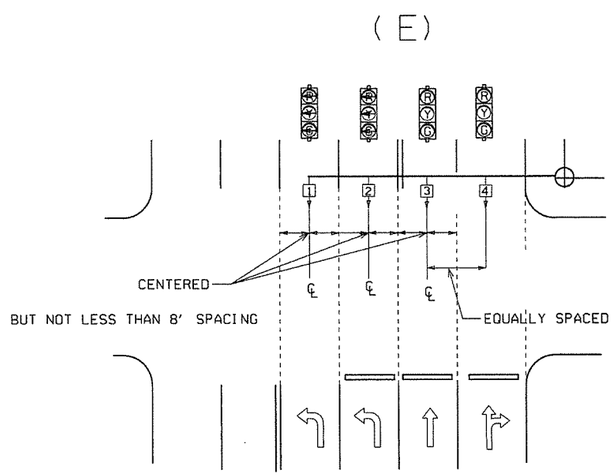








NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. 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.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. 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.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. 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.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

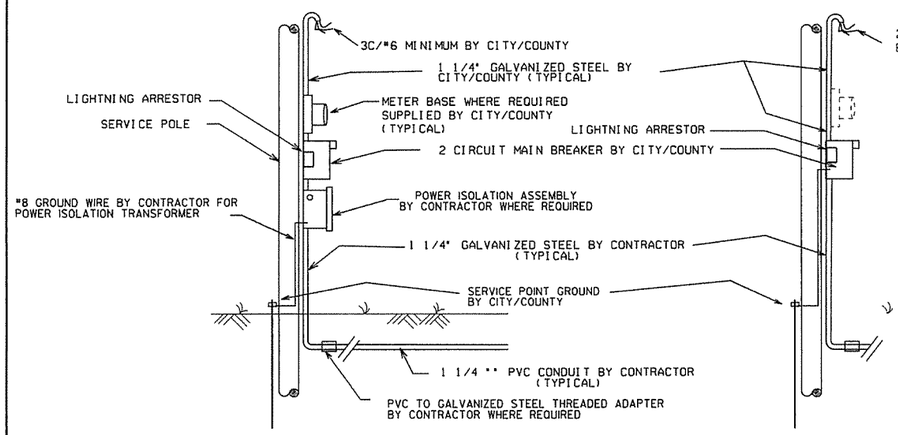
SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

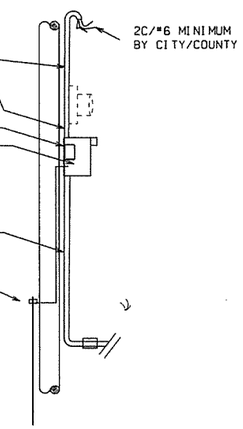
MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

GROUND ROD-A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

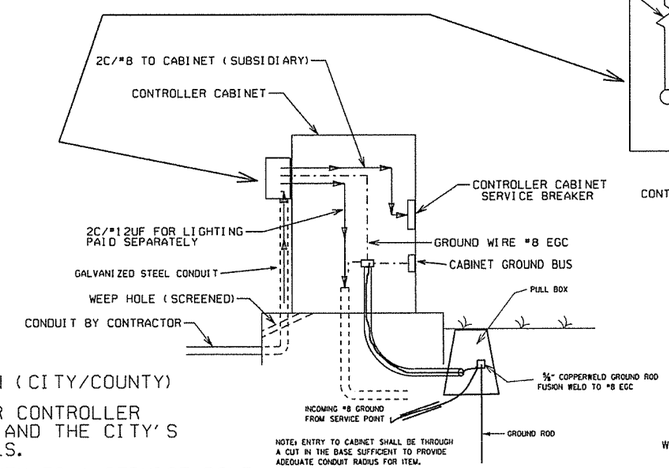
WITH POWER ISOLATION ASSEMBLY

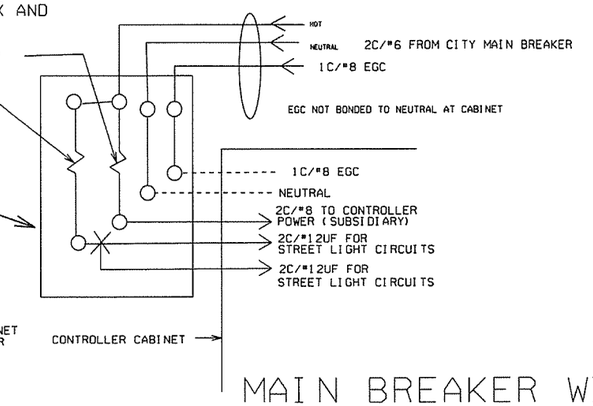


WITHOUT POWER ISOLATION ASSEMBLY



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)

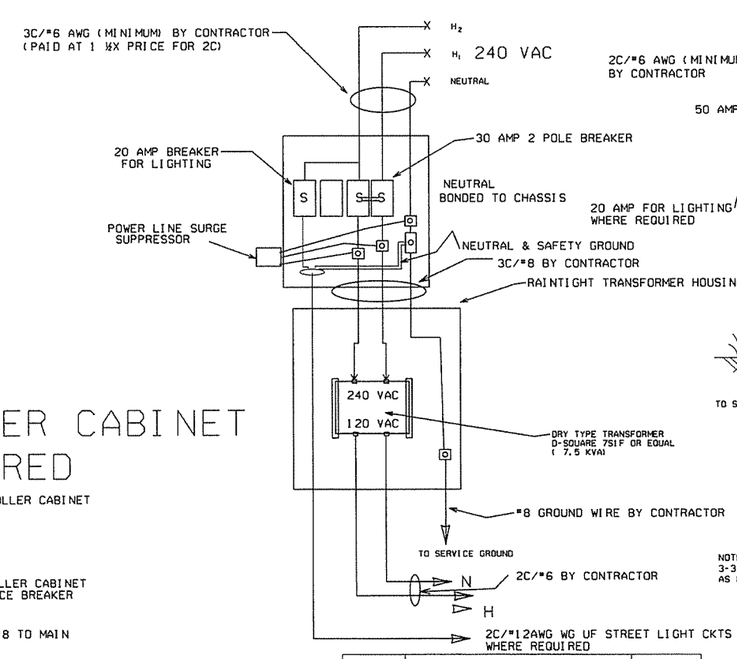
ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S OR COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT 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.

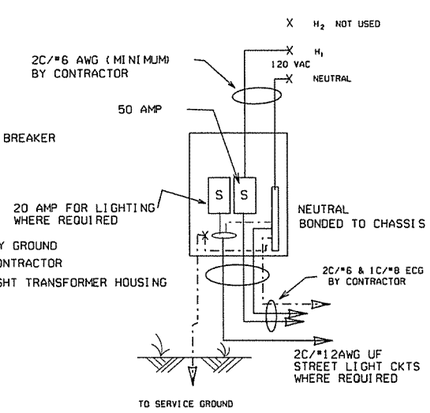
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN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

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

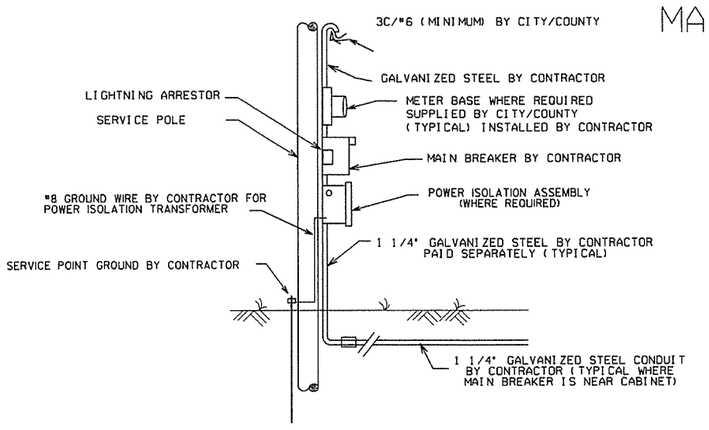


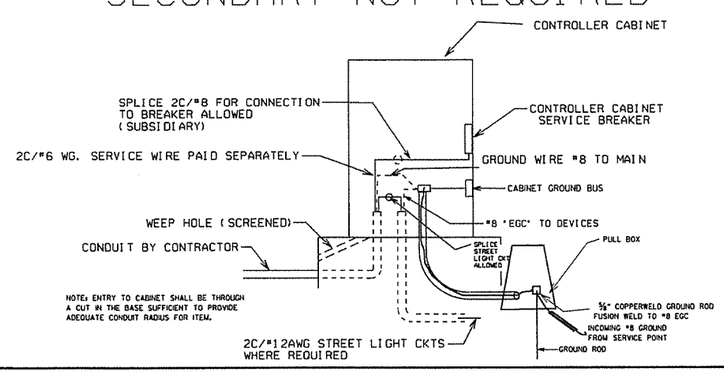
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



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

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	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

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 III) 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.

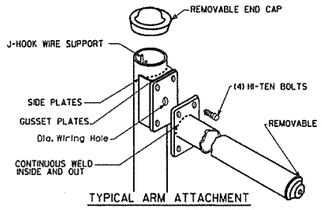
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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).

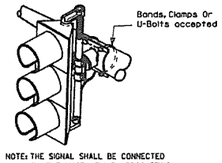
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

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.

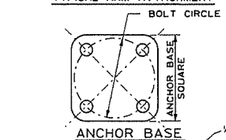
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



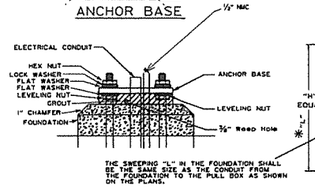
TYPICAL ARM ATTACHMENT

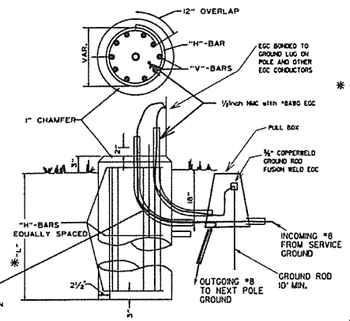


NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE



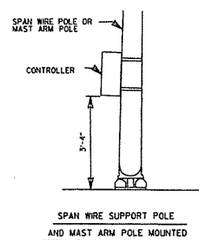


THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

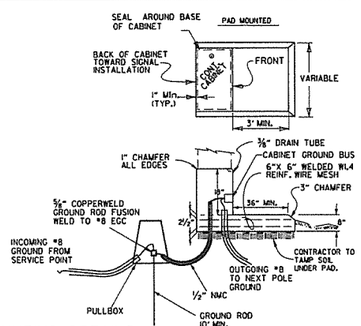
TYPICAL FOUNDATION DETAILS

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

ARM LENGTH	FDN. DIAMETER	DEPTH "L" *	STEEL VERT.	STEEL HORZ.	STEEL 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"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



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.

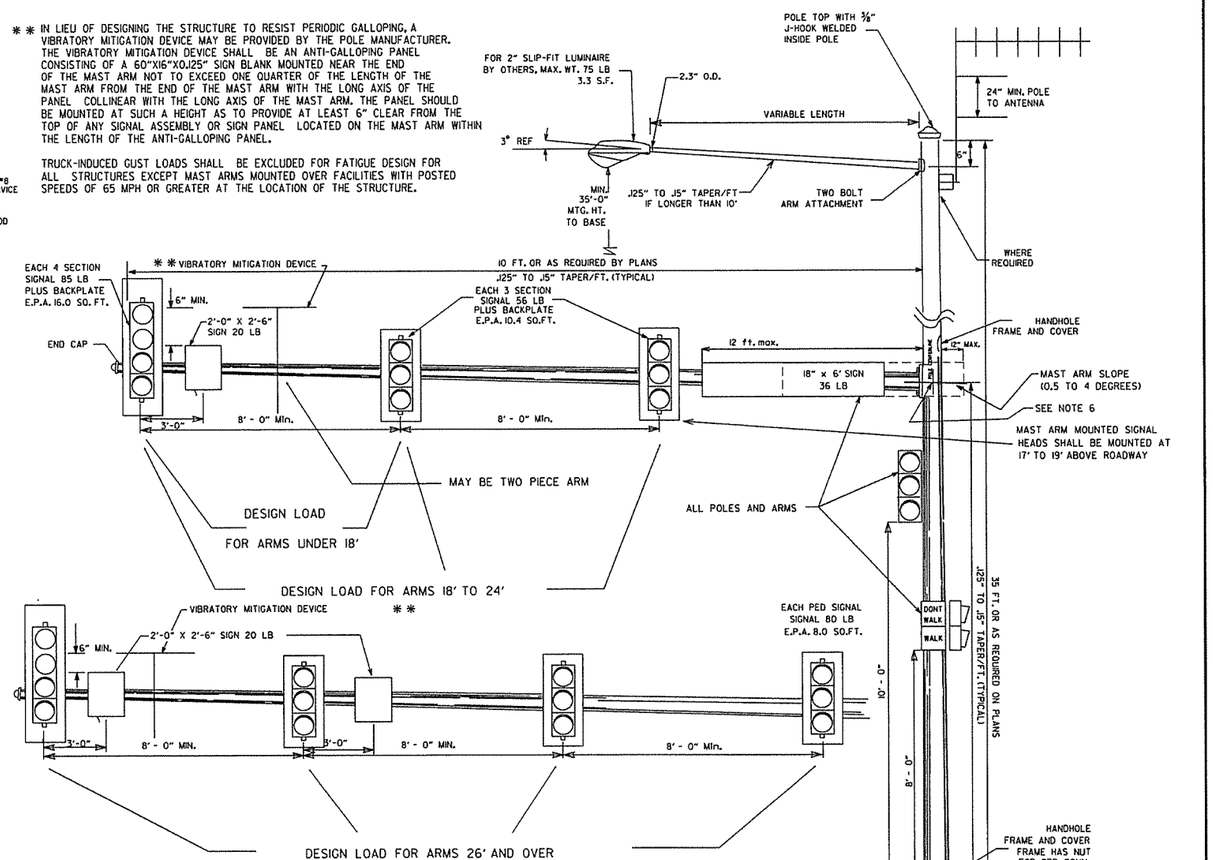
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS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

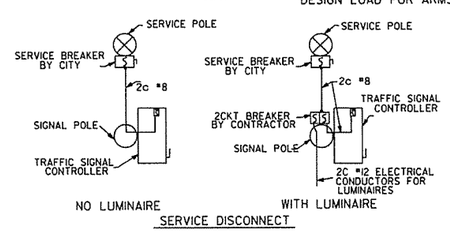
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

* 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.

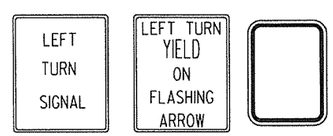
** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE 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.





SERVICE DISCONNECT



R10-10 SPECIAL R10-3e

DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
7-21-11	REVISED VMD, SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-23-04	REVISED	
5-8-04	REV. NOTE 3/AASHTO REQUIREMENTS	
6-8-01	REV. NOTES & POLE MAST ARM SLOPE	
4-8-01	REVISED POLE TAPERS	
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
8-22-99	REVISED FOUNDATION DETAILS	
4-17-98	REVISED DETAILS AND NOTES	
8-21-95	ISSUED	

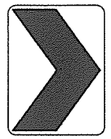
ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

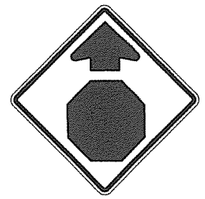
R1-1
30"X30"

W1-3
30"X30"
(LT. OR RT.)



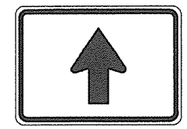
W1-8
18"X24"

W2-5
30"X30"

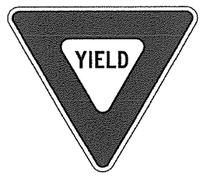


W3-1
36"X36"

W5-1
36"X36"



M6-3
21"X15"

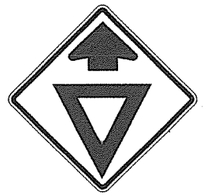


R1-2
36"X36"X36"

W1-4
30"X30"
(LT. or RT.)

W2-1
30"X30"

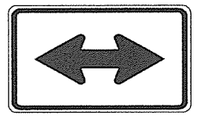
S1-1
36"X36"



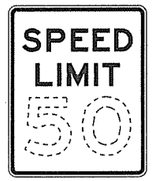
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.



M6-4
21"X15"



R2-1
24"X30"

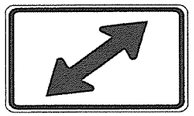
W1-5
30"X30"
(LT. or RT.)

W2-2
30"X30"

W5-2
36"X36"

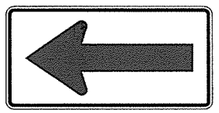
W8-3
36"X36"

R1-3P
18"X6"

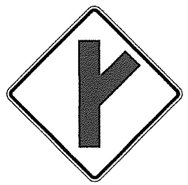


M6-5
21"X15"

W1-1
30"X30"
(LT. or RT.)

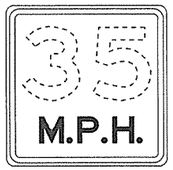


W1-6
48"X24"

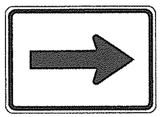


W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

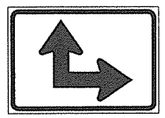


W13-1P
18"X18"



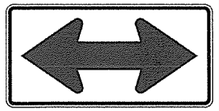
M6-1
21"X15"

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.



M6-6
21"X15"

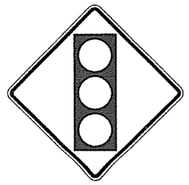
W1-2
30"X30"
(LT. or RT.)



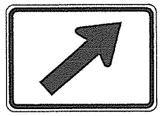
W1-7
48"X24"

W2-4
30"X30"

W10-1
36" DIAMETER



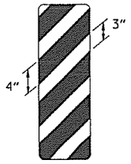
W3-3
36"X36"



M6-2
21"X15"

S4-3P
24"X8"

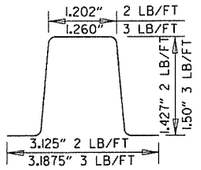
S4-2P
24"X10"



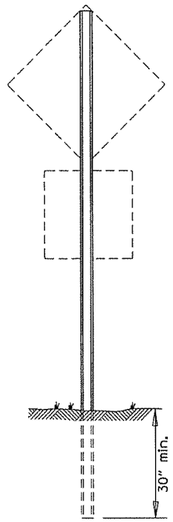
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

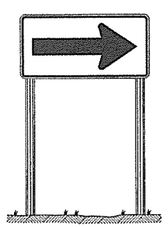


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

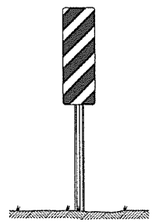


TYPE A

NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.



TYPE B



TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

SUPPORT ASSEMBLIES

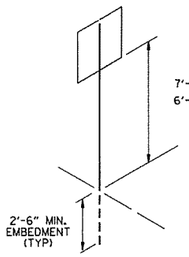
STANDARD HIGHWAY SIGNS

DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED R1-3 TO R1-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1& W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED W1-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

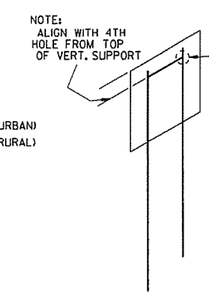
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

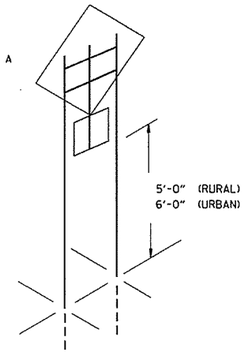
STANDARD DRAWING SHS-1



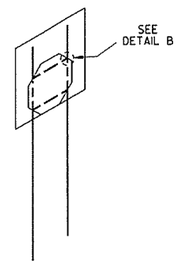
U-1



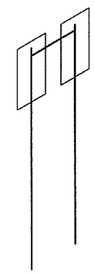
U-2



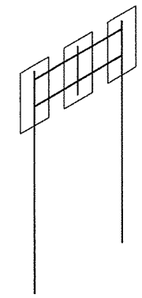
U-2 (A)



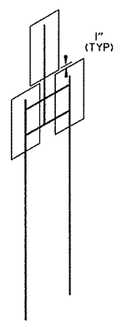
U-2 (B)



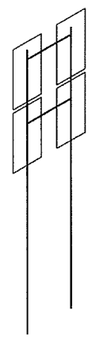
U-2 (1)



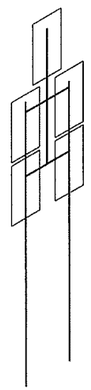
U-2 (2)



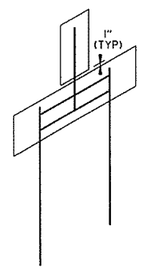
U-2 (3)



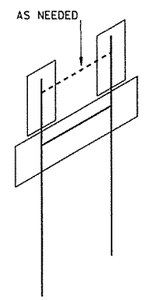
U-2 (4)



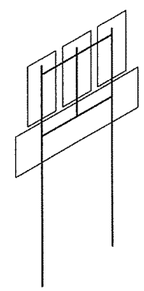
U-2 (5)



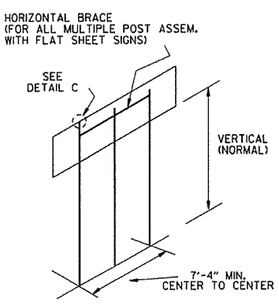
U-2 (6)



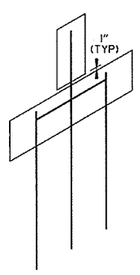
U-2 (7)



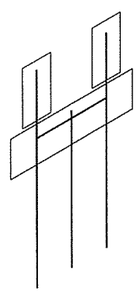
U-2 (8)



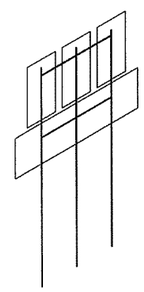
U-3



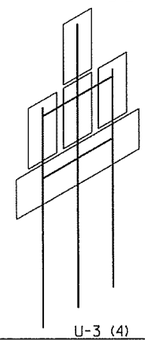
U-3 (1)



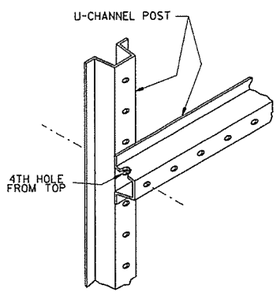
U-3 (2)



U-3 (3)

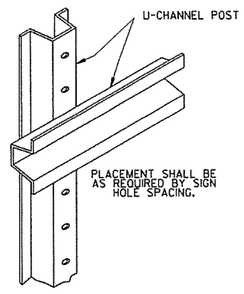


U-3 (4)



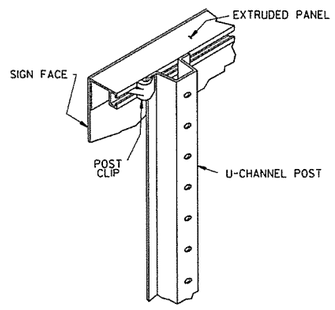
DETAIL A

SHOWING HORIZONTAL BRACE



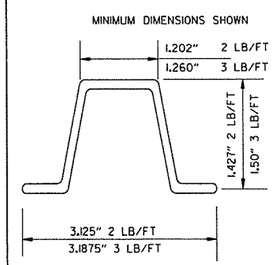
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



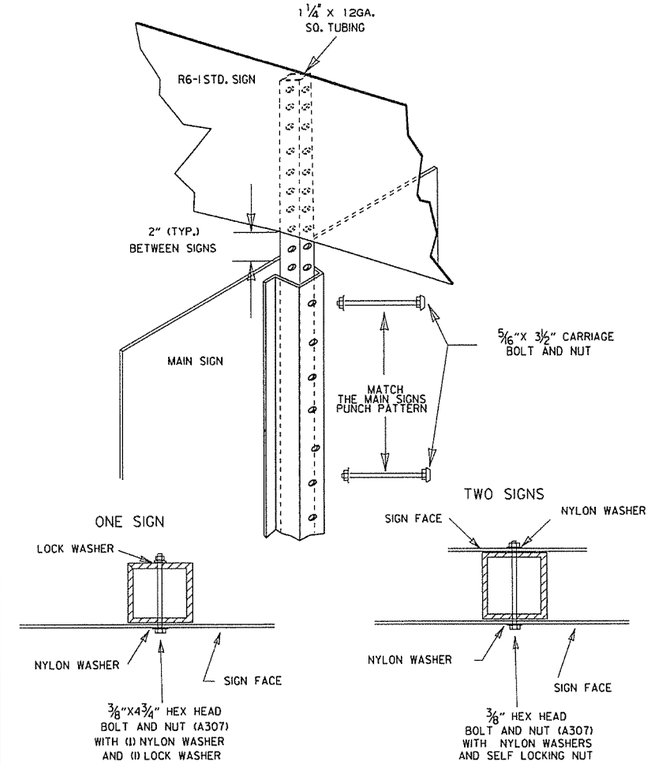
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



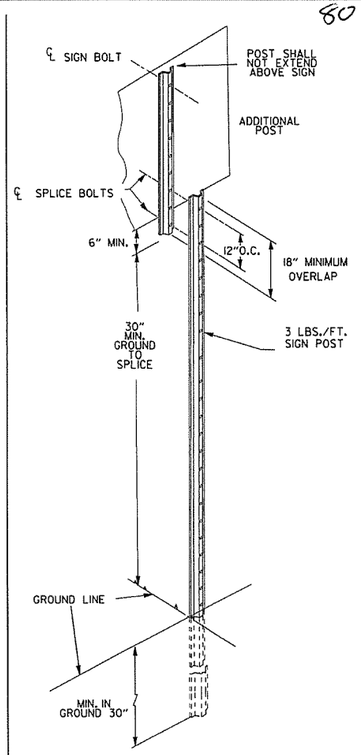
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

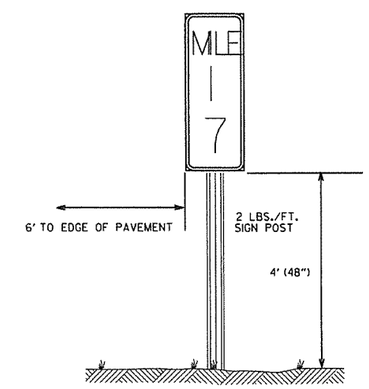
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

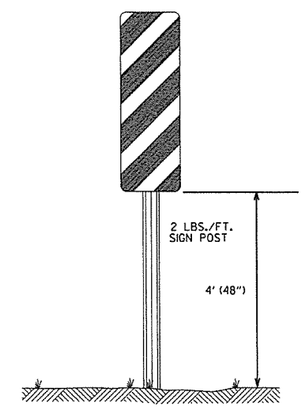
NORMAL INSTALLATIONS WILL REQUIRE $\frac{5}{16}$ " DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

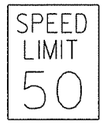
R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2

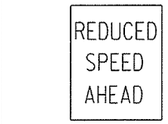
STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

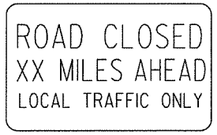
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

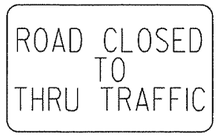
48"X30"

R11-3A



60"X30"

R11-4

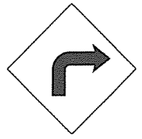


60"X30"

RSP-1

48"X30"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2

STD. 36"X36"
FWY. 48"X48"

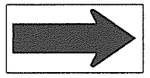
W1-3

STD. 48"X48"

W1-4

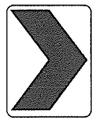
STD. 48"X48"

W1-6



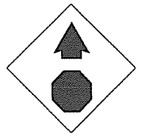
STD. 48"X24"
SPECIAL 60"X30"

W1-8



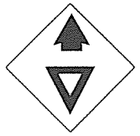
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



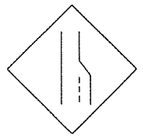
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2

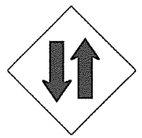


STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

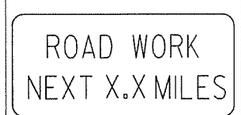
W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

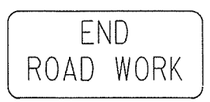
STD. 36"X36"
FWY. 48"X48"

G20-1



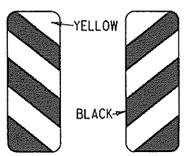
60"X24"

G20-2



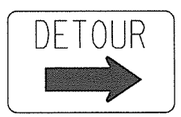
48"X24"

OM-3L OM-3R



12"X36"

M4-9

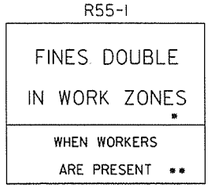


STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

* 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

* 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

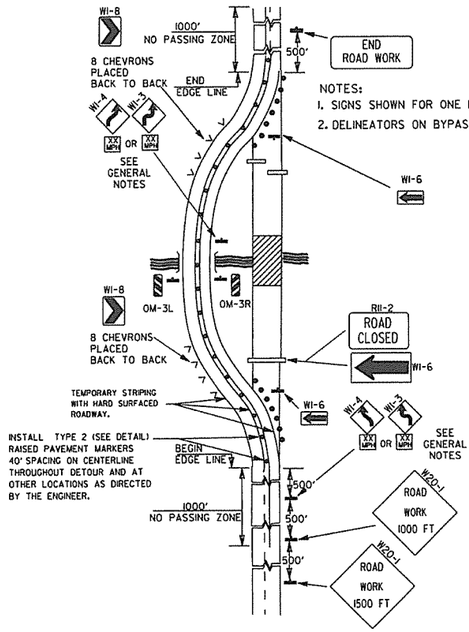
* NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

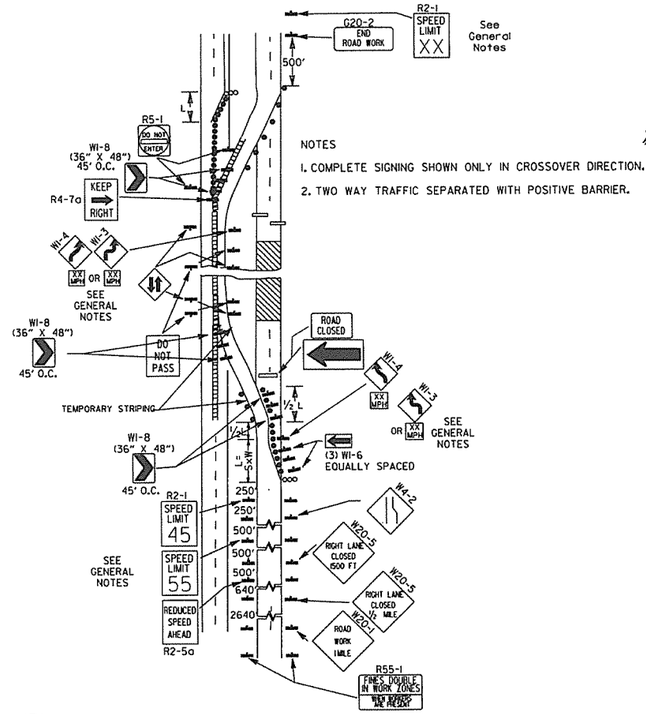
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



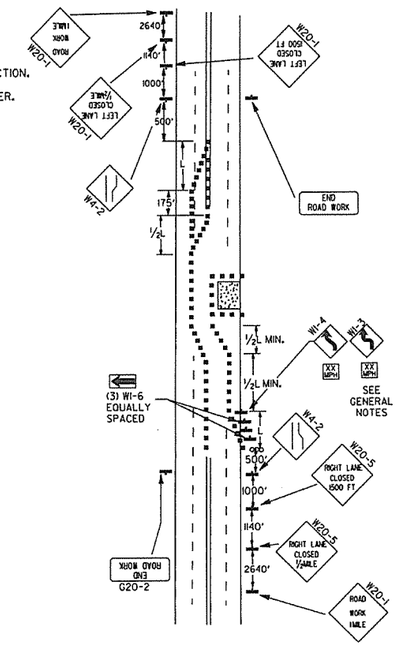
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

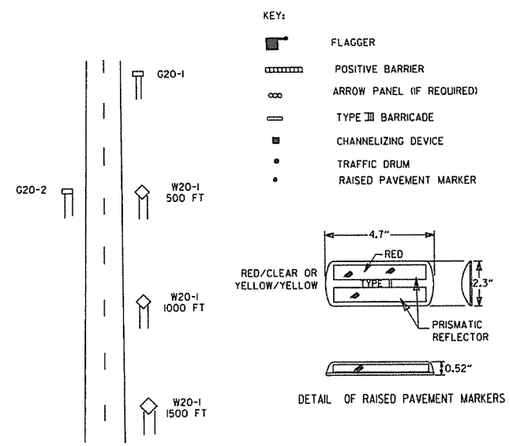


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

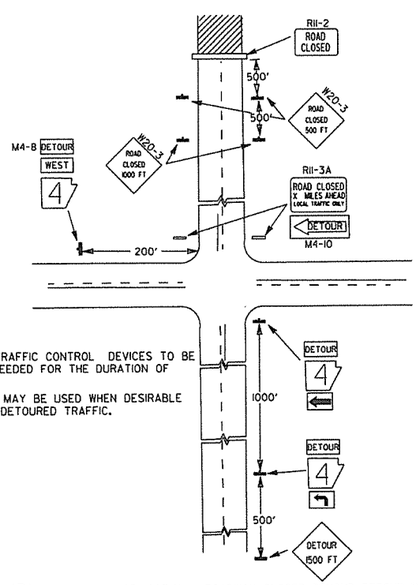
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

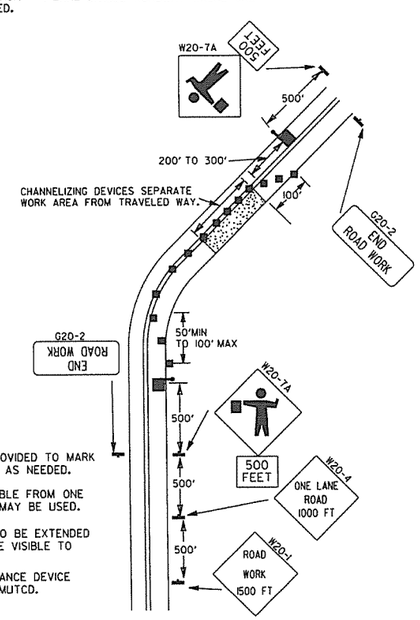
GENERAL NOTES:

1. 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 R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.



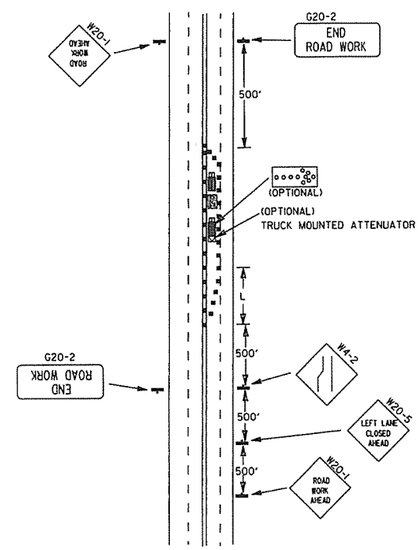
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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



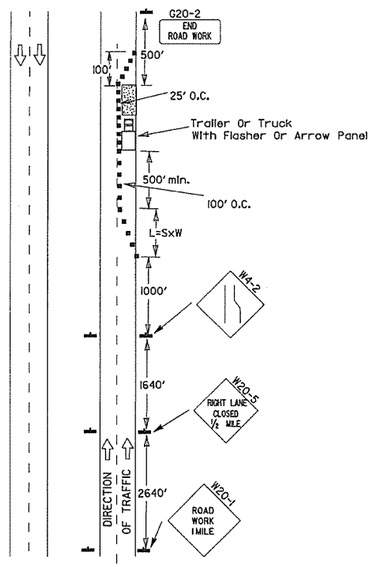
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
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	

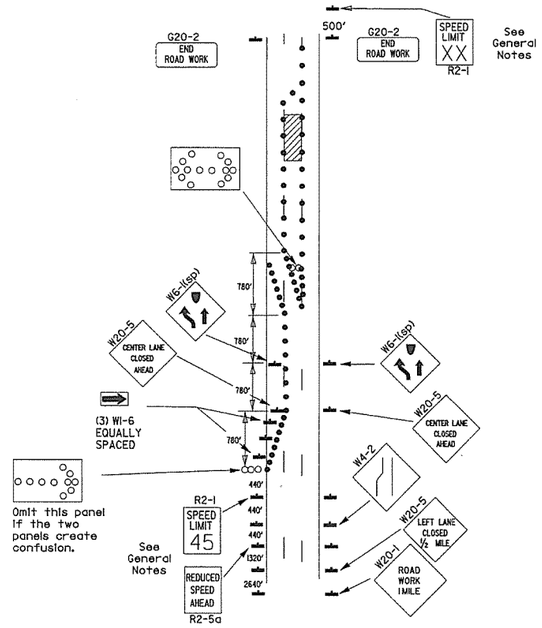
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



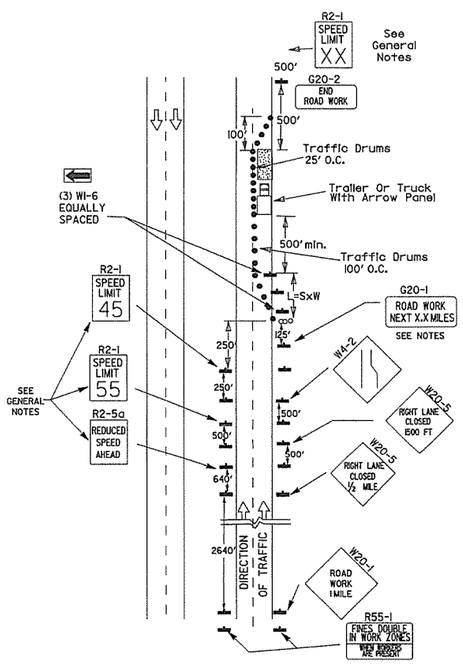
(B) Typical application - 3-lane oneway roadway where center lane is closed.

KEY:

- Arrow Panel (If Required)
- Channelizing Device
- Traffic drum

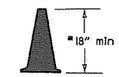
GENERAL NOTES:

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 R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



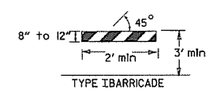
(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

Channelizing devices



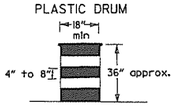
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

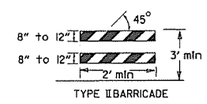
CONES



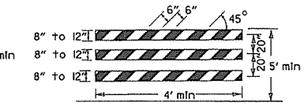
TYPE I BARRICADE

PLASTIC DRUM



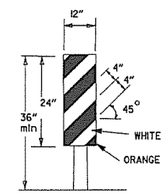


TYPE II BARRICADE



TYPE III BARRICADE

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



VERTICAL PANEL
VP-1R

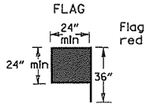
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

* When shown on the plans concrete barrier will be used.

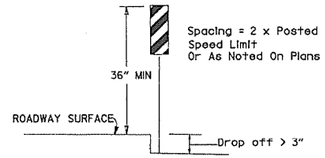
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

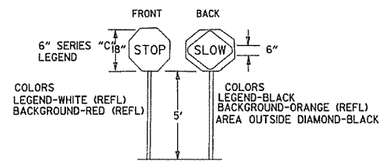


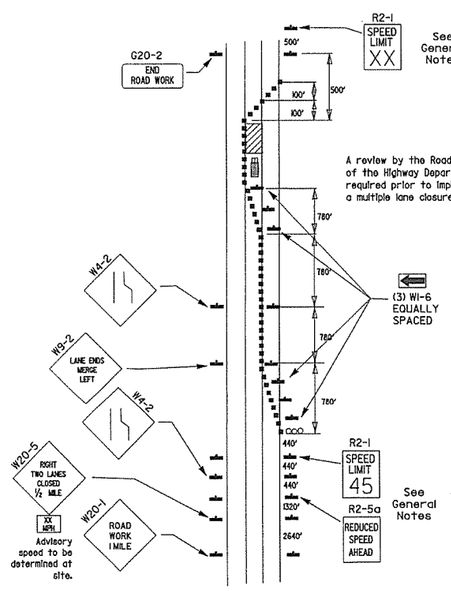
Flag shall be of good grade red material

VERTICAL PANEL PLACEMENT



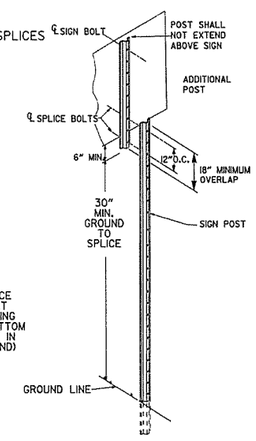
STOP SLOW PADDLE





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

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-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	

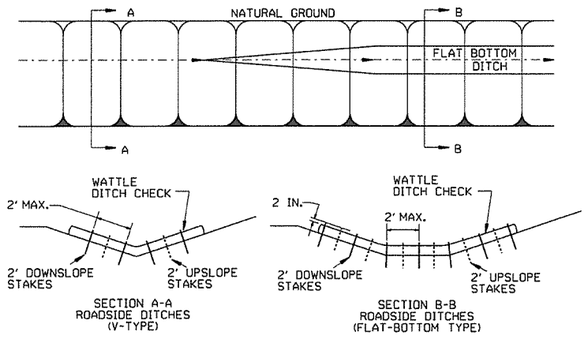
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

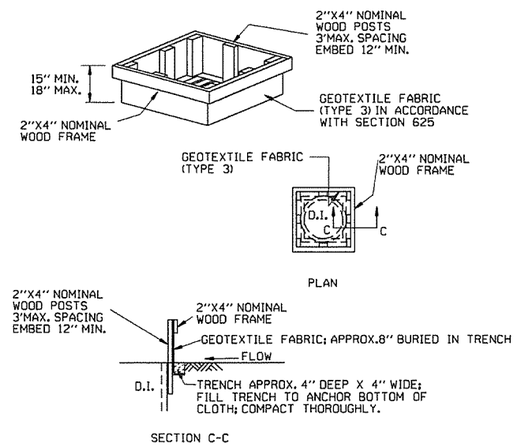
STANDARD DRAWING TC-3

GENERAL NOTES

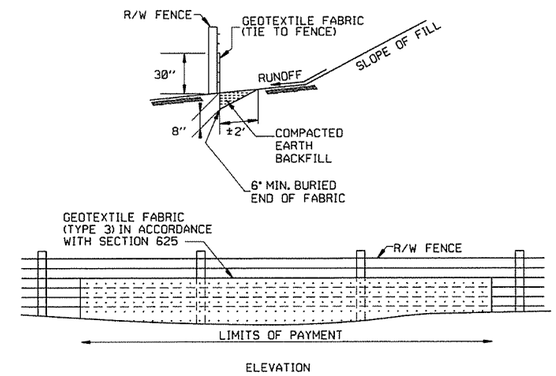
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



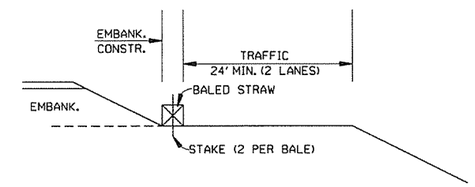
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

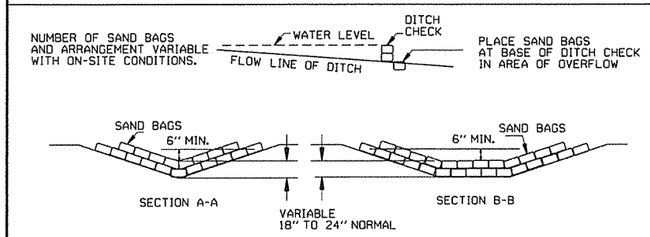
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

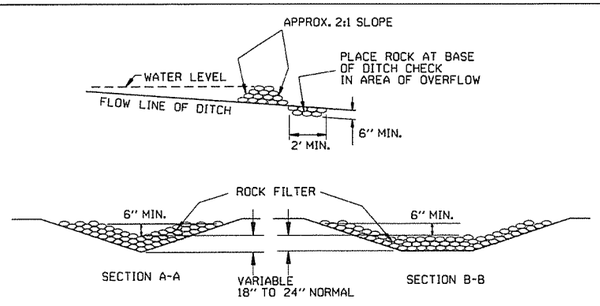
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED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



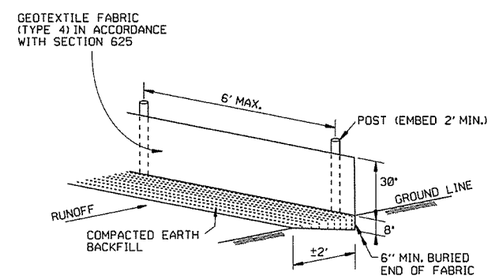
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

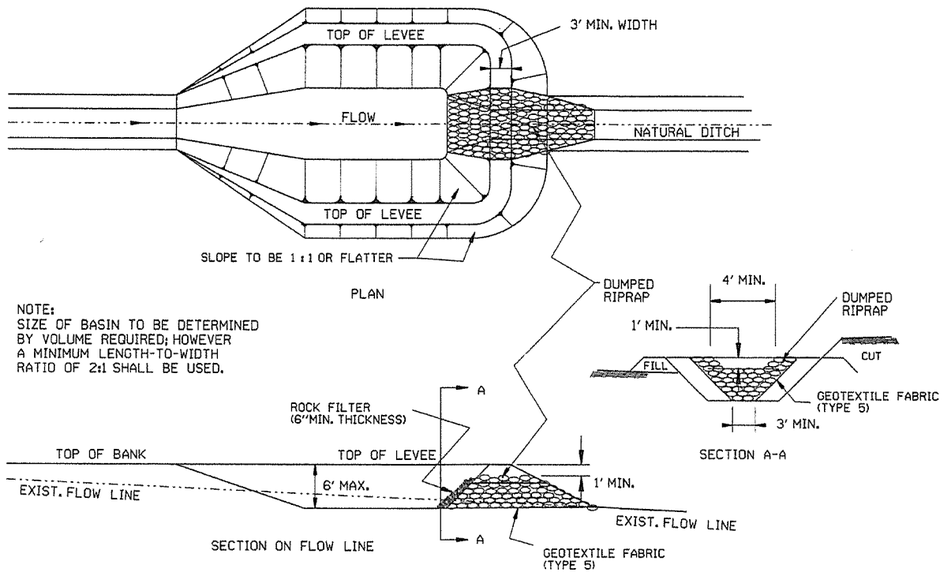
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

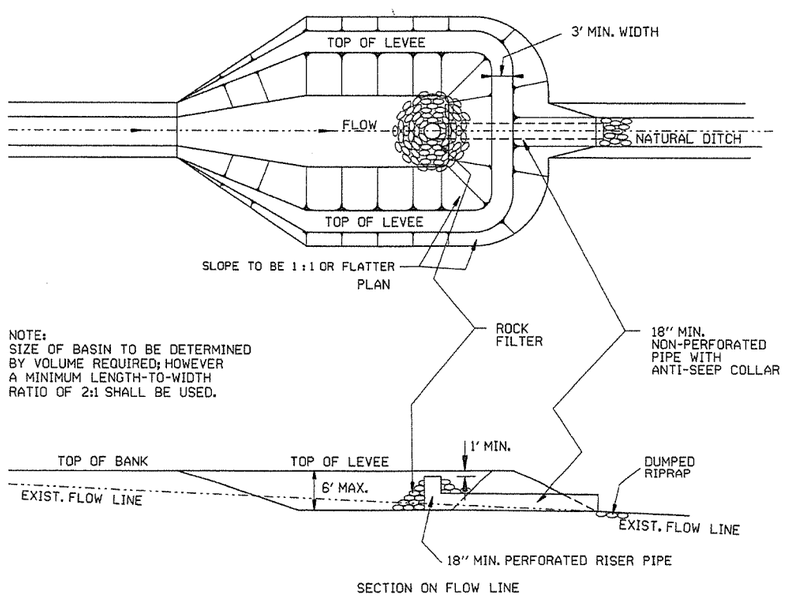
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-1



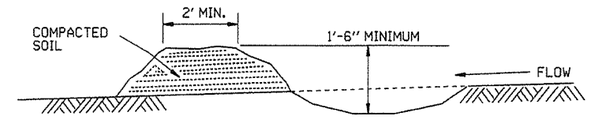
NOTE:
SIZE OF BASIN TO BE DETERMINED BY VOLUME REQUIRED; HOWEVER A MINIMUM LENGTH-TO-WIDTH RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

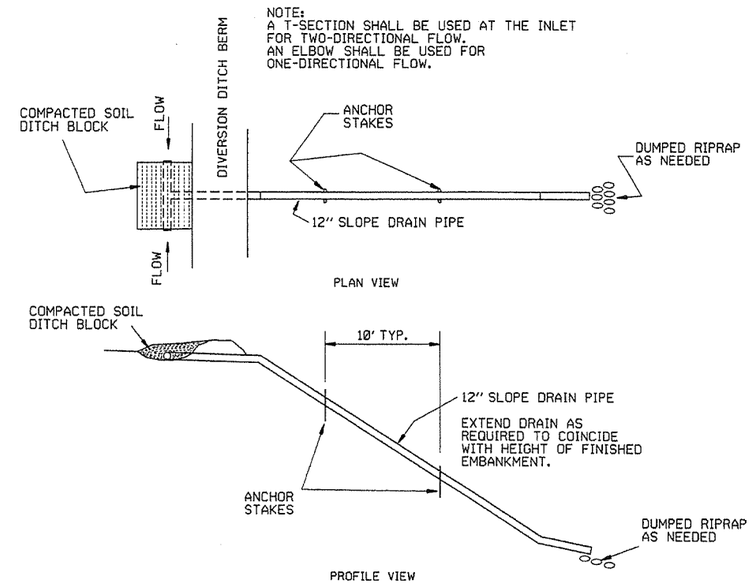


NOTE:
SIZE OF BASIN TO BE DETERMINED BY VOLUME REQUIRED; HOWEVER A MINIMUM LENGTH-TO-WIDTH RATIO OF 2:1 SHALL BE USED.

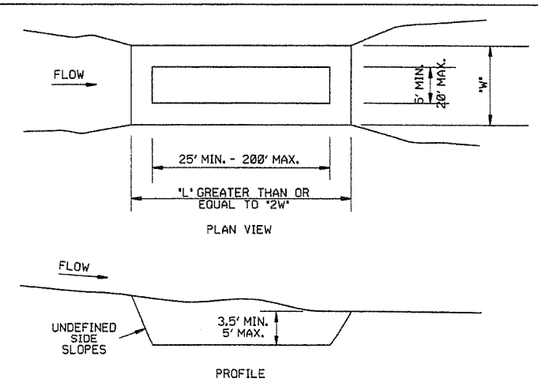
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

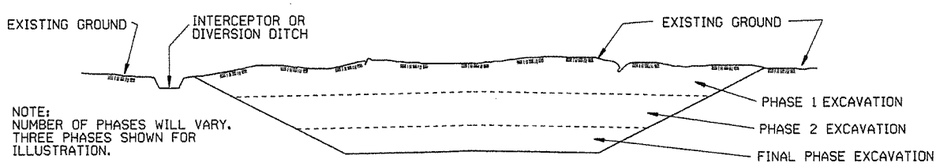
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



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

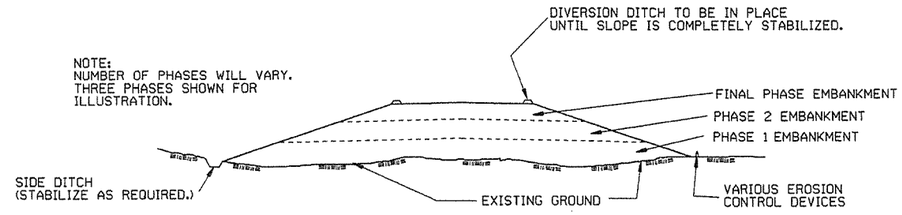
GENERAL NOTE

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

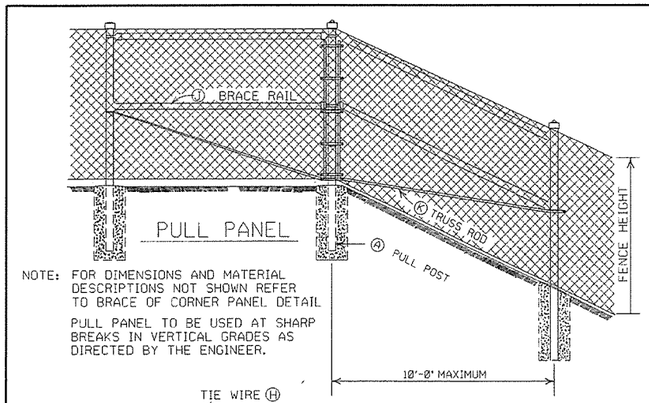
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

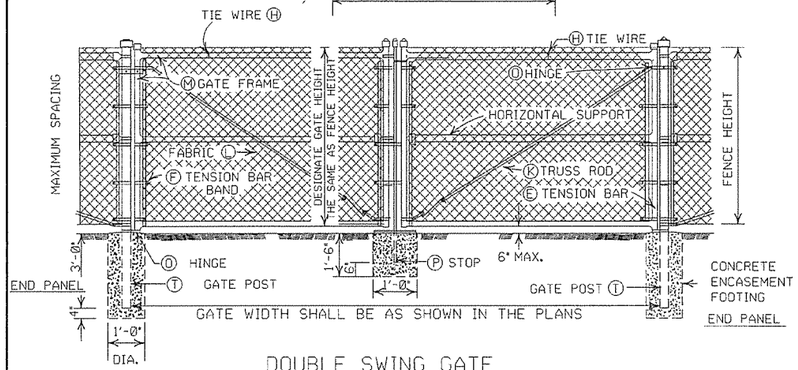
STANDARD DRAWING TEC-3



PULL PANEL

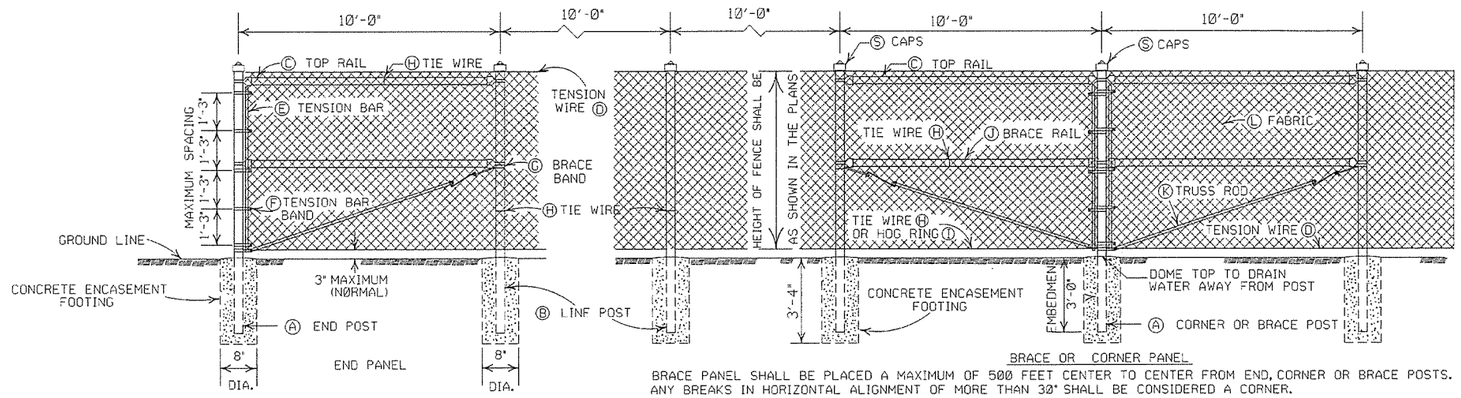
NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



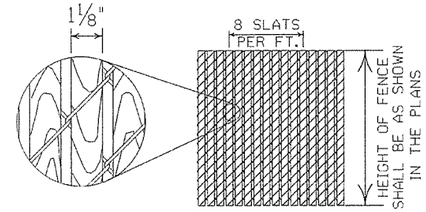
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

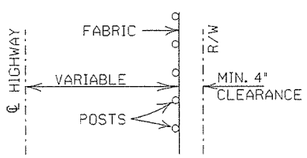
HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF 3/16" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	5/16" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	5/16" X 1¼"
OVER 6' TO 12' INCL.	3" O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE 180° SWING	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅜" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK-ING AND/OR TWIST-ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1 5/8	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

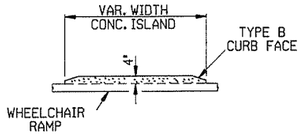
TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91 8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

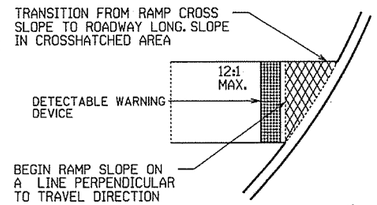
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

STANDARD DRAWING WF-3



CONCRETE ISLAND DETAIL



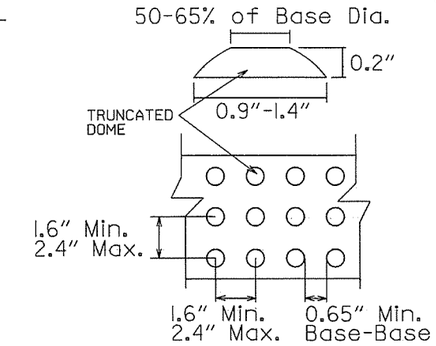
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

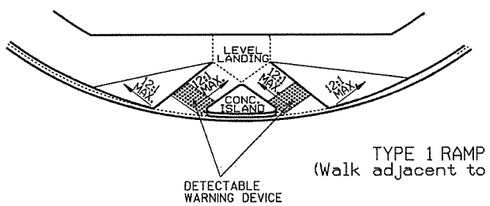
RADIUS 'R' FEET	DISTANCE 'X' FEET	DISTANCE 'Y' FEET	LENGTH 'L' FEET	RAMP AREA 'A' SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

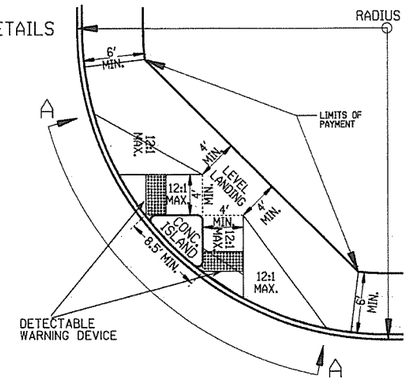
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT 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).

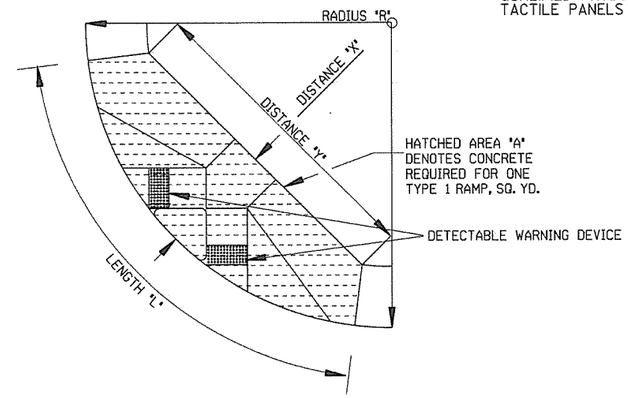


DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)





GENERAL NOTES:

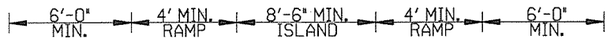
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.

THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.

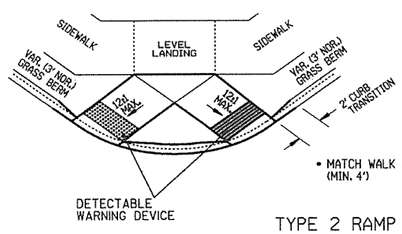
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.

RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.

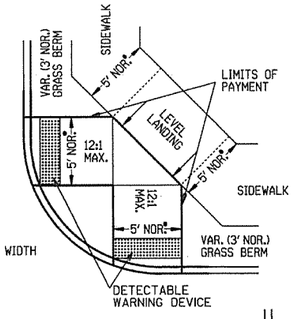
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



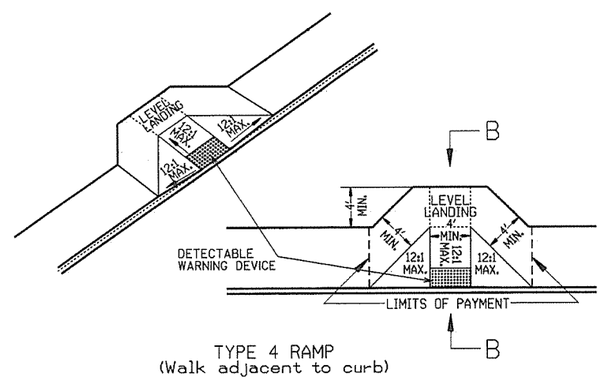
SECTION A-A



TYPE 2 RAMP



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

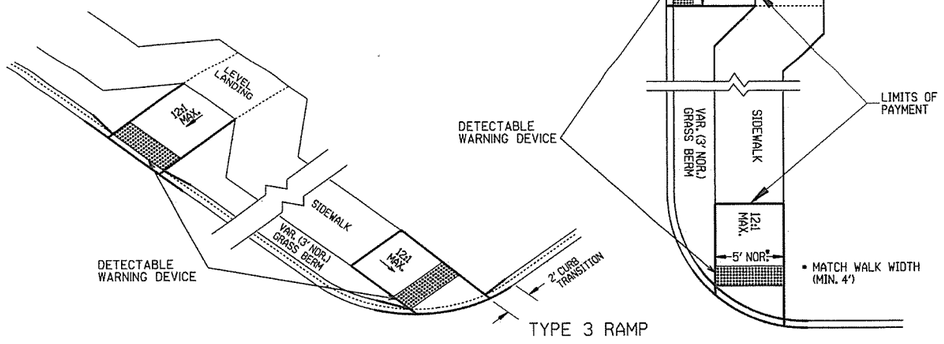


TYPE 4 RAMP
(Walk adjacent to curb)

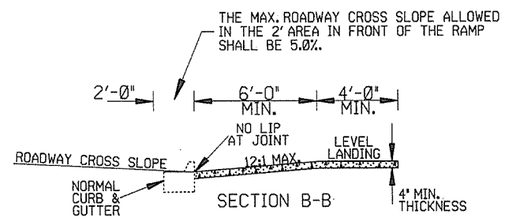
RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.
AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.



TYPE 3 RAMP



SECTION B-B

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	FROM8:1TO12:1MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1

Reshot 3-8-93 385

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			89	
JOB No.					

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

"a" bars: STRAIGHT – In Top and Bottom Slab of Barrel. "b" bars: BENT – See Diagram below. In Bottom of Top Slab bent up over Division Wall – hooked. Alternate with "a" and "c" bars. "b_2" bars: BENT – See Diagram below. In Top of Bottom Slab bent down under Division Wall – hooked. Alternate with "a" and "c" bars.

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"a" Size	"a" Spacing	"a" No. Req'd	"a" Length	"b" Size	"b" Spacing	"b" No. Req'd	"b" Length	"b" X	"b" Y	"b" Z	"b_2" Size	"b_2" Spacing	"b_2" No. Req'd	"b_2" Length	"b_2" X	"b_2" Y	"b_2" Z
0'-0" TO 5'-0" MAXIMUM	2 @ 4'	2'	#5	12"	120	9'-9"	#5	12"	59	10'-10"	0'-3"	2'-3½"	3'-5½"	#5	12"	59	10'-10"	0'-2½"	2'-4½"	3'-5½"
		3'			120	9'-9"			59	10'-10"	"	2'-3½"	3'-5½"			59	10'-10"	"	2'-4½"	3'-5½"
		4'			120	9'-9"			59	10'-10"	"	2'-3½"	3'-5½"			59	10'-10"	"	2'-4½"	3'-5½"
		5'			120	9'-9"			59	10'-10"	"	2'-3½"	3'-5½"			59	10'-10"	"	2'-4½"	3'-5½"
		6'			120	10'-0"			59	11'-1"	0'-3"	2'-4½"	3'-6½"			59	11'-1"	0'-2½"	2'-5½"	3'-6½"
	2 @ 5'	3'	#6	12"	120	11'-10"	#5	12"	59	12'-11"	0'-3½"	2'-8"	4'-3"	#5	12"	59	12'-11"	0'-3"	2'-9"	4'-3"
		4'			120	11'-10"			59	12'-11"	"	2'-8"	4'-3"			59	12'-11"	"	2'-9"	4'-3"
		5'			120	11'-10"			59	12'-11"	"	2'-8"	4'-3"			59	12'-11"	"	2'-9"	4'-3"
		6'			120	12'-1"			59	13'-2"	"	2'-9"	4'-4"			59	13'-2"	"	2'-10"	4'-4"
		7'			120	12'-3"			59	13'-4"	0'-3½"	2'-10"	4'-4½"			59	13'-4"	0'-3"	2'-11"	4'-4½"
	2 @ 6'	3'	#6	11"	132	13'-11"	#5	11"	65	15'-0"	0'-4"	3'-2"	5'-0"	#5	11"	65	15'-0"	0'-4"	3'-2"	5'-0"
		4'			132	13'-11"			65	15'-0"	"	3'-2"	5'-0"			65	15'-0"	"	3'-2"	5'-0"
		5'			132	13'-11"			65	15'-0"	"	3'-2"	5'-0"			65	15'-0"	"	3'-2"	6'-0"
		6'			132	14'-2"			65	15'-3"	"	3'-3"	5'-1"			65	15'-3"	"	3'-3"	5'-1"
		7'			132	14'-4"			65	15'-5"	"	3'-4"	5'-1½"			65	15'-5"	"	3'-4"	5'-1½"
		8'			132	14'-5"			65	15'-6"	0'-4"	3'-4"	5'-2"			65	15'-6"	0'-4"	3'-4"	5'-2"
	2 @ 7'	4'	#6	12"	120	15'-11"	#6	12"	59	17'-3"	0'-4½"	3'-7"	5'-9"	#6	12"	59	17'-3"	0'-4½"	3'-7"	5'-9"
		5'			120	15'-11"			59	17'-3"	"	3'-7"	5'-9"			59	17'-3"	"	3'-7"	5'-9"
		6'			120	16'-2"			59	17'-6"	"	3'-8"	5'-10"			59	17'-6"	"	3'-8"	5'-10"
		7'			120	16'-4"			59	17'-8"	"	3'-9"	5'-10½"			59	17'-8"	"	3'-9"	5'-10½"
		8'			120	16'-5"			59	17'-9"	"	3'-9"	5'-11"			59	17'-9"	"	3'-9"	5'-11"
		9'			120	16'-8"			59	18'-0"	0'-4½"	3'-10"	6'-0"			59	18'-0"	0'-4½"	3'-10"	6'-0"
	2 @ 8'	4'	#6	11"	132	18'-0"	#6	11"	65	19'-5"	0'-5"	4'-0"	6'-6½"	#6	11"	65	19'-5"	0'-5"	4'-0"	6'-6½"
		5'			132	18'-3"			65	19'-8"	"	4'-1"	6'-7½"			65	19'-8"	"	4'-1"	6'-7½"
		6'			132	18'-3"			65	19'-8"	"	4'-1"	6'-7½"			65	19'-8"	"	4'-1"	6'-7½"
		7'			132	18'-5"			65	19'-10"	"	4'-2"	6'-8"			65	19'-10"	"	4'-2"	6'-8"
		8'			132	18'-6"			65	19'-11"	"	4'-2"	6'-8½"			65	19'-11"	"	4'-2"	6'-8½"
		9'			132	18'-9"			65	20'-2"	"	4'-3"	6'-9½"			65	20'-2"	"	4'-3"	6'-9½"
		10'			132	19'-0"			65	20'-5"	0'-5"	4'-4"	6'-10½"			65	20'-5"	0'-5"	4'-4"	6'-10½"
	2 @ 9'	5'	#6	11"	132	20'-4"	#6	11"	65	21'-9"	0'-5½"	4'-6"	7'-5"	#6	11"	65	21'-9"	0'-5¾"	4'-5½"	7'-5"
		6'			132	20'-6"			65	21'-11"	"	4'-7"	7'-5½"			65	21'-11"	"	4'-6½"	7'-5½"
		7'			132	20'-6"			65	21'-11"	"	4'-7"	7'-5½"			65	21'-11"	"	4'-6½"	7'-5½"
		8'			132	20'-7"			65	22'-0"	"	4'-7"	7'-6"			65	22'-0"	"	4'-6½"	7'-6"
		9'			132	20'-10"			65	22'-3"	"	4'-8"	7'-7"			65	22'-3"	"	4'-7½"	7'-7"
		10'			132	21'-1"			65	22'-6"	"	4'-9"	7'-8"			65	22'-6"	"	4'-8½"	7'-8"
		11'			132	21'-3"			65	22'-8"	0'-5½"	4'-9"	7'-9"			65	22'-8"	0'-5¾"	4'-8½"	7'-9"
	2 @ 10'	5'	#7	12"	120	22'-5"	#6	12"	59	23'-11"	0'-6"	5'-0"	8'-2"	#6	12"	59	23'-11"	0'-6½"	4'-11"	8'-2"
		6'			120	22'-7"			59	24'-1"	"	5'-1"	8'-2½"			59	24'-1"	"	5'-0"	8'-2½"
		7'			120	22'-7"			59	24'-1"	"	5'-1"	8'-2½"			59	24'-1"	"	5'-0"	8'-2½"
		8'			120	22'-8"			59	24'-2"	"	5'-1"	8'-3"			59	24'-2"	"	5'-0"	8'-3"
		9'			120	22'-11"			59	24'-5"	"	5'-2"	8'-4"			59	24'-5"	"	5'-1"	8'-4"
		10'			120	23'-2"			59	24'-8"	"	5'-3"	8'-5"			59	24'-8"	"	5'-2"	8'-5"
		11'			120	23'-4"			59	24'-10"	"	5'-3"	8'-6"			59	24'-10"	"	5'-2"	8'-6"
		12'			120	23'-6"			59	25'-0"	0'-6"	5'-3"	8'-7"			59	25'-0"	0'-6½"	5'-2"	8'-7"
	2 @ 11'	6'	#7	12"	120	24'-9"	#6	12"	59	26'-3"	0'-6½"	5'-5"	9'-1"	#6	12"	59	26'-4"	0'-7½"	5'-3"	9'-1"
		7'			120	24'-9"			59	26'-3"	"	5'-5"	9'-1"			59	26'-4"	"	5'-3"	9'-1"
		8'			120	24'-9"			59	26'-3"	"	5'-5"	9'-1"			59	26'-4"	"	5'-3"	9'-1"
		9'			120	25'-0"			59	26'-6"	"	5'-6"	9'-2"			59	26'-7"	"	5'-4"	9'-2"
		10'			120	25'-3"			59	26'-9"	"	5'-7"	9'-3"			59	26'-10"	"	5'-5"	9'-3"
		11'			120	25'-5"			59	26'-11"	"	5'-7"	9'-4"			59	27'-0"	"	5'-5"	9'-4"
		12'			120	25'-7"			59	27'-1"	0'-6½"	5'-7"	9'-5"			59	27'-2"	0'-7½"	5'-5"	9'-5"
	2 @ 12'	6'	#7	11"	132	26'-10"	#6	11"	65	28'-4"	0'-7"	5'-11"	9'-10"	#6	11"	65	28'-6"	0'-8½"	5'-8"	9'-10"
		7'			132	26'-10"			65	28'-4"	"	5'-11"	9'-10"			65	28'-6"	"	5'-8"	9'-10"
		8'			132	26'-10"			65	28'-4"	"	5'-11"	9'-10"			65	28'-6"	"	5'-8"	9'-10"
		9'			132	27'-1"			65	28'-7"	"	6'-0"	9'-11"			65	28'-9"	"	5'-9"	9'-11"
		10'			132	27'-4"			65	28'-10"	"	6'-1"	10'-0"			65	29'-0"	"	5'-10"	10'-0"
		11'			132	27'-6"			65	29'-0"	"	6'-1"	10'-1"			65	29'-2"	"	5'-10"	10'-1"
		12'			132	27'-8"			65	29'-2"	0'-7"	6'-1"	10'-2"			65	29'-4"	0'-8½"	5'-10"	10'-2"

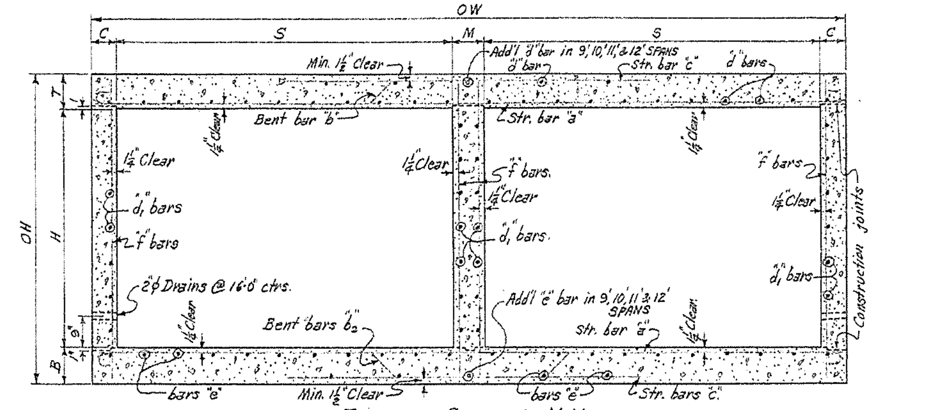
"c" bars: STRAIGHT – In Top and Bottom Slab of Barrel. Alt. with "b" and "b_2" bars. "d" bars: STRAIGHT – Longitudinal in Top Slab of Barrel. "d_1" bars: STRAIGHT – Longitudinal in Sidewalls and Division Wall. "e" bars: STRAIGHT – Longitudinal in Bottom Slab of Barrel. "f" bars: STRAIGHT – Verticals in Sidewalls and Division Wall. "k" bars: STRAIGHT – 2 in Top of Headwalls and Aprons – Each.

S	H	"c" Size	"c" Spacing	"c" No. Req'd	"c" Length	"d" Size	"d" Spacing	"d" No. Req'd	"d" Length	"d_1" Size	"d_1" Spacing	"d_1" No. Req'd	"d_1" Length	"e" Size	"e" Spacing	"e" No. Req'd	"e" Length	"f" Size	"f" Spacing	"f" No. Req'd	"f" Length	"k" Size	"k" No. Req'd	"k" Length
2 @ 4'	2'	#5	12"	120	4'-10"	#5	12"	14	2 @ 30'-8" for 60'-0" Length Barrel (1'-8" Lap)	#4	12"	8	2 @ 30'-6" for 60'-0" Length Barrel (1'-3" Lap)	#4	12"	14	2 @ 31'-6" for 60'-0" Length Barrel (1'-3" Lap)	#4	12"	240	2'-10"	#5	8	10'-3"
	3'			120	4'-10"			14				12				14				240	3'-10"		8	"
	4'			120	4'-10"			14				16				14				240	4'-10"		8	"
	5'			120	4'-10"			14				20				14				240	5'-10"		8	"
	6'			120	4'-11"			14				24				14				240	6'-10"		8	10'-6"
2 @ 5'	3'	#6	12"	120	5'-10"	#5	11½"	16		#4	12"	12		#4	12"	16		#4	12"	240	3'-11"	#6	8	12'-4"
	4'			120	5'-10"			16				16				16				240	4'-11"		8	"
	5'			120	5'-10"			16				20				16				240	5'-11"		8	"
	6'			120	5'-11"			16				24				16				240	6'-11"		8	12'-7"
	7'			120	6'-0"			16				28				16				240	7'-11"		8	12'-9"
2 @ 6'	3'	#6	11"	132	6'-11"	#5	11½"	18		#4	12"	12		#4	12"	18		#4	12"	240	4'-0"	#6	8	14'-5"
	4'			132	6'-11"			18				16				18				240	5'-0"		8	"
	5'			132	6'-11"			18				20				18				240	6'-0"		8	"
	6'			132	7'-0"			18				24				18				240	7'-0"		8	14'-8"
	7'			132	7'-1"			18				28				18				240	8'-0"		8	14'-10"
	8'			132	7'-1"			18				32				18			10"	288	9'-0"		8	14'-11"
2 @ 7'	4'	#6	12"	120	7'-11"	#5	11½"	20		#4	12"	16		#4	12"	20		#4	12"	240	5'-1"	#6	8	16'-6"
	5'			120	7'-11"			20				20				20				240	6'-1"		8	"
	6'			120	8'-0"			20				24				20				240	7'-1"		8	16'-9"
	7'			120	8'-1"			20				28				20				240	8'-1"		8	16'-11"
	8'			120	8'-1"			20				32				20			10"	288	9'-1"		8	17'-0"
	9'			120	8'-2"			20				36				20		#5	12"	240	10'-1"		8	17'-3"
2 @ 8'	4'	#6	11"	132	9'-0"	#5	11½"	23		#4	12"	16		#4	12"	22		#4	12"	240	5'-2"	#6	8	18'-7"
	5'			132	9'-0"			23				20				22				240	6'-2"		8	18'-10"
	6'			132	9'-0"			23				24				22				240	7'-2"		8	"
	7'			132	9'-2"			23				28				22				240	8'-2"		8	19'-0"
	8'			132	9'-2"			23				32				22			10"	288	9'-2"		8	19'-1"
	9'			132	9'-3"			23				36				22		#5	12"	240	10'-2"		8	19'-4"
	10'			132	9'-4"			23				40				22			11"	264	11'-2"		8	19'-7"
2 @ 9'	5'	#6	11"	132	10'-1"	#5	11½"	26		#4	12"	20		#4	12"	25		#4	12"	240	6'-3"	#6	8	20'-11"
	6'			132	10'-2"			26				24				25				240	7'-3"		8	21'-1"
	7'			132	10'-2"			26				28				25				240	8'-3"		8	"
	8'			132	10'-2"			26				32				25			10"	288	9'-3"		8	21'-2"
	9'			132	10'-3"			26				36				25		#5	12"	240	10'-3"		8	21'-5"
	10'			132	10'-4"			26				40				25			11"	264	11'-3"		8	21'-8"
	11'			132	10'-4"			26				44				25			10"	288	12'-3"		8	21'-10"
2 @ 10'	5'	#7	12"	120	11'-2"	#5	11½"	28		#4	12"	20		#4	12"	27		#4	12"	240	6'-4"	#7	8	22'-11"
	6'			120	11'-3"			28				24				27				240	7'-4"		8	23'-1"
	7'			120	11'-3"			28				28				27				240	8'-4"		8	"
	8'			120	11'-3"			28				32				27			10"	288	9'-4"		8	23'-2"
	9'			120	11'-4"			28				36				27		#5	12"	240	10'-4"		8	23'-6"
	10'			120	11'-5"			28				40				27			11"	264	11'-4"		8	23'-9"
	11'			120	11'-5"			28				44				27			10"	288	12'-4"		8	23'-11"
	12'			120	11'-5"			28				48				27		#6	12"	240	13'-4"		8	24'-1"
2 @ 11'	6'	#7	12"	120	12'-3"	#5	11½"	30		#4	12"	24		#4	12"	29		#4	12"	240	7'-6"	#7	8	25'-3"
	7'			120	12'-3"			30				28				29				240	8'-6"		8	"
	8'			120	12'-3"			30				32				29			10"	288	9'-6"		8	"
	9'			120	12'-4"			30				36				29		#5	12"	240	10'-6"		8	25'-6"
	10'			120	12'-5"			30				40				29			11"	264	11'-6"		8	25'-10"
	11'			120	12'-5"			30				44				29			10"	288	12'-6"		8	26'-0"
	12'			120	12'-5"			30				48				29		#6	12"	240	13'-6"		8	26'-2"
2 @ 12'	6'	#7	11"	132	13'-3"	#5	11½"	32		#4	12"	24		#4	12"	31		#4	12"	240	7'-7"	#7	8	27'-4"
	7'			132	13'-3"			32				28				31				240	8'-7"		8	"
	8'			132	13'-3"			32				32				31			10"	288	9'-7"		8	"
	9'			132	13'-4"			32				36				31		#5	12"	240	10'-7"		8	27'-7"
	10'			132	13'-6"			32				40				31			11"	264	11'-7"		8	27'-10"
	11'			132	13'-6"			32				44				31			10"	288	12'-7"		8	28'-0"
	12'			132	13'-6"			32				48				31		#6	12	240	13'-7"		8	28'-5"

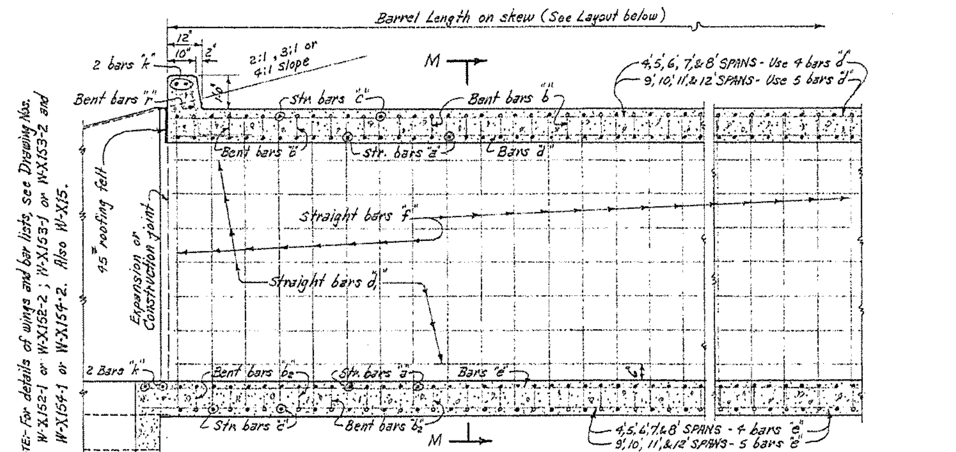
NOTE:- The "a", "b", "b_2", and "c" bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

DIMENSIONS / QUANTITIES

MAX. DESIGN DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	SQ. FT. OPENING A	OVERALL WIDTH OW	THICKNESS OF TOP SLAB T	THICKNESS OF SIDEWALLS C	THICKNESS OF DIVISION WALL M	THICKNESS OF BOTTOM SLAB B	OVERALL HEIGHT OH	ROADWAY LENGTH RL	LENGTH OF HEADWALL K	CLASS S CONC. PER LIN. FT. OF BARREL CU. YD.	REINFORCING STEEL PER LIN. FT. OF BARREL LB.	ADDITIONAL PER LAP LB.	ADDITIONAL TWO HEADWALLS & APRONS LB.
5'-0"	2 @ 4'	2'	16	9'-8"	6½"	6"	8"	6"	3'-0½"	10'-0"	10'-6½"	0.496	89.89	42.71	136.52
		3'	24	9'-8"		6"	8"		4'-0½"	"	"	0.558	95.23	46.05	136.52
		4'	32	9'-8"		6"	8"		5'-0½"	"	"	0.620	100.58	49.39	136.52
		5'	40	9'-8"		6"	8"		6'-0½"	"	"	0.682	105.92	52.73	136.52
		6'	48	9'-11"		7"	9"		7'-0½"	10'-3⅛"	10'-9⅝"	0.809	112.48	56.07	138.60
	2 @ 5'	3'	30	11'-8"	7"	6"	8"	6½"	4'-1½"	12'-1"	12'-7½"	0.671	125.87	51.19	209.65
		4'	40	11'-8"		6"	8"		5'-1½"	"	"	0.733	131.22	54.53	209.65
		5'	50	11'-8"		6"	8"		6'-1½"	"	"	0.795	136.56	57.87	209.65
		6'	60	11'-11"		7"	9"		7'-1½"	12'-4"	12'-10½"	0.922	143.43	61.21	212.66
		7'	70	12'-1"		7½"	10"		8'-1½"	12'-6⅛"	13'-0½"	1.044	149.87	64.55	214.66
	2 @ 6'	3'	36	13'-8"	7½"	6"	8"	7½"	4'-3"	14'-1¾"	14'-8¼"	0.818	151.91	56.34	245.60
		4'	48	13'-8"		6"	8"		5'-3"	"	"	0.880	157.25	59.68	245.60
		5'	60	13'-8"		6"	8"		6'-3"	"	"	0.941	162.60	63.02	245.60
		6'	72	13'-11"		7"	9"		7'-3"	14'-5"	14'-11½"	1.070	169.60	66.36	248.60
		7'	84	14'-1"		7½"	10"		8'-3"	14'-7"	15'-1½"	1.192	176.15	69.70	250.61
		8'	96	14'-2"		8"	10"		9'-3"	14'-8"	15'-2½"	1.298	186.76	73.04	251.61
	2 @ 7'	4'	56	15'-8"	8"	6"	8"	8"	5'-4"	16'-2⅝"	16'-9"	1.021	181.91	64.83	281.99
		5'	70	15'-8"		6"	8"		6'-4"	"	"	1.082	187.25	68.17	281.99
		6'	84	15'-11"		7"	9"		7'-4"	16'-5⅝"	17'-0⅛"	1.212	194.35	71.51	284.99
		7'	98	16'-1"		7½"	10"		8'-4"	16'-7⅝"	17'-2¼"	1.334	200.94	74.85	286.99
		8'	112	16'-2"		8"	10"		9'-4"	16'-8⅞"	17'-3¼"	1.440	211.64	78.19	288.00
		9'	126	16'-5"		9"	11"		10'-4"	17'-0"	17'-6½"	1.616	229.01	81.53	291.00
	2 @ 8'	4'	64	17'-8"	8½"	6"	8"	8½"	5'-5"	18'-3½"	18'-10"	1.174	215.29	71.71	322.50
		5'	80	17'-11"		7"	9"		6'-5"	18'-6⅝"	19'-1"	1.295	222.27	75.05	325.50
		6'	96	17'-11"		7"	9"		7'-5"	"	"	1.366	227.62	78.39	325.50
		7'	112	18'-1"		7½"	10"		8'-5"	18'-8⅝"	19'-3"	1.489	234.60	81.73	327.50
		8'	128	18'-2"		8"	10"		9'-5"	18'-9¾"	19'-4¼"	1.595	245.39	85.07	328.50
		9'	144	18'-5"		9"	11"		10'-5"	19'-0⅞"	19'-7¼"	1.772	263.00	88.41	331.51
		10'	160	18'-8"		10"	12"		11'-5"	19'-3⅞"	19'-10½"	1.967	275.99	91.75	334.51
	2 @ 9'	5'	90	19'-11"	9"	7"	9"	9¼"	6'-6¼"	20'-7½"	21'-2"	1.477	244.83	82.77	364.23
		6'	108	20'-1"		7½"	10"		7'-6¼"	20'-9½"	21'-4"	1.594	251.54	86.11	366.23
		7'	126	20'-1"		7½"	10"		8'-6¼"	"	"	1.671	256.89	89.45	366.23
		8'	144	20'-2"		8"	10"		9'-6¼"	20'-10½"	21'-5"	1.778	267.72	92.79	367.23
		9'	162	20'-5"		9"	11"		10'-6¼"	21'-1⅝"	21'-8¼"	1.956	285.41	96.13	370.24
		10'	180	20'-8"		10"	12"		11'-6¼"	21'-4¾"	21'-11¼"	2.152	298.43	99.47	373.24
		11'	198	20'-10"		11"	12"		12'-6¼"	21'-6⅞"	22'-1½"	2.328	312.32	102.81	375.24
	2 @ 10'	5'	100	21'-11"	9½"	7"	9"	10"	6'-7½"	22'-8¼"	23'-2¾"	1.674	286.66	87.92	500.43
		6'	120	22'-1"		7½"	10"		7'-7½"	22'-10⅜"	23'-4¾"	1.792	293.52	91.26	503.15
		7'	140	22'-1"		7½"	10"		8'-7½"	"	"	1.869	298.87	94.60	503.15
		8'	160	22'-2"		8"	10"		9'-7½"	22'-11⅜"	23'-5¾"	1.976	309.79	97.94	504.52
		9'	180	22'-5"		9"	11"		10'-7½"	23'-2½"	23'-9"	2.155	327.76	101.28	509.97
		10'	200	22'-8"		10"	12"		11'-7½"	23'-5⅝"	24'-0"	2.352	341.02	104.62	514.06
		11'	220	22'-10"		11"	12"		12'-7½"	23'-7⅝"	24'-2"	2.529	355.04	107.96	516.78
		12'	240	23'-0"		12"	12"		13'-7½"	23'-9¾"	24'-4½"	2.718	377.25	111.30	519.51
	2 @ 11'	6'	132	24'-2"	10"	8"	10"	11"	7'-9"	25'-0½"	25'-6¾"	2.048	316.97	96.41	551.83
		7'	154	24'-2"		8"	10"		8'-9"	"	"	2.128	322.31	99.75	551.83
		8'	176	24'-2"		8"	10"		9'-9"	"	"	2.208	332.74	103.09	551.83
		9'	198	24'-5"		9"	11"		10'-9"	25'-3⅝"	25'-9¾"	2.388	350.87	106.43	555.92
		10'	220	24'-8"		10"	12"		11'-9"	25'-6½"	26'-1"	2.586	364.19	109.77	561.37
		11'	242	24'-10"		11"	12"		12'-9"	25'-8½"	26'-3"	2.769	378.28	113.11	564.10
		12'	264	25'-0"		12"	12"		13'-9"	25'-10⅝"	26'-5"	2.954	400.66	116.45	566.82
	2 @ 12'	6'	144	26'-2"	10½"	8"	10"	12"	7'-10½"	27'-1"	27'-7½"	2.299	362.26	101.55	599.59
		7'	168	26'-2"		8"	10"		8'-10½"	"	"	2.379	367.60	104.89	599.59
		8'	192	26'-2"		8"	10"		9'-10½"	"	"	2.459	378.07	108.23	599.59
		9'	216	26'-5"		9"	11"		10'-10½"	27'-4⅛"	27'-10⅝"	2.640	396.97	111.57	603.68
		10'	240	26'-8"		10"	12"		11'-10½"	27'-7¼"	28'-1¾"	2.840	410.39	114.91	607.77
		11'	264	26'-10"		11"	12"		12'-10½"	27'-9⅜"	28'-3⅝"	3.018	424.63	118.25	610.49
		12'	288	27'-0"		12"	12"		13'-10½"	27'-11⅜"	28'-6"	3.208	447.20	121.59	614.58



TYPICAL SECTION M-M



PART LONGITUDINAL SECTION N-N

NOTE:- For details of wings and bar lists, see Drawing Nos. W-X152-1 or W-X152-2, W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2. Also W-X15.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.

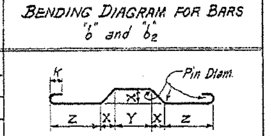
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, side walls, 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.

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#5	2½"	4¼"	0'-11½"
#6	3"	5"	1'-2"

BENDING DIAGRAM FOR BARS "b" and "b_2"

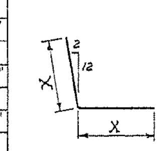


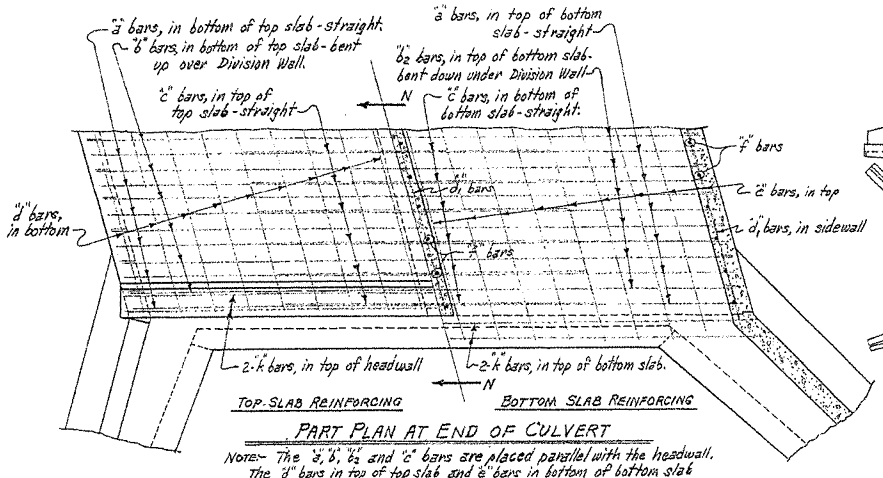
NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

2 SPANS @	SIZE	SPACING	No. REQ'D	LENGTH	X
4'	#4	12"±	20	2'-5"	1'-2½"
5'	#4	12"±	24	2'-6"	1'-3"
6'	#4	12"±	28	2'-7"	1'-3½"
7'	#4	12"±	32	2'-8"	1'-4"
8'	#4	12"±	38	2'-9"	1'-4½"
9'	#4	12"±	42	2'-10"	1'-5"
10'	#4	12"±	46	2'-11"	1'-5½"
11'	#4	12"±	50	3'-0"	1'-6"
12'	#4	12"±	54	3'-1"	1'-6½"

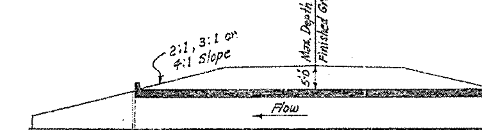
Bars "r" – Dowel bars in Headwalls



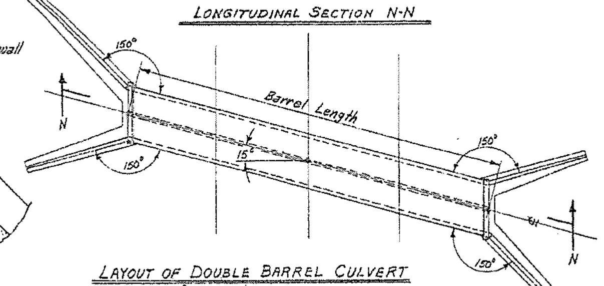


PART PLAN AT END OF CULVERT

NOTE:- The "a", "b", "b_2" and "c" bars are placed parallel with the headwall. The "d" bars in top of top slab and "e" bars in bottom of bottom slab are not shown.



LONGITUDINAL SECTION N-N



LAYOUT OF DOUBLE BARREL CULVERT
15° SKEW LEFT FORWARD
15° Skew Right Forward is reversed.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X152-1 or W-X152-2, W-X153-1 or W-X153-2, and W-X154-1 or W-X154-2. Also W-X15.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

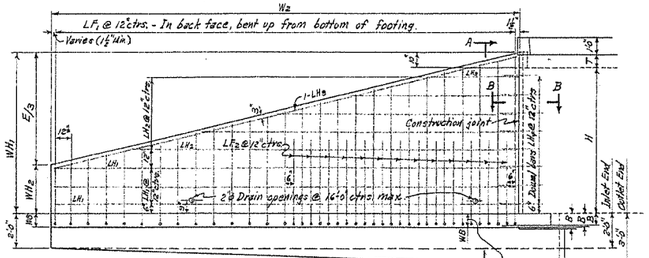
DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
15° SKEW

4, 5, 6, 7, 8, 9, 10, 11 & 12 SPANS — 2:1, 3:1 OR 4:1 SLOPES
DOUBLES — UNDER 5'-0" COVER

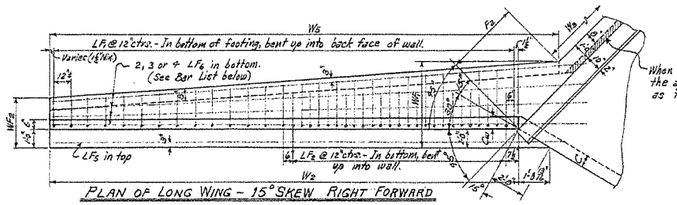
STANDARD DRAWING NO. R-215X-0

Designed by: W.C.H. 1-17-63. Checked by: R.H.S. - 5-14-63
Drawn by: W.C.H. 8-23-63. Checked by: R.H.S. 10-7-63
Quantities by: W.C.H. 8-26-63. Checked by: R.G. - 12-16-63

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			90	
JOB No.					

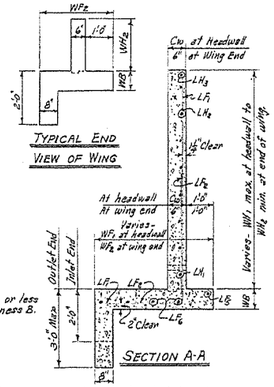


REAR ELEVATION OF LONG WING - 15° SKEW RIGHT FORWARD
SHOWING BACK FACE REINFORCING



PLAN OF LONG WING - 15° SKEW RIGHT FORWARD
SHOWING FOOTING REINFORCING.

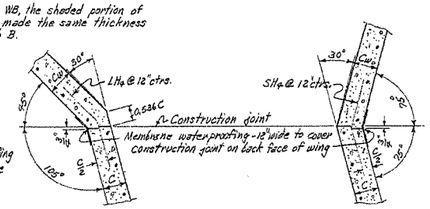
NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



TYPICAL END VIEW OF WING

SECTION A-A

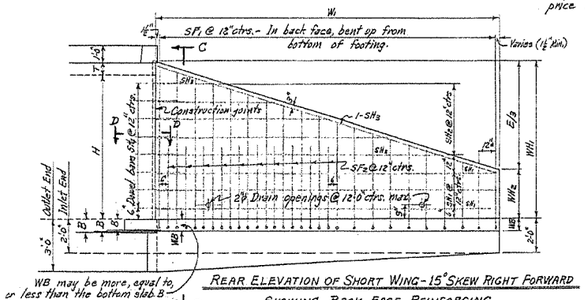
SECTION C-C



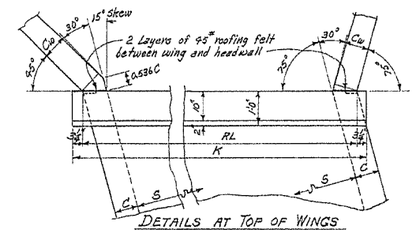
SECTION B-B

SECTION D-D

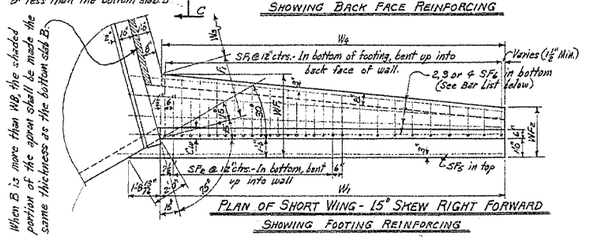
SECTIONS THRU CONSTRUCTION JOINTS



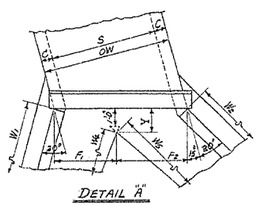
REAR ELEVATION OF SHORT WING - 15° SKEW RIGHT FORWARD
SHOWING BACK FACE REINFORCING



DETAILS AT TOP OF WINGS
15° SKEW RIGHT FORWARD



PLAN OF SHORT WING - 15° SKEW RIGHT FORWARD
SHOWING FOOTING REINFORCING



DETAIL "A"

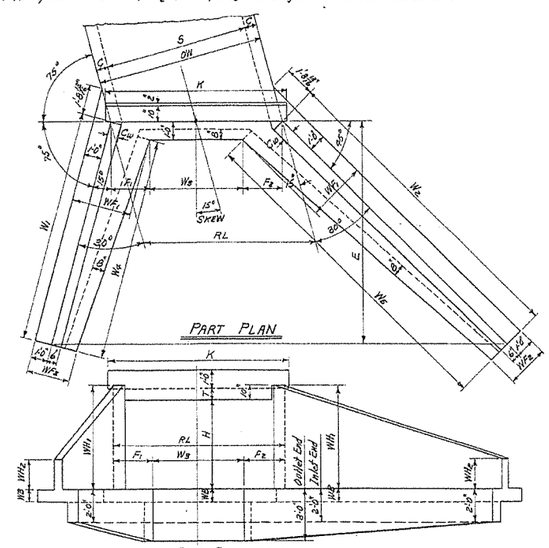
TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F1	F2	W4	W5	W3	Y
5'	7'	3'-0"	3'-5⅝"	16'-10⅛"	25'-0⅜"	0"	1'-0⅛"
6'	8'	3'-6"	4'-1⅛"	19'-0¼"	28'-3⅛"	0"	1'-1"

REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	FOOTING DIMENSION - PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSION - PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DIST. FROM HEAD TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSIONS SHORT WING	INSIDE FOOTING DIMENSIONS LONG WING	* QUANTITY PER WING CLASS S CONCRETE INLET END SHORT WING	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.
2'	7"	6"	2'-10"	0'-6"	2'-9"	2'-0"	1'-1⅜"	0'-10⅝"	6'-6"	6'-8¾"	9'-2⅛"	6'-0⅝"	9'-1⅝"	0.789	1.094	0.876	1.212
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-11½"	1'-5⅜"	1'-4⅝"	8'-6"	8'-9½"	12'-0⅛"	8'-2⅝"	12'-3⅜"	1.186	1.650	1.300	1.808
4'	7"	6"	4'-10"	1'-4"	3'-0"	3'-3"	1'-9⅜"	1'-1"	10'-6"	10'-10⅝"	14'-10⅝"	10'-2⅝"	15'-5⅝"	1.656	2.305	1.797	2.502
5'	7"	6"	5'-10"	1'-8"	3'-4"	3'-6½"	2'-1⅜"	2'-3⅝"	12'-6"	12'-11⅝"	17'-8½"	12'-6⅝"	18'-7½"	2.196	3.059	2.363	3.295
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	2'-3⅝"	12'-6"	12'-11⅝"	17'-8½"	12'-6⅝"	18'-7½"	2.287	3.188	2.455	3.424
6'	8"	7"	6'-10"	2'-0"	3'-8"	3'-6"	2'-5⅜"	2'-8⅝"	14'-6"	15'-0½"	20'-6"	14'-8⅝"	21'-9"	3.052	4.242	3.246	4.517
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅜"	2'-9⅛"	14'-6"	15'-0½"	20'-6"	14'-8⅝"	21'-9"	3.119	4.329	3.309	4.605
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-5⅜"	2'-9⅛"	14'-6"	15'-0½"	20'-6"	14'-8⅝"	21'-9"	3.177	4.417	3.371	4.693
⊕ 7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-0⅛"	3'-5⅝"	16'-6"	17'-1"	23'-4"	16'-10⅝"	25'-1"	3.998	5.560	4.220	5.877
		8"	7'-10"	2'-4"	4'-2"	2'-7⅞"	3'-0⅛"	3'-5⅝"	16'-6"	17'-1"	23'-4"	16'-10⅝"	25'-1"	4.079	5.675	4.301	5.991
⊕ 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-4⅜"	4'-2⅛"	18'-6"	19'-1⅝"	26'-2"	19'-1½"	28'-5"	5.111	7.111	5.360	7.470

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.
⊕ See Table "A" for special values of F_1 & F_2 and W_4 & W_5 for Single 5'x7' and 6'x8' Box Culverts.



SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD
Details of Culvert with 15° Skew Left Forward is reversed, see Drwg. No. W-X16

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X15. For values of RL, K, and W_5 for each box, see the above Std. also.

MEMARAHE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

QUANTITIES

CLEAR SPAN S	CLEAR HEIGHT H	THICKNESS OF WING AT HEADWALL Cw	THICKNESS OF WING FOOTING WB	⊕ REINFORCING STEEL - FOR 4 WINGS LB.	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS: SINGLE BARREL CULVERT Cu.Yd.	DOUBLE BARREL CULVERT Cu.Yd.	TRIPLE BARREL CULVERT Cu.Yd.	QUADRUPLE BARREL CULVERT Cu.Yd.	QUINTUPLE BARREL CULVERT Cu.Yd.
4'	2'	6"	7"	117	4.73	5.78	6.77	7.77	8.76
	3'	6"	7"	176	6.65	7.64	8.63	9.63	10.62
	4'	6"	7"	267	8.85	9.84	10.84	11.83	12.82
	5'	6"	7"	379	11.40	12.38	13.38	14.37	15.36
	6'	7"	8"	626	15.95	16.95	17.98	18.51	19.53
5'	3'	6"	7"	176	6.87	8.07	9.28	10.48	11.69
	4'	6"	7"	267	9.08	10.28	11.48	12.69	13.90
	5'	6"	7"	379	11.61	12.81	14.02	15.23	16.44
	6'	7"	8"	626	15.67	16.90	18.14	19.38	20.61
	7'	7½"	8½"	1210	20.11	21.36	22.62	23.88	25.14
6'	3'	6"	7"	176	7.09	8.52	9.92	11.34	12.78
	4'	6"	7"	267	9.29	10.73	12.18	13.54	14.98
	5'	6"	7"	379	11.83	13.26	14.67	16.10	17.53
	6'	7"	8"	626	15.85	17.35	18.79	20.25	21.70
	7'	7½"	8½"	1210	20.33	21.81	23.28	24.76	26.24
	8'	8"	9"	1533	25.56	27.05	28.53	30.02	31.50
7'	4'	6"	7"	267	9.52	11.18	12.81	14.47	16.09
	5'	6"	7"	379	12.05	13.72	15.35	17.01	18.63
	6'	7"	8"	626	16.12	17.80	19.45	21.13	22.78
	7'	7½"	8½"	1210	20.56	22.26	23.94	25.64	27.33
	8'	8"	9"	1533	25.80	27.50	29.20	30.90	32.60
8'	4'	6"	7"	267	9.75	11.65	13.51	15.41	17.23
	5'	7"	7"	379	12.74	14.48	16.25	18.47	20.31
	6'	7"	8"	626	16.39	18.26	20.14	22.06	23.90
	7'	7½"	8½"	1210	20.78	22.72	24.62	26.55	28.42
	8'	8"	9"	1533	26.03	27.94	29.86	31.80	33.71
9'	5'	7"	7"	379	12.99	15.15	17.25	19.40	21.45
	6'	7½"	8"	626	16.89	19.07	21.19	23.34	25.42
	7'	7½"	8½"	1210	21.01	23.19	25.31	27.48	29.54
	8'	8"	9"	1533	26.25	28.42	30.55	32.72	34.78
10'	5'	7"	7"	379	13.23	15.62	17.85	20.24	22.59
	6'	7½"	8"	626	17.13	19.54	21.89	24.20	26.56
	7'	7½"	8½"	1210	21.44	23.66	26.01	28.32	30.68
	8'	8"	9"	1533	26.48	28.89	31.25	33.56	35.92
11'	6'	8"	8"	626	17.67	20.34	22.92	25.48	——
	7'	8"	8½"	1210	21.88	24.55	27.13	29.69	——
	8'	8"	9"	1533	26.70	29.37	31.94	34.52	——
12'	6'	8"	8"	626	17.91	20.84	23.64	26.46	——
	7'	8"	8½"	1210	22.11	25.04	27.85	30.67	——
	8'	8"	9"	1533	26.93	29.86	32.67	35.49	——

⊕ For reinforcing steel in Headwalls and Aprons, see Drawings listed below.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.
CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:-
This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT H	WING LOCATION SHORT OR LONG	SF1 & LF1 BENT In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	SPACING	No. REQ'D	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	SF2 & LF2 BENT In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE	SPACING	No. REQ'D	LENGTH	X	Y
2'	Short	#3	12"	7	1'-9"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"	—	—	—	—	—	—
	Long	#3	12"	10	1'-9"	3'-11"	0'-8"	1'-0"	0'-10"	3'-0"	—	—	—	—	—	—
3'	Short	#3	12"	9	2'-2"	5'-8"	0'-10"	1'-4"	1'-5"	4'-0"	—	—	—	—	—	—
	Long	#3	12"	13	1'-11"	5'-2"	0'-10"	1'-3"	1'-2"	4'-0"	—	—	—	—	—	—
4'	Short	#3	12"	11	2'-7"	6'-7"	0'-11"	1'-8"	1'-9"	5'-0"	—	—	—	—	—	—
	Long	#3	12"	15	2'-6"	6'-6"	0'-11"	1'-7"	1'-8"	5'-0"	—	—	—	—	—	—
5'	Short	#3	12"	13	3'-1"	7'-11"	1'-1"	2'-0"	2'-1"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"
	Long	#3	12"	18	3'-0"	7'-10"	1'-1"	1'-11"	2'-0"	6'-0"	#3	12"	5	3'-6"	1'-1"	2'-6"
6'	Short	#4	12"	16	3'-6"	9'-6"	1'-2"	2'-4"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"
	Long	#4	12"	21	3'-5"	9'-3"	1'-2"	2'-3"	2'-4"	7'-1"	#3	12"	5	4'-6"	1'-4"	3'-3"
7'	Short	#4	12"	18	3'-9"	10'-10"	1'-3"	2'-10"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"
	Long	#4	12"	26	3'-10"	10'-8"	1'-3"	2'-8"	2'-8"	8'-1"	#4	12"	9	5'-6"	1'-7"	4'-0"
8'	Short	#4	12"	20	4'-4"	12'-5"	1'-5"	3'-4"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"
	Long	#4	12"	27	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	13	6'-6"	1'-10"	4'-9"

CLEAR HEIGHT H	WING LOCATION SHORT OR LONG	SF3 & LF3 STRAIGHT Longitudinal in top of wing footing heel. SIZE	No. REQ'D	LENGTH	SF4 & LF4 STRAIGHT Longitudinal in bottom of wing footing toe. SIZE	No. REQ'D	LENGTH	SH1 & LH1 STRAIGHT Horizontal in back face of wing. SIZE	SPACING	No. REQ'D	LENGTH	SH2 & LH2 STRAIGHT Horizontal in back face of wing. One bar of each length. SIZE	SPACING	No. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.
2'	Short	#3	1	9'-2"	#3	2	7'-10"	#3	12"	1	6'-5"	#3	12"	1	—	3'-6"
	Long	#3	1	11'-8"	#3	2	10'-10"	#3	12"	1	8'-11"	#3	12"	1	—	4'-8"
3'	Short	#3	1	11'-8"	#3	2	10'-0"	#3	12"	1	8'-6"	#3	12"	2	6'-7"	3'-6"
	Long	#3	1	14'-6"	#3	2	14'-0"	#3	12"	2	11'-9"	#3	12"	2	8'-11"	4'-8"
4'	Short	#3	1	13'-4"	#3	3	12'-2"	#3	12"	1	10'-7"	#3	12"	3	9'-8"	3'-6"
	Long	#3	1	17'-4"	#3	3	17'-2"	#3	12"	1	14'-7"	#3	12"	3	12'-2"	4'-8"
5'	Short	#3	1	15'-5"	#3	3	14'-4"	#3	12"	2	12'-8"	#3	12"	3	11'-8"	3'-6"
	Long	#3	1	20'-2"	#3	3	20'-4"	#3	12"	2	17'-5"	#3	12"	3	15'-2"	4'-8"
6'	Short	#3	1	17'-6"	#3	3	16'-6"	#3	12"	2	14'-9"	#3	12"	4	12'-10"	3'-6"
	Long	#3	1	23'-10"	#3	3	23'-4"	#3	12"	2	20'-3"	#3	12"	4	17'-5"	4'-8"
7'	Short	#4	1	19'-7"	#4	4	18'-9"	#4	12"	2	16'-10"	#4	12"	5	15'-10"	3'-6"
	Long	#4	1	25'-10"	#4	4	26'-10"	#4	12"	2	23'-1"	#4	12"	5	21'-8"	4'-8"
8'	Short	#4	1	21'-8"	#4	4	21'-0"	#4	12"	3	18'-11"	#4	12"	5	18'-10"	3'-6"
	Long	#4	1	28'-9"	#4	4	30'-3"	#4	12"	3	25'-11"	#4	12"	5	21'-8"	4'-8"

CLEAR HEIGHT H	WING LOCATION SHORT OR LONG	SH3 & LH3 STRAIGHT In back face of wing at top - on slope. SIZE	No. REQ'D	LENGTH	SH4 & LH4 BENT Dowels thru construction joint at headwall. SIZE	SPACING	No. REQ'D	LENGTH	X	BAR BENDING DIAGRAM	QUANTITY REINFORCING STEEL PER WING - LBS. SHORT WING	LONG WING
2'	Short	#3	1	6'-10"	#3	12"	2	2'-8"	1'-9"	SF1 & SF2 LF1 & LF2 3" Min.	24.9	33.4
	Long	#3	1	9'-7"	#3	12"	2	"	"			
3'	Short	#3	1	9'-0"	#3	12"	3	"	"		37.7	50.3
	Long	#3	1	12'-0"	#3	12"	3	"	"			
4'	Short	#3	1	11'-2"	#3	12"	4	"	"		57.3	76.4
	Long	#3	1	14'-11"	#3	12"	4	"	"			
5'	Short	#3	1	13'-6"	#3	12"	5	"	"		81.1	108.4
	Long	#3	1	17'-10"	#3	12"	5	"	"			
6'	Short	#3	1	15'-6"	#3	12"	6	"	"		134.8	178.1
	Long	#3	1	20'-9"	#3	12"	6	2'-8"	1'-9"			
7'	Short	#4	1	17'-8"	#4	12"	7	3'-6"	1'-9"		259.5	345.2
	Long	#4	1	23'-8"	#4	12"	7	"	"			
8'	Short	#4	1	19'-10"	#4	12"	8	"	"		328.0	438.3
	Long	#4	1	26'-9"	#4	12"	8	3'-6"	1'-9"			

Note:- Dimensions are to bar centers.

Note:- Bars for short wing shall be marked with prefix letter "S", while those for long wing shall be marked with letter "L".

Designed By- W.C.H. 5-13-63 Checked By- RWS - 8-7-63
Drawn By- W.C.H. 6-20-63 Checked By-
Quantities By- W.C.H. 9-23-63 Checked By-

REVISIONS:- Membrane Added. 5-10-66 W.C.H.

CLASS S CONCRETE

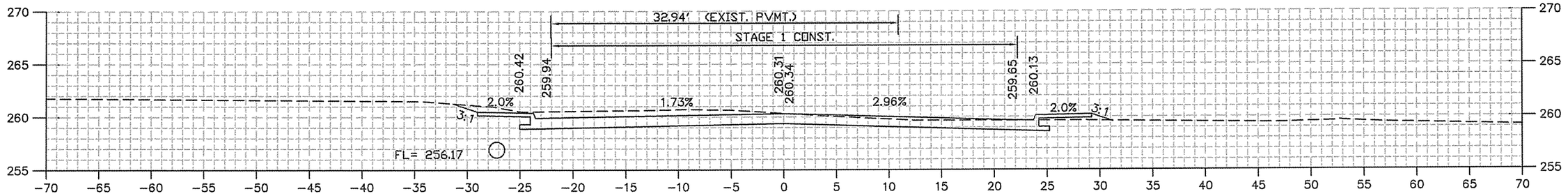
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
15° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X153-1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	91	120

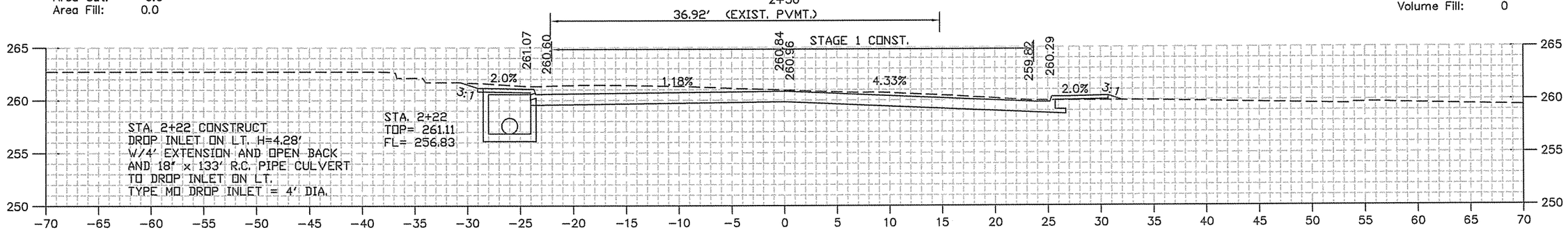
CROSS SECTION STA. 1+60 TO STA 2+50



Area Cut: 0.0
Area Fill: 0.0

2+50

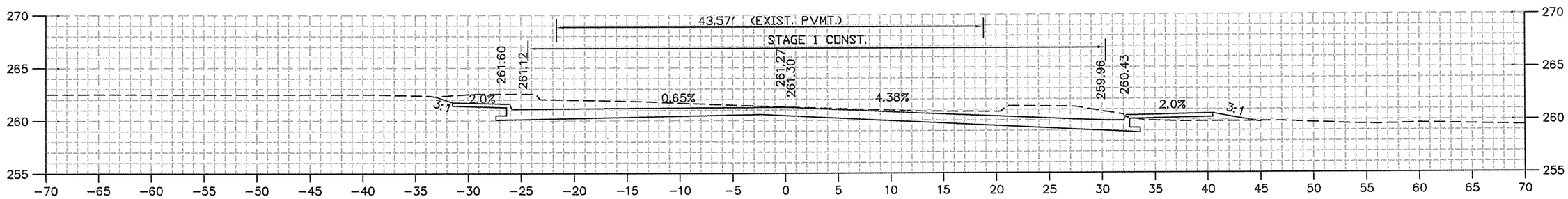
Volume Cut: 0
Volume Fill: 0



Area Cut: 0.0
Area Fill: 0.0

2+22

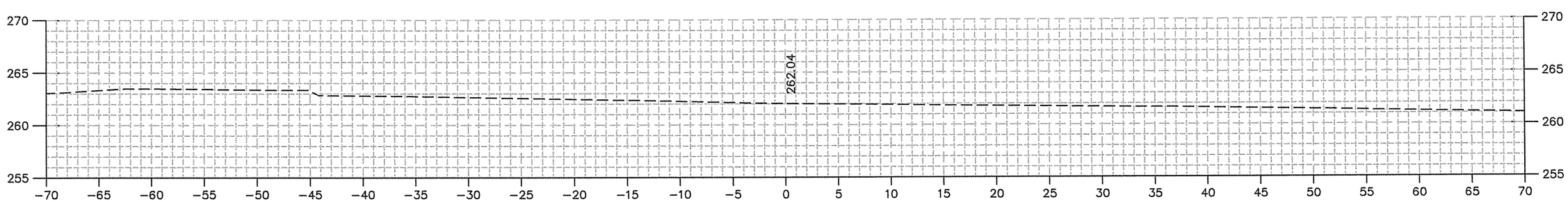
Volume Cut: 0
Volume Fill: 0



Area Cut: 0.0
Area Fill: 0.0

2+00

Volume Cut: 0
Volume Fill: 0



Area Cut: 0.0
Area Fill: 0.0

1+60

Volume Cut: 0
Volume Fill: 0

STA. 1+60.22 BEGIN JOB

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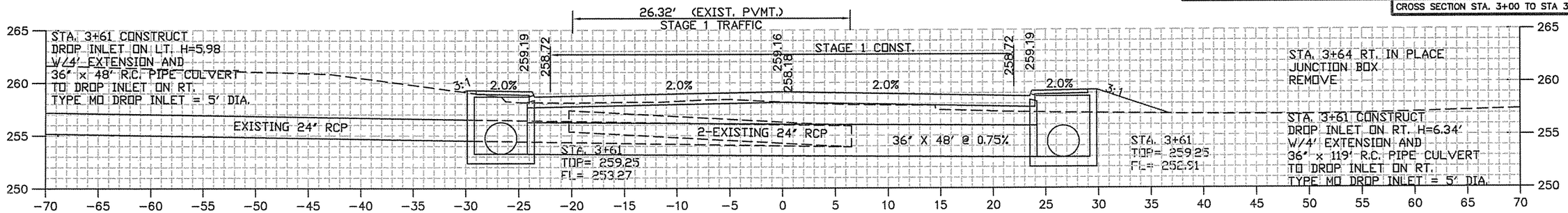
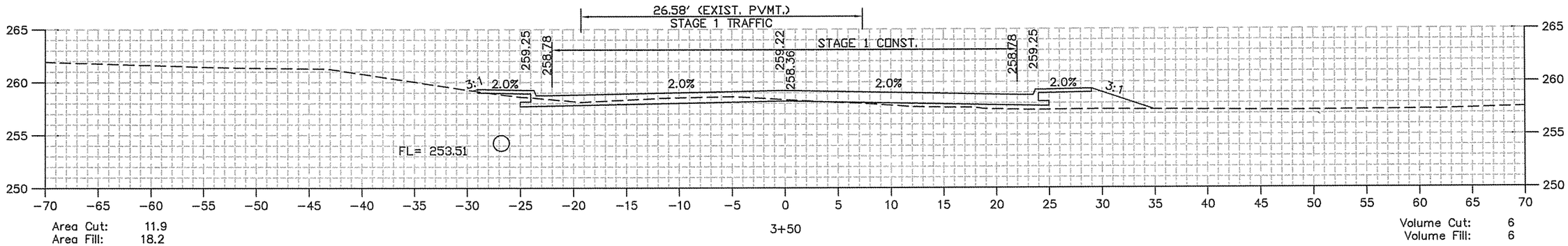
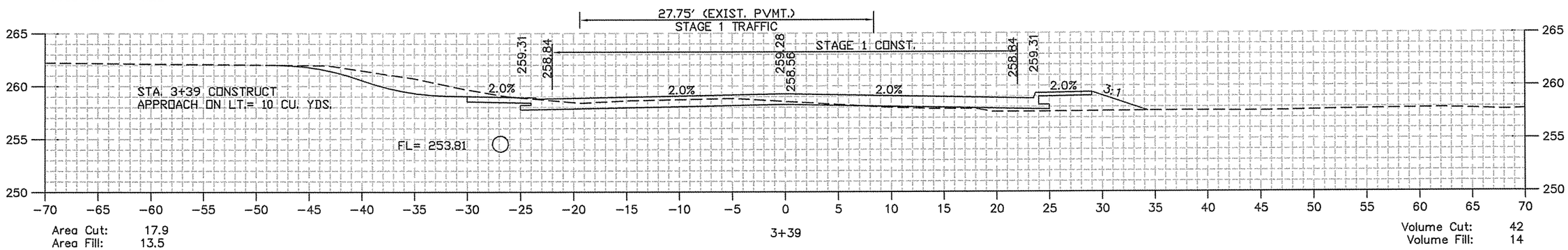
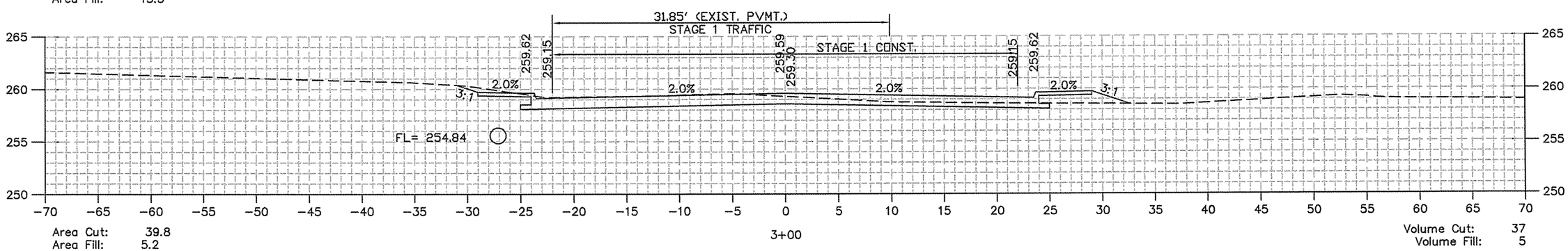
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	92	120

CROSS SECTION STA. 3+00 TO STA 3+61









STA. 2+65.84 – 47'–0" FACE TO FACE OF CURB

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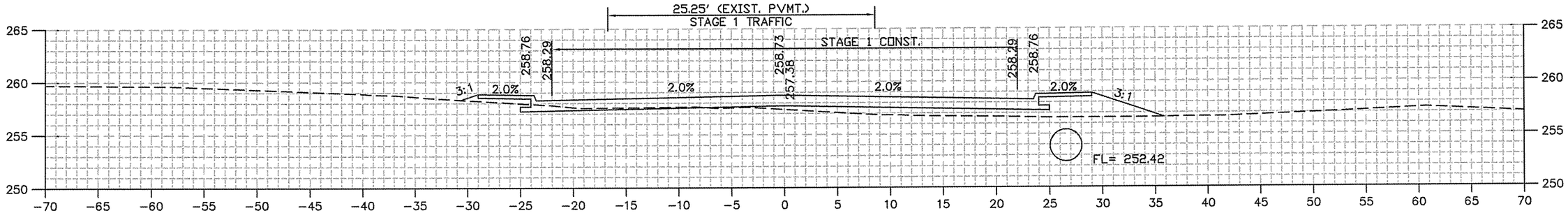
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	93	120

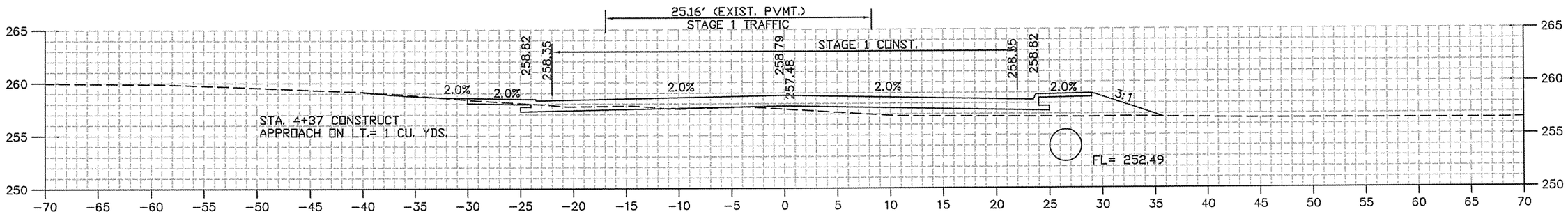
CROSS SECTION STA. 4+00 TO STA 4+50



Area Cut: 4.1
Area Fill: 34.9

4+50

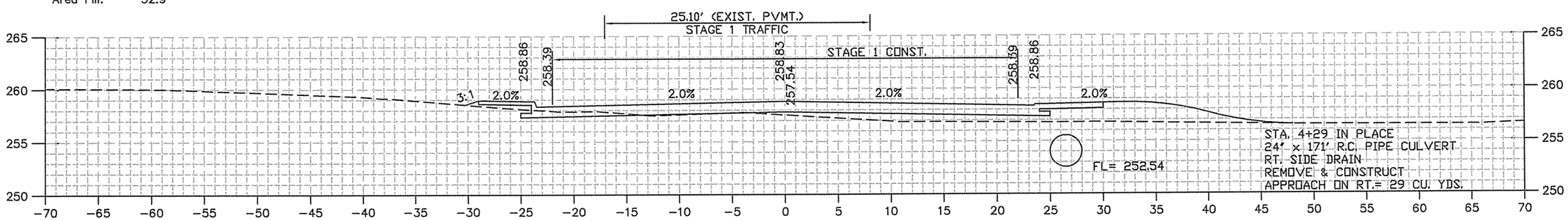
Volume Cut: 2
Volume Fill: 17



Area Cut: 5.1
Area Fill: 32.9

4+37

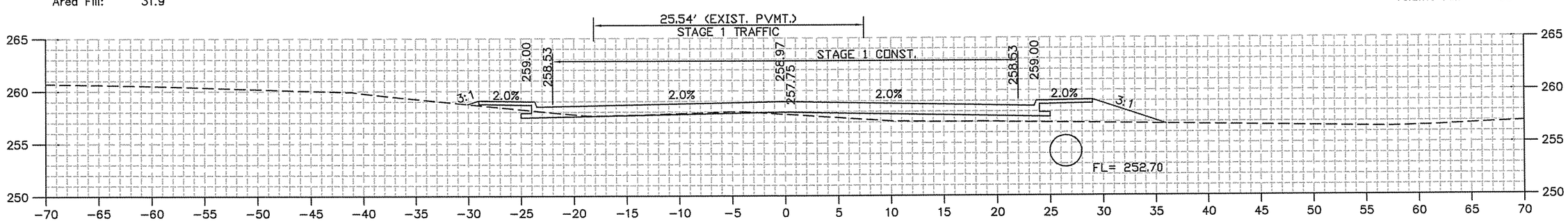
Volume Cut: 1
Volume Fill: 9



Area Cut: 4.9
Area Fill: 31.9

4+29

Volume Cut: 5
Volume Fill: 33



Area Cut: 3.6
Area Fill: 30.1

4+00

Volume Cut: 7
Volume Fill: 33

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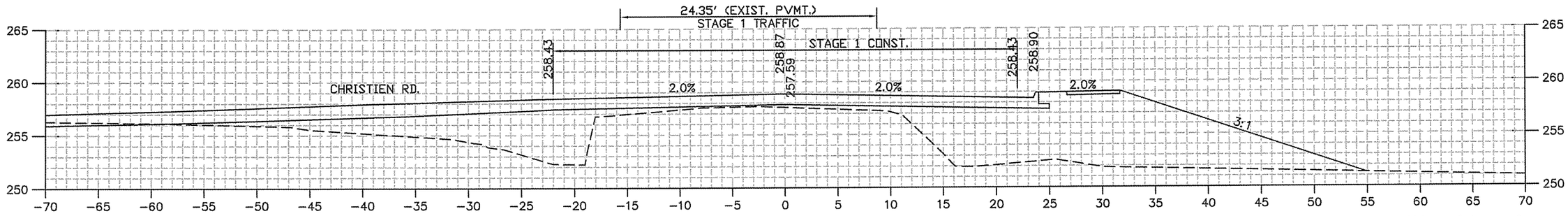
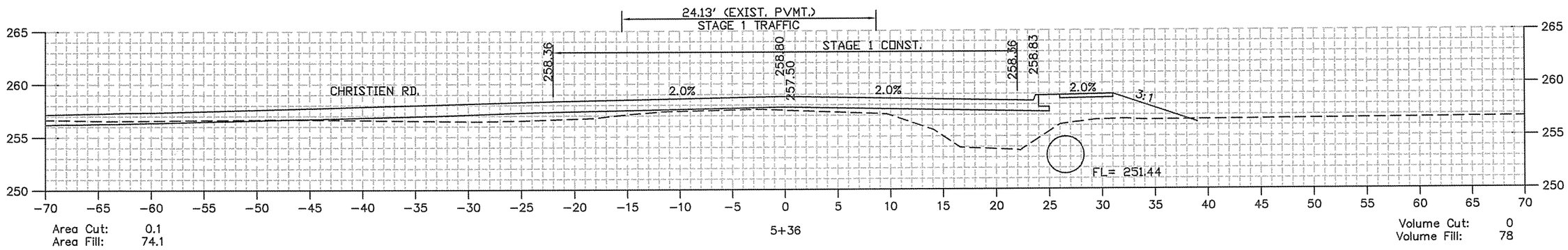
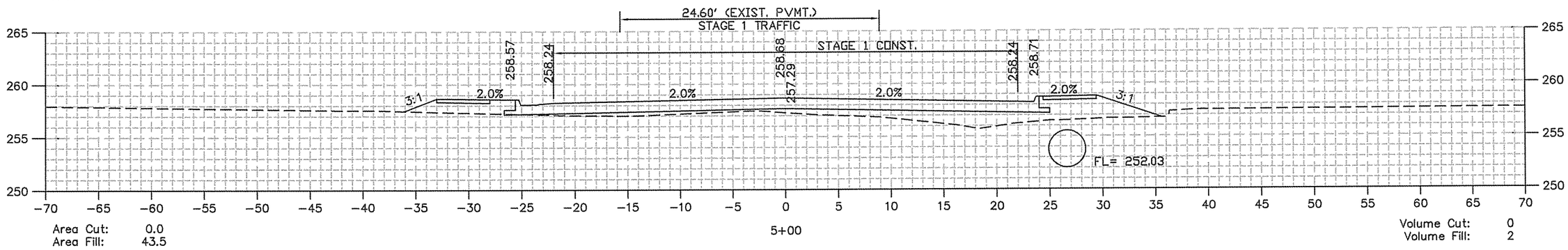
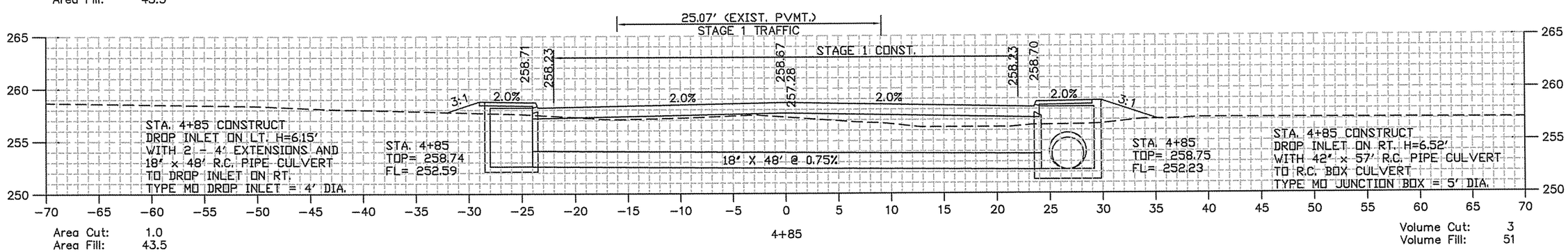
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	94	120
				CROSS SECTION STA. 4+85 TO STA 5+50				









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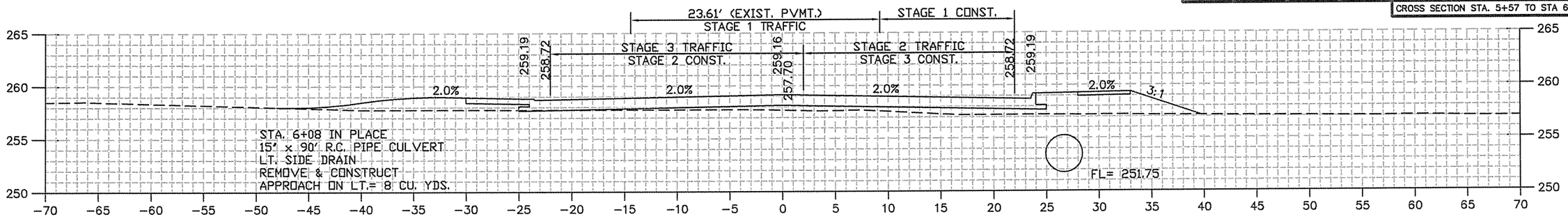
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	95	120

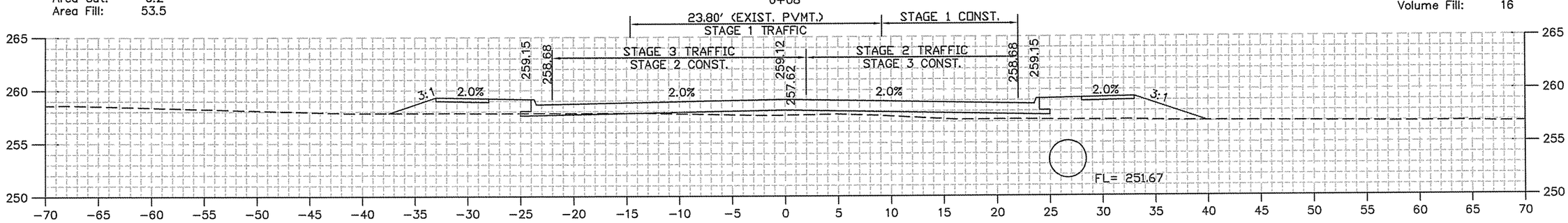
CROSS SECTION STA. 5+57 TO STA 6+08



Area Cut: 0.2
Area Fill: 53.5

6+08

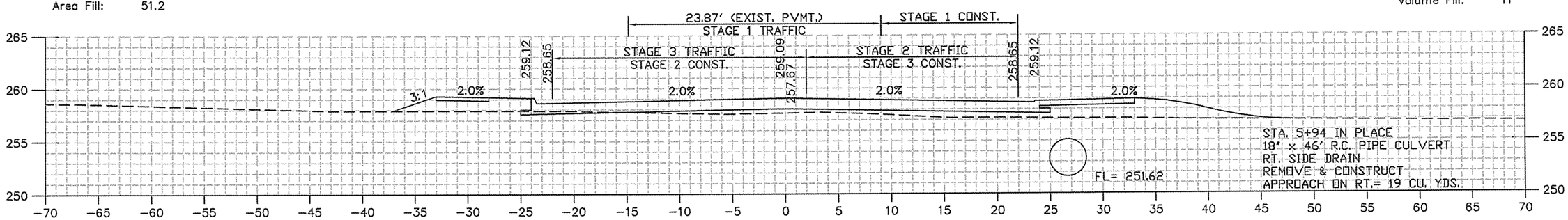
Volume Cut: 0
Volume Fill: 16



Area Cut: 1.1
Area Fill: 51.2

6+00

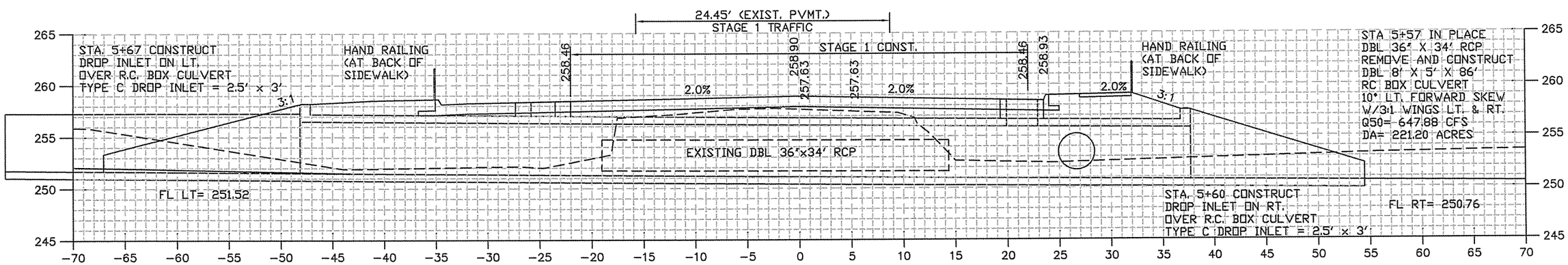
Volume Cut: 0
Volume Fill: 11



Area Cut: 1.7
Area Fill: 50.4

5+94

Volume Cut: 0
Volume Fill: 16



Area Cut: 0.0
Area Fill: 192.2

5+57

Volume Cut: 0
Volume Fill: 51

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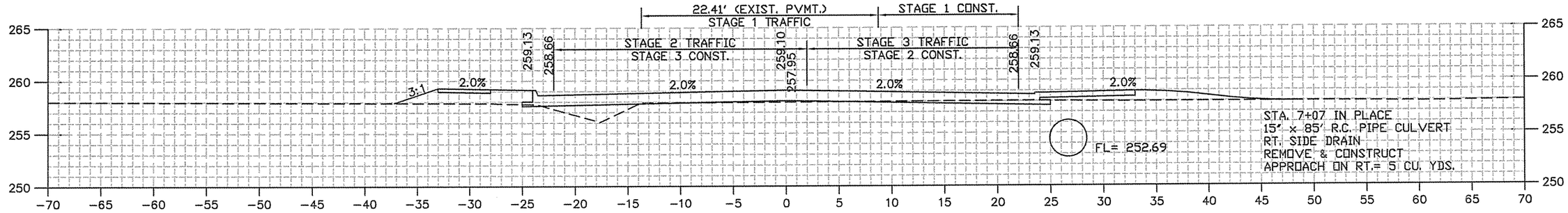
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-0253(46)		
				JOB NO.		061094	96	120

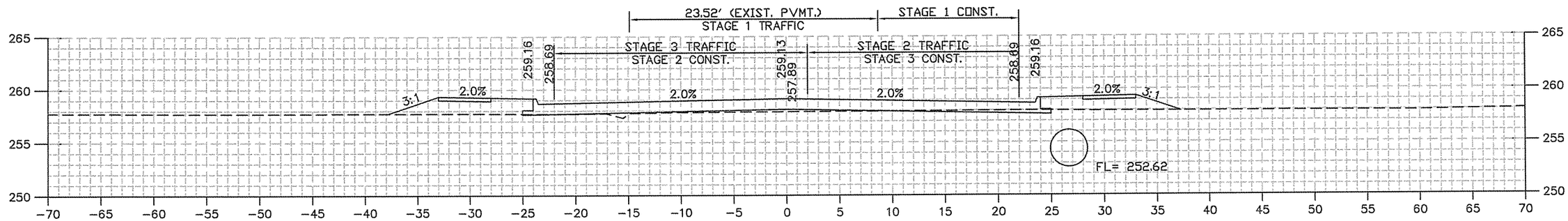
CROSS SECTION STA. 6+50 TO STA 7+07



Area Cut: 4.6
Area Fill: 32.5

7+07

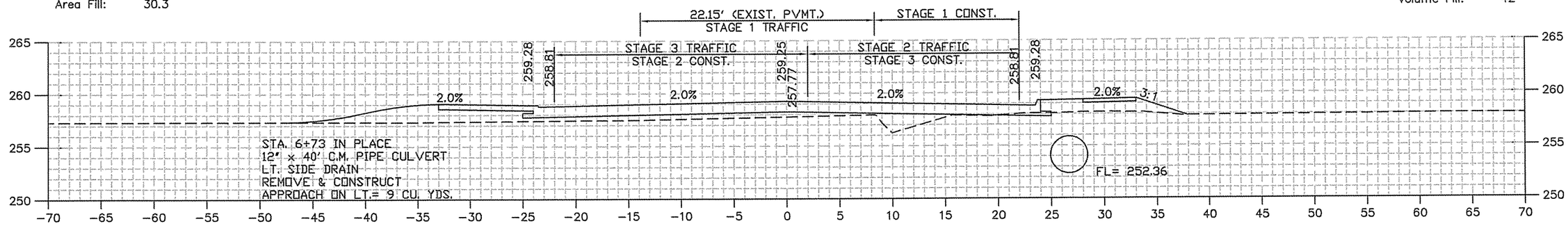
Volume Cut: 1
Volume Fill: 9



Area Cut: 2.8
Area Fill: 30.3

7+00

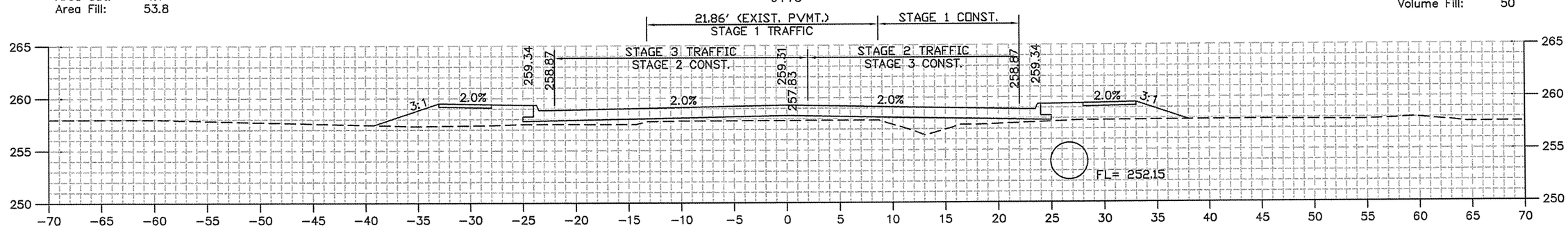
Volume Cut: 2
Volume Fill: 42



Area Cut: 1.1
Area Fill: 53.8

6+73

Volume Cut: 0
Volume Fill: 50



Area Cut: 0.0
Area Fill: 61.4

6+50

Volume Cut: 0
Volume Fill: 40

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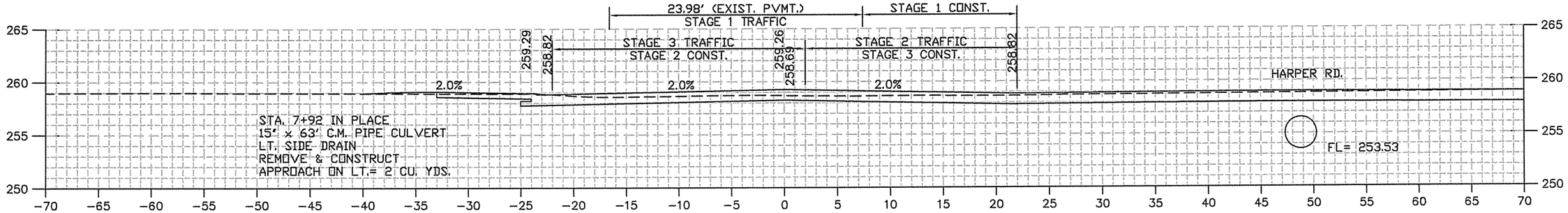
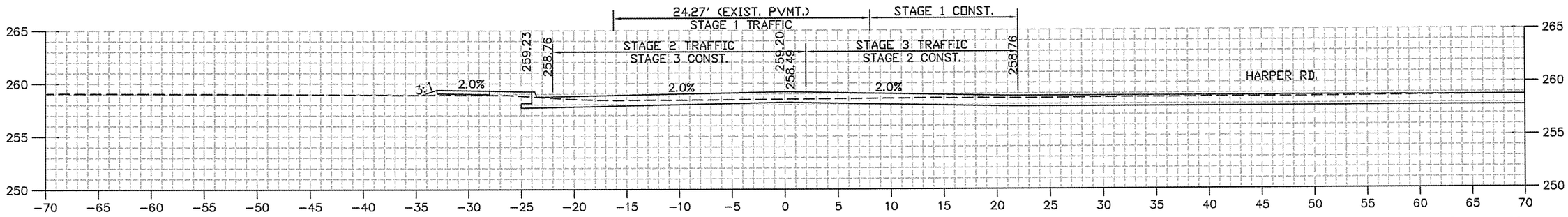
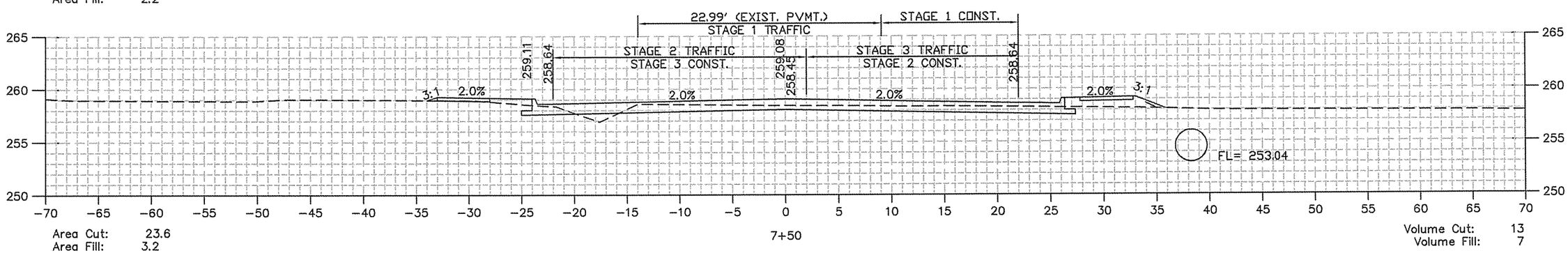
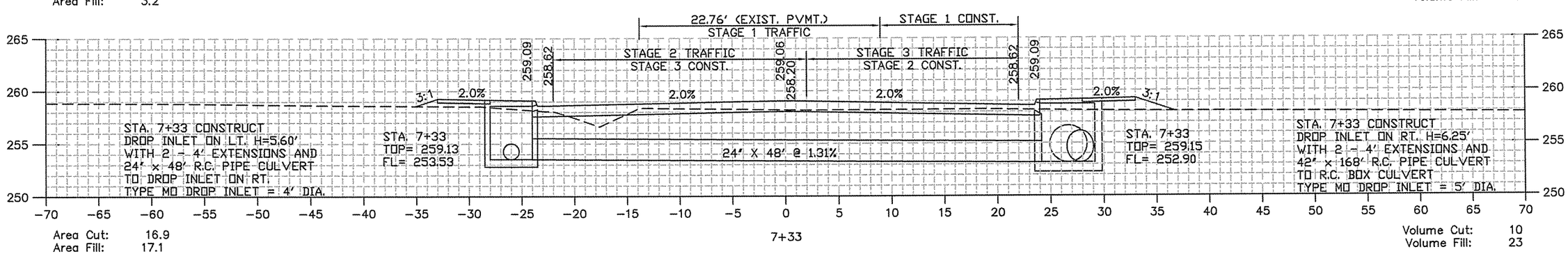
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	97	120

CROSS SECTION STA. 7+33 TO STA 7+92









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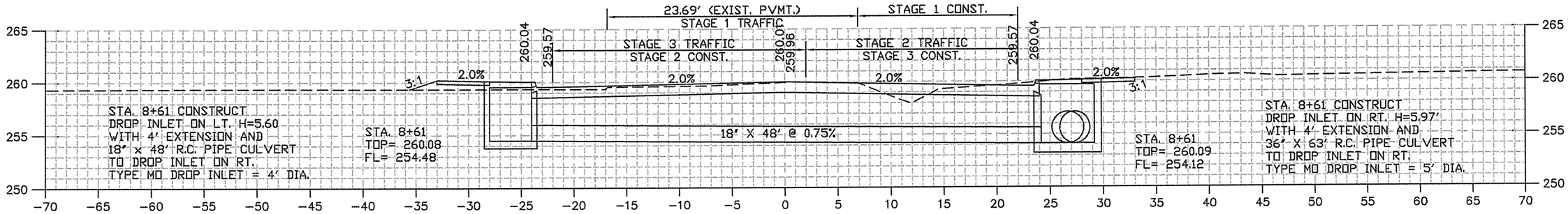
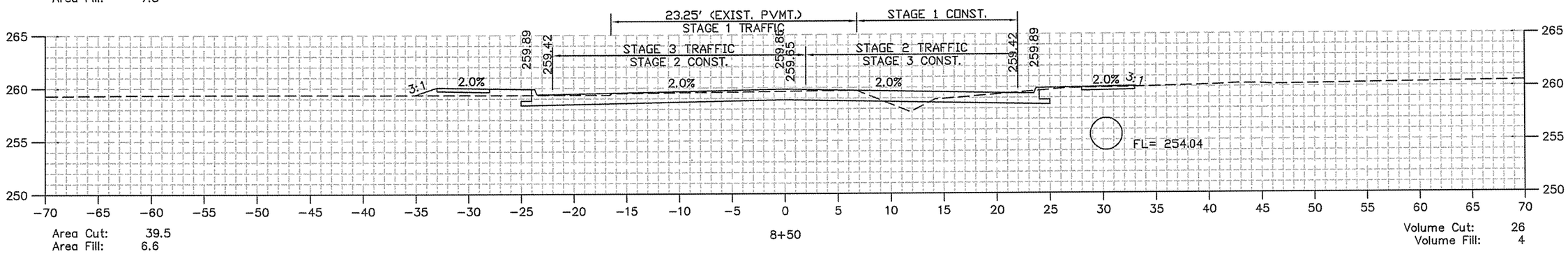
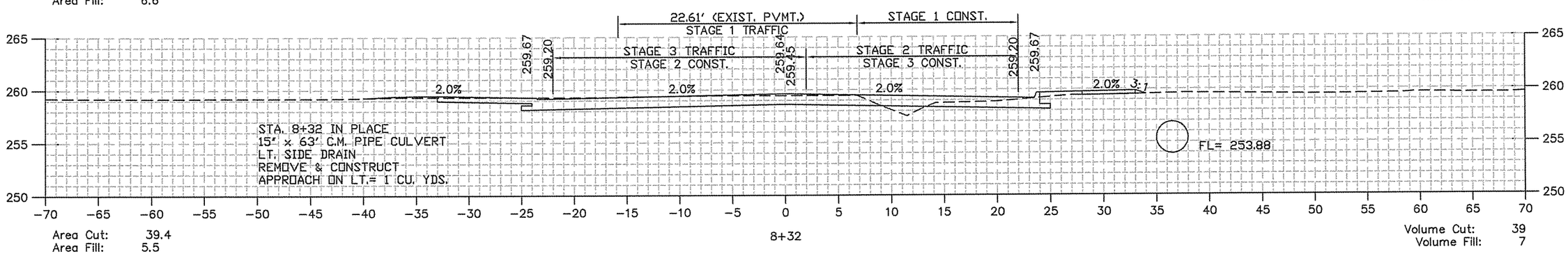
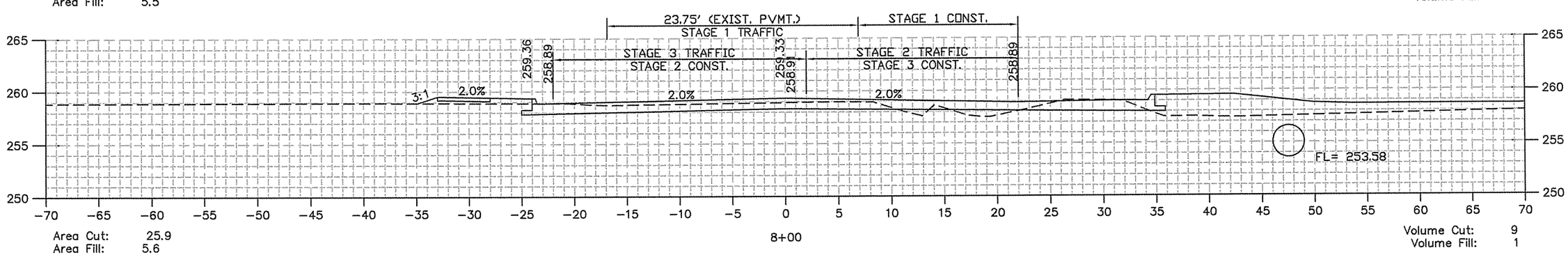
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	98	120
				CROSS SECTION STA. 8+00 TO STA 8+61				









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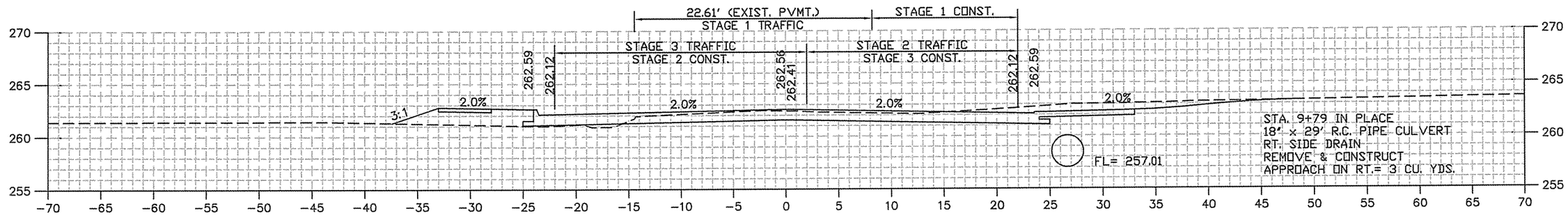
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	99	120

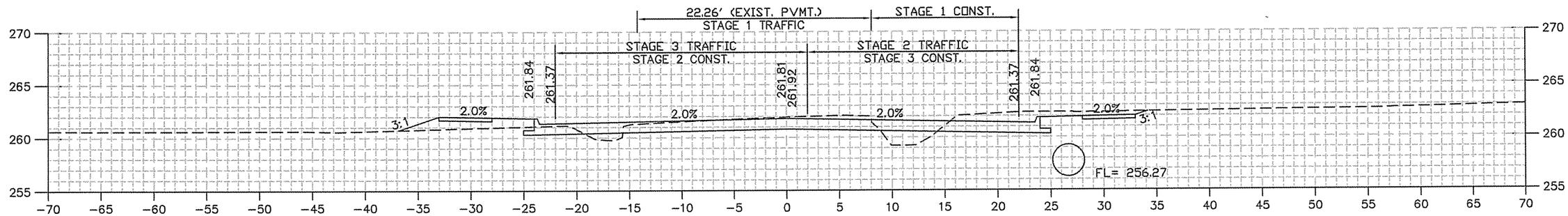
CROSS SECTION STA. 9+00 TO STA 9+79



Area Cut: 42.0
Area Fill: 15.7

9+79

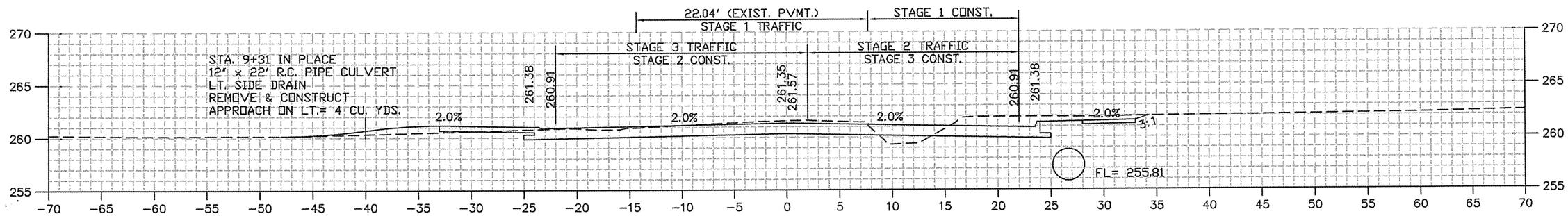
Volume Cut: 50
Volume Fill: 17



Area Cut: 52.2
Area Fill: 15.8

9+50

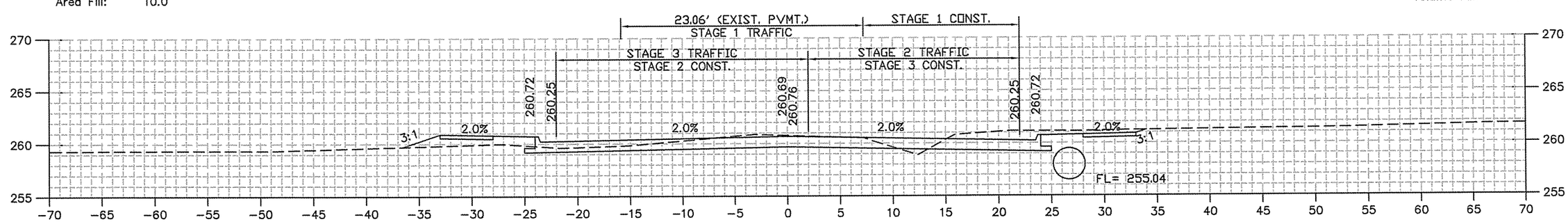
Volume Cut: 38
Volume Fill: 9



Area Cut: 58.4
Area Fill: 10.0

9+31

Volume Cut: 62
Volume Fill: 11



Area Cut: 49.4
Area Fill: 8.4

9+00

Volume Cut: 66
Volume Fill: 12

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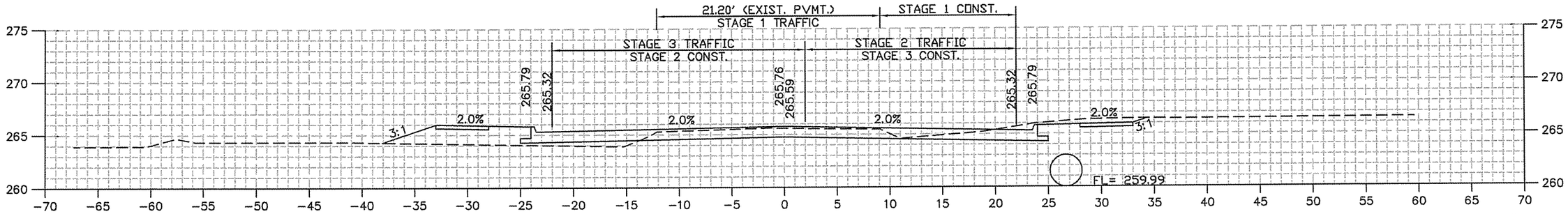
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	100	120

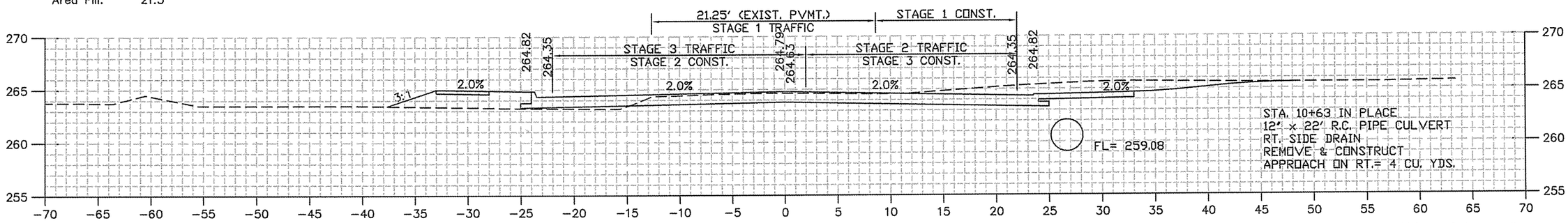
CROSS SECTION STA. 10+00 TO STA 11+00



Area Cut: 36.0
Area Fill: 21.3

11+00

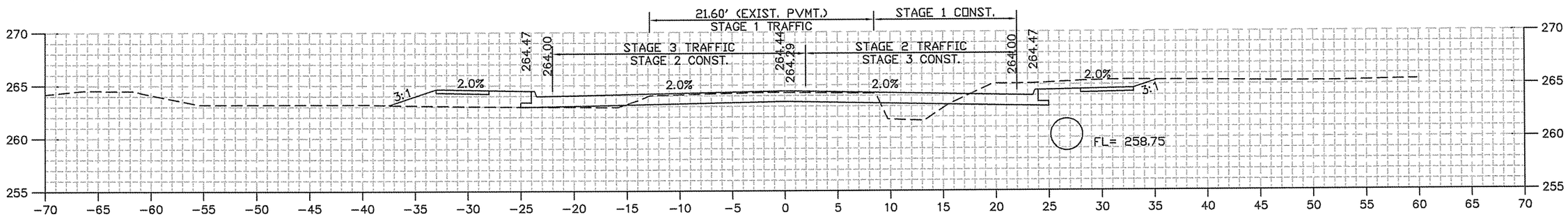
Volume Cut: 59
Volume Fill: 26



Area Cut: 51.6
Area Fill: 17.0

10+63

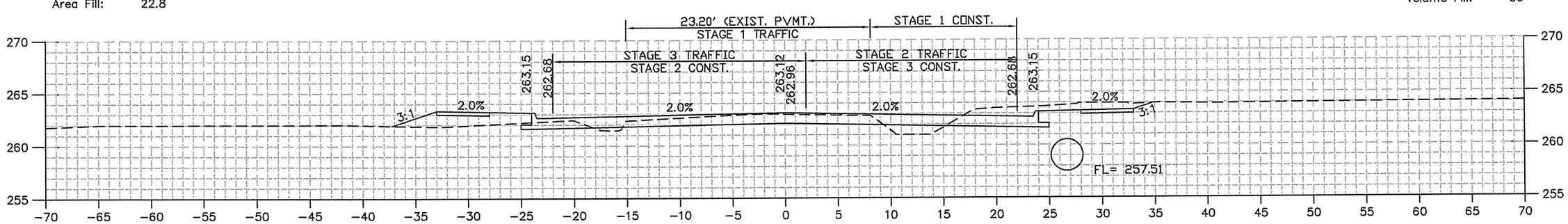
Volume Cut: 24
Volume Fill: 10



Area Cut: 44.0
Area Fill: 22.8

10+50

Volume Cut: 83
Volume Fill: 36



Area Cut: 45.4
Area Fill: 16.3

10+00

Volume Cut: 34
Volume Fill: 12

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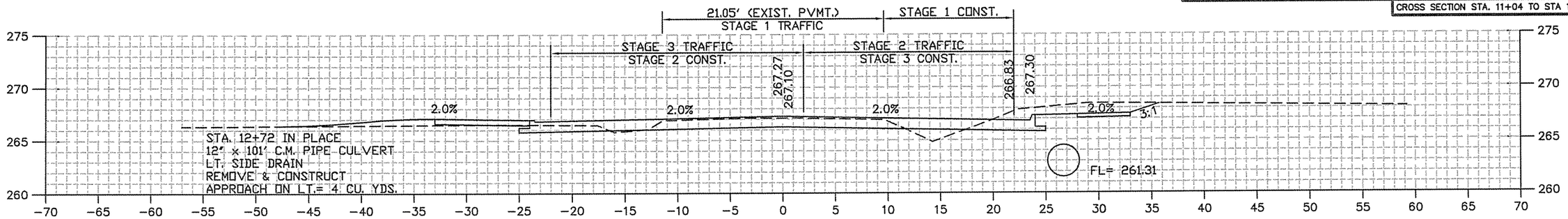
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	101	120

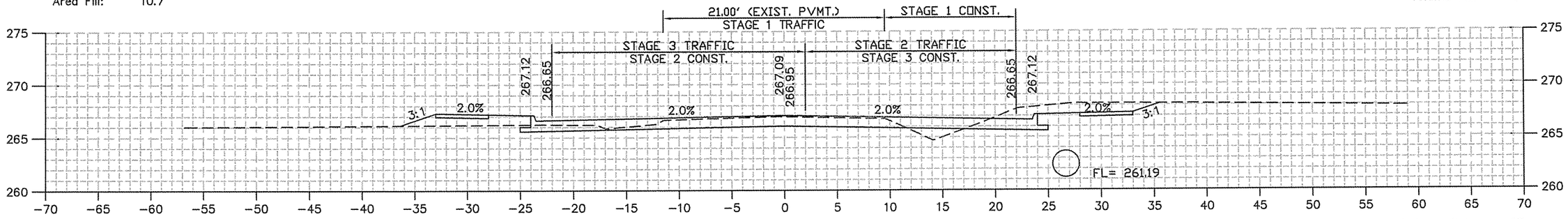
CROSS SECTION STA. 11+04 TO STA 11+57



Area Cut: 45.6
Area Fill: 10.7

11+57

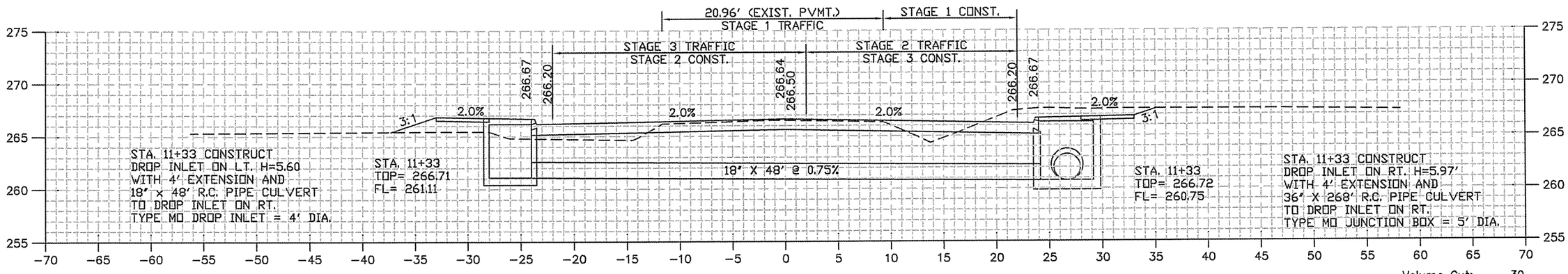
Volume Cut: 12
Volume Fill: 3



Area Cut: 46.5
Area Fill: 11.4

11+50

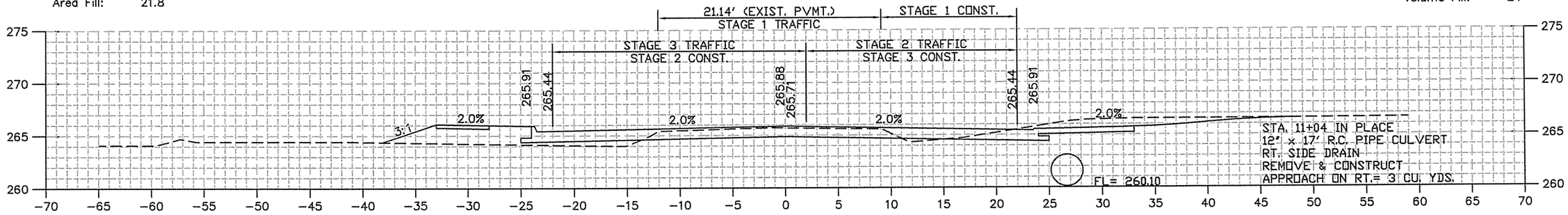
Volume Cut: 27
Volume Fill: 10



Area Cut: 41.5
Area Fill: 21.8

11+33

Volume Cut: 39
Volume Fill: 24



Area Cut: 31.2
Area Fill: 22.4

11+04

Volume Cut: 5
Volume Fill: 3

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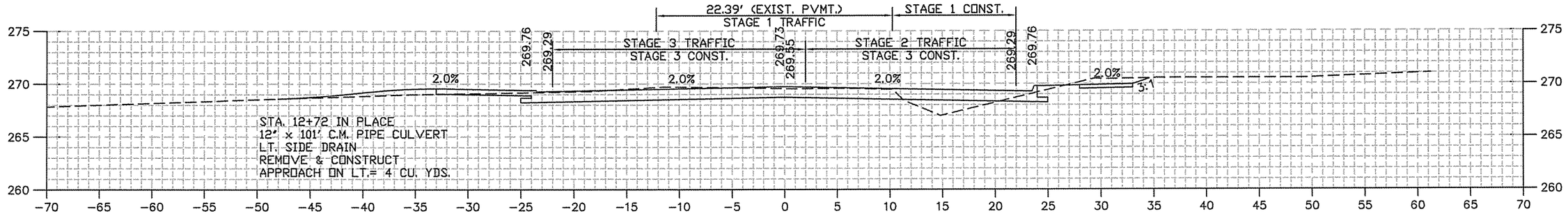
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.		061094	102	120

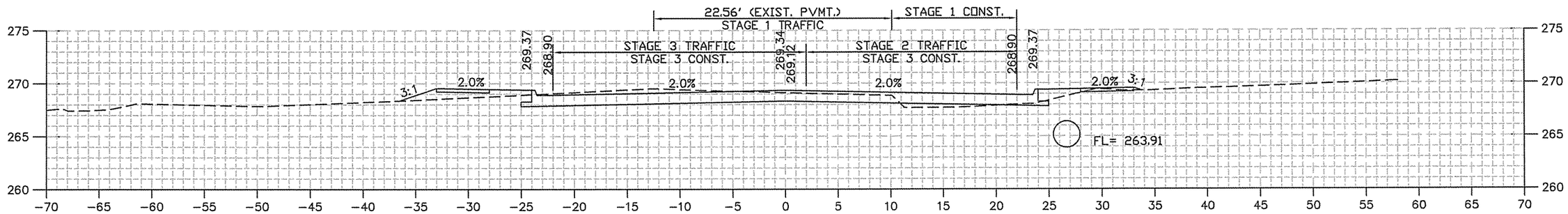
CROSS SECTION STA. 12+00 TO STA 12+72



Area Cut: 42.7
Area Fill: 12.8

12+72

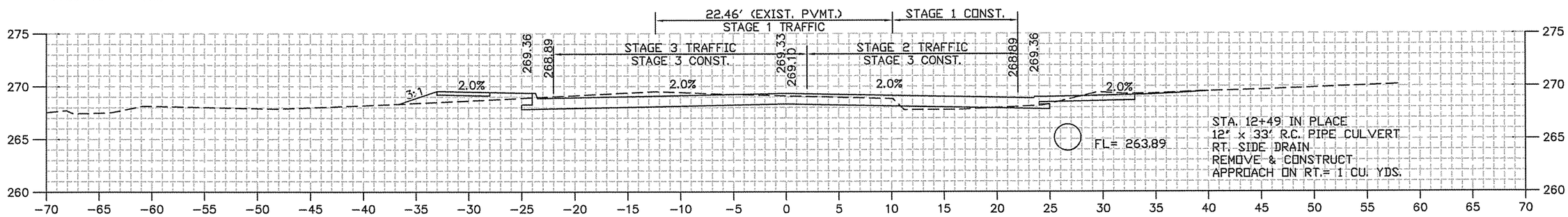
Volume Cut: 32
Volume Fill: 10



Area Cut: 38.4
Area Fill: 11.0

12+50

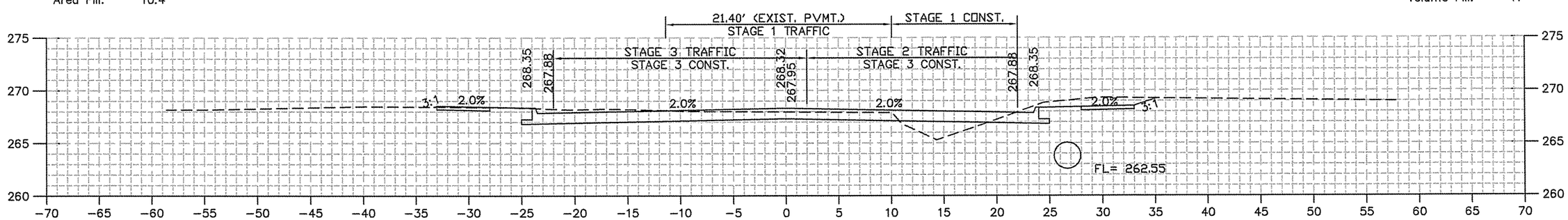
Volume Cut: 1
Volume Fill: 0



Area Cut: 38.6
Area Fill: 10.4

12+49

Volume Cut: 80
Volume Fill: 17



Area Cut: 49.3
Area Fill: 7.8

12+00

Volume Cut: 76
Volume Fill: 15

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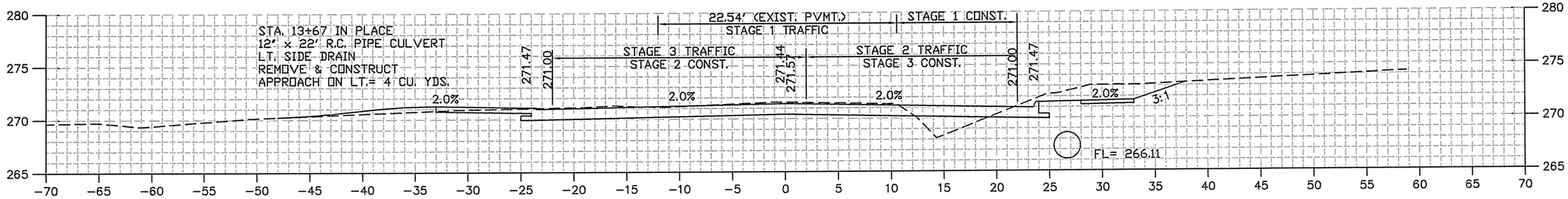
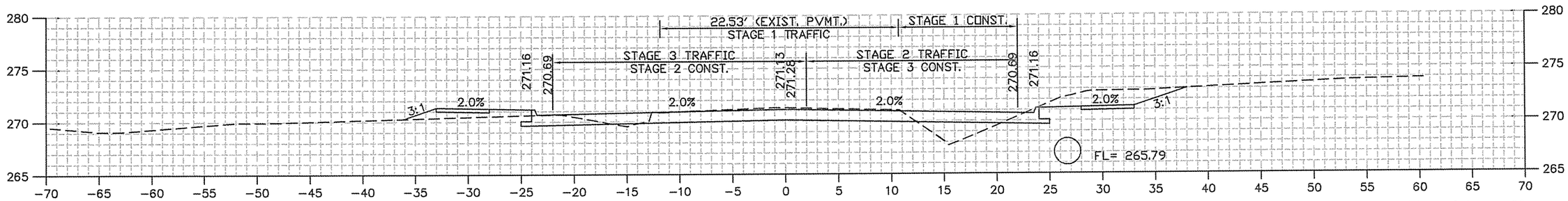
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	103	120
				CROSS SECTION STA. 12+73 TO STA 13+67				



Area Cut: 61.5
Area Fill: 11.6

13+67

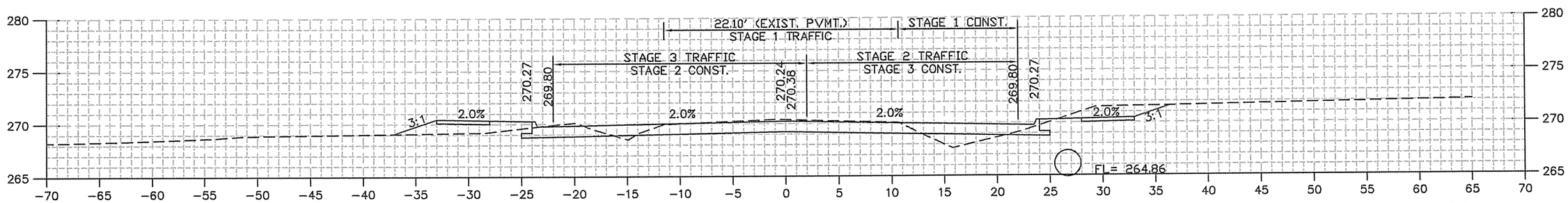
Volume Cut: 36
Volume Fill: 8



Area Cut: 53.2
Area Fill: 15.0

13+50

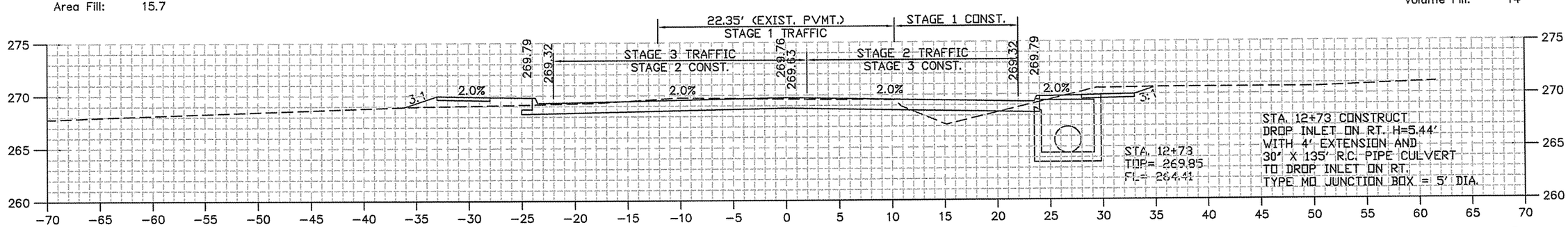
Volume Cut: 92
Volume Fill: 28



Area Cut: 46.1
Area Fill: 15.7

13+00

Volume Cut: 44
Volume Fill: 14



Area Cut: 43.3
Area Fill: 12.2

12+73

Volume Cut: 3
Volume Fill: 1

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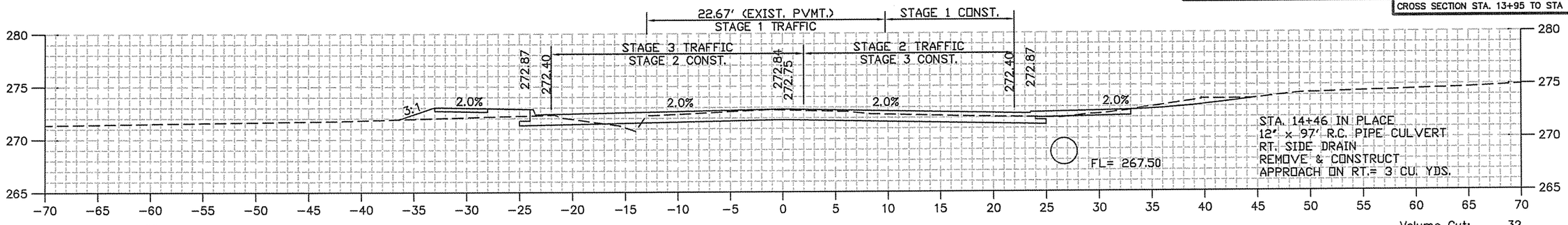
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	104	120

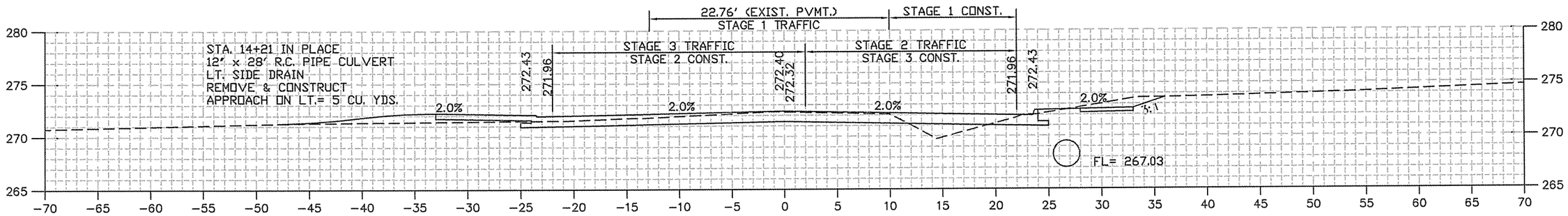
CROSS SECTION STA. 13+95 TO STA 14+46



Area Cut: 33.8
Area Fill: 12.2

14+46

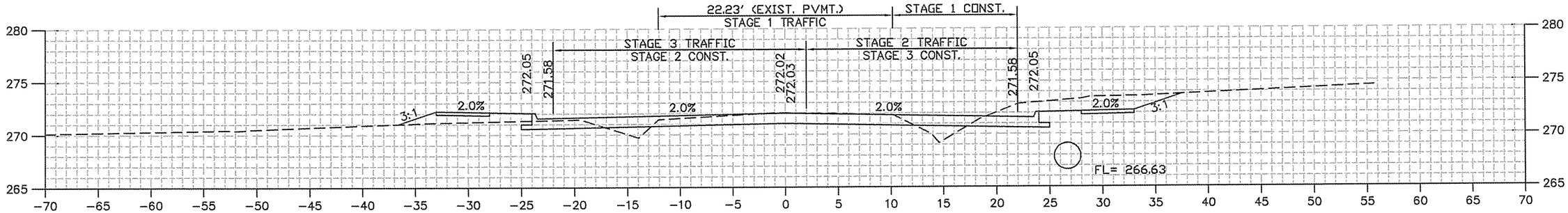
Volume Cut: 32
Volume Fill: 12



Area Cut: 37.4
Area Fill: 14.7

14+21

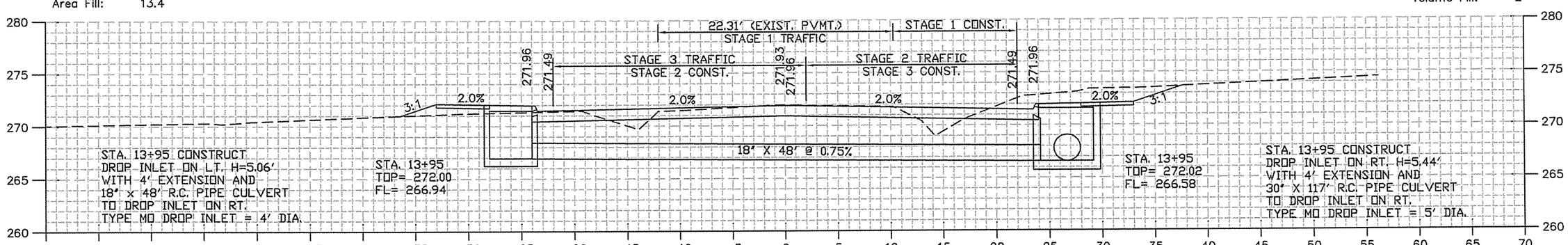
Volume Cut: 36
Volume Fill: 11



Area Cut: 55.0
Area Fill: 13.4

14+00

Volume Cut: 10
Volume Fill: 2



Area Cut: 55.8
Area Fill: 12.3

13+95

Volume Cut: 61
Volume Fill: 12

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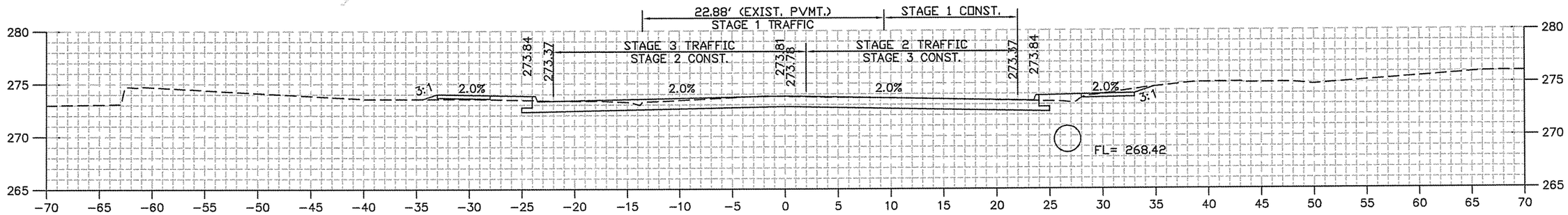
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.		061094	105	120

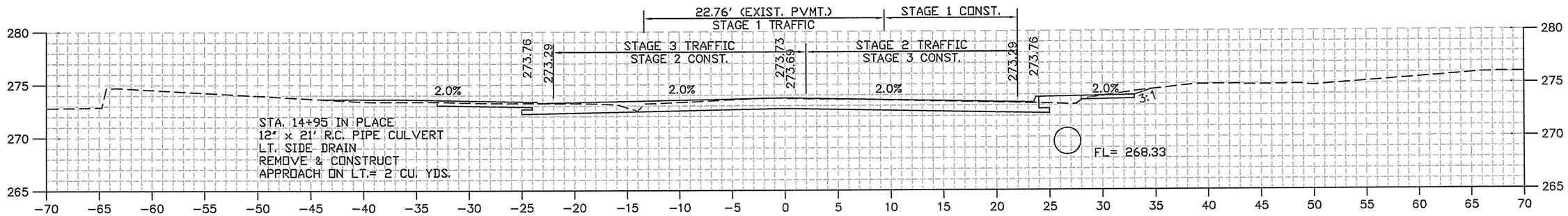
CROSS SECTION STA. 14+50 TO STA 15+00



Area Cut: 49.4
Area Fill: 3.9

15+00

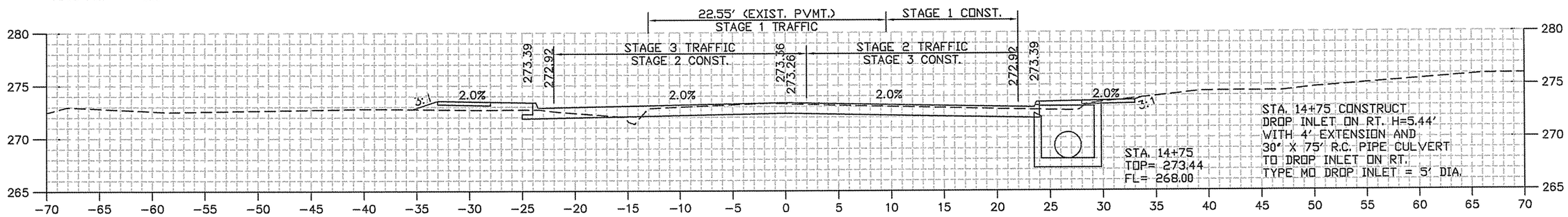
Volume Cut: 8
Volume Fill: 1



Area Cut: 47.2
Area Fill: 5.2

14+95

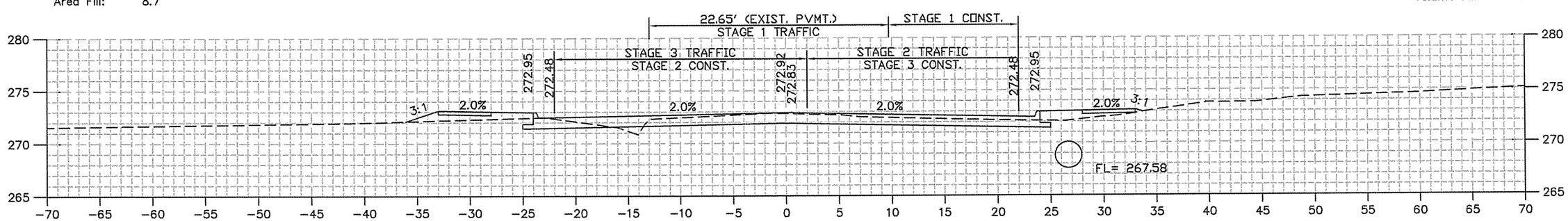
Volume Cut: 33
Volume Fill: 5



Area Cut: 37.7
Area Fill: 8.7

14+75

Volume Cut: 33
Volume Fill: 9



Area Cut: 34.7
Area Fill: 10.7

14+50

Volume Cut: 6
Volume Fill: 2

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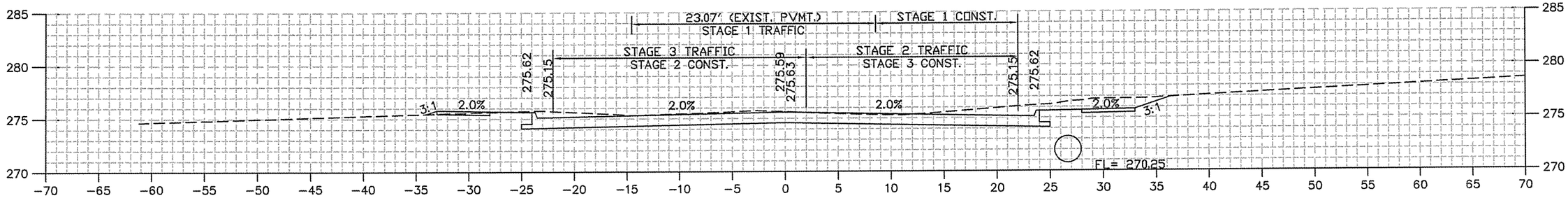
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.		061094	106	120

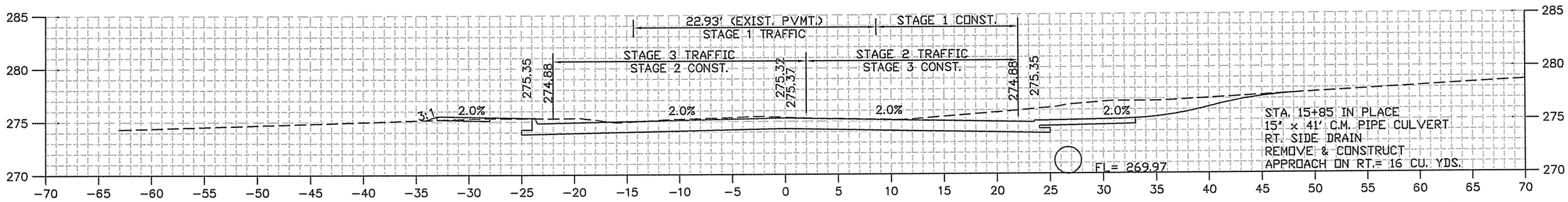
CROSS SECTION STA. 15+50 TO STA 16+00



Area Cut: 73.6
Area Fill: 0.2

16+00

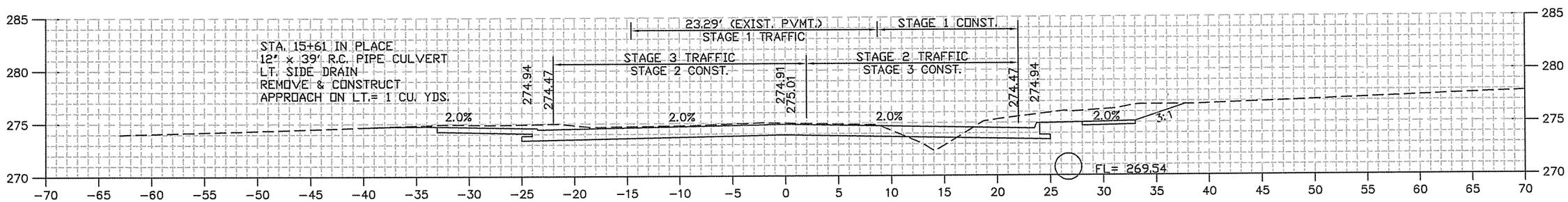
Volume Cut: 43
Volume Fill: 0



Area Cut: 78.5
Area Fill: 0.4

15+85

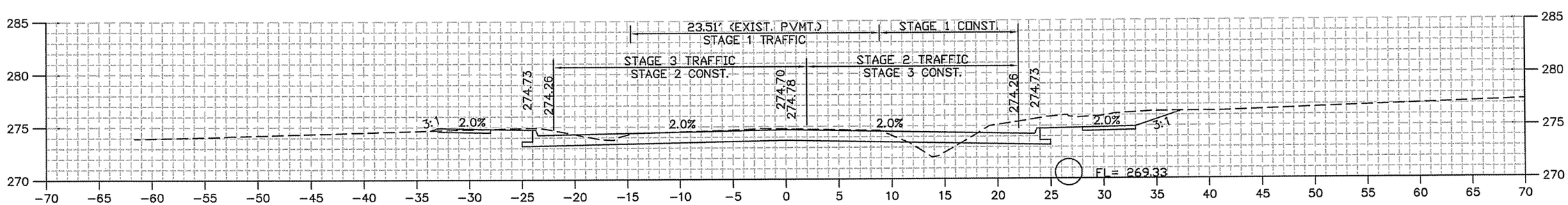
Volume Cut: 64
Volume Fill: 2



Area Cut: 71.7
Area Fill: 3.3

15+61

Volume Cut: 30
Volume Fill: 1



Area Cut: 67.4
Area Fill: 3.7

15+50

Volume Cut: 108
Volume Fill: 7

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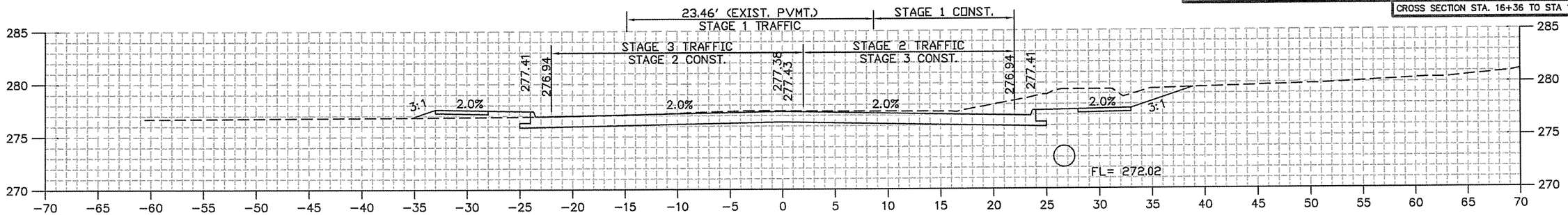
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	107	120

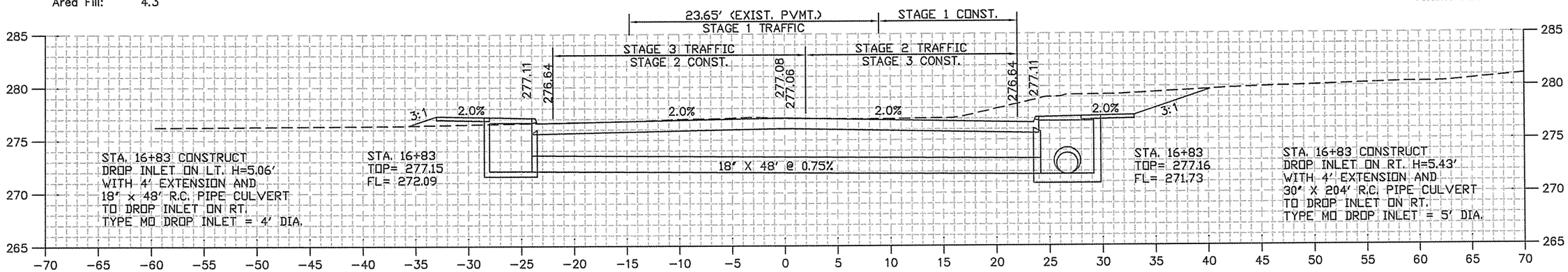
CROSS SECTION STA. 16+36 TO STA 17+00



Area Cut: 83.7
Area Fill: 4.3

17+00

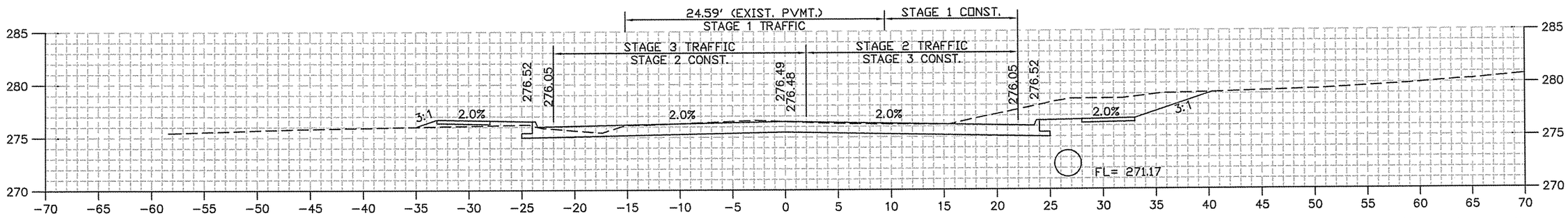
Volume Cut: 54
Volume Fill: 3



Area Cut: 90.1
Area Fill: 4.9

16+83

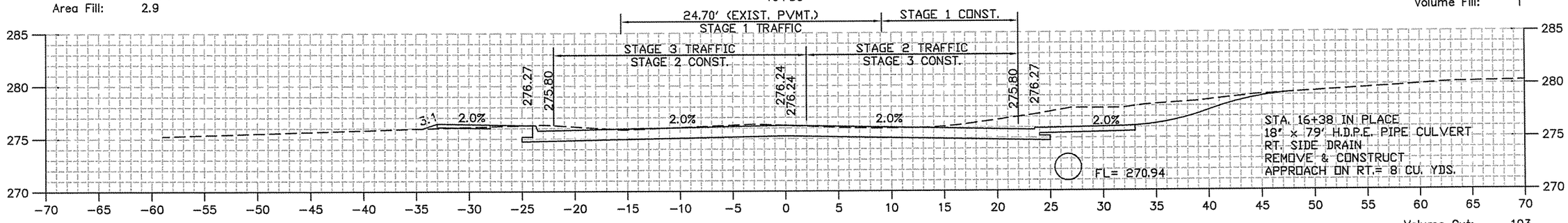
Volume Cut: 85
Volume Fill: 4



Area Cut: 82.4
Area Fill: 2.9

16+50

Volume Cut: 41
Volume Fill: 1



Area Cut: 79.6
Area Fill: 0.7

16+36

Volume Cut: 103
Volume Fill: 1

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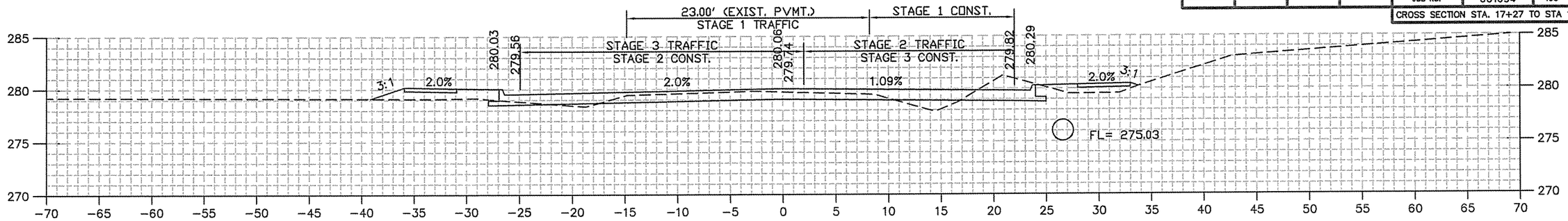
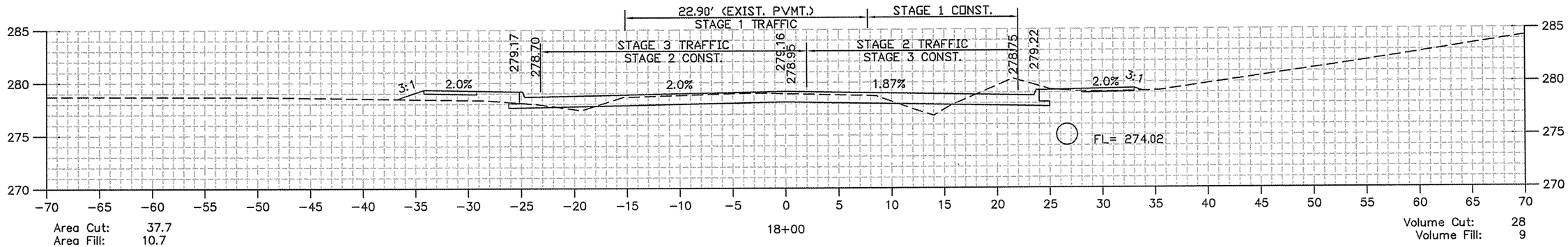
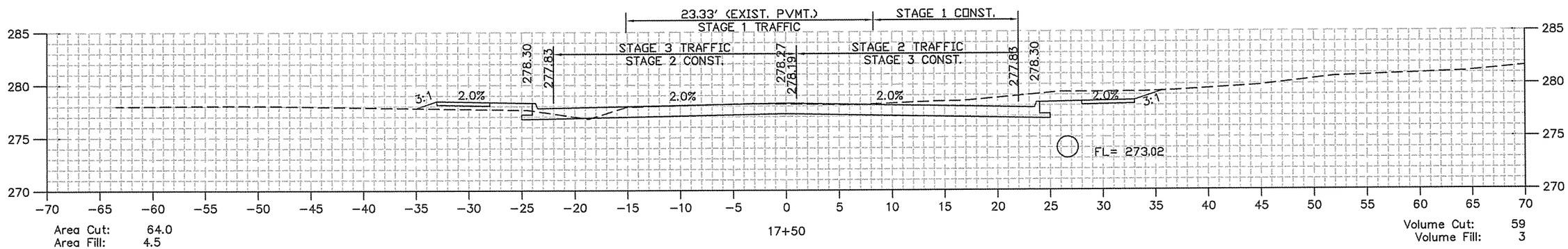
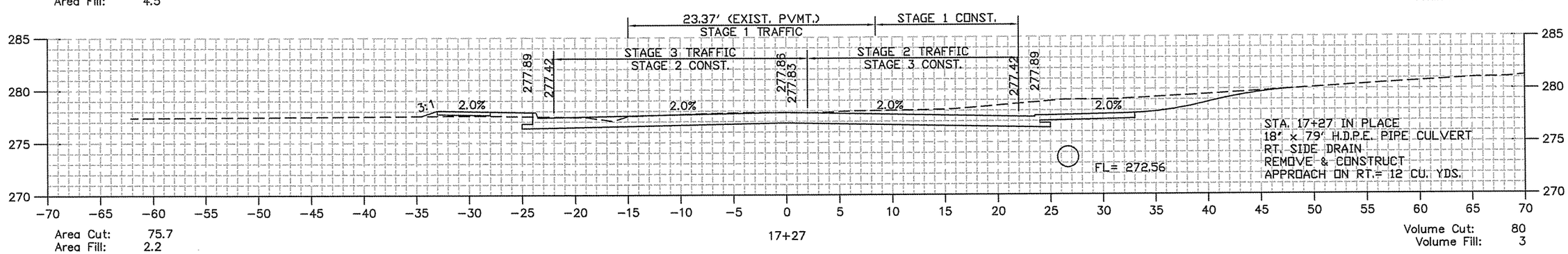
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	108	120
				CROSS SECTION STA. 17+27 TO STA 18+50				





STA. 17+57 BEGIN LANE TRANSITION – 47'-0" FACE TO FACE OF CURB





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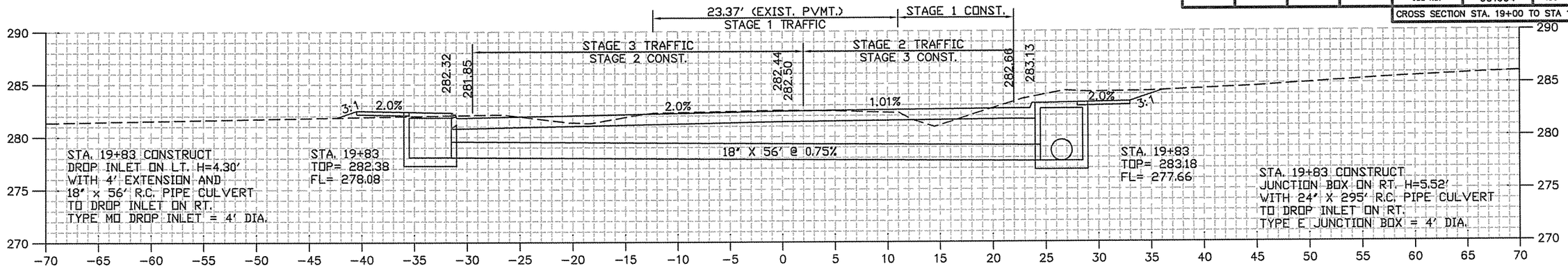
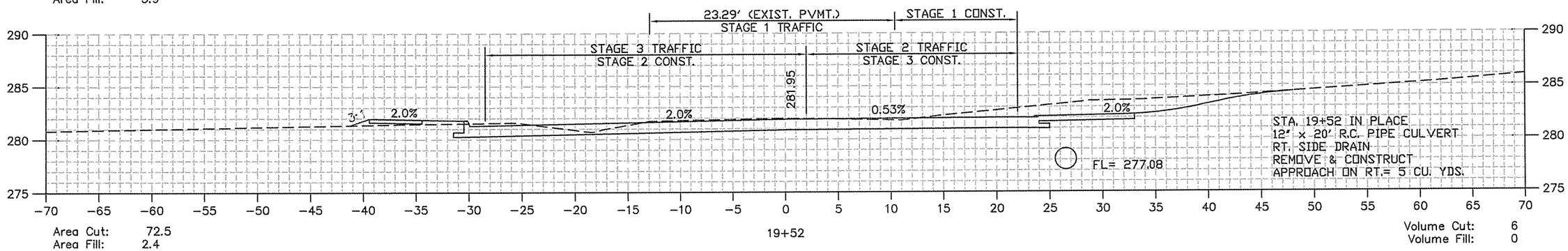
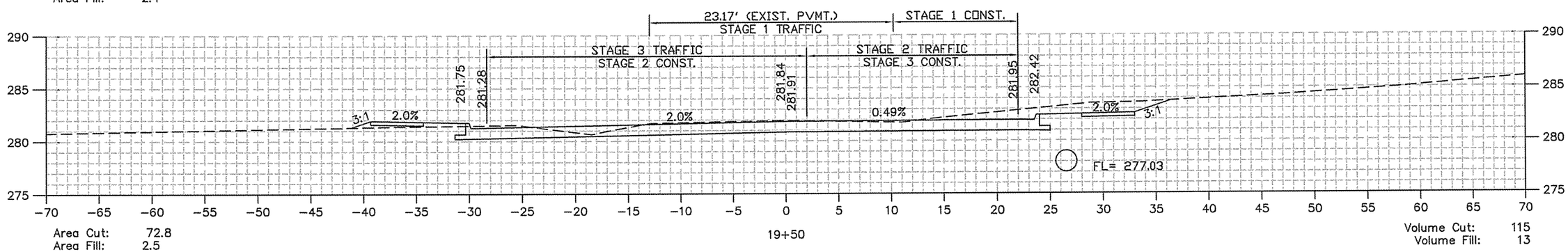
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

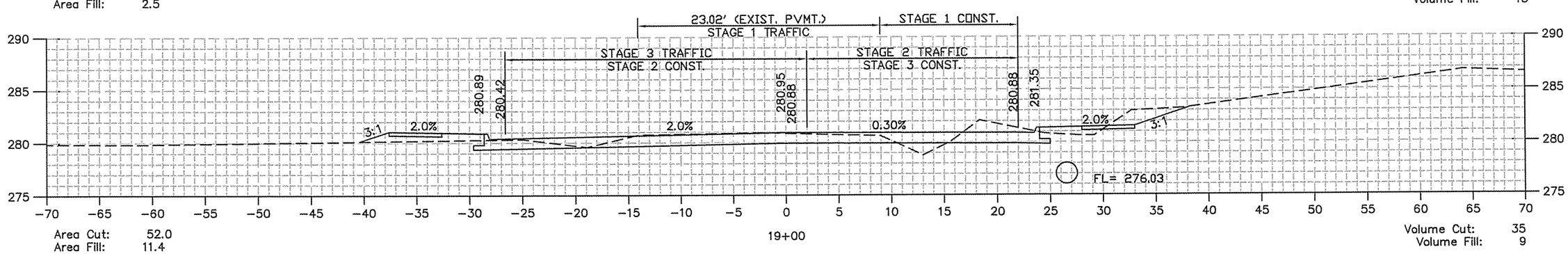
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.		061094	109	120

CROSS SECTION STA. 19+00 TO STA 19+83









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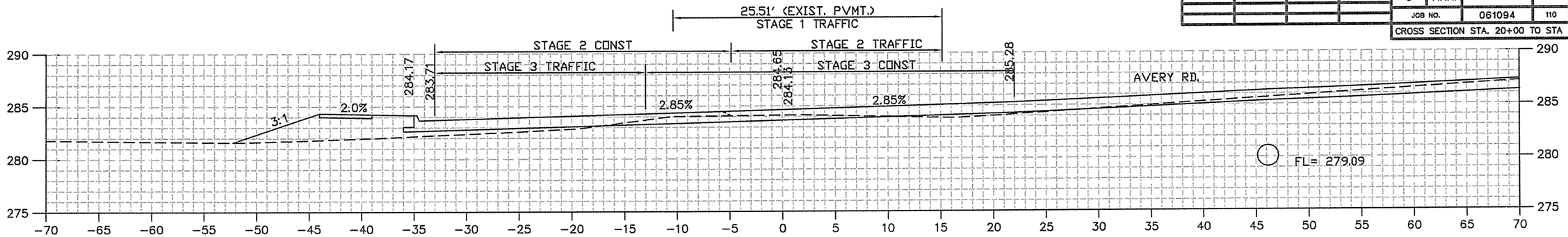
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-0253(46)		
JOB NO.		061094	110	120

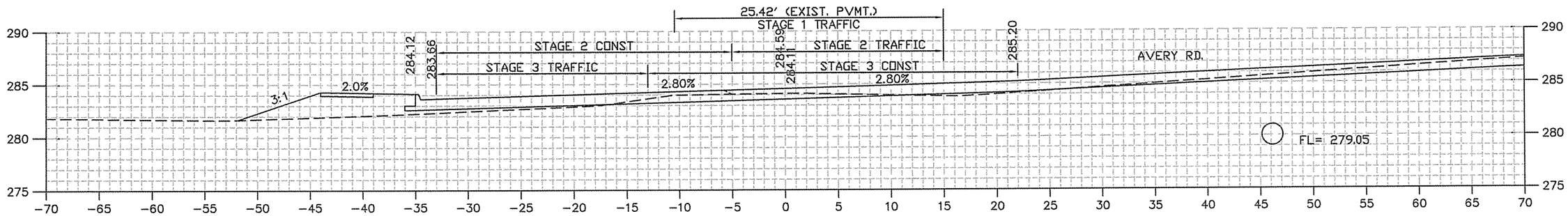
CROSS SECTION STA. 20+00 TO STA 21+00



Area Cut: 11.0
Area Fill: 36.0

21+00

Volume Cut: 1
Volume Fill: 4

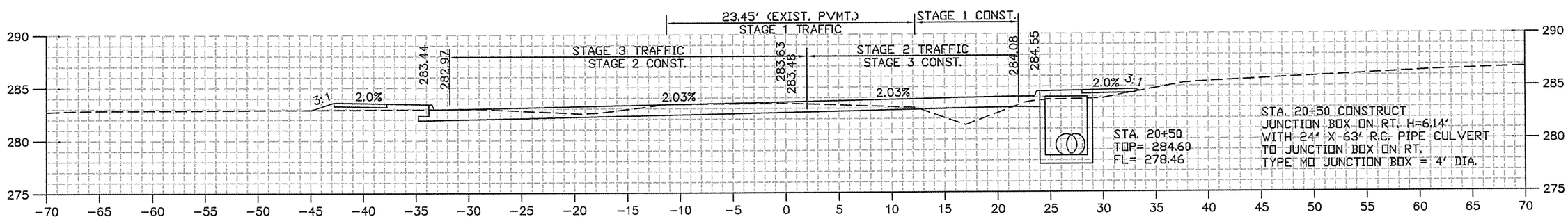


Area Cut: 11.7
Area Fill: 31.3

20+97

Volume Cut: 41
Volume Fill: 40

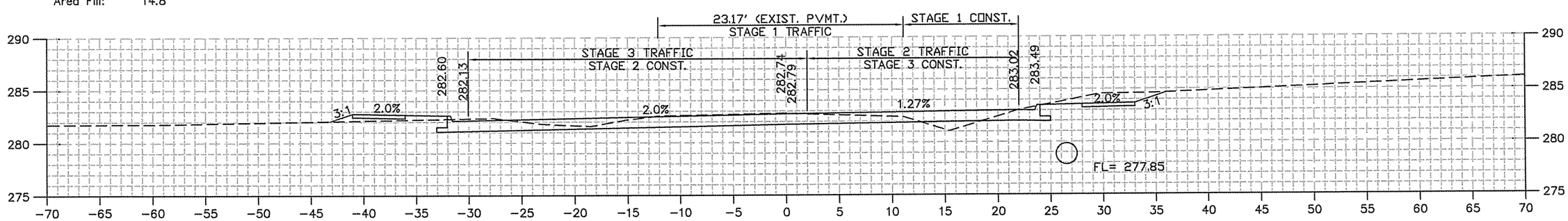
STA. 20+57 END LANE TRANSITION – 58'–0" FACE TO FACE OF CURB



Area Cut: 35.3
Area Fill: 14.8

20+50

Volume Cut: 82
Volume Fill: 19



Area Cut: 53.1
Area Fill: 5.7

20+00

Volume Cut: 36
Volume Fill: 3

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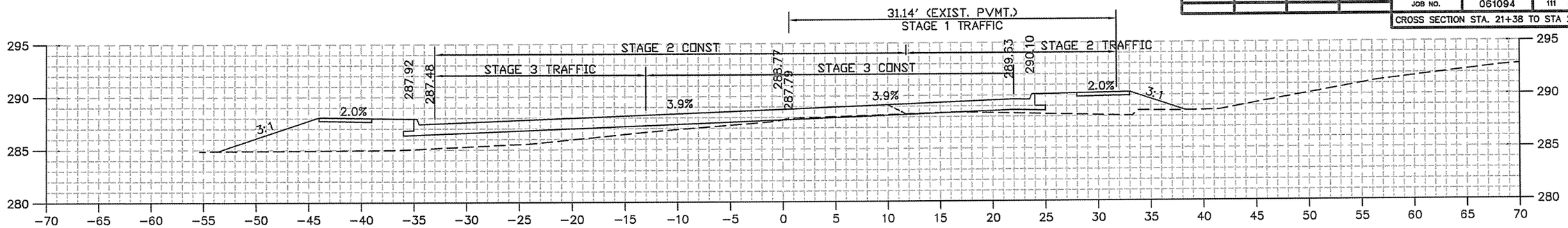
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.	061094		111	120

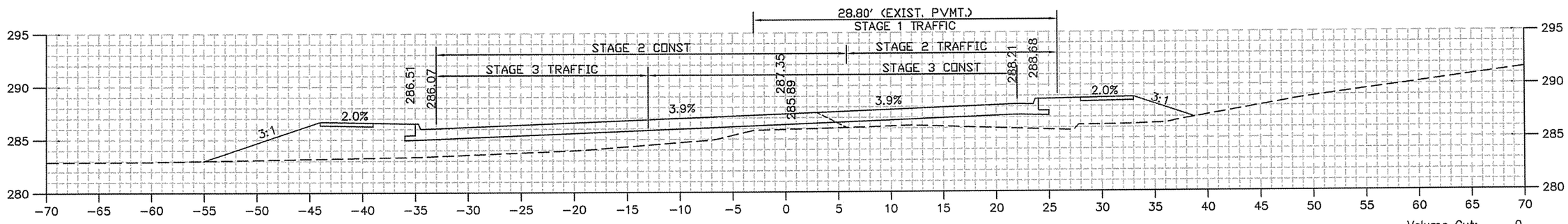
CROSS SECTION STA. 21+38 TO STA 22+50



Area Cut: 1.0
Area Fill: 90.6

22+50

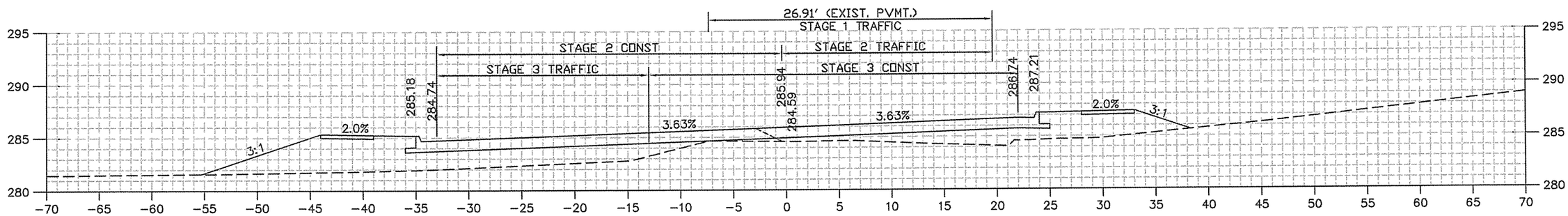
Volume Cut: 1
Volume Fill: 214



Area Cut: 0.0
Area Fill: 140.6

22+00

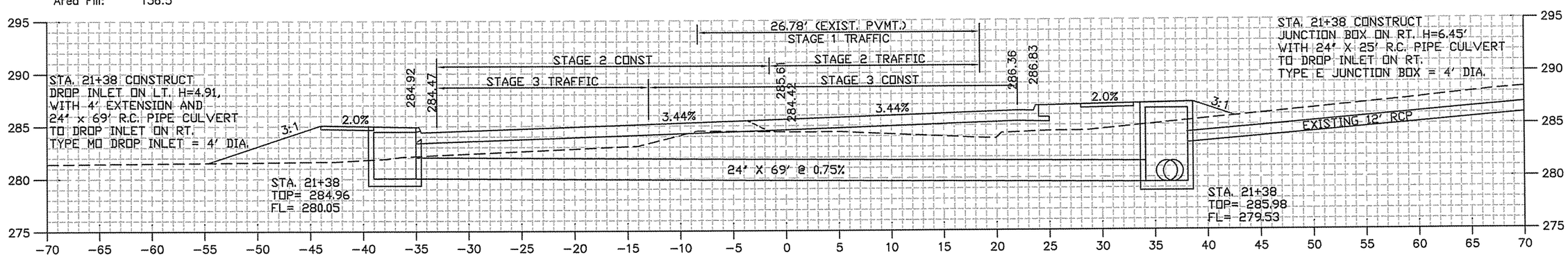
Volume Cut: 0
Volume Fill: 52



Area Cut: 0.0
Area Fill: 136.5

21+50

Volume Cut: 0
Volume Fill: 55



Area Cut: 0.5
Area Fill: 114.1

21+38

Volume Cut: 8
Volume Fill: 106

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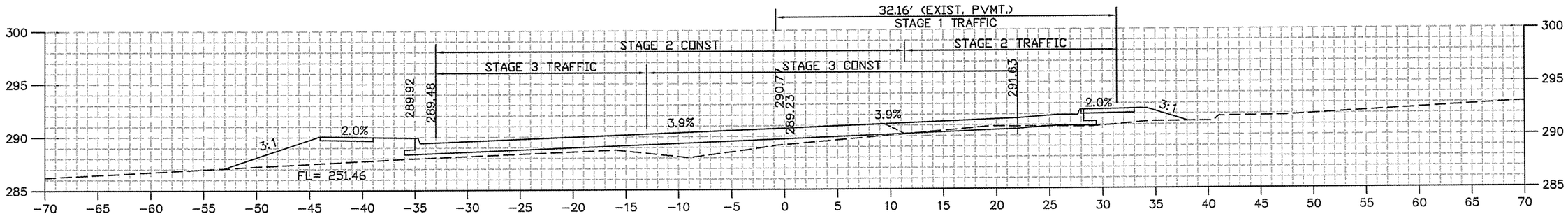
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	112	120

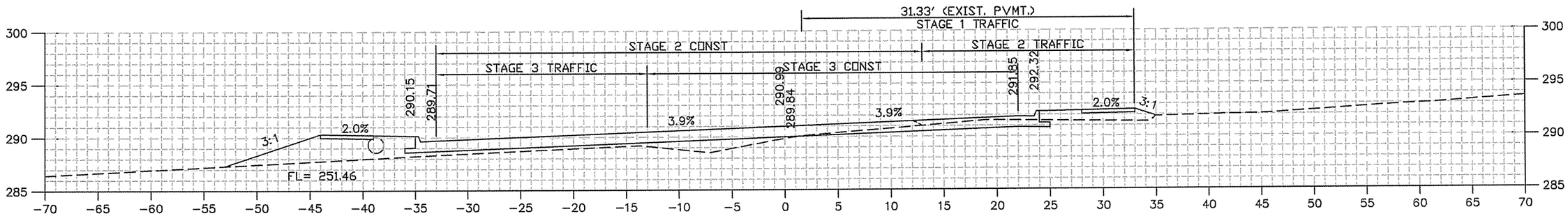
CROSS SECTION STA. 23+00 TO STA 24+50



Area Cut: 2.0
Area Fill: 54.6

24+50

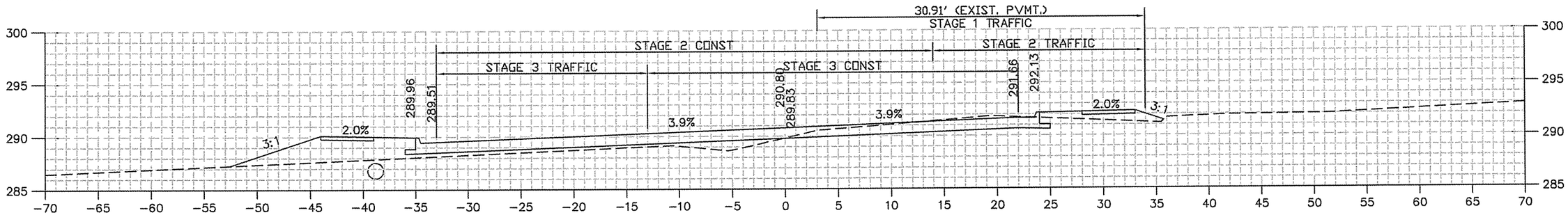
Volume Cut: 0
Volume Fill: 7



Area Cut: 11.1
Area Fill: 52.8

24+00

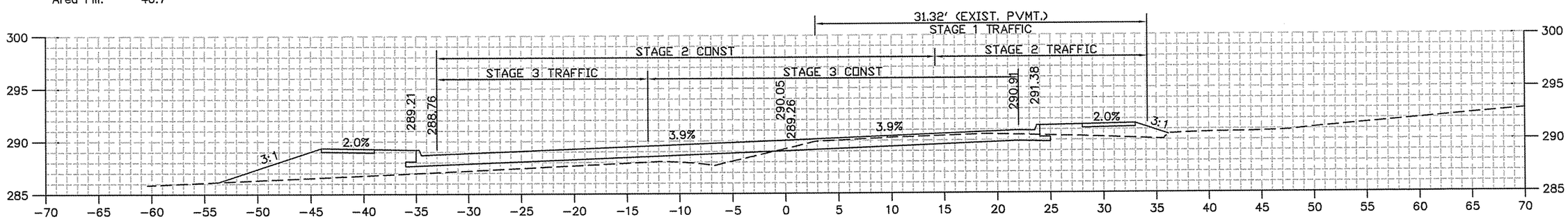
Volume Cut: 31
Volume Fill: 92



Area Cut: 22.6
Area Fill: 46.7

23+50

Volume Cut: 38
Volume Fill: 103



Area Cut: 18.5
Area Fill: 64.9

23+00

Volume Cut: 18
Volume Fill: 144

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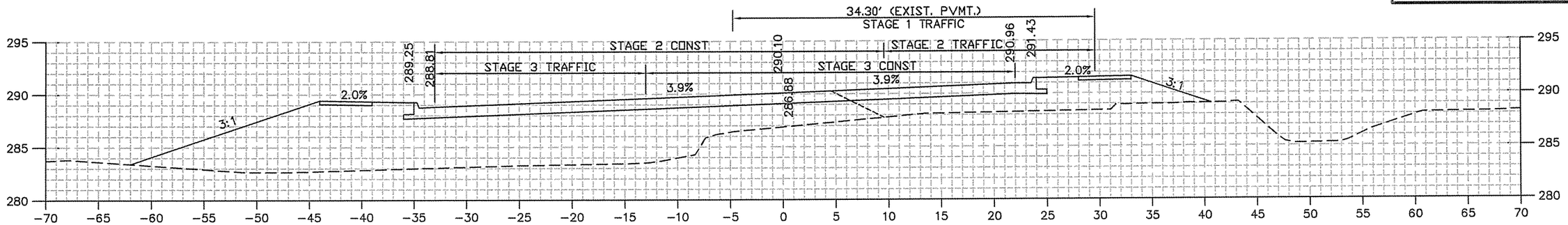
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9263(48)		
JOB NO.		061094	113	120

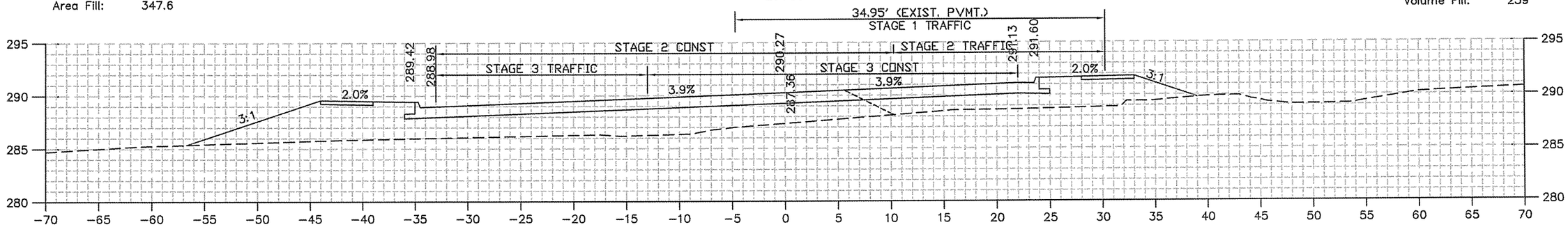
CROSS SECTION STA. 24+80 TO STA 26+00



Area Cut: 0.0
Area Fill: 347.6

26+00

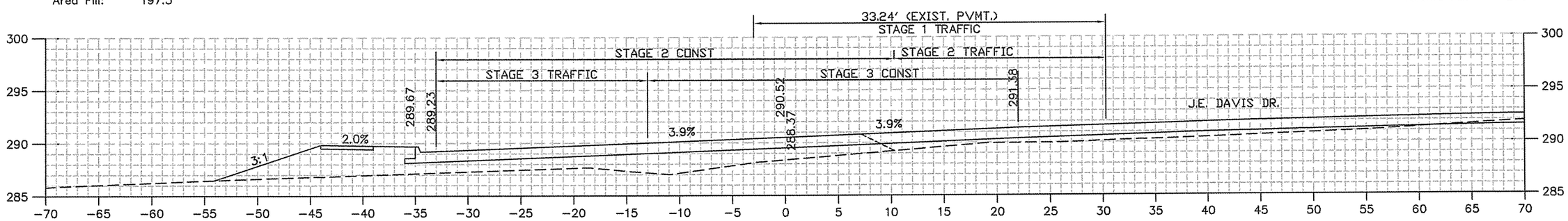
Volume Cut: 0
Volume Fill: 239



Area Cut: 0.0
Area Fill: 197.3

25+50

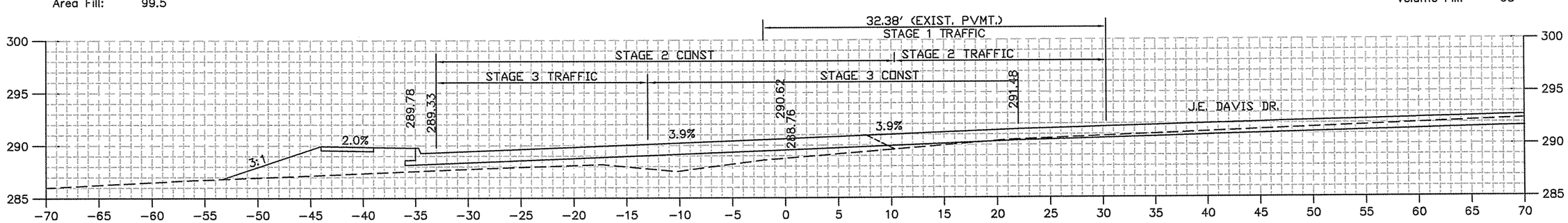
Volume Cut: 0
Volume Fill: 275



Area Cut: 0.0
Area Fill: 99.5

25+00

Volume Cut: 0
Volume Fill: 65



Area Cut: 0.0
Area Fill: 74.8

24+80

Volume Cut: 1
Volume Fill: 71

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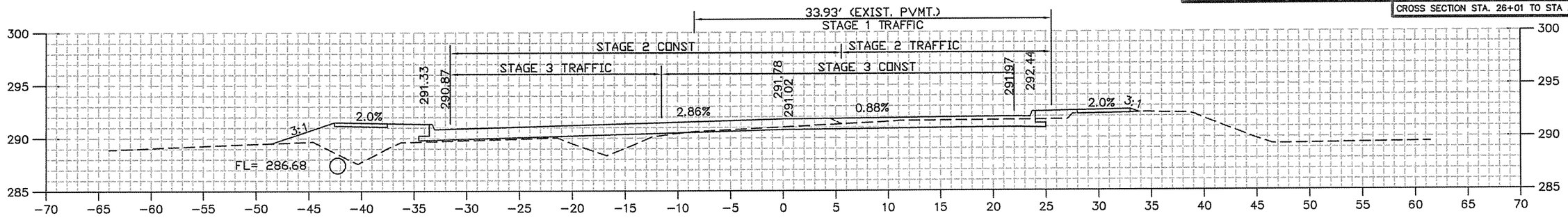
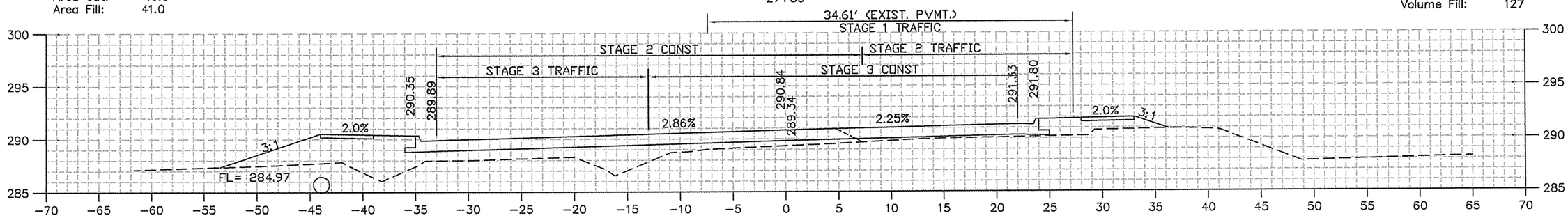
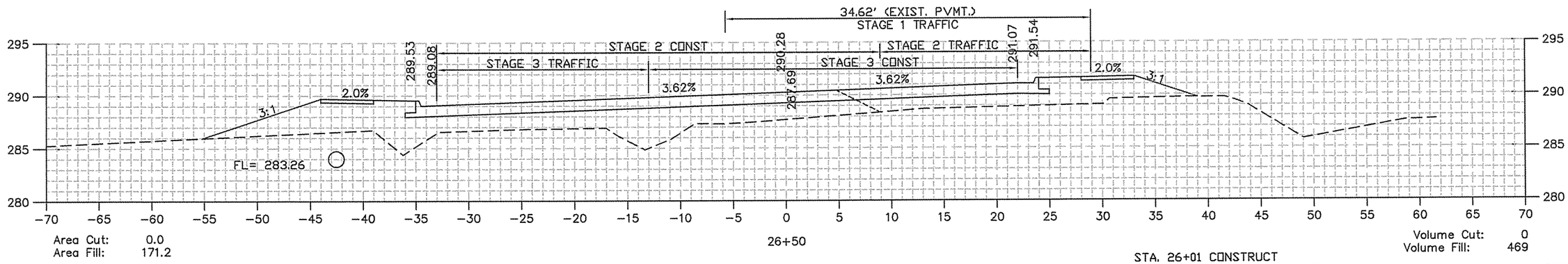
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FAP STPU-9253(46)		
JOB NO.		061094	114	120

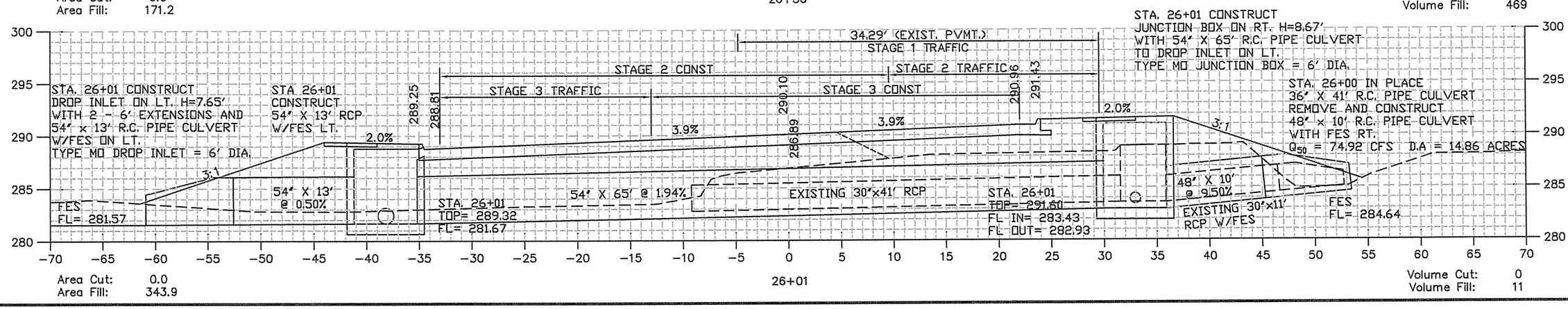
CROSS SECTION STA. 26+01 TO STA 27+50





STA. 27+00 BEGIN LANE TRANSITION – 58'–0" FACE TO FACE OF CURB





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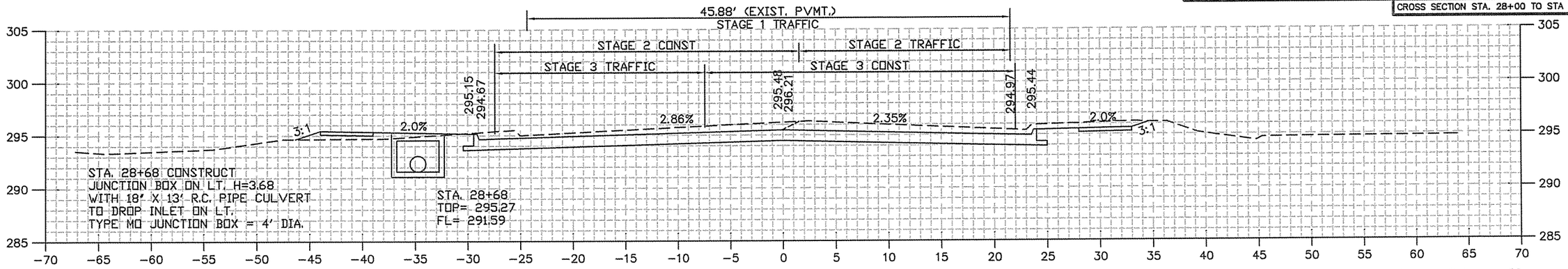
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	115	120

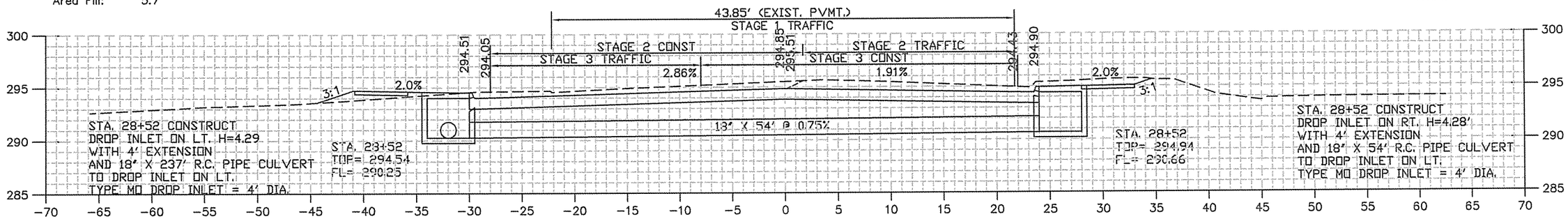
CROSS SECTION STA. 28+00 TO STA 28+68



Area Cut: 95.5
Area Fill: 5.7

28+68

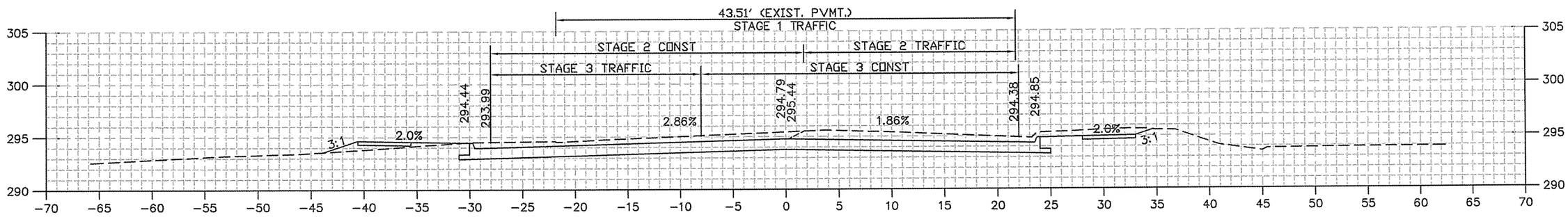
Volume Cut: 58
Volume Fill: 3



Area Cut: 97.0
Area Fill: 4.5

28+52

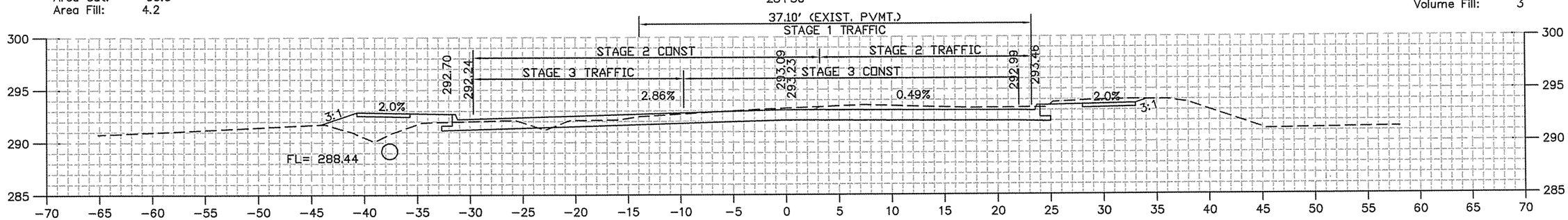
Volume Cut: 6
Volume Fill: 0



Area Cut: 96.9
Area Fill: 4.2

28+50

Volume Cut: 52
Volume Fill: 3



Area Cut: 61.4
Area Fill: 15.2

28+00

Volume Cut: 72
Volume Fill: 52

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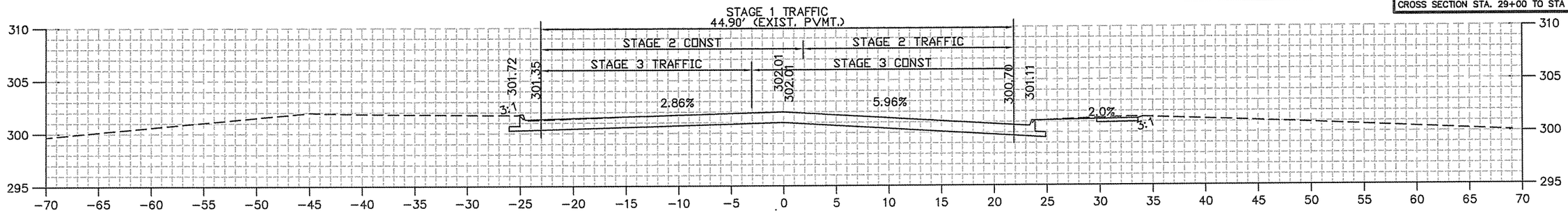
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	116	120
				CROSS SECTION STA. 29+00 TO STA 30+00				

STA. 30+00 END JOB

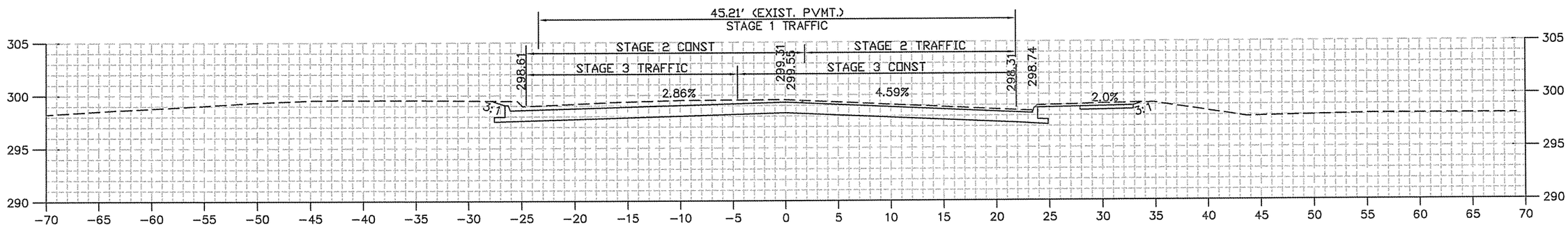


Area Cut: 52.9
Area Fill: 0.0

30+00

Volume Cut: 77
Volume Fill: 0

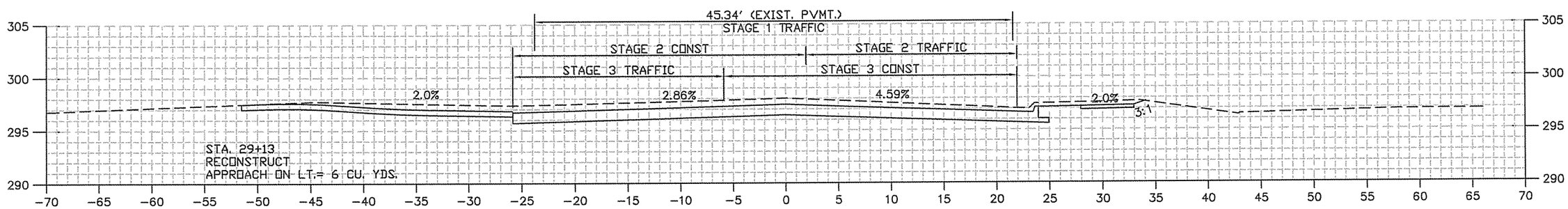
STA. 30+00 END LANE TRANSITION – 47.90' FACE TO FACE OF CURB



Area Cut: 75.2
Area Fill: 0.0

29+50

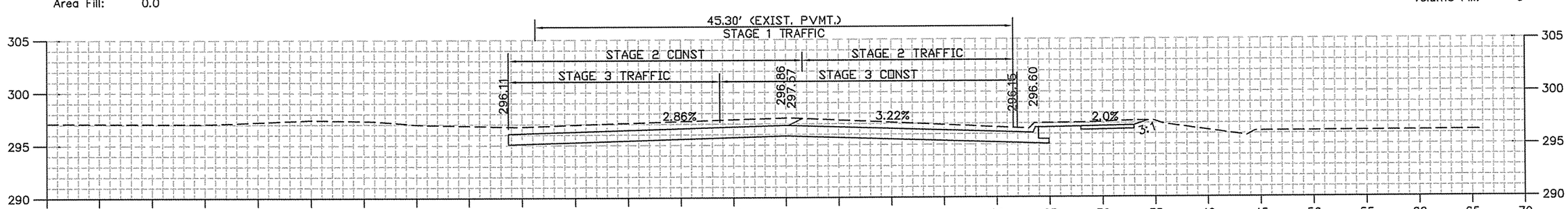
Volume Cut: 110
Volume Fill: 0



Area Cut: 83.6
Area Fill: 0.0

29+13

Volume Cut: 40
Volume Fill: 0



Area Cut: 88.7
Area Fill: 0.0

29+00

Volume Cut: 30
Volume Fill: 0

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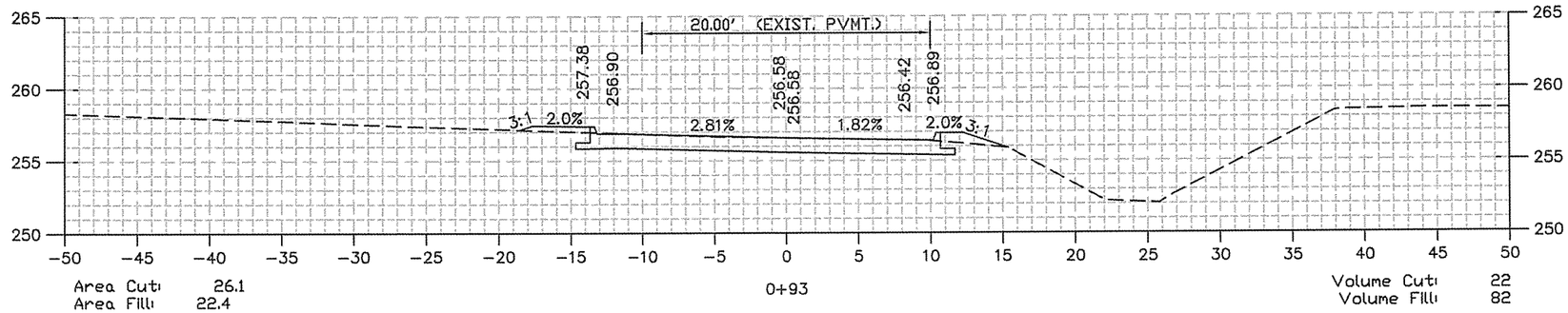
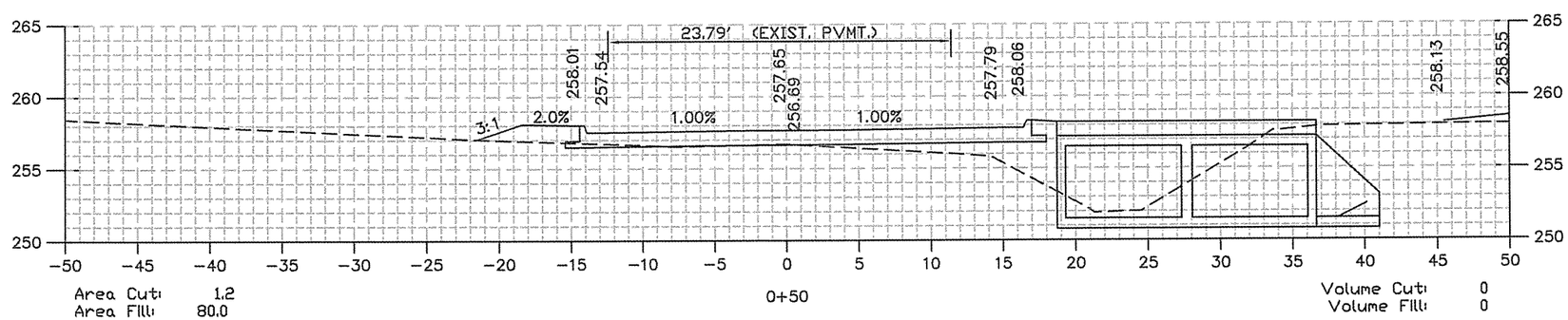
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	117	120
				CROSS SECTION – CHRISTEN DR.				

STA. 0+93 END CHRISTEN DR.





STA. 0+23 BEGIN CHRISTEN DR.

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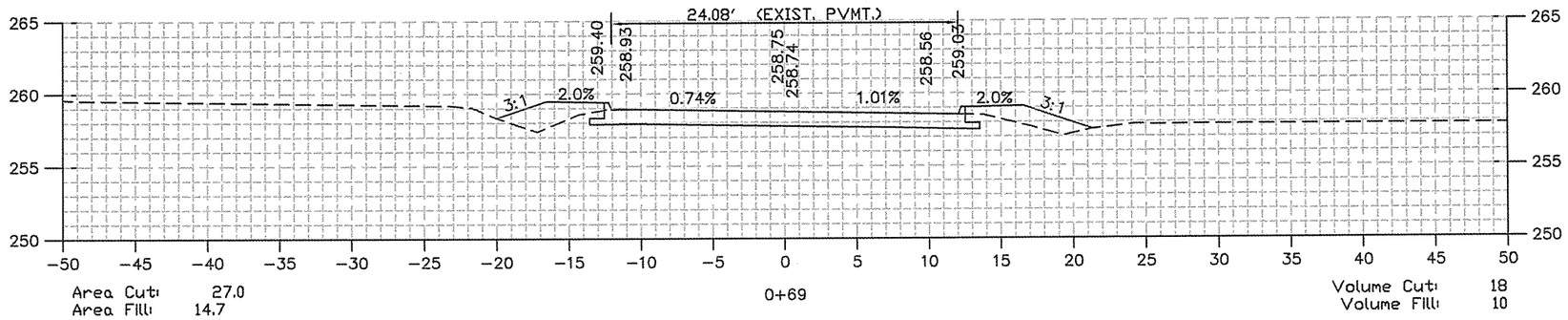
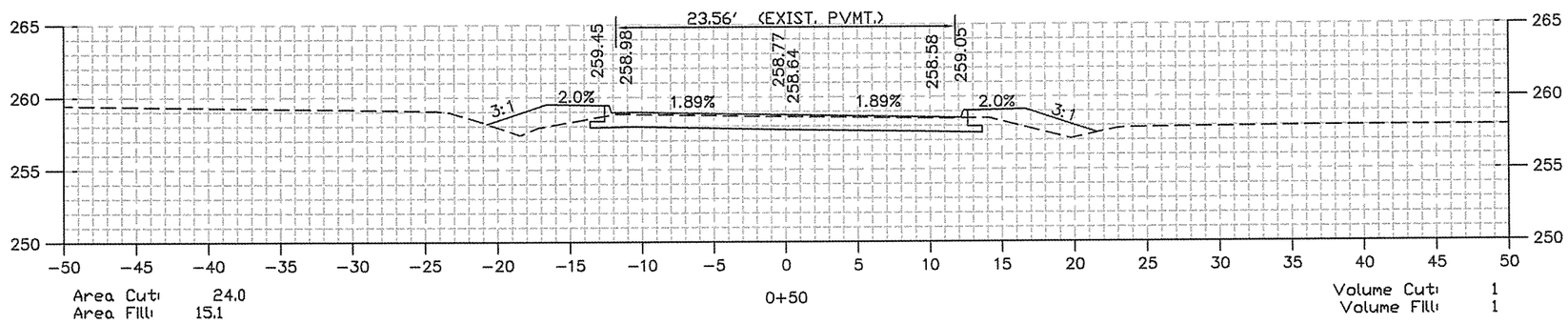
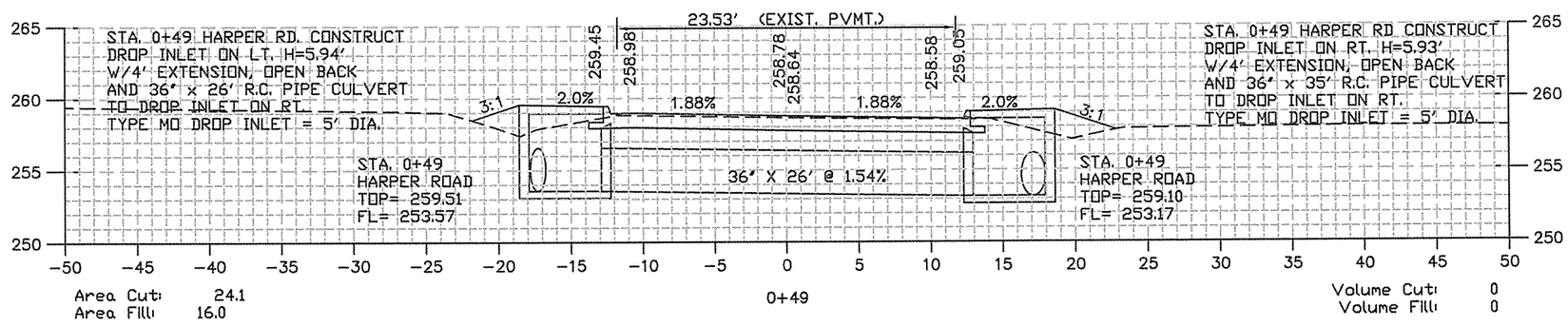
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	118	120
				CROSS SECTION – HARPER RD.				

STA. 0+69 END HARPER RD.







STA. 0+22 BEGIN HARPER RD.

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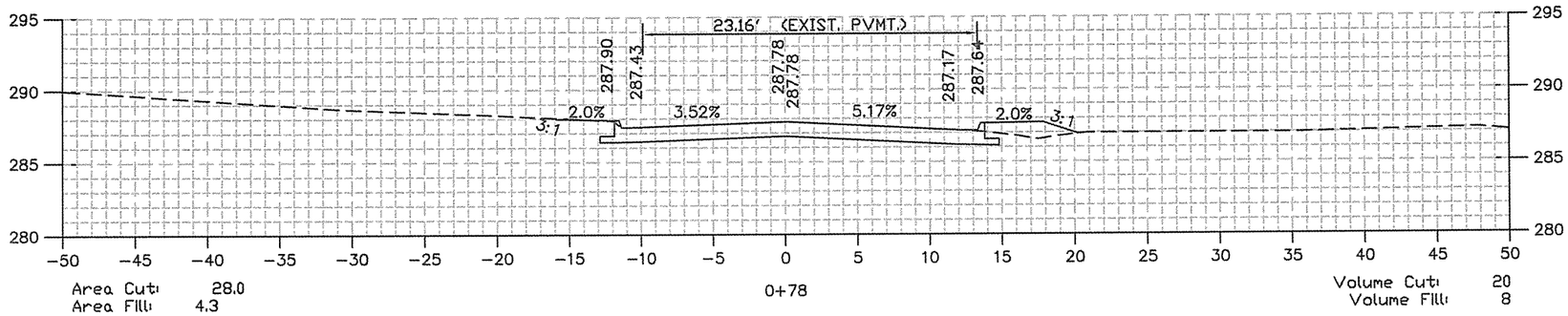
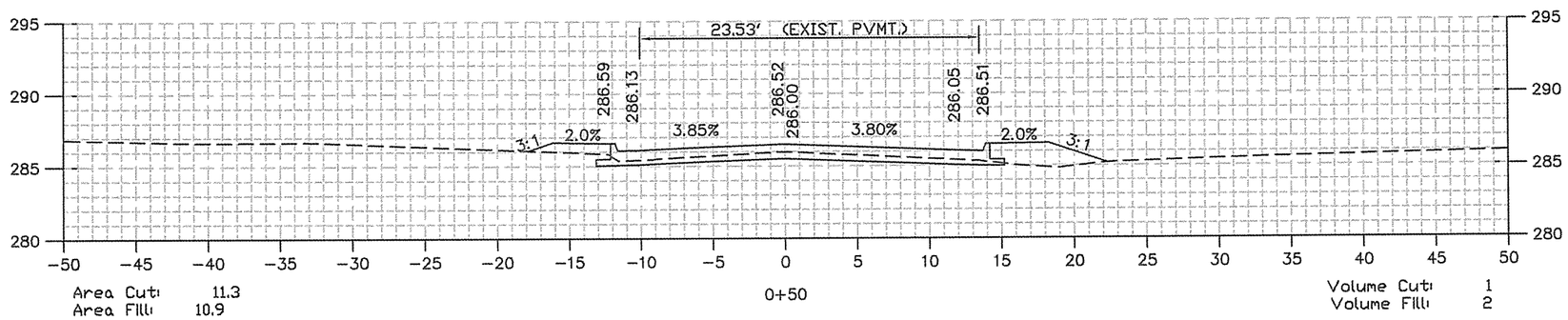
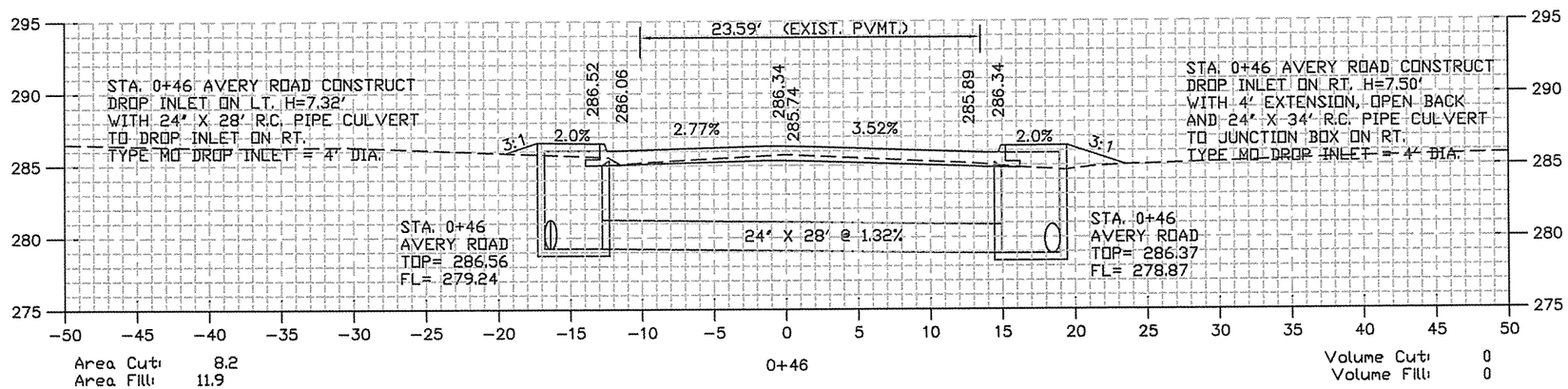
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(46)		
				JOB NO.		061094	119	120
				CROSS SECTION – AVERY RD.				

STA. 0+78 END AVERY RD.







STA. 0+22 BEGIN AVERY RD.

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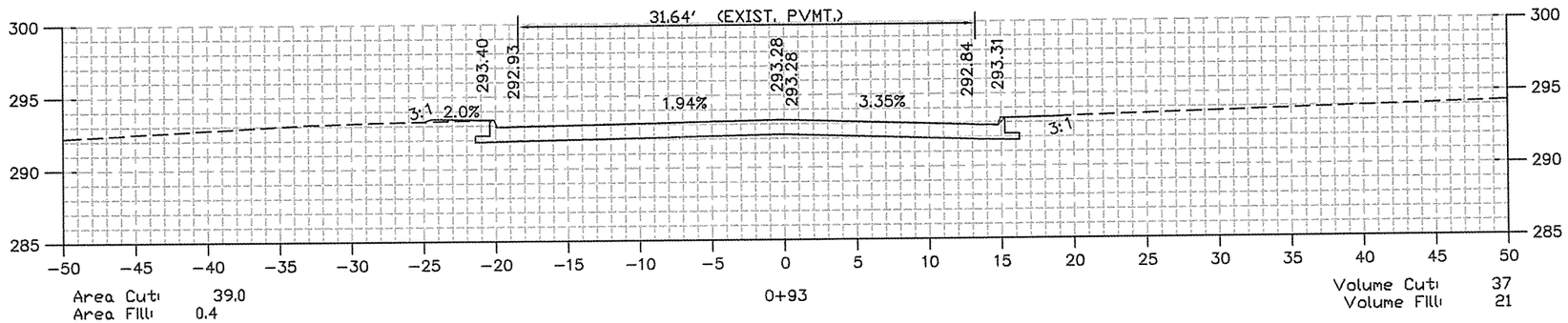
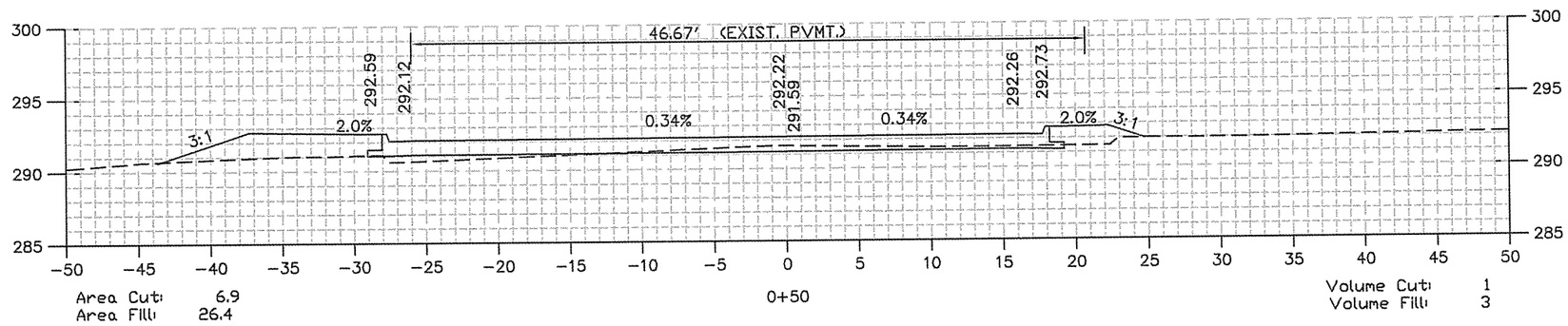
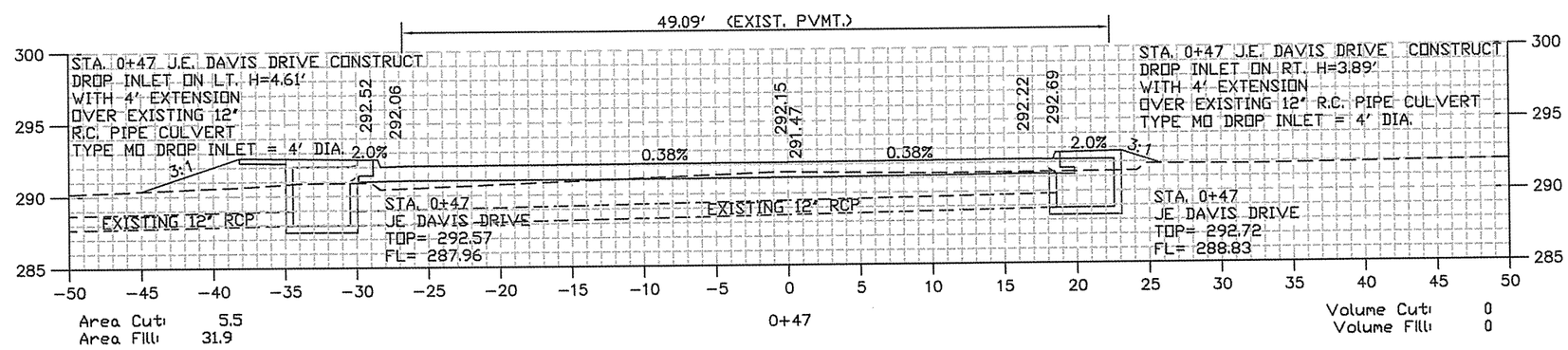
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FAP STPU-9253(48)		
				JOB NO.		061094	120	120
				CROSS SECTION – J.E. DAVIS DR.				

STA. 0+93 END J.E. DAVIS DR.







STA. 0+23 BEGIN J.E. DAVIS DR.

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