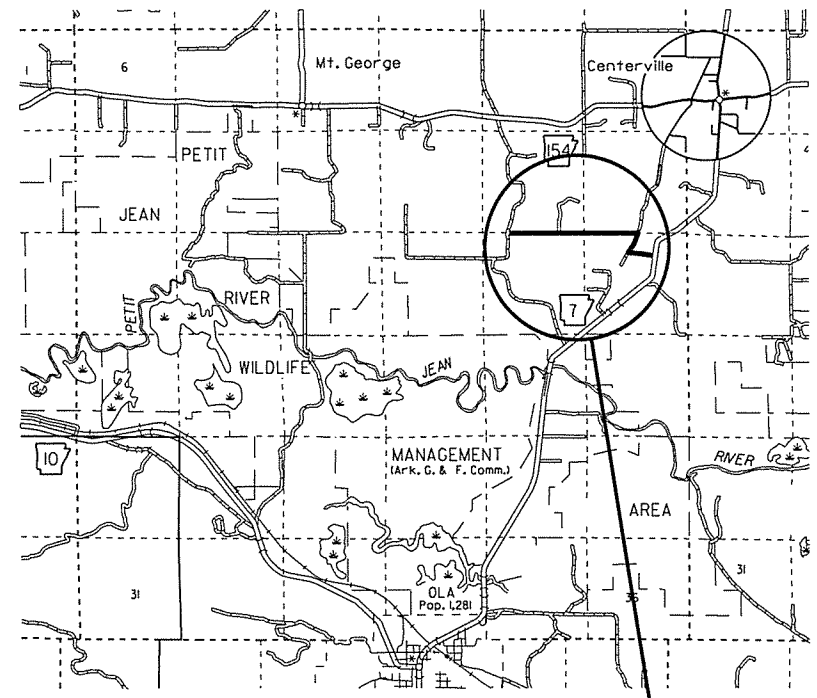


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	STPR-0075(34)		
				JOB NO.		FA7518	1	64
				4		HWY. 7 - WEST (S)		



VICINITY MAP

PROJECT LOCATION

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

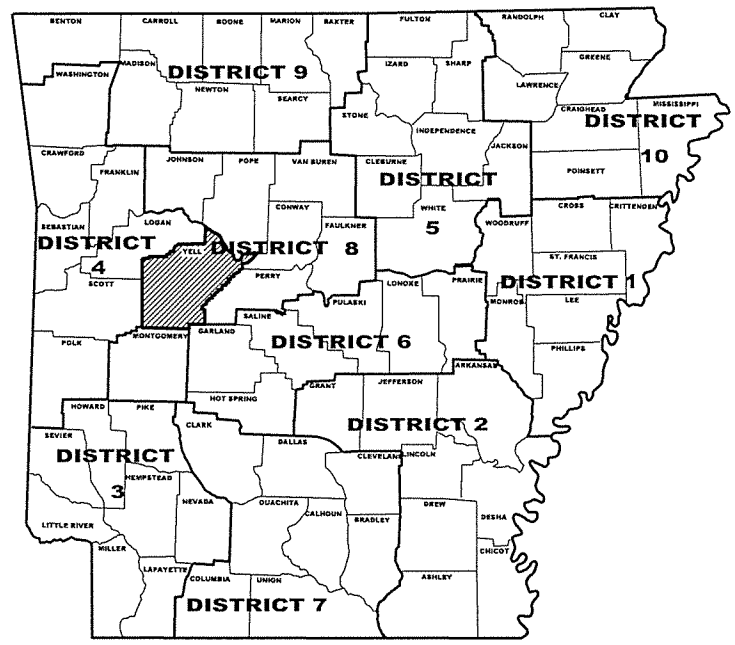
HWY. 7 - WEST (S)

COUNTY ROADS 204, 50 & 47
YELL COUNTY

FED. AID PROJECT STPR-0075(34)

JOB FA7518

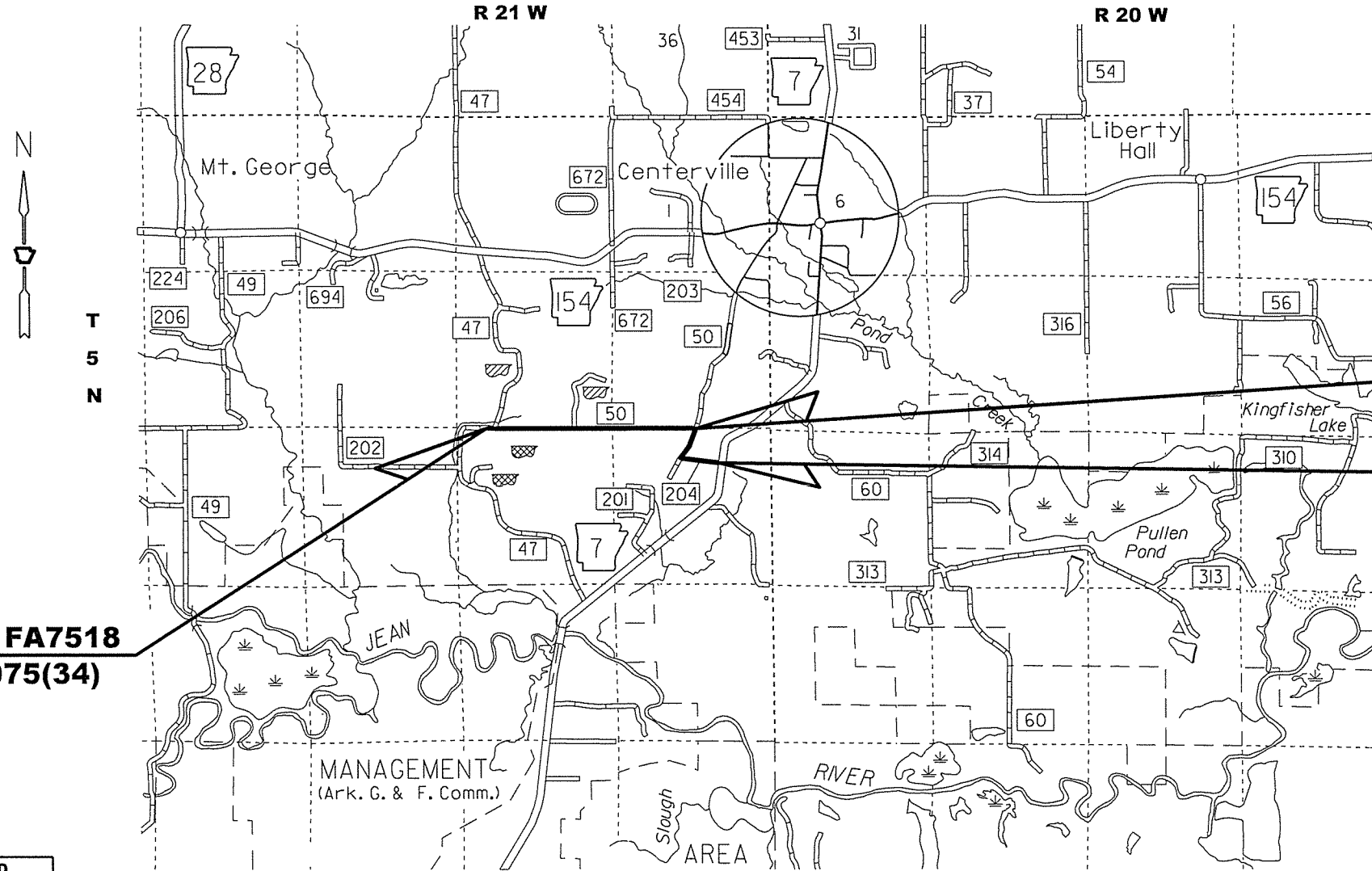
0.5 MILE 0 0.5 MILE 1.0 MILE
SCALE 1" = 1 MILE



ARKANSAS HIGHWAY DIST. 8

DESIGN TRAFFIC DATA

DESIGN YEAR	2035
2015 ADT	500
2035 ADT	650
2035 DHV	75
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	10%
DESIGN SPEED	40 MPH



STA. 169+50.00
END PARTICIPATING SECTION
BEGIN NON-PARTICIPATING SECTION
STA. 194+16.70 END JOB FA7518
FED. AID PROJECT STPR-0075(34)
END NON-PARTICIPATING SECTION

STA. 100+00.00 BEGIN JOB FA7518
FED. AID PROJECT STPR-0075(34)

	BEGIN	MID-POINT	END
LATITUDE	N35°05'40.2"	N35°05'38.3"	N35°05'26.2"
LONGITUDE	W93°12'23.2"	W93°11'28.3"	W93°10'51.2"

GROSS LENGTH OF PROJECT	9416.70 FEET OR 1.783 MILES
NET " " ROADWAY	9416.70 " " 1.783 "
NET " " BRIDGE	0000.00 " " 0.000 "
NET " " PROJECT	9416.70 " " 1.783 "

APPROVED



7-24-15
DEPUTY DIRECTOR
AND CHIEF ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		2	64
(4) INDEX OF SHEETS, GOV. SPECS. & GEN. NOTES								

INDEX OF SHEETS

SHEET NO.	TITLE	DRWG. NO.	DATE
1.	TITLE SHEET		
2.	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES		
3-6.	TYPICAL SECTION OF IMPROVEMENT AND SPECIAL DETAILS		
7-12.	TEMPORARY EROSION CONTROL DETAILS		
13-15.	QUANTITIES		
16.	SUMMARY OF QUANTITIES AND REVISIONS		
17-21.	SURVEY CONTROL DETAILS		
22-29.	PLAN AND PROFILE SHEETS		
30.	TRANSVERSE & LONGITUDINAL JOINT FOR CONCRETE PAVEMENT (NON-REINFORCED)	CPT-J-6A	05-25-06
31.	FLARED END SECTION	FES-1	10-18-96
32.	FLARED END SECTION	FES-2	10-18-96
33.	MAILBOX DETAILS	MB-1	11-18-04
34.	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1	02-27-14
35.	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	02-27-14
36.	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	PCP-1	02-27-14
37.	PLASTIC PIPE CULVERT (PVC F949)	PCP-2	02-27-14
38.	PAVEMENT MARKING DETAILS	PM-1	09-12-13
39.	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	SE-2	10-18-96
40.	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	SHS-1	09-12-13
41.	U-CHANNEL POST ASSEMBLIES	SHS-2	02-27-14
42.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	09-02-15
43.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	09-02-15
44.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	09-02-15
45.	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
46.	TEMPORARY EROSION CONTROL DEVICES	TEC-2	06-02-94
47.	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-03-94
48.	WIRE FENCE TYPE C AND D	WF-4	08-22-02
49-64.	CROSS SECTIONS		

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
JOB FA7518	BASE REPLACEMENT
JOB FA7518	BIDDING REQUIREMENTS AND CONDITIONS
JOB FA7518	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB FA7518	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB FA7518	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB FA7518	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB FA7518	MANDATORY ELECTRONIC CONTRACT
JOB FA7518	OFF-SITE RESTRAINING CONDITIONS FOR BATS
JOB FA7518	PLASTIC PIPE
JOB FA7518	RECYCLED ASPHALT SHINGLES
JOB FA7518	SCARIFYING AND RECOMPACTING ROADWAY
JOB FA7518	SHORING FOR CULVERTS
JOB FA7518	SOIL STABILIZATION
JOB FA7518	STORM WATER POLLUTION PREVENTION PLAN
JOB FA7518	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB FA7518	UTILITY ADJUSTMENTS
JOB FA7518	WARM MIX ASPHALT

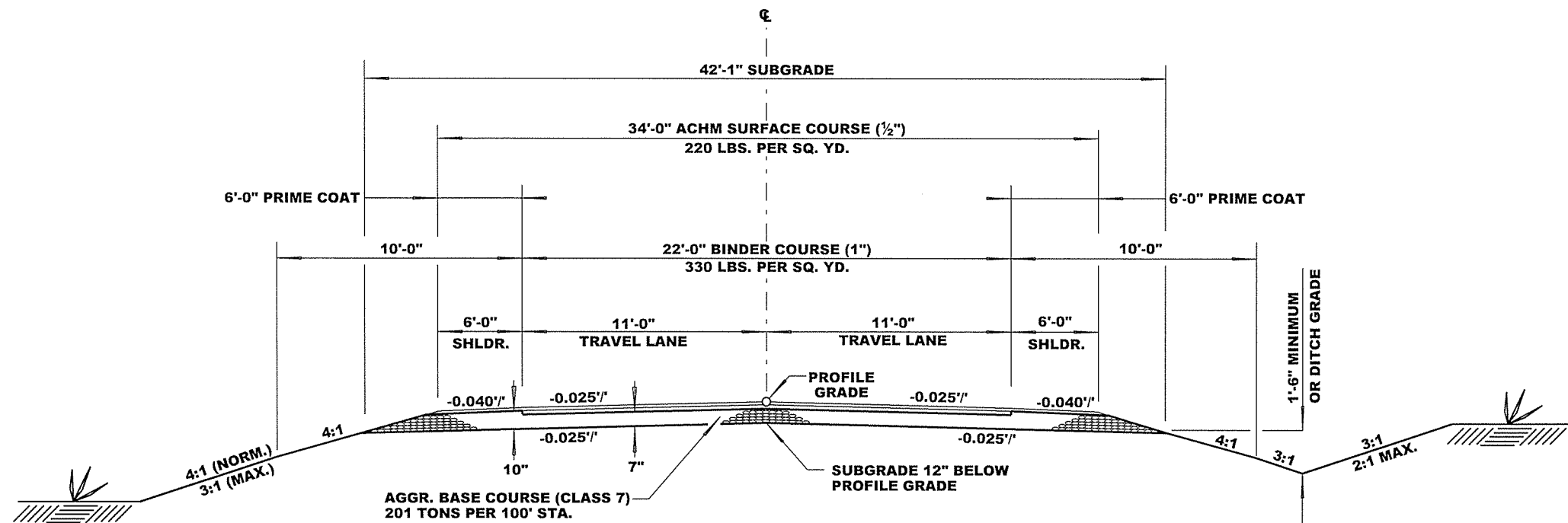
GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- UTILITIES INTERFERING WITH CONSTRUCTION SHALL BE MOVED BY THE OWNERS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- SUPERELEVATION SHALL BE COMPUTED IN ACCORDANCE WITH STD. DRWG. SE-2 USING 40 M.P.H. DESIGN VALUES AND REVOLVE ABOUT THE INNER EDGE OF TRAVEL LANE UNLESS OTHERWISE SHOWN.
- ALL SALVAGEABLE PIPE CULVERTS AND EXISTING BRIDGE STRUCTURES SHALL BE STORED ON THE RIGHT OF WAY AND REMAIN THE PROPERTY OF YELL COUNTY.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 23 PERMIT. REFER TO SUPPLEMENTAL SPECIFICATION 110-1, FOR PERMIT REQUIREMENTS.
- ROAD IS TO REMAIN OPEN THROUGHOUT THE COMPLETION OF THE PROJECT.
- 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.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	3	64	

4 TYPICAL SECTION OF IMPROVEMENT

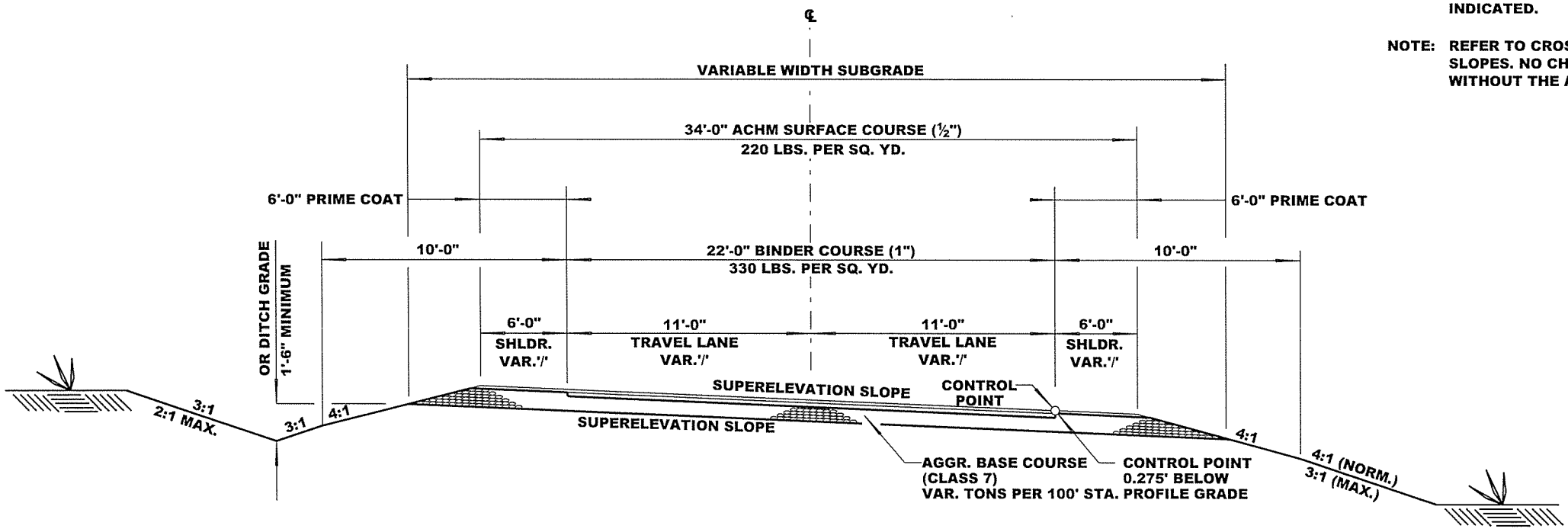


TANGENT SECTION

PARTICIPATING SECTION
 STA. 100+00 - STA. 109+00
 STA. 160+00 - STA. 169+50

NOTE: THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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



SUPERELEVATION SECTION

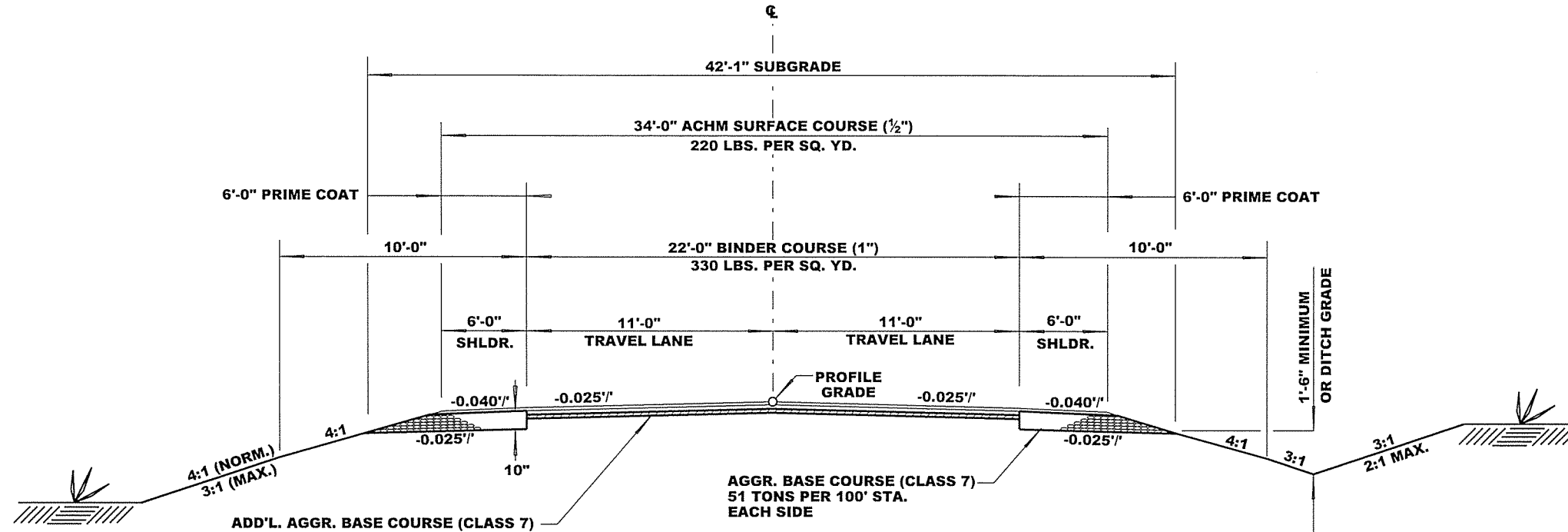
PARTICIPATING SECTION
 STA. 162+47 - STA. 169+50

TYPICAL SECTION OF IMPROVEMENT



7/21/2015

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				6	ARK.			
				JOB NO.	FA7518		4	64
4 TYPICAL SECTION OF IMPROVEMENT								



SCARIFYING AND RECOMPACTING ROADWAY
 STA. 109+00 - STA. 129+00
 STA. 130+34 - STA. 160+00
 SEE SPECIAL PROVISION,
 SCARIFYING AND RECOMPACTING
 ROADWAY, FOR DETAILS.

ADD'L. AGGR. BASE COURSE (CLASS 7)
 VARIABLE TONS PER 100' STA. FOR
 SCARIFYING AND RECOMPACTING
 ROADWAY TO BRING BASE COURSE
 TO GRADE. SEE QUANTITY SHEETS
 FOR ESTIMATED AMOUNT.

NOTCH AND WIDENING

PARTICIPATING SECTION
 STA. 109+00 - STA. 129+00
 STA. 130+34 - STA. 160+00

NOTE: THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

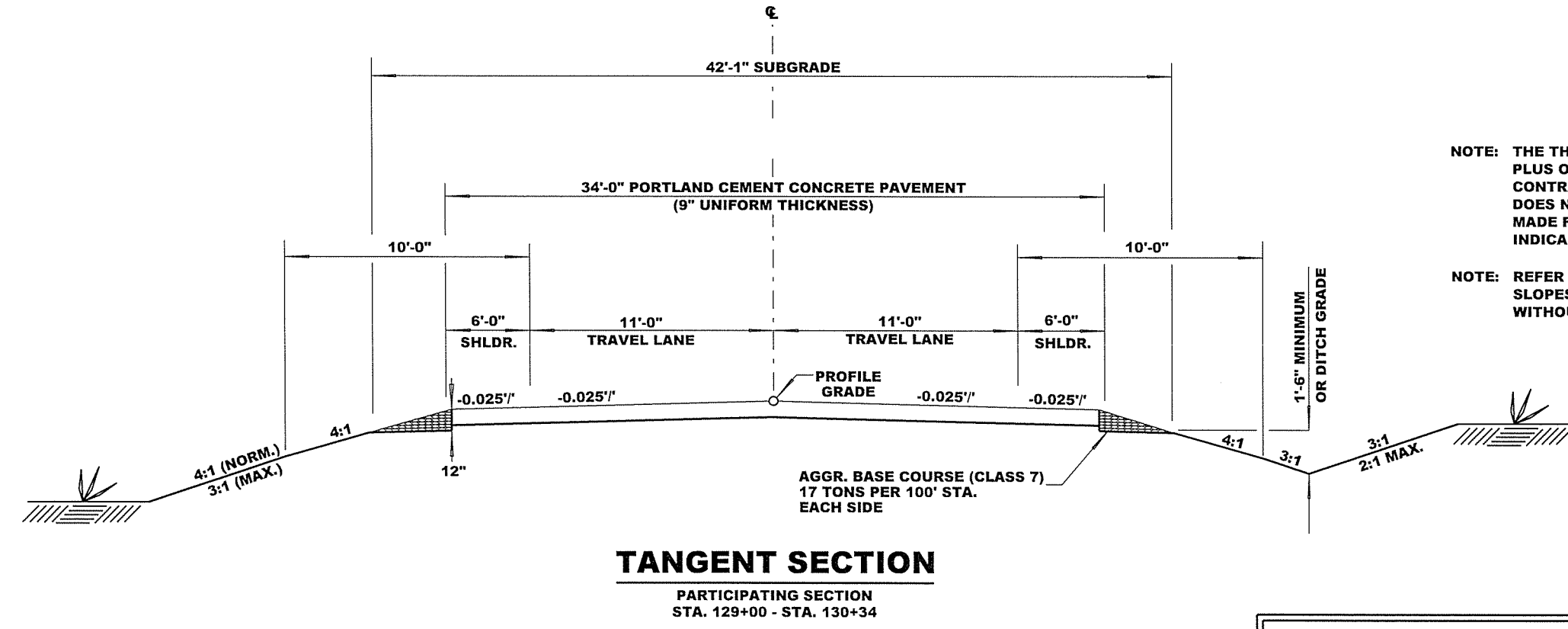
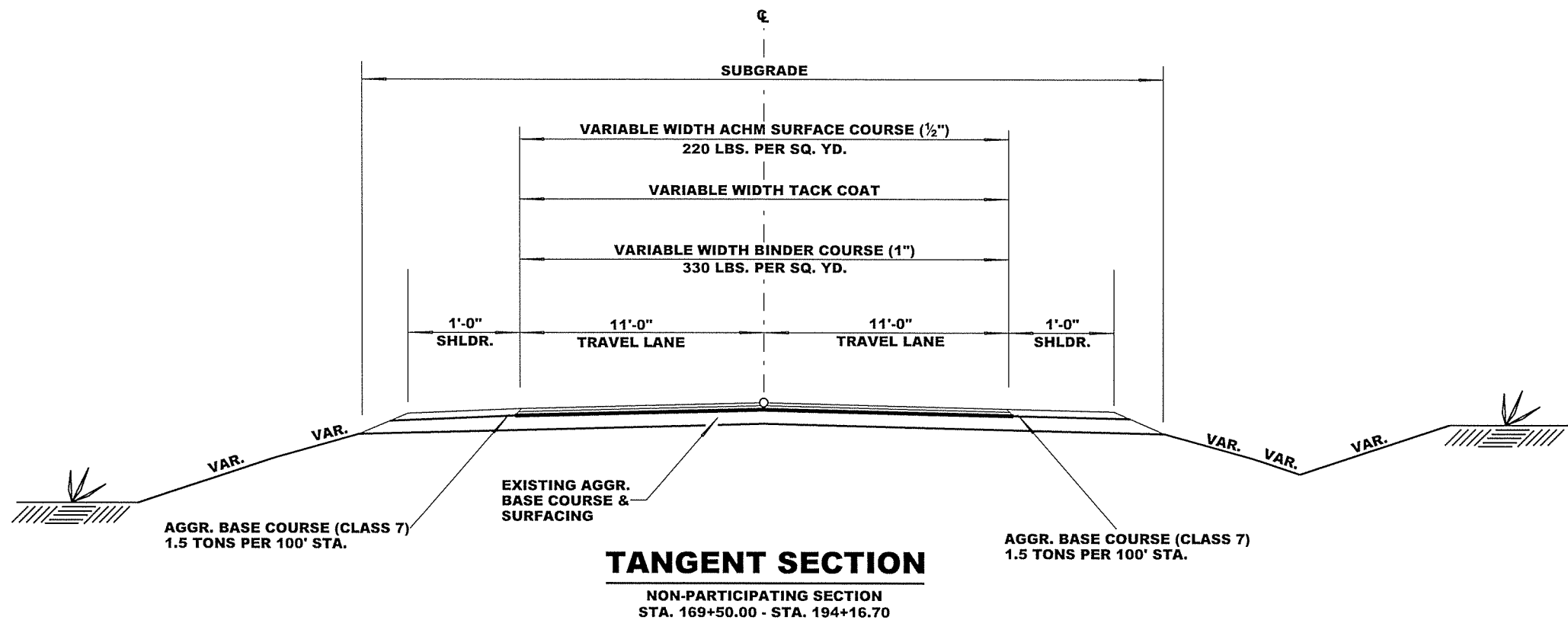
NOTE: REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGE SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

TYPICAL SECTION OF IMPROVEMENT



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		5	64

4 TYPICAL SECTION OF IMPROVEMENT



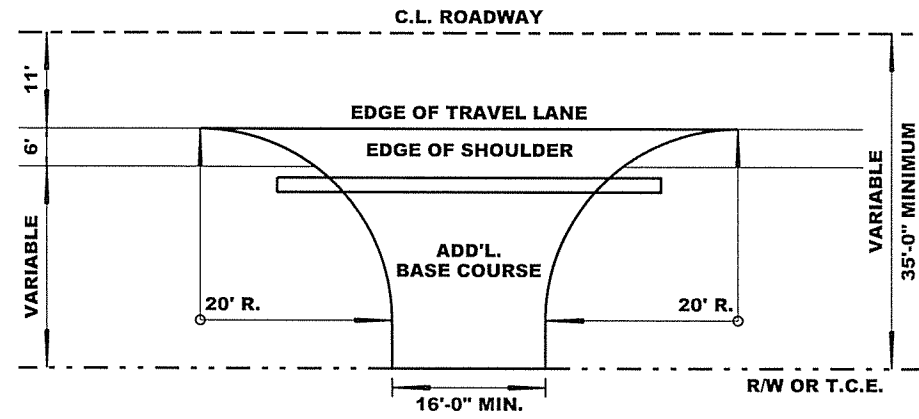
NOTE: THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

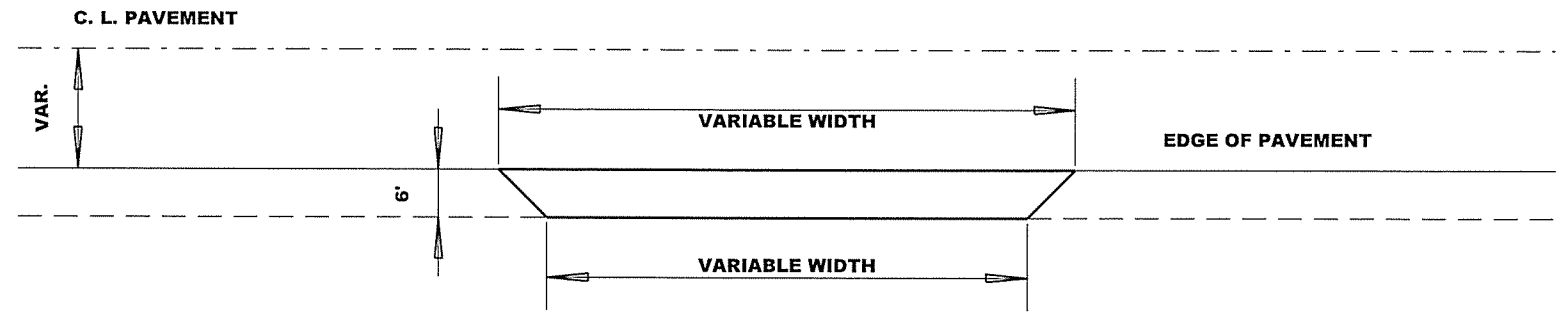
TYPICAL SECTION OF IMPROVEMENT

STATE OF ARKANSAS
 REGISTERED PROFESSIONAL ENGINEER
 No. 5368
 DAVID R. MAYO, JR.
 7/21/2015

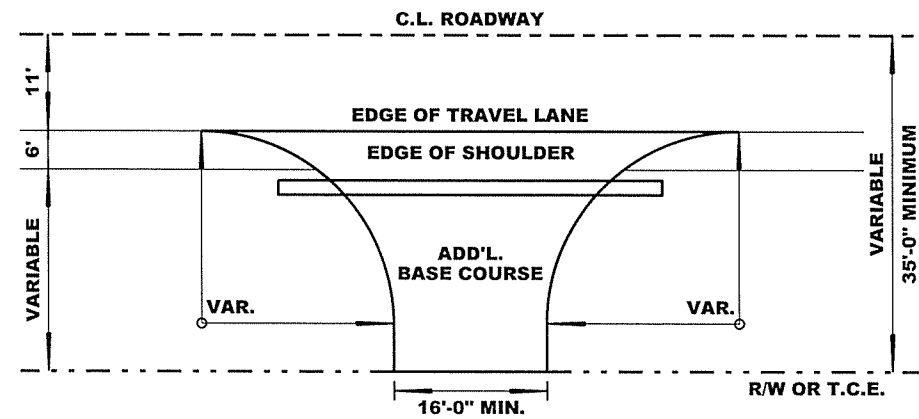
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				6	ARK.			
				JOB NO.	FA7518		6	64
4 SPECIAL DETAILS								



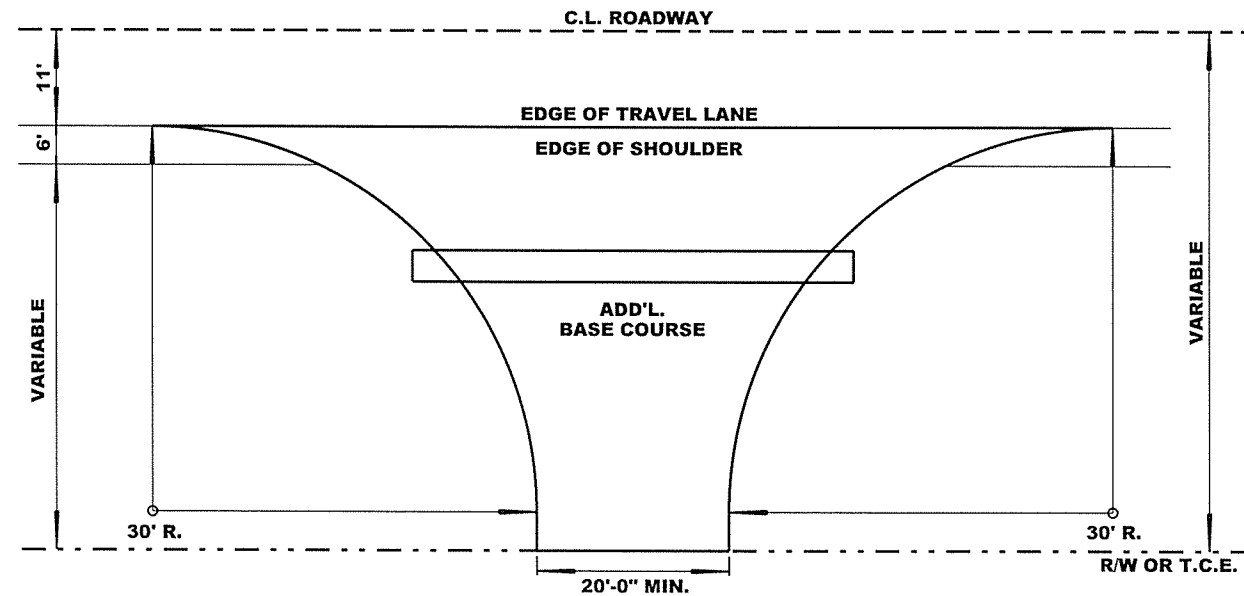
DETAIL OF PRIVATE ENTRANCES
 ADD'L. BASE COURSE
 PARTICIPATING SECTION



DETAIL OF PRIVATE ENTRANCES
 ADD'L. BASE COURSE
 NON-PARTICIPATING SECTION



DETAIL OF PRIVATE ENTRANCE
 STA. 129+69
 ADD'L. BASE COURSE
 PARTICIPATING SECTION
 PORTLAND CEMENT CONCRETE DRIVE = 307.18 SQ. YD.



DETAIL OF COUNTY ROAD TURNOUT
 ADD'L. BASE COURSE
 PARTICIPATING SECTION

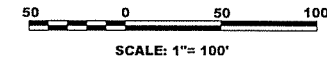
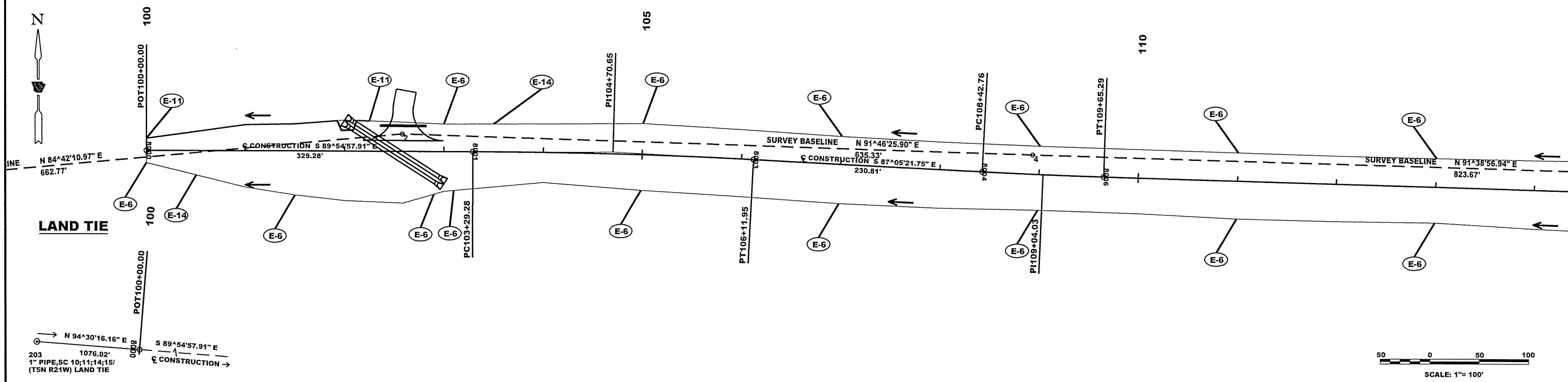
SPECIAL DETAILS



7/23/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		7	64

4 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 100+00	RT.	= 1 CU. YD.	1 CU. YD.
STA. 101+50	RT.	= 1 CU. YD.	1 CU. YD.
STA. 102+90	RT.	= 1 CU. YD.	1 CU. YD.
STA. 103+00	LT.	= 1 CU. YD.	1 CU. YD.
STA. 103+10	RT.	= 1 CU. YD.	1 CU. YD.
STA. 105+00	LT. & RT.	= 2 CU. YD.	2 CU. YD.
STA. 107+00	LT. & RT.	= 2 CU. YD.	2 CU. YD.
STA. 109+00	LT. & RT.	= 2 CU. YD.	2 CU. YD.
STA. 111+00	LT. & RT.	= 2 CU. YD.	2 CU. YD.
STA. 113+00	LT. & RT.	= 2 CU. YD.	2 CU. YD.

SILT FENCE (E-11)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 100+00 - STA. 102+25	LT.	= 239	LIN. FT. 7 CU. YD.

SEDIMENT BASIN (E-14)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 100+50	RT.	= 152 CU. YD.	152 CU. YD.
STA. 103+50	LT.	= 134 CU. YD.	134 CU. YD.

OBLIT. OF SED. BASIN = 286 CU. YD.

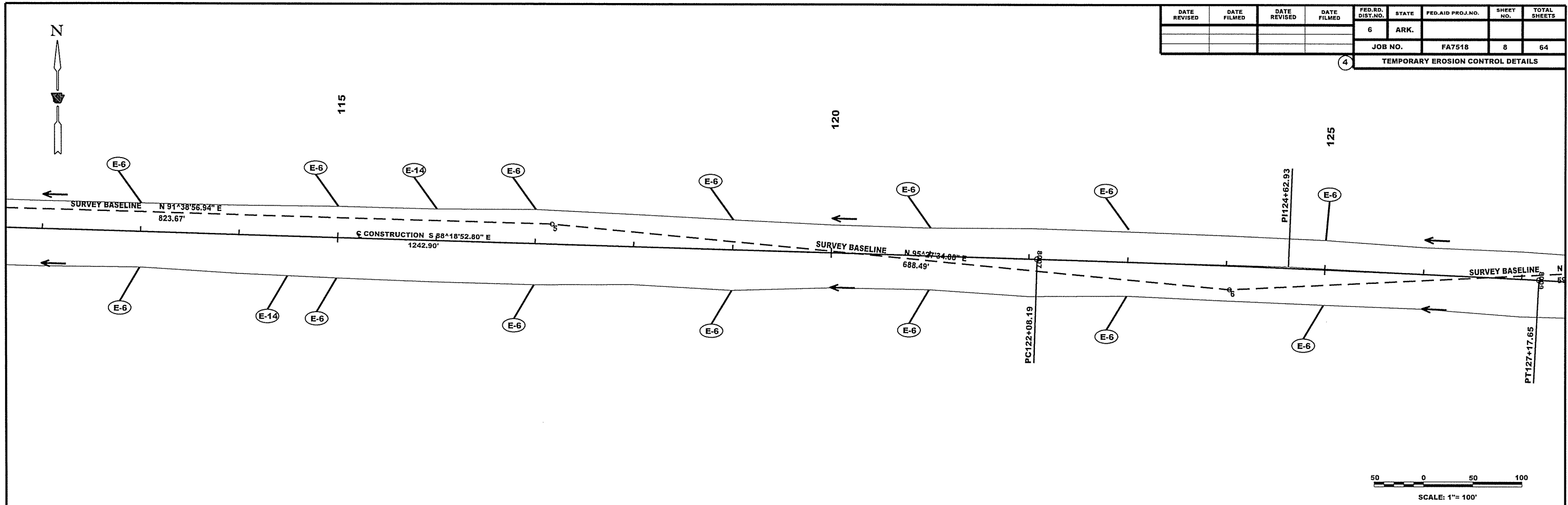
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STATE OF ARKANSAS
 REGISTERED PROFESSIONAL ENGINEER
 NUMBER 5368
 DAVID R. MAYOR JR.
 7/21/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		8	64

TEMPORARY EROSION CONTROL DETAILS



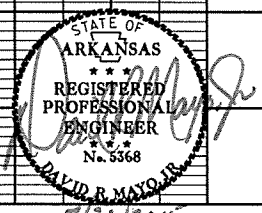
TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 115+00 LT. & RT.	= 2 CU. YD. 2 CU. YD.
STA. 117+00 LT. & RT.	= 2 CU. YD. 2 CU. YD.
STA. 119+00 LT. & RT.	= 2 CU. YD. 2 CU. YD.
STA. 121+00 LT. & RT.	= 2 CU. YD. 2 CU. YD.
STA. 123+00 LT. & RT.	= 2 CU. YD. 2 CU. YD.
STA. 125+00 LT. & RT.	= 2 CU. YD. 2 CU. YD.

SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 114+50 RT.	= 152 CU. YD. 152 CU. YD.
STA. 116+00 LT.	= 134 CU. YD. 134 CU. YD.

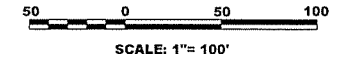
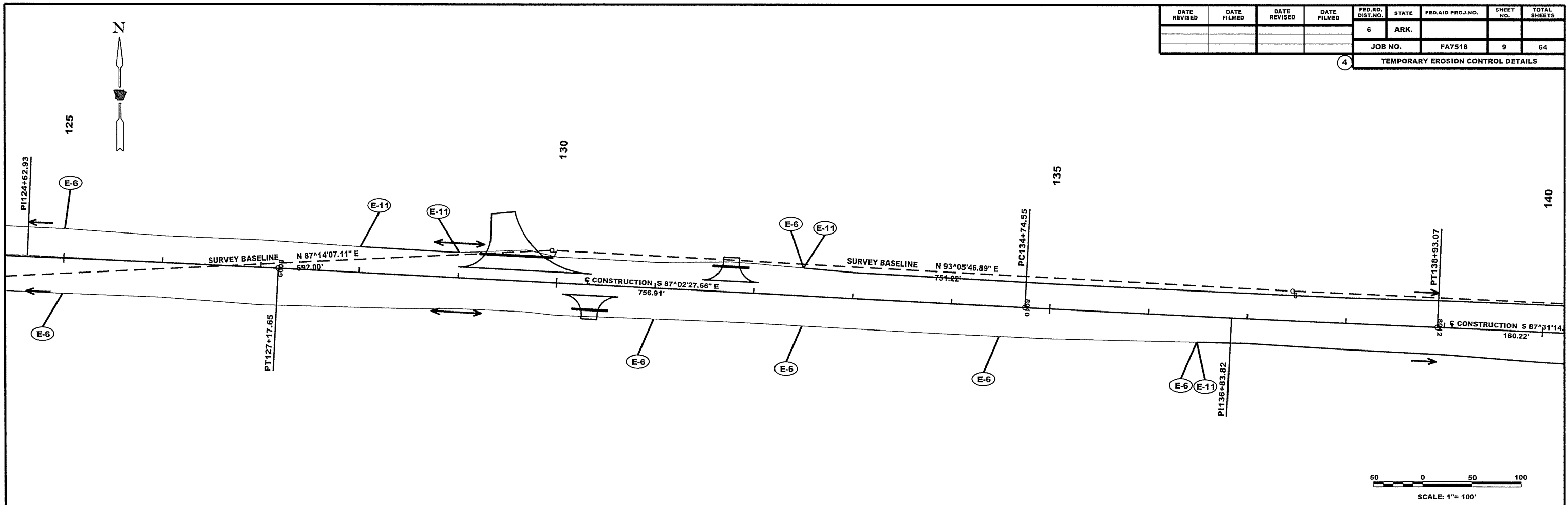
OBLIT. OF SED. BASIN	
	= 286 CU. YD.

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7/21/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		9	64
4 TEMPORARY EROSION CONTROL DETAILS								



TEMPORARY EROSION CONTROL DEVICES

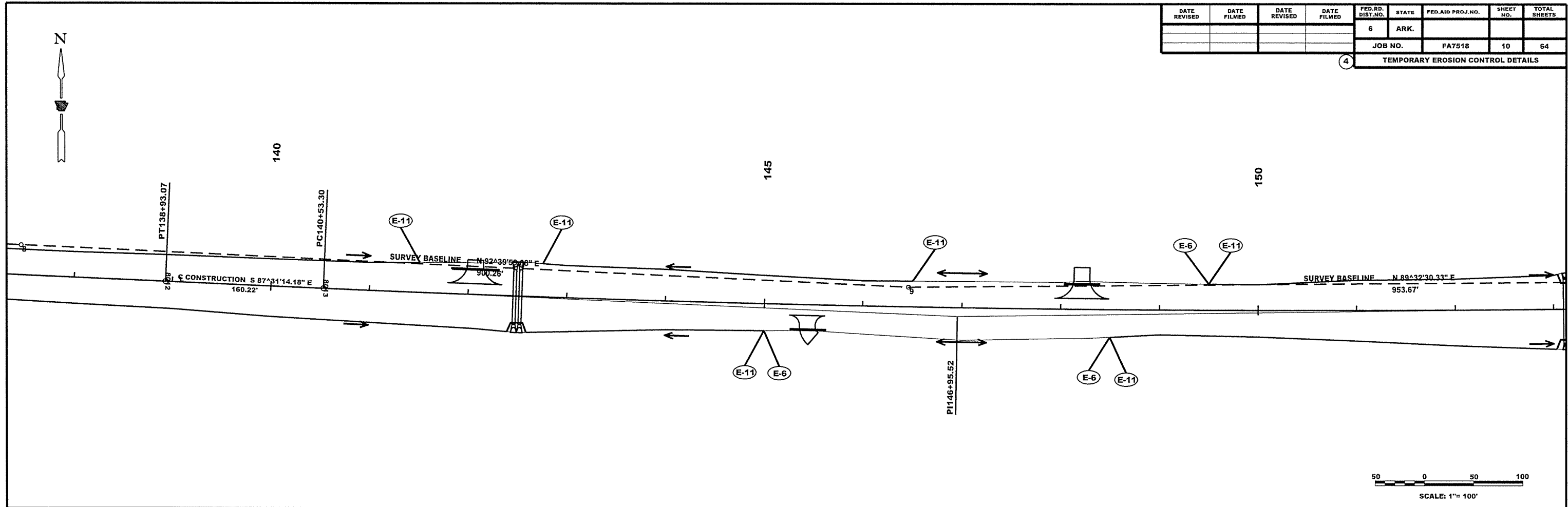
ROCK DITCH CHECKS (E-6)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 131+00	RT. = 1 CU. YD.	1 CU. YD.	
STA. 132+50	LT. & RT. = 2 CU. YD.	2 CU. YD.	
STA. 134+50	RT. = 1 CU. YD.	1 CU. YD.	
STA. 136+50	RT. = 1 CU. YD.	1 CU. YD.	
SILT FENCE (E-11)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 128+00 - STA. 129+00	LT. = 100	LIN. FT. 3 CU. YD.	
STA. 132+50 - STA. 141+50	LT. = 892	LIN. FT. 27 CU. YD.	
STA. 136+50 - STA. 145+00	RT. = 864	LIN. FT. 26 CU. YD.	

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STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 5368
DAVID R. MAYOR JR.
7/21/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	10	64

4 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6) SEDIMENT REMOVAL AND DISPOSAL
 STA. 145+00 RT. = 1 CU. YD. 1 CU. YD.
 STA. 148+50 RT. = 1 CU. YD. 1 CU. YD.
 STA. 149+50 LT. = 1 CU. YD. 1 CU. YD.

SILT FENCE (E-11) SEDIMENT REMOVAL AND DISPOSAL
 STA. 142+75 - STA. 146+50 LT. = 375 LIN. FT. 12 CU. YD.
 STA. 148+50 - STA. 154+50 RT. = 615 LIN. FT. 19 CU. YD.
 STA. 149+50 - STA. 154+75 LT. = 640 LIN. FT. 20 CU. YD.

REVISION NO.

REVISION

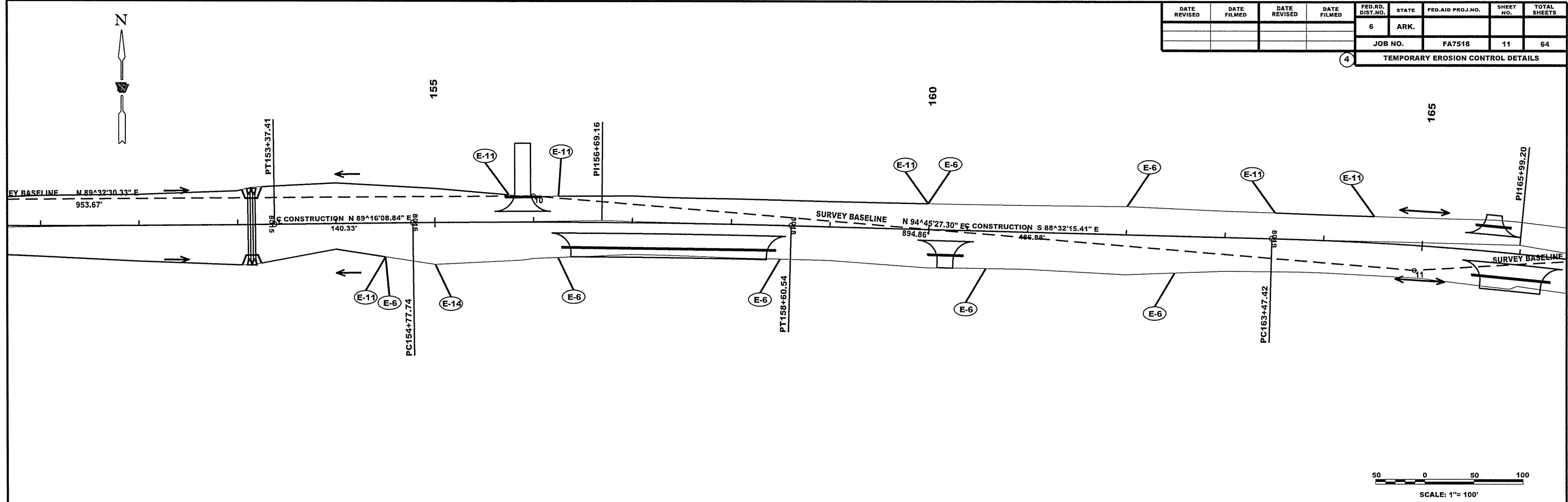
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7/21/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		11	64

4 TEMPORARY EROSION CONTROL DETAILS



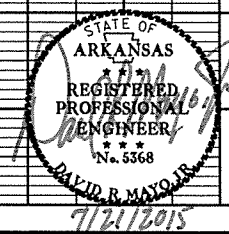
TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 154+50 RT.	= 1 CU. YD. 1 CU. YD.
STA. 156+25 RT.	= 1 CU. YD. 1 CU. YD.
STA. 158+50 RT.	= 1 CU. YD. 1 CU. YD.
STA. 160+00 LT.	= 1 CU. YD. 1 CU. YD.
STA. 160+50 RT.	= 1 CU. YD. 1 CU. YD.
STA. 162+00 LT.	= 1 CU. YD. 1 CU. YD.
STA. 162+50 RT.	= 1 CU. YD. 1 CU. YD.
SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL
STA. 156+25 - STA. 160+00	LT. = 374 LIN. FT. 12 CU. YD.
STA. 163+50 - STA. 164+50	LT. = 100 LIN. FT. 3 CU. YD.
SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 155+00 RT.	= 107 CU. YD. 107 CU. YD.
OBLIT. OF SED. BASIN	
	= 107 CU. YD.

REVISION NO.

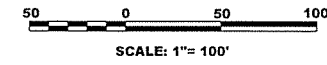
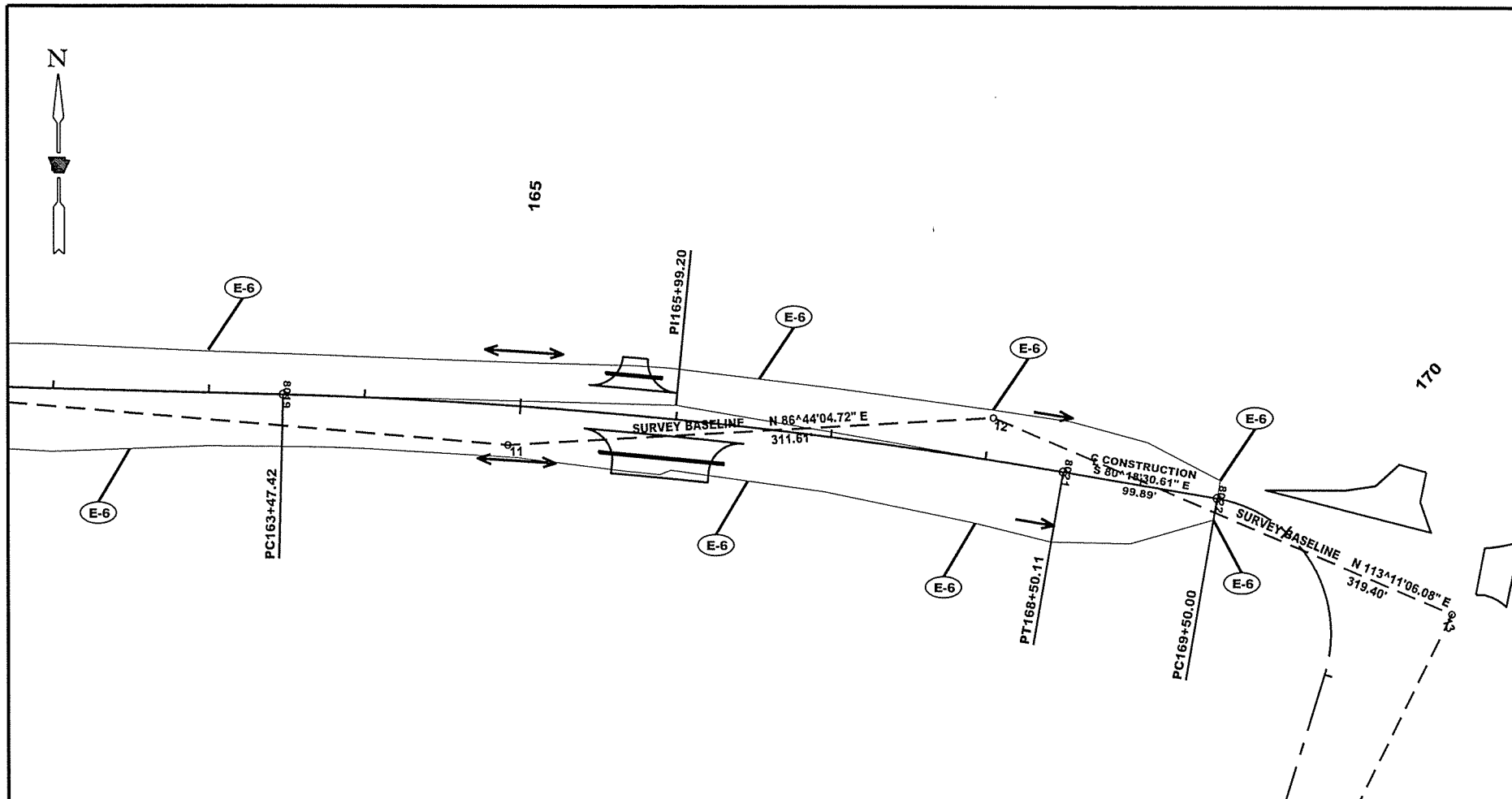
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	12	64	

4 TEMPORARY EROSION CONTROL DETAILS



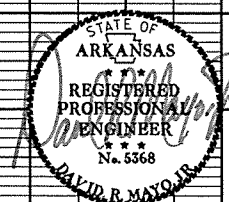
TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6) SEDIMENT REMOVAL AND DISPOSAL
 STA. 166+50 LT. & RT. = 2 CU. YD. 2 CU. YD.
 STA. 168+00 LT. & RT. = 2 CU. YD. 2 CU. YD.
 STA. 169+50 LT. & RT. = 2 CU. YD. 2 CU. YD.

SEDIMENT BASIN (E-14) SEDIMENT REMOVAL AND DISPOSAL
 STA. 169+50 LT. = 49 CU. YD. 49 CU. YD.
 STA. 169+50 RT. = 49 CU. YD. 49 CU. YD.

OBLIT. OF SED. BASIN = 98 CU. YD.

REVISION NO.	REVISION
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7/21/2015

EARTHWORK

STATION	STATION	UNCLASSIFIED EXCAVATION MAIN LANES	COMPACTED EMBANKMENT			SOIL STABILIZATION TON
			MAIN LANES	ADDITIONAL	TOTAL	
		CUBIC YARD				
PARTICIPATING SECTION						
100+00	169+50	12167	3879		3879	
102+59				45	45	
129+69				75	75	
130+34				20	20	
131+76				20	20	
142+06				20	20	
145+44				20	20	
148+21				25	25	
155+89				75	75	
157+37				175	175	
160+17				25	25	
165+71				45	45	
165+93				75	75	
ENTIRE SECTION						200
SUBTOTALS:		12167	3879	620	4499	200
NON-PARTICIPATING SECTION						
180+50				55	55	
191+62				25	25	
193+30				20	20	
SUBTOTALS:						100
TOTALS:		12167	3879	720	4599	200

NOTE: EARTHWORK QUANTITIES SHOWN SHALL BE PAID AS PLAN QUANTITY.
SOIL STABILIZATION TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	FENCE	METAL GATES	CONCRETE DRIVEWAYS
				EACH	LIN. FT.	EACH	SQ. YD.
PARTICIPATING SECTION							
102+19		CROSS DRAIN	42" X 130' C.M. PIPE CULVERT CROSS DRAIN	1			
102+36		CROSS DRAIN	42" X 101' C.M. PIPE CULVERT CROSS DRAIN	1			
102+55		RT.	18" X 60' C.M. PIPE CULVERT RT. SIDE DRAIN	1			
103+03	116+11	RT.	4B - 4 STRAND BARBED WIRE		1330		
103+41	128+10	LT.	4B - 4 STRAND BARBED WIRE		2437		
120+66		CROSS DRAIN	15" X 40' C.M. PIPE CULVERT CROSS DRAIN	1			
129+69		LT.	PORTLAND CEMENT CONCRETE DRIVEWAYS				56.18
131+86		LT.	12" X 67' C.P. PIPE CULVERT LT. SIDE DRAIN	1			
142+05		LT.	24" X 73' C.M. PIPE CULVERT LT. SIDE DRAIN	1			
142+47		CROSS DRAIN	48" X 40' C.M. PIPE CULVERT CROSS DRAIN	1			
145+43		RT.	12" X 30' C.M. PIPE CULVERT RT. SIDE DRAIN	1			
145+45		RT.	16' METAL VEHICULAR GATE			1	
145+61	147+42	RT.	4B - 4 STRAND BARBED WIRE		182		
147+77	153+34	RT.	4B - 4 STRAND BARBED WIRE		582		
153+14		CROSS DRAIN	48" X 41' C.M. PIPE CULVERT CROSS DRAIN	1			
160+13		CROSS DRAIN	12" X 69' C.M. PIPE CULVERT CROSS DRAIN	1			
164+39	165+48	LT.	4B - 4 STRAND BARBED WIRE		136		
TOTALS:				10	4667	1	56.18

TRAFFIC CONTROL DEVICES

LOCATION	W20-1								G20-1	G20-2	TRAFFIC DRUMS EACH	STANDARD DRAWING NUMBER	
	1500 FT.		1000 FT.		500 FT.		AHEAD						
	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.					
PARTICIPATING SECTION													
STA. 85+00	1	16										TC-1, 2 & 3	
STA. 90+00			1	16								TC-1, 2 & 3	
STA. 95+00					1	16						TC-1, 2 & 3	
STA. 100+00							1	10	1	8		TC-1, 2 & 3	
STA. 102+59							1	16				TC-1, 2 & 3	
ENTIRE JOB												50	TC-1, 2 & 3
SUBTOTALS:		1	16	1	16	1	16	1	10	1	8		
NON-PARTICIPATING SECTION													
STA. 170+15							1	16				TC-1, 2 & 3	
STA. 194+17							1	10	1	8		TC-1, 2 & 3	
SUBTOTALS:							1	16	1	10	1	8	
TOTALS:		1	16	1	16	1	16	2	20	2	16	50	

REFLECTORIZED PAINT PAVEMENT MARKINGS

STATION	STATION	4" YELLOW	4" WHITE
		LIN. FT.	LIN. FT.
PARTICIPATING SECTION			
100+00	169+50	13900	13900
SUBTOTALS:		13900	13900
NON-PARTICIPATING SECTION			
169+50	194+17	4934	4934
SUBTOTALS:		4934	4934
TOTALS:		18834	18834

NOTE: THIS IS A LOW VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER								SUPPORT ASSEMBLIES (TYPE A) EACH	STANDARD DRAWING NUMBER
		W1-2 LT.		W1-2 RT.		W1-1R		W5-1			
		NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.		
PARTICIPATING SECTION											
101+54	RT.			1	6.25					1	SHS - 1 & 2
106+68	RT.	1	6.25							1	SHS - 1 & 2
107+87	LT.	1	6.25							1	SHS - 1 & 2
111+40	LT.			1	6.25					1	SHS - 1 & 2
120+33	RT.			1	6.25					1	SHS - 1 & 2
128+93	LT.	1	6.25							1	SHS - 1 & 2
133+00	RT.	1	6.25							1	SHS - 1 & 2
138+78	RT.	1	6.25							1	SHS - 1 & 2
140+68	LT.			1	6.25					1	SHS - 1 & 2
153+03	RT.			1	6.25					1	SHS - 1 & 2
155+12	LT.			1	6.25					1	SHS - 1 & 2
160+36	LT.	1	6.25							1	SHS - 1 & 2
161+72	RT.			1	6.25					1	SHS - 1 & 2
167+75	RT.					1	6.25			1	SHS - 1 & 2
167+75	RT.							1	6.25	1	SHS - 1 & 2
170+25	LT.	1	6.25							1	SHS - 1 & 2
TOTALS:		7	43.75	7	43.75	1	6.25	1	6.25	16	

NOTE: ALL STANDARD SIGN BLANKS TO BE 0.080" THICK. REFER TO STANDARD DWG. SHS-2 FOR CHANNEL POST SPLICING DETAILS.

WIRE FENCE

STATION	STATION	SIDE	WIRE FENCE
			(TYPE D)
			LIN. FT.
PARTICIPATING SECTION			
103+03	116+11	RT.	1302
103+76	128+10	LT.	2438
145+61	147+42	RT.	181
147+77	153+34	RT.	557
164+39	165+48	LT.	110
TOTAL:			4588

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	STATION
PARTICIPATING SECTION			
100+00	169+50	70	70
TOTALS:		70	70



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	14	64	
								QUANTITIES

STRUCTURES

STATION	DESCRIPTION	SIDE DRAIN	CROSS DRAIN ALTS.				F.E.S. ALTS.		SOLID SODDING	WATER	SELECTED PIPE BEDDING	SELECTED PIPE BACKFILL	STANDARD DRAWING
		18"	42" R.C.P.	42" C.M.P.	42" H.D.P.E.	42" R.C.P.	42" C.M.P.						
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH						
PARTICIPATING SECTION													
102+59	18" X 46' PIPE CULVERT LT.	46										PCC-1, PCM-1	
103+00	DOUBLE 42" PIPE CULVERT CROSS DRAIN		96	104	104	4	4	50	0.6	28	206	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2	
129+69	18" X 74' PIPE CULVERT LT.	74										PCC-1, PCM-1	
130+34	18" X 36' PIPE CULVERT RT.	36										PCC-1, PCM-1	
131+76	18" X 36' PIPE CULVERT LT.	36										PCC-1, PCM-1	
142+06	18" X 48' PIPE CULVERT LT.	48										PCC-1, PCM-1	
145+44	18" X 36' PIPE CULVERT RT.	36										PCC-1, PCM-1	
148+21	18" X 36' PIPE CULVERT LT.	36										PCC-1, PCM-1	
155+89	18" X 36' PIPE CULVERT LT.	36										PCC-1, PCM-1	
157+37	18" X 216' PIPE CULVERT RT.	216										PCC-1, PCM-1	
160+17	18" X 36' PIPE CULVERT RT.	36										PCC-1, PCM-1	
165+71	18" X 36' PIPE CULVERT LT.	36										PCC-1, PCM-1	
165+93	18" X 80' PIPE CULVERT RT.	80										PCC-1, PCM-1	
TOTALS:		716	96	104	104	4	4	50	0.6	28	206		

BASIS OF ESTIMATE:

WATER = 12.6 GAL. PER SQ. YD. SOLID SODDING.

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

FOR C.M. OR PLASTIC PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STRUCTURES

STATION	DESCRIPTION	CROSS DRAIN ALTS.				F.E.S. ALTS.		SOLID SODDING	WATER	SELECTED PIPE BEDDING	SELECTED PIPE BACKFILL	STANDARD DRAWING
		36" R.C.P.	36" C.M.P.	36" H.D.P.E.	36" P.V.C.	36" R.C.P.	36" C.M.P.					
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH					
PARTICIPATING SECTION												
142+50	DOUBLE 36" PIPE CULVERT CROSS DRAIN	112	122	122	122	4	4	36	0.5	15	109	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
TOTALS:		112	122	122	122	4	4	36	0.5	15	109	

BASIS OF ESTIMATE:

WATER = 12.6 GAL. PER SQ. YD. SOLID SODDING.

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

FOR C.M. OR PLASTIC PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STRUCTURES

STATION	DESCRIPTION	CROSS DRAIN ALTS.				F.E.S. ALTS.		SOLID SODDING	WATER	SELECTED PIPE BEDDING	SELECTED PIPE BACKFILL	STANDARD DRAWING
		30" R.C.P.	30" C.M.P.	30" H.D.P.E.	30" P.V.C.	30" R.C.P.	30" C.M.P.					
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH					
PARTICIPATING SECTION												
153+14	DOUBLE 30" PIPE CULVERT CROSS DRAIN	132	142	142	142	4	4	28	0.4	14	95	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
TOTALS:		132	142	142	142	4	4	28	0.4	14	95	

BASIS OF ESTIMATE:

WATER = 12.6 GAL. PER SQ. YD. SOLID SODDING.

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

FOR C.M. OR PLASTIC PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

MAILBOXES

STATION	SIDE	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)	MAILBOX
		EACH		
PARTICIPATING SECTION				
130+33	LT.	1		1
158+77	LT.		1	2
165+48	LT.		1	2
TOTALS:		1	2	5

BASE REPLACEMENT

STATION	STATION	AGGREGATE BASE CRS. (BASE REPLACEMENT)
TON		
NON-PARTICIPATING SECTION		
ENTIRE SECTION		250
TOTAL:		250

NOTE: QUANTITIES ARE ESTIMATED AND SHALL BE PLACED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

TEMPORARY & PERMANENT SEEDING

STATION	TEMPORARY SEEDING	LIME	SEEDING	MULCH COVER	WATER	STANDARD DRAWING NO.
	ACRE	TON	ACRE	ACRE	M. GAL.	
PARTICIPATING SECTION						
ENTIRE SECTION	4.74	10	4.74	9.48	580.2	TEC-3
TOTALS:	4.74	10	4.74	9.48	580.2	

BASIS OF ESTIMATE:

LIME 2 TONS PER ACRE

WATER 102 M. GALS. PER ACRE PERMANENT SEEDING

WATER 20.4 M. GALS. PER ACRE TEMPORARY SEEDING



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		16	64
SUMMARY OF QUANTITIES AND REVISIONS								

SUMMARY OF QUANTITIES

4

ITEM NUMBER	ITEM	PARTICIPATING	NON-PARTICIPATING	TOTAL	UNIT
201	CLEARING	70		70	STA.
201	GRUBBING	70		70	STA.
202	REMOVAL AND DISPOSAL OF FENCE	4667		4667	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	10		10	EACH
202	REMOVAL AND DISPOSAL OF GATES	1		1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	56		56	SQ. YD.
210	UNCLASSIFIED EXCAVATION	12167		12167	CU. YD.
210	COMPACTED EMBANKMENT	4499	100	4599	CU. YD.
SP&210	SOIL STABILIZATION	200		200	TON
303	AGGREGATE BASE COURSE (CLASS 7)	12854	278	13132	TON
SP&303	AGGREGATE BASE COURSE (BASE REPLACEMENT)		250	250	TON
401	PRIME COAT	4079	268	4347	GAL.
SP&401	TACK COAT	617	329	946	GAL.
SPSS&406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	2628	951	3579	TON
SPSS&406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	121	44	165	TON
SPSS&407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	2822	756	3578	TON
SPSS&407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	155	41	196	TON
501	PORTLAND CEMENT CONCRETE PAVEMENT (9" UNIFORM THICKNESS)	506		506	SQ. YD.
505	PORTLAND CEMENT CONCRETE DRIVEWAY	307.18		307.18	SQ. YD.
601	MOBILIZATION	0.74	0.26	1.00	LUMP SUM
SP&602	FURNISHING FIELD OFFICE	1		1	EACH
603	MAINTENANCE OF TRAFFIC	0.74	0.26	1.00	LUMP SUM
SS&604	SIGNS	82	34	116	SQ. FT.
SS&604	TRAFFIC DRUMS	50		50	EACH
SPSS&606	18" SIDE DRAIN	716		716	LIN. FT.
* 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALT. NO. 1	132		132	LIN. FT.
* 606	30" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) ALT. NO. 2	142		142	LIN. FT.
* 606	30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) ALT. NO. 3	142		142	LIN. FT.
* 606	30" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (16 GAUGE) ALT. NO. 4	142		142	LIN. FT.
* SP&606	30" HIGH DENSITY POLYETHYLENE PIPE ALT. NO. 5	142		142	LIN. FT.
* SP&606	30" PVC PIPE ALT. NO. 6	142		142	LIN. FT.
* 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALT. NO. 1	112		112	LIN. FT.
* 606	36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) ALT. NO. 2	122		122	LIN. FT.
* 606	36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) ALT. NO. 3	122		122	LIN. FT.
* 606	36" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE) ALT. NO. 4	122		122	LIN. FT.
* SP&606	36" HIGH DENSITY POLYETHYLENE PIPE ALT. NO. 5	122		122	LIN. FT.
* SP&606	36" PVC PIPE ALT. NO. 6	122		122	LIN. FT.
* 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) ALT. NO. 1	96		96	LIN. FT.
* 606	42" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) ALT. NO. 2	104		104	LIN. FT.
* 606	42" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) ALT. NO. 3	104		104	LIN. FT.
* 606	42" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE) ALT. NO. 4	104		104	LIN. FT.
* SP&606	42" HIGH DENSITY POLYETHYLENE PIPE ALT. NO. 5	104		104	LIN. FT.
* 606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS ALT. NO. 1	4		4	EACH
* 606	30" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS ALT. NO. 2	4		4	EACH
* 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS ALT. NO. 1	4		4	EACH
* 606	36" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS ALT. NO. 2	4		4	EACH
* 606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS ALT. NO. 1	4		4	EACH
* 606	42" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS ALT. NO. 2	4		4	EACH
606	SELECTED PIPE BEDDING	57		57	CU. YD.
606	SELECTED PIPE BACKFILL	410		410	CU. YD.
611	UNDERDRAIN OUTLET PROTECTORS	6		6	EACH
611	4" PIPE UNDERDRAINS	150		150	LIN. FT.
619	WIRE FENCE (TYPE D)	4588		4588	LIN. FT.
* 619	16' STEEL GATES ALT. NO. 1	1		1	EACH
* 619	16' ALUMINUM GATES ALT. NO. 2	1		1	EACH
620	LIME	10		10	TON
620	SEEDING	4.74		4.74	ACRE
SS&620	MULCH COVER	9.48		9.48	ACRE
620	WATER	581.7		581.7	M. GAL.
621	TEMPORARY SEEDING	4.74		4.74	ACRE
621	SILT FENCE	4349		4349	LIN. FT.
621	ROCK DITCH CHECKS	48		48	CU. YD.
621	SEDIMENT BASIN	777		777	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	777		777	CU. YD.
621	SAND BAG DITCH CHECKS	48		48	BAGS
621	SEDIMENT REMOVAL AND DISPOSAL	963		963	CU. YD.
624	SOLID SODDING	114		114	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	0.74	0.26	1.00	LUMP SUM
637	MAILBOXES	5		5	EACH
637	MAILBOX SUPPORTS (SINGLE)	1		1	EACH
637	MAILBOX SUPPORTS (DOUBLE)	2		2	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")	13900	4934	18834	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")	13900	4934	18834	LIN. FT.
726	STANDARD SIGN	100.00		100.00	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE A)	16		16	EACH
SP	SCARIFYING AND RECOMPACTING ROADWAY	46		46	STA.

REVISIONS

DATE	REVISION	SHEET NUMBER

* DENOTES ALTERNATE BID ITEMS.



9/11/2015

SURVEY CONTROL COORDINATES

Project Name: FA7518
 Date: 9/30/2014
 Coordinate System: Arkansas State Plane Coordinates
 Horizontal Control Based on GPS Points 750015 - 750016A, Vertical Control Based on NGS POINT E47
 Projected to Ground Coordinates
 Units: U.S. Survey Foot

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	17	64

4 SURVEY CONTROL DETAIL

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

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	279149.3624	0.023	950819.263	0.021	329.65	0.0109	CTL	PD:AHTD STD. MON STAMPED PN:1
2	279210.5475	0.0240	951479.2000	0.0230	339.070	0.011	CTL	PD:AHTD STD. MON STAMPED PN:2
3	279821.7623	0.0290	951690.9652	0.0270	342.081	0.011	CTL	PD:AHTD STD. MON STAMPED PN:3
4	279190.8810	0.0250	952114.2262	0.0230	351.712	0.011	CTL	PD:AHTD STD. MON STAMPED PN:4
5	279167.1764	0.0270	952937.5586	0.0250	357.295	0.010	CTL	PD:AHTD STD. MON STAMPED PN:5
6	279101.6702	0.0240	953622.9203	0.0210	362.422	0.010	CTL	PD:AHTD STD. MON STAMPED PN:6
7	279130.2248	0.0290	954214.2299	0.0240	362.519	0.010	CTL	PD:AHTD STD. MON STAMPED PN:7
8	279089.6473	0.0280	954964.3552	0.0240	357.424	0.010	CTL	PD:AHTD STD. MON STAMPED PN:8
9	279047.7640	0.0260	955863.6364	0.0230	363.485	0.009	CTL	PD:AHTD STD. MON STAMPED PN:9
10	279055.3912	0.0230	956817.2753	0.0200	361.848	0.009	CTL	PD:AHTD STD. MON STAMPED PN:10
11	278981.1711	0.0260	957709.0561	0.0220	379.477	0.009	CTL	PD:AHTD STD. MON STAMPED PN:11
12	278998.9206	0.0260	958020.1617	0.0220	374.671	0.008	CTL	PD:AHTD STD. MON STAMPED PN:12
13	278873.1711	0.0260	958313.7692	0.0220	351.163	0.008	CTL	PD:AHTD STD. MON STAMPED PN:13
14	278472.2080	0.0280	958115.6739	0.0230	350.625	0.008	CTL	PD:AHTD STD. MON STAMPED PN:14
15	278069.7324	0.0300	957845.2106	0.0250	360.457	0.007	CTL	PD:AHTD STD. MON STAMPED PN:15
16	277866.3463	0.0210	958407.7113	0.0180	343.310	0.007	CTL	PD:AHTD STD. MON STAMPED PN:16
17	277793.5184	0.0260	959045.6429	0.0230	334.280	0.006	CTL	PD:AHTD STD. MON STAMPED PN:17
18	278231.9692	0.0270	959236.6654	0.0230	342.445	0.006	CTL	PD:AHTD STD. MON STAMPED PN:18
19	277255.8953	0.0280	959052.0364	0.0240	328.419	0.006	CTL	PD:AHTD STD. MON STAMPED PN:19
100	274284.7200	0.0000	955935.5607	0.0000	312.301	0.000	GPS	PD:AHTD GPS 750015
101	275477.9891	0.0000	957314.0279	0.0000	318.861	0.004	GPS	PD:AHTD GPS 750015A
102	285740.8524	0.0000	962597.1164	0.0000	347.173	0.000	GPS	PD:AHTD GPS 750016
103	285873.0300	0.0000	960890.2722	0.0000	347.446	0.000	GPS	PD:AHTD GPS 750016A
900	275094.0253	-99999.0000	956947.5963	-99999.0000	315.272	0.003	TBM	PD:CHISLED SQUARE S. SIDE OF HDWALL
901	276336.7367	-99999.0000	958627.3745	-99999.0000	326.347	0.005	TBM	PD:BOLT IN FENCE POST
902	277007.7672	-99999.0000	958911.3669	-99999.0000	323.447	0.006	TBM	PD:3"BM IN HDWALL WEST SIDE OF HWY 7
903	277653.1077	-99999.0000	959061.2303	-99999.0000	331.196	0.006	TBM	PD:CUT SQ. WEST END OF N. DBL RCP
904	278144.0039	-99999.0000	959189.2894	-99999.0000	335.864	0.006	TBM	PD:3"BM IN HDWALL WEST SIDE OF HWY7

POINT NAME	STATION	NORTHING	EASTING
8000	POT	100+00.00	279193.45563
8001	PC	103+29.28	279192.97338
8002	CC		273463.40157
8003	PT	106+11.95	279185.58813
8004	PC	108+42.76	279173.86806
8005	CC		284896.05462
8006	PT	109+65.29	279168.95516
8007	PC	122+08.19	279132.40118
8008	CC		256223.99514
8009	PT	127+17.65	279111.75918
8010	PC	134+74.55	279072.68686
8011	CC		329006.02412
8012	PT	138+93.07	279052.83189
8013	PC	140+53.30	279045.90065
8014	CC		301942.76554
8015	PT	153+37.41	279026.31016
8016	PC	154+77.74	279028.10026
8017	CC		269028.91385
8018	PT	158+60.54	279025.65680
8019	PC	163+47.42	279013.23118
8020	CC		275514.37115
8021	PT	168+50.11	278964.42077
8022	PC	169+50.00	278947.60538

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8" x 24" Rebar with 2" Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN:####" & "Job#####". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:####", "Job#####", & "PS#####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.
 **Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5" Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. #####".
 SX, SY, SZ - Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX, SY, and SZ for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.
 Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techniques.
 All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

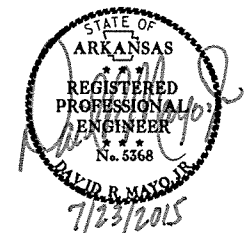
Positional Accuracy: Horizontal - GPS (1.0 cm ± 1PPM) PN: 100-103
 Horizontal - Primary (2.0 cm ± 20PPM): PN: 1-19
 Horizontal - Secondary (3 cm ± 50PPM): PN: N/A
 Vertical - NGS 1st Order (±4mm x vdist in km) PN: N/A
 Vertical - NGS 2nd Order (±6mm x vdist in km) PN: NGS POINT E47
 Vertical - NGS 3rd Order (±8mm x vdist in km) PN: N/A

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0301-North Zone
 The adjustment year is based on metadata in the SDMS Control file
 A project CAF of: 0.99995566 has been used to compute the above coordinates.
 The project CAF shall have a minimum precision of 9 digits right of the decimal.
 This CAF is intended for use within the project limits only.
 Grid Distance = Ground Distance X CAF
 If Coordinates are listed as Ground:
 To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
 If Coordinates are listed as Grid:
 To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM:
 A project Elevation Factor of: 0.999983514 has been computed and incorporated in the above CAF.
 This is based on the average elevation of the project: 344.652 Feet
 3-Wire Leveling techniques have been used to establish elevations on
 Points: 1-19, 100-103, 900-904
 From NGS BM: E47

Basis of Bearing: Grid Bearings based on GPS Points 230020-230026
 Convergence Angle is: 00 41 42.88 LEFT at PN: 8
 LT: 35-05-38.80 N LG: 093-14-12.34 W
 Grid Azimuth = Astronomical Azimuth - Convergence Angle

Note: Information in Italics is for clarification only. It is not to be part of the actual Control Table or Control Detail Sheets.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	18	64
				4 SURVEY CONTROL DETAIL				

C CONSTRUCTION
 PI = 104+70.65
 Δ = 2°49'36.16" RT.
 D = 1°00'00.00"
 T = 141.36'
 L = 282.67'
 PC = 103+29.28
 PT = 106+11.95
 NO SUPERELEVATION

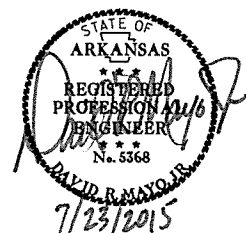
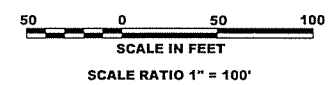
C CONSTRUCTION
 PI = 109+04.03
 Δ = 1°13'31.05" LT.
 D = 1°00'00.0"
 T = 61.27'
 L = 122.53'
 PC = 108+42.76
 PT = 109+65.29
 NO SUPERELEVATION

C CONSTRUCTION
 PI = 124+62.93
 Δ = 1°16'25.14" RT.
 D = 0°15'00.0"
 T = 254.74'
 L = 509.46'
 PC = 122+08.19
 PT = 127+27.65
 NO SUPERELEVATION

BEGIN JOB FA7518 STA. 100+00.00
BEGIN PARTICIPATING SECTION

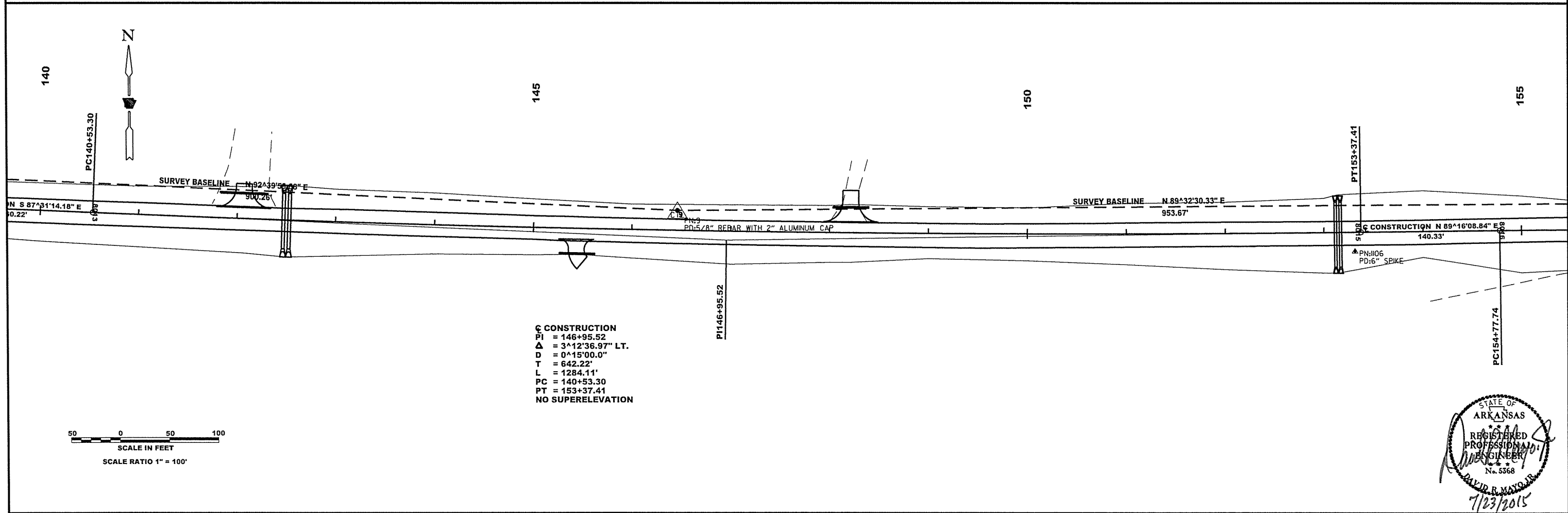
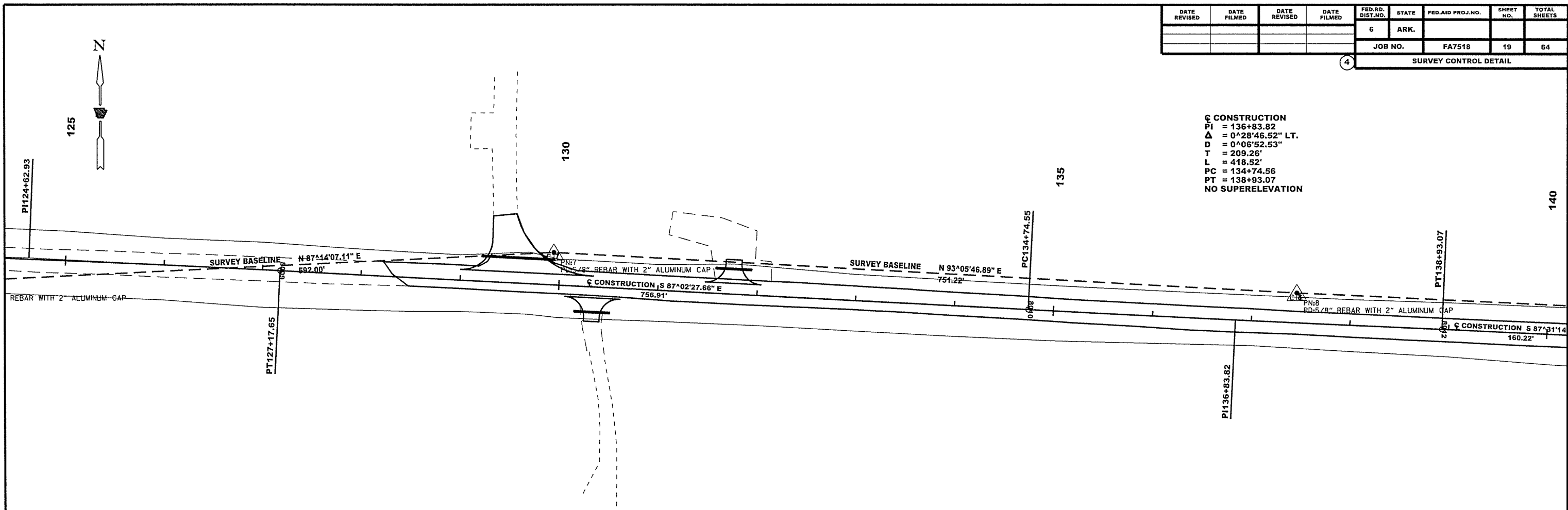
LAND TIE

S 85°29'43.84" E 1076.02'
 S 89°54'57.91" E 1076.02'
 203 1" PIPE, SC 10;11;14;15/
 (T5N R21W) LAND TIE

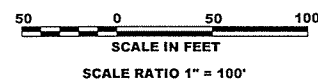


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		19	64
				JOB NO.		FA7518		
				4 SURVEY CONTROL DETAIL				

§ CONSTRUCTION
 PI = 136+83.82
 Δ = 0°28'46.52" LT.
 D = 0°06'52.53"
 T = 209.26'
 L = 418.52'
 PC = 134+74.56
 PT = 138+93.07
 NO SUPERELEVATION



§ CONSTRUCTION
 PI = 146+95.52
 Δ = 3°12'36.97" LT.
 D = 0°15'00.0"
 T = 642.22'
 L = 1284.11'
 PC = 140+53.30
 PT = 153+37.41
 NO SUPERELEVATION

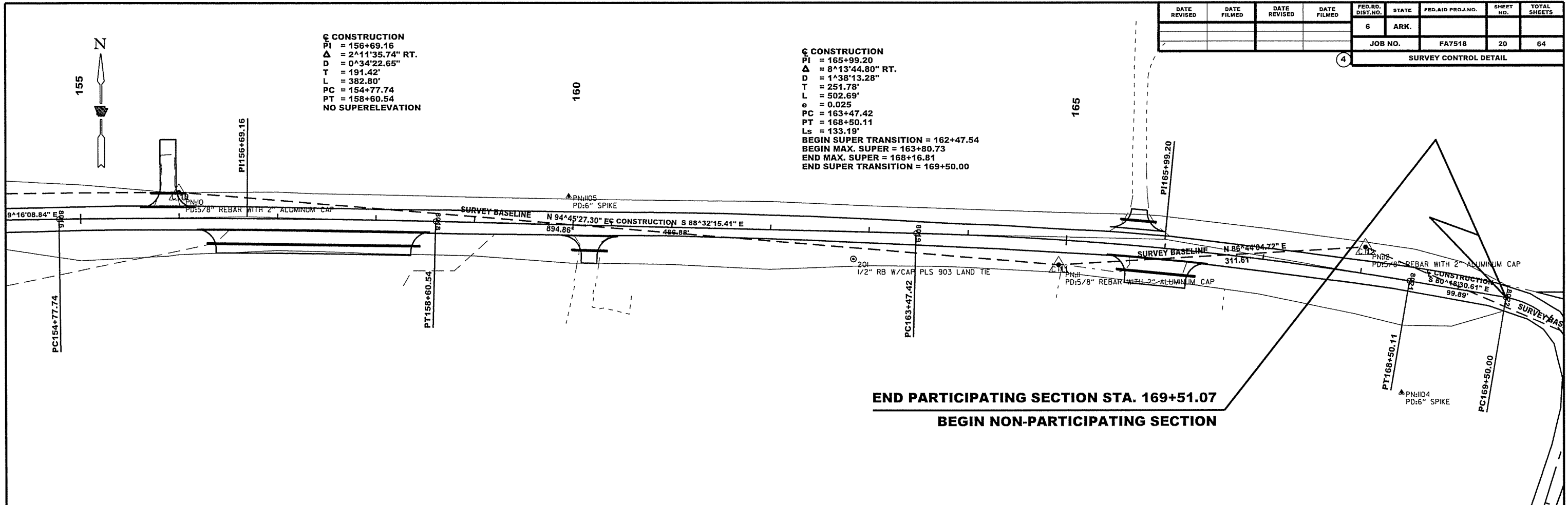


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	20	64

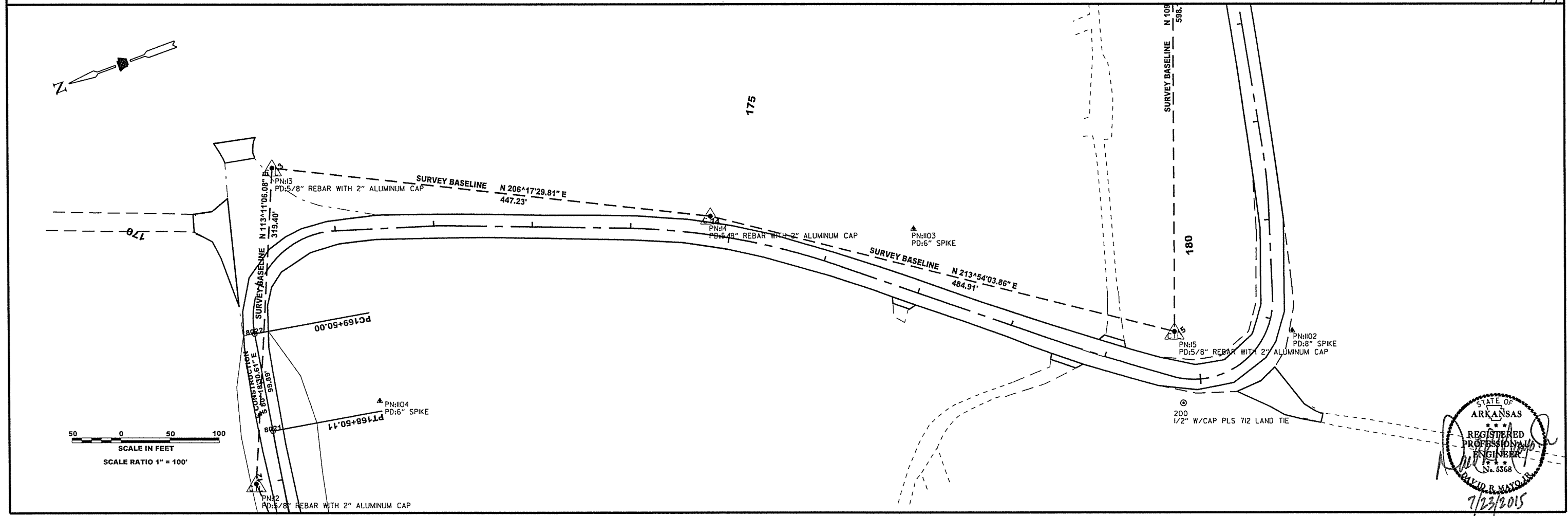
4 SURVEY CONTROL DETAIL

C CONSTRUCTION
 PI = 156+69.16
 Δ = 2°11'35.74" RT.
 D = 0°34'22.65"
 T = 191.42'
 L = 382.80'
 PC = 154+77.74
 PT = 158+60.54
 NO SUPERELEVATION

C CONSTRUCTION
 PI = 165+99.20
 Δ = 8°13'44.80" RT.
 D = 1°38'13.28"
 T = 251.78'
 L = 502.69'
 e = 0.025
 PC = 163+47.42
 PT = 168+50.11
 Ls = 133.19'
 BEGIN SUPER TRANSITION = 162+47.54
 BEGIN MAX. SUPER = 163+80.73
 END MAX. SUPER = 168+16.81
 END SUPER TRANSITION = 169+50.00



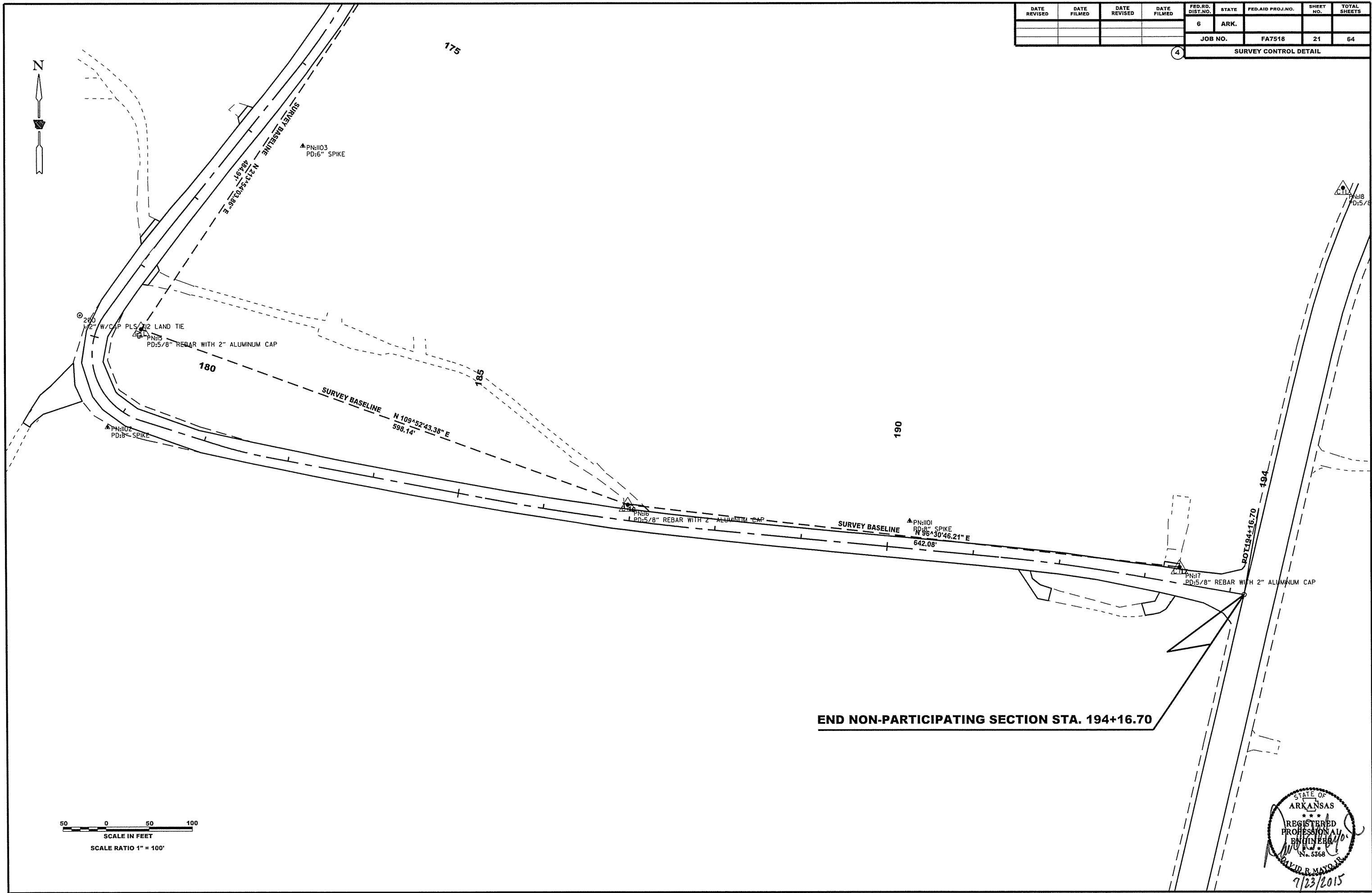
END PARTICIPATING SECTION STA. 169+51.07
BEGIN NON-PARTICIPATING SECTION



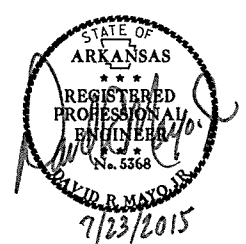
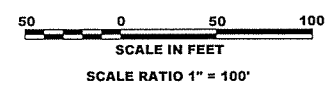
0 50 100
 SCALE IN FEET
 SCALE RATIO 1" = 100'

STATE OF ARKANSAS
 REGISTERED PROFESSIONAL ENGINEER
 No. 5368
 DAVID B. MAYO, JR.
 7/23/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	21	64
				4 SURVEY CONTROL DETAIL				



END NON-PARTICIPATING SECTION STA. 194+16.70



STA. 102+59 INSTALL
18" X 46" PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 45 CU. YDS.

STA. 102+19
42" X 130" C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 102+36
42" X 101" C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

CONSTRUCTION
PI = 104+70.65
Δ = 2°49'36.16" RT.
D = 1'00'00.00"
T = 141.36'
L = 282.67'
PC = 103+29.28
PT = 106+11.95
NO SUPERELEVATION

CONSTRUCTION
PI = 109+04.03
Δ = 1°13'31.05" LT.
D = 1'00'00.00"
T = 61.27'
L = 122.53'
PC = 108+42.76
PT = 109+65.29
NO SUPERELEVATION

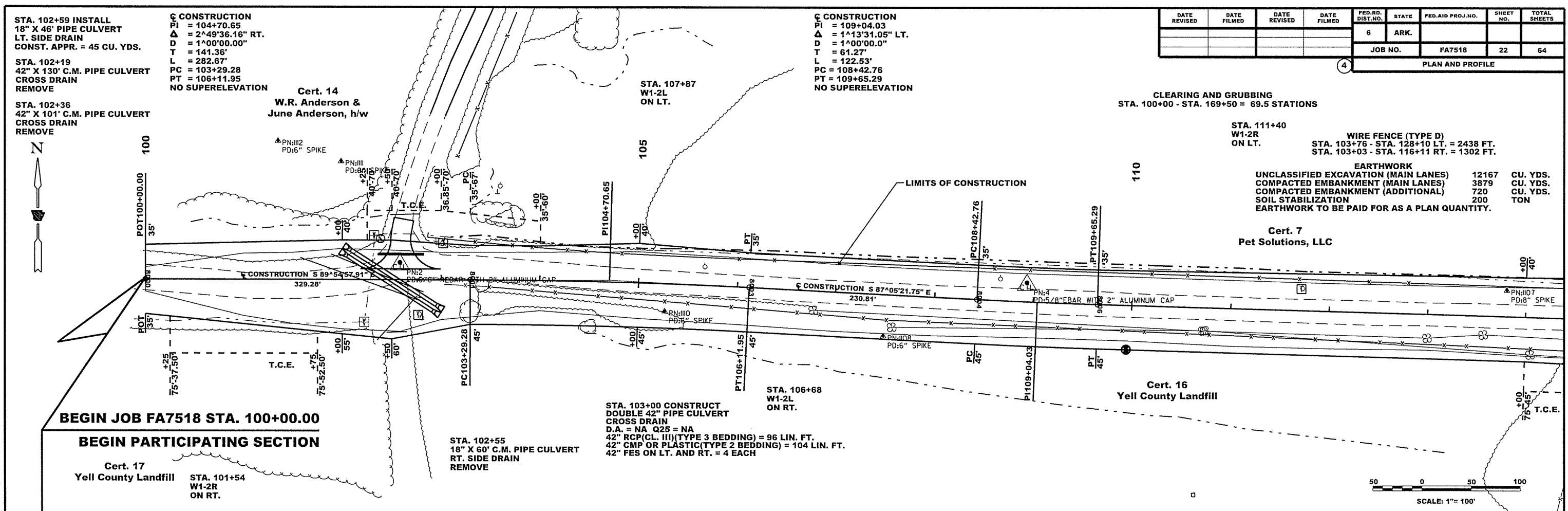
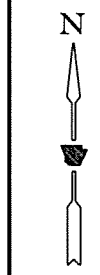
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. FA7518							22	64

CLEARING AND GRUBBING
STA. 100+00 - STA. 169+50 = 69.5 STATIONS

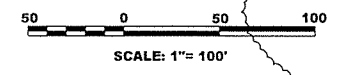
STA. 111+40
W1-2R
ON LT.

WIRE FENCE (TYPE D)
STA. 103+76 - STA. 128+10 LT. = 2438 FT.
STA. 103+03 - STA. 116+11 RT. = 1302 FT.

EARTHWORK
UNCLASSIFIED EXCAVATION (MAIN LANES) 12167 CU. YDS.
COMPACTED EMBANKMENT (MAIN LANES) 3879 CU. YDS.
COMPACTED EMBANKMENT (ADDITIONAL) 720 CU. YDS.
SOIL STABILIZATION 200 TON
EARTHWORK TO BE PAID FOR AS A PLAN QUANTITY.

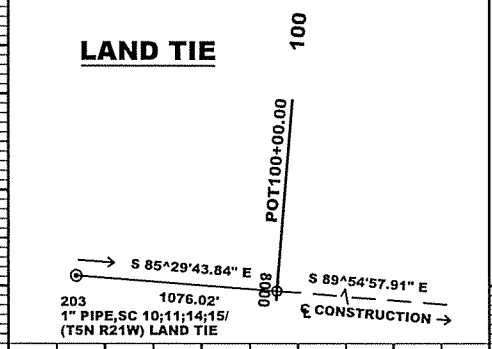


BEGIN JOB FA7518 STA. 100+00.00
BEGIN PARTICIPATING SECTION

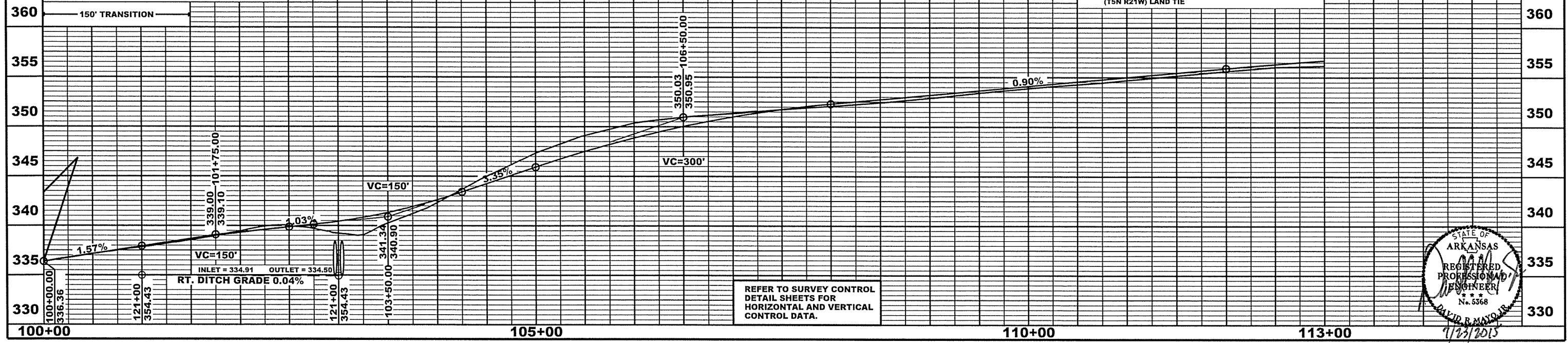


TRAFFIC CONTROL DEVICES	
G20-1 STA. 100+00 STA. 194+17	- RT. (1 SIGN) = 10 SQ. FT. - LT. (1 SIGN) = 10 SQ. FT.
G20-2 STA. 100+00 STA. 194+17	- LT. (1 SIGN) = 8 SQ. FT. - RT. (1 SIGN) = 8 SQ. FT.
W20-1 STA. 85+00 (1500) STA. 90+00 (1000) STA. 95+00 (500) STA. 102+59 (NORTH AHEAD) STA. 170+15 (NORTH AHEAD)	- RT. (1 SIGN) = 16 SQ. FT. - RT. (1 SIGN) = 16 SQ. FT. - RT. (1 SIGN) = 16 SQ. FT. - LT. (1 SIGN) = 16 SQ. FT. - LT. (1 SIGN) = 16 SQ. FT.
TRAFFIC DRUMS ENTIRE JOB	- 50 DRUMS

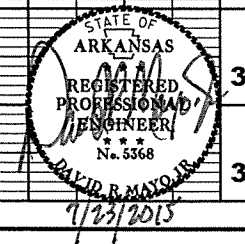
WIRE FENCE REMOVED	
STA. 103+76 - STA. 128+10 LT. =	2437'
STA. 103+03 - STA. 116+11 RT. =	1330'



LEGEND	
○	POWER POLE
◇	COMBINATION POLE
⊕	POLE W/GUY
⊞	TELEPHONE RISER
◇	TELEPHONE POLE
U	UNDERGROUND CABLE MKR.
⊗	GAS METER
⊞	WATER VALVE



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



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		23	64
				JOB NO.		FA7518		
				PLAN AND PROFILE				



Cert. 7
Pet Solutions, LLC

115

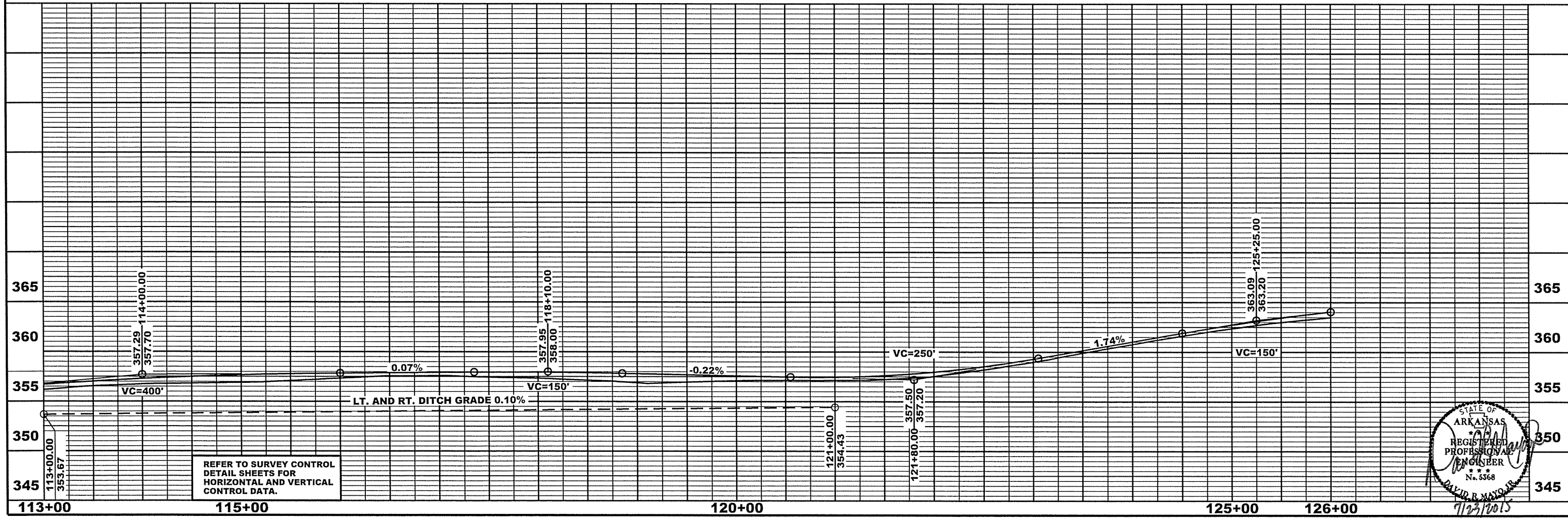
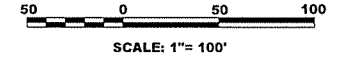
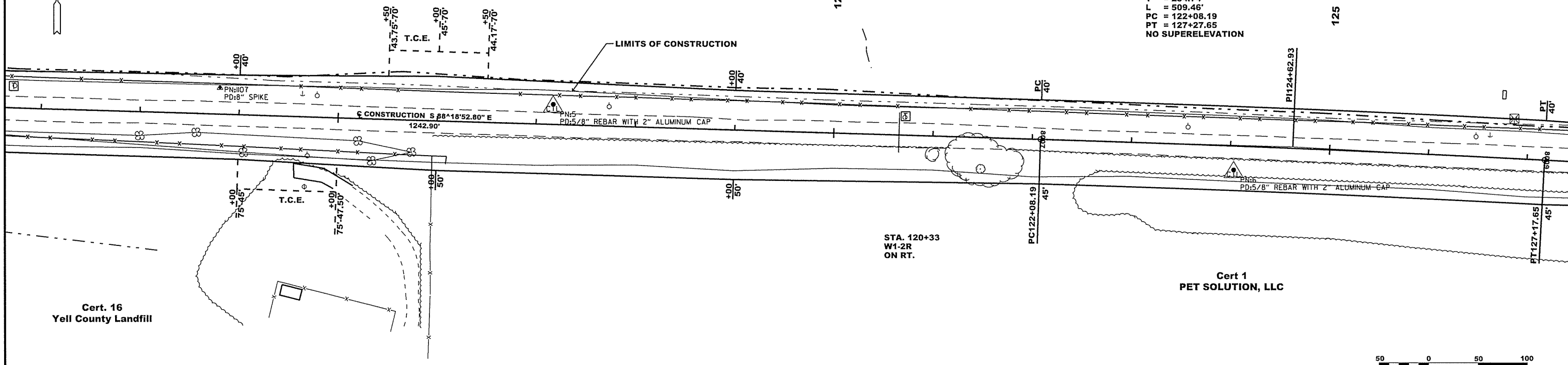
STA. 120+66
15" X 40" C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

Cert. 7
Pet Solutions, LLC

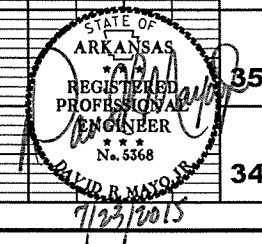
CONSTRUCTION
 PI = 124+62.93
 Δ = 1°16'25.14" RT.
 D = 0°15'00.0"
 T = 254.74'
 L = 509.46'
 PC = 122+08.19
 PT = 127+27.65
 NO SUPERELEVATION

125

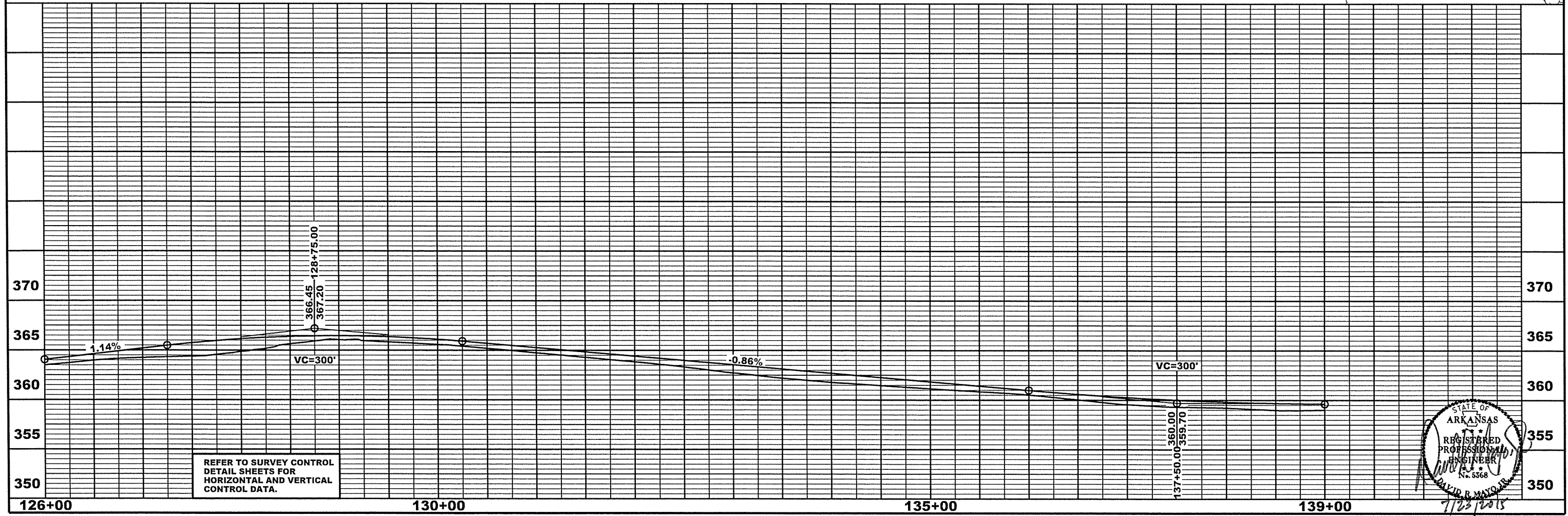
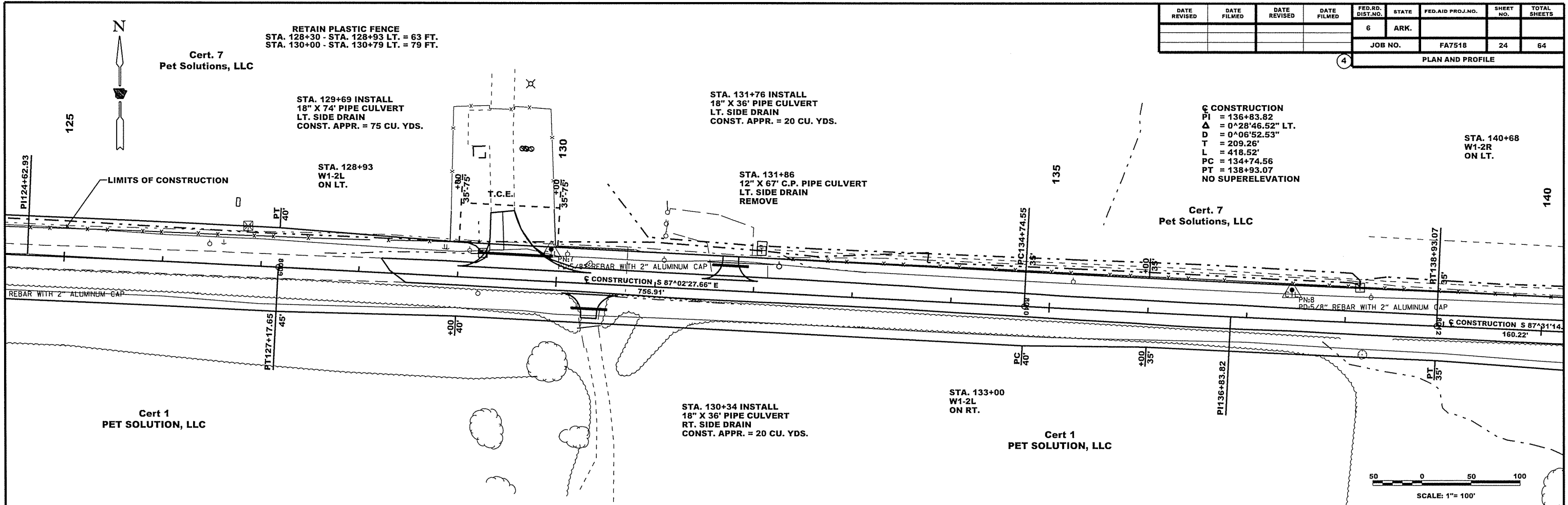
LIMITS OF CONSTRUCTION



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



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	24	64
				PLAN AND PROFILE				



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		25	64
				JOB NO. FA7518				
				PLAN AND PROFILE				

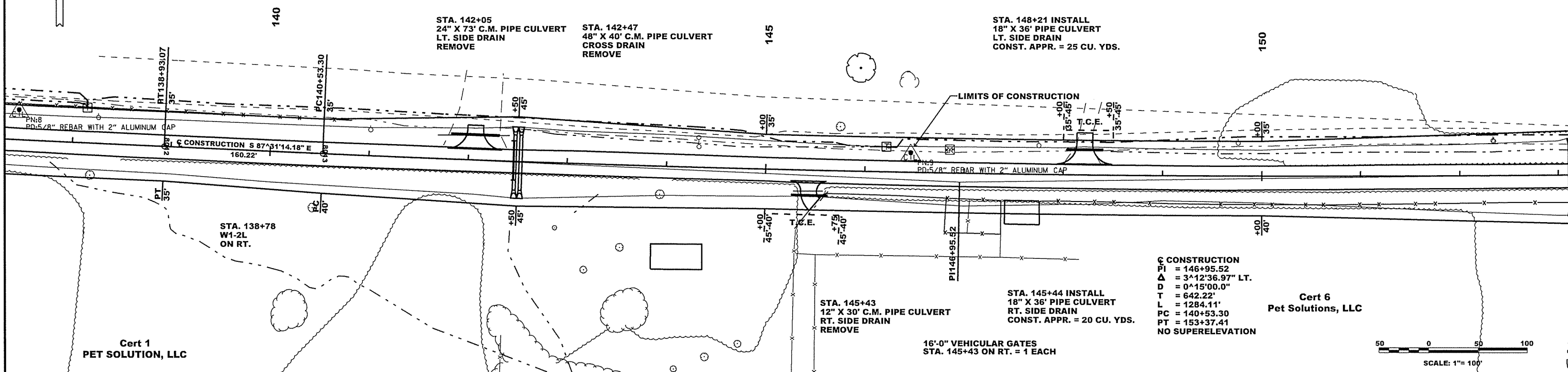


Cert. 7
Pet Solutions, LLC

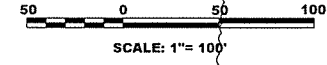
STA. 142+06 INSTALL
18" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 20 CU. YDS.

STA. 142+50 CONSTRUCT
DOUBLE 36" PIPE CULVERT
CROSS DRAIN
D.A. = 54 ACRES Q25 = 127 CFS
36" RCP(CL. III)(TYPE 3 BEDDING) = 112 LIN. FT.
36" CMP OR PLASTIC(TYPE 2 BEDDING) = 122 LIN. FT.
36" FES ON LT. AND RT. = 4 EACH

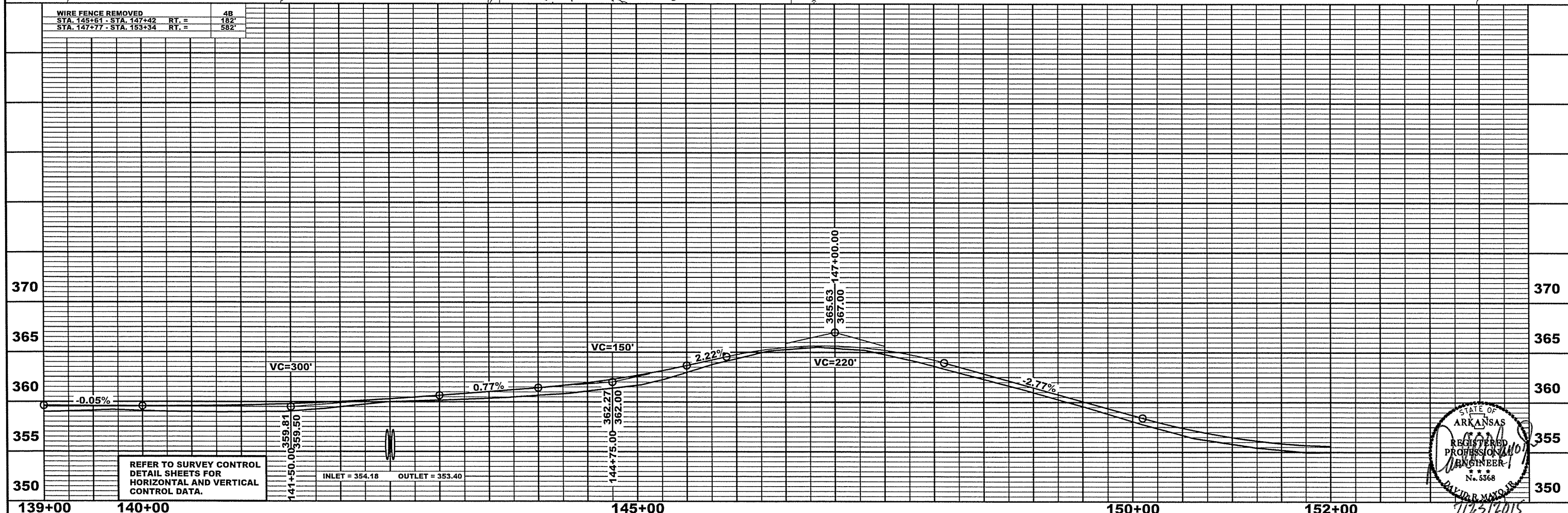
WIRE FENCE (TYPE D)
STA. 145+61 - STA. 147+42 RT. = 181 FT.
STA. 147+77 - STA. 153+34 RT. = 557 FT.



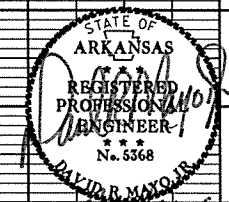
∅ CONSTRUCTION
 PI = 146+95.52
 Δ = 3°12'36.97" LT.
 D = 0°15'00.0"
 T = 642.22'
 L = 1284.11'
 PC = 140+53.30
 PT = 153+37.41
 NO SUPERELEVATION



WIRE FENCE REMOVED
 STA. 145+61 - STA. 147+42 RT. = 181'
 STA. 147+77 - STA. 153+34 RT. = 557'

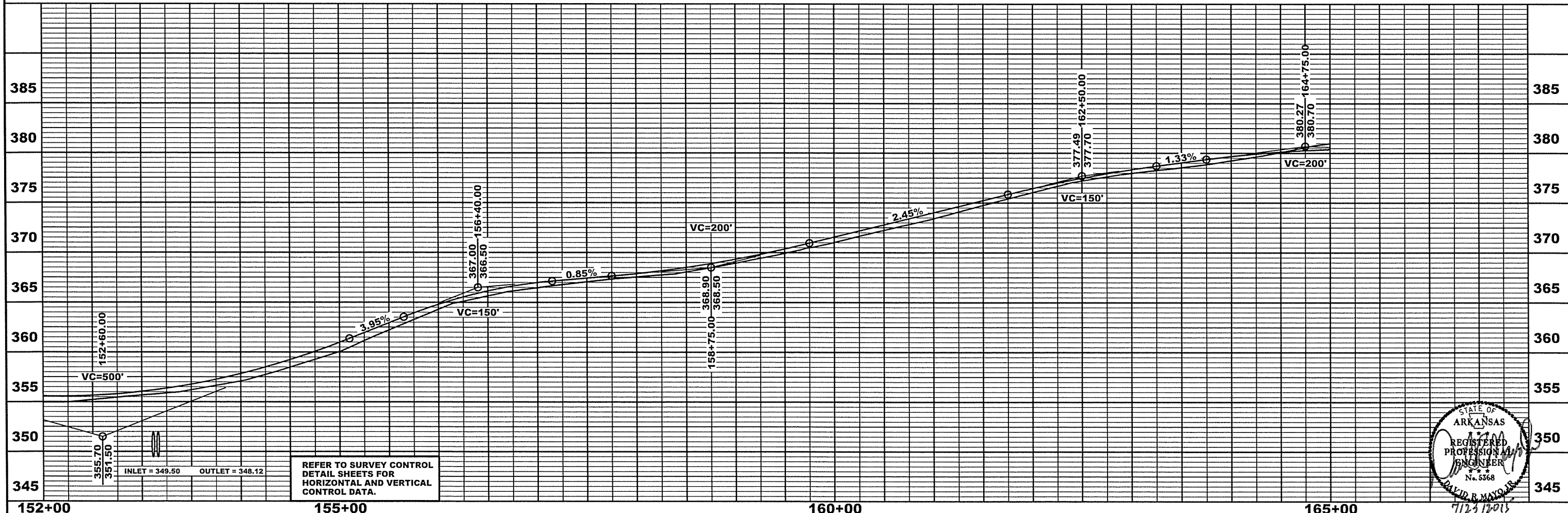
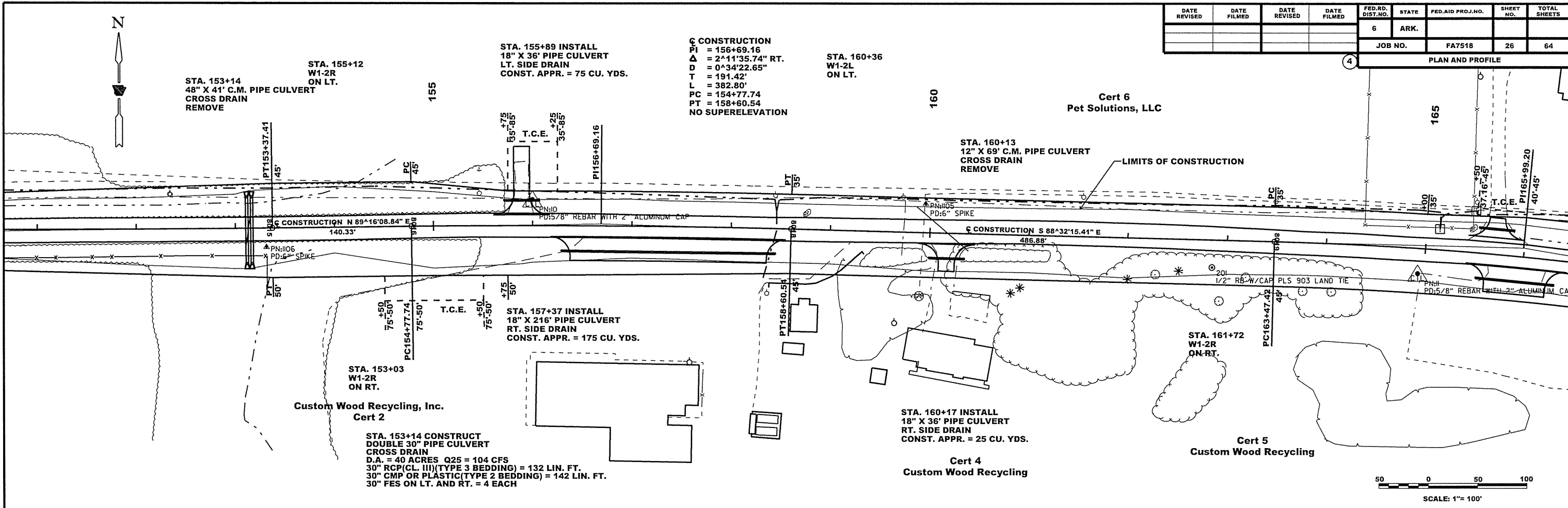


REFER TO SURVEY CONTROL
DETAIL SHEETS FOR
HORIZONTAL AND VERTICAL
CONTROL DATA.

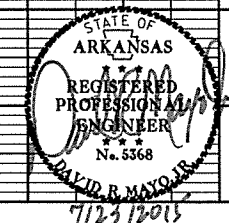


7/23/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	26	64



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



CONSTRUCTION
 PI = 165+99.20
 Δ = 8°13'44.80" RT.
 D = 1°38'13.28"
 T = 251.78'
 L = 502.69'
 e = 0.025
 PC = 163+47.42
 PT = 168+50.11
 Ls = 175'
 BEGIN SUPER TRANSITION = 162+16.17
 BEGIN MAX. SUPER = 163+91.17
 END MAX. SUPER = 167+75.00
 END SUPER TRANSITION = 169+50.00

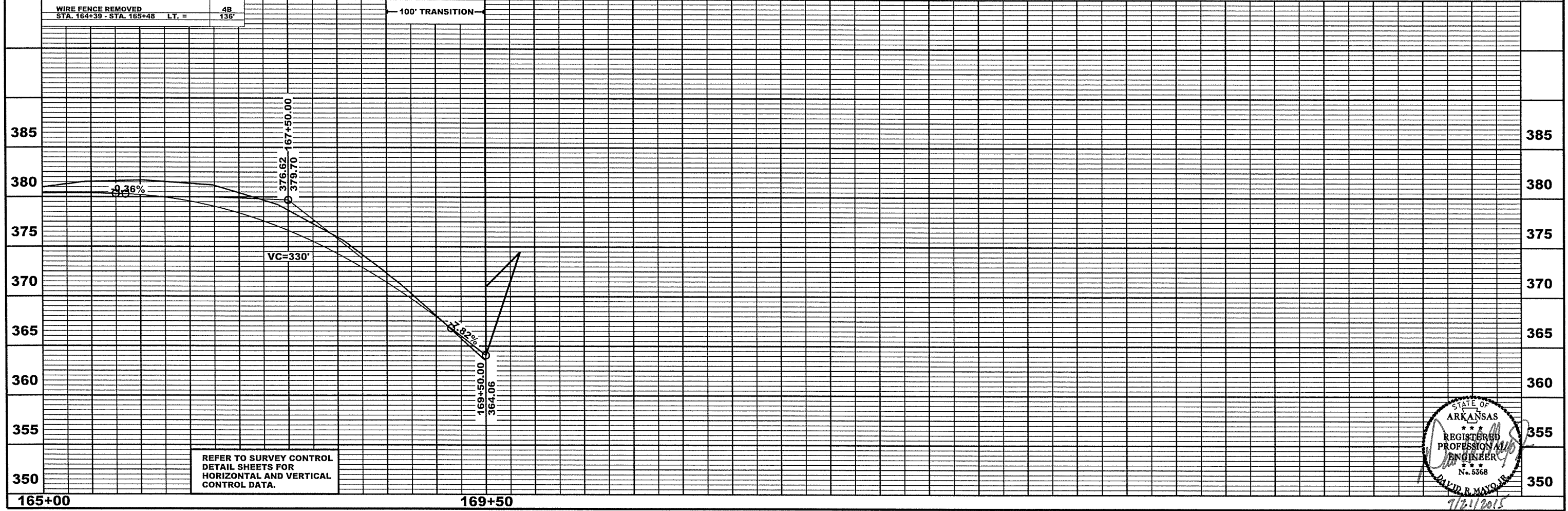
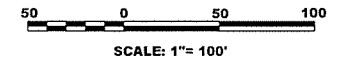
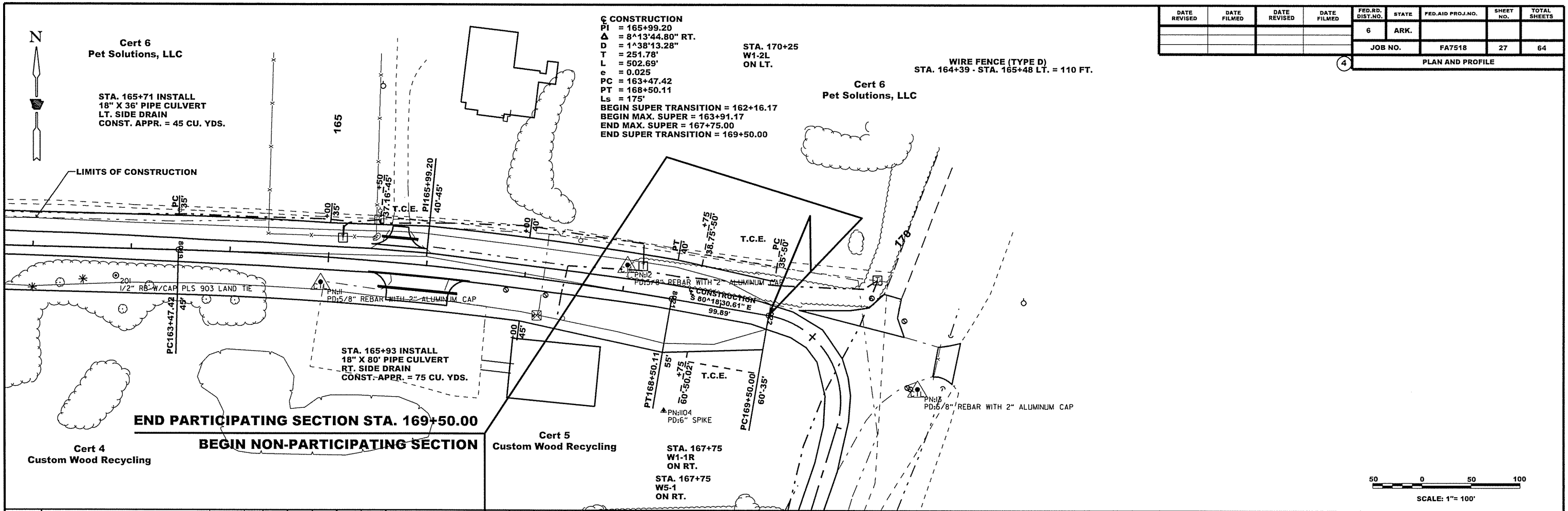
STA. 170+25
 W1-2L
 ON LT.

WIRE FENCE (TYPE D)
 STA. 164+39 - STA. 165+48 LT. = 110 FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		27	64

4

PLAN AND PROFILE



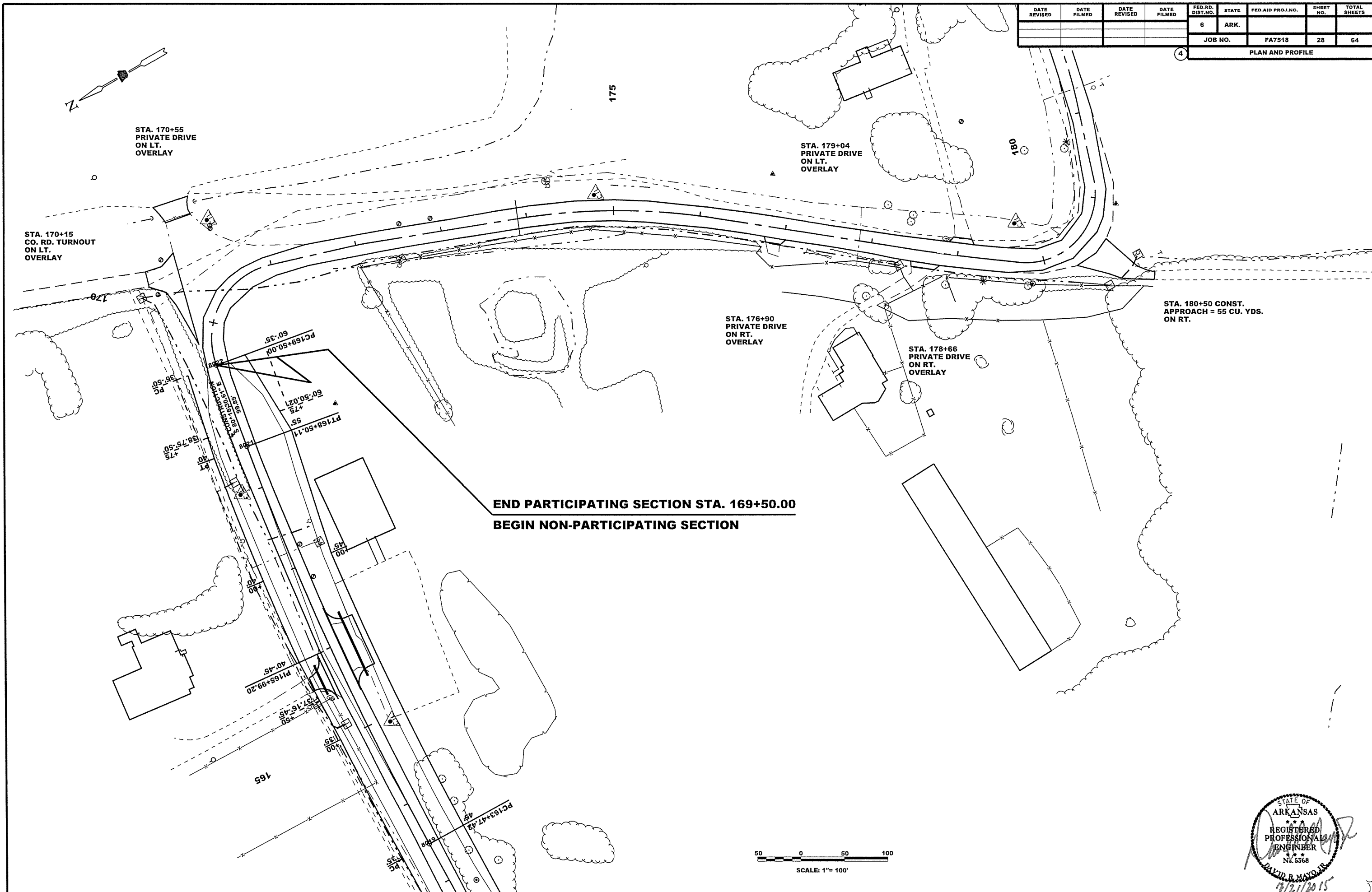
REFER TO SURVEY CONTROL
 DETAIL SHEETS FOR
 HORIZONTAL AND VERTICAL
 CONTROL DATA.



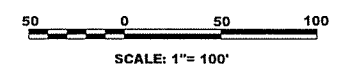
7/21/2015

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	28	64	

4 PLAN AND PROFILE

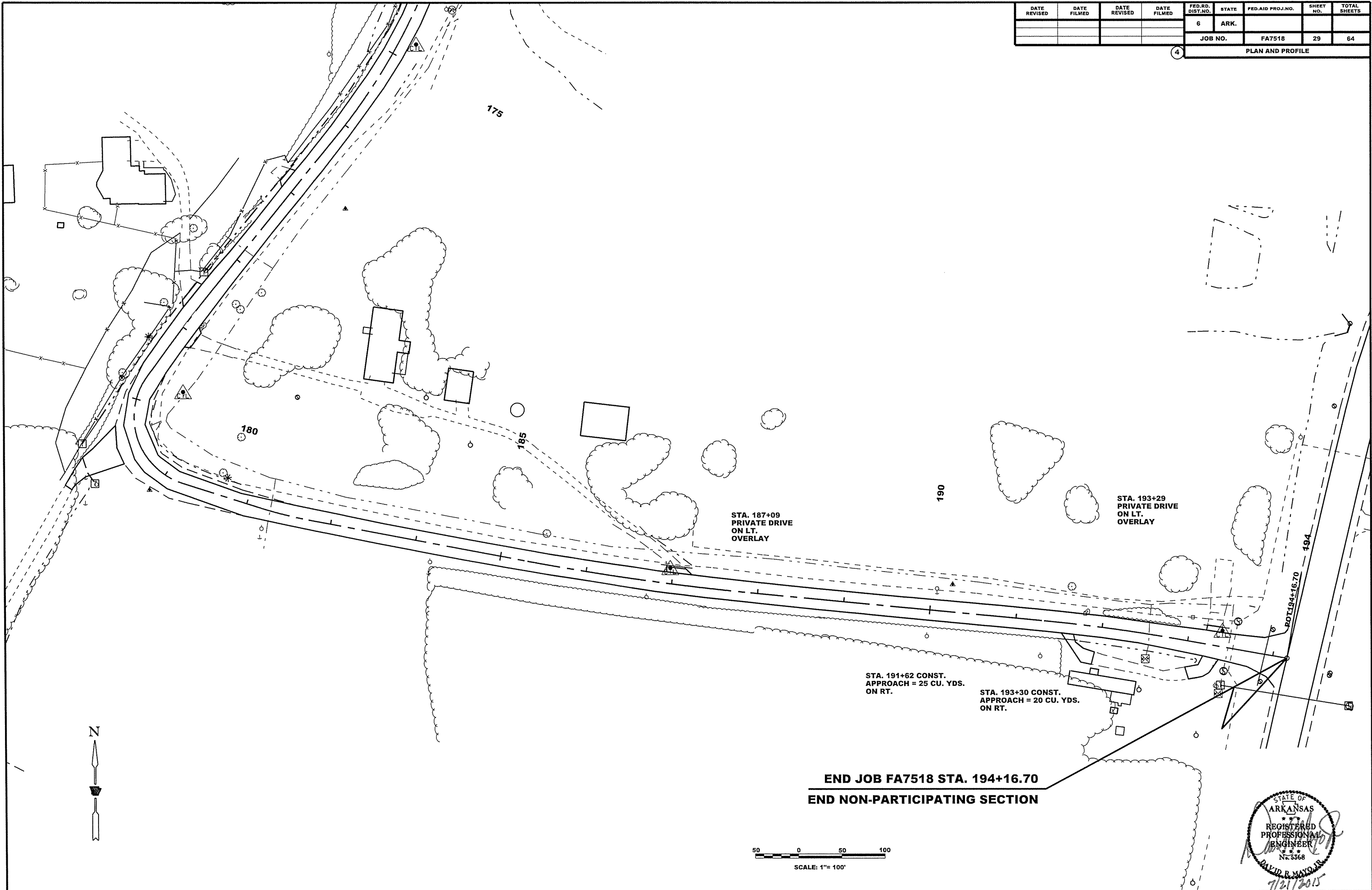


END PARTICIPATING SECTION STA. 169+50.00
BEGIN NON-PARTICIPATING SECTION

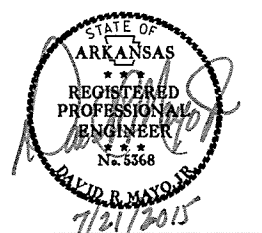
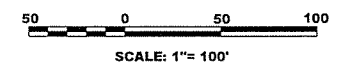


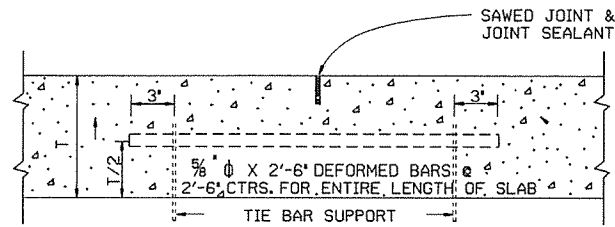
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA7518	29	64

4 PLAN AND PROFILE



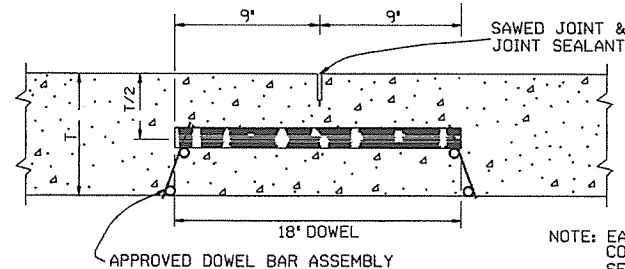
END JOB FA7518 STA. 194+16.70
END NON-PARTICIPATING SECTION





LONGITUDINAL JOINT

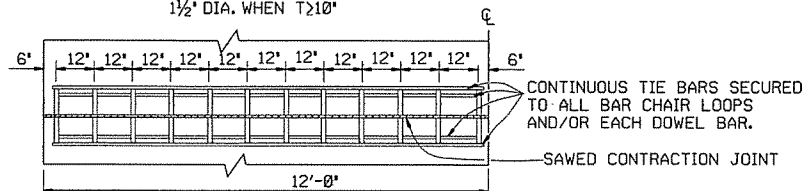
NOTE: THE TIE BAR SUPPORT SHOWN ABOVE MAY BE ELIMINATED IF OTHER APPROVED METHODS FOR PLACING AND SUPPORTING THE TIE BARS ARE PROVIDED.
TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.



ROUND STEEL BAR DOWEL

1/4" DIA. WHEN T < 10'
1/2" DIA. WHEN T > 10'

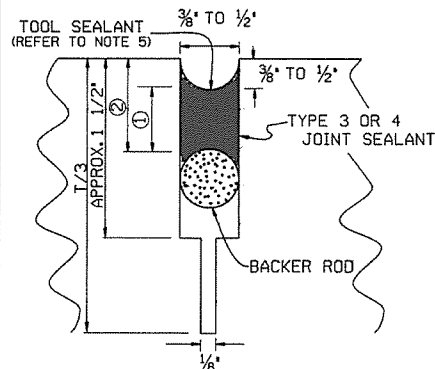
NOTE: EACH DOWEL TO BE COATED ACCORDING TO SECTION 502 OF THE STANDARD SPECIFICATIONS.



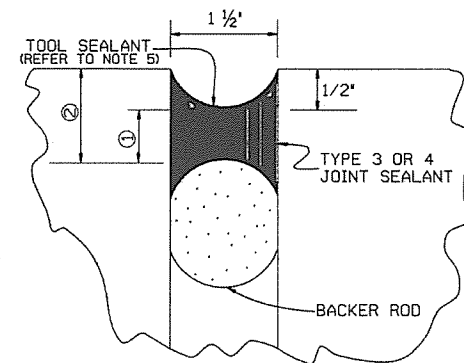
ONE-HALF 24' PAVEMENT
12 DOWELS
PLAN

NOTE: FOR 20' PAVEMENT USE 20 DOWELS @ 12' CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR.
FOR 15' PAVEMENT USE 15 DOWELS @ 12' CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR.
FOR 26' PAVEMENT USE 26 DOWELS @ 12' CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR.
FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12' CTRS. WITH 6" MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12' DOWEL BAR SPACING

CONTRACTION JOINT DETAILS



DETAIL OF SAWED CONTRACTION JOINT



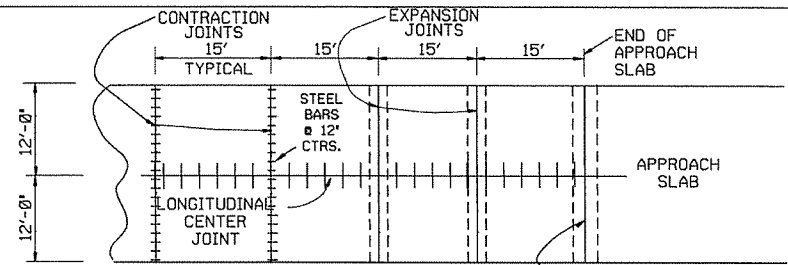
DETAIL OF EXPANSION JOINT

JOINT CONFIGURATION FOR TYPE 3 OR 4 JOINT SEALANT

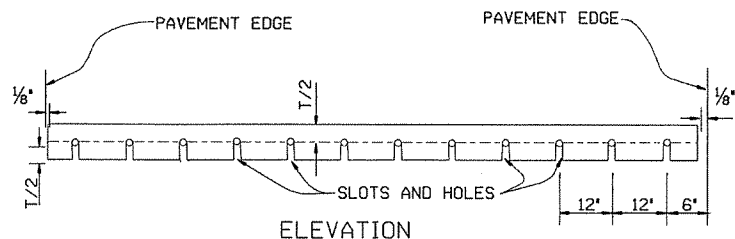
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②	
			INCHES	
1/4	1/4	3/8	1/2	1/2
3/8	1/4	1/2	1/2	1/2
1/2	1/4	5/8	1/2	1/2
5/8	3/8	3/4	3/4	3/4
3/4	3/8	7/8	3/4	3/4
1 1/2	3/4	2	1 1/4	1 1/4

JOINT CONFIGURATION FOR TYPE 5 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②	
			INCHES	
1/4	1/4	3/8	1/2	1/2
3/8	3/8	1/2	1/2	1

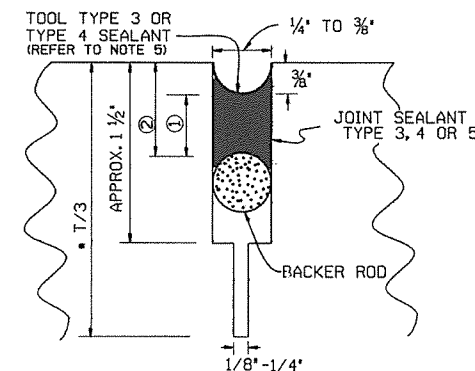


PLAN SHOWING EXPANSION JOINTS AT BRIDGE APPROACH SLABS



ELEVATION

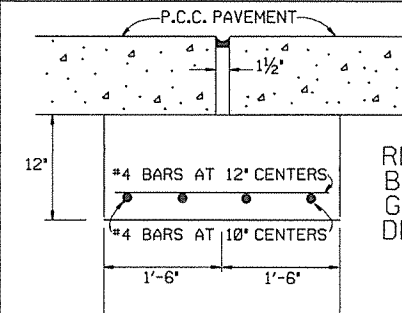
NOTE: ALL DOWEL BARS SHALL CONFORM TO THE DETAILS FOR CONTRACTION JOINTS.



*NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

DETAIL OF SAWED LONGITUDINAL JOINT AND LONGITUDINAL CONSTRUCTION JOINT

DATE	REVISION	DATE FILMED
5-25-06	ADDED GENERAL NOTE 7	
10-9-03	REMOVED TIE BAR COATING & REVISED GENERAL NOTES	
11-16-01	ADDED TOOL SEALANT AND NOTE 5; REVISED NOTE 3	
4-26-96	REVISED CONTRACTION JOINT NOTE	
11-3-94	ADDED NOTE RE: REINF. BARS	
4-1-93	REVISED DOWEL BARS & GEN. NOTES	4-1-93
10-1-92	REVISED DOWEL SPACING	10-1-92
8-15-91	ADDED SPAC FOR CONTR JTS & DEL KEYWAY	
05-24-90	REVISED TIE BAR, DOWEL & JOINT SIZE	
01-25-90	ADDED EXPANSION JOINT	01-25-90
11-30-89	CHANGED T/4+1 TO T/3+1	11-30-89
03-23-89	ALTERED SAWED JOINT & ADDED NOTE	512-03-23-89
07-15-88	REVISED AND REDRAWN	632-07-15-88



DETAIL OF JOINT SUPPORT FOR EXPANSION JOINTS

REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS.

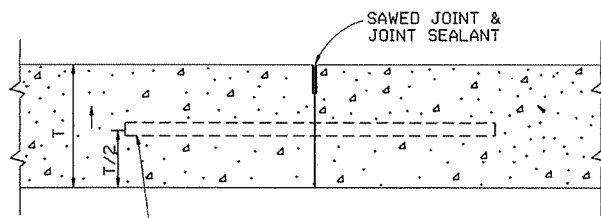
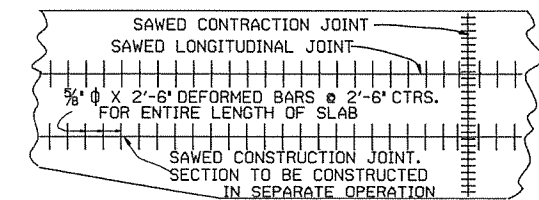
GENERAL NOTES

- *T* DENOTES THICKNESS OF SLAB.
- DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR THE VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS 1/4" WILL BE ALLOWED FOR THE TILT AND SKEW. DOWEL BARS SHALL BE FIELD COATED FOR A MINIMUM DISTANCE OF 2' GREATER THAN HALF THE LENGTH OF THE BAR WITH AN APPROVED GREASE AS A BOND BREAKER JUST PRIOR TO PLACEMENT OF CONCRETE.
- THE EXPANSION JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS 'A', 'S' OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE SPECIFIED IN THE PLANS. PAYMENT FOR ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ON 15' CENTERS.
- TOOLING NOT REQUIRED FOR SELF-LEVELING SILICONE.
- UNLESS OTHERWISE SPECIFIED IN THE PLANS, CONCRETE SHOULDERS SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS SHOWN HEREON. CONTRACTION JOINTS SHALL MATCH CONTRACTION JOINTS IN THE LANES.
- TIE WIRES IN DOWEL BAR ASSEMBLIES SHALL NOT BE CUT PRIOR TO PLACEMENT OF PAVING CONCRETE.

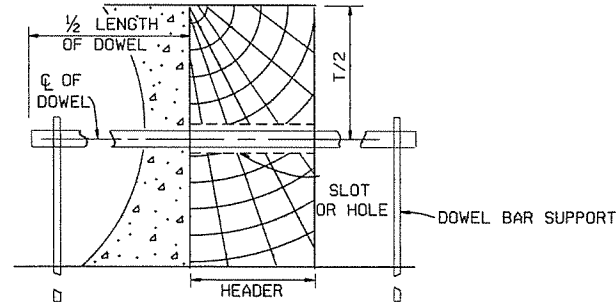
ARKANSAS STATE HIGHWAY COMMISSION

TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)

STANDARD DRAWING CPTJ - 6A

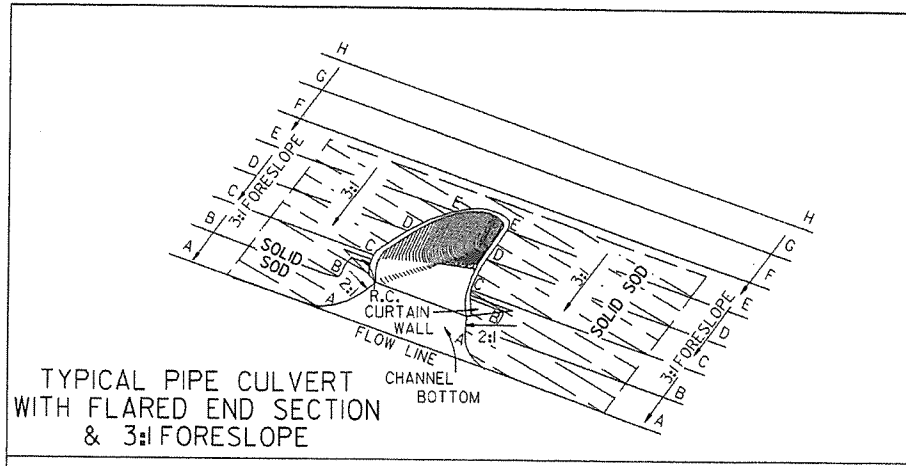


LONGITUDINAL CONSTRUCTION JOINT

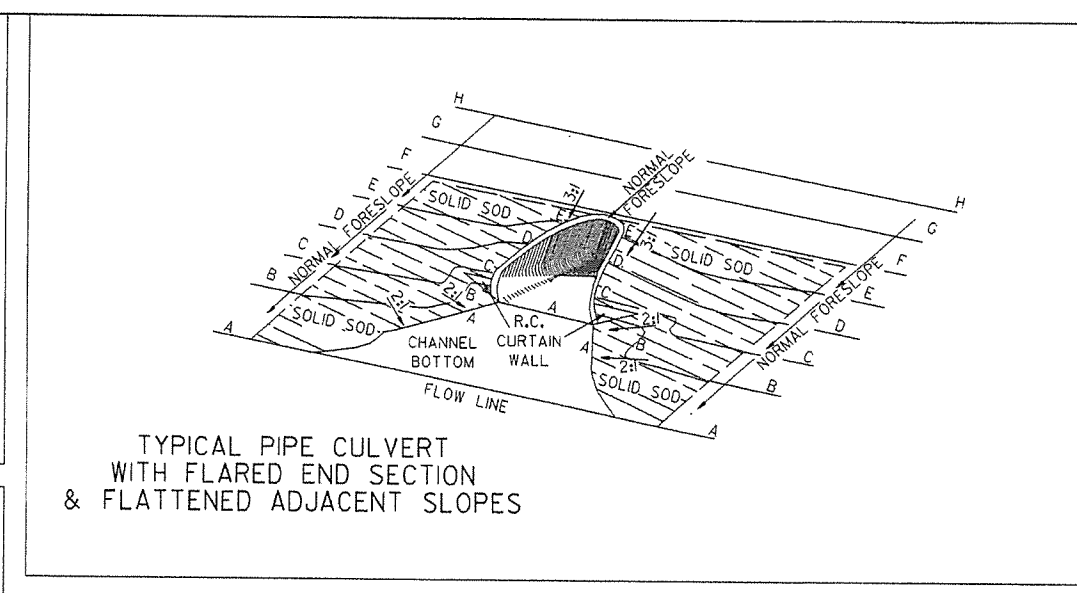


SECTION

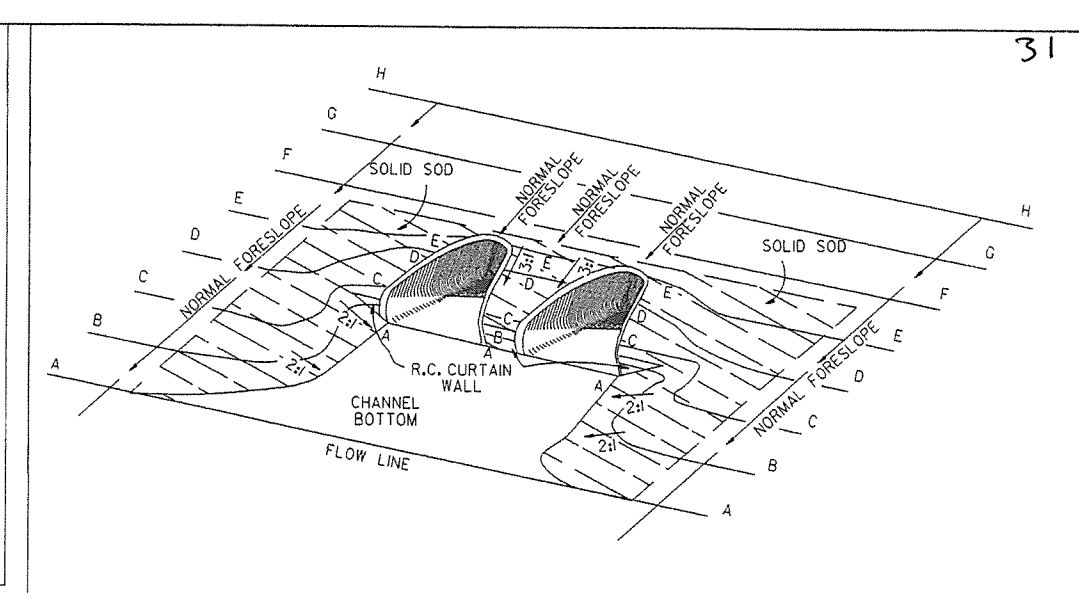
TRANSVERSE CONSTRUCTION JOINT



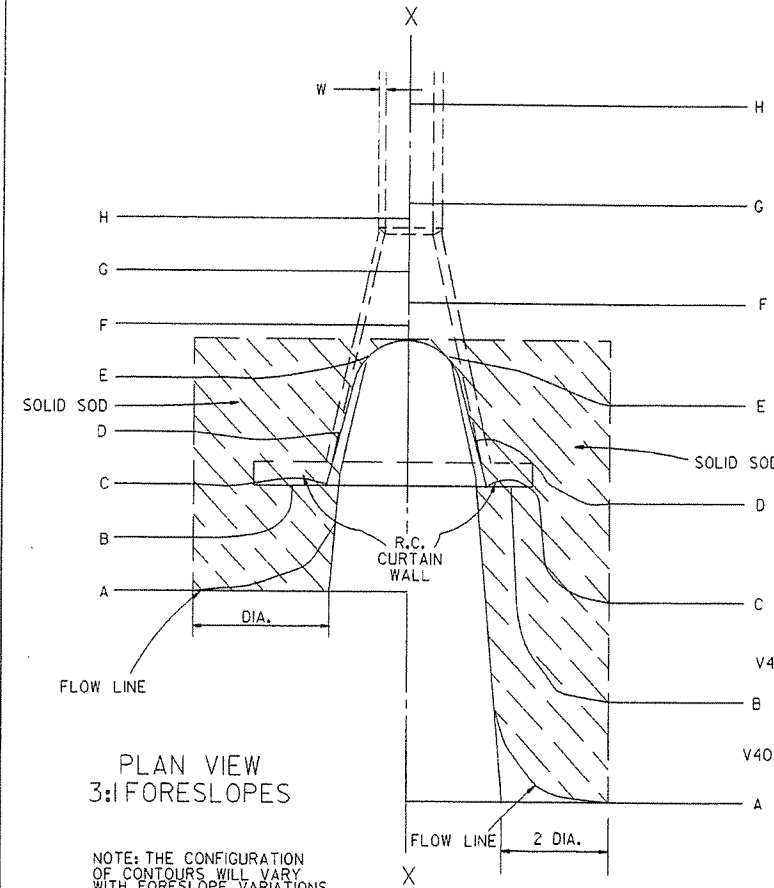
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



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

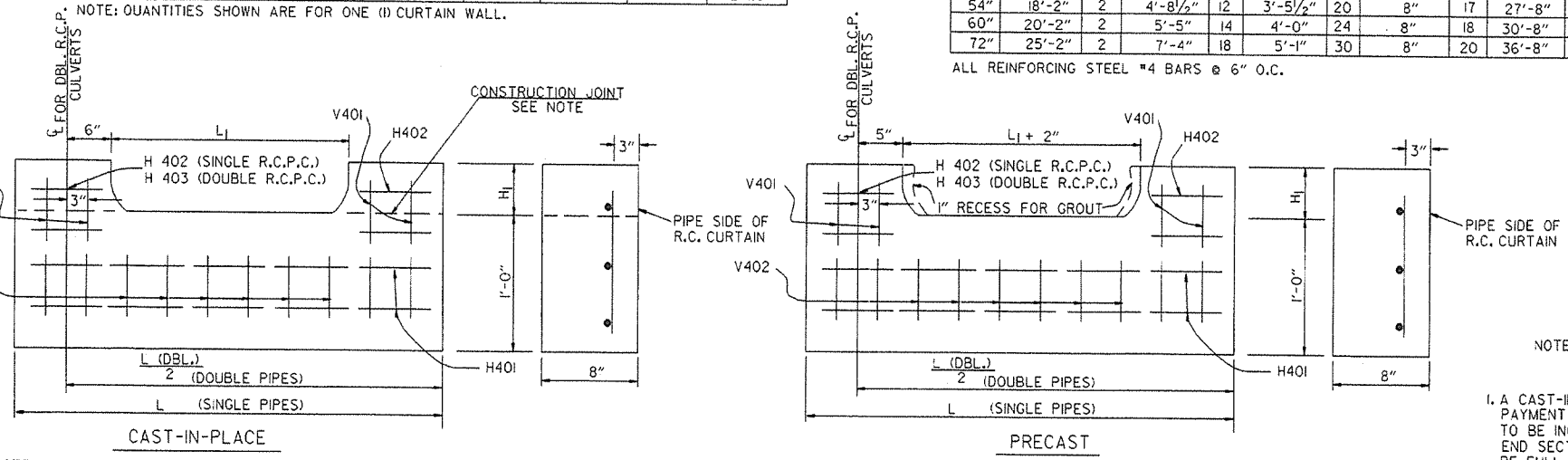
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

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

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



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.

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8 1/2"	12	8"	18
30"	10'-8"	2	2'-4 1/2"	4	1'-11 1/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11 1/2"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9 1/2"	8	2'-9 1/2"	16	8"	15	23'-8"	2	3'-9 1/2"	8	8"	4	2'-9 1/2"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8 1/2"	12	3'-5 1/2"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5 1/2"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

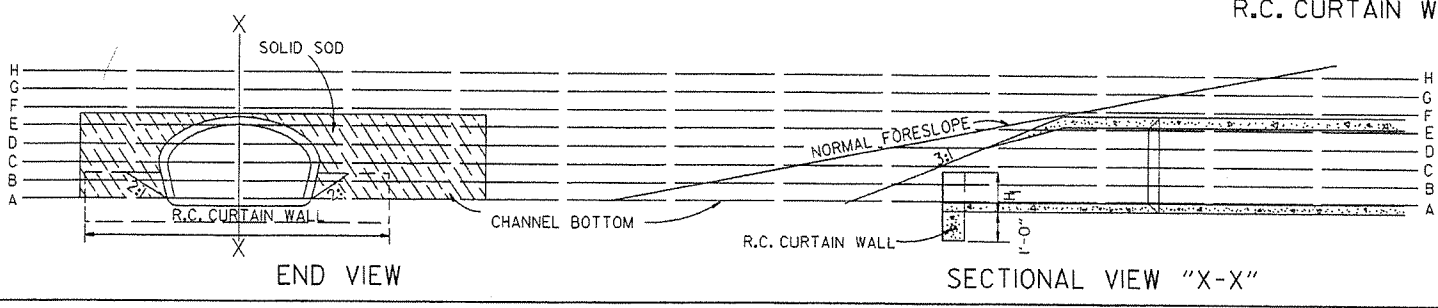
ALL REINFORCING STEEL #4 BARS @ 6" O.C.

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
18"	5	7	12	6	8	13
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 3/4".
 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 W/10 x W/10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

10-18-96	ADDED NOTE TO SOLID SODDING		ARKANSAS STATE HIGHWAY COMMISSION
10-12-95	CORRECTED SPELLING	10-18-96	
11-3-94	ADDED GENERAL NOTE NO. 4		
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.		
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES		
5-15-80	ADDED PRECAST WALL & GENERAL NOTES		
10-2-72	REVISED AND REDRAWN		
DATE	REVISION	FILMED	STANDARD DRAWING FES-1

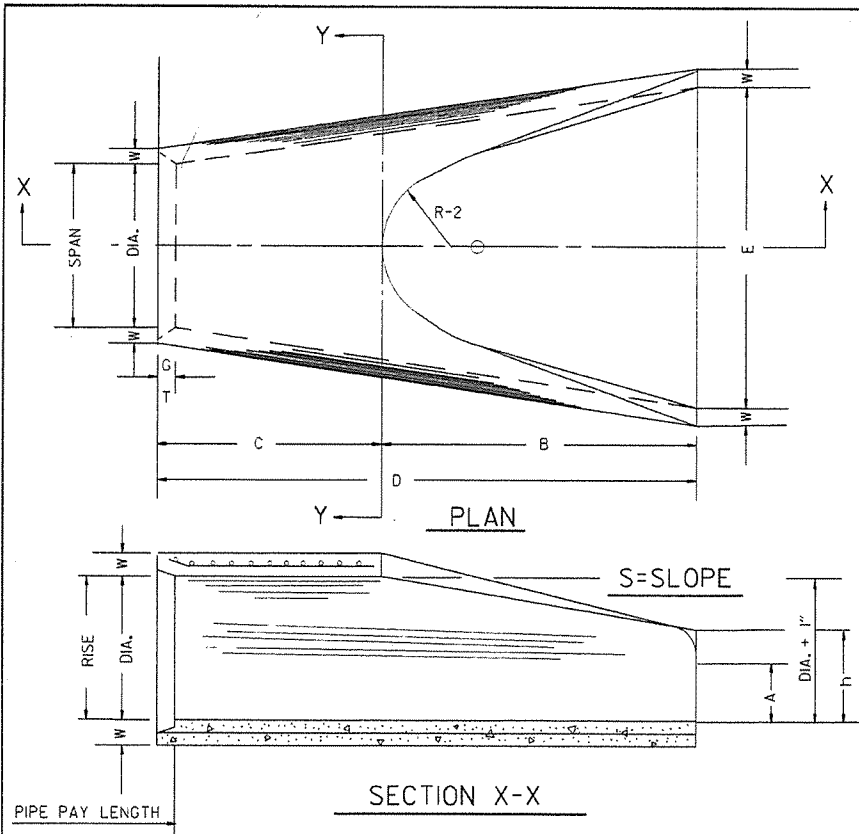
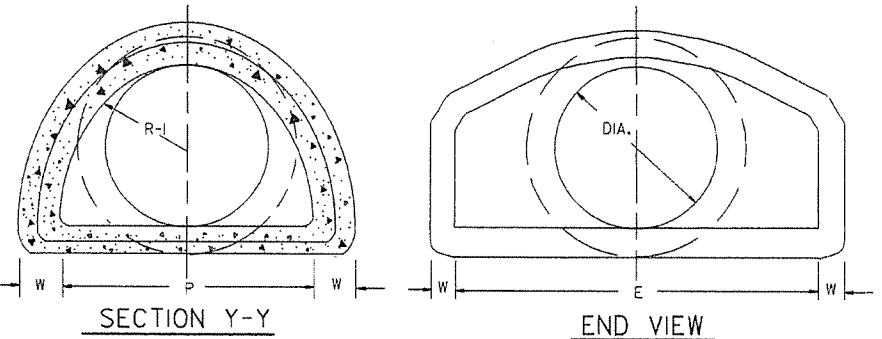


TABLE OF DIMENSIONS

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



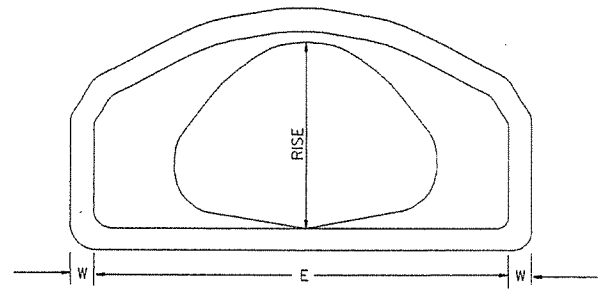
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

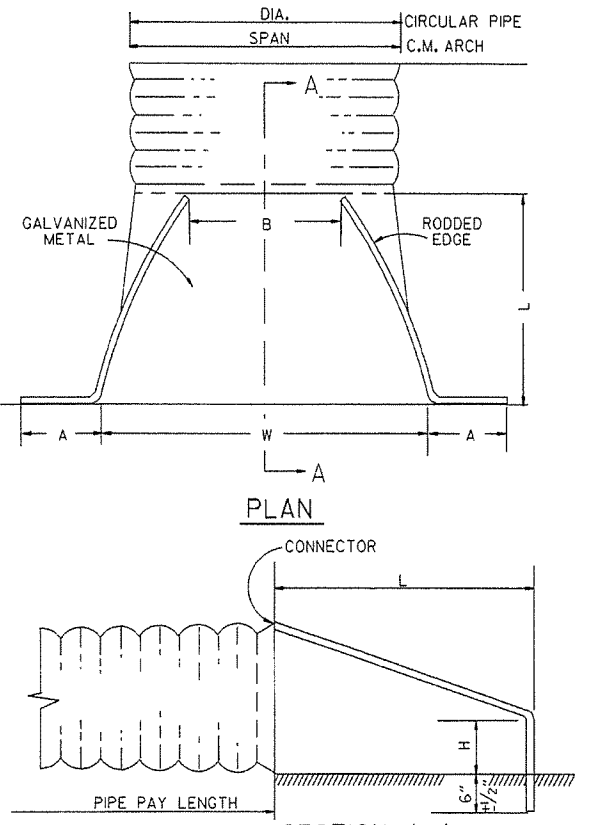
ARCH PIPE

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

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



END VIEW CONCRETE ARCH PIPE

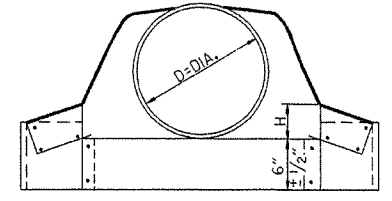


NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

CIRCULAR PIPE

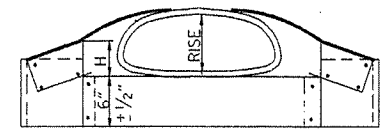
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1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



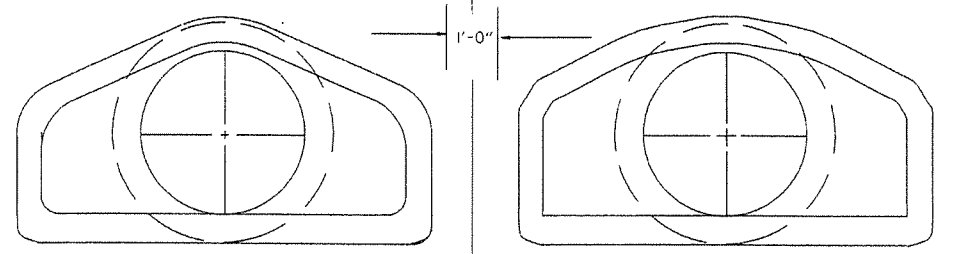
CIRCULAR PIPE

C.M. ARCH PIPE

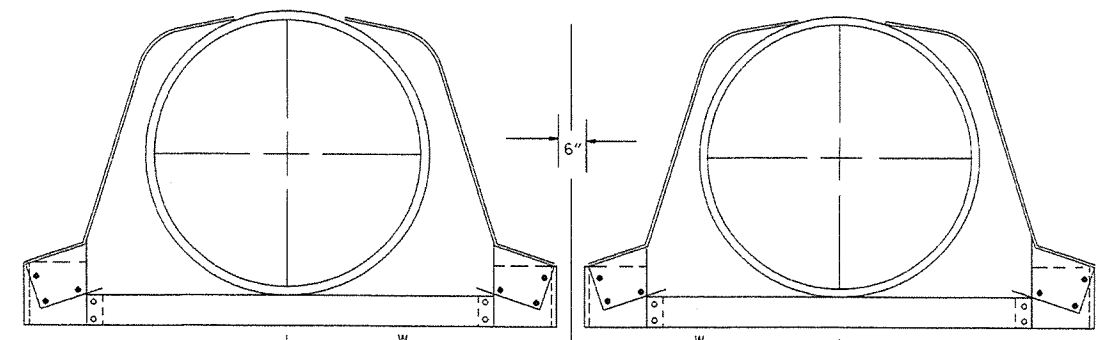
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX. 1" ±	H 1" ±	L 1 1/2" ±	W 2" ±	S	GAUGE
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85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



C.M. ARCH PIPE



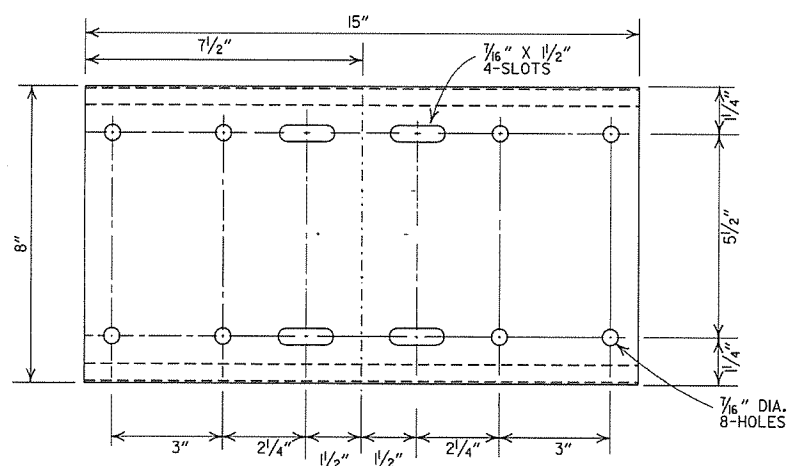
MULTIPLE R.C. PIPE CULVERTS



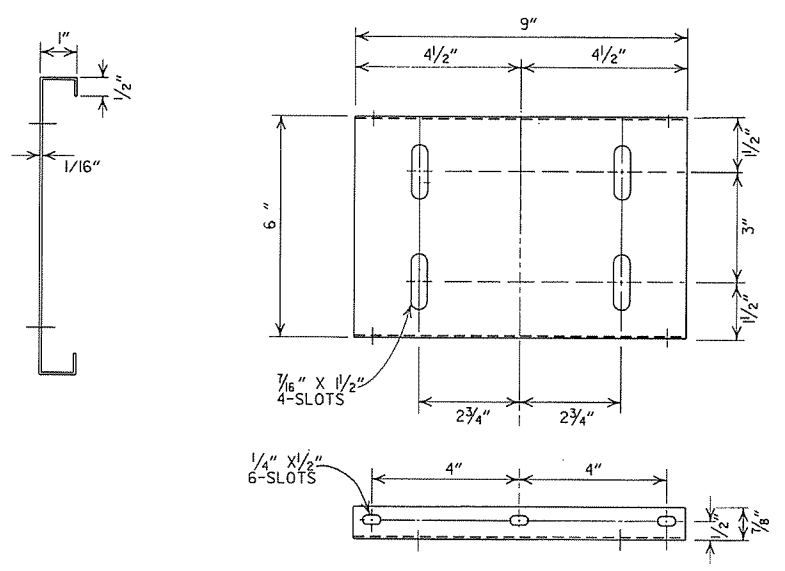
MULTIPLE C.M. PIPE CULVERTS

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

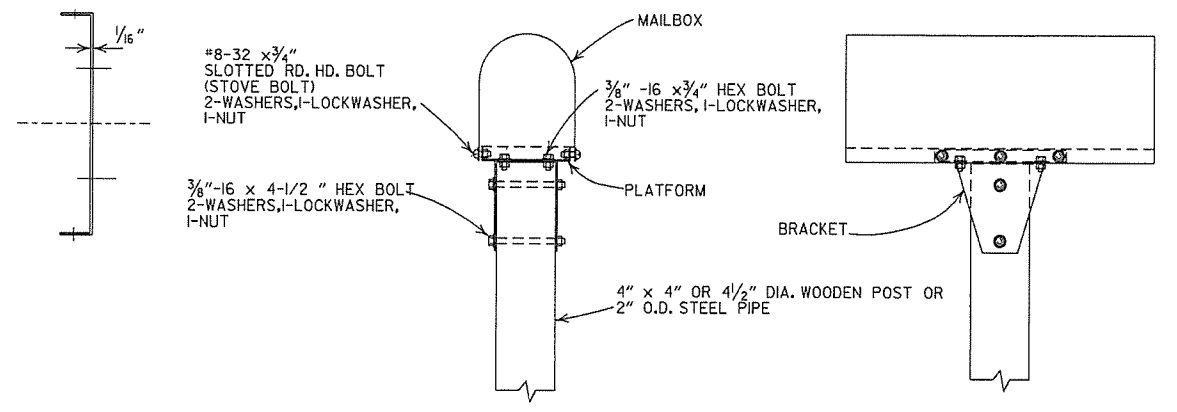
FLARED END SECTION
STANDARD DRAWING FES-2



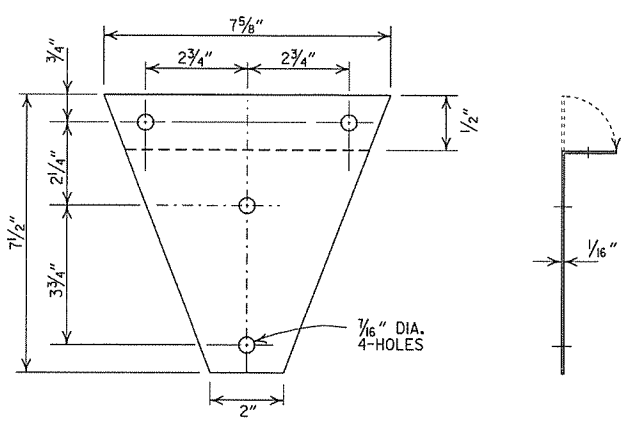
SHELF



PLATFORM

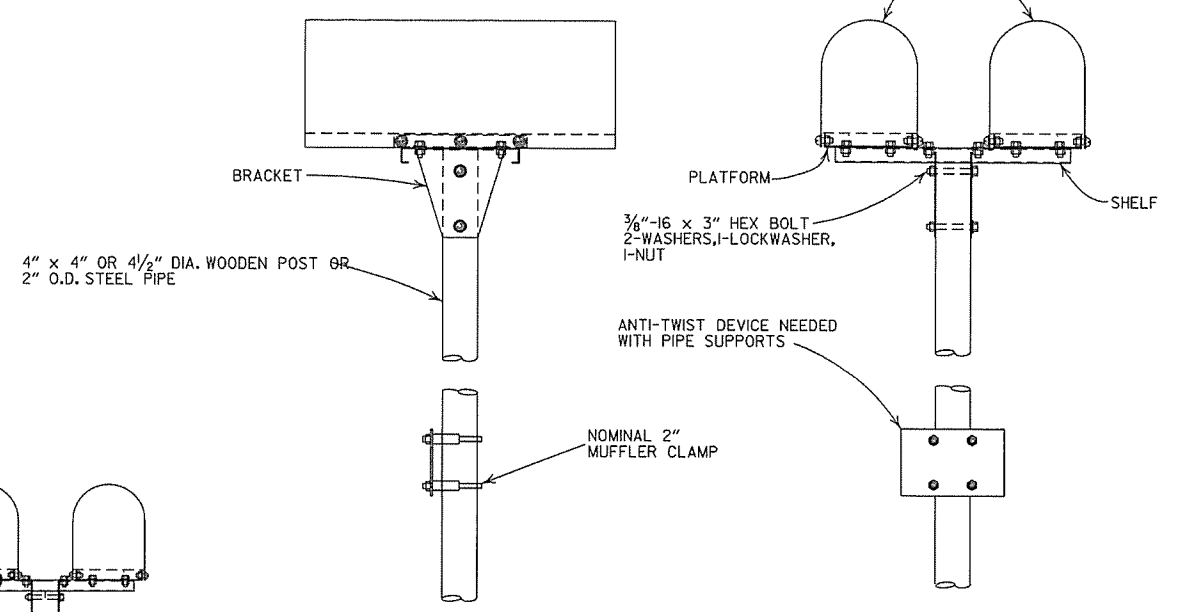


SINGLE INSTALLATION

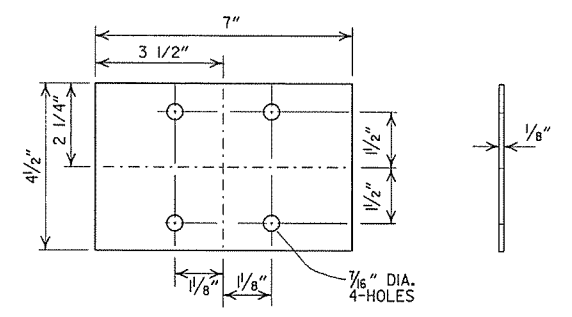


BRACKET

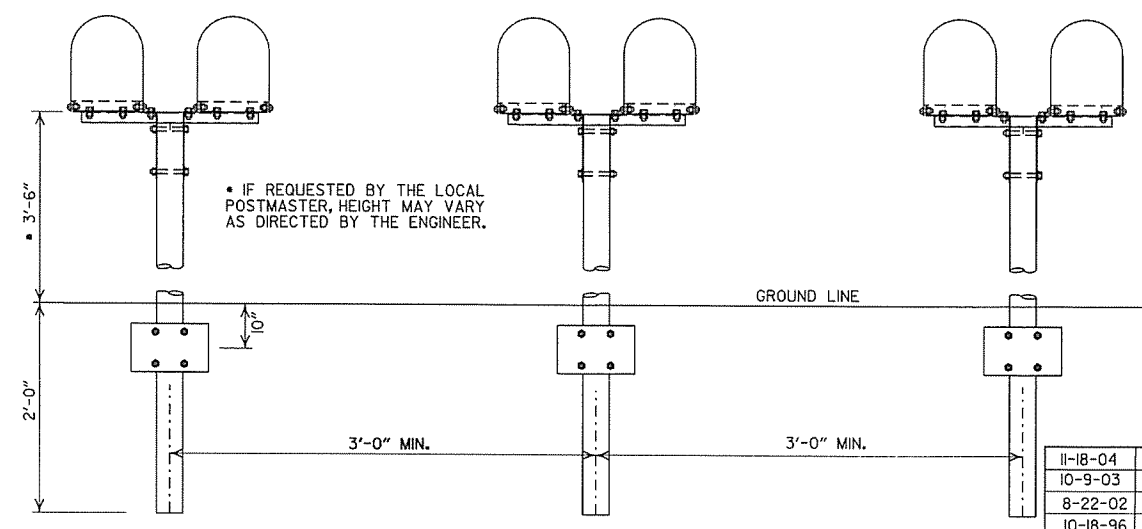
- GENERAL NOTES
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
 2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
 3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 1/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 3/4" 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.



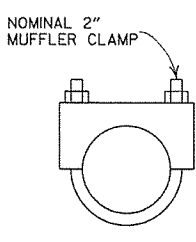
DOUBLE INSTALLATION



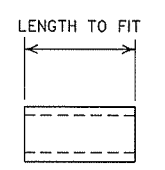
ANTI-TWIST PLATE



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

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/8	44	26 3/8	27
42	51 1/6	51	31 1/6	31
48	58 1/2	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77 1/2	77
108	138	138	87 1/8	87
120	154	154	96 3/8	97
132	168 3/4	169	106 1/2	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

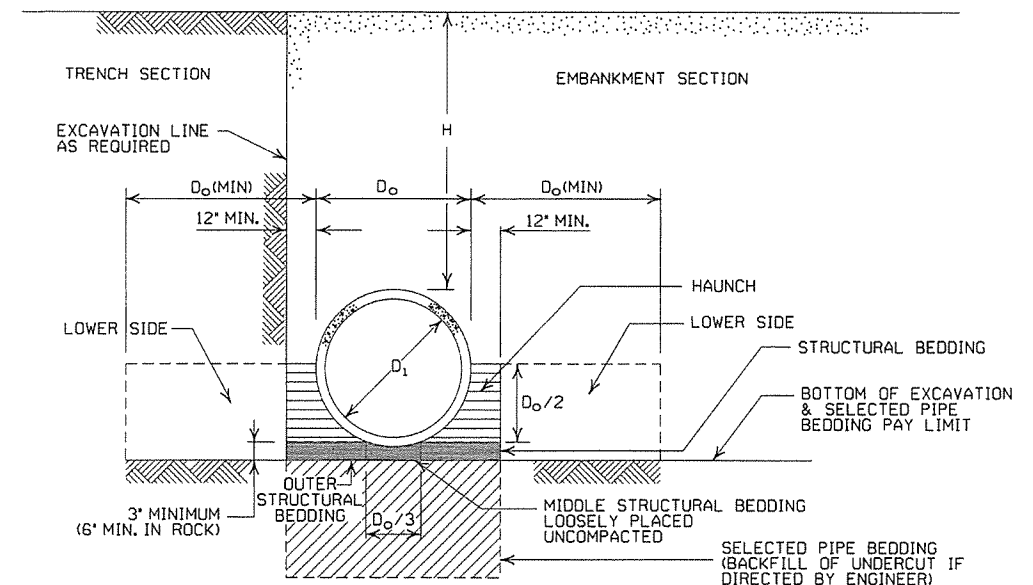
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- 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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING
STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

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

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM						
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

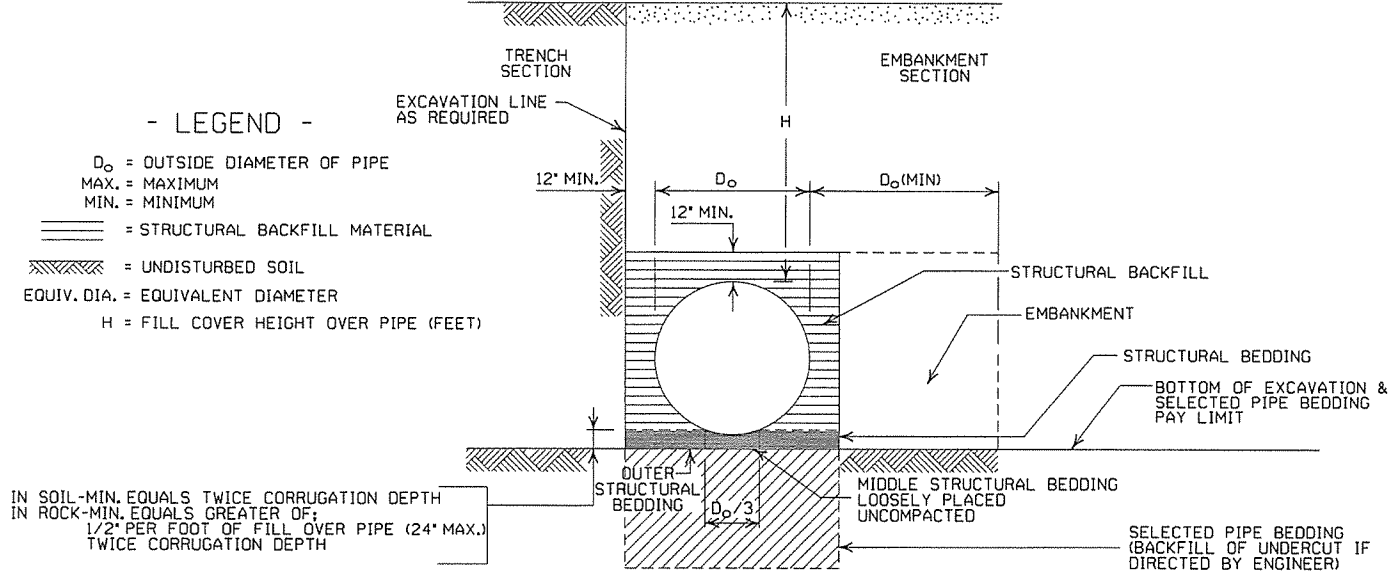
EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM				
			MIN. THICKNESS REQUIRED (INCHES)	① MIN. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED (INCHES)	① MIN. HEIGHT OF FILL, "H" (FT.)				
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION TYPE 1			
			2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15			
18	21x15	3	0.064	2	15	0.060	2	15			
21	24x18	3	0.064	2,25	15	0.060	2,25	15			
24	28x20	3	0.064	2,5	15	0.075	2,5	15			
30	35x24	3	0.079	3	12	0.075	3	12			
36	42x29	3 1/2	0.079	3	12	0.105	3	12			
42	49x33	4	0.079	3	12	0.105	3	12			
48	57x38	5	0.109	3	13	0.135	3	13			
54	64x43	6	0.109	3	14	0.135	3	14			
60	71x47	7	0.138	3	15	0.164	3	15			
66	77x52	8	0.168	3	15						
72	83x57	9	0.168	3	15						
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM											
			INSTALLATION				INSTALLATION				
			TYPE 2	TYPE 1	TYPE 2	TYPE 1	TYPE 2	TYPE 1	TYPE 2	TYPE 1	TYPE 1
36	40x31	5	0.079	3	2	12	15				
42	46x36	6	0.079	3	2	13	15				
48	53x41	7	0.079	3	2	13	15				
54	60x46	8	0.079	3	2	13	15				
60	66x51	9	0.079	3	2	13	15				
66	73x55	12	0.079	3	2	15	15				
72	81x59	14	0.079	3	2	15	15				
78	87x63	14	0.079	3	2	15	15				
84	95x67	16	0.109	3	2	15	15				
90	103x71	16	0.109	3	2	15	15				
96	112x75	18	0.109	3	2	15	15				
102	117x79	18	0.109	3	2	15	15				
108	128x83	18	0.138	3	2	15	15				

- ① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.
- ② WHERE THE STANDARD 2 2/3" x 1/2" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" x 1/2" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" x 1" OR 5" x 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

**METAL PIPE CULVERT
FILL HEIGHTS & BEDDING**

STANDARD DRAWING PCM-1

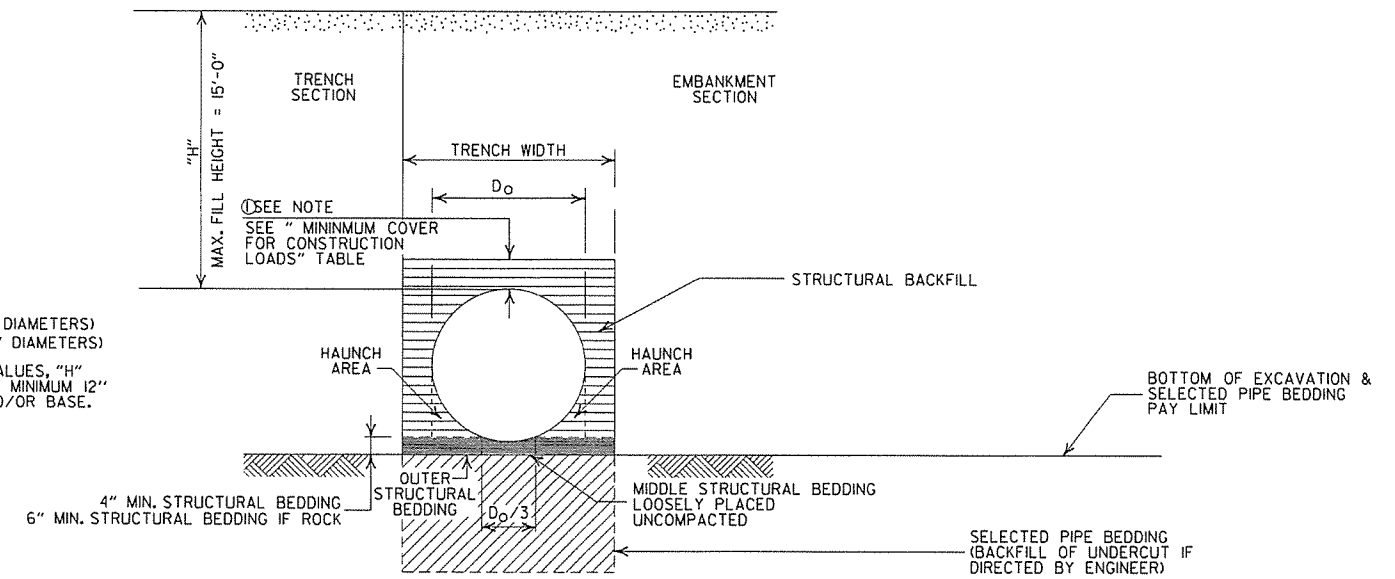
INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.
- SM3 WILL NOT BE ALLOWED.
- STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/4 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.
- STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

NOTE:
 18" MIN. (18" - 30" DIAMETERS)
 24" MIN. (36" - 48" DIAMETERS)
 MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

- H = FILL HEIGHT (FT.)
- D_o = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- [Symbol] = STRUCTURAL BACKFILL MATERIAL
- [Symbol] = UNDISTURBED SOIL

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE, IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT
(HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL. SM3 WILL NOT BE ALLOWED.
- STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/2 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

NOTE: 12" MIN. (18" - 36" DIAMETERS) MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" > OR = 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

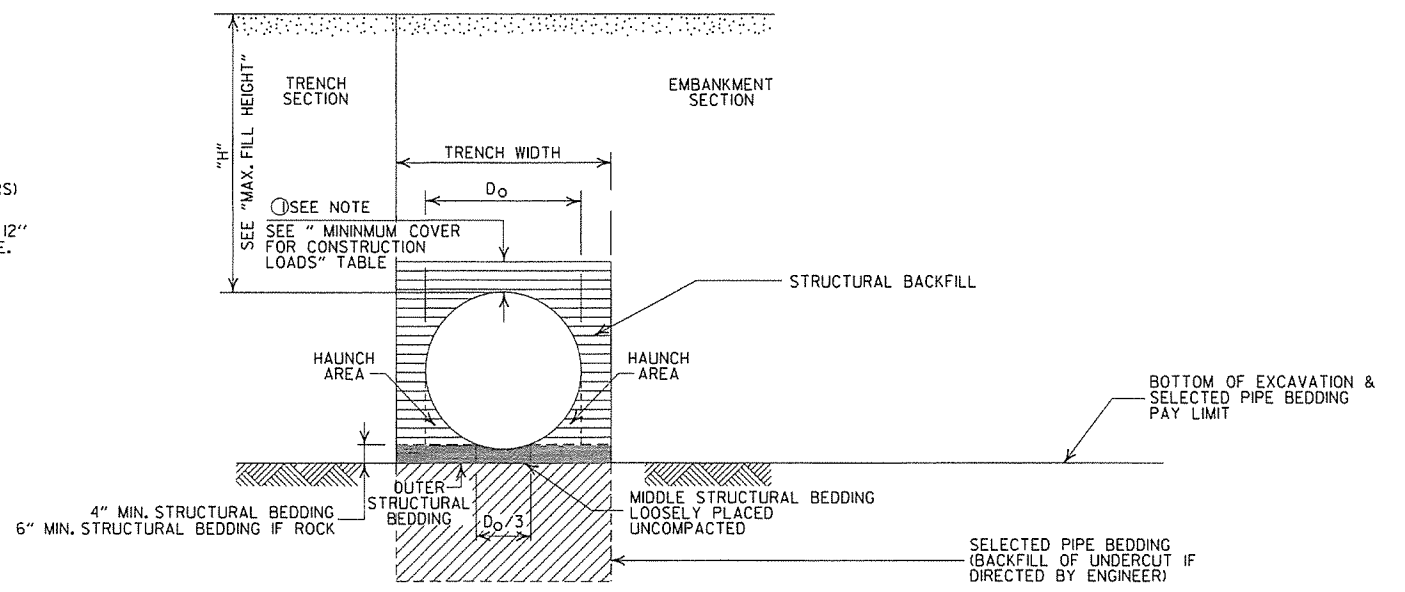
MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18,0-50,0 (KIPS)	50,0-75,0 (KIPS)	75,0-110,0 (KIPS)	110,0-175,0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

- PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
- INSTALL PIPE TO GRADE.
- COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
- THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
- PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

H = FILL HEIGHT (FT.)
 D_o = OUTSIDE DIAMETER OF PIPE
 MAX. = MAXIMUM
 MIN. = MINIMUM

==== = STRUCTURAL BACKFILL MATERIAL
 ===== = UNDISTURBED SOIL

GENERAL NOTES


- PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
- THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
- 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.
- 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."
- WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
- FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
- PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

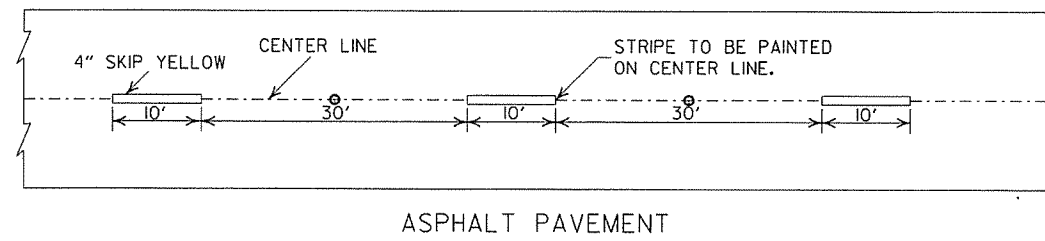
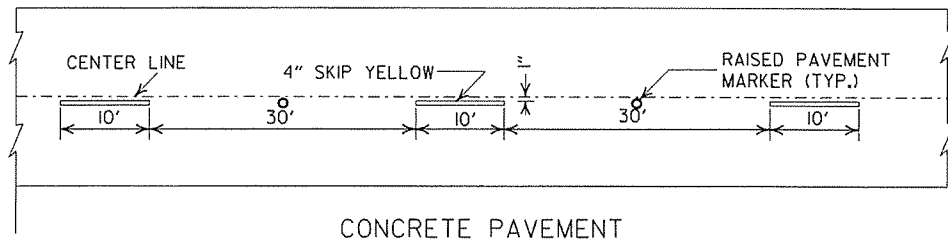
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

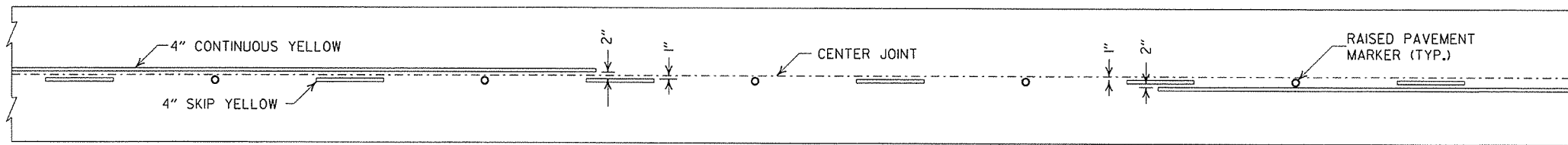
PLASTIC PIPE CULVERT
(PVC F949)

STANDARD DRAWING PCP-2

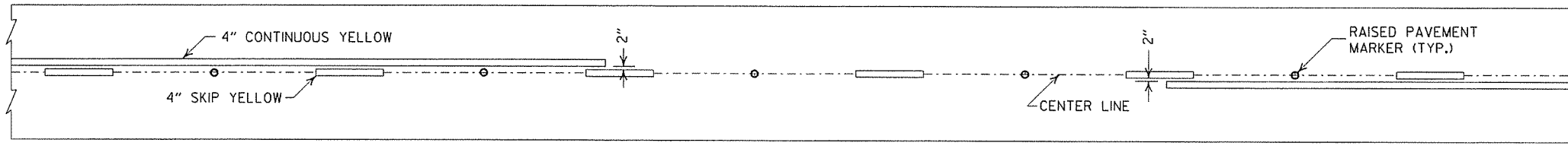




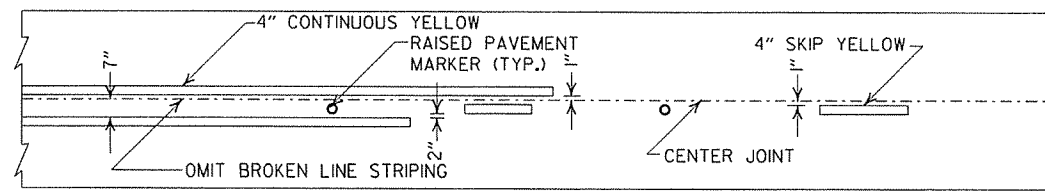
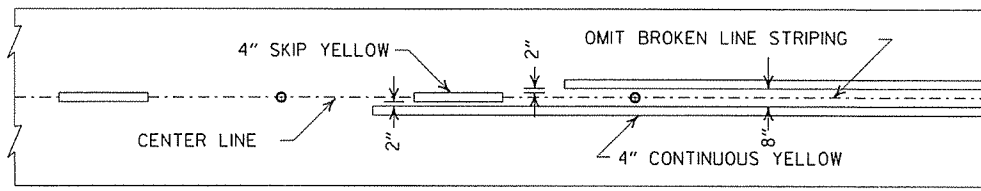
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT



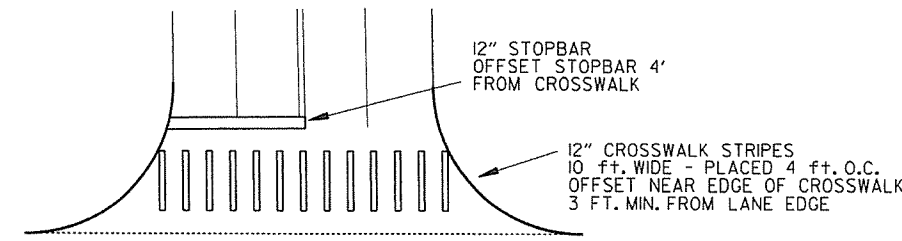
SOLID LINE STRIPING ON ASPHALT PAVEMENT



ASPHALT PAVEMENT

CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

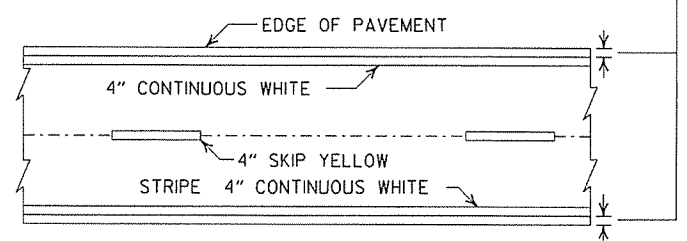


CROSSWALK AND STOPBAR DETAILS

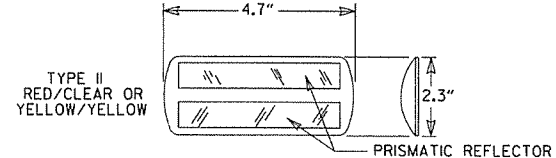
NOTES:

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

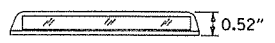
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED 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

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	R.C.		175		200		225		250		275	300
2° 15'	R.C.											
2° 30'	0.021											
2° 45'	0.023											
3° 00'	0.025	150										
3° 15'	0.027											
3° 30'	0.029											
3° 45'	0.031											
4° 00'	0.033											
4° 30'	0.037											
5° 00'	0.040											
5° 30'	0.043											
6° 00'	0.046											
6° 30'	0.050											
7° 00'	0.053											
7° 30'	0.056											
8° 00'	0.058											
8° 30'	0.061											
9° 00'	0.063											
10° 00'	0.068	160										
11° 00'	0.072	170										
12° 00'	0.076	175										
13° 00'	0.080	180										
14° 00'	0.083	190										
15° 00'	0.086	195										
16° 00'	0.089	200										
17° 00'	0.091	200										
18° 00'	0.093	205										
19° 00'	0.095	210										
20° 00'	0.097	215										
21° 00'	0.098	215										
22° 00'	0.099	215										
23° 00'	0.099	215										
24° 00'	0.100	220										

D MAX = 24° 45'

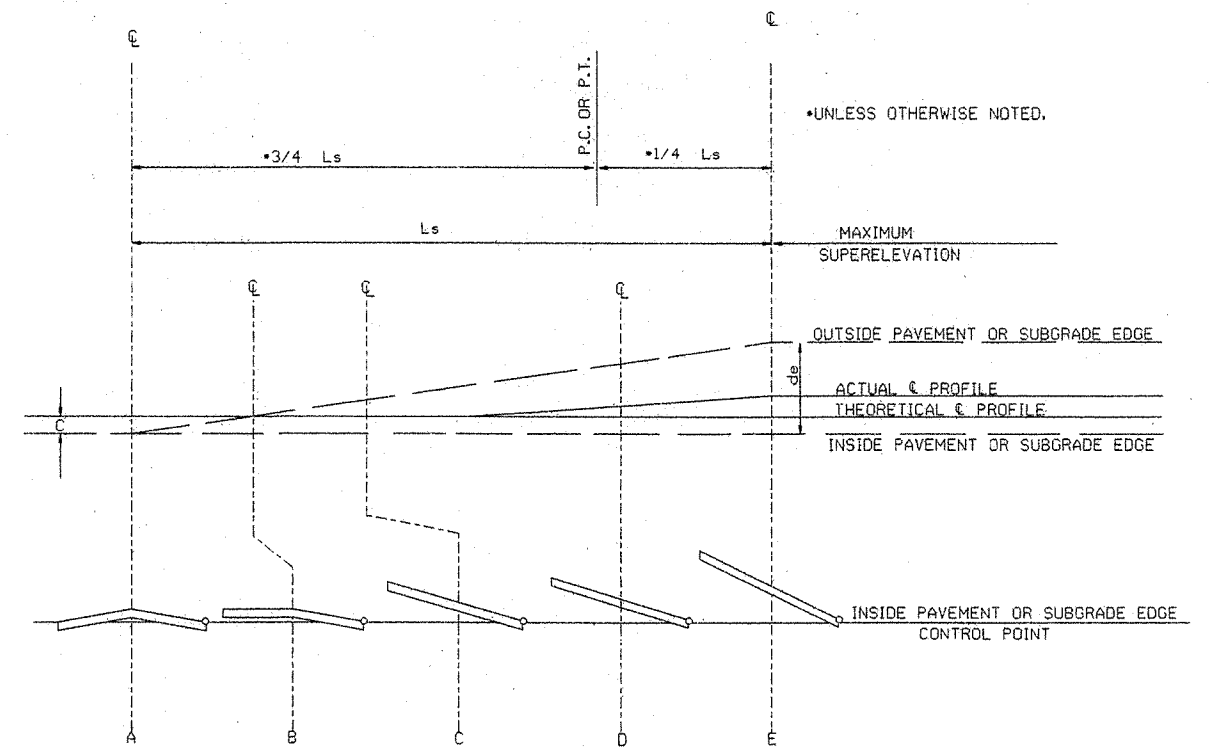
ABBREVIATIONS

- NC - NORMAL CROWN
- RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
- e - RATE OF SUPERELEVATION (FT. PER FT.)
- Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
- L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
- d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
- C - NORMAL CROWN (FT.)

GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:
 - 3 LANE UNDIVIDED ----- +20%
 - 4 LANE UNDIVIDED ----- +50%
 - 5 LANE UNDIVIDED ----- +80%
 - 6 LANE UNDIVIDED ----- +100%

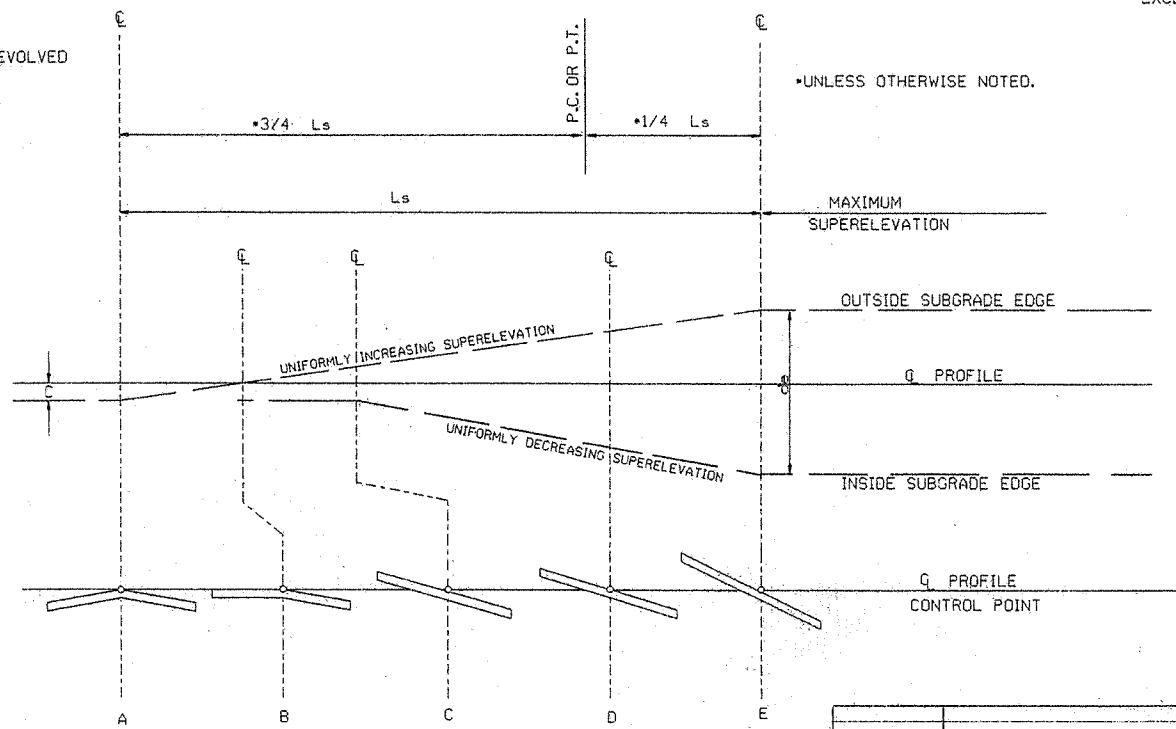
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



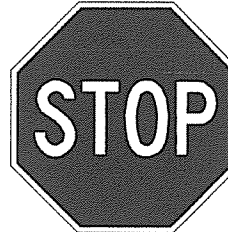
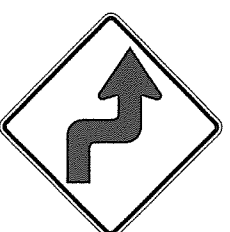
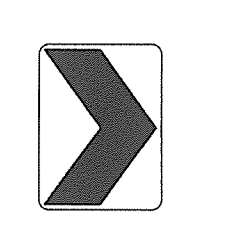
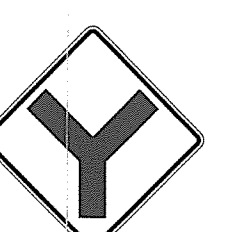
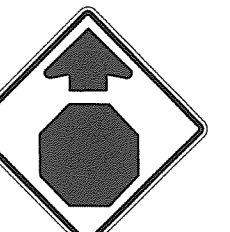
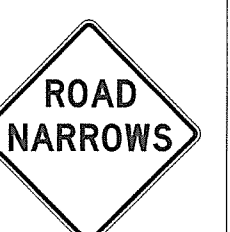
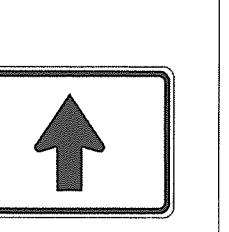
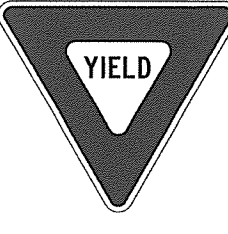
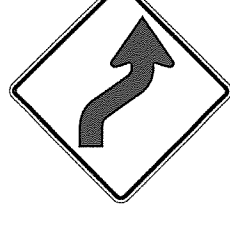
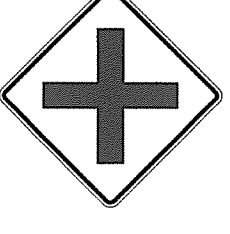

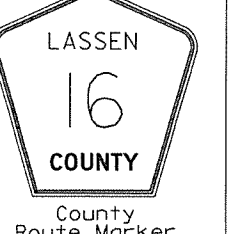
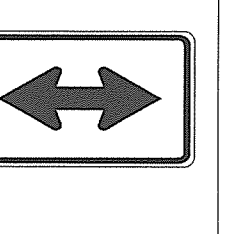

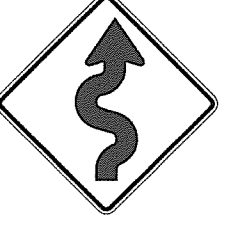
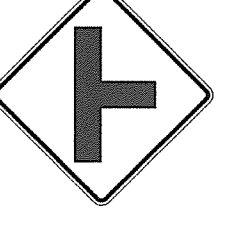


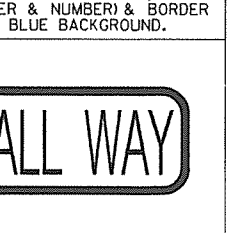
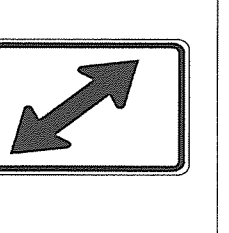
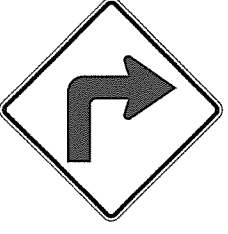
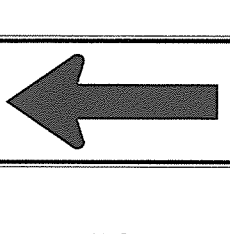
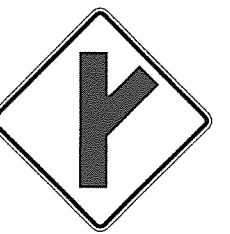

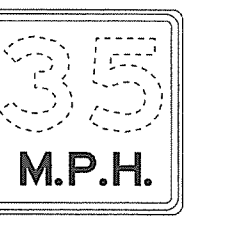
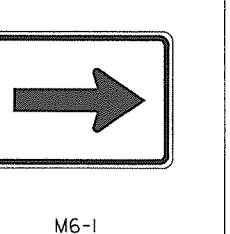
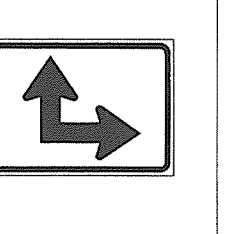

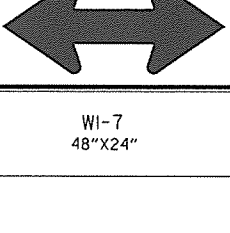
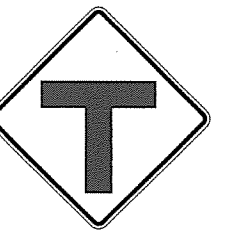

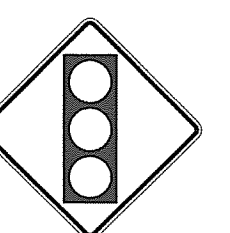
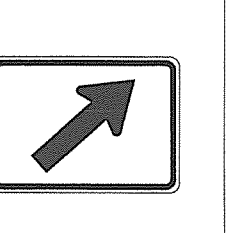
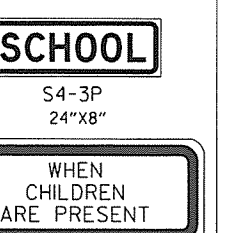
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

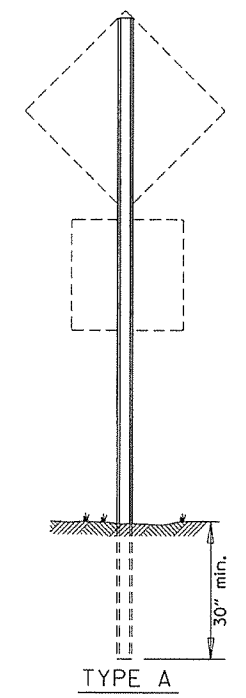
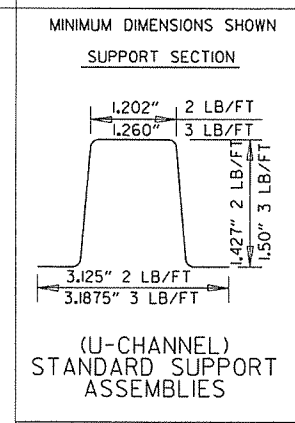
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

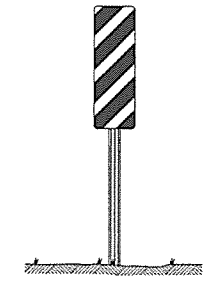
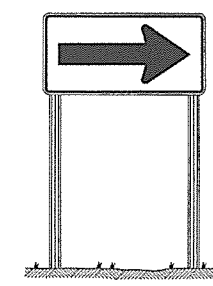
STANDARD DRAWING SE-2

10-18-96	ADDED FORMULA	18-18-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILMED

 RI-1 30"x30"	 WI-3 30"x30" (LT. OR RT.)	 WI-8 18"x24"	 W2-5 30"x30"	 W3-1 36"x36"	 W5-1 36"x36"	 M6-3 21"x15"
 RI-2 36"x36"x36"	 WI-4 30"x30" (LT. OR RT.)	 W2-1 30"x30"	 SI-1 36"x36"	 W3-2 36"x36"	 MI-6 24"x24" County Route Marker	 M6-4 21"x15"
 R2-1 24"x30"	 WI-5 30"x30" (LT. OR RT.)	 W2-2 30"x30"	 W5-2 36"x36"	 W8-3 36"x36"	 RI-3P 18"x6" NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.	 M6-5 21"x15"
 WI-1 30"x30" (LT. OR RT.)	 WI-6 48"x24"	 W2-3 30"x30" (LT. OR RT.)	 W5-3 36"x36"	 WI3-IP 18"x18" NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.	 M6-1 21"x15"	 M6-6 21"x15"
 WI-2 30"x30" (LT. OR RT.)	 WI-7 48"x24"	 W2-4 30"x30"	 W10-1 36" DIAMETER	 W3-3 36"x36"	 M6-2 21"x15"	 S4-3P 24"x8" WHEN CHILDREN ARE PRESENT S4-2P 24"x10"



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.



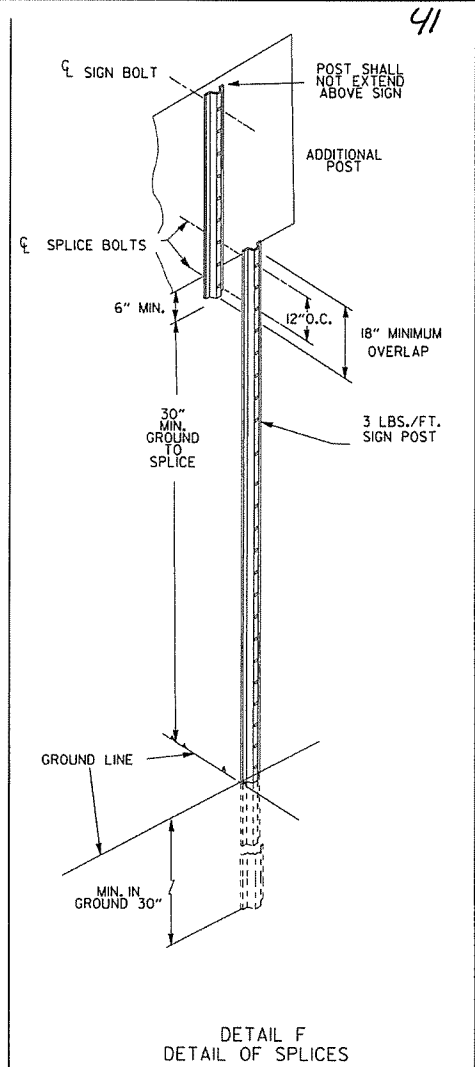
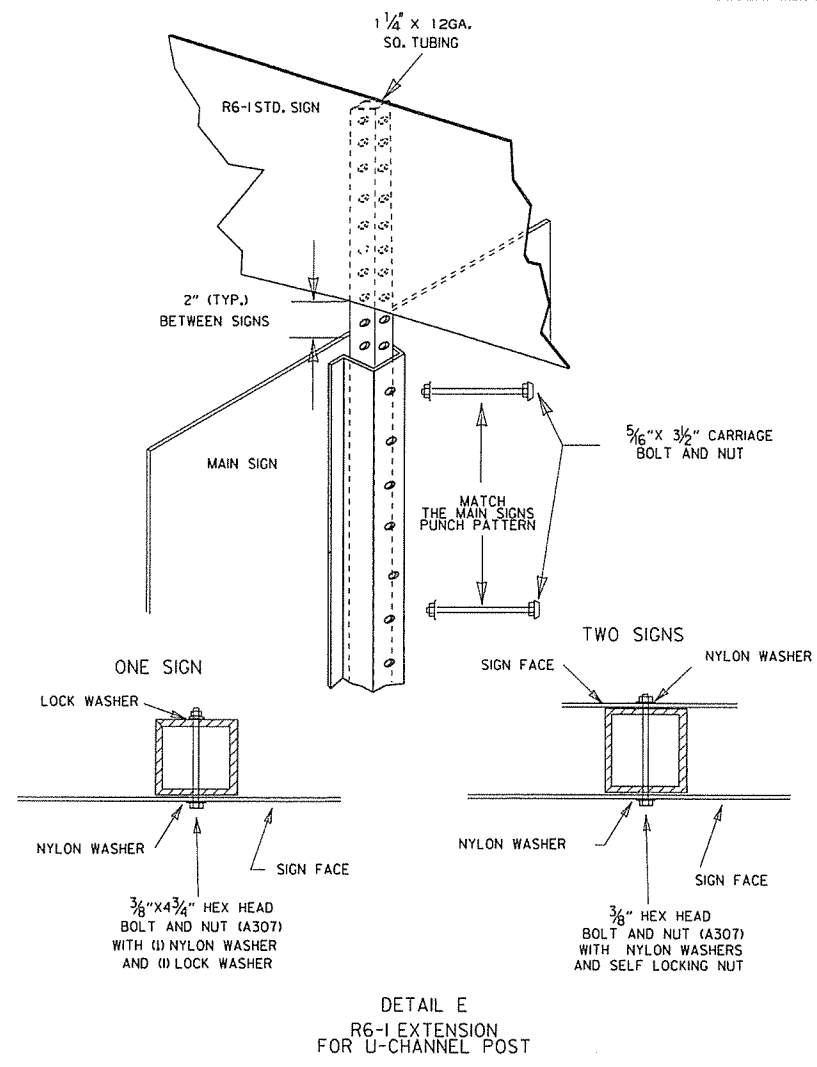
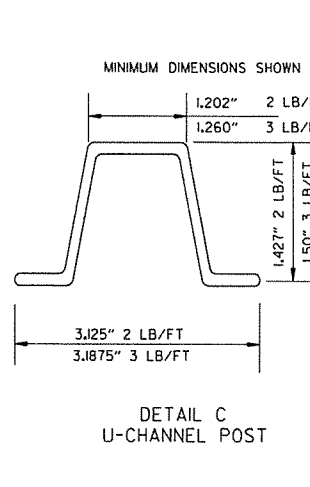
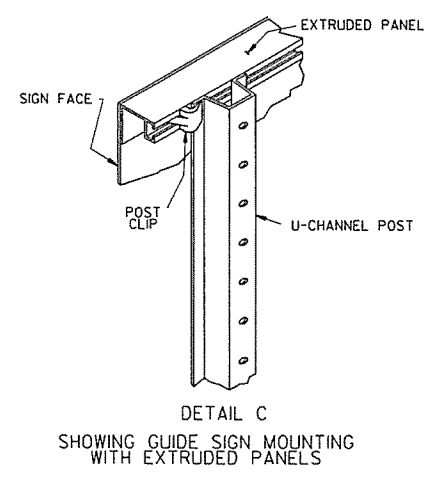
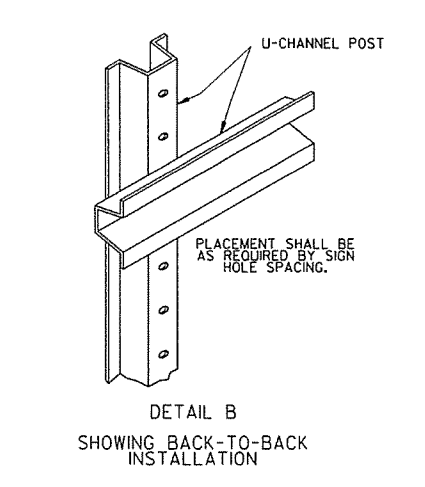
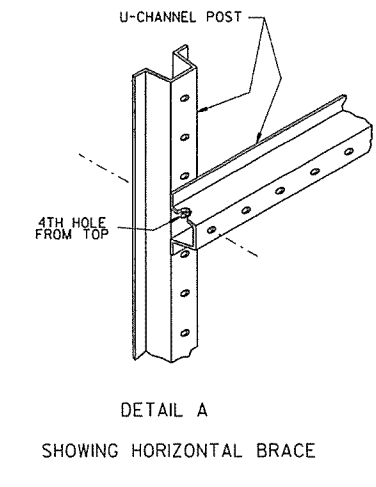
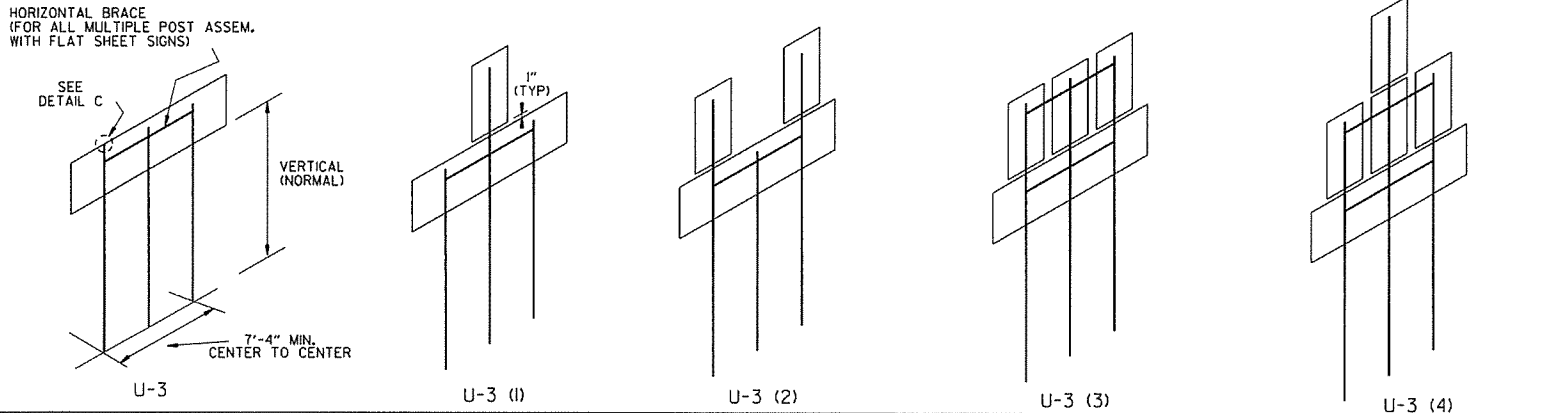
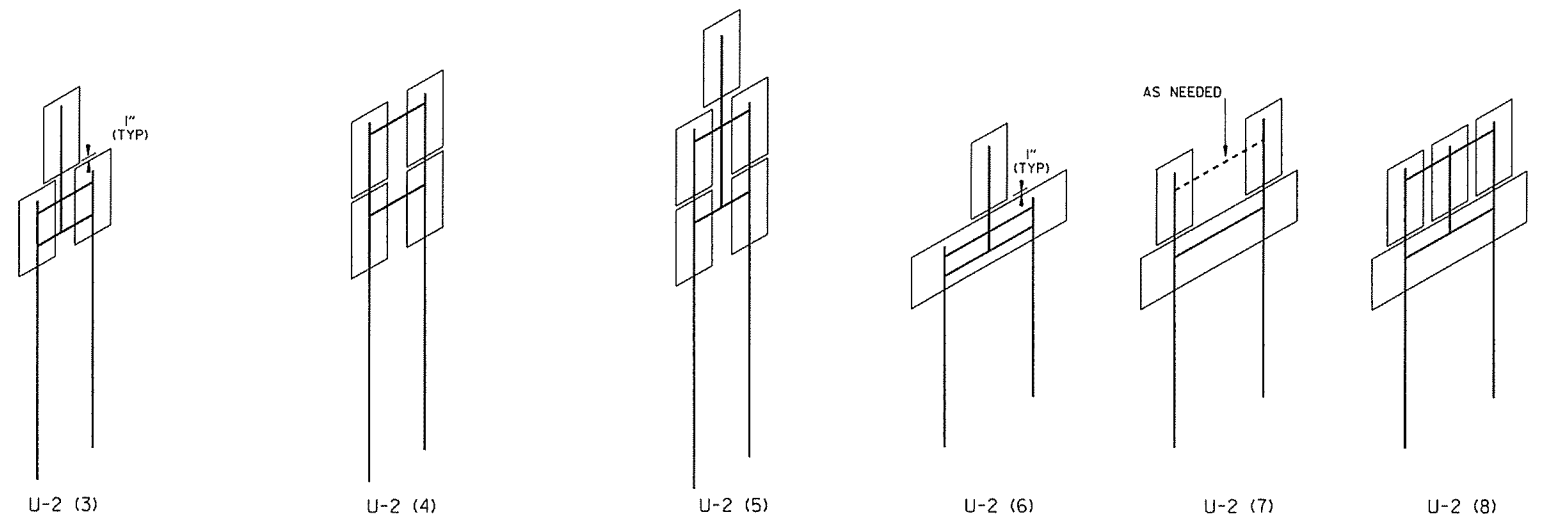
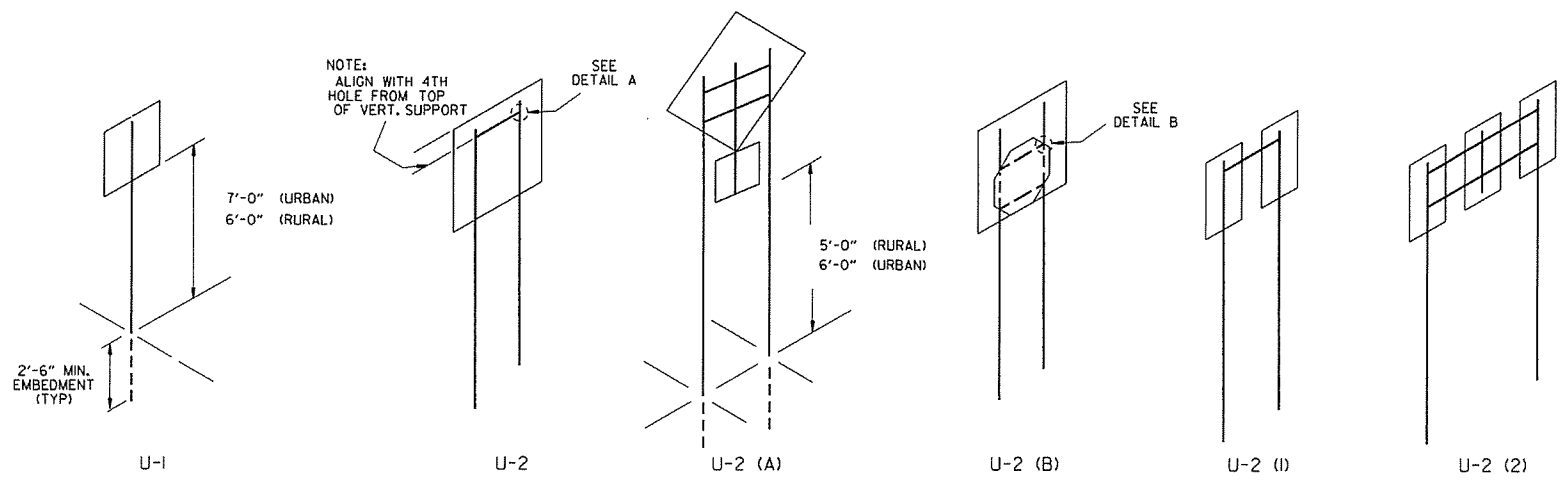
MINIMUM WEIGHT
TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

SUPPORT ASSEMBLIES

9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED WI-4-3	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
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES
STANDARD DRAWING SHS-1



NOTES:

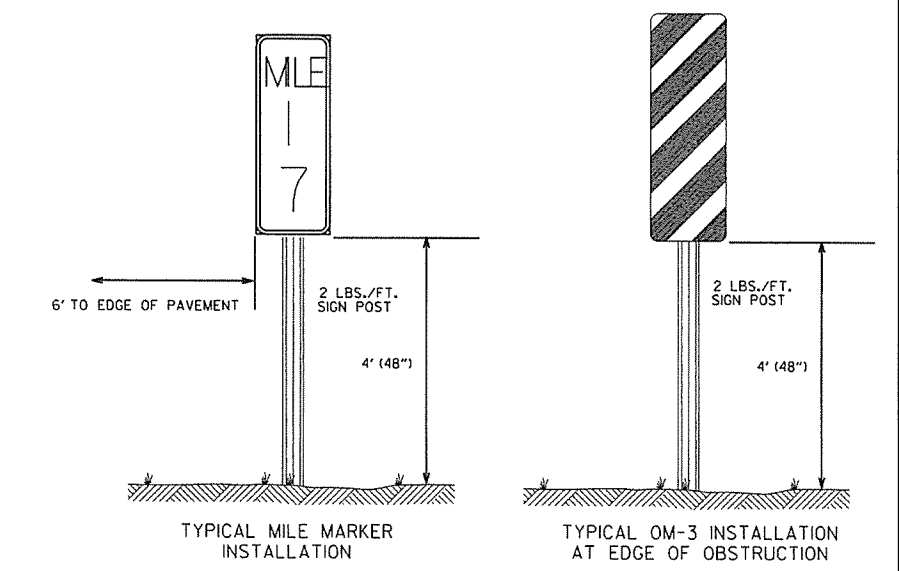
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7" PATH.

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

NORMAL INSTALLATIONS WILL REQUIRE 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.



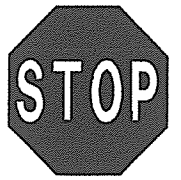
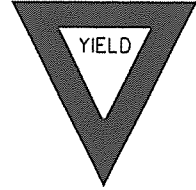
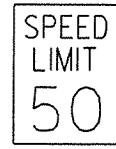


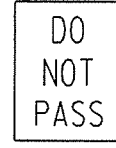
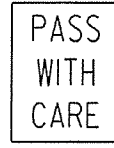
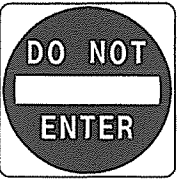

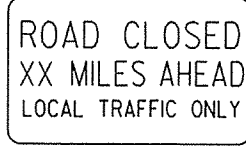
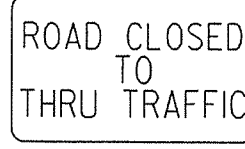
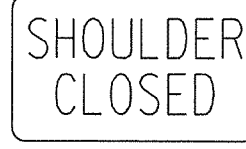
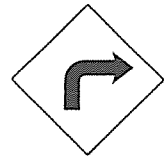
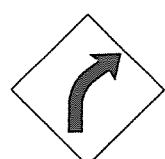
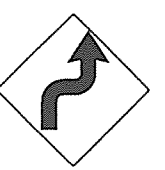
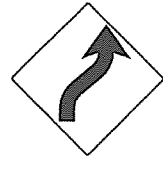
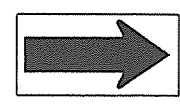
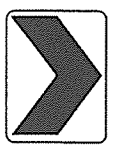
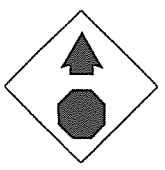
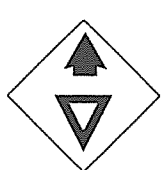
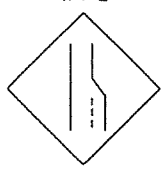

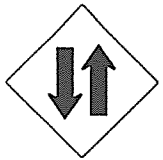

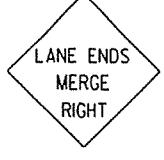






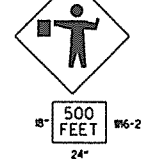


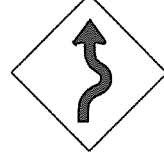
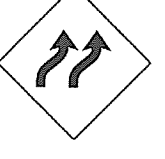

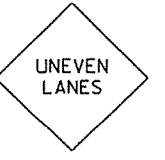
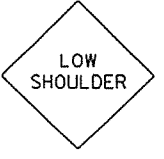
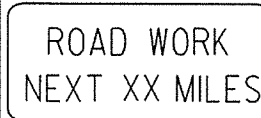
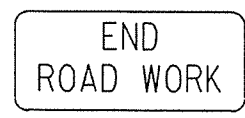
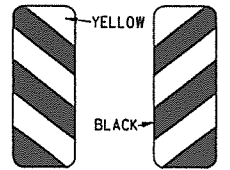
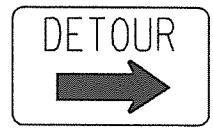

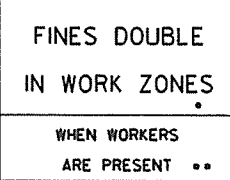
ARIZONA STATE HIGHWAY COMMISSION		
U-CHANNEL POST ASSEMBLIES		
STANDARD DRAWING SHS-2		
DATE	REVISION	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL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

ADVANCE DISTANCES (XXXX)

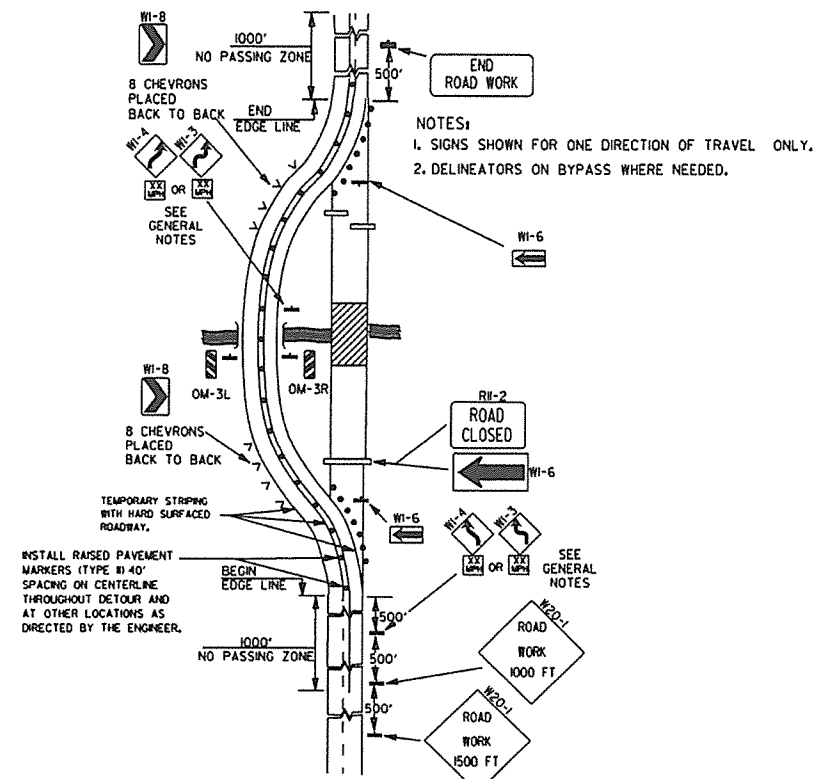
500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

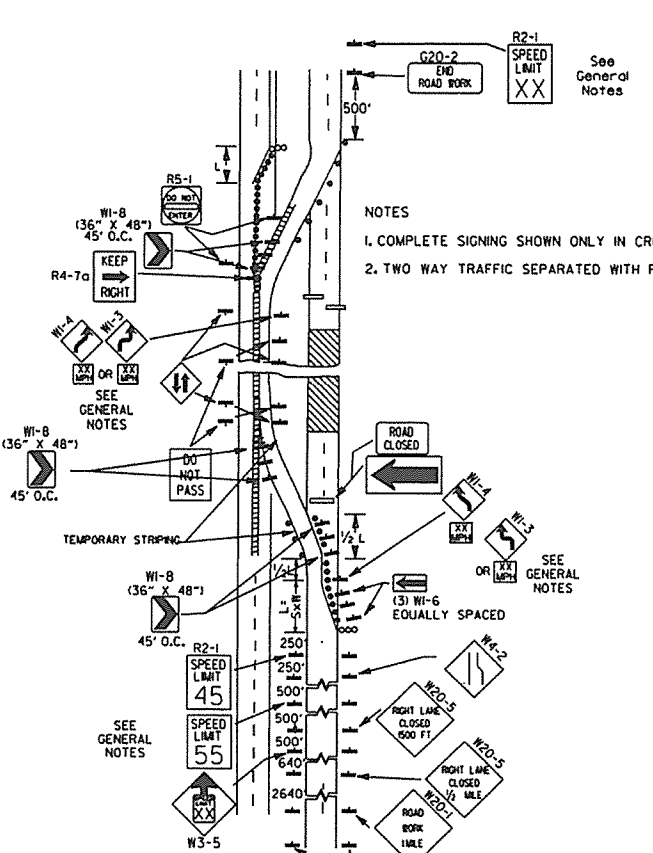
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
 - TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
 - EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
 - SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
 - SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
 - POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
 - ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
 - FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
 - 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.
 - 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.

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS</p>

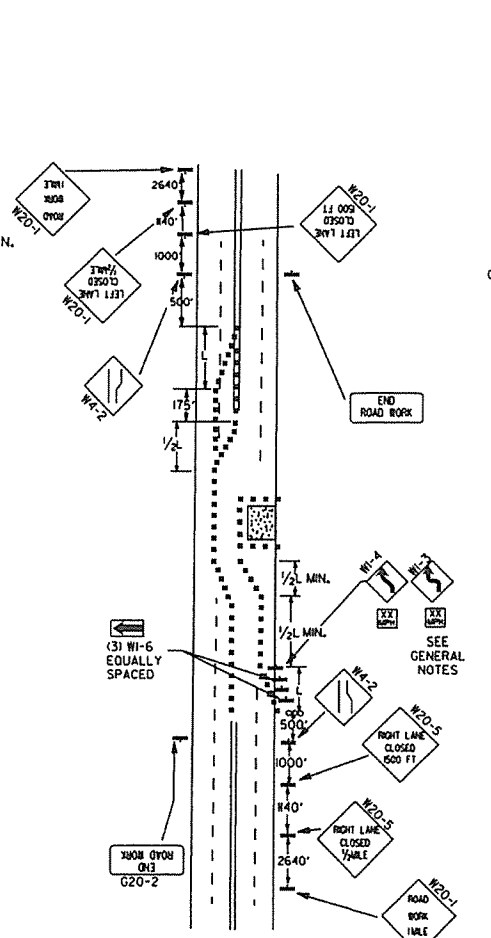
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-1	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-04	REVISED NOTE 7	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



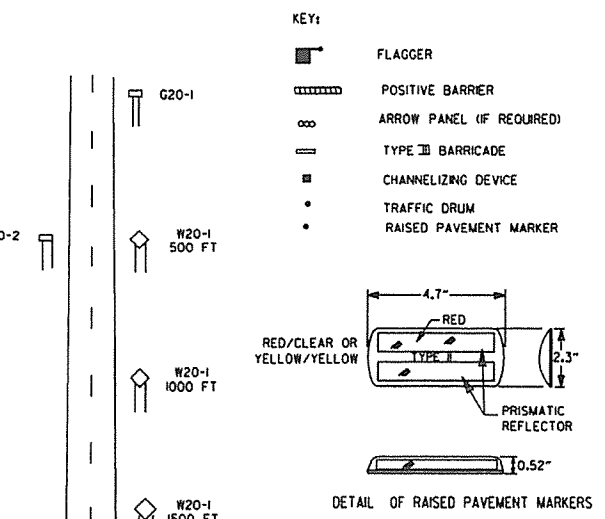
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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



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



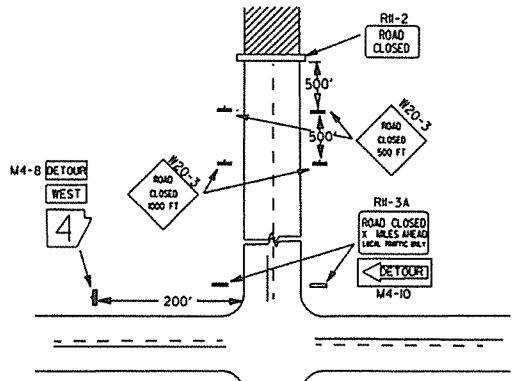
TYPICAL ADVANCE WARNING SIGN PLACEMENT

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.

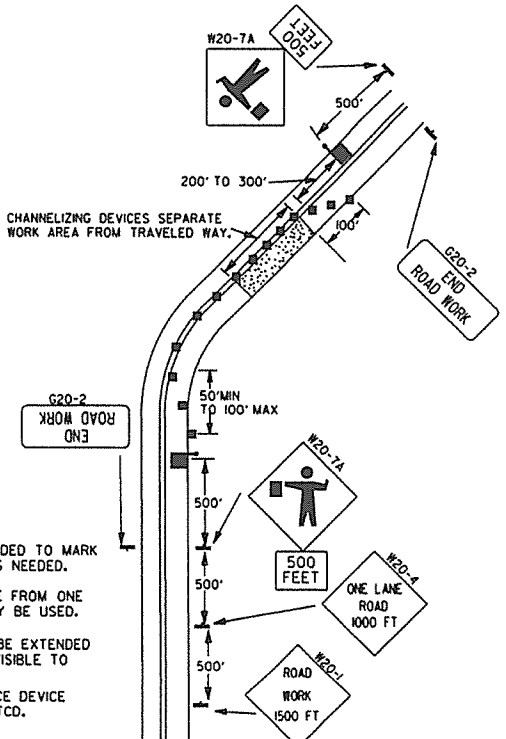
- GENERAL NOTES:
- ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
 - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(K55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(K65) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 - 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.
 - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 - 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.
 - 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.

9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILED

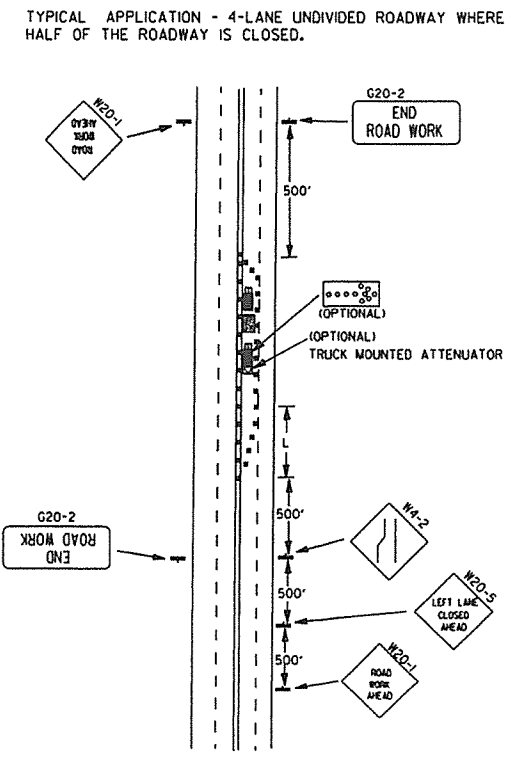
ARKANSAS STATE HIGHWAY COMMISSION
 STANDARD TRAFFIC CONTROLS
 FOR HIGHWAY CONSTRUCTION
 STANDARD DRAWING TC-2



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

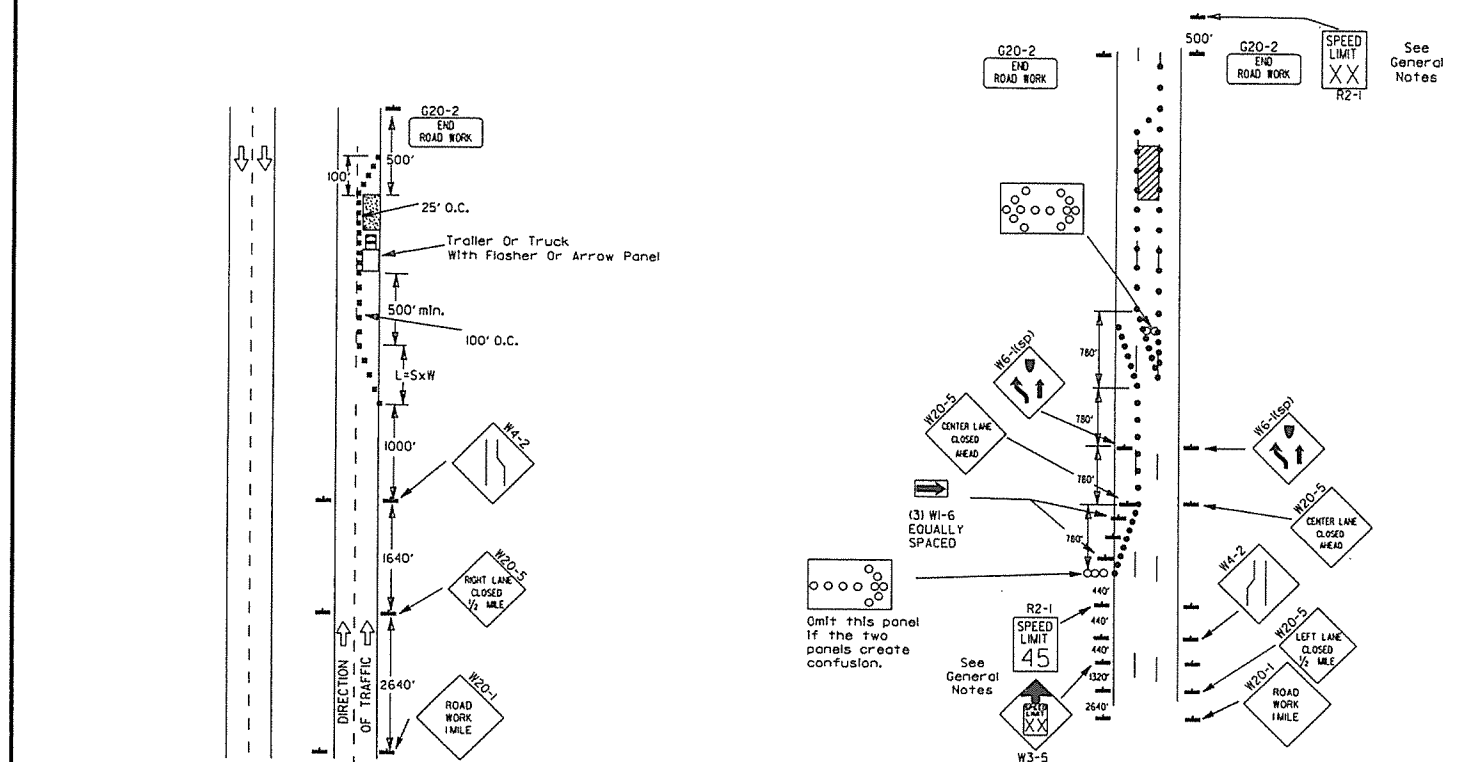


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

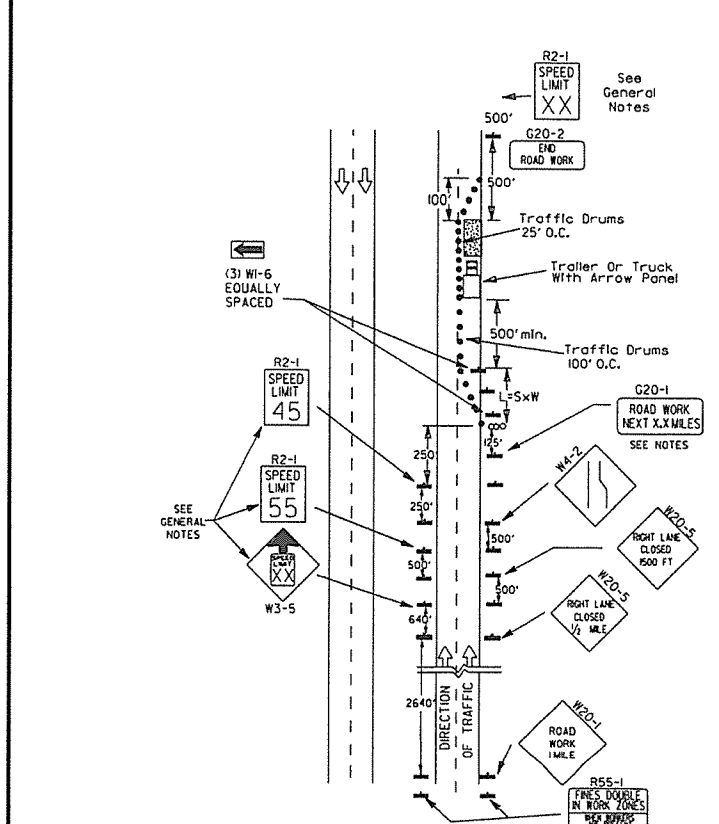


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

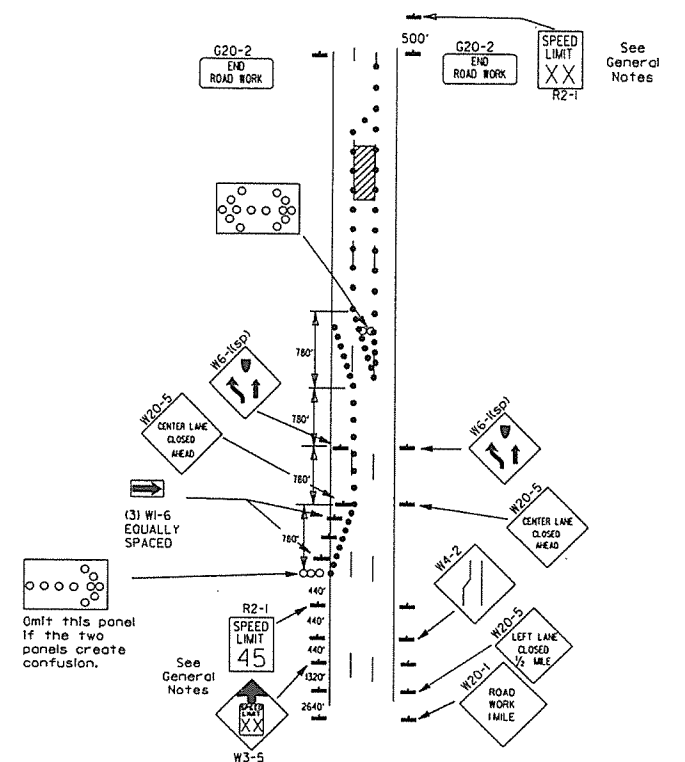
Channelizing devices



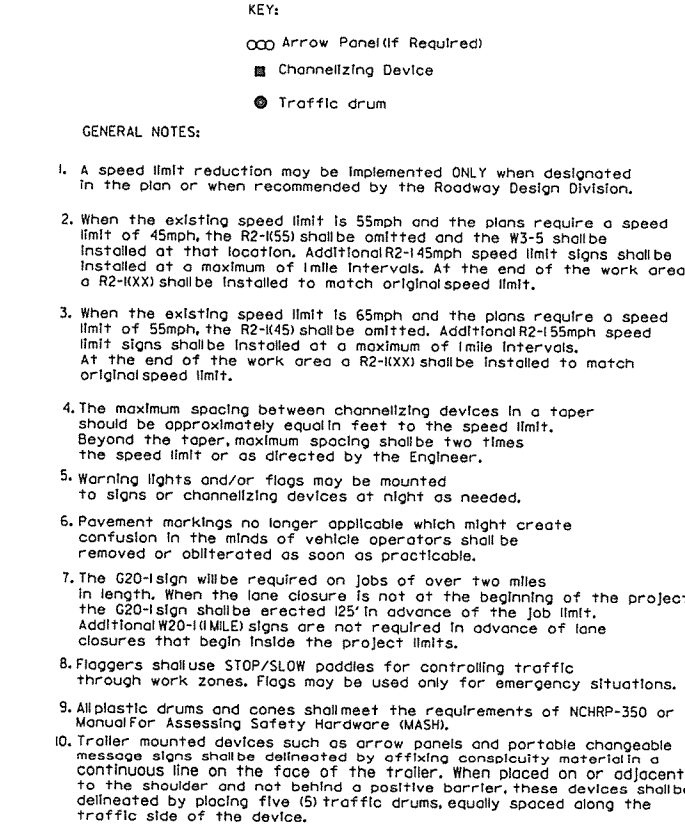
(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



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



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

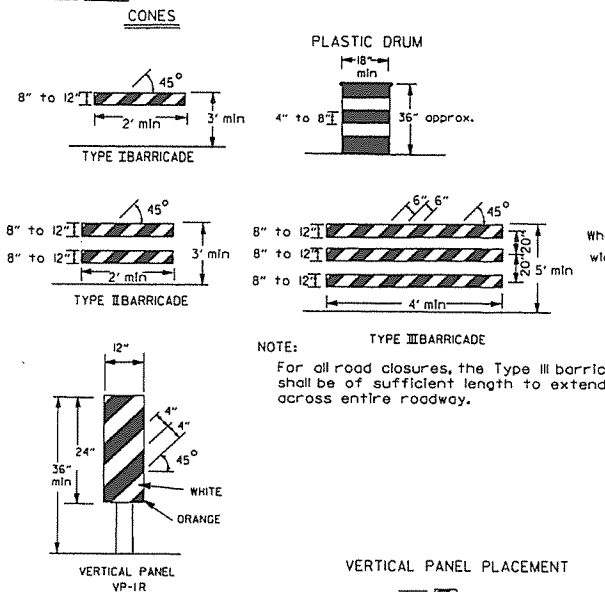


(D) Typical application - closing multiple lanes of a multilane highway.

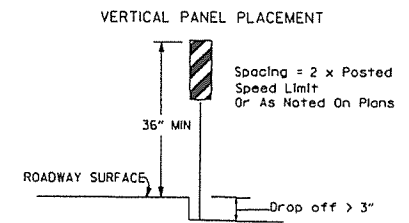
- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

- GENERAL NOTES:
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
 2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 3. When the existing speed limit is 65mph and the plans require a speed limit of 45mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
 5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
 6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
 7. 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.

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



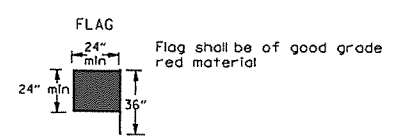
NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



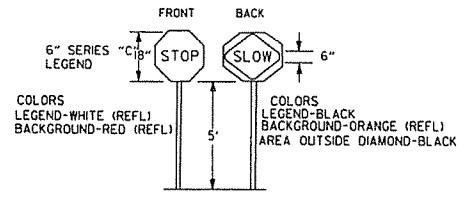
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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

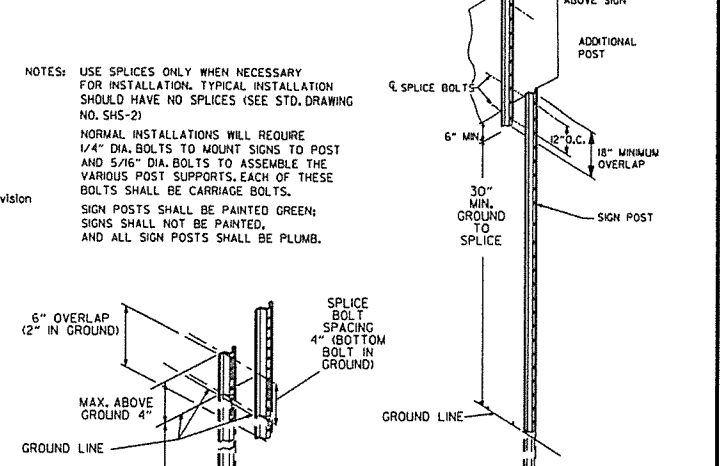
* When shown on the plans concrete barrier will be used. When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE

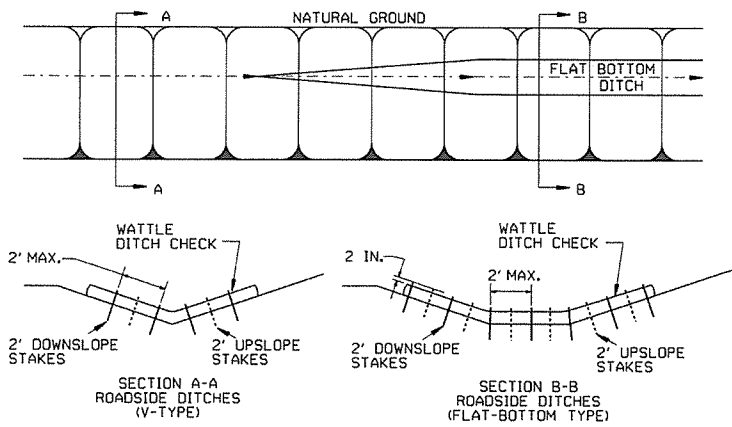


DETAIL OF SPLICES

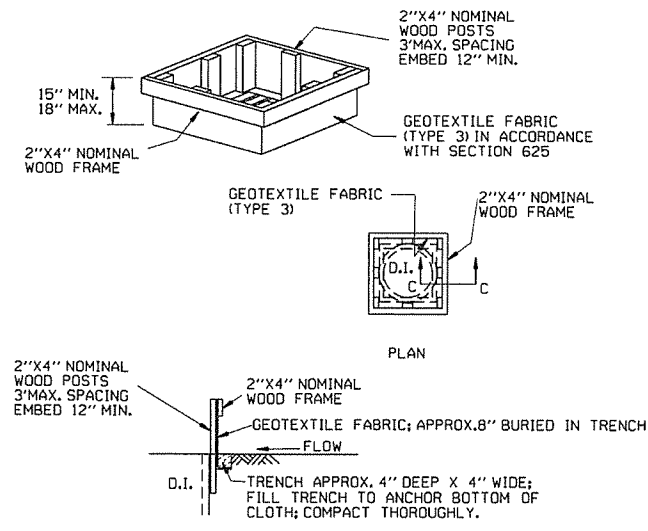


DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

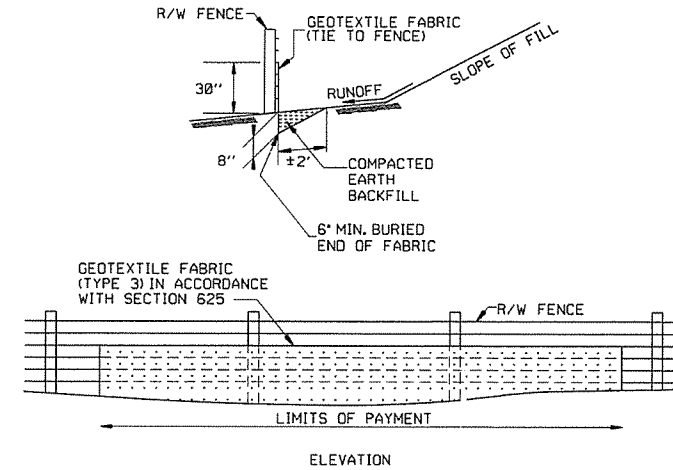
GENERAL NOTES
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



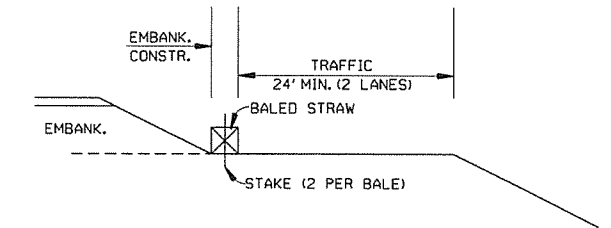
DROP INLET SILT FENCE (E-7)



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

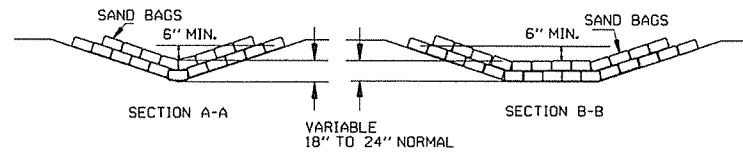
GENERAL NOTES
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

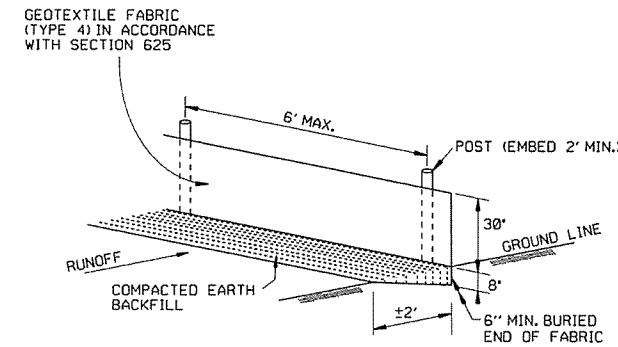


BALED STRAW FILTER BARRIER (E-2)

NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.

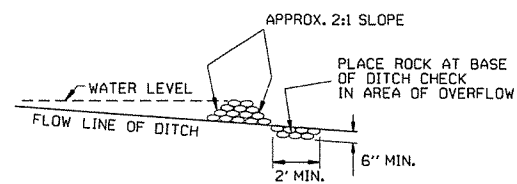


SAND BAG DITCH CHECK (E-5)



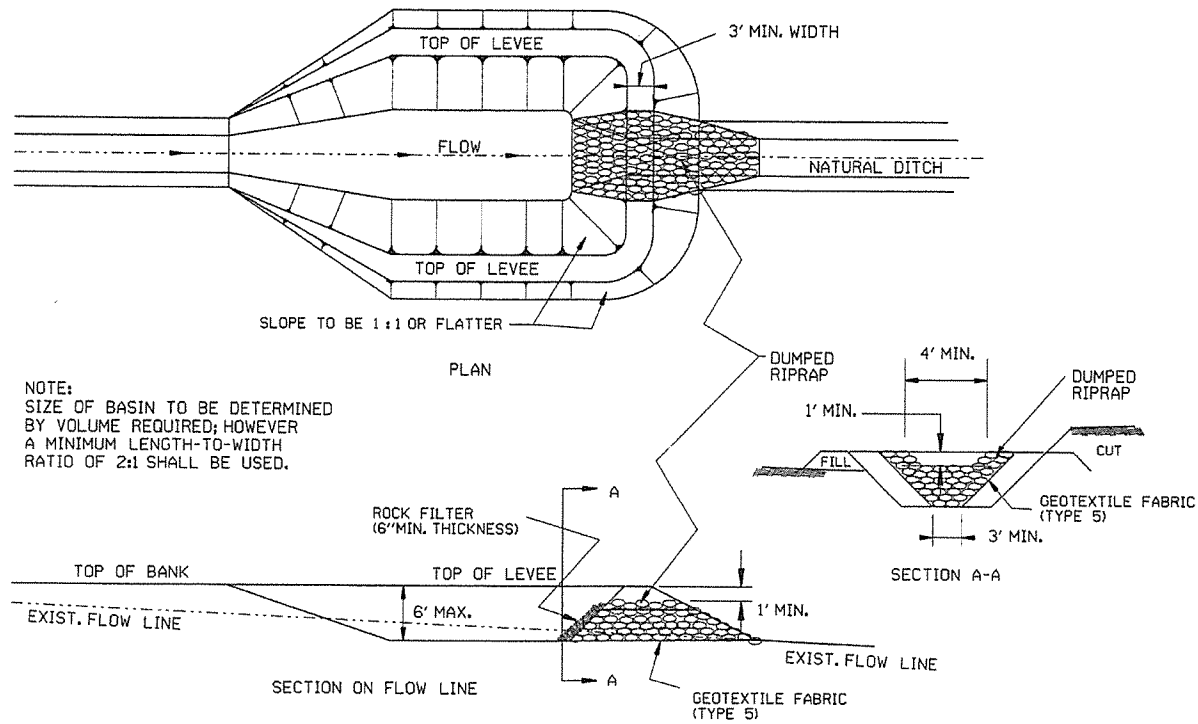
SILT FENCE (E-11)

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

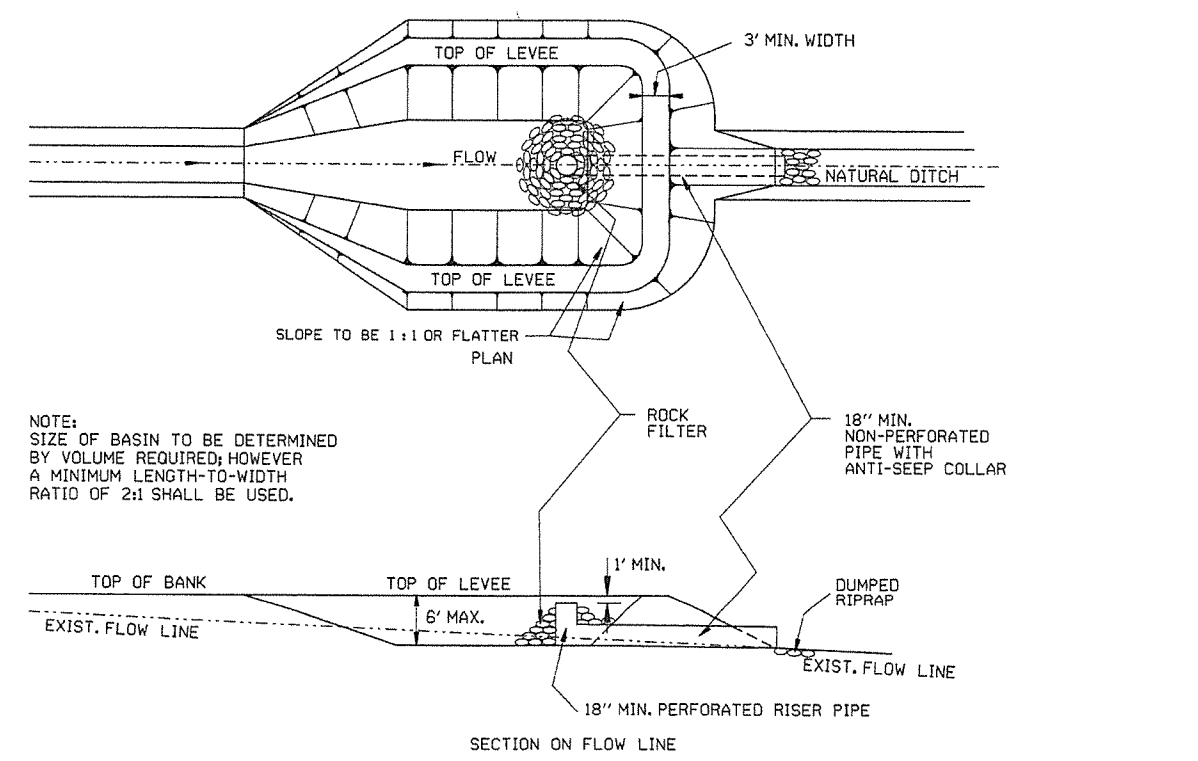


ROCK DITCH CHECK (E-6)

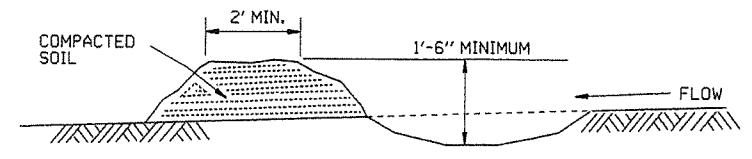
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	
7-15-94	REV. E-4 & E-11 MIN. 13\"/>		
6-2-94	REVISED E-1, 4, 7 & 11; DELETED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



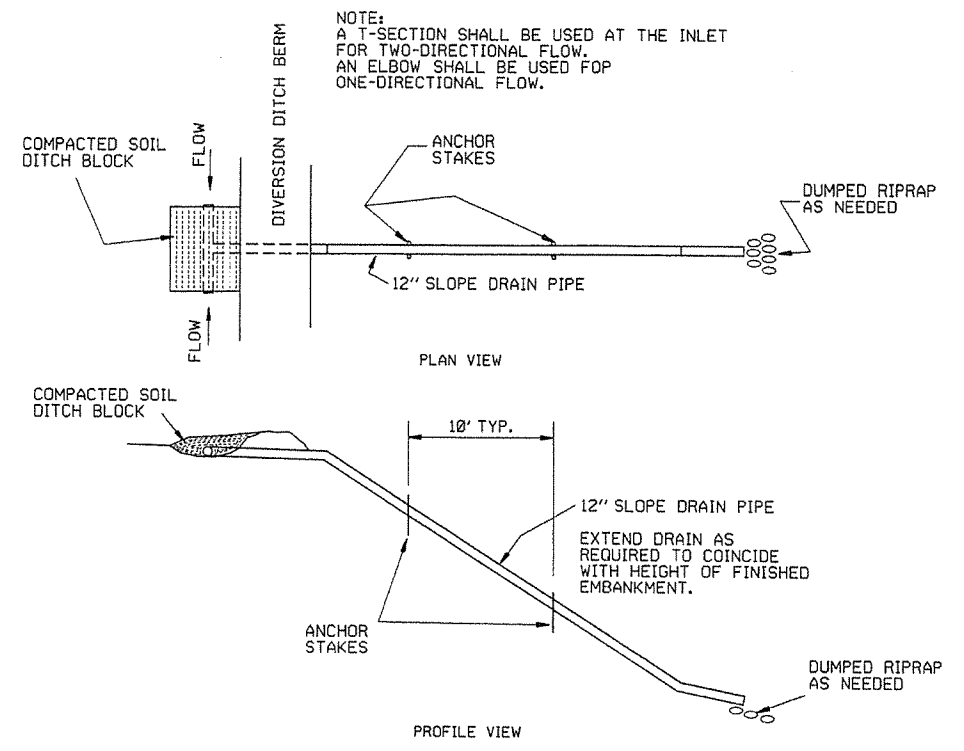
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



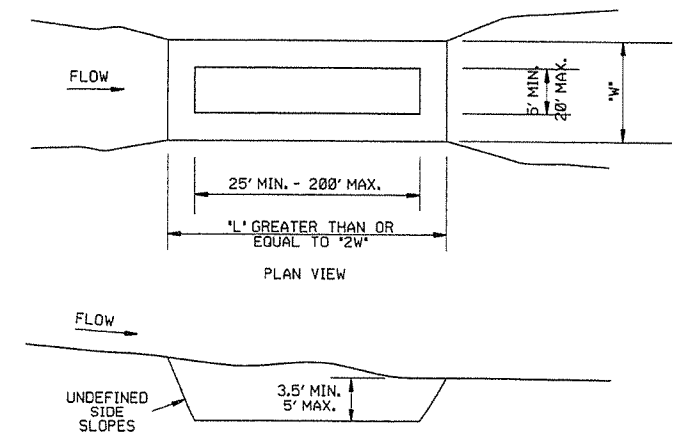
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

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

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

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

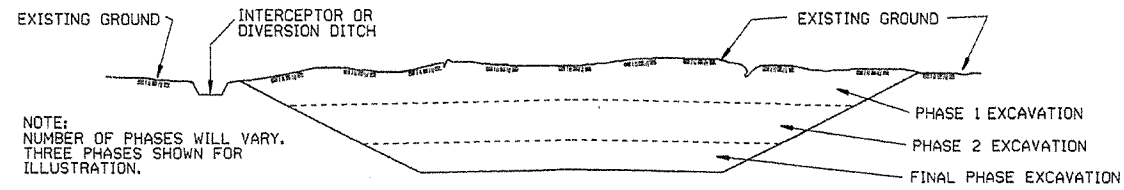
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION
 CONTROL DEVICES
 STANDARD DRAWING TEC-2

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

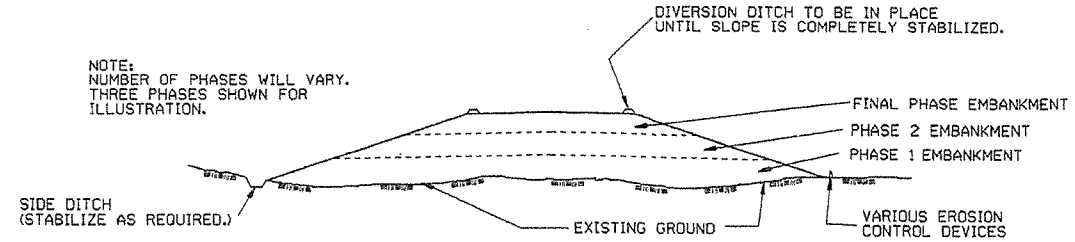
ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

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

47



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

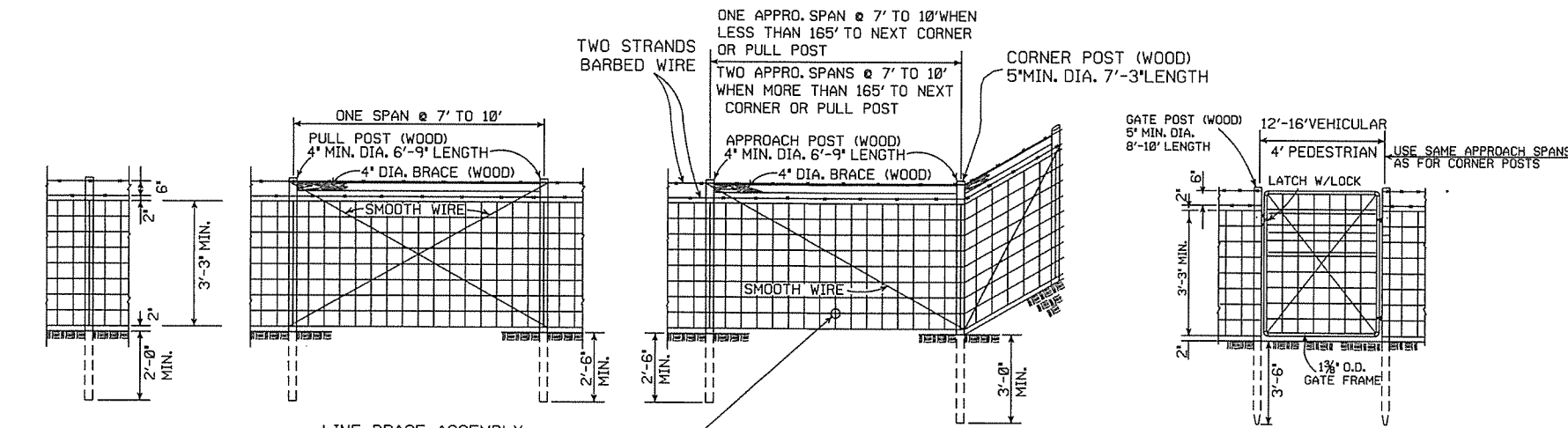
GENERAL NOTE

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.

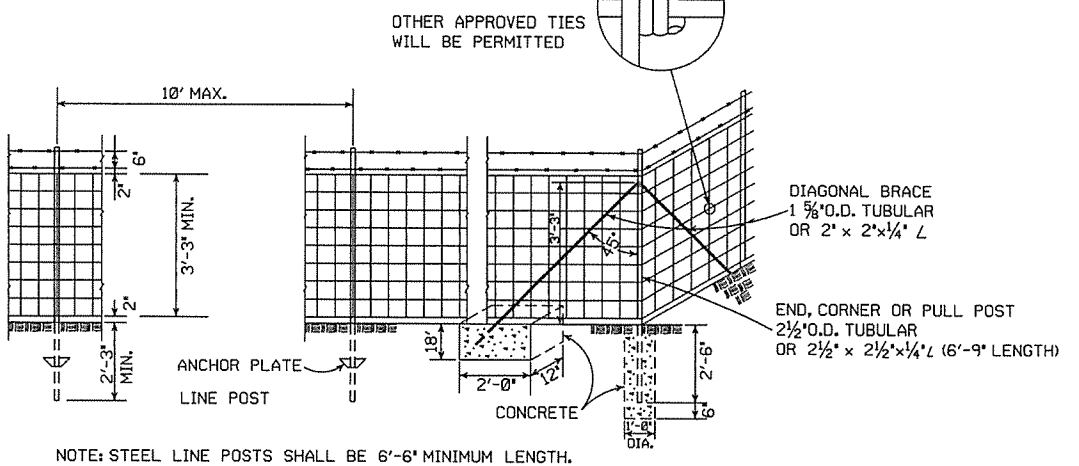
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued		6-2-94
DATE	REVISION		FILMED
		STANDARD DRAWING TEC-3	



LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

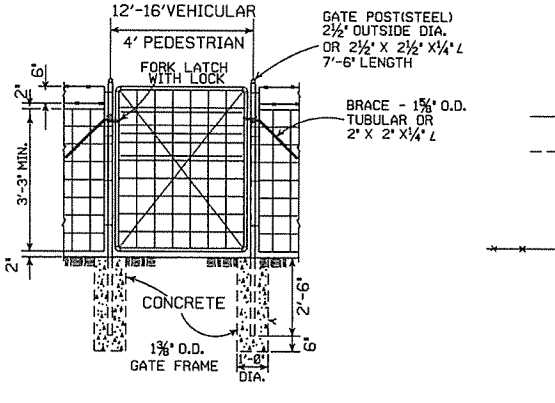
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 33'

TYPE C FENCE (WOOD POSTS)



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)



GENERAL NOTES:

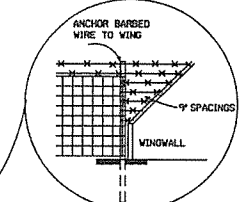
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE. AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2". TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

NOTE: USE 3/8" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.



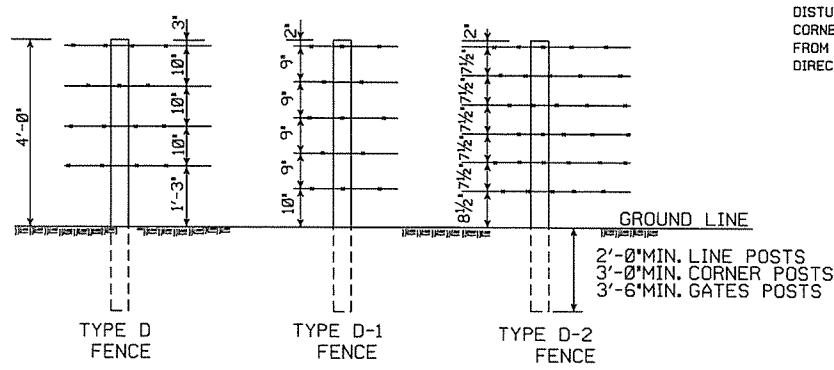
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

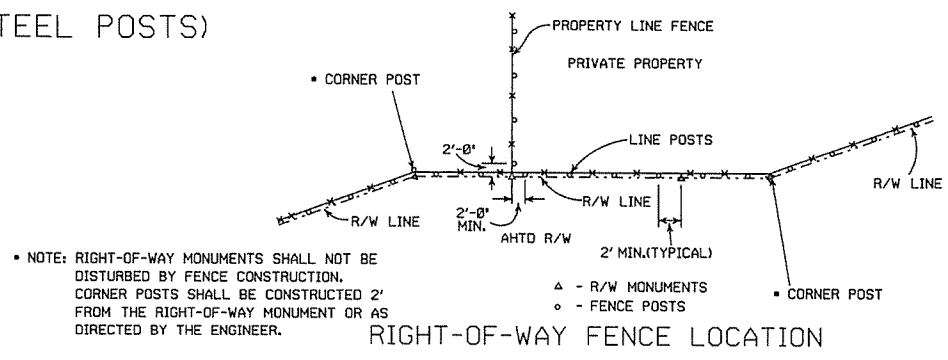
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

- 4 STRANDS BARBED WIRE (D)
- 5 STRANDS BARBED WIRE (D-1)
- 6 STRANDS BARBED WIRE (D-2)

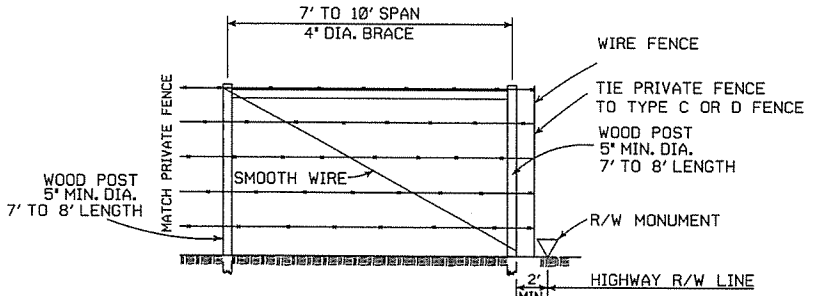


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

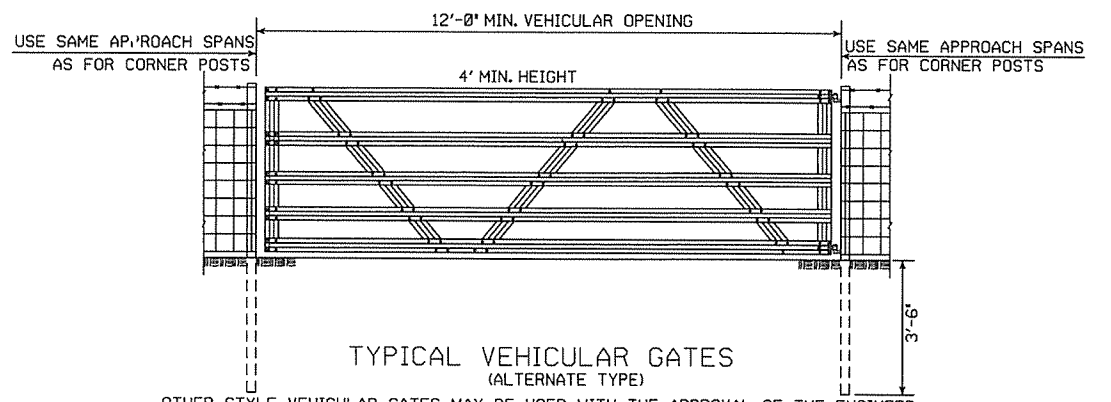


NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

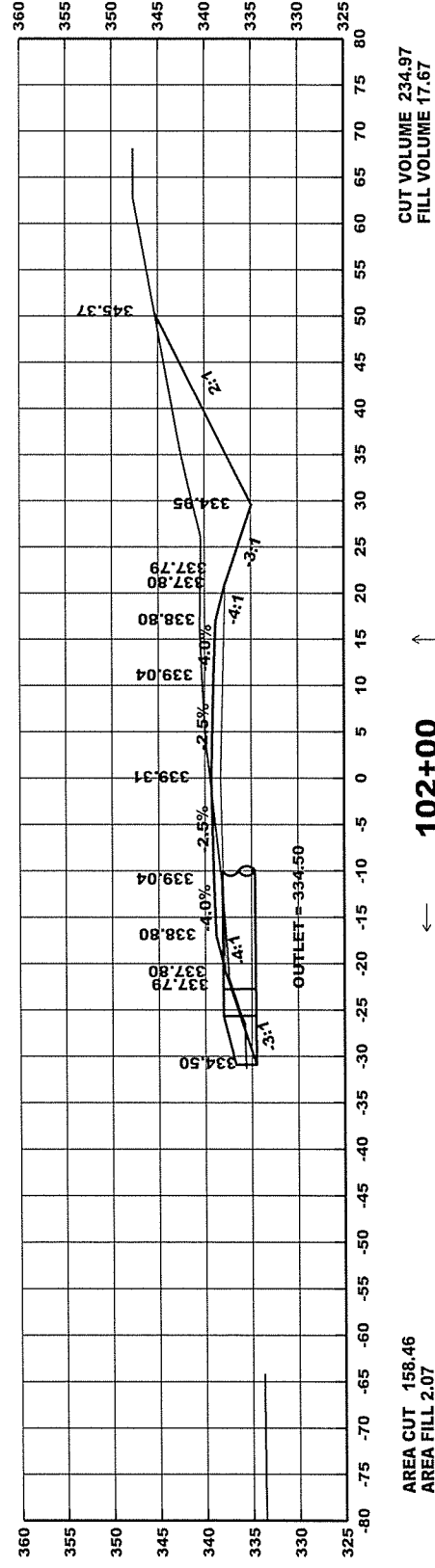
8-22-82	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4

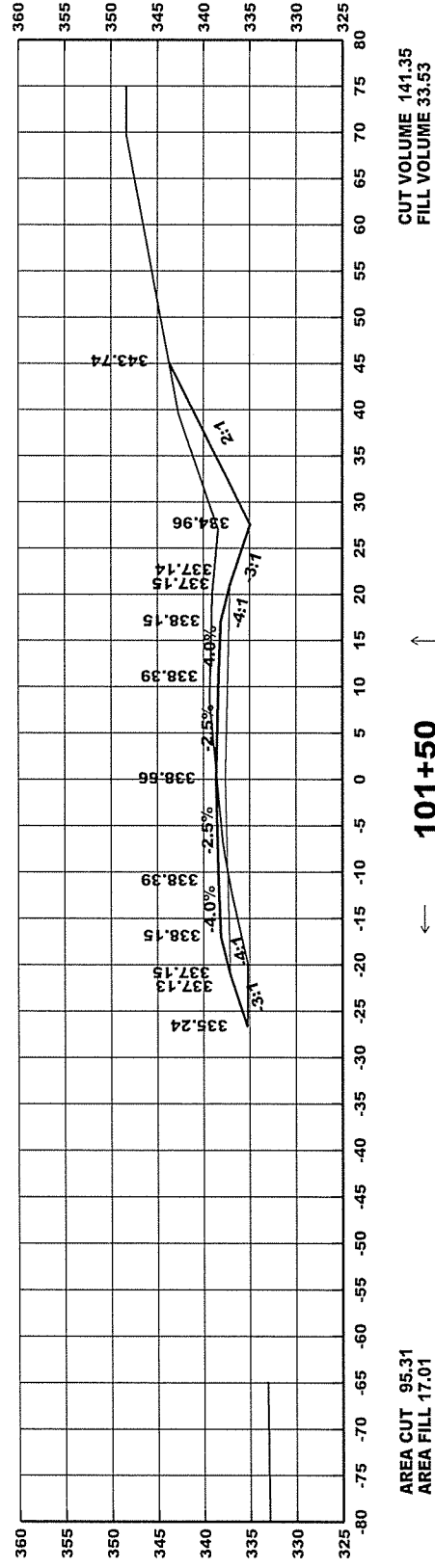
STA. 109+00 - STA. 129+00 AND STA. 130+34 - STA. 160+00
 AGGREGATE BASE COURSE WILL BE USED TO LEVEL THE
 AREAS BETWEEN THE TYPICAL SECTION AND THE EXISTING
 SURFACE. THESE QUANTITIES ARE NOT INCLUDED IN THE
 FILL VOLUMES.



CUT VOLUME 234.97
 FILL VOLUME 17.67

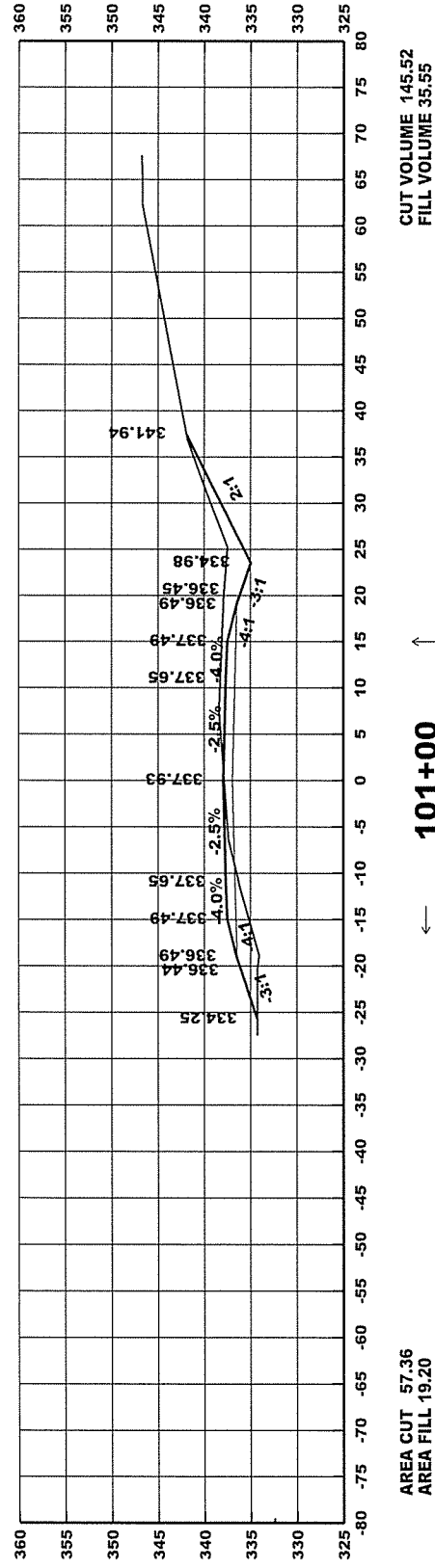
← 102+00 →

**OUTLET - CONSTRUCT
 DOUBLE 42" PIPE CULVERT
 CROSS DRAIN**
 42" RCP (CL. III)(TYPE 3 BEDDING) = 96 LIN. FT.
 42" CMP OR PLASTIC (TYPE 2 BEDDING) = 104 LIN. FT.
 42" FES ON LT. = 2 EACH



CUT VOLUME 141.35
 FILL VOLUME 33.53

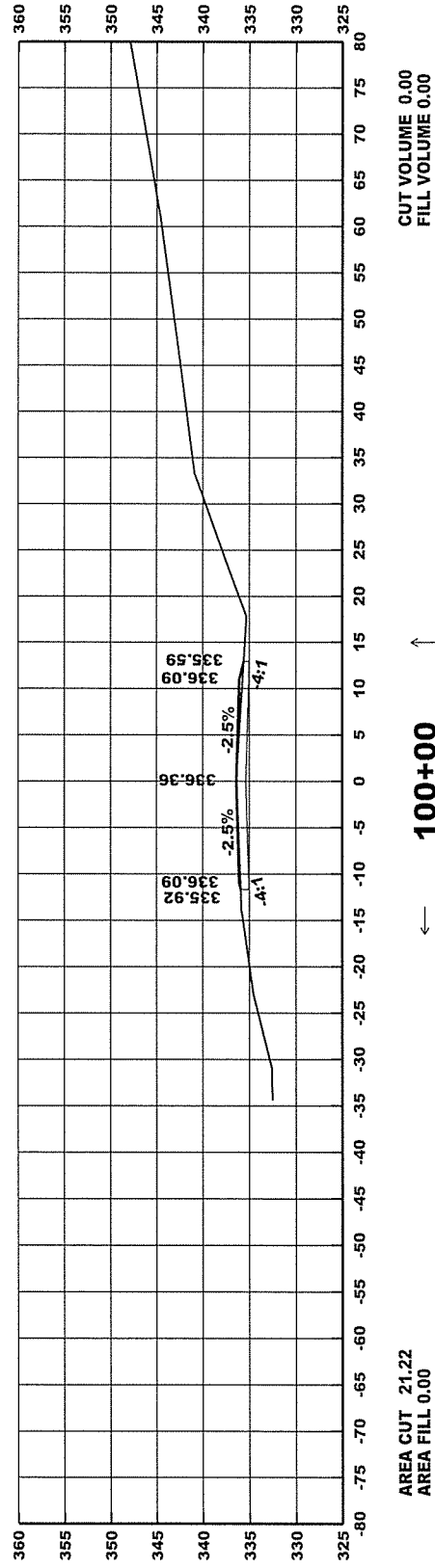
← 101+50 →



CUT VOLUME 145.52
 FILL VOLUME 35.55

← 101+00 →

BEGIN DITCH GRADE ON RT.



CUT VOLUME 0.00
 FILL VOLUME 0.00

← 100+00 →

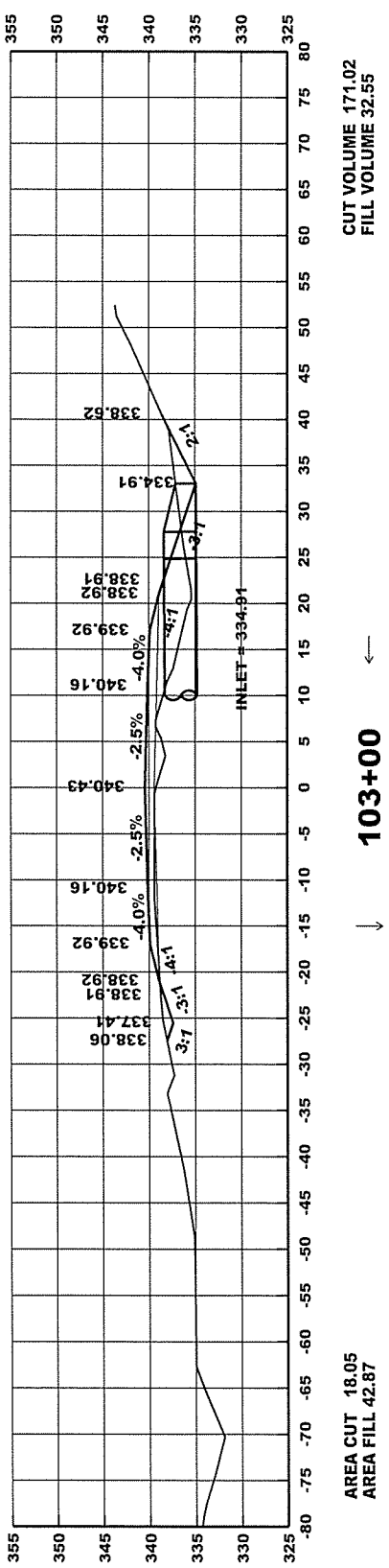
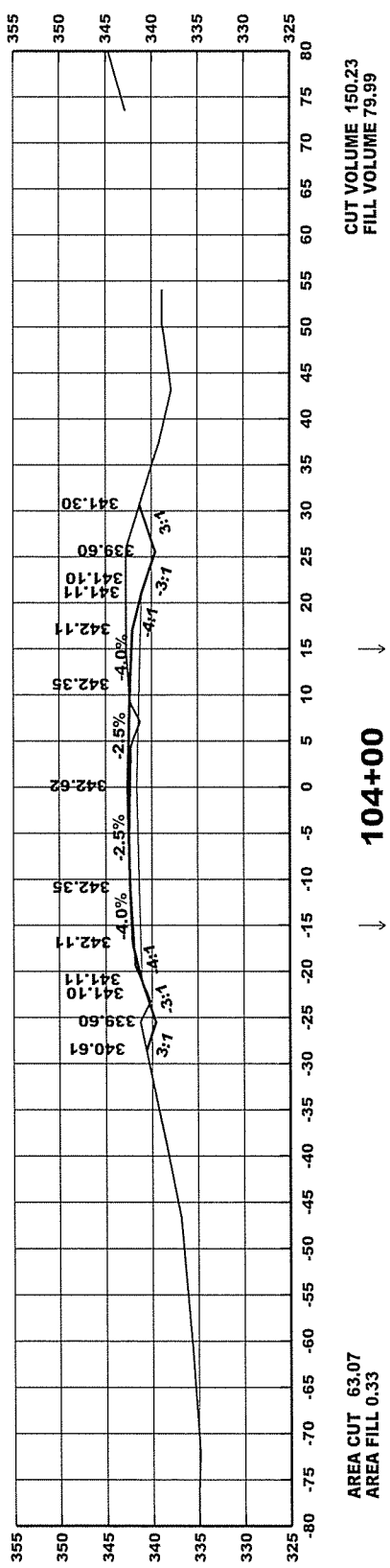
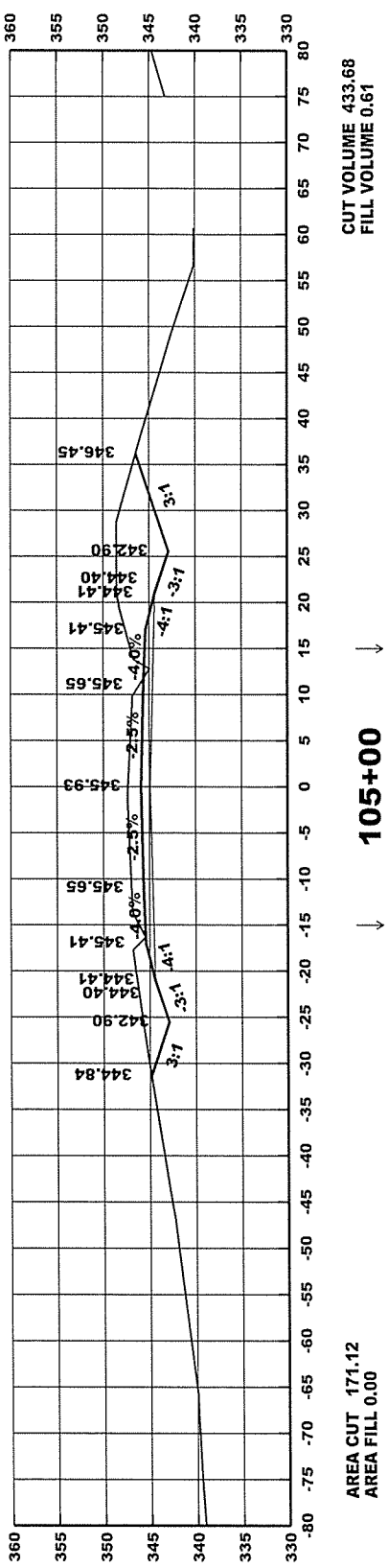
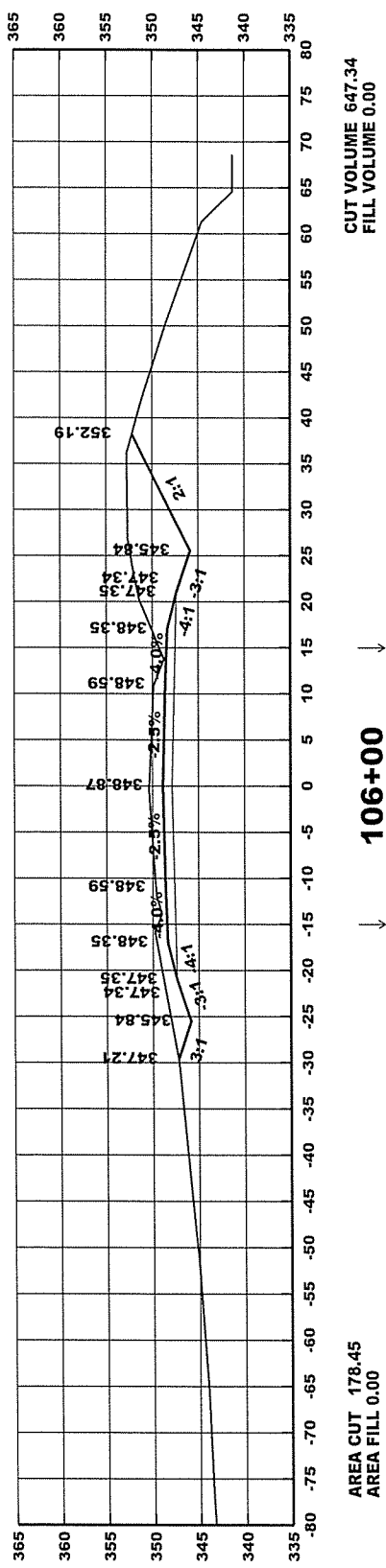
BEGIN JOB FA7518

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		49	64
4 CROSS SECTIONS								

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518		50	64

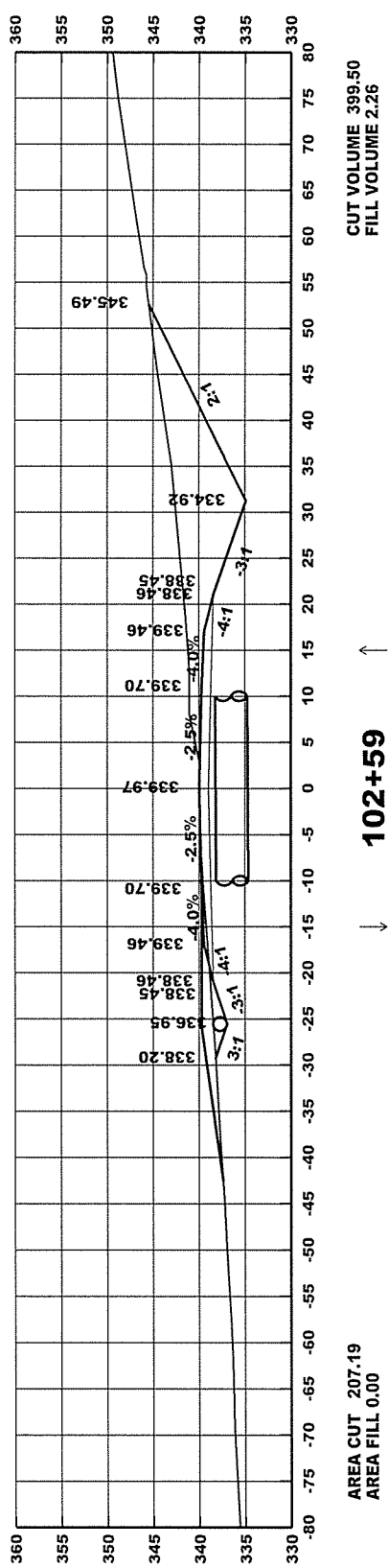
4

CROSS SECTIONS

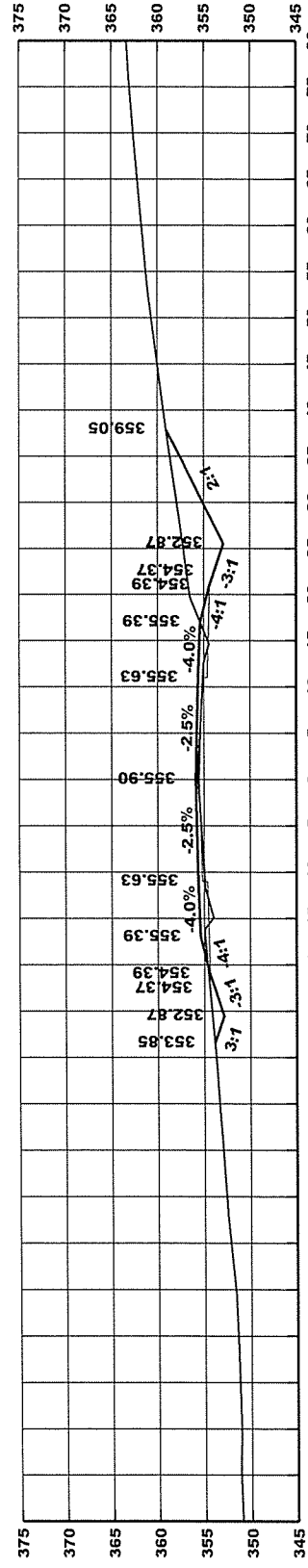


**INLET - CONSTRUCT
 DOUBLE 42" PIPE CULVERT
 CROSS DRAIN
 42" RCP (CL. III)(TYPE 3 BEDDING) = 96 LIN. FT.
 42" CMP OR PLASTIC (TYPE 2 BEDDING) = 106 LIN. FT.
 42" FES ON RT. = 2 EACH**

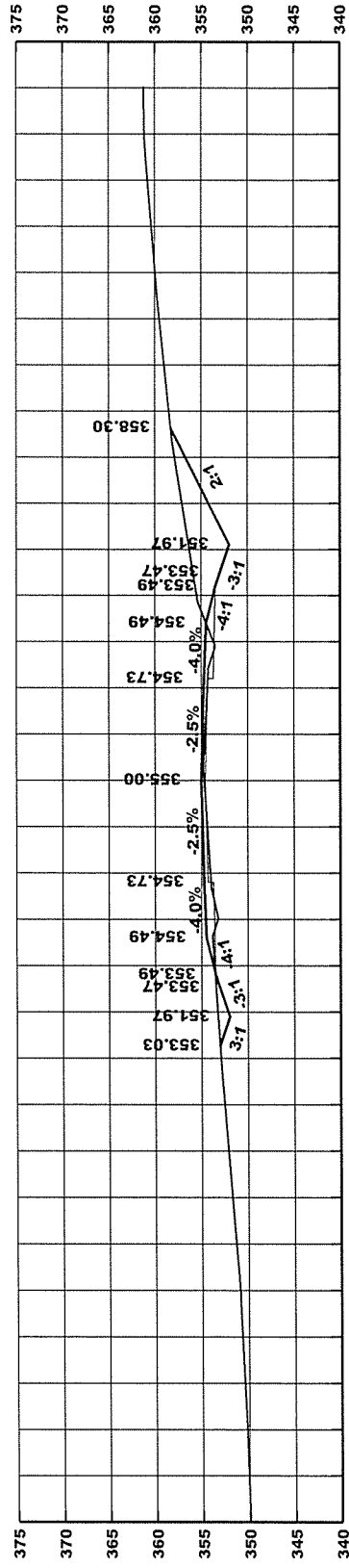
END DITCH GRADE ON RT.



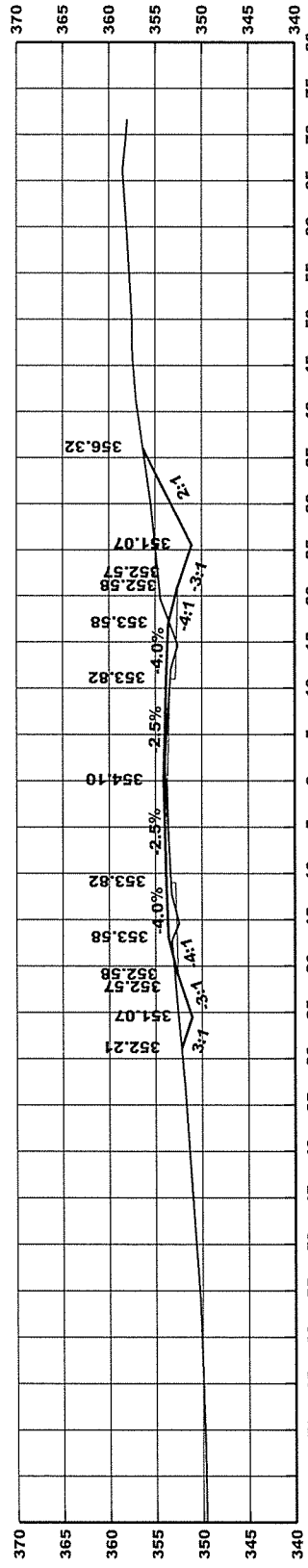
**INSTALL
 18" X 46' PIPE CULVERT
 LT. SIDE DRAIN
 CONST. APPR. = 45 CU. YDS.**



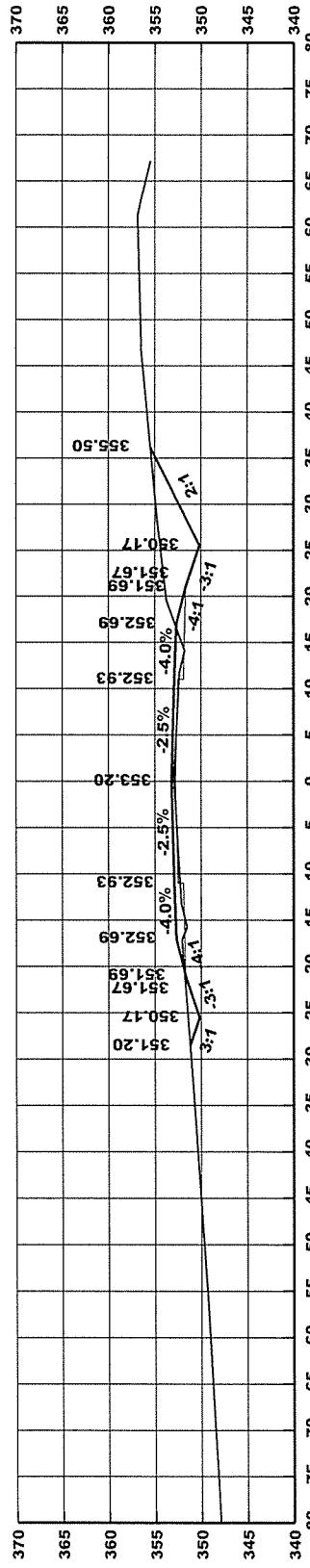
112+00



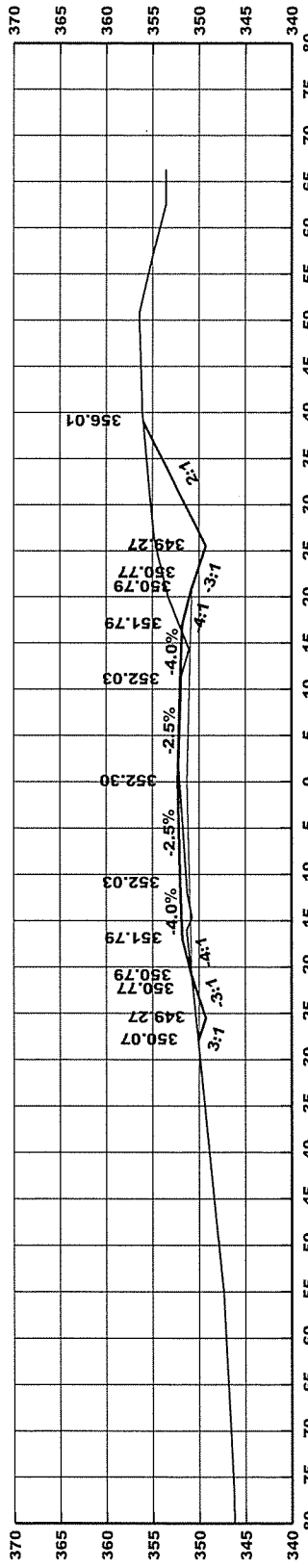
111+00



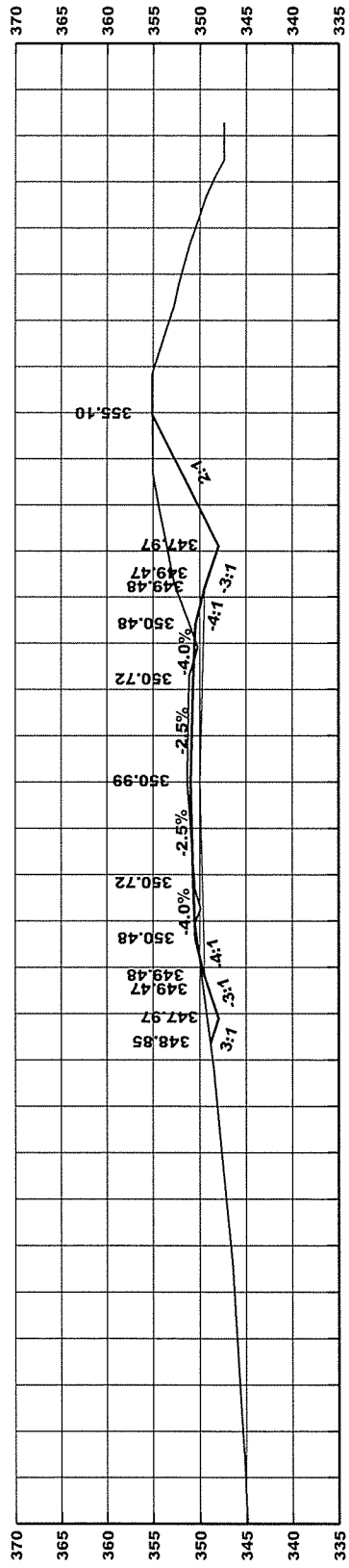
110+00



109+00



108+00



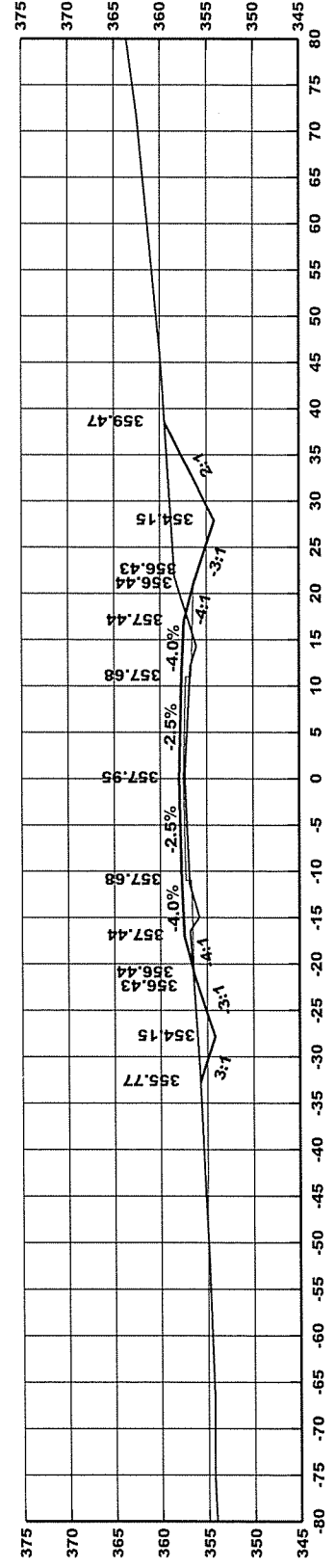
107+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	FA7518	51
						CROSS SECTIONS		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	52	64	

4

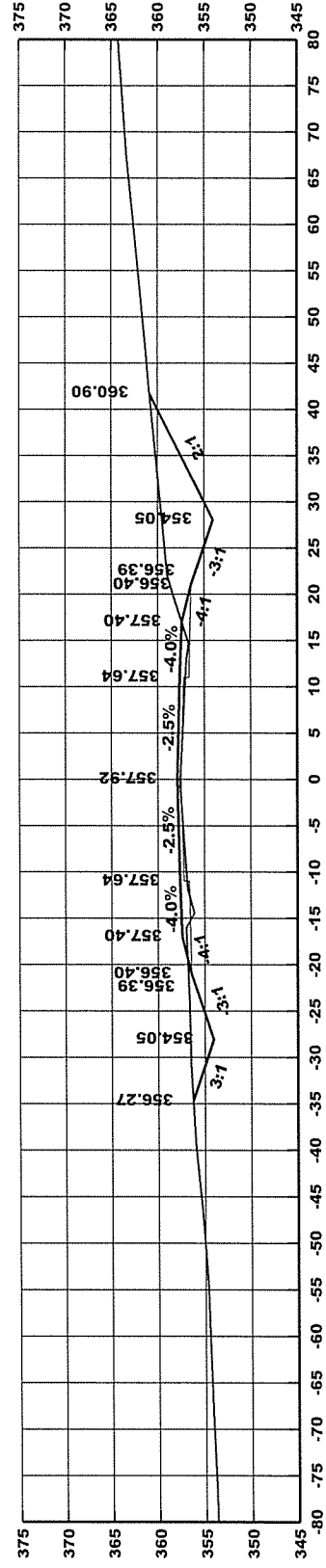
CROSS SECTIONS



CUT VOLUME 297.48
FILL VOLUME 0.00

118+00

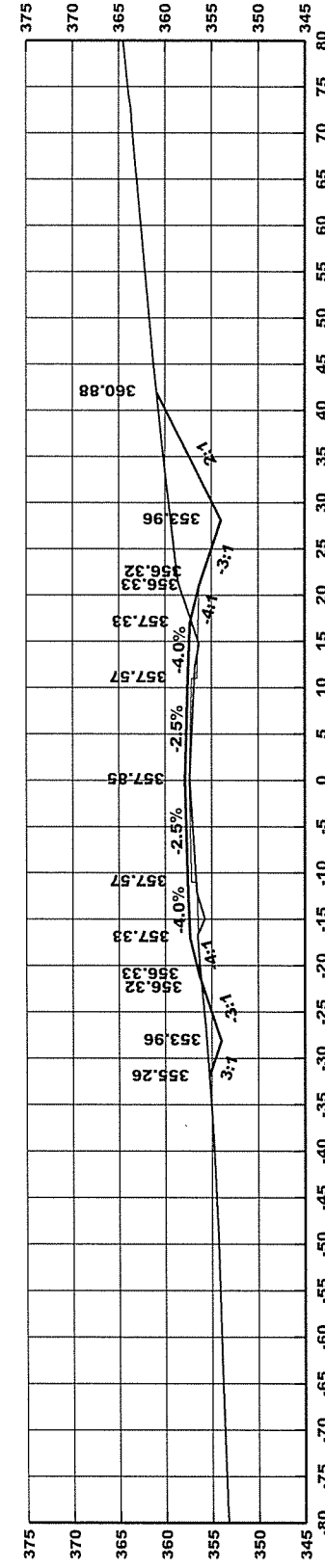
AREA CUT 64.98
AREA FILL 8.40



CUT VOLUME 325.33
FILL VOLUME 10.85

117+00

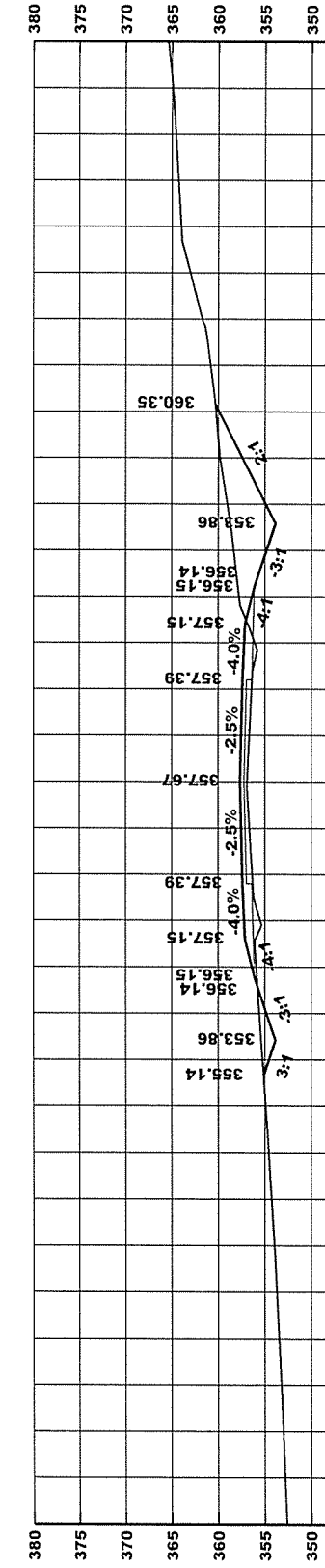
AREA CUT 95.67
AREA FILL 2.55



CUT VOLUME 275.60
FILL VOLUME 22.02

116+00

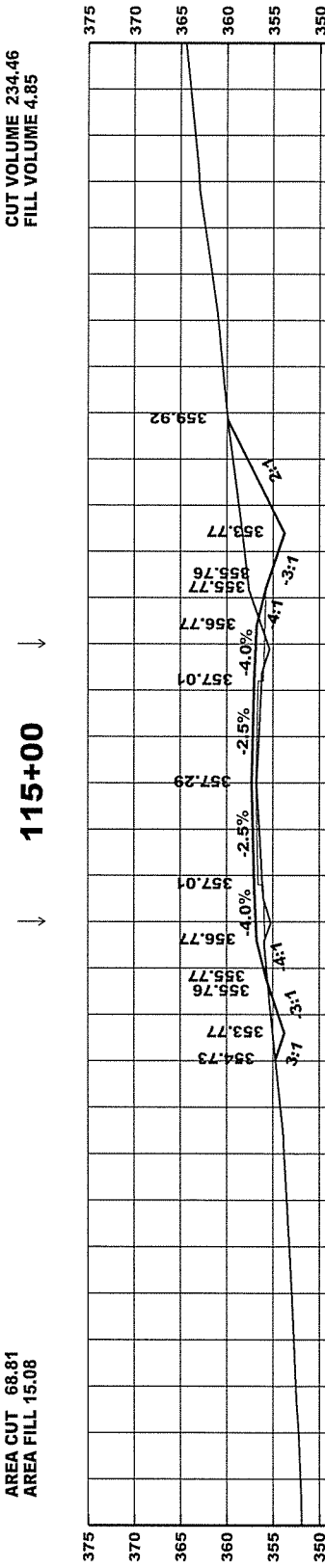
AREA CUT 80.01
AREA FILL 7.21



CUT VOLUME 234.46
FILL VOLUME 4.85

115+00

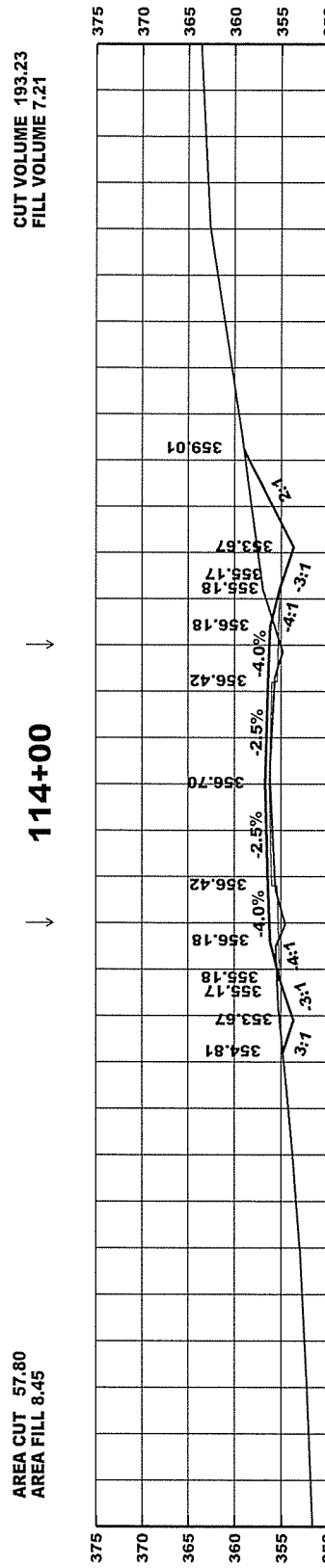
AREA CUT 68.81
AREA FILL 15.08



CUT VOLUME 193.23
FILL VOLUME 7.21

114+00

AREA CUT 57.80
AREA FILL 8.45



CUT VOLUME 196.75
FILL VOLUME 1.01

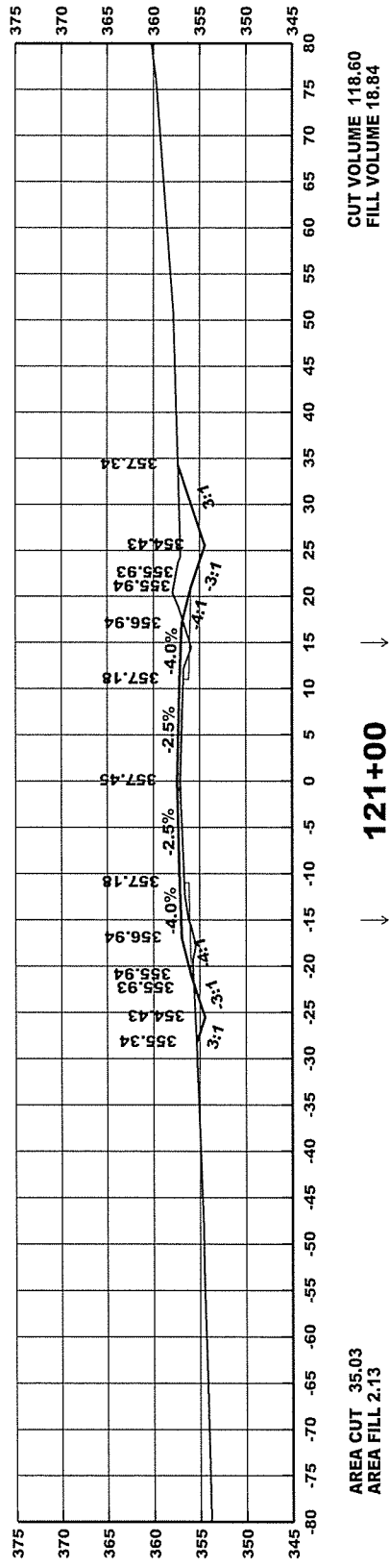
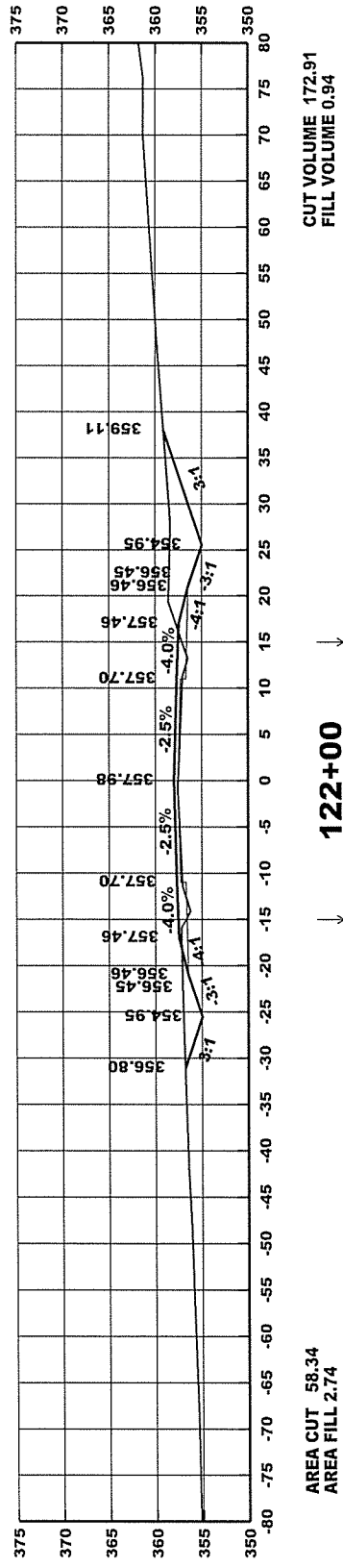
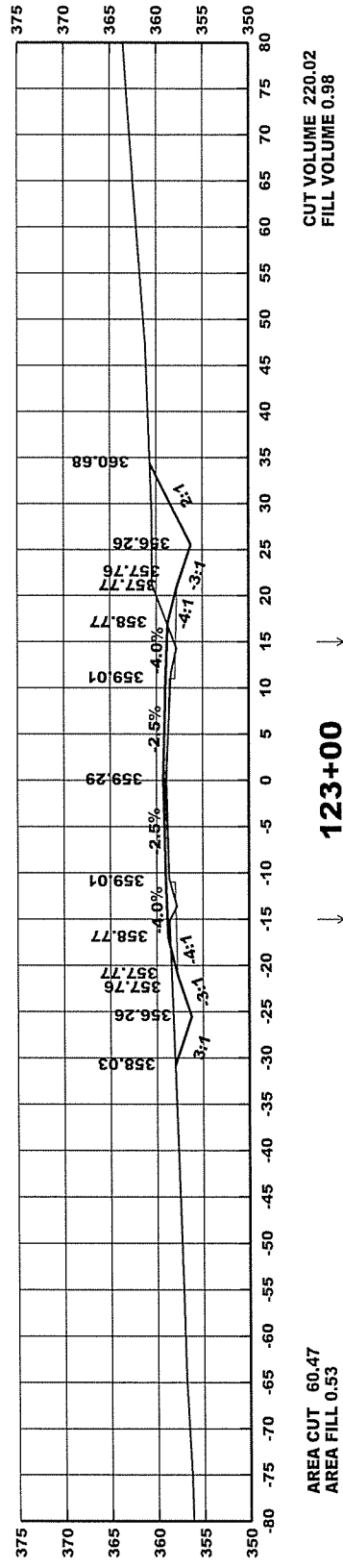
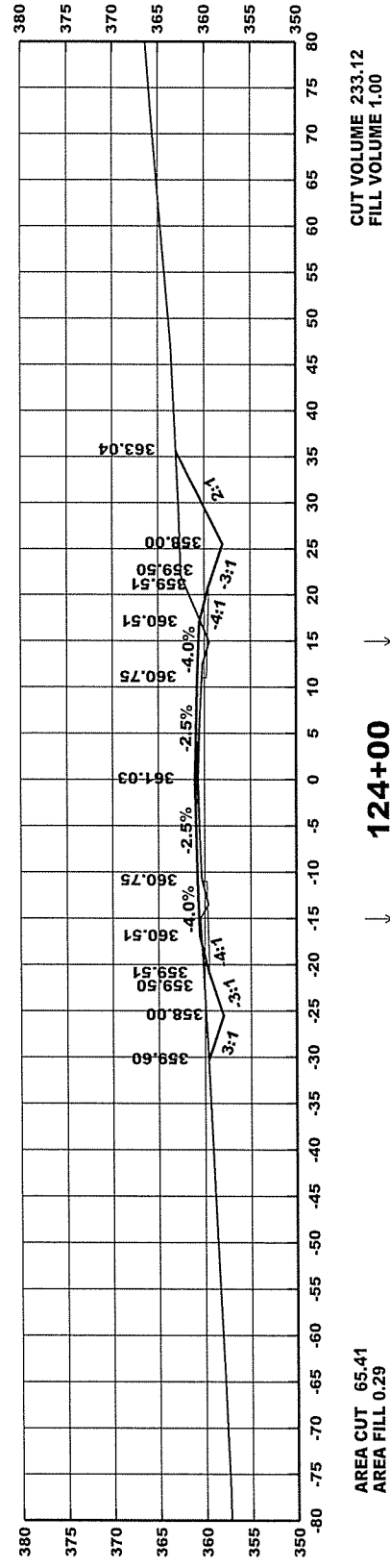
113+00

AREA CUT 46.55
AREA FILL 7.02

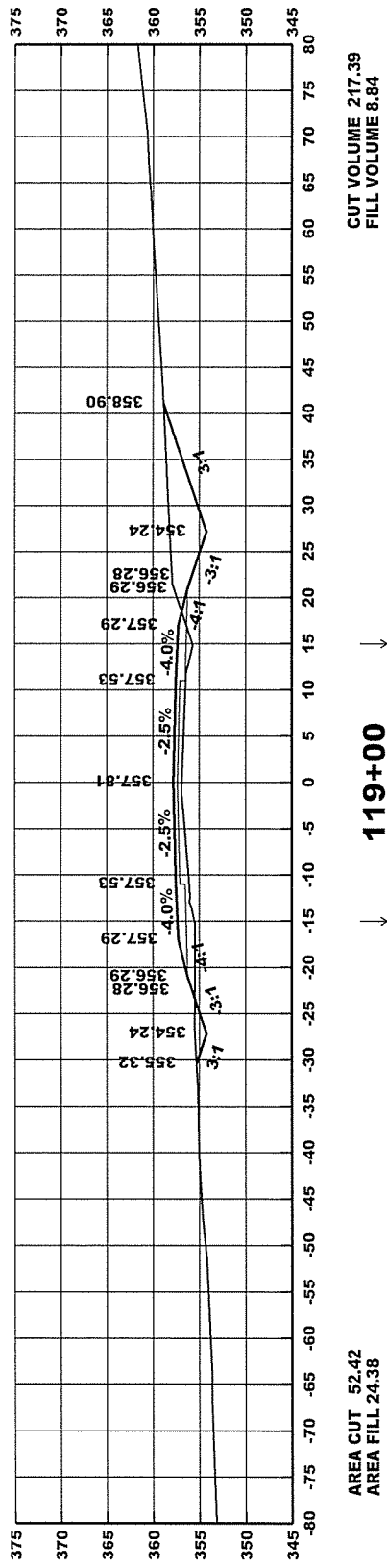
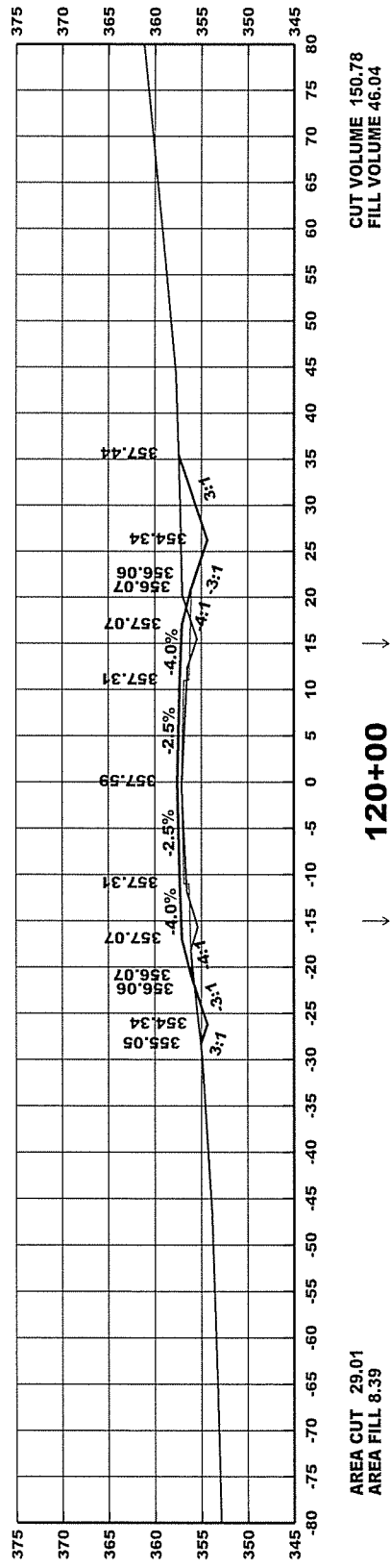
BEGIN DITCH GRADE ON LT. AND RT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	53	64	

4
CROSS SECTIONS

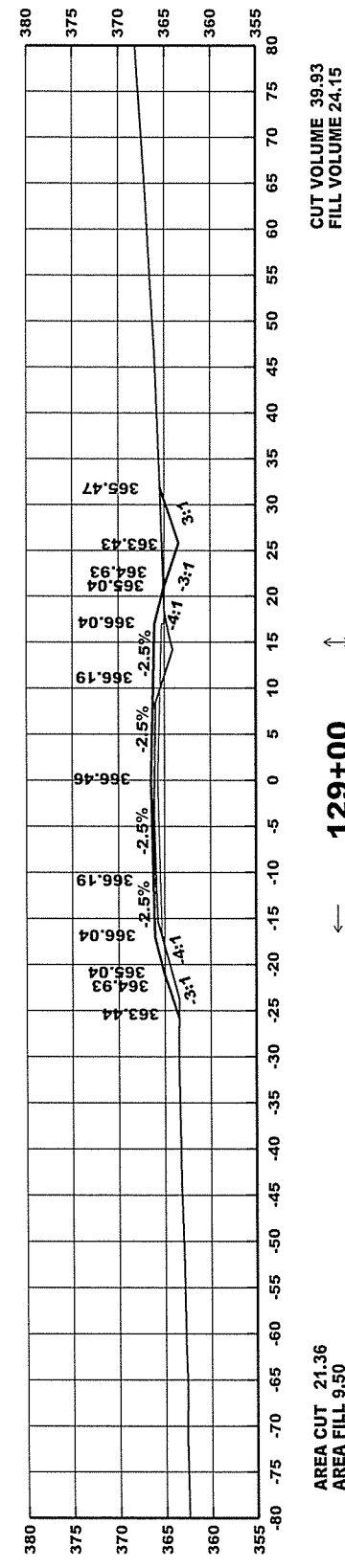


END DITCH GRADE ON LT. AND RT.

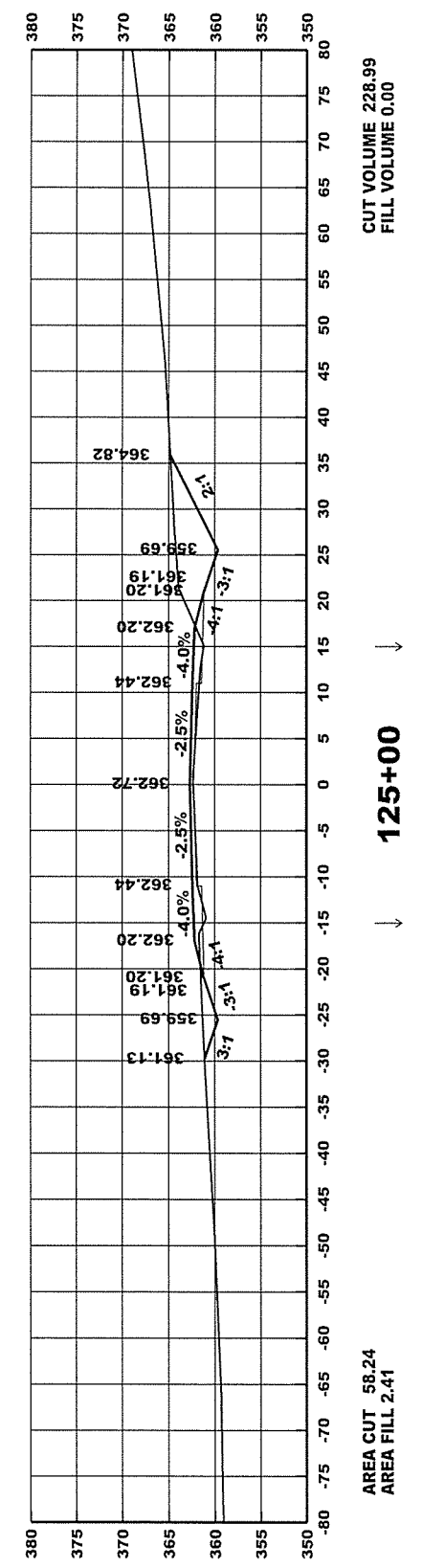
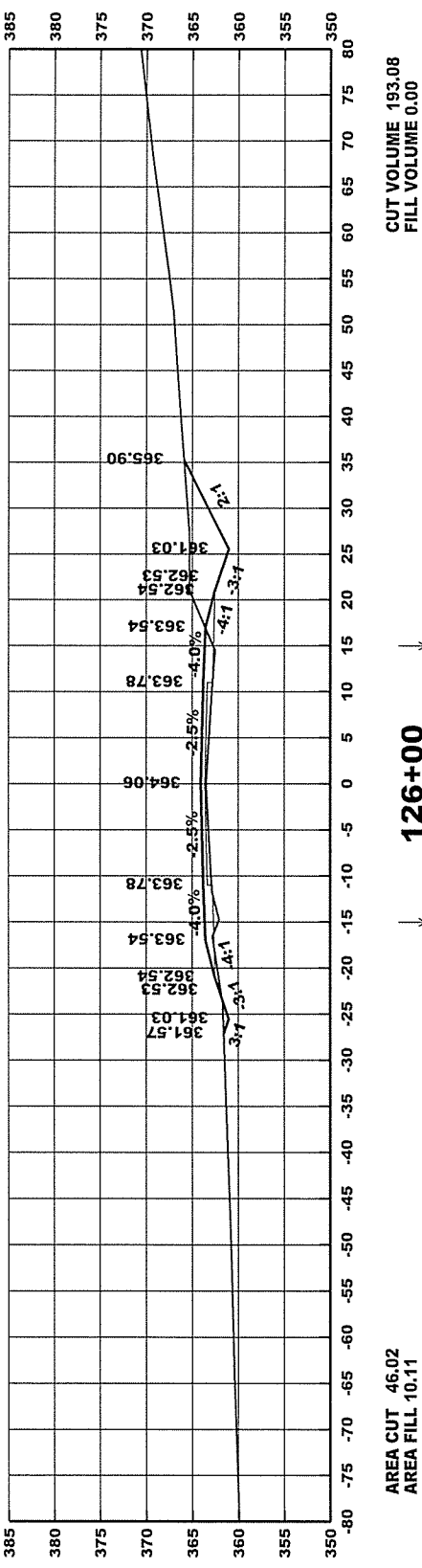
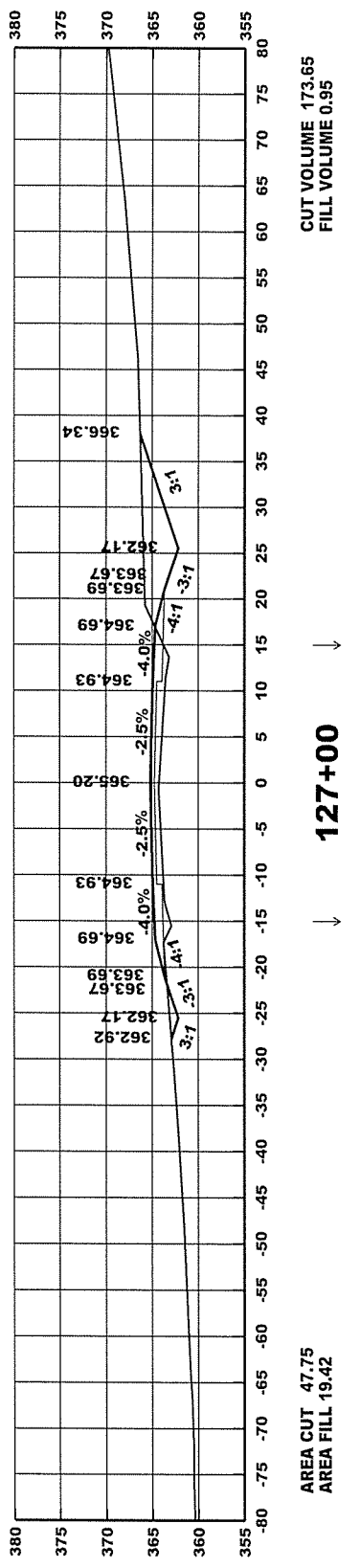
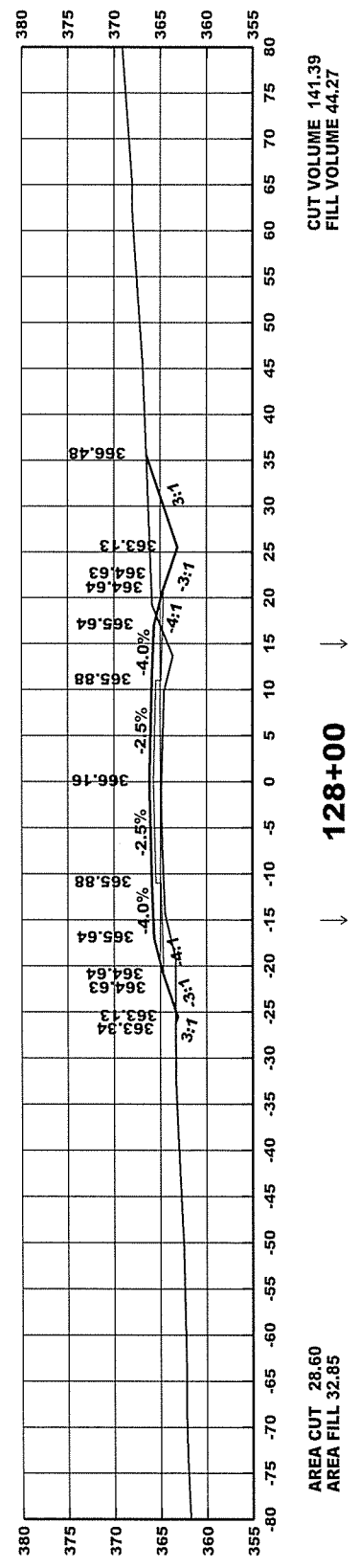
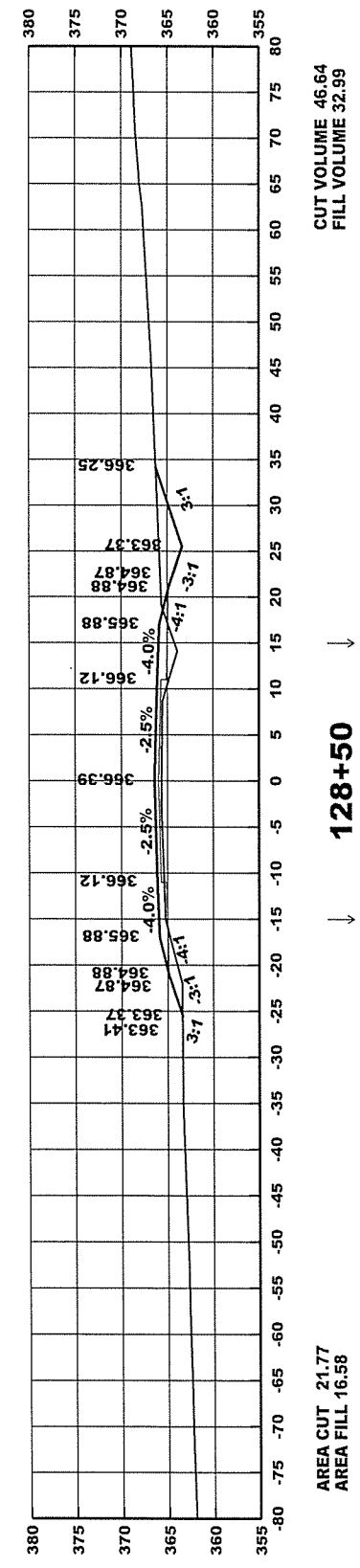


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	54	64	

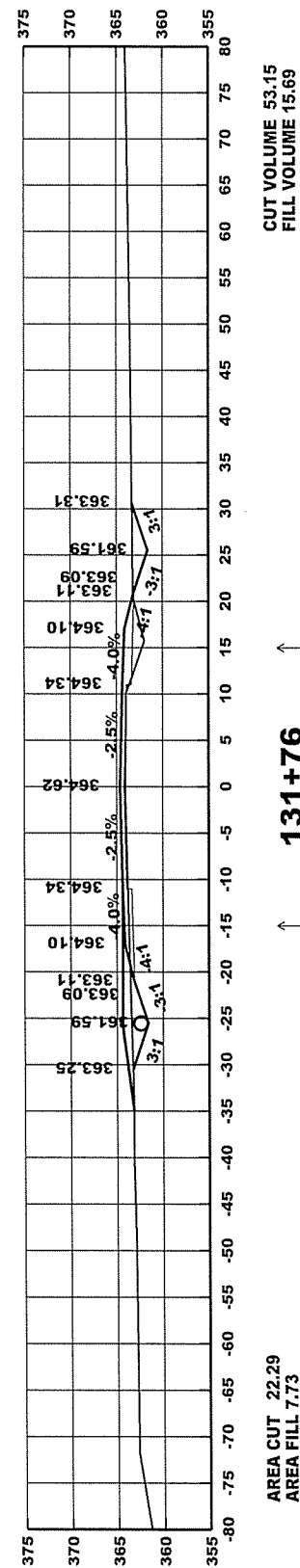
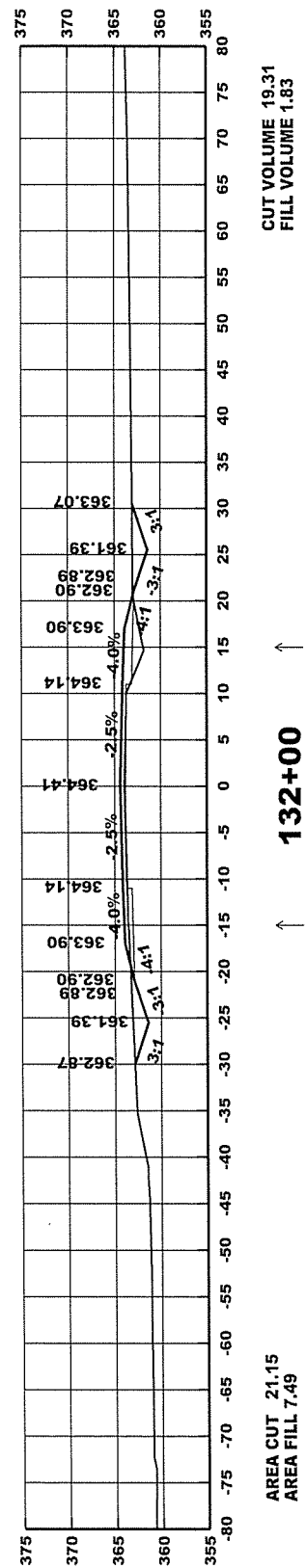
4 CROSS SECTIONS



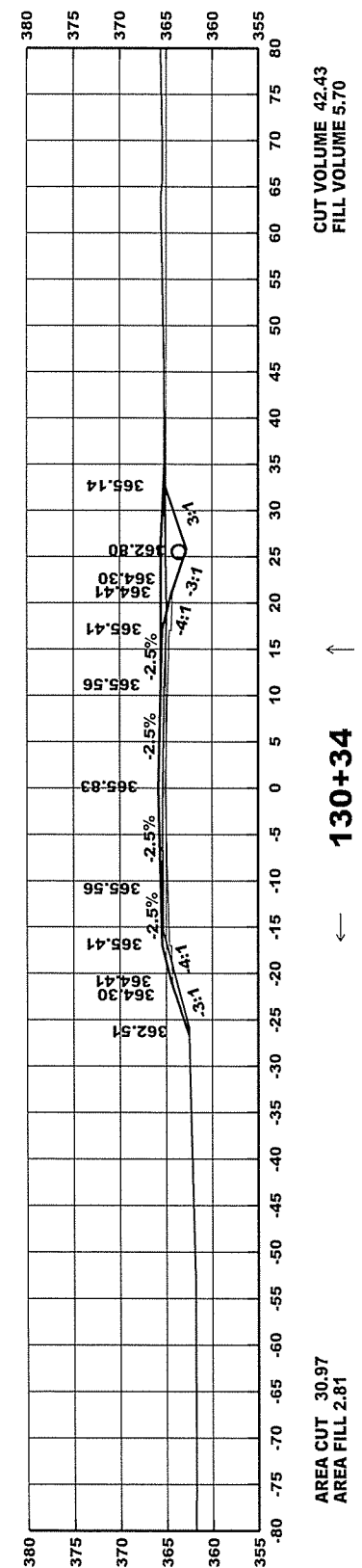
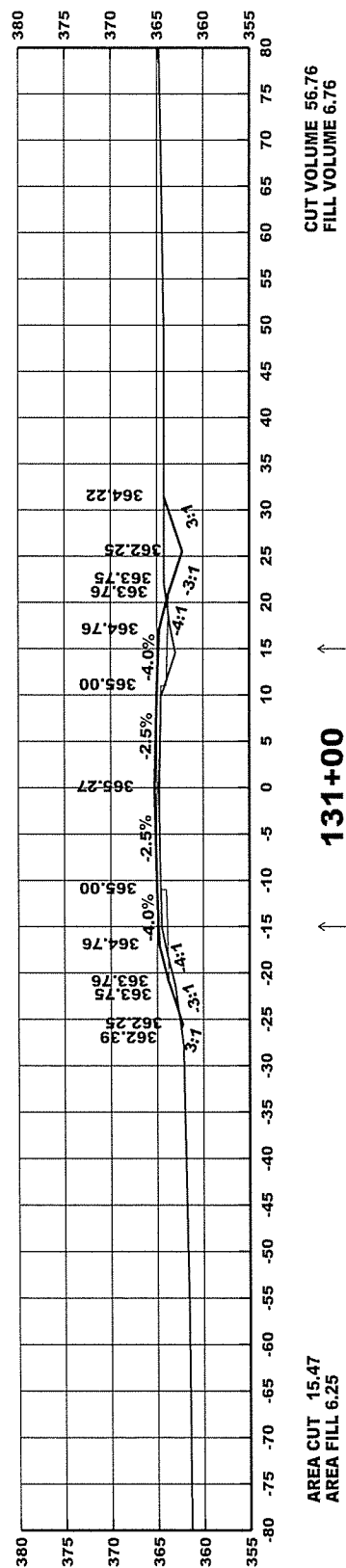
BEGIN PORTLAND CEMENT CONCRETE PAVEMENT



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	55	64	
4 CROSS SECTIONS								

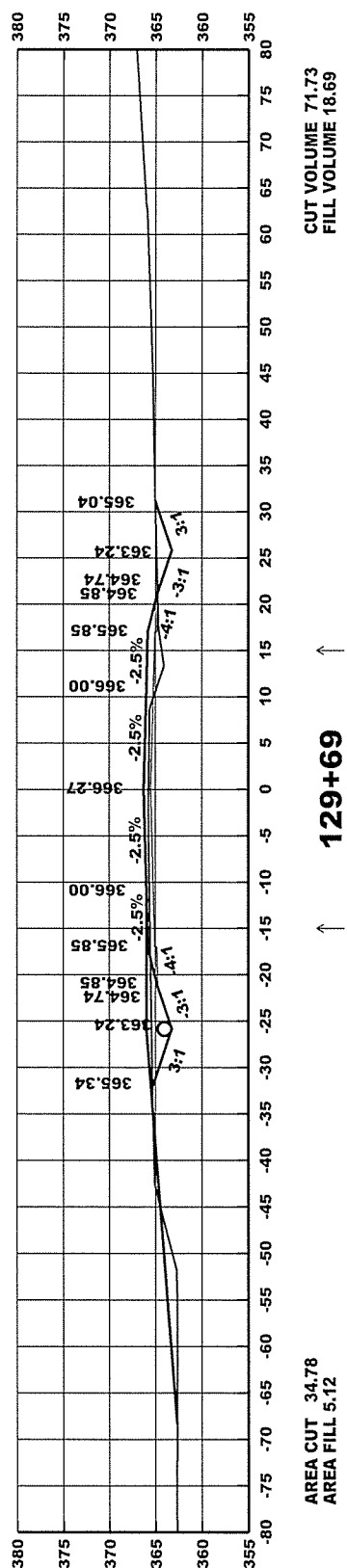
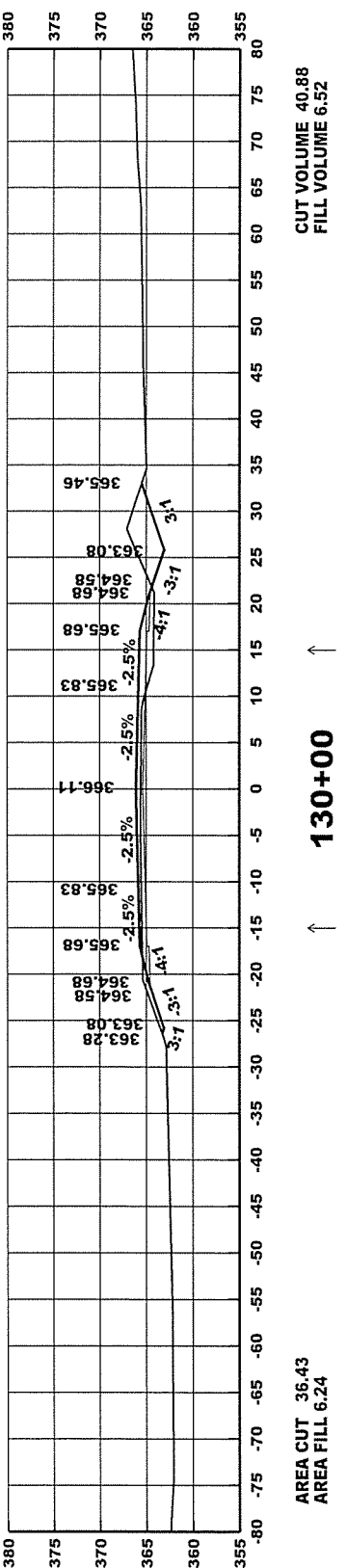


**INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 20 CU. YDS.**



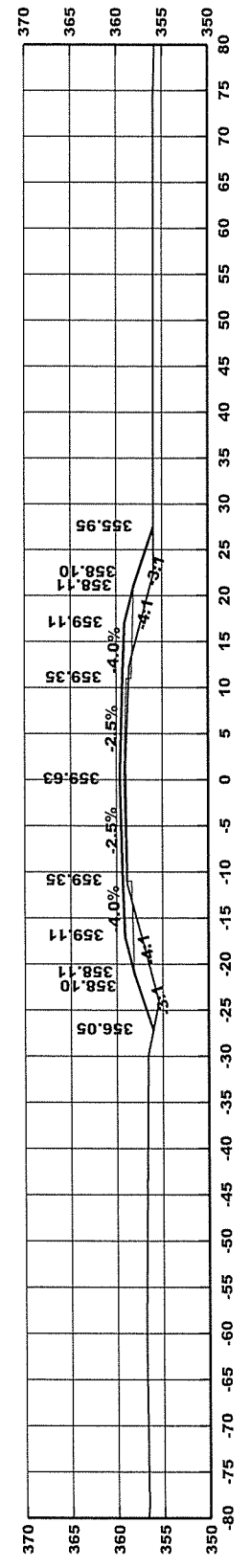
**INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 20 CU. YDS.**

END PORTLAND CEMENT CONCRETE PAVEMENT

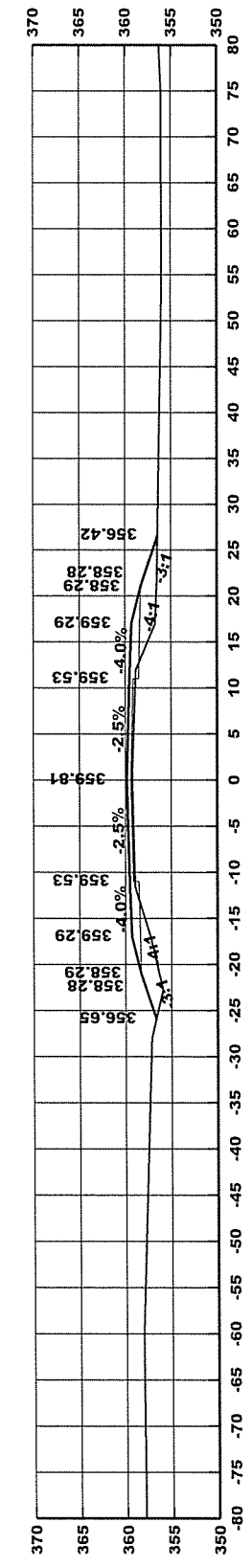


**INSTALL
18" X 74' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 75 CU. YDS.**

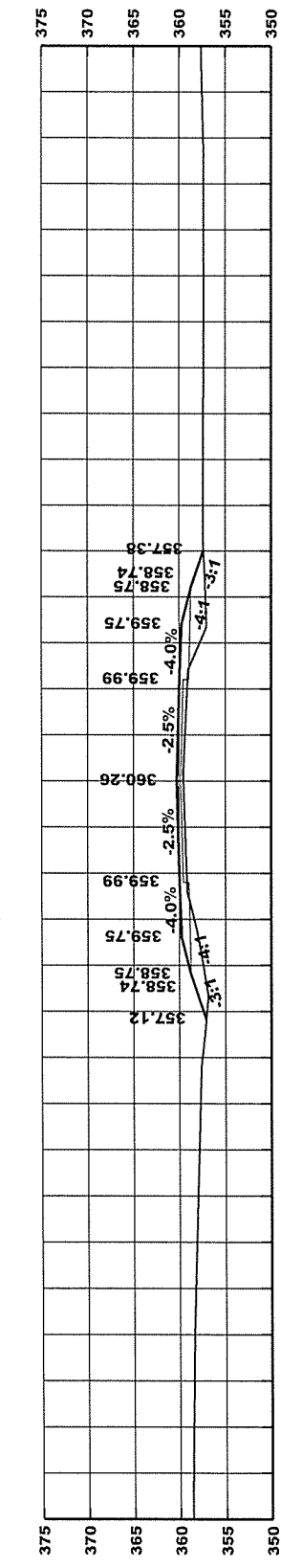
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	56	64	
4 CROSS SECTIONS								



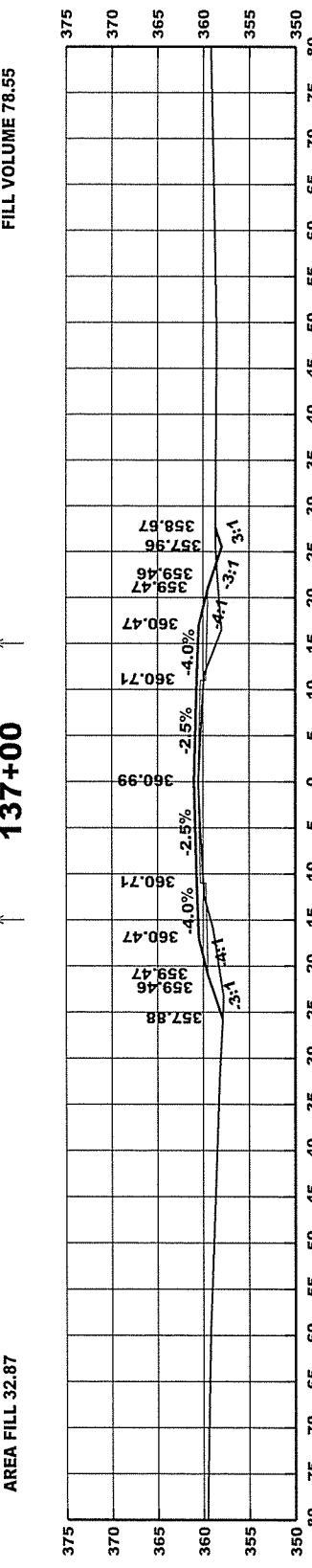
↑ **139+00** →



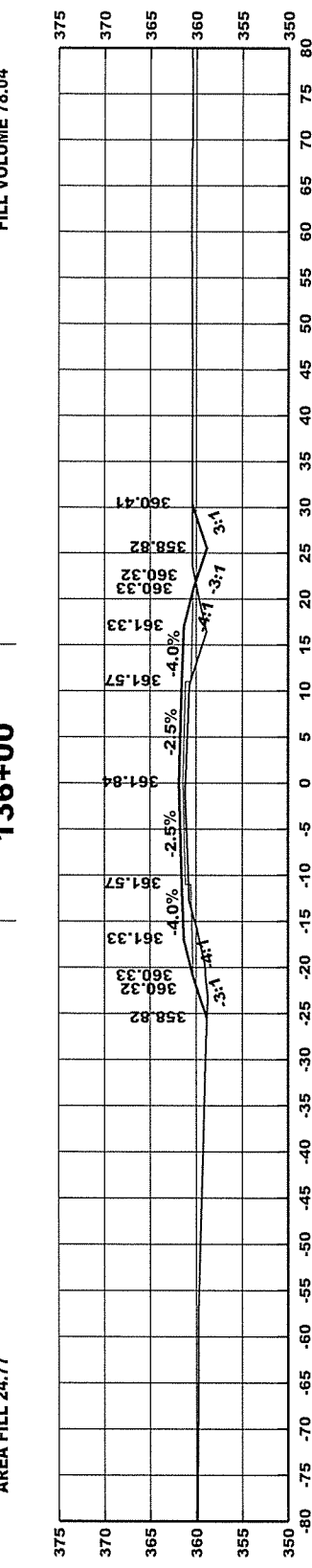
↑ **138+00** →



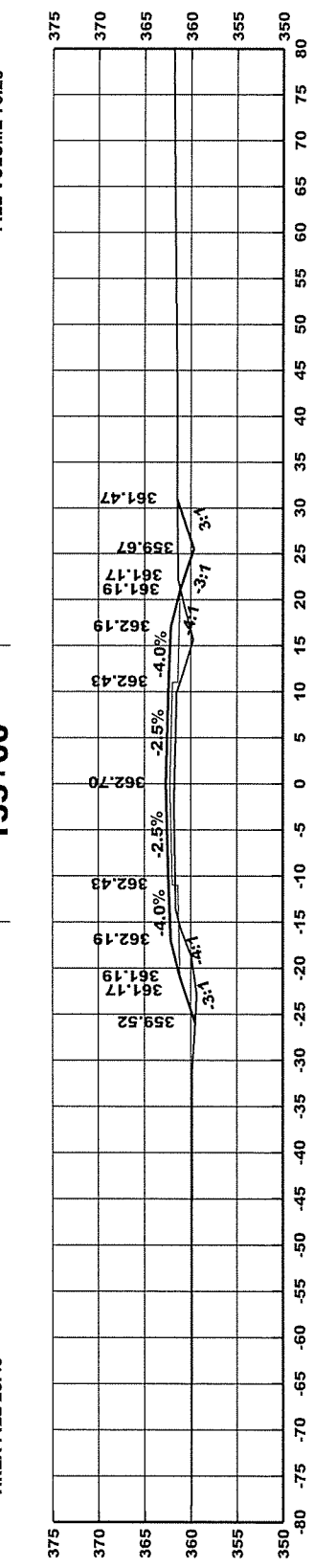
↑ **137+00** →



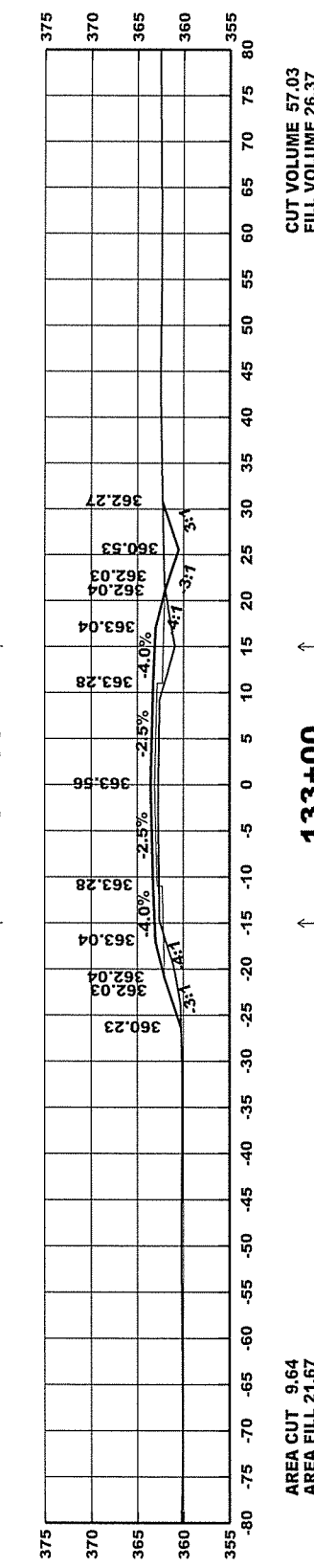
↑ **136+00** →



↑ **135+00** →



↑ **134+00** →

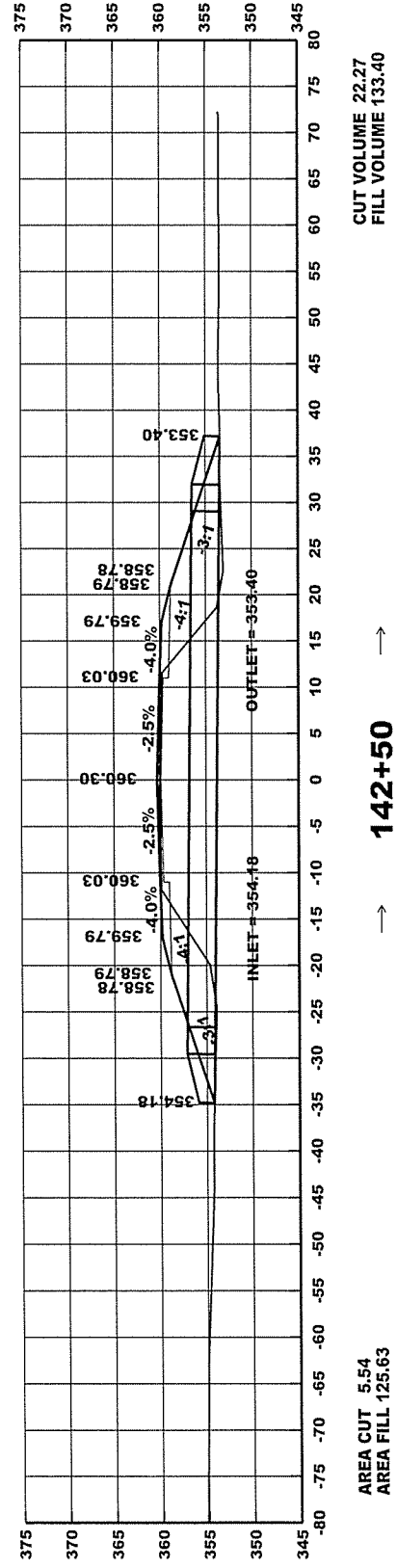


↑ **133+00** →

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	57	64	

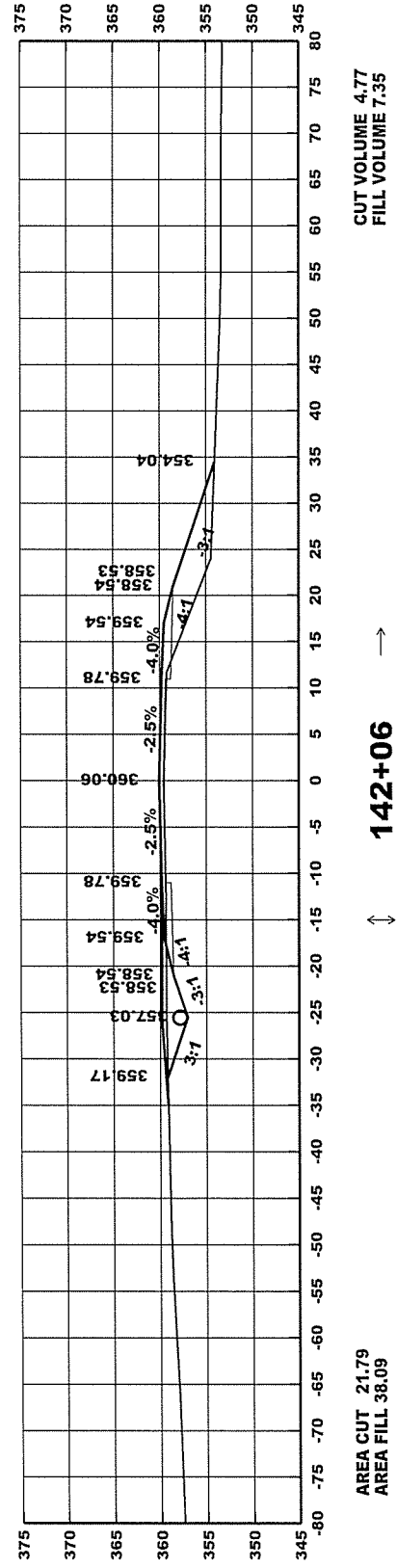
4

CROSS SECTIONS



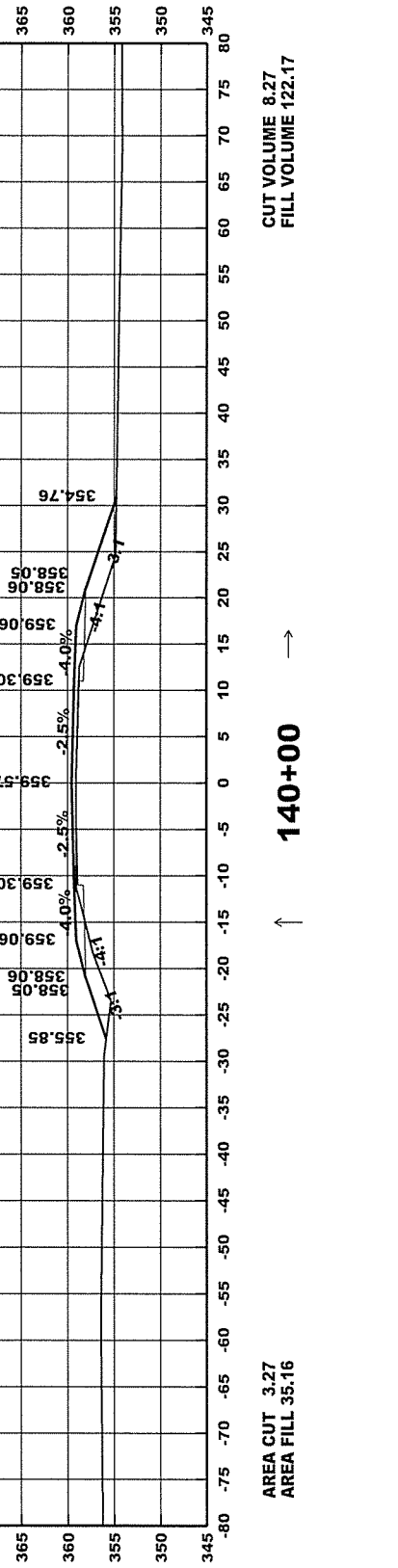
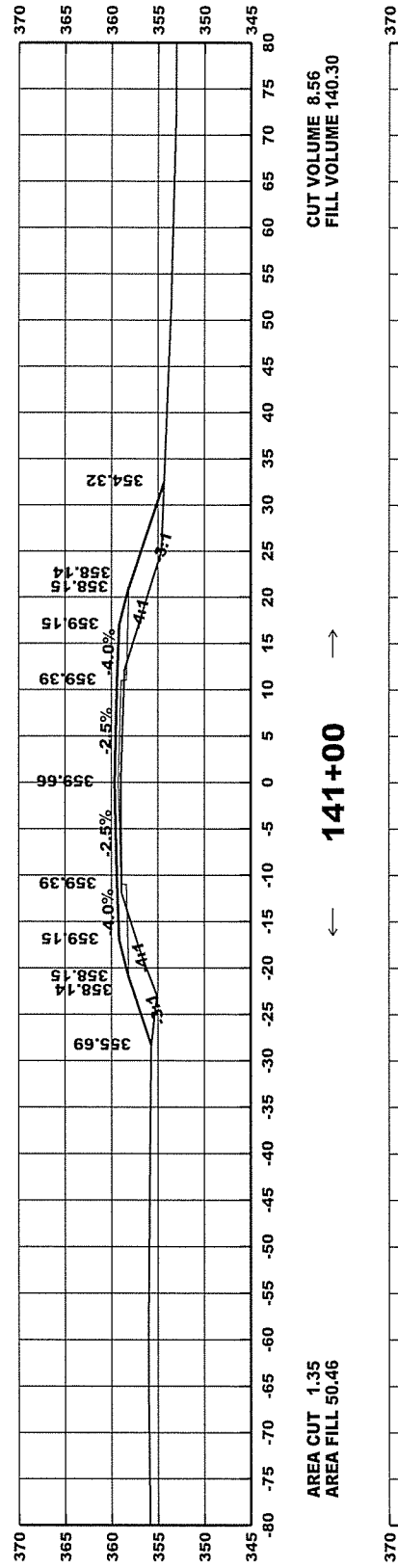
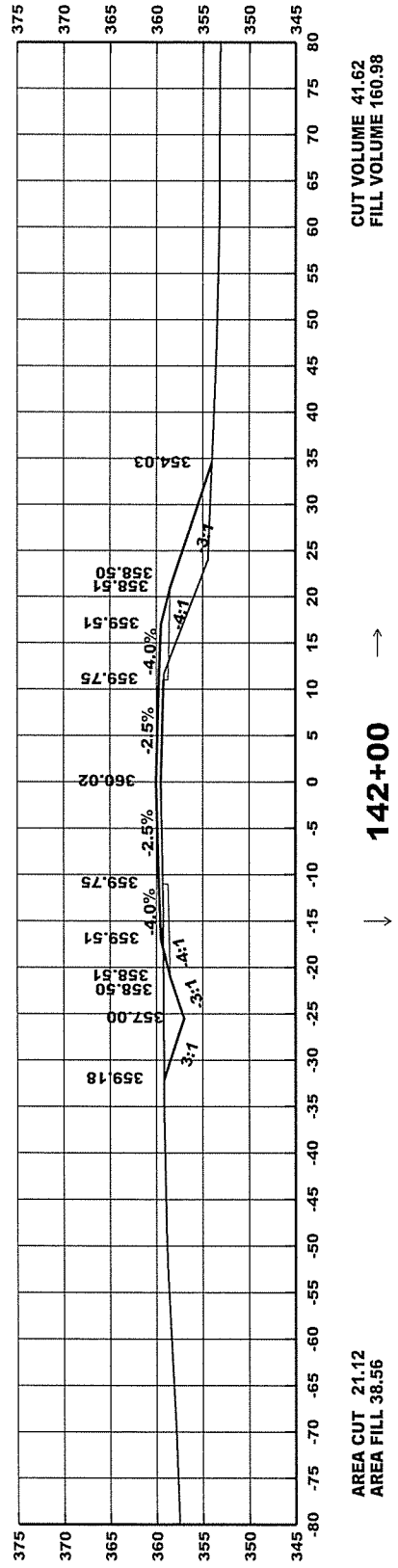
**CONSTRUCT
DOUBLE 36" PIPE CULVERT
CROSS DRAIN**

**36" RCP (CL. III)(TYPE 3 BEDDING) = 112 LIN. FT.
36" CMP OR PLASTIC (TYPE 2 BEDDING) = 122 LIN. FT.
36" FES ON LT. AND RT. = 4 EACH**

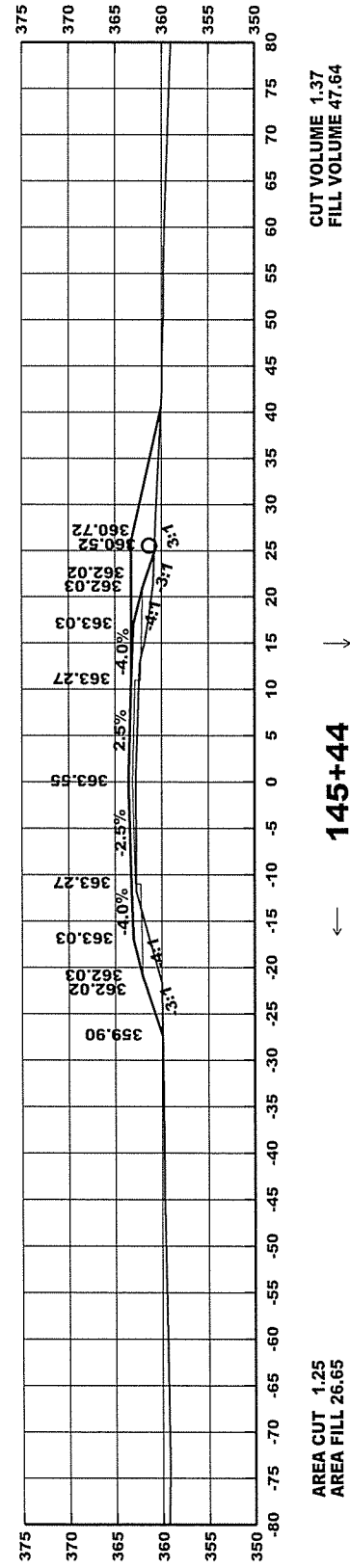
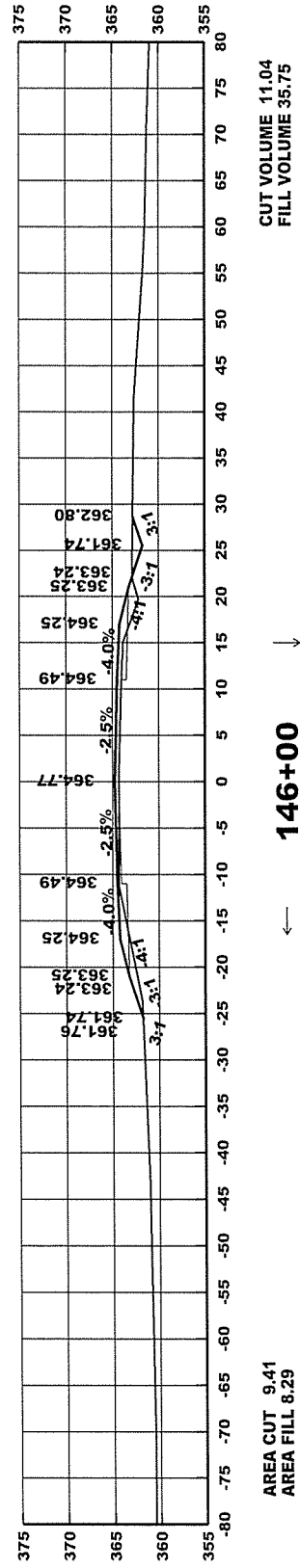
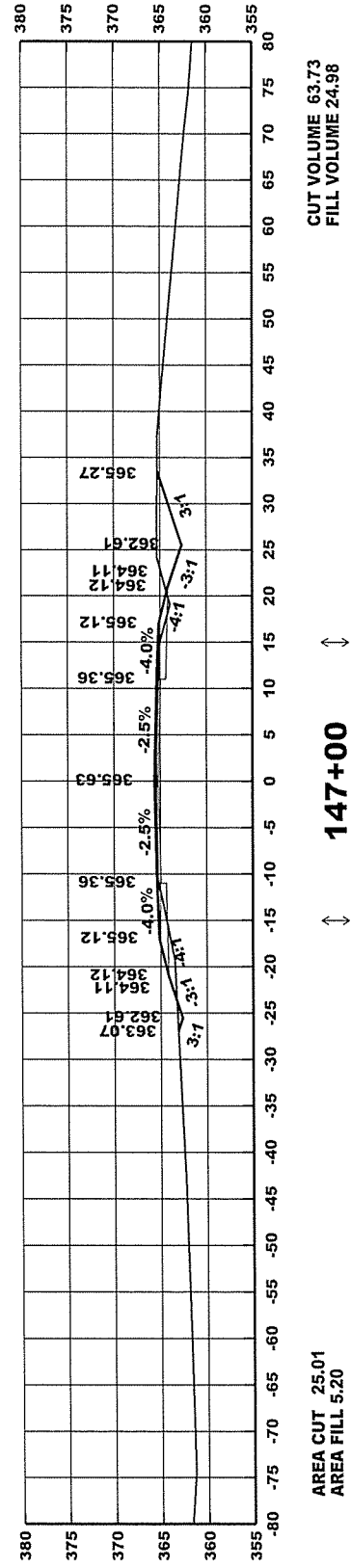


**INSTALL
18" X 48' PIPE CULVERT
LT. SIDE DRAIN**

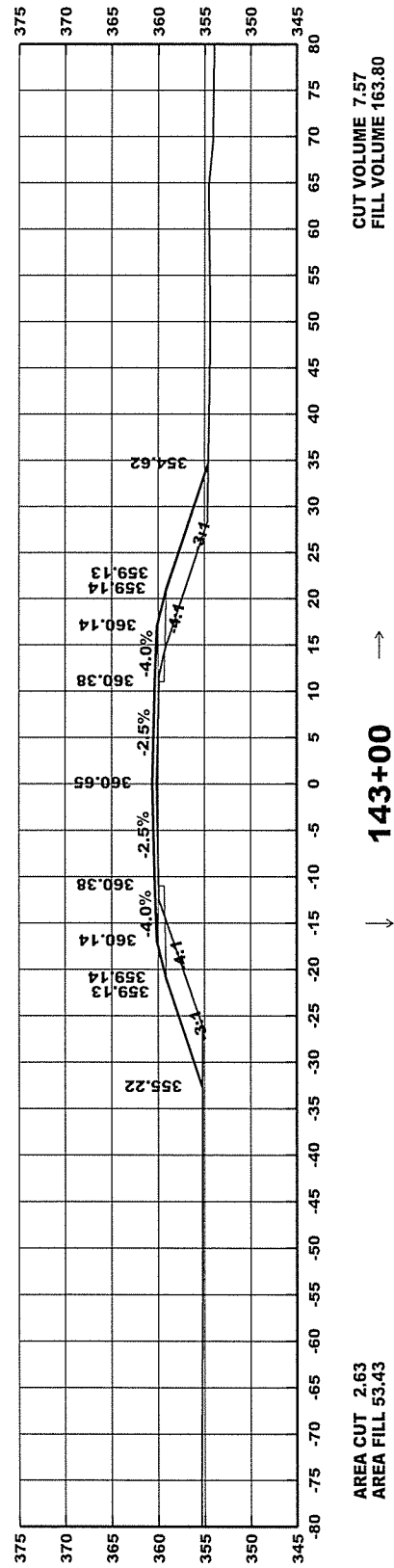
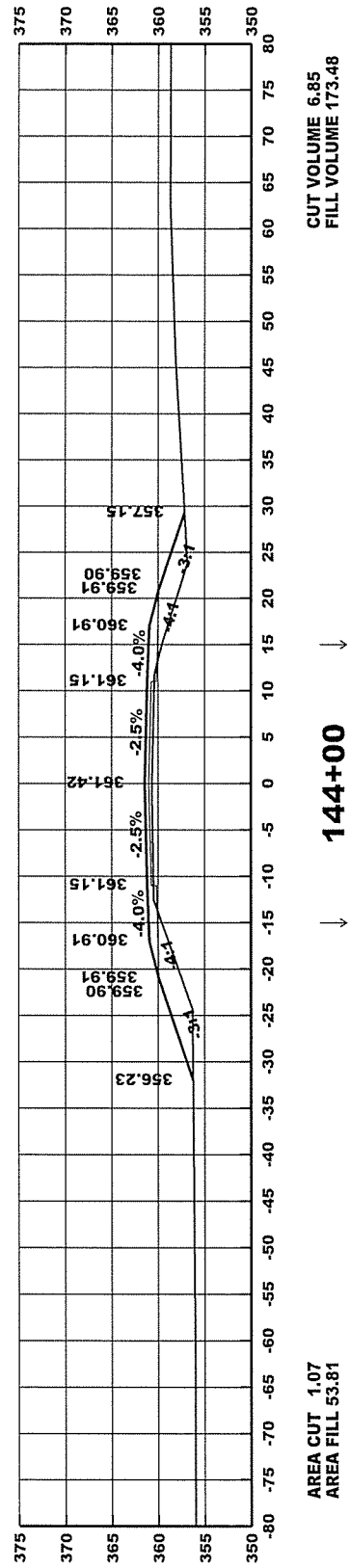
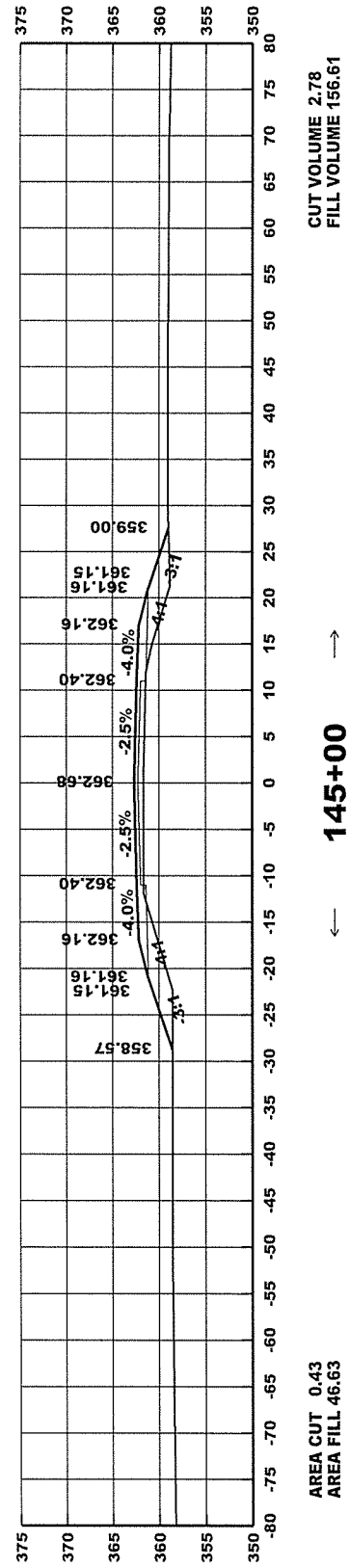
CONST. APPR. = 20 CU. YDS.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	58	64	



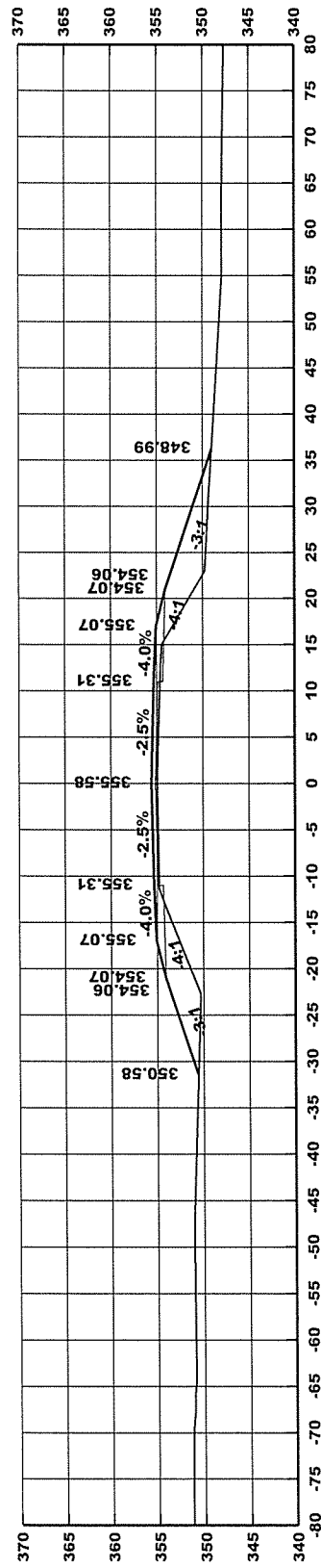
**INSTALL
 18" X 36' PIPE CULVERT
 RT. SIDE DRAIN
 CONST. APPR. = 20 CU. YDS.**



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	59	64	

4

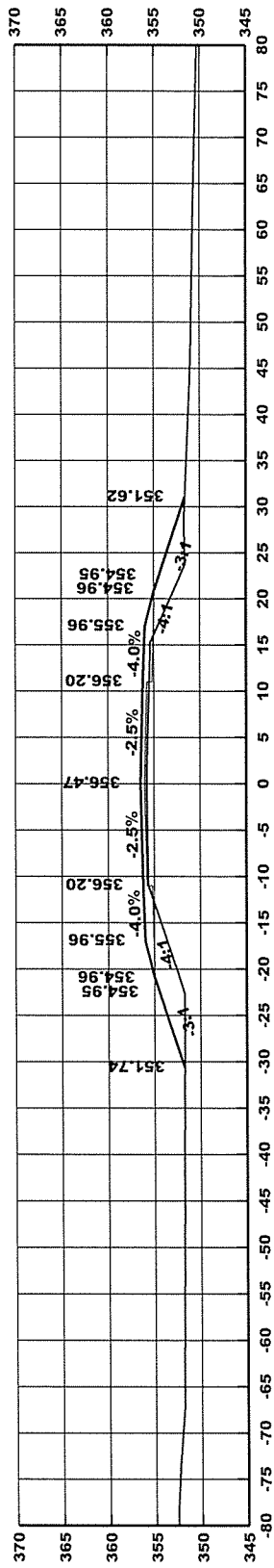
CROSS SECTIONS



CUT VOLUME 6.16
FILL VOLUME 221.11

↑ 152+00

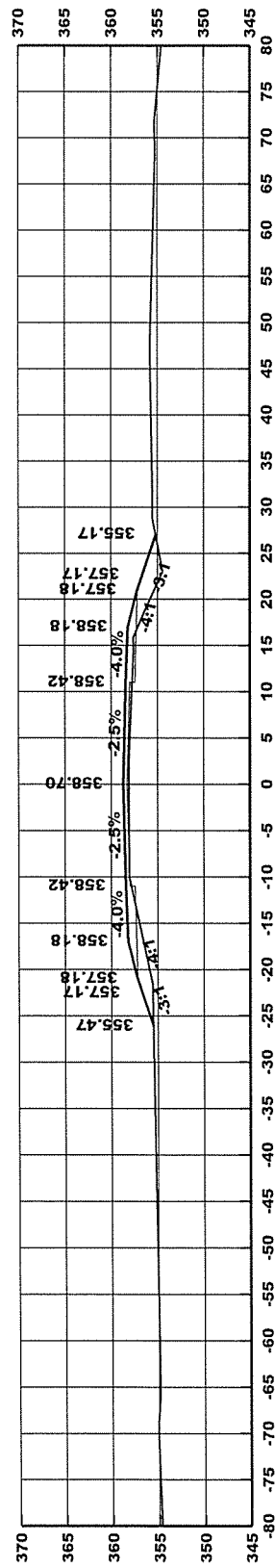
AREA CUT 1.59
AREA FILL 76.02



CUT VOLUME 6.72
FILL VOLUME 125.50

↑ 151+00

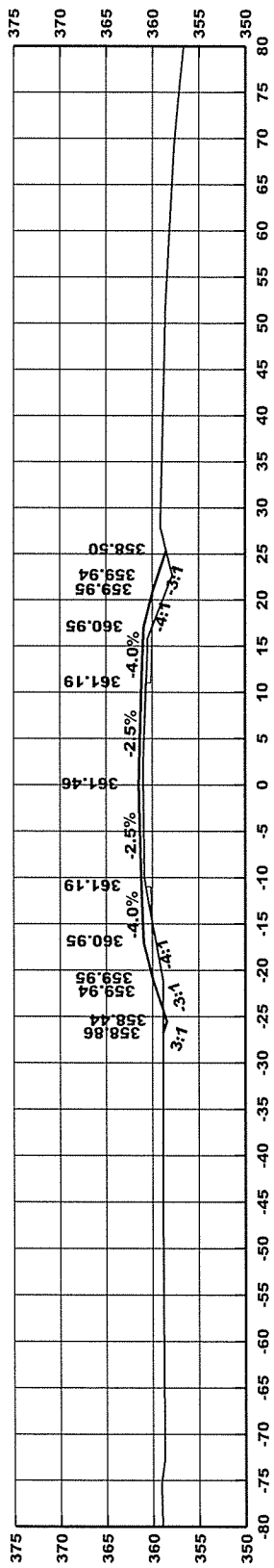
AREA CUT 1.74
AREA FILL 51.88



CUT VOLUME 10.86
FILL VOLUME 60.24

↑ 150+00

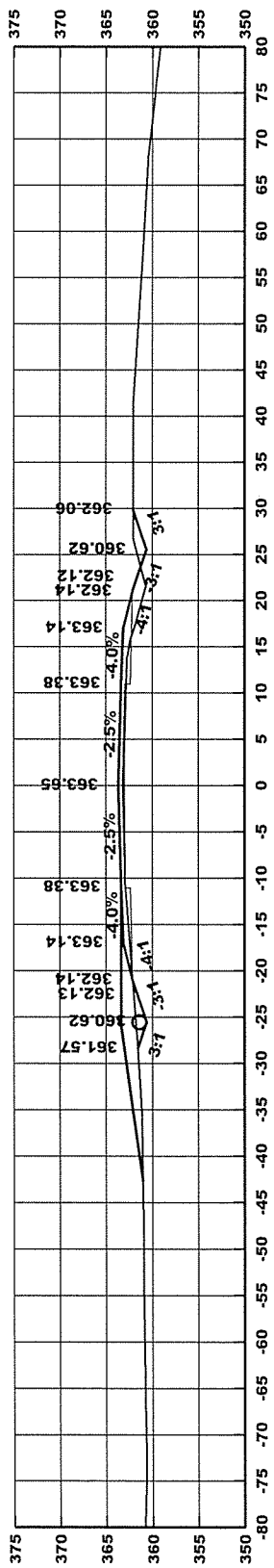
AREA CUT 1.89
AREA FILL 25.57



CUT VOLUME 24.13
FILL VOLUME 28.66

↑ 149+00

AREA CUT 3.97
AREA FILL 13.42

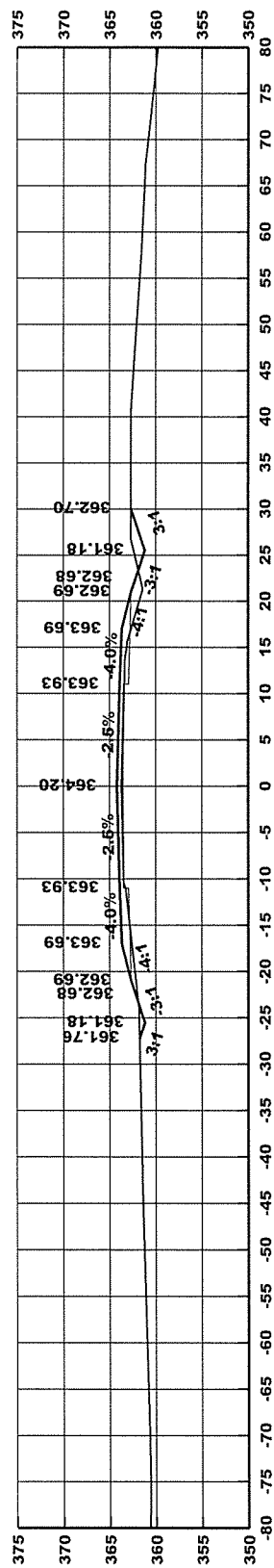


CUT VOLUME 8.00
FILL VOLUME 2.35

↑ 148+21

AREA CUT 12.52
AREA FILL 7.76

**INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 25 CU. YDS.**

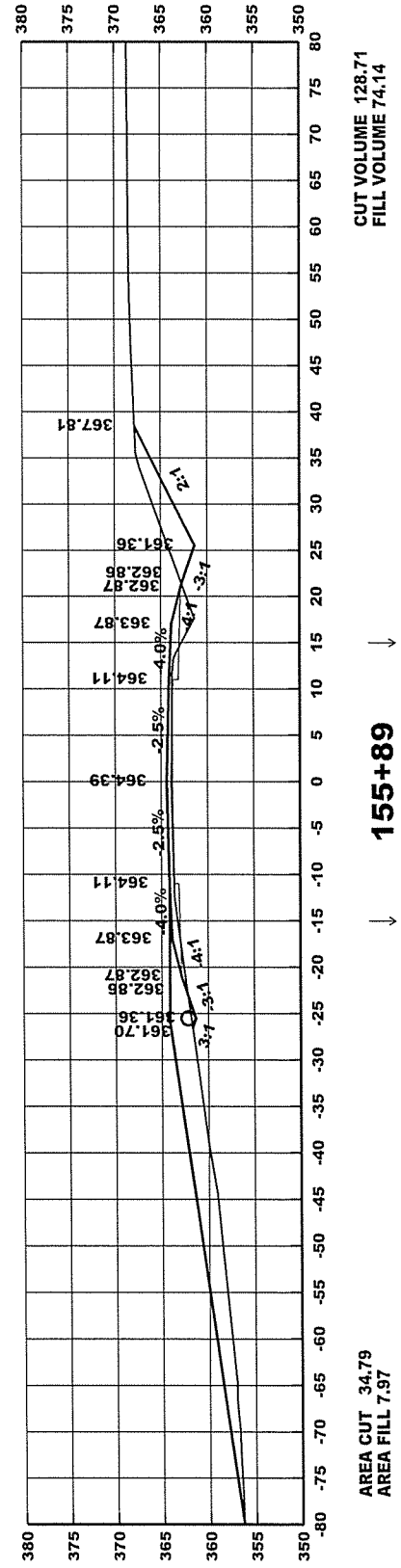


CUT VOLUME 61.24
FILL VOLUME 21.07

↑ 148+00

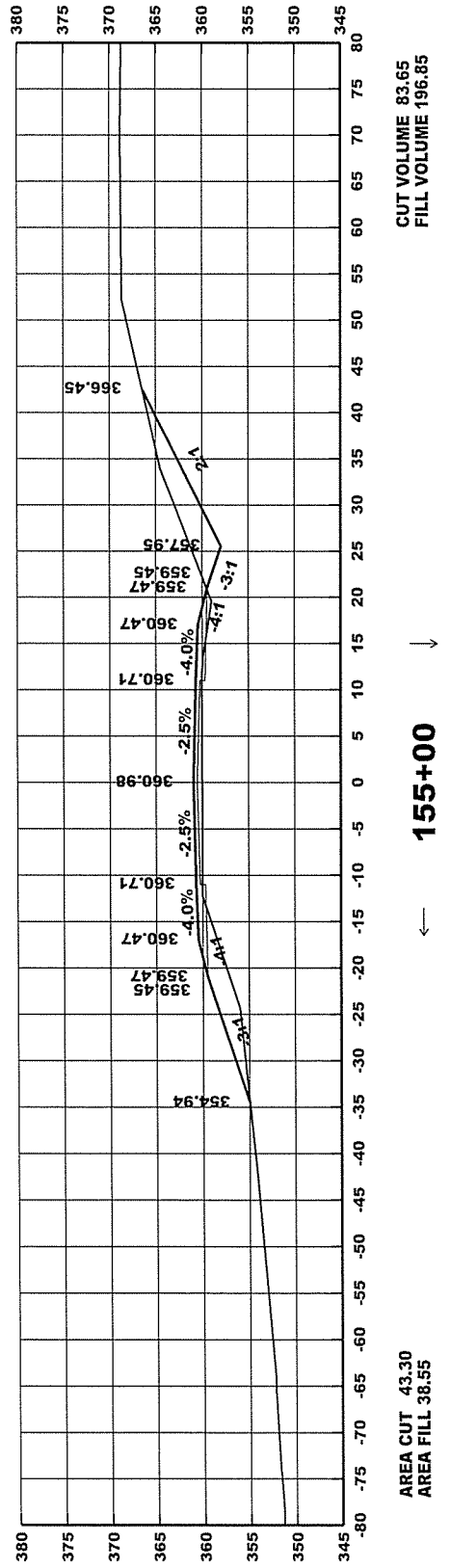
AREA CUT 8.06
AREA FILL 9.95

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	60	64	

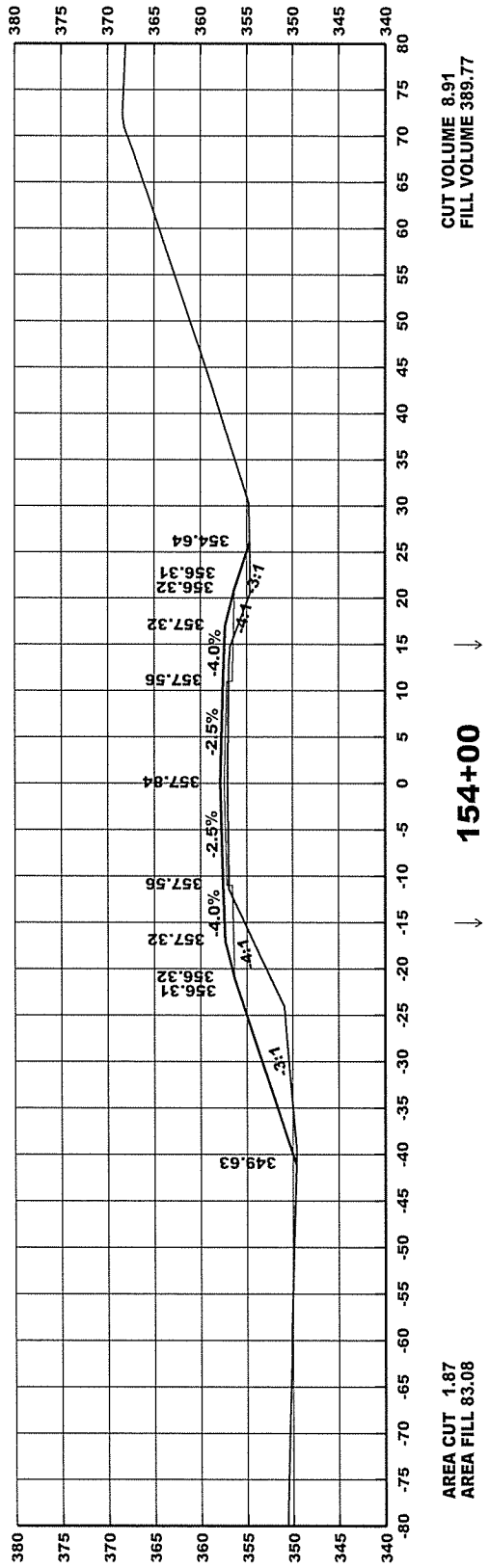


155+89

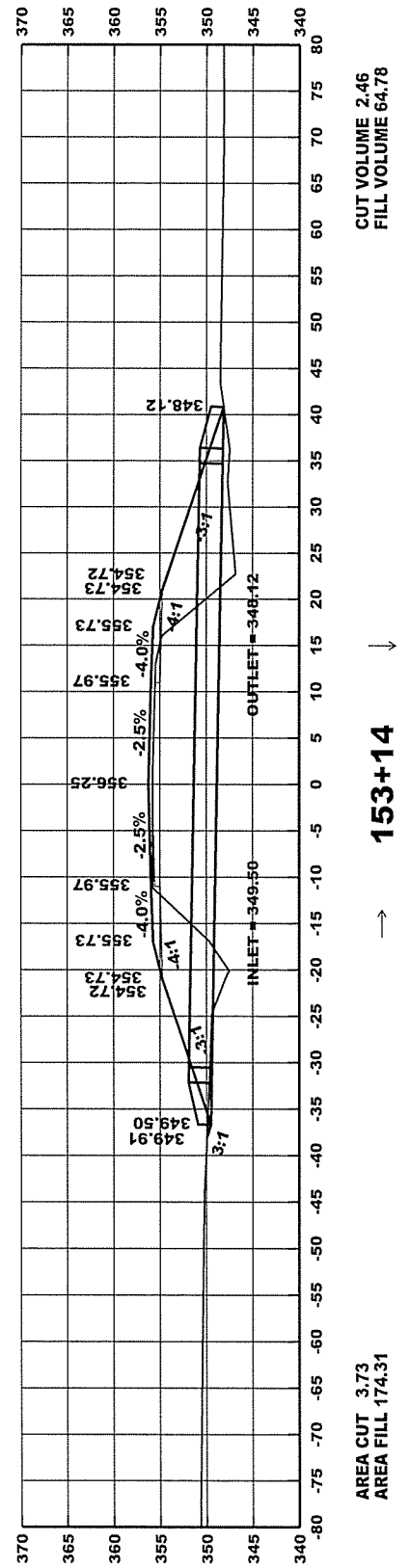
INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 75 CU. YDS.



155+00

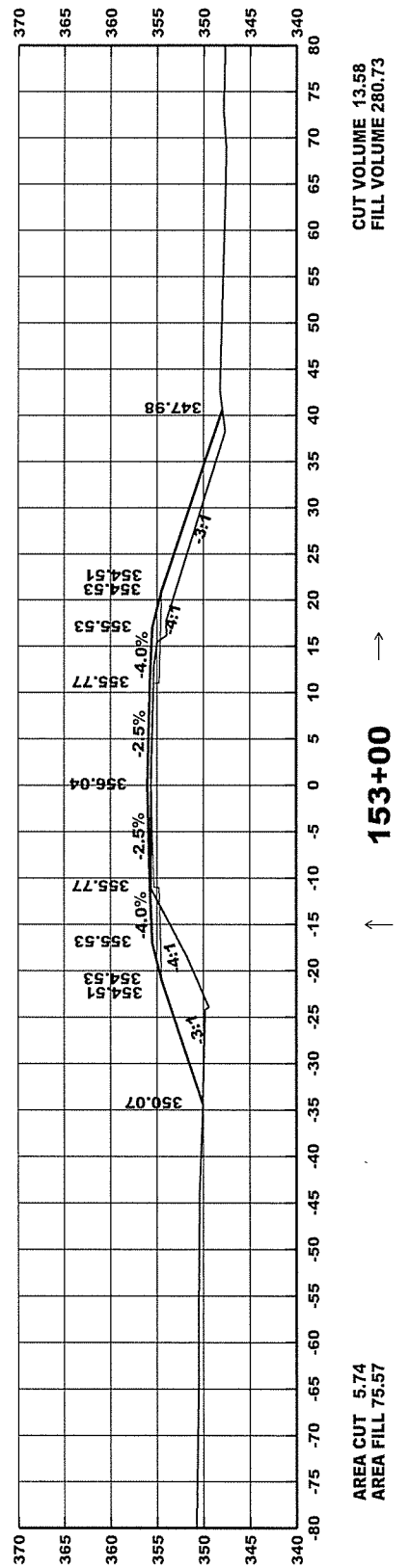


154+00



153+14

CONSTRUCT
DOUBLE 30" PIPE CULVERT
CROSS DRAIN
30" RCP (CL. III)(TYPE 3 BEDDING) = 132 LIN. FT.
30" CMP OR PLASTIC (TYPE 2 BEDDING) = 142 LIN. FT.
30" FES ON LT. AND RT. = 4 EACH

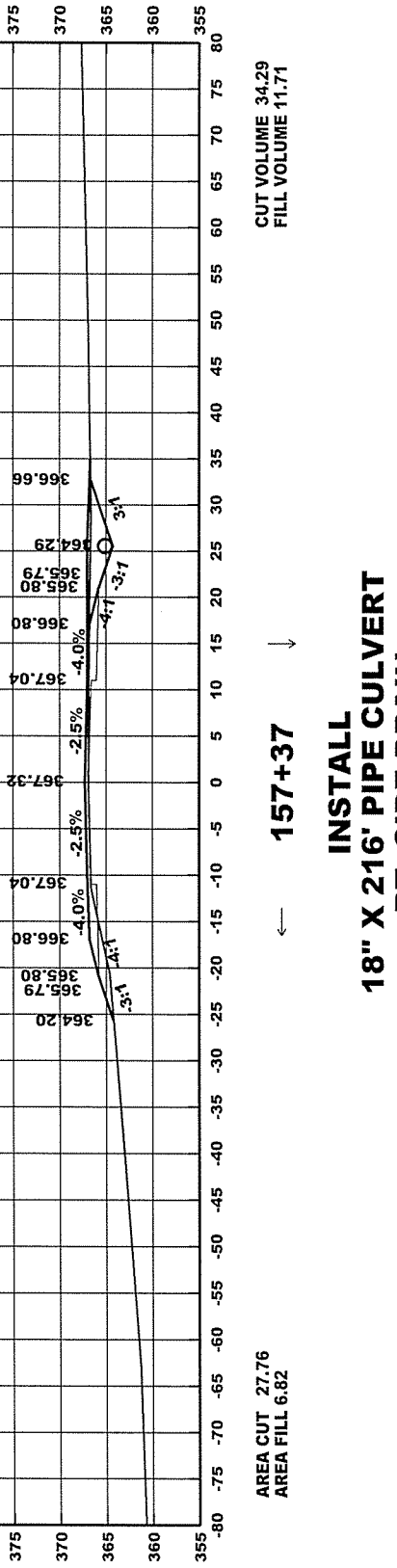
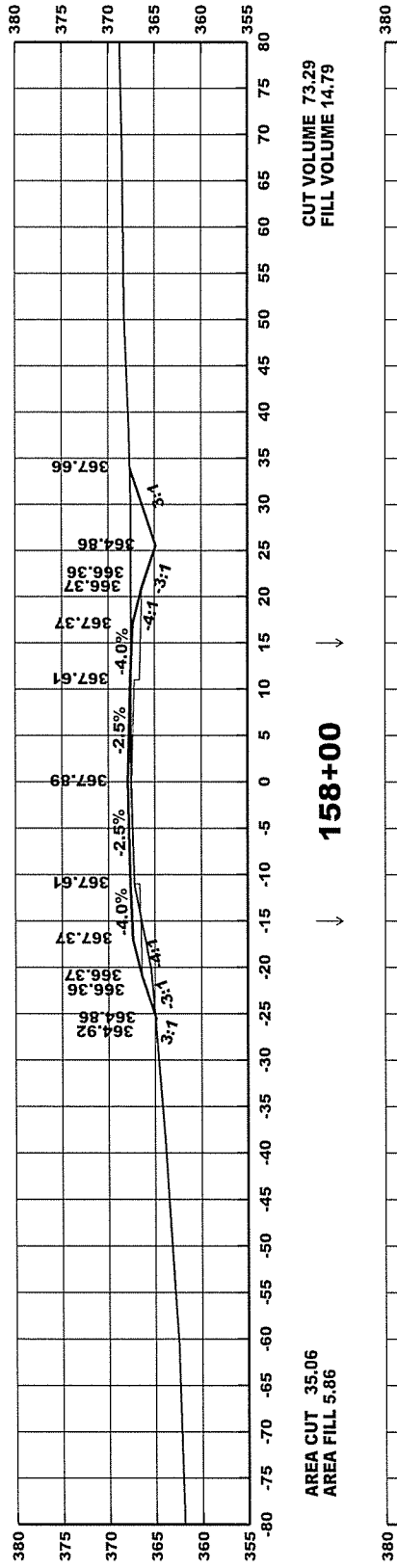
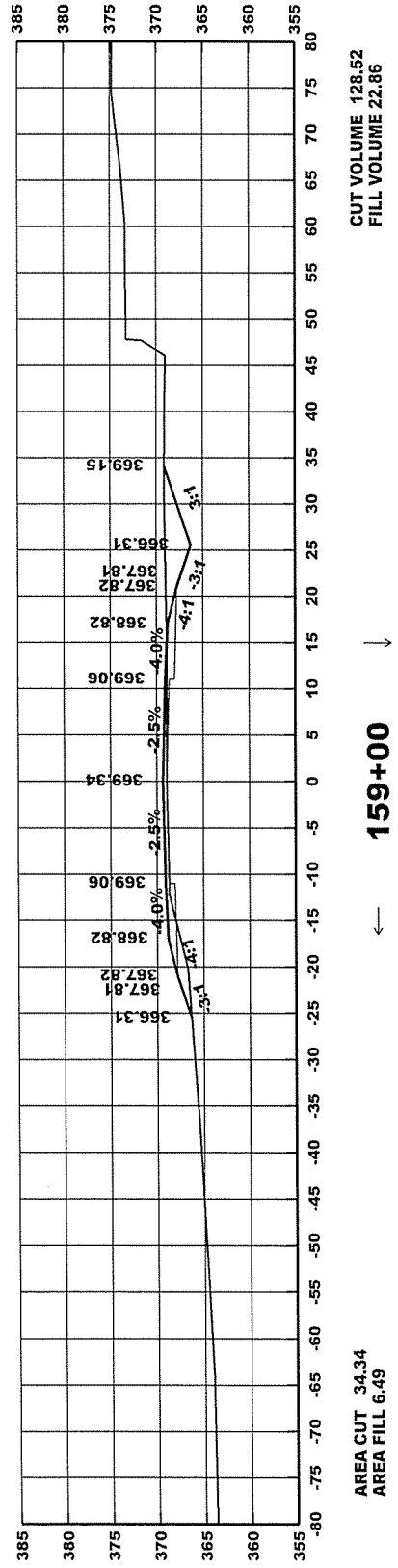
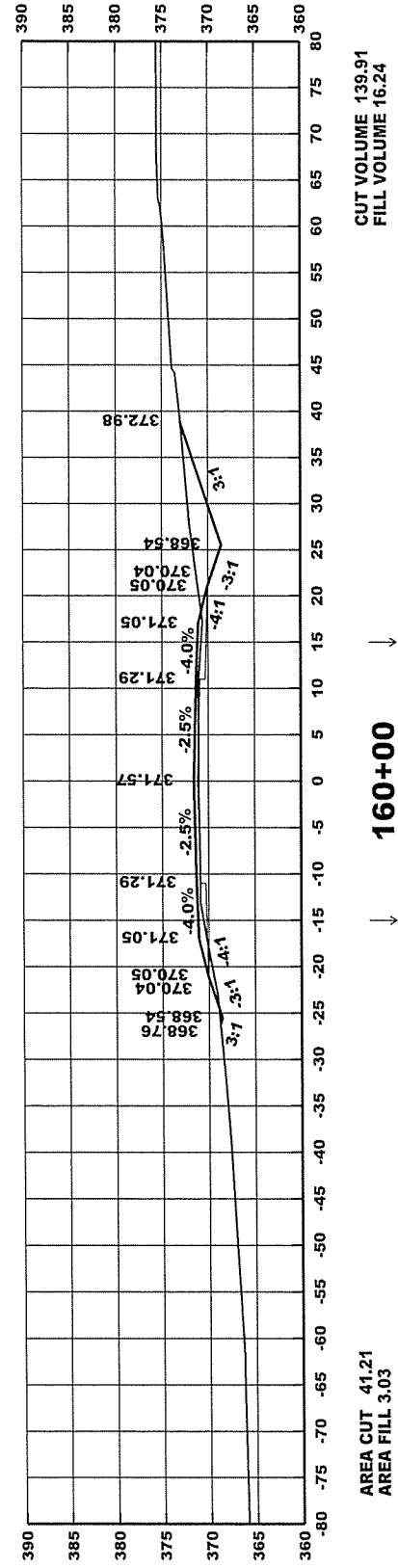


153+00

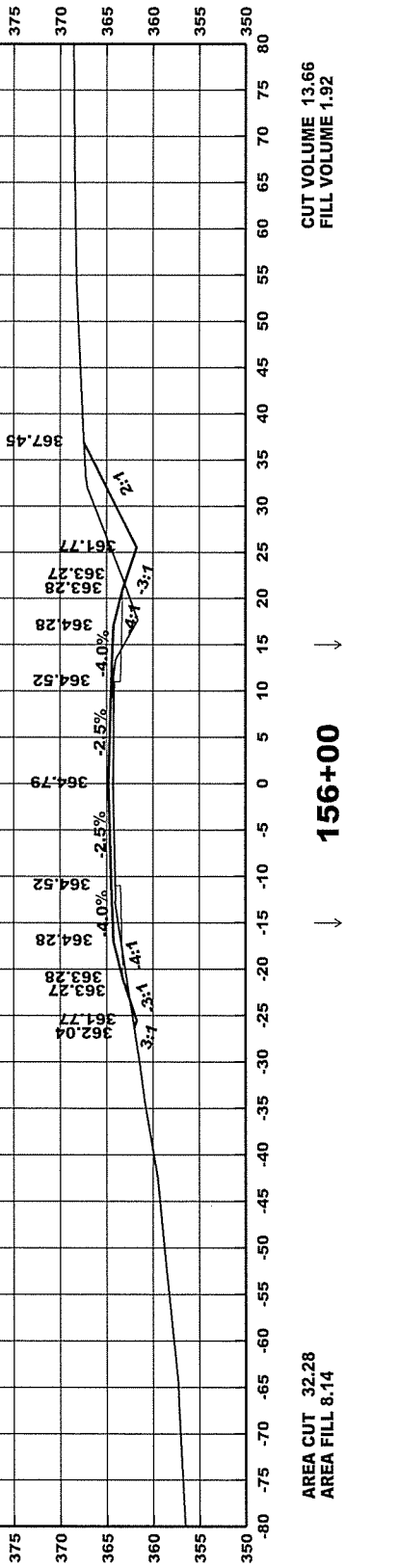
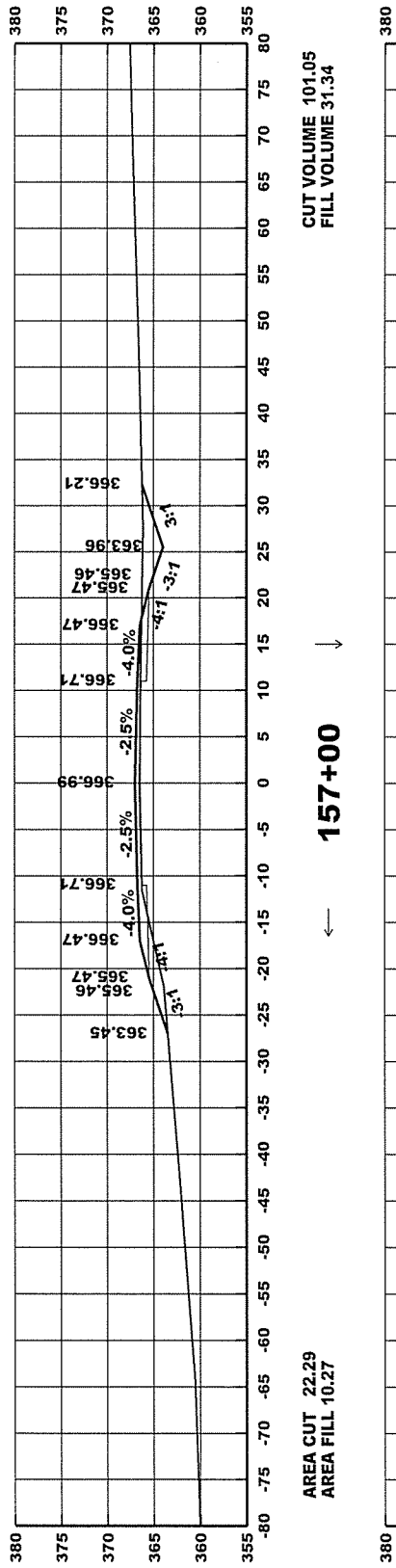
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	61	64	

4

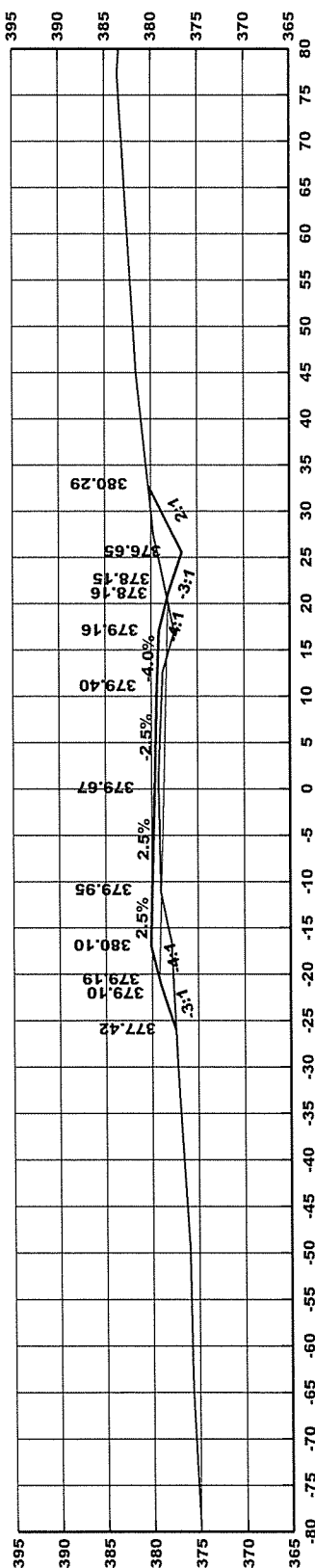
CROSS SECTIONS



**INSTALL
 18" X 216' PIPE CULVERT
 RT. SIDE DRAIN
 CONST. APPR. = 175 CU. YDS.**



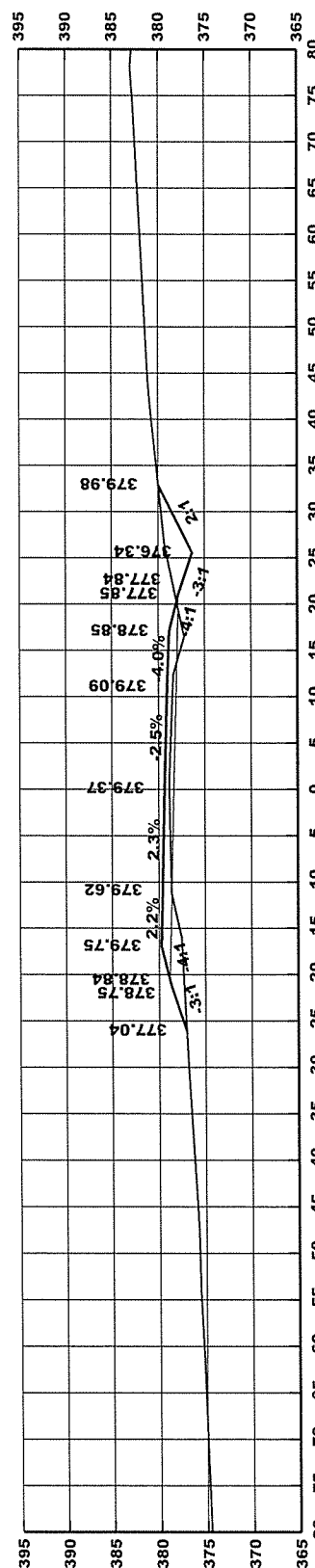
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	62	64	



CUT VOLUME 24.85
FILL VOLUME 14.00

164+00

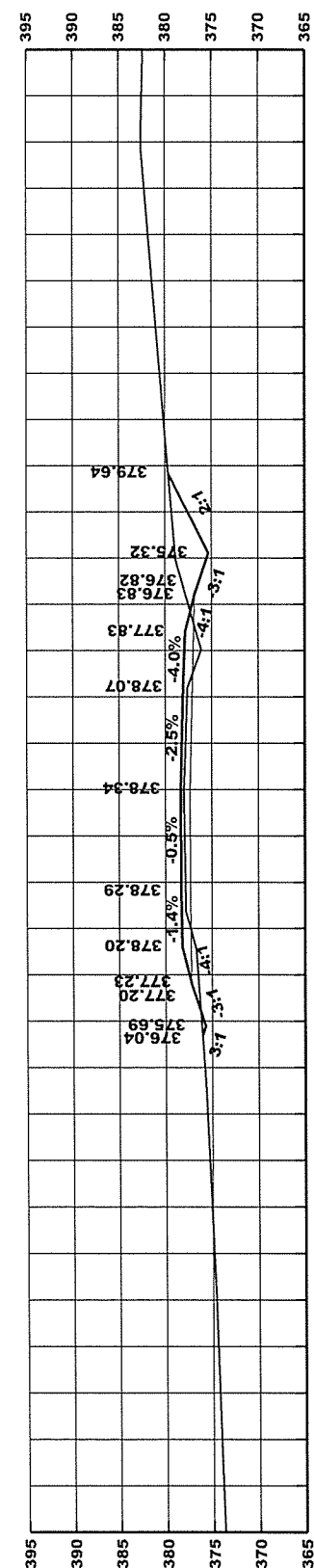
AREA CUT 27.20
AREA FILL 15.02



CUT VOLUME 96.68
FILL VOLUME 30.33

163+75

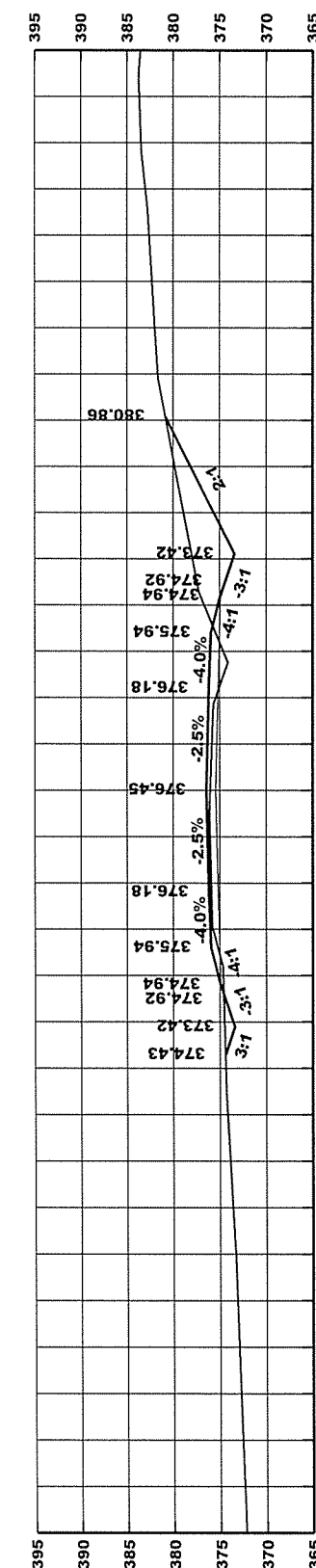
AREA CUT 26.46
AREA FILL 15.21



CUT VOLUME 219.87
FILL VOLUME 18.69

163+00

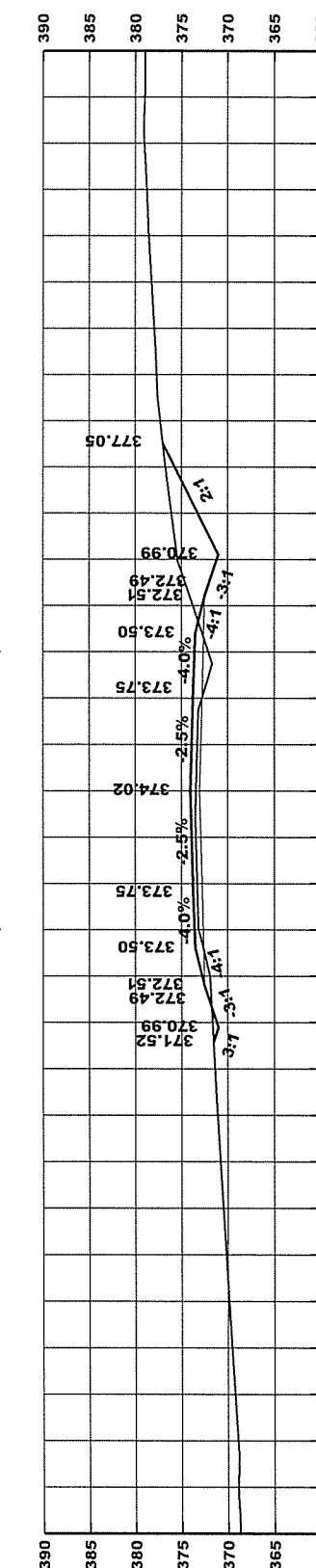
AREA CUT 43.14
AREA FILL 6.63



CUT VOLUME 247.70
FILL VOLUME 16.83

162+00

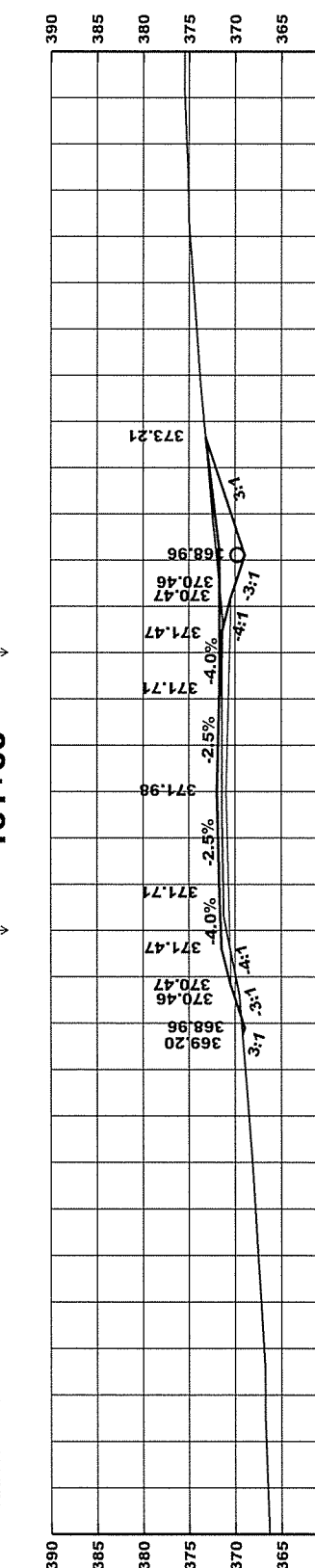
AREA CUT 75.59
AREA FILL 3.46



CUT VOLUME 171.33
FILL VOLUME 12.94

161+00

AREA CUT 58.17
AREA FILL 5.63



CUT VOLUME 29.75
FILL VOLUME 1.83

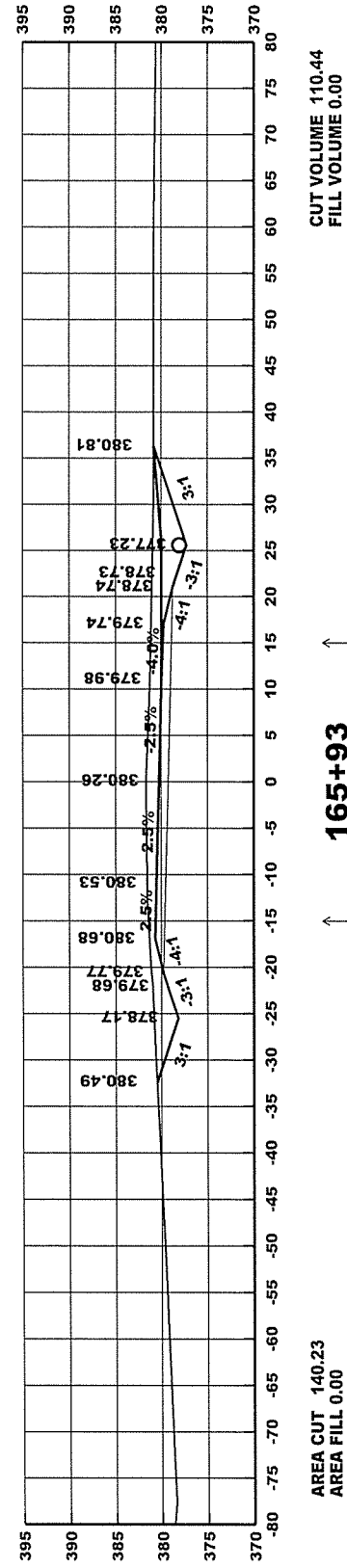
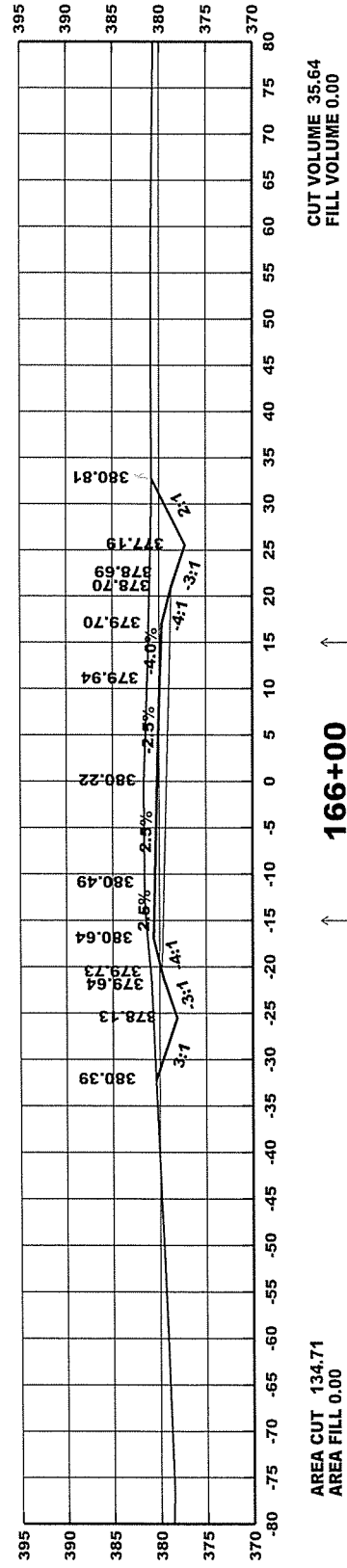
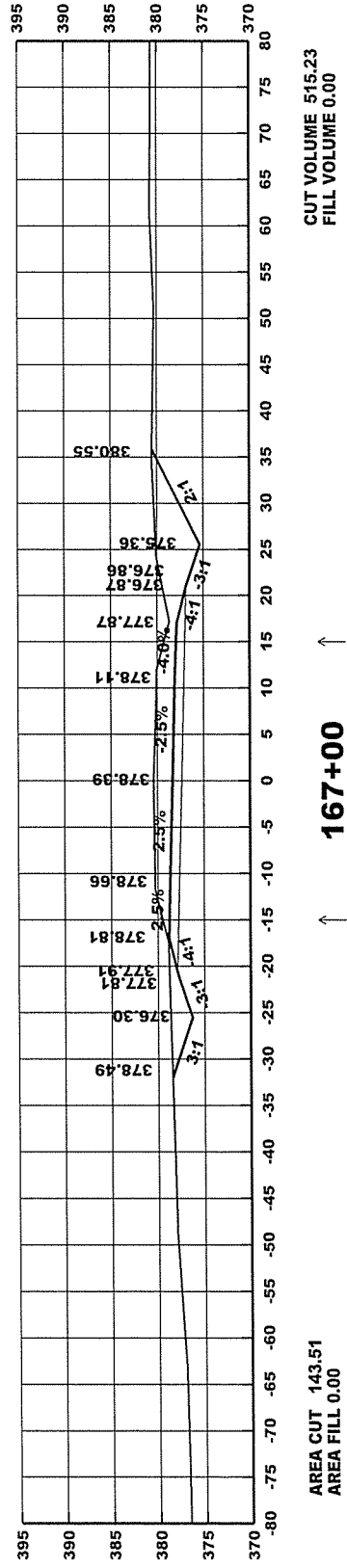
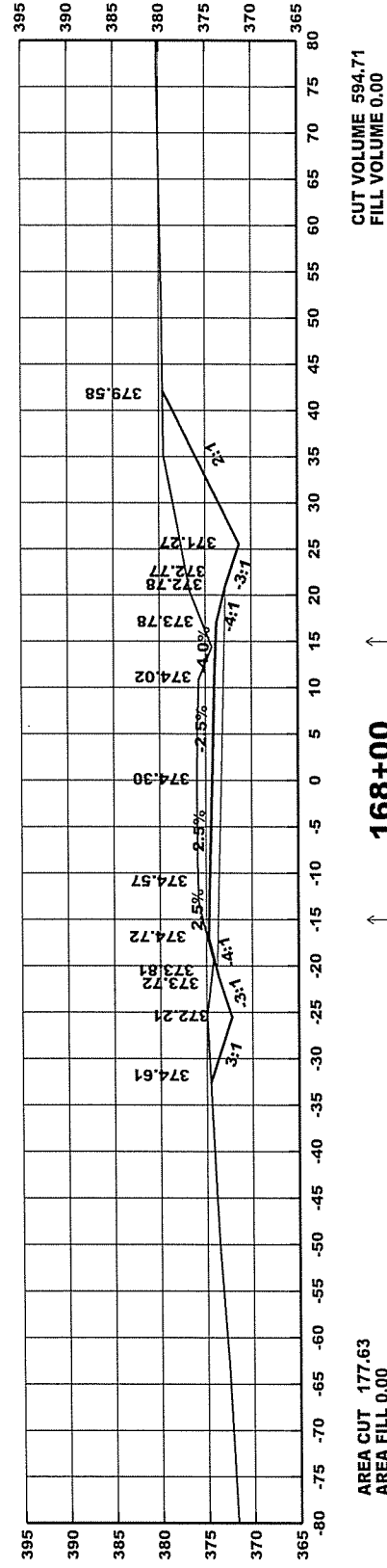
160+17

AREA CUT 53.30
AREA FILL 2.79

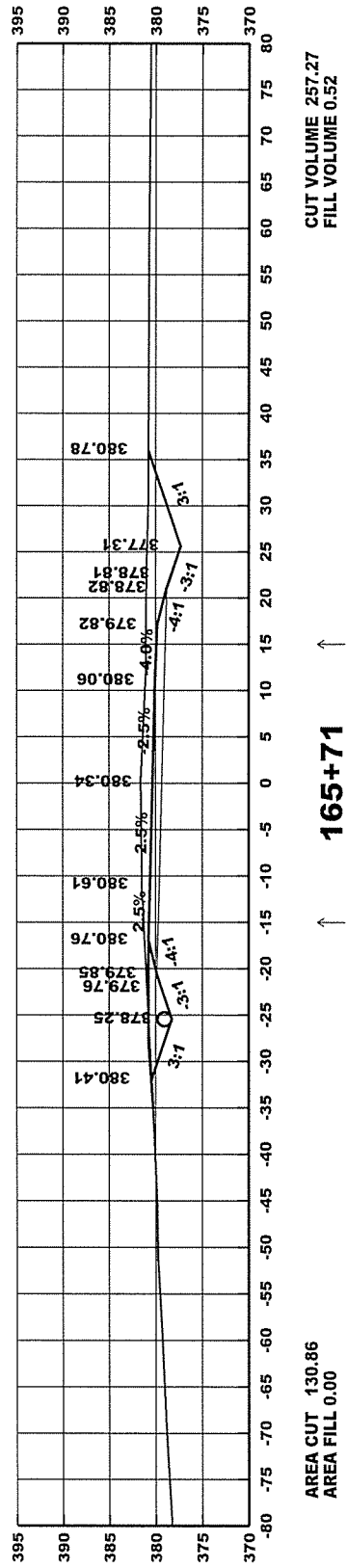
INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 25 CU. YDS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	63	64	

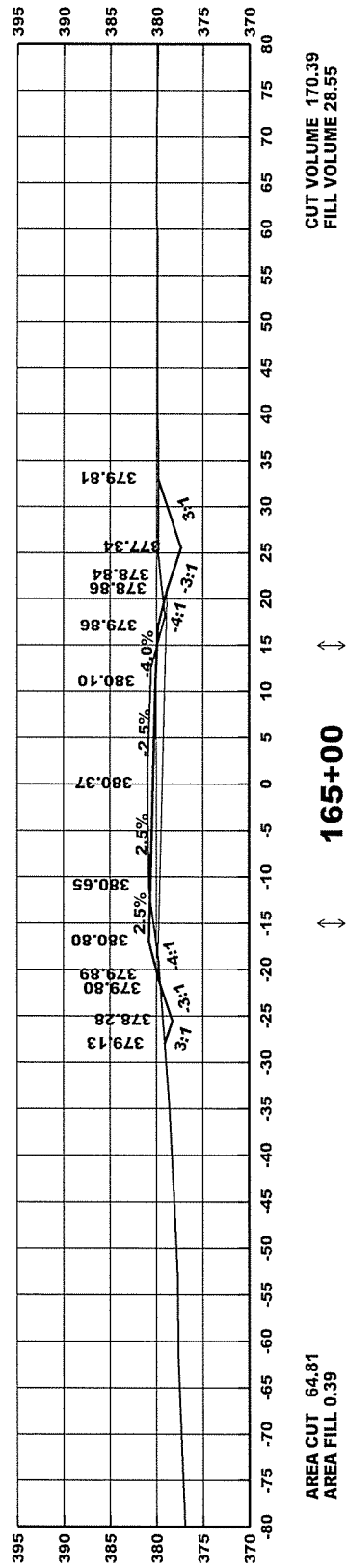
4 CROSS SECTIONS



**INSTALL
18" X 80' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 75 CU. YDS.**



**INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR. = 45 CU. YDS.**



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	FA7518	64	64	

4 CROSS SECTIONS

END JOB FA7518

