DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	STPR-0045(27)		
				JOB NO.		FA4511	1	69
				(4)	SEARCY CO. LINE-NORTHWEST PHASE 2 (RECONST.) (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS OF PROPOSED COUNTY ROAD

SEARCY CO. LINE-NORTHWEST PHASE 2 (RECONST.) (S)

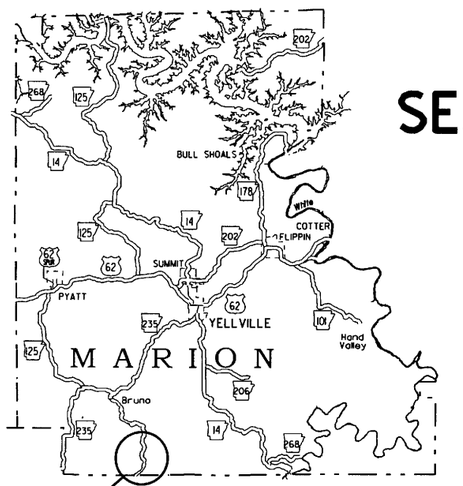
COUNTY ROAD 6

MARION COUNTY

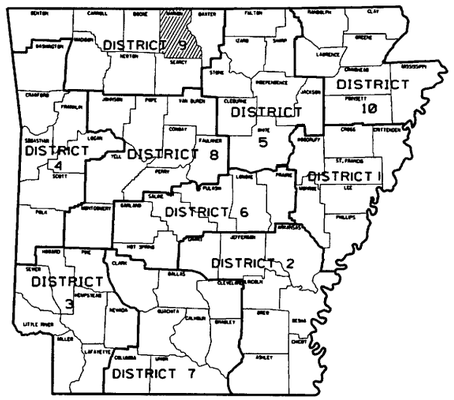
FED. AID PROJ. STPR-0045(27)

JOB FA4511

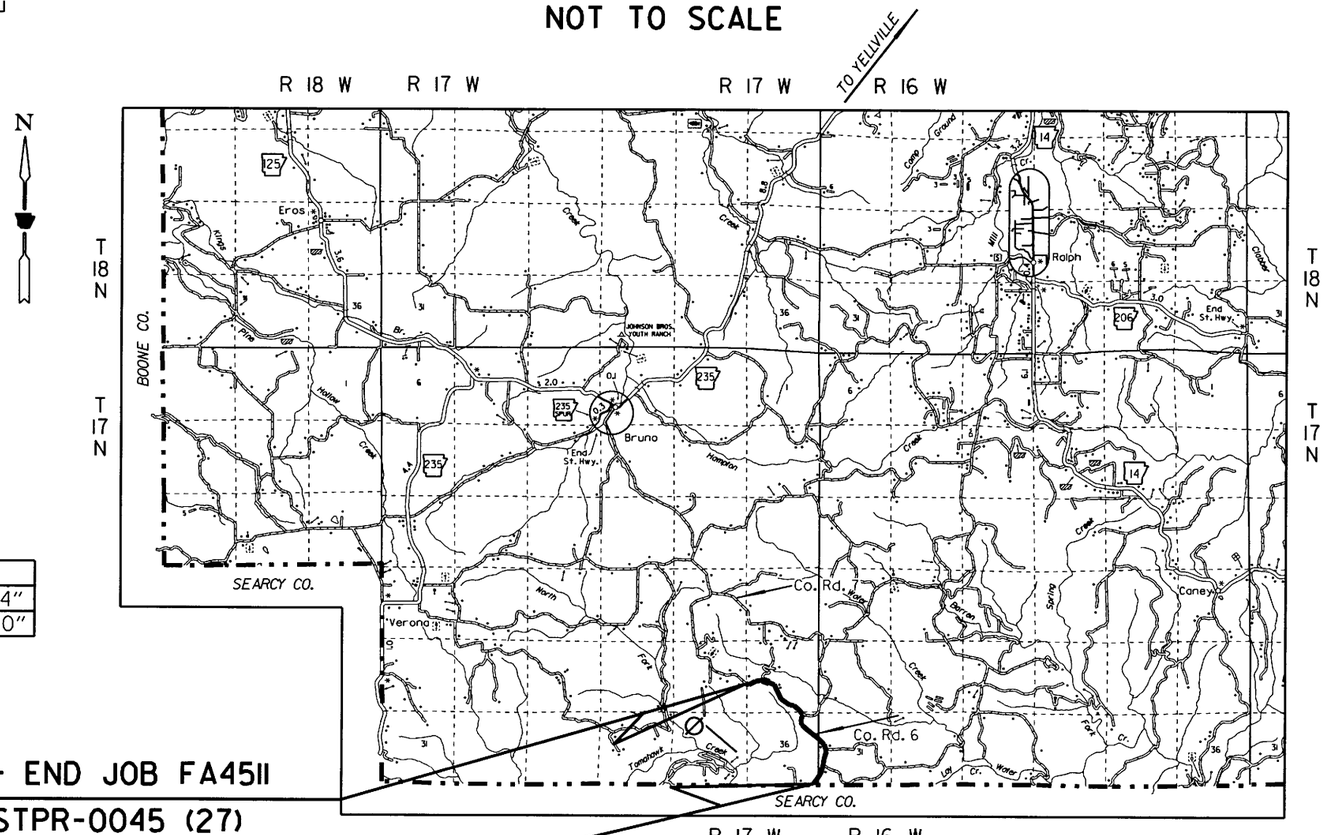
NOT TO SCALE



VICINITY MAP



ARK. HWY. DISTRICT NO. 9



DESIGN TRAFFIC DATA

DESIGN YEAR	2038
2018 ADT	75
2038 ADT	105
2038 DHV	12
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	10%
DESIGN SPEED	30 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LAT.	N36°04'03"	N36°05'15"	N36°05'24"
LONG.	W92°44'30"	W92°44'48"	W92°45'00"

STA. 221+31.34 - END JOB FA4511

FED. AID PROJ. STPR-0045 (27)

STA. 103+25.00 - BEGIN JOB FA4511

FED. AID PROJ. STPR-0045 (27)

JOB FA4511					
GROSS LENGTH OF PROJECT	11806.34	FEET OR	2.236	MILES	
NET " " ROADWAY	11806.34	" "	2.236	"	
NET " " BRIDGE	N/A	" "	N/A	"	
NET " " PROJECT	11806.34	" "	2.236	"	

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7894
K. E. BANKS

5-7-17

DEPUTY DIRECTOR
AND CHIEF ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	2	69
				4	INDEX OF SHEETS & STANDARD DRAWINGS			

INDEX OF SHEETS

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

ROADWAY DESIGN STANDARDS

DRWG.NO	TITLE	DATE
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	02-27-14
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-4	WIRE FENCE TYPE C AND D	08-22-02

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
12/7/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	3	69

(4) INDEX OF SHEETS & STANDARD DRAWINGS

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMISSION STANDARD SPECFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS.

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOKS 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 OPPORTUNITIY - 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- REVISIONS OF FHWA-1273 FOR OFF-SYSTEMS PROJECTS
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1_____	AGGREGATE BASE COURSE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1_____	PLASTIC PIPE FOR SIDE DRAINS
620-1_____	MULCH COVER
JOB FA4511____	BIDDING REQUIREMENTS AND CONDITIONS
JOB FA4511____	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB FA4511____	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB FA4511____	CARGO PREFERENCE ACT REQUIREMENTS
JOB FA4511____	CAVE DISCOVERY
JOB FA4511____	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBLITIES
JOB FA4511____	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB FA4511____	MANDATORY ELECTRONIC CONTRACT
JOB FA4511____	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB FA4511____	OFF SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB FA4511____	PLASTIC PIPE
JOB FA4511____	PROTECTION OF WATER QUALITY AND WETLANDS
JOB FA4511____	RECYCLED ASPALT SHINGLES
JOB FA4511____	RESTRAINING CONDITIONS
JOB FA4511____	SHORING FOR CULVERTS
JOB FA4511____	STORM WATER POLLUTION PREVENTION PLAN
JOB FA4511____	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB FA4511____	UTILITY ADJUSTMENTS
JOB FA4511____	WARM MIX ASPHALT

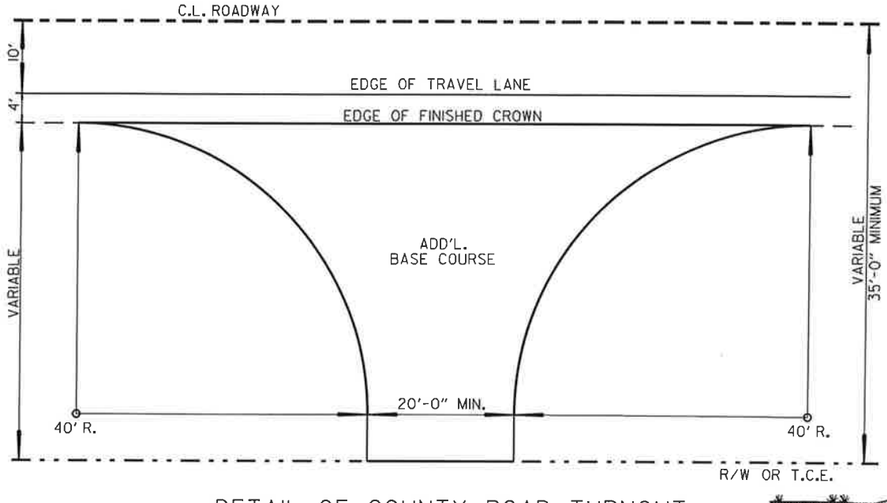
GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. UTILITES INTERFERING WITH CONSTRUCTION SHALL BE MOVED BY THE OWNERS.
3. THE ROAD WILL REMAIN OPEN TO THRU TRAFFIC DURING CONSTRUCTION.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. THIS JOB IS PERMITTED UNDER A SECTION 404 NATIONWIDE E14 PERMIT, REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE DIRECTED BY THE ENGINEER, CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED, WIREFENCE MAY CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. SUPERELEVATION SHALL BE COMPUTED IN ACCORDANCE WITH STANDARD DRAWING SE-2 USING 30 M.P.H. DESIGN VALUES AND REVOLVE ABOUT THE INNER TRAVEL LANE EDGE UNLESS OTHERWISE SHOWN.
9. ALL SALVAGE PIPE CULVERTS SHALL BE STORED ON THE RIGHT-OF-WAY AND REMAIL THE PROPERTY OF MARION COUNTY.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R MAYO, JR.
12/4/2017

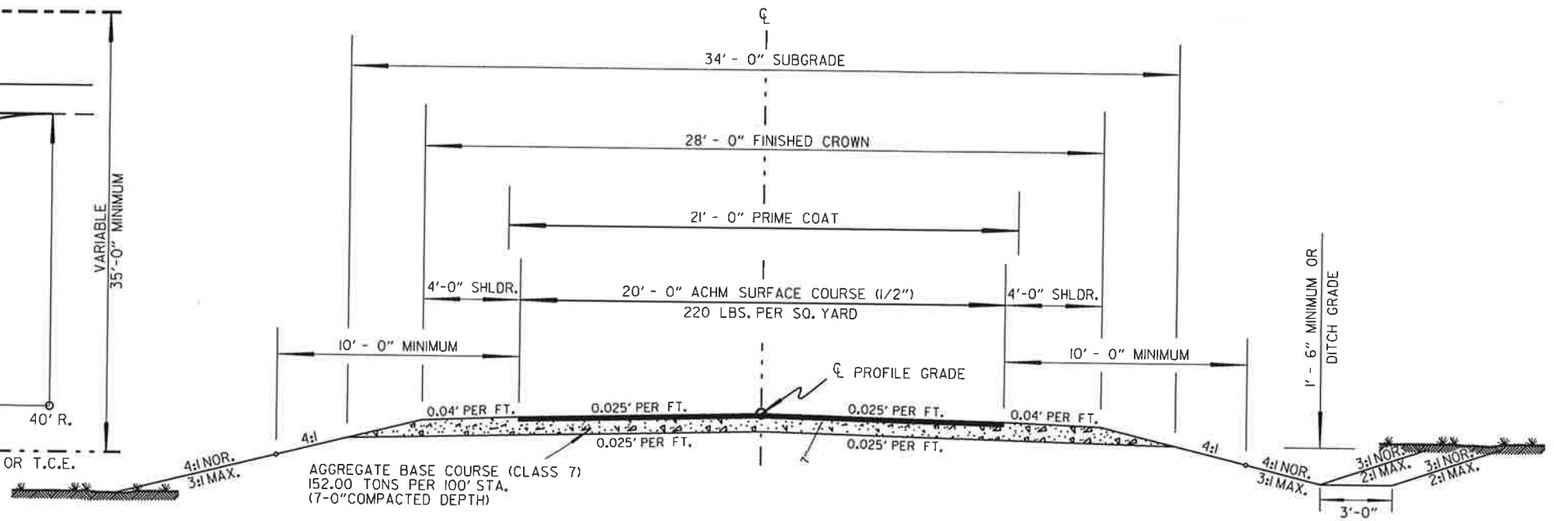
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12/19/17				6	ARK.			
				JOB NO.		FA451I	4	69

(4) TYPICAL SECTIONS OF IMPROVEMENT & SPECIAL DETAILS



DETAIL OF COUNTY ROAD TURNOUT

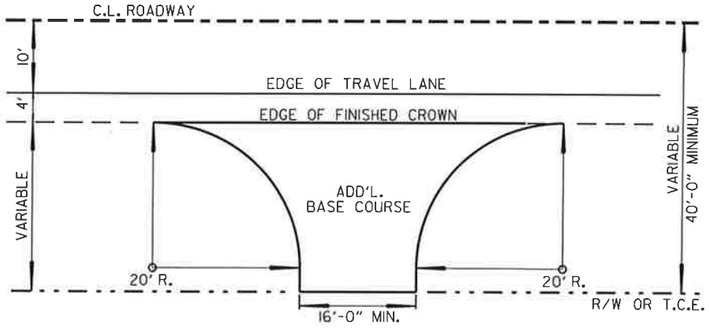
NOTE: THE ABOVE DETAIL MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.



TYPICAL SECTION OF IMPROVEMENT

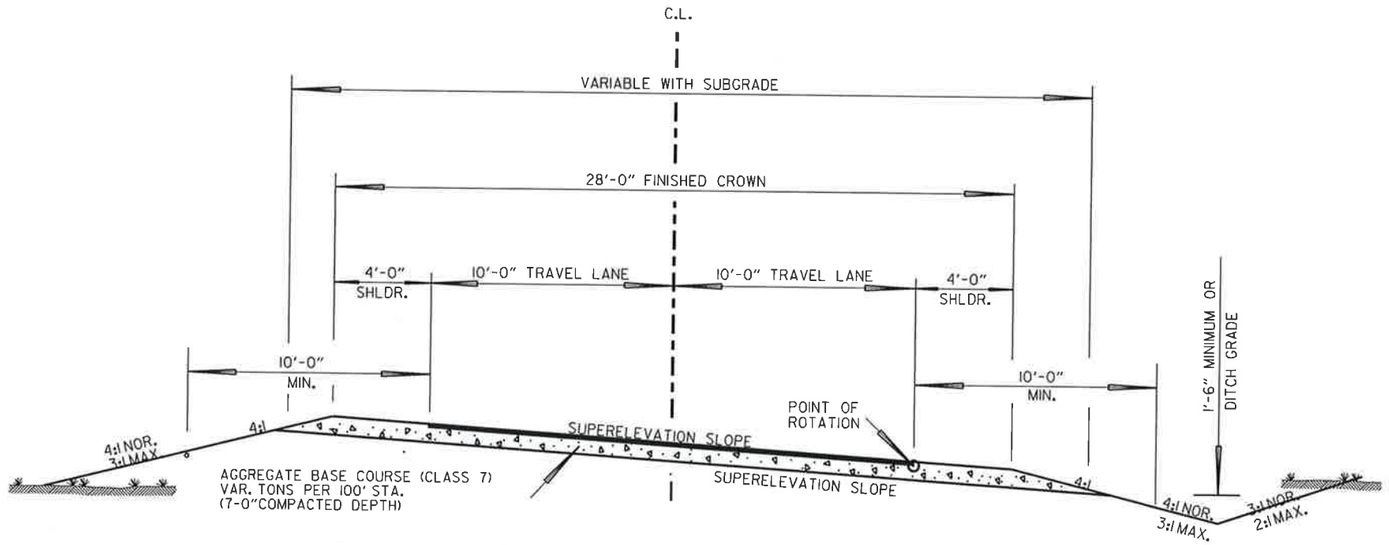
NOTE: FLAT BOTTOM DITCHES TO BE USED AT LOCATIONS AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

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



DETAIL OF PRIVATE ENTRANCES

NOTE: THE ABOVE DETAIL MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.



SUPERELEVATED SECTION OF IMPROVEMENT

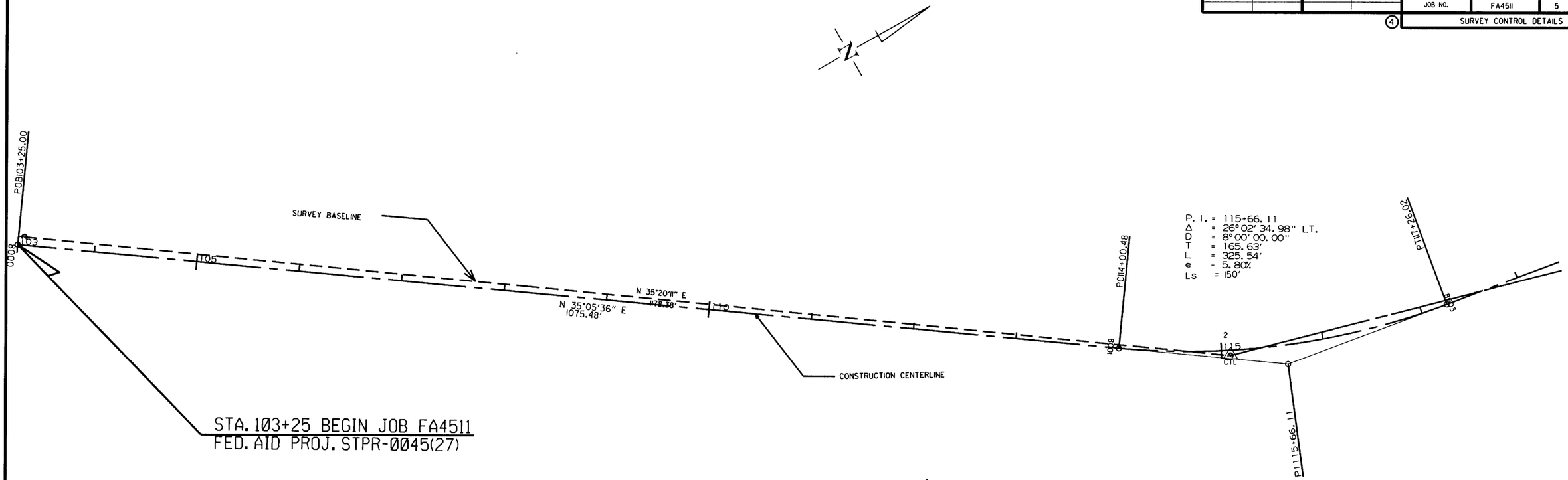
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID P. MAYO, JR.
12/20/2017

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.		FA4511	5	69

④ SURVEY CONTROL DETAILS

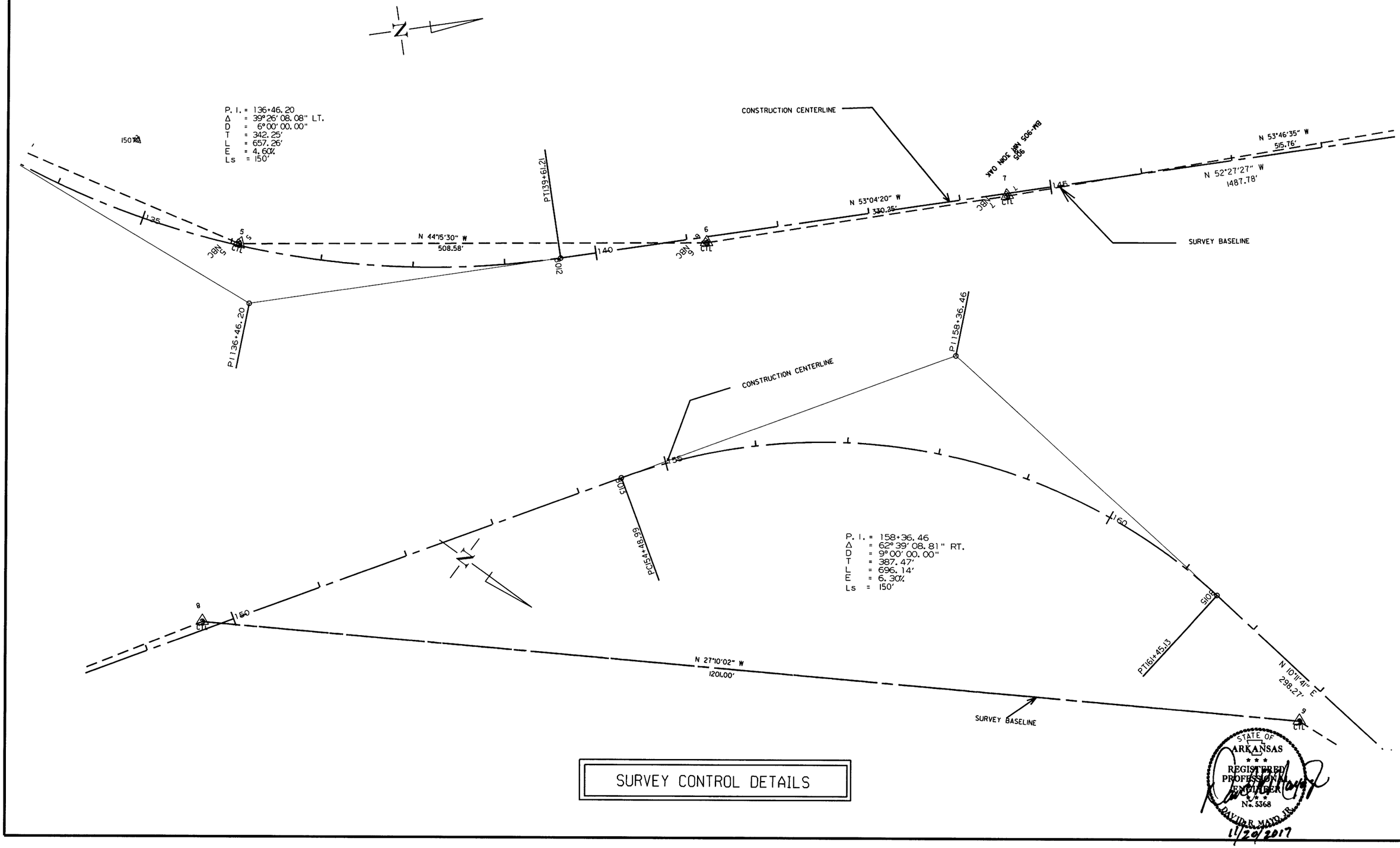


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.

11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	6	69

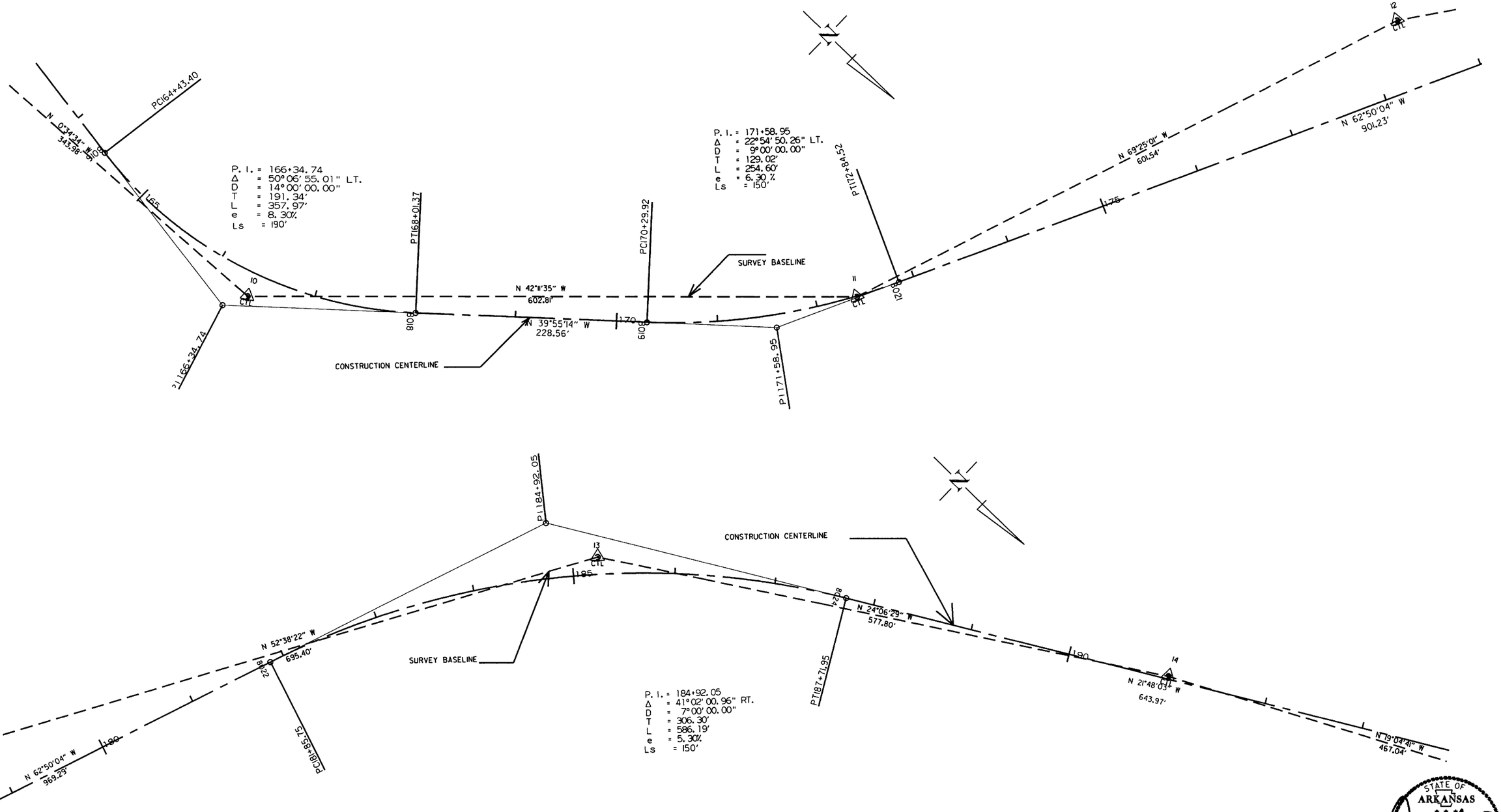
④ SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	7	69

④ SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2017

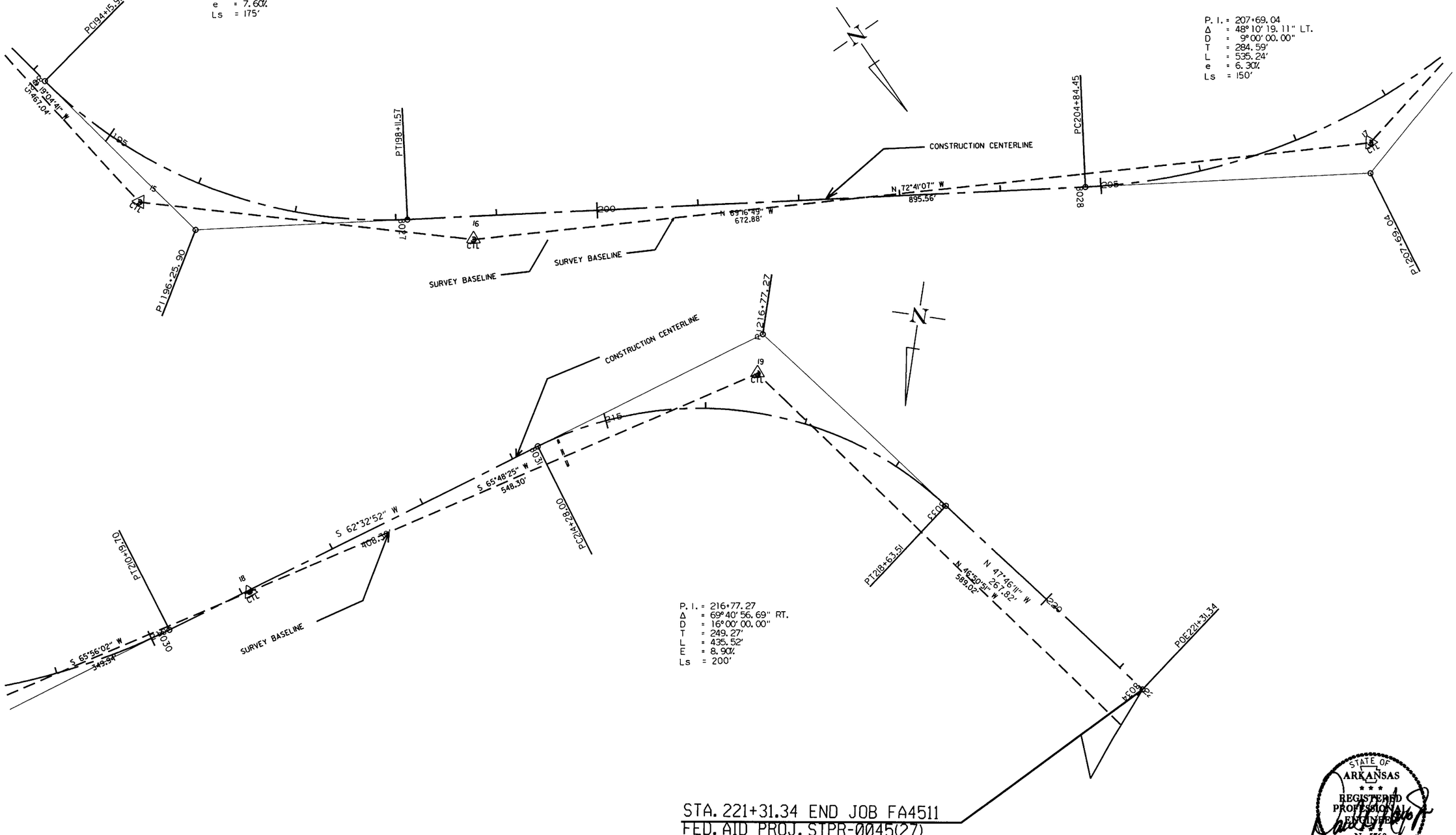
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	8	69

④ SURVEY CONTROL DETAILS

P. I. = 196+25.90
Δ = 47°28'45.96" LT.
D = 12°00'00.00"
T = 209.99'
L = 395.66'
e = 7.6%
Ls = 175'

P. I. = 207+69.04
Δ = 48°10'19.11" LT.
D = 9°00'00.00"
T = 284.59'
L = 535.24'
e = 6.3%
Ls = 150'

P. I. = 216+77.27
Δ = 69°40'56.69" RT.
D = 16°00'00.00"
T = 249.27'
L = 435.52'
E = 8.9%
Ls = 200'



STA. 221+31.34 END JOB FA4511
FED. AID PROJ. STPR-0045(27)

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	9	69

④ SURVEY CONTROL DETAILS

APPROXIMATE STATE PLANE COORDINATES
DETERMINED FROM SOLAR OBSERVATION
PROJECTED TO GROUND

Point	Northing	Easting	Elevation
1	632013.64730	1096315.06700	1075.92430
2	632974.93599	1096996.61435	1064.30950
3	634202.03024	1097332.37047	1045.40950
4	634541.17170	1097380.86782	1035.45810
5	634997.27831	1097206.41643	1030.15190
6	635361.52533	1096851.47901	1040.02230
7	635559.94543	1096587.47623	1039.61400
8	635864.72563	1096171.40752	1025.17570
9	636933.23247	1095623.04400	1038.26500
10	637277.19323	1095619.58456	1024.08190
11	637723.80884	1095214.71521	1015.67170
12	637935.29169	1094651.57157	1051.22800
13	638357.27976	1094098.84837	1081.58890
14	638884.67958	1093862.84348	1112.46650
15	639326.06937	1093710.18832	1105.21710
16	639492.14820	1093421.71391	1125.76630
17	639758.68338	1092566.73881	1156.62660
18	639615.97904	1092247.21419	1166.28150
19	639391.27943	1091747.07231	1168.32230
20	639794.13518	1091317.36292	1182.10990
21	640247.10076	1090310.31849	1183.08260
22	640289.58566	1089897.21590	1196.66340
23	640700.29275	1089141.92542	1191.11140
24	641257.46283	1089033.40923	1187.22780
25	641458.08523	1088522.22429	1190.28420
26	642411.65260	1088018.10725	1151.18880
27	642927.81875	1087821.96514	1164.95490
28	644339.36361	1087738.37190	1181.94540
29	644862.46505	1087692.21235	1180.39630
30	645156.16119	1087615.23329	1196.34370
31	645383.15560	1087729.25132	1195.32300
32	645619.46290	1088075.25337	1196.36700
33	645907.73600	1089094.87873	1179.38440
1100	632395.43486	1096604.51455	1070.16650
1101	633375.81437	1097108.54679	1058.16370
1102	633549.43662	1097152.93747	1054.49060
1103	634073.36090	1097211.03023	1042.00140
1104	636159.33151	1095828.69571	1016.22660
1105	636413.27696	1095579.06534	1031.42300
1106	636813.32229	1095539.68247	1039.29580
1107	640180.47624	1090755.25822	1155.44060
1108	641515.90298	1088152.89565	1172.92600
1109	642138.39023	1088076.99244	1155.44200
1110	643590.45240	1087775.77519	1156.61160
1111	645840.78417	1088952.45750	1174.32140
1112	646144.47993	1089169.01737	1179.28810
1200	632491.25192	1096535.36032	1069.38260
1201	633208.55028	1097052.97524	1055.86810
1202	633477.48057	1097130.94834	1057.37670
1203	634303.42484	1097202.24706	1046.30640
1204	635660.87190	1096426.07910	1031.35680
1205	632054.33842	1096418.93700	1073.56540
1206	632026.79455	1096591.87502	1059.37240
1207	637105.41986	1095922.50638	1030.62260
1208	637041.19994	1096337.97847	1029.79850
1209	637071.43762	1096505.14265	1024.36180
1210	637174.24657	1096738.19031	1003.08230
1211	637538.24548	1095373.13822	1021.21700
1212	637872.61604	1094798.94501	1042.86180
1213	638254.23759	1094224.06708	1073.48910
1214	638582.98121	1094011.96890	1091.09020
1215	639633.71549	1093078.64608	1127.85120
1216	639458.25287	1091864.58449	1158.21660
1217	639773.79222	1091257.53599	1180.33170
1218	640147.44114	1090156.54128	1184.66520
1219	640229.11210	1089686.17416	1180.16470

APPROXIMATE STATE PLANE COORDINATES
DETERMINED FROM SOLAR OBSERVATION
PROJECTED TO GROUND

Point	Northing	Easting	Elevation
1220	641288.64505	1088827.36681	1185.20070
1221	641579.41586	1088334.79305	1174.09080
1222	642633.61869	1087921.42265	1151.60090
1223	643290.44120	1087806.90071	1157.33170
1224	643860.70534	1087762.64283	1156.35900
1225	644615.51790	1087711.64227	1170.37080
1226	645547.59366	1087948.21659	1192.86760
1227	645704.94812	1088413.98861	1190.53550
1229	639495.67945	1091629.69184	1173.80700
1230	639260.55870	1091636.36623	1173.90480
1231	638828.20359	1091627.11083	1156.74900
1232	640530.87657	1088987.27568	1165.83270
1233	639483.17182	1090095.53199	1176.21130
1234	640876.95903	1088995.31632	1183.75630
1235	643072.04576	1088013.53115	1171.80930
1500	631965.71367	1096277.58741	1076.71290
1501	631999.35489	1096342.43426	1076.64800
1502	632035.01520	1096364.28448	1076.45590
1503	631929.43103	1096259.74616	1076.40220
1504	634591.59114	1097425.31130	1043.52280
1505	634537.05003	1097461.49563	1043.05410
1506	634722.11906	1097237.53315	1032.53000
1507	634838.82950	1097202.24256	1035.25330
1508	637054.73931	1095709.43326	1039.59340
1509	637115.97110	1095705.09488	1036.52210
1510	638951.20490	1093887.13231	1114.87060
1511	638978.63306	1093931.47449	1114.03420
1512	638822.20704	1094014.40470	1112.67770
1513	638783.31949	1093973.65577	1111.16930
1514	639672.61684	1091317.45452	1179.08840
1515	639761.20939	1091192.25142	1178.32580
1516	639868.22702	1091275.29854	1182.56080
1517	639759.14090	1091381.93405	1181.05080
1518	640792.76026	1089160.74662	1193.64320
1519	641105.91282	1089073.57923	1185.31150
1520	641294.40420	1089045.22993	1187.44000
1521	641410.20960	1088988.55573	1186.76100
1525	646102.52225	1089502.35028	1189.44690
1526	646154.23604	1089190.48268	1180.20550
1527	646203.77464	1089212.37751	1180.00290
1528	646348.12165	1089128.66666	1178.45790
1529	644280.32091	1087689.92665	1183.29460
1530	644384.71273	1087688.35969	1177.89540
1531	644425.88887	1087788.30742	1181.33140
1532	644324.53458	1087792.59250	1182.40830

COORDINATES CONSTRUCTION CENTERLINE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	103+25.00	632004.28	1096318.30
8001	PC	114+00.00	632884.26	1096936.60
8003	PT	117+26.00	633183.35	1097057.88
8004	PC	122+71.00	633721.65	1097143.62
8006	PT	126+90.00	634125.03	1097254.25
8007	PC	128+80.00	634125.45	1097317.84
8009	PT	131+95.00	634301.34	1097324.14
8010	PC	133+04.00	634610.65	1097347.40
8012	PT	139+61.00	634716.95	1097322.82
8013	PC	154+49.00	635258.95	1096974.33
8015	PT	161+45.00	636165.53	1095794.66
8016	PC	164+43.00	636782.99	1095556.02
8018	PT	168+00.00	637076.54	1095608.81
8019	PC	170+30.00	637411.61	1095519.89
8021	PT	172+85.00	637744.76	1095175.63
8022	PC	181+86.00	638156.23	1094373.82
8024	PT	187+72.00	638580.47	1094012.83
8025	PC	194+16.00	639178.38	1093987.55
8027	PT	198+12.00	639178.38	1093748.39
8028	PC	204+84.00	639447.64	1093474.00
8030	PT	210+20.00	639655.19	1092325.92
8031	PC	214+28.00	639466.96	1091963.59
8033	PT	218+64.00	639519.58	1091557.82
8034	POE	221+31.00	639699.59	1091359.52

USE CAF 1.0 FOR STAKEOUT ON THIS PROJECT
TO CONVERT TO GRID USE CAF 0.999957665
GRID DISTANCE=GROUND DISTANCE X CAF
GRID COORDINATES ARE STORED UNDER FILENAME FA4510GI.CTL
HORIZONTAL DATUM: NAD-83
VERTICAL DATUM: NAVD 29
REFERENCE POINTS (1500 SERIES) TO BE USED TO ESTABLISH CONTROL POINTS BY RESECTION

BASIS OF BEARINGS

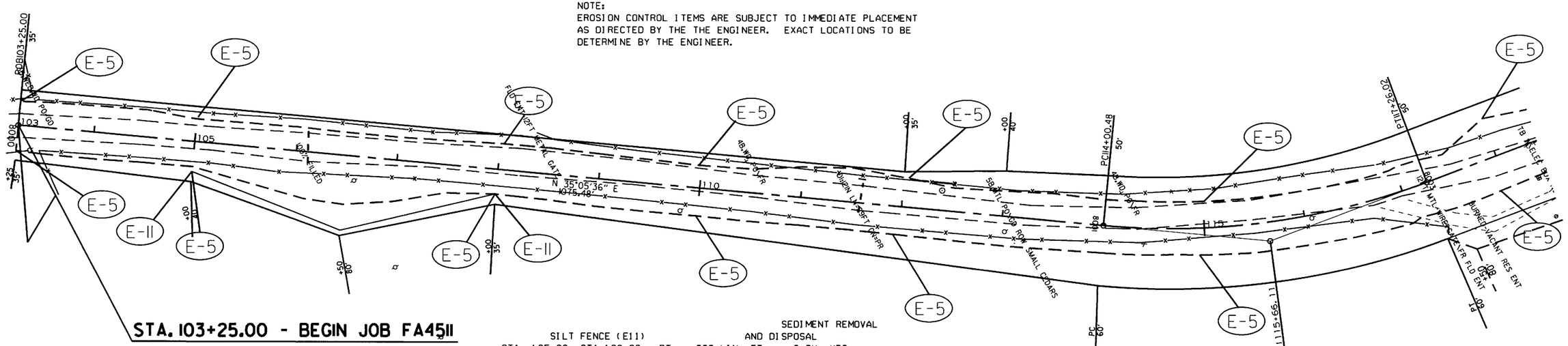
GRID NORTH, BASED ON SOLAR OBSERVATION AT POINT NO. 2
APPROXIMATE ARKANSAS STATE PLANE GRID COORDINATES, NORTH ZONE
CONVERGENCE ANGLE AT POINT NO. 2=0°25'27" LT.
GRID AZIMUTH=ASTRONOMICAL AZIMUTH-CONVERGENCE ANGLE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	10	69
				(4)	TEMPORARY EROSION CONTROL DETAILS			

P. I. = 115+66.11
Δ = 26° 02' 34.98" LT.
D = 8° 00' 00.00"
T = 165.63'
L = 325.54'
e = 5.80'
Ls = 150'

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINE BY THE ENGINEER.



STA. 103+25.00 - BEGIN JOB FA45II

FED. AID PROJ. STPR-0045(27)

SILT FENCE (E11) — SEDIMENT REMOVAL AND DISPOSAL
STA. 105+00 -STA. 108+00 RT. =300 LIN. FT. ...9 CU. YDS.

SAND BAG DITCH CHECKS (E-5) — SEDIMENT REMOVAL AND DISPOSAL

STA. 103+25 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 105+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 108+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 110+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 112+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 115+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 118+00 LT. & RT.	= 12 BAGS	2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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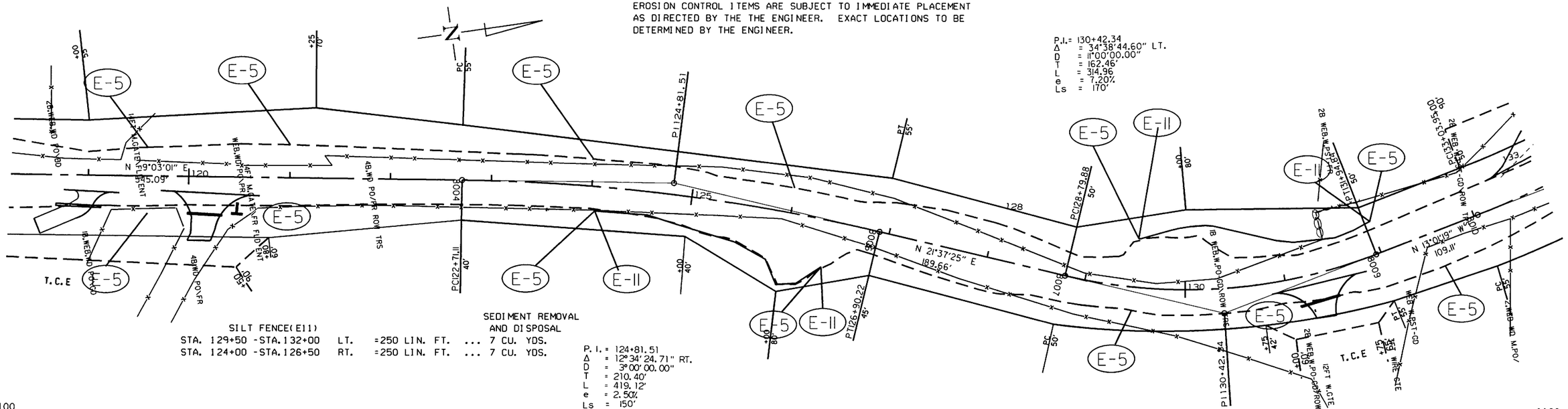
1130 1120 1110 1100 1090 1080 1070 1060 1050 1040 1030

103+25 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+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.		FA45II	II	69

4 TEMPORARY EROSION CONTROL DETAILS

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.



P.I.= 130+42.34
Δ = 34°38'44.60" LT.
D = 11°00'00.00"
T = 162.46'
L = 314.96
e = 7.20%
Ls = 170'

P. I. = 124+81.51
Δ = 12°34'24.71" RT.
D = 3°00'00.00"
T = 210.40'
L = 419.12'
e = 2.50%
Ls = 150'

SILT FENCE(E11)

STA. 129+50 -STA.132+00	LT.	=250 LIN. FT.	... 7 CU. YDS.
STA. 124+00 -STA.126+50	RT.	=250 LIN. FT.	... 7 CU. YDS.

SEDIMENT REMOVAL AND DISPOSAL

SAND BAG DITCH CHECKS (E-5)

			SEDIMENT REMOVAL AND DISPOSAL
STA. 119+50 LT. & RT.	= 12 BAGS	.....	2 CU. YDS.
STA. 121+00 LT. & RT.	= 12 BAGS	.....	2 CU. YDS.
STA. 124+00 LT.	= 6 BAGS	.....	1 CU. YDS.
STA. 126+50 LT.	= 6 BAGS	.....	1 CU. YDS.
STA. 129+50 LT. & RT.....	= 12 BAGS	.....	2 CU. YDS.
STA. 131+00 RT.	= 6 BAGS	.....	1 CU. YDS.
STA. 132+00 LT.	= 6 BAGS	.....	1 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
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1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000

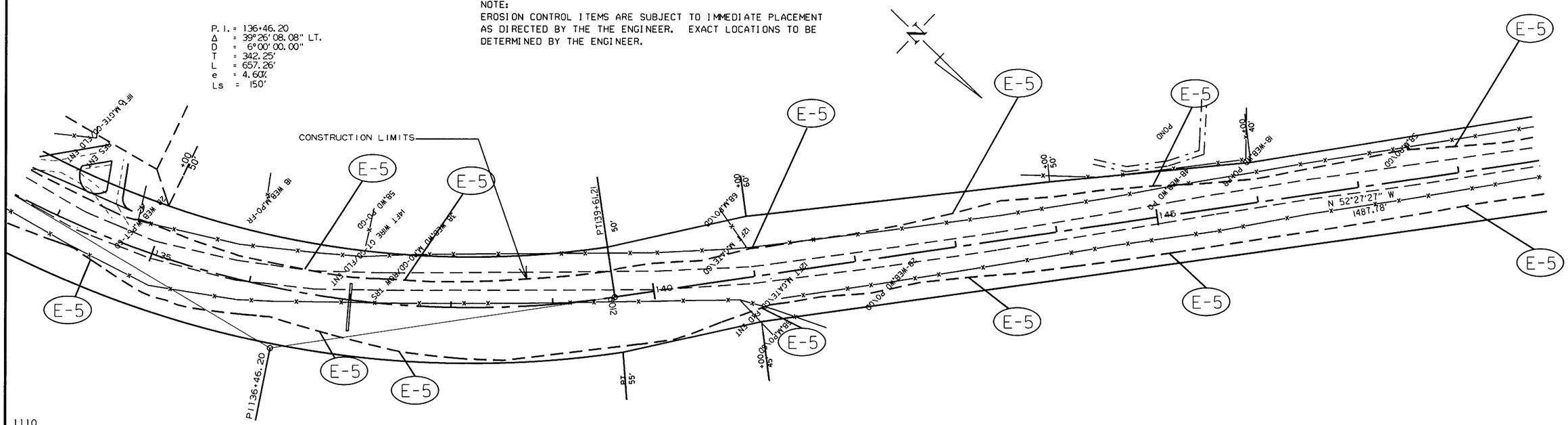
118+25 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00

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.		FA458	12	69

4 TEMPORARY EROSION CONTROL DETAILS

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

P. I. = 136+46.20
Δ = 39°26'08.08" LT.
D = 6°00'00.00"
T = 342.25'
L = 657.26'
e = 4.60%
Ls = 150'



SAND BAG DITCH CHECKS (E-5)

		SEDIMENT REMOVAL AND DISPOSAL
STA. 134+50 RT.	6 BAGS	1 CU. YDS.
STA. 136+50 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 137+50 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 138+50 RT.	= 6 BAGS	1 CU. YDS.
STA. 141+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 143+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 145+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 148+00 LT. & RT.	= 12 BAGS	2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

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REGISTERED PROFESSIONAL ENGINEER
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DAVID R. MAYO, JR.
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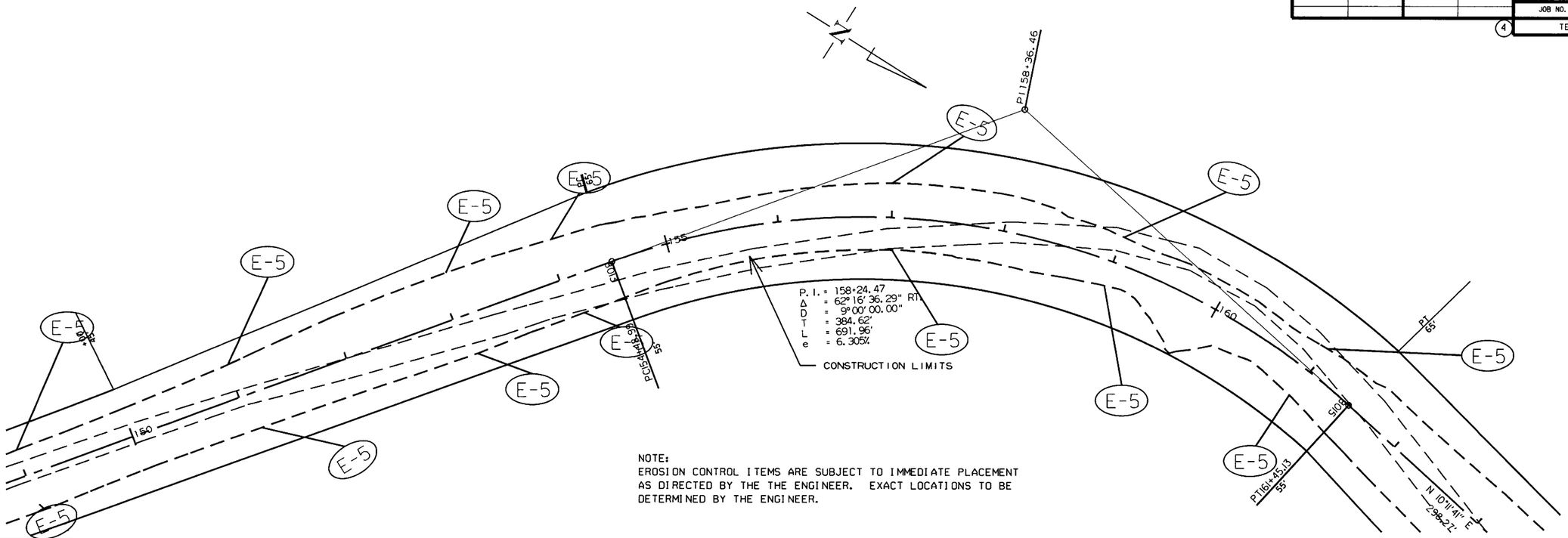
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA451	13	69

4 TEMPORARY EROSION CONTROL DETAILS



NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

SAND BAG DITCH CHECKS (E-5)		SEDIMENT REMOVAL AND DISPOSAL
STA. 149+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 151+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 153+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 154+25 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 155+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 157+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 159+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 161+00 LT. & RT.	= 12 BAGS	2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

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DAVID R. MAYO JR.
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1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990

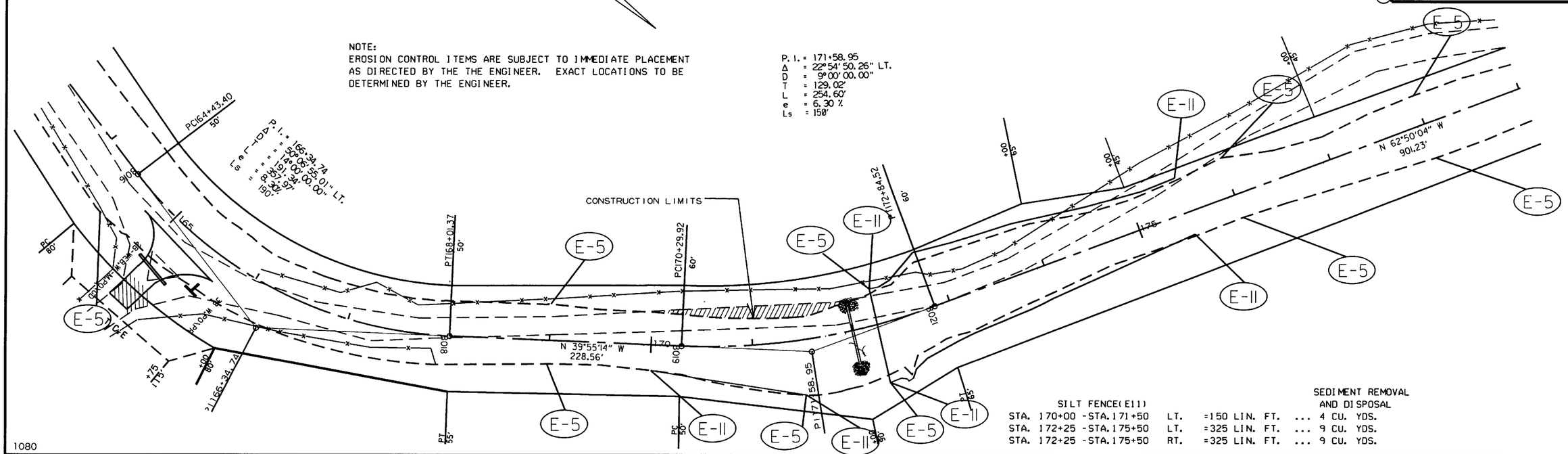
148+25 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00

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.		FA45II	14	69

4 TEMPORARY EROSION CONTROL DETAILS

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

P. I. = 171+58.95
Δ = 22°54'50.26" LT.
D = 9°00'00.00"
T = 129.02'
L = 254.60'
e = 6.30 %
Ls = 150'



SILT FENCE(E11)

STA. 170+00 -STA.171+50	LT.	=150 LIN. FT.	... 4 CU. YDS.	
STA. 172+25 -STA.175+50	LT.	=325 LIN. FT.	... 9 CU. YDS.	
STA. 172+25 -STA.175+50	RT.	=325 LIN. FT.	... 9 CU. YDS.	

SEDIMENT REMOVAL AND DISPOSAL

SAND BAG DITCH CHECKS (E-5)

			SEDIMENT REMOVAL AND DISPOSAL
STA. 164+50 RT.	= 6 BAGS	.....	1 CU. YDS.
STA. 165+00 RT.	= 6 BAGS	.....	1 CU. YDS.
STA. 167+00 LT. & RT.	= 12 BAGS	.....	2 CU. YDS.
STA. 169+00 LT. & RT..	= 12 BAGS	.....	2 CU. YDS.
STA. 171+00 LT. .	= 6 BAGS	.....	1 CU. YDS.
STA. 171+50 RT. .	= 6 BAGS	.....	1 CU. YDS.
STA. 172+25 LT. & RT..	= 12 BAGS	.....	2 CU. YDS.
STA. 173+00 LT. .	= 6 BAGS	.....	1 CU. YDS.
STA. 175+00 LT. .	= 6 BAGS	.....	1 CU. YDS.
STA. 176+00 LT. & RT.	= 12 BAGS	.....	2 CU. YDS.
STA. 177+00 LT. & RT.	= 12 BAGS	.....	2 CU. YDS.
STA. 179+00 LT. & RT.	= 12 BAGS	.....	2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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DAVID B. MAYO, JR.
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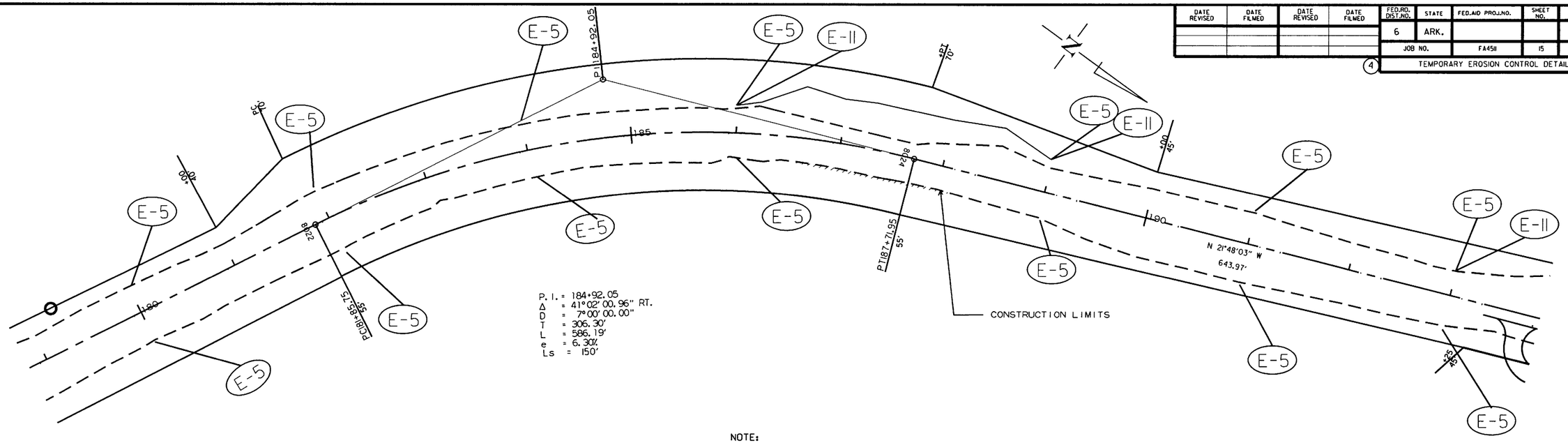
1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980

163+25 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+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.		FA4511	15	69

④ TEMPORARY EROSION CONTROL DETAILS

P.I. = 184+92.05
Δ = 41°02′00.96″ RT.
D = 7°00′00.00″
T = 306.30′
L = 586.19′
e = 6.30%
Ls = 150′

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

SILT FENCE(E11)		SEDIMENT REMOVAL AND DISPOSAL
STA. 186+00 -STA.189+00 LT.	=300 LIN. FT. ...	9 CU. YDS.

SAND BAG DITCH CHECKS (E-5)		SEDIMENT REMOVAL AND DISPOSAL
STA. 180+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 182+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 184+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 186+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 189+00 RT.	= 6 BAGS	2 CU. YDS.
STA. 191+00 LT. & RT.	= 12 BAGS	2 CU. YDS.
STA. 193+00 LT. & RT.	= 12 BAGS	2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

DAVID R. MAYO, JR.
No. 5368

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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.		FA45II	16	69

(4) TEMPORARY EROSION CONTROL DETAILS

SILT FENCE(E11)

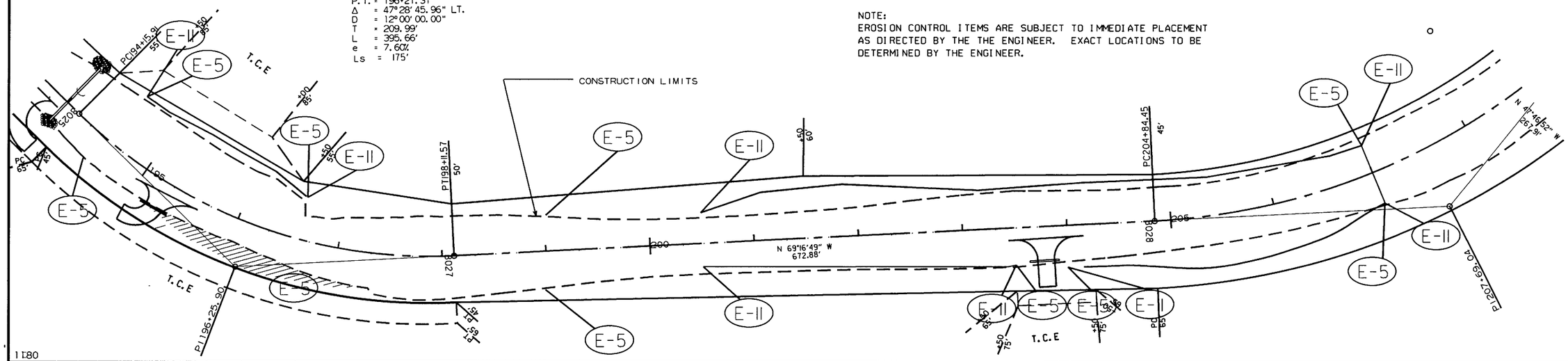
STA. 194+50 -STA. 196+50	LT.	=200 LIN. FT.	...9 CU. YDS.
STA. 200+50 -STA. 207+50	LT.	=70 LIN. FT.	...21 CU. YDS.
STA. 200+50 -STA. 203+50	RT.	=300 LIN. FT.	...9 CU. YDS.
STA. 204+50 -STA. 207+50	RT.	=300 LIN. FT.	...9 CU. YDS.

SEDIMENT REMOVAL AND DISPOSAL

P.I. = 196+21.31
Δ = 47°28' 45.96" LT.
D = 12°00' 00.00"
T = 209.99'
L = 395.66'
e = 7.60%
Ls = 175'

P.I. = 207+69.04
Δ = 48° 10' 19.11" LT.
D = 9°00' 00.00"
T = 284.59'
L = 535.24'
e = 6.30%
Ls = 150'

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.



SAND BAG DITCH CHECKS (E-5) — SEDIMENT REMOVAL AND DISPOSAL

STA. 194+50 RT.	= 6 BAGS	...1 CU. YDS.
STA. 196+00 RT.	= 6 BAGS	...1 CU. YDS.
STA. 199+50 LT. & Rt.	= 12 BAGS	...2 CU. YDS.
STA. 203+50 RT.	= 6 BAGS	...1 CU. YDS.
STA. 204+00 RT.	= 6 BAGS	...1 CU. YDS.
STA. 207+50 LT. & RT.	= 12 BAGS	...2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
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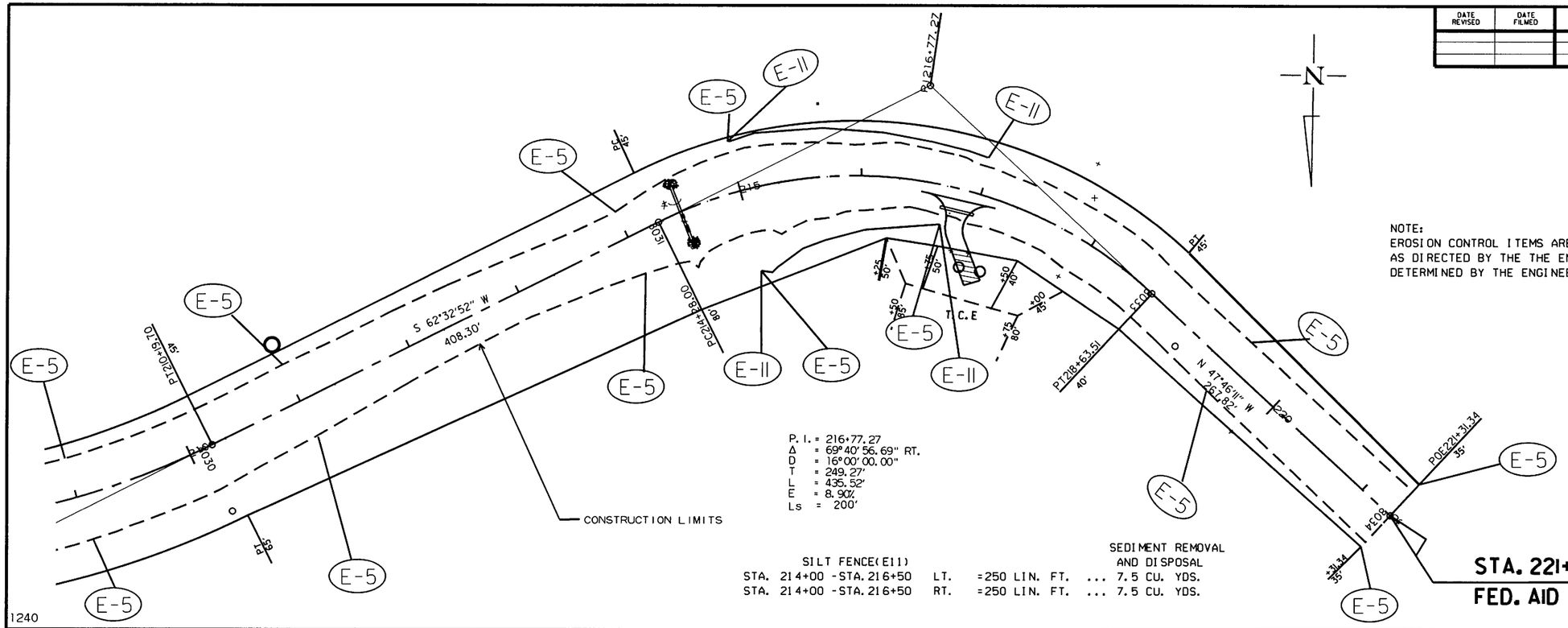
1180 1170 1160 1150 1140 1130 1120 1110 1100 1090 1080

193+25 194+00 195+00 196+00 197+00 198+00 199+00 200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+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.		FA45II	17	69

4 TEMPORARY EROSION CONTROL DETAILS



P. I. = 216+77.27
Δ = 69°40'56.69" RT.
D = 16°00'00.00"
T = 249.27'
L = 435.52'
E = 8.90'
Ls = 200'

NOTE:
EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

STA. 221+31.34- END JOB FA45II
FED. AID PROJ. STPR-0045(27)

SILT FENCE(E11)

STA. 214+00 - STA. 216+50	LT.	=250 LIN. FT.	... 7.5 CU. YDS.	SEDIMENT REMOVAL AND DISPOSAL
STA. 214+00 - STA. 216+50	RT.	=250 LIN. FT.	... 7.5 CU. YDS.	

SAND BAG DITCH CHECKS (E-5)

			SEDIMENT REMOVAL AND DISPOSAL
STA. 209+00 LT. & RT.	..... = 12 BAGS	.....	2 CU. YDS.
STA. 211+00 LT. & RT.	..... = 12 BAGS	.....	2 CU. YDS.
STA. 214+00 LT. & RT.	..... = 12 BAGS	.....	2 CU. YDS.
STA. 215+00 LT. & RT.	..... = 12 BAGS	.....	2 CU. YDS.
STA. 217+00 LT. & RT.	..... = 12 BAGS	.....	2 CU. YDS.

TEMPORARY EROSION CONTROL REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAID, JR.
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1240 1230 1220 1210 1200 1190 1180 1170 1160 1150 1140

208+25 209+00 210+00 211+00 212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00 221+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.		FA4511	18	69
				(4)	QUANTITIES			

STRUCTURES

STATION	DESCRIPTION	SIDE DRAIN 18"	CROSS DRAIN ALTS.				F.E.S. ALTS.		DUMPED RIPRAP	FILTER BLANKETT	*SELECTED PIPE BEDDING	*SOLID SODDING	WATER	STANDARD DRAWING NUMBERS
			24" R.C.P.	24" C.M.P.	24" H.D.P.E.	24" PVC	24" R.C.P.	24 C.M.P.						
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH		CU. YD.	SQ. YD.	CU. YD.	SQ. YD.	M. GAL.	
117+26	18" X 45' RT. SIDE DRAIN	45												PCM-1,PCC-1
118+98	18" X 45' RT. SIDE DRAIN	45												PCM-1,PCC-1
120+14	18" X 34' RT. SIDE DRAIN	34												PCM-1,PCC-1
131+25	18" X 40' RT. SIDE DRAIN	40												PCM-1,PCC-1
137+00	24" X 48' CROSS DRAIN		48	53	53	53	2	2			3	16	0.2	PCM-1,PCC-1,FES-1 & FES-2,PCP-1,PCP-2
153+61	24" X 33' CROSS DRAIN		33	38	38	38	2	2			3	16	0.2	PCM-1,PCC-1,FES-1 & FES-2,PCP-1,PCP-2
164+97	18" X 40' RT. SIDE DRAIN	40												PCM-1,PCC-1
172+00	24" X 92' CROSS DRAIN		92	92	92	92			5	10			0.2	PCM-1,PCC-1
193+67	18" X 28' RT. SIDE DRAIN	28												PCM-1,PCC-1
194+00	24" X 71' CROSS DRAIN		71	71	71	71			10	10			0.2	PCM-1,PCC-1
195+08	18" X 28' RT. SIDE DRAIN	28												PCM-1,PCC-1
203+63	18" X 28' RT. SIDE DRAIN	28												PCM-1,PCC-1
214+33	24" X 70' CROSS DRAIN		70	70	70	70			6	5	3	16	0.2	PCM-1,PCC-1
216+70	18" X 40' RT. SIDE DRAIN	40												PCM-1,PCC-1
														PCM-1,PCC-1
TOTALS:		**328**	**314**	**324**	**324**	**324**	**4**	**4**	**21**	**25**	**9**	**48**	**1.0**	

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

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

* QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

EARTHWORK

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT		
			NORMAL	ADD'L	TOTAL	NORMAL	ADD'L	TOTAL
			CUBIC YARDS					
103+25	221+31	MAIN LANES	40216		40216	25517		25517
117+26		PVT. DRIVE		30	30		18	18
118+98		PVT. DRIVE		66	66		11	11
120+14		CO. RD. TURNOUT		26	26		15	15
131+25		CO. RD. TURNOUT					38	38
133+84		PVT. DRIVE					8	8
164+97		CO. RD. TURNOUT		83	83		17	17
193+66		PVT. DRIVE					18	18
195+08		PVT. DRIVE					76	76
203+63		PVT. DRIVE					78	78
216+70		PVT. DRIVE					27	27
TOTALS:			**40216**	**205**	**40421**	**25517**	**306**	**25823**

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

REFLECTORIZED PAINT PAVEMENT MARKING

STATION		YELLOW MARKING (4") CONTINUOUS	STANDARD DRAWING NUMBER
FROM	TO	LIN. FT.	
103+25	221+31	23612	PM-1
TOTAL:		**23612**	

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	19	69

(4) QUANTITIES

TRAFFIC CONTROL DEVICES

LOCATION	W20-1 1500 NO.	W20-1 1500 SQ. FT.	W20-1 1000 NO.	W20-1 1000 SQ. FT.	W20-1 500 NO.	W20-1 500 SQ. FT.	G20-1 NO.	G20-1 SQ. FT.	G20-2 NO.	G20-2 SQ. FT.	*TRAFFIC DRUMS EACH	TOTAL SIGNS SQ. FT.	STANDARD DRAWING NUMBER
STA.88+25	1	16										16.00	TC-1,TC-2,&,TC-3
STA.93+25			1	16								16.00	TC-1,TC-2,&,TC-3
STA.98+25					1	16						16.00	TC-1,TC-2,&,TC-3
STA.103+25							1	10	1	8		18.00	TC-1,TC-2,&,TC-3
STA.221+00							1	10	1	8		18.00	TC-1,TC-2,&,TC-3
STA.226+00					1	16						16.00	TC-1,TC-2,&,TC-3
STA.231+00			1	16								16.00	TC-1,TC-2,&,TC-3
STA.236+00	1	16										16.00	TC-1,TC-2,&,TC-3
CO. RD. 18	1	16	1	16								32.00	TC-1,TC-2,&,TC-3
CO. RD. 560	1	16	1	16								32.00	TC-1,TC-2,&,TC-3
CO. RD. 561	1	16	1	16								32.00	TC-1,TC-2,&,TC-3
ENTIRE JOB											40		TC-1,TC-2,&,TC-3
TOTALS:	**5**	**80**	**5**	**80**	**2**	**32**	**2**	**20**	**2**	**16**	**40**	**228**	

NOTE: LOCATION OF THE TRAFFIC CONTROL DEVICES TO BE PLACE IF AND WHERE DIRECTED BY THE ENGINEER; SEE SECTIONC104.03 0F THE STANDARD SPECIFICATIONS

* QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

4" PIPE UNDERDRAINS

LOCATION	4" PIPE UNDERDRAIN LIN. FT.
ENTIRE PROJECT	300
TOTAL:	**300**

QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.00 OF THE STANDARD SPECIFICATIONS.

MAILBOXES

LOCATION	MAILBOXES EACH	MAILBOX SUPPORTS SINGLE EACH
ENTIRE PROJECT	6	6
TOTALS:	**6**	**6**

SURFACING QUANTITIES

STATION	STATION	LOCATION / DESCRIPTION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7) TON	PRIME COAT WIDTH FEET	PRIME COAT SQ. YD.	PRIME COAT GALLONS	ACHM SURFACE COURSE (1/2") WIDTH FEET	ACHM SURFACE COURSE (1/2") SQ. YD.	ACHM SURFACE COURSE (1/2") TON
103+25	221+31	MAIN LANES	11806	17945	21	27547.3	11019.9	20	26235.6	2885.9
	117+26	DRIVEWAY ON RT.		41		118.0	47.2		118.0	12.9
	118+98	DRIVEWAY ON RT.		60		120.0	48.0		120.0	13.2
	120+14	CO. RD. TURNOUT ON RT.		65		185.5	74.2		185.5	20.4
	131+25	CO. RD. TURNOUT ON RT.		65		147.3	58.9		147.2	16.2
	133+84	FIELD ENTRANCE ON RT.		52						
	164+97	CO. RD. TURNOUT ON RT.		109		312.0	124.8		312.0	34.4
	193+67	DRIVEWAY ON RT.		50		150.1	60.0		150.1	16.5
	195+08	DRIVEWAY ON RT.		41		117.0	46.8		117.0	12.9
	203+63	DRIVEWAY ON RT.		36		103.0	41.2		103.1	11.3
	216+70	DRIVEWAY ON RT.		30		88.9	35.6		88.9	9.8
TOTALS:				**18494**		**28889.1**	**11556.6**		**27577.4**	**3033.5**
USE:							11557			3034

BASIS OF ESTIMATE:
AGGREGATE BASE COURSE (CLASS 7) _____152 TONS /STA.
PRIME COAT_____0.40 GAL / SQ. YD.
A.C.H.M. SURFACE COURSE (1/2")_____220 LBS/ SQ. YD.

VOLUME CONTROL:
MINIMUM AGGREGATE IN A.C.H.M. SURFACE COURSE (1/2")_____ 94.5%
ASPLALT BINDER (PG 64-22) IN A.C.H.M. SURFACE COURSE (1/2")_____ 5.5%
NMAX =115

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL SEEDING ACRES	LIME TONS	MULCH COVER ACRES	WATER M. GALS.
103+25	221+00	CONSTRUCTION LIMITS	12.65	25.30	12.65	1290.3
TOTALS:			**12.65**	**25.30**	**12.65**	**1290.30**
USE:			12.65	26	12.65	1290.3

BASIS OF ESTIMATE:
LIME.....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING, PERMANENT SEEDING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	20	69
				(4)	QUANTITIES			

TEMPORARY EROSION CONTROL (BOX 1 of 2)

STATION	STATION	SIDE	TEMPORARY SEEDING	MULCH COVER	WATER	SILT FENCE (E-11)	SAND BAG DITCH CHECKS (E-5)	*SEDIMENT REMOVAL AND DISPOSAL	STANDARD DRAWING NUMBER
			ACRE	ACRE	M. GAL.	LIN. FT.	BAG	CU. YD.	
103+25		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
105+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
105+00	108+00	RT.				300		9	TEC-1,TEC-2, & TEC-3
108+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
110+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
112+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
115+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
118+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
119+50		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
121+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
124+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
124+00	126+00	RT.				200		6	TEC-1,TEC-2, & TEC-3
126+00		LT. & RT.					12	2	TEC-1,TEC-2, &TEC-3
129+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
129+00	132+00	LT. & RT.				300		9	TEC-1,TEC-2, & TEC-3
131+00		RT.					6	1	TEC-1,TEC-2, & TEC-3
132+50		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
134+50		RT.					6	1	TEC-1,TEC-2, & TEC-3
134+50	138+50	LT. & RT.				450		13	TEC-1,TEC-2, & TEC-3
136+50		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
137+50		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
138+50		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
141+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
143+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
145+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
147+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
149+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
151+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
153+00		LT. & RT.					12	2	TEC-1,TEC-2, &TEC-3
154+25		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
155+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
157+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
159+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
161+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
164+50		RT.					6	2	TEC-1,TEC-2, & TEC-3
165+00		RT.					6	2	TEC-1,TEC-2, & TEC-3
167+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
169+00		LT. & RT.					12	2	TEC-1,TEC-2, &TEC-3
170+00	171+75	RT.				175		5	TEC-1,TEC-2, &TEC-3
171+00		LT.					6	1	TEC-1,TEC-2, &TEC-3
171+75		RT.					6	1	TEC-1,TEC-2, &TEC-3
172+25		LT. & RT.					12	2	TEC-1,TEC-2, &TEC-3
173+00		LT.					6	1	TEC-1,TEC-2, &TEC-3
175+00		LT.					6	1	TEC-1,TEC-2, & TEC-3
177+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
179+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
179+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
180+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
182+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
184+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
186+00		LT. & RT.					12		TEC-1,TEC-2, & TEC-3
186+00	189+00	LT. & RT.				300		9	TEC-1,TEC-2, & TEC-3
189+00		RT.					6	1	TEC-1,TEC-2, & TEC-3
SUBTOTALS (BOX 1):						**1725**	**510**	**136**	

TEMPORARY EROSION CONTROL (BOX 2 OF 2)

STATION	STATION	SIDE	TEMPORARY SEEDING	MULCH COVER	WATER	SILT FENCE (E-11)	SAND BAG DITCH CHECKS (E-5)	*SEDIMENT REMOVAL AND DISPOSAL	STANDARD DRAWING NUMBER
			ACRE	ACRE	M. GAL.	LIN. FT.	BAG	CU. YD.	
191+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
193+00	196+00	LT.				300		2	TEC-1,TEC-2, & TEC-3
196+00		RT.					12		TEC-1,TEC-2, & TEC-3
199+50		LT. & RT.						9	TEC-1,TEC-2, & TEC-3
200+00	207+00	LT. & RT.				1400		42	TEC-1,TEC-2, & TEC-3
209+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
211+00		LT. & RT.					12	2	TEC-1,TEC-2, &TEC-3
213+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
214+00	216+50	LT. & RT.				566		15	TEC-1,TEC-2, & TEC-3
217+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
219+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
221+00		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
221+27		LT. & RT.					12	2	TEC-1,TEC-2, & TEC-3
ENTIRE PROJECT			25.30	25.30	516.0				
SUBTOTALS (BOX 2):			**25.30**	**25.30**	**516.0**	**2266**	**108**	**84**	
TOTALS (ALL BOXES):			**25.30**	**25.30**	**516.0**	**3991**	**618**	**220**	

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

WATER.....102.0 M.G. / ACRE OF SEEDING, TEMPORARY SEEDING

WIRE FENCE

STATION	STATION	SIDE	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	STANDARD DRAWING NUMBER
			LIN. FT.	LIN. FT.	
103+25	118+25	LT.		1500	WF-4
103+25	117+31	RT.		1406	WF-4
118+25	118+62	LT.		37	WF-4
118+62	133+03	LT.		1441	WF-4
119+11	119+92	RT.		81	WF-4
120+31	129+72	RT.		941	WF-4
120+41	120+85	LT.	44		WF-4
132+17	164+88	RT.	3271		WF-4
139+75	158+83	LT.	1908		WF-4
148+25	158+75	LT.	1050		WF-4
148+25	163+25	RT.	1500		WF-4
165+61	167+77	RT.		217	WF-4
165+98	196+00	LT.		3002	WF-4
196+00	214+00	LT.	1800		WF-4
214+38	215+80	LT.	142		WF-4
215+39	216+77	RT.	138		WF-4
217+07	221+31	RT.	424		WF-4
217+72	221+31	LT.	359		WF-4
TOTALS:			**10636**	**8625**	

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
12/4/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	21	69

(4) QUANTITIES

METAL VEHICULAR GATES

STATION	SIDE	WIDTH	*12'-0" GATES	*16'-0" GATES
		LIN. FT.	EACH	EACH
108+27	LT.	12	1	
117+81	RT.	12	1	
119+37	LT.	14		1
120+44	LT.	14		1
134+00	LT.	11	1	
140+62	LT.	12	1	
141+08	RT.	12	1	
147+16	LT.	12	1	
179+25	RT.	12	1	
211+00	LT.	12	1	
216+75	RT.	16		1
TOTALS:			**8**	**3**

* DENOTES ALTERNATIVE BID ITEMS.

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	
103+25	221+31	118	118
TOTALS:		**118**	**118**

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER				CHANNEL POST SIGN SUPPORT	STANDARD DRAWING NUMBER
		R1-1	W1-2L	W1-2R	W13-1	TYPE A	
		SQ. FT.				EACH	
113+00	RT.		6.25		2.25	1	SHS 1&2
118+26	LT.			6.25	6.25	1	SHS 1&2
120+96	RT.	6.25				1	SHS 1&2
127+90	RT.		6.25		2.25	1	SHS 1&2
131+65	RT.	6.25				1	SHS 1&2
132+95	LT.			6.25	2.25	1	SHS 1&2
153+49	RT.			6.25	2.25	1	SHS 1&2
162+46	LT.		6.25		2.25	1	SHS 1&2
165+56	RT.	6.25				1	SHS 1&2
180+86	RT.			6.25	2.25	1	SHS 1&2
188+72	LT.		6.25		2.25	1	SHS 1&2
193+16	RT.		6.25		2.25	1	SHS 1&2
199+12	LT.			6.25	2.25	1	SHS 1&2
203+48	RT.		6.25		2.25	1	SHS 1&2
211+50	LT.			6.25	2.25	1	SHS 1&2
213+28	RT.			6.25	2.25	1	SHS 1&2
219+63	LT.		6.25		2.25	1	SHS 1&2
TOTALS:		**18.75**	**43.75**	**43.75**	**35.50**	**17**	

NOTE: ALL STANDARD DRAWING TO BE 0.08" THICK. REFER TO STANDARD DRAWING SHS-2 FOR CHANNEL POST SPLICING DETAILS.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	SIDE	DESCRIPTION	PIPE CULVERTS	FENCE	METAL GATES	FRAME SHED
				EACH	LIN. FT.	EACH	EACH
103+25	118+25	LT.	5B - STRAND BARBED WIRE		1500		
103+25	117+31	RT.	5B - STRAND BARBED WIRE		1406		
108+27		LT.	12' METAL GATE			1	
111+58			18" X 29' PIPE CULVERT C.M. CROSS DRAIN	1			
117+81		RT.	12' METAL WIRE GATE			1	
118+25	118+62	LT.	2B - 2 STRANDED BARBED WIRE		37		
118+62	133+00	LT.	2B - 2 STRANDED BARBED WIRE		1441		
119+11	119+92	RT.	1B - 1 STRANDED BARBED WIRE		81		
119+37			14' METAL GATE			1	
120+31	129+72	RT.	4B - 4 STRANDED BARBED WIRE		941		
120+44		LT.	14' METAL GATE			1	
120+41	120+85	LT.	OLDWOOD CATTLE CHUTE		44		
121+00		LT.	OLDWOOD SHED				1
132+17	164+88	RT.	31B - 1 STRAND BARBED WIRE		3271		
139+75	158+83	LT.	4B - 2 STRANDED BARBED WIRE		1908		
134+00		LT.	11' METAL GATE			1	
140+62		LT.	12' METAL GATE			1	
141+08		RT.	12' METAL GATE			1	
147+16		LT.	12' METAL GATE			1	
148+25	158+75	LT.	2B - 2 STRANDED BARBED WIRE		1050		
148+25	163+25	RT.	1B - 1 STRANDED BARBED WIRE		1500		
153+61			18" X 29' PIPE CULVERT C.M. CROSS DRAIN	1			
165+60	167+77	RT.	3B - 3 STRANDED BARBED WIRE		217		
165+98	196+00	LT.	5B - 5 STRANDED BARBED WIRE		3002		
179+25		LT.	12' METAL GATE			1	
196+00	214+00	LT.	3B - 3 STRANDED BARBED WIRE		1800		
211+00		LT.	12' METAL GATE			1	
214+33			18" X 29' PIPE CULVERT C.M. CROSS DRAIN	1			
214+38	215+80	LT.	4B - 5 STRANDED BARBED WIRE		142		
215+40	216+77	RT.	1B - 1 STRANDED BARBED WIRE		137		
216+75		RT.	METAL GATE W/CONC. BLOCK POSTS			1	
217+07	221+31	RT.	3B - 3 STRANDED BARBED WIRE		424		
217+72	221+31	LT.	4B - 5 STRANDED BARBED WIRE		359		
TOTALS:				**3**	**19260**	**11**	**1**

OBLITERATION OF ABANDONED ROADWAY

STATATION	STATION	SIDE	UNCLASSIFIED EXCAVATION	LIME	SEEDING	MULCH COVER	WATER
			CU. YD.	TON	ACRE	ACRE	M. GAL.
1128+84	130+27	RT.	34.80	0.03	0.01	0.01	1.0
136+64	139+56	LT.	100.10	0.08	0.04	0.04	4.1
153+22	157+09	RT.	174.00	0.14	0.07	0.07	7.1
158+77	161+19	LT.	171.00	0.14	0.07	0.07	7.1
165+06	165+24	RT.	15.39	0.02	0.01	0.01	1.0
169+92	172+13	LT.	79.60	1.04	0.52	0.52	53.0
174+61	176+06	LT.	62.70	0.05	0.03	0.03	3.1
193+06	197+21	RT.	128.20	0.10	0.05	0.05	5.1
TOTALS:			**765.79**	**1.60**	**0.80**	**0.80**	**81.6**
USE:			766	2	0.80	0.80	81.6

BASIS OF ESTIMATE:
LIME.....2 TONS/ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING, PERMANENT SEEDING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
12/6/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12/19/17				6	ARK.			
				JOB NO.		FA451I	22	69

(4) SUMMARY OF QUANTITIES & REVISIONS

SUMMARY OF QUANTITIES

	ITEM NO.	ITEM		QUANITY	UNIT
	201	CLEARING		118	STATION
	201	GRUBBING		118	STATION
	202	REMOVAL AND DISPOSAL OF FRAME SHED		1	EACH
	202	REMOVAL AND DISPOSAL OF FENCE		19260	LIN. FT.
	202	REMOVAL AND DISPOSAL OF GATES		11	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		3	EACH
	210	UNCLASSIFIED EXCAVATION		41187	CU. YD.
	210	COMPACTED EMBANKMENT		25823	CU. YD.
	SS & 303	AGGREGATE BASE COURSE (CLASS 7)		18494	TON
	SS & 401	PRIME COAT		11557	GAL.
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		2867	TON
	SP, SS, & 407	ASPHALT BINDER (PG64-22) IN ACHM SURFACE COURSE (1/2")		167	TON
	601	MOBILIZATION		1.00	LUMP SUM
	SP & 602	FURNISHING FIELD OFFICE		1	EACH
	603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	SS & 604	SIGNS		228	SQ. FT.
	SS & 604	TRAFFIC DRUMS		40	EACH
*	606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	314	LIN. FT.
*	606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	324	LIN. FT.
*	606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	324	LIN. FT.
*	606	24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 4)	324	LIN. FT.
*	SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 5)	324	LIN. FT.
*	SP & 606	24" PVC PIPE	(ALTERNATE NO. 6)	324	LIN. FT.
*	606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	4	EACH
*	606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	4	EACH
	SP, SS & 606	18" SIDE DRAIN		328	LIN. FT.
	606	SELECTED PIPE BEDDING		9	CU. YD.
	611	4" PIPE UNDERDRAINS		300	LIN. FT.
	619	WIRE FENCE (TYPE D)		10636	LIN. FT.
	619	WIRE FENCE (TYPE D-1)		8625	LIN. FT.
*	619	12' STEEL GATES	(ALTERNATE NO. 1)	8	EACH
*	619	12' ALUMINUM GATES	(ALTERNATE NO. 2)	8	EACH
*	619	16' STEEL GATES	(ALTERNATE NO. 1)	3	EACH
*	619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	3	EACH
	620	LIME		28	TON
	620	SEEDING		13.45	ACRE
	SS & 620	MULCH COVER		38.75	ACRE
	620	WATER		1888.9	M. GAL.
	621	TEMPORARY SEEDING		25.30	ACRE
	621	SILT FENCE		3991	LIN. FT.
	621	SAND BAG DITCH CHECKS		618	BAG
	621	SEDIMENT REMOVAL AND DISPOSAL		220	CU. YD.
	624	SOLID SODDING		48	SQ. YD.
	635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
	637	MAILBOXES		6	EACH
	637	MAILBOX SUPPORTS (SINGLE)		6	EACH
	718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		23612	LIN. FT.
	726	STANDARD SIGN		141.75	SQ. FT.
	729	CHANNEL POST SIGN SUPPORT (TYPE A)		17	EACH
	816	FILTER BLANKET		25	SQ. YD.
	816	DUMPED RIPRAP		21	CU. YD.

* DENOTES ALTERNATE BID ITEM.

REVISIONS

DATE	REVISION	SHEET NUMBER
12/19/2017	MAKE CORRECTIONS TO SUPERELEVATION SECTION	4,22
12/19/2017	CORRECT THE FLOWLINES ON PLAN AND PROFILE SHEETS	22,25 &26
12/19/2017	CORRECT THE FLOWLINE ON CROSS SECTIONS	22, 43 & 48

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 5368
DAVID R. MAYO, JR.

12/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	23	69

(4) PLAN AND PROFILE STA. 103+00 - STA. 118+25

IP 224 ROCK NEAR FE
S1/16 COR.
SECS. 25 & 26,
T17N, R17W

LAND TIE

POB103+25.00
N 35°04'25" E
8000 N 35°05'36.00" E
℄ CONSTRUCTION

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- GAS VALVE
- WELL

EARTHWORK
STA. 103+25 - STA. 221+31

UNCLASIFIED EXCAVATION (NORMAL)	=	40216 CU. YDS.
UNCLASIFIED EXCAVATION (DRIVES)	=	205 CU. YDS.
COMPACTED EMBANKMENT (NORMAL)	=	25517 CU. YDS.
COMPACTED EMBANKMENT (DRIVES)	=	298 CU. YDS.

EARTHWORK TO BE PAID FOR AS PLAN QUANTITY

CLEARING AND GRUBBING
STA. 103+25 TO STA. 221+00 = 18 STA.

REMOVAL AND DISPOSAL OF FENCE
STA. 103+25 - STA. 118+25 LT. = 1500 LIN. FT.
STA. 103+25 - STA. 117+31 RT. = 1406 LIN. FT.

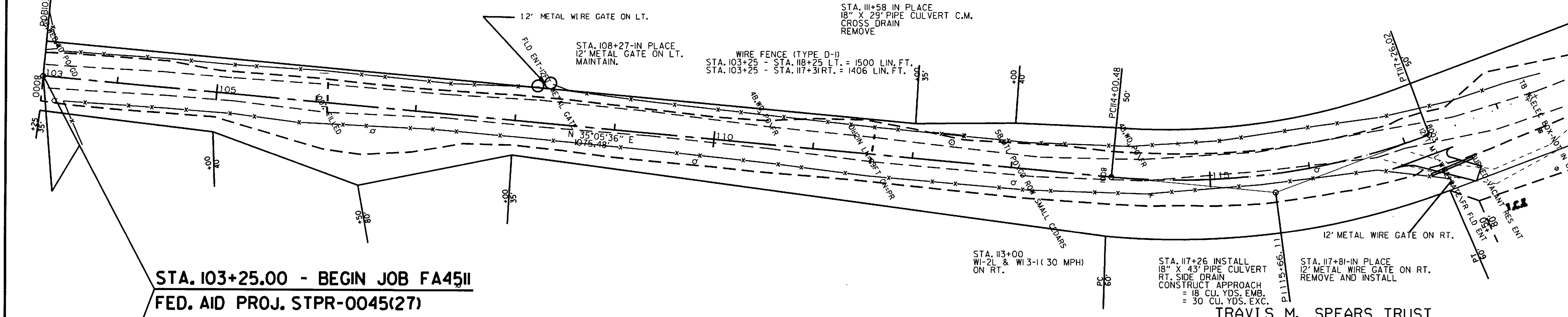
WIRE FENCE (TYPE D-1)
STA. 103+25 - STA. 118+25 LT. = 1500 LIN. FT.
STA. 103+25 - STA. 117+31 RT. = 1406 LIN. FT.

P. I. = 115+66.11
Δ = 26°02'34.98" LT.
D = 8°00'00.00"
T = 165.63'
L = 325.54'
e = 5.80%
Ls = 150'

BEGIN SUPER = 112+88
BEGIN MAX. SUPER = 114+38
END MAX. SUPER = 116+89
END SUPER = 118+39

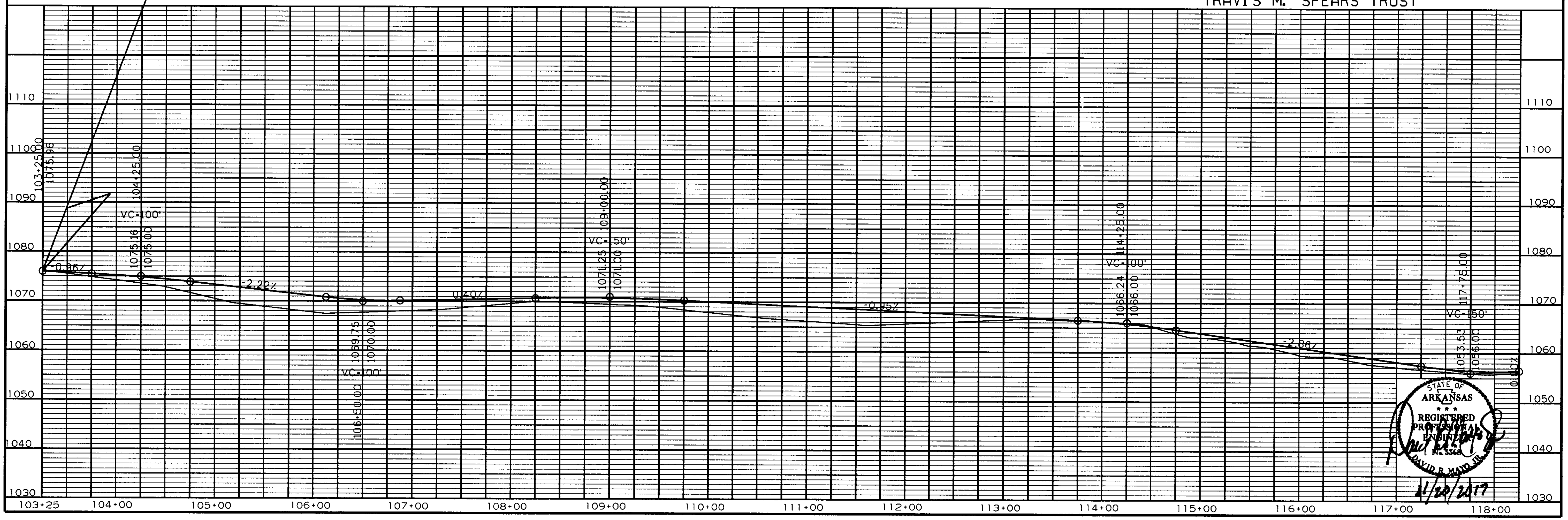
STA. 118+26
W1-2R & W13-1 (30 MPH)
ON LT.

TRAVIS M. SPEARS TRUST



TRAVIS M. SPEARS TRUST

STA. 103+25.00 - BEGIN JOB FA4511
FED. AID PROJ. STPR-0045(27)



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5560
DAVID B. MAYO, JR.
1/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		FA451I	24	69

4 PLAN AND PROFILE STA. 118+25 - STA. 133+25

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- GAS VALVE
- WELL

REMOVAL AND DISPOSAL OF FENCE
STA. 118+25 - STA. 118+62 LT. = 37 LIN. FT.
STA. 118+62 - STA. 133+03 LT. = 1441 LIN. FT.
STA. 119+11 - STA. 119+92 RT. = 81 LIN. FT.
STA. 120+31 - STA. 129+72 RT. = 941 LIN. FT.

WIRE FENCE (TYPE D-1)
STA. 118+25 - STA. 118+62 LT. = 37 LIN. FT.
STA. 118+62 - STA. 133+03 LT. = 1441 LIN. FT.
STA. 119+11 - STA. 119+92 RT. = 81 LIN. FT.
STA. 120+31 - STA. 129+72 RT. = 941 LIN. FT.

STA. 119+37-IN PLACE
14' METAL GATE ON LT.
REMOVE AND INSTALL

14' METAL GATE ON LT.

STA. 120+44-IN PLACE
14' METAL GATE ON LT.
REMOVE AND INSTALL

STA. 120+66-IN PLACE
OLDWOOD CATTLE CHUTE ON LT.
REMOVE AND INSTALL

STA. 121+00-IN PLACE
OLDWOOD SHED ON LT.
REMOVE AND RECONSTRUCT

TRAVIS M. SPEARS TRUST

CHARLES A. HUDSPETH LIVING TRUST

P.I.= 130+42.34
Δ = 34°38'44.60" LT.
D = 11°00'00.00"
T = 162.46'
L = 314.96
e = 7.20%
Ls = 170'

BEGIN SUPER = 127+52
BEGIN MAX. SUPER = 129+22
END MAX. SUPER = 131+52
END SUPER = 133+22

STA. 132+95
WI-2R & WI3-1(30 MPH)
ON LT.

STA. 131+25 INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CO. RD. TURNOUT = 38 CU. YDS.

OBLITERATION OF EXISTING ROADWAY
STA. 128+84 - STA. 130+27 RT. = 34.8 CU. YDS.

N 9°03'01" E
545.09'

N 21°37'25" E
189.66'

N 13°00'13" W
109.11'

CONSTRUCTION LIMITS

TRAVIS M. SPEARS TRUST

JORDI & RITA BLAIR

STA. 131+65 CONSTRUCT
STD. HWY. SIGNS
RI-ION RT.

STA. 120+96 CONSTRUCT
STD. HWY. SIGNS
RI-ION RT.

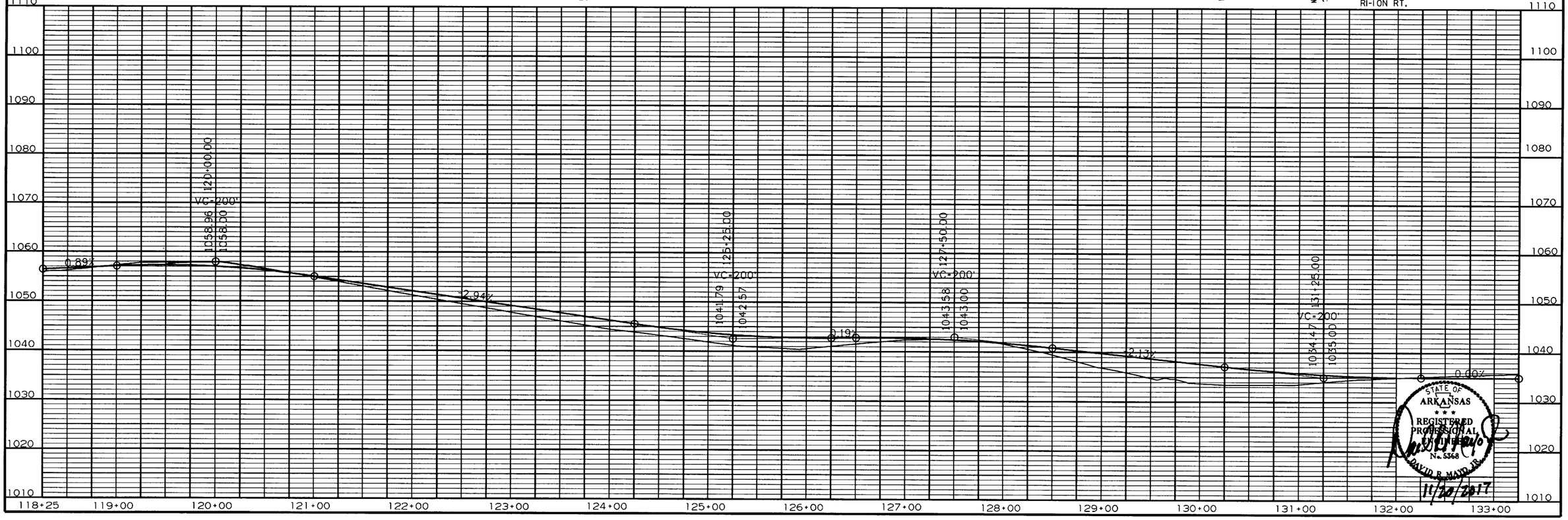
STA. 118+98 INSTALL
18" X 45' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
= 11 CU. YDS. EMB.
= 66 CU. YDS. EXC.

STA. 120+14 INSTALL
18" X 34' PIPE CULVERT
RT. SIDE DRAIN
CO. RD. TURNOUT = 15 CU. YDS. EMB.
= 26 CU. YDS. EXC.

P. I. = 124+81.51
Δ = 12°34'24.71" RT.
D = 3°00'00.00"
T = 210.40'
L = 419.12'
e = 2.50%
Ls = 150'

BEGIN SUPER = 121+59
BEGIN MAX. SUPER = 123+09
END MAX. SUPER= 126+53
END SUPER = 128+03

STA. 127+90
WI-2L & WI3-1(30 MPH)
ON RT.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAHAFFEY, JR.
11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12/19/17				6	ARK.			
				JOB NO.		FA45II	25	69

4 PLAN AND PROFILE STA. 133+25 - STA. 148+25

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- GAS VALVE
- WELL

P. I. = 136+46.20
Δ = 39°26'08.08" LT.
D = 6°00'00.00"
T = 342.25'
L = 657.26'
e = 4.60'
Ls = 150'

BEGIN SUPER = 131+92
BEGIN MAX. SUPER = 133+42
END MAX. SUPER= 139+24
END SUPER = 140+74

STA. 137+00 CONSTRUCT
24"PIPE CULVERT CROSS DRAIN
D.A. = 0.5 AC. .025 = 1.8 CFS
24" R.C.P (CLASS III) (TYPE 3 BEDDING) = 48 LIN. FT.
24" C.M.P OR PLASTIC (TYPE 2 BEDDING) = 53 LIN FT.
24" FES ON LT. AND RT. = 2 EACH

STA. 133+84 CONSTRUCT APPROACH ON LT. = 8 CU. YDS.

REMOVED AND DISPOSAL OF FENCE
STA. 132+17 - STA. 164+88 RT. = 3271LIN. FT.
STA. 139+75 - STA. 158+83 LT. = 1922 LIN. FT.

STA. 134+00-IN PLACE
11' METAL GATE ON LT.
REMOVE AND INSTALL.

11' METAL GATE ON LT.

WIRE FENCE (TYPE D)
STA. 132+17 - STA. 164+88 RT. = 3271LIN. FT.
STA. 139+75 - STA. 158+83 LT. = 1922 LIN. FT.

CONSTRUCTION LIMITS

OBLITERATION OF EXISTING ROADWAY
STA. 136+64 - STA. 139+56 LT. = 100.1 CU. YDS.

STA. 140+62-IN PLACE
12' METAL GATE ON LT.
REMOVE AND INSTALL

12' METAL GATE ON LT.

OW:NOBEL STILL

POND

CHARLES A. HUDSPETH
LIVING TRUST

STA. 147+16-IN PLACE
12' METAL GATE ON LT.
REMOVE AND INSTALL

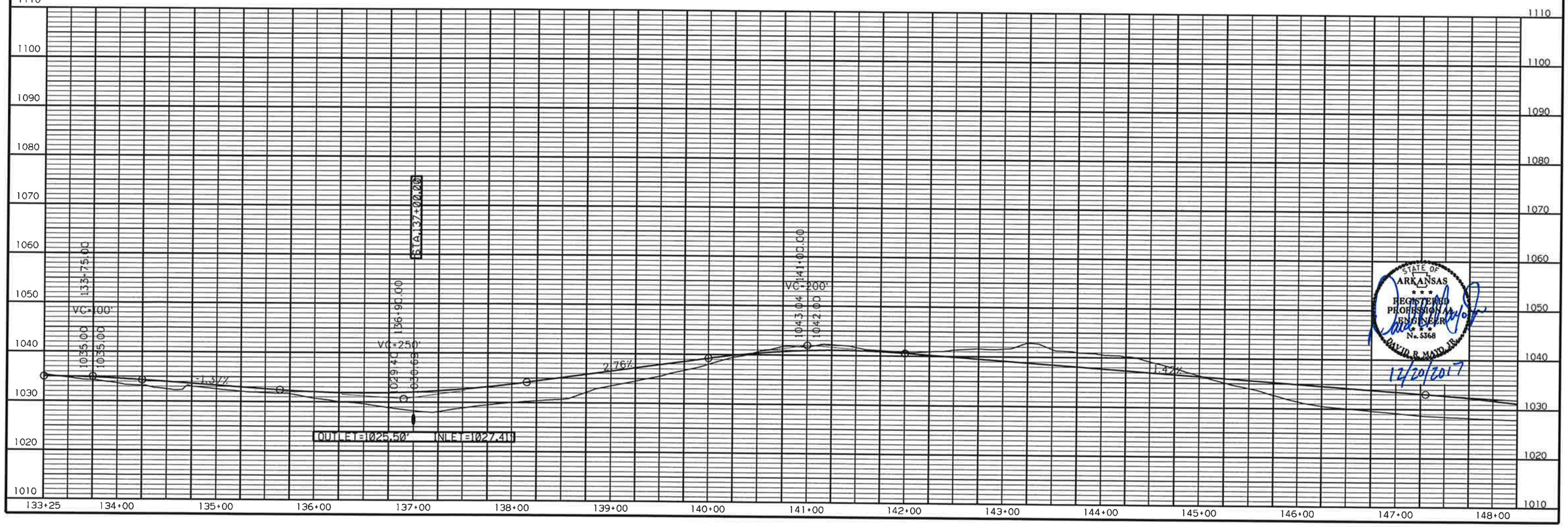
12' METAL GATE ON LT.

N 52°27'27" W
1487.78'

CHARLES A. HUDSPETH
LIVING TRUST

12' METAL GATE ON LT.
STA. 141+08-IN PLACE
12' METAL GATE ON RT.
REMOVE AND INSTALL

P.I 136+46.20



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
12/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12/19/17				6	ARK.			
				JOB NO.		FA45II	26	69

(4) PLAN AND PROFILE STA. 148+25 - STA. 163+25

LEGEND

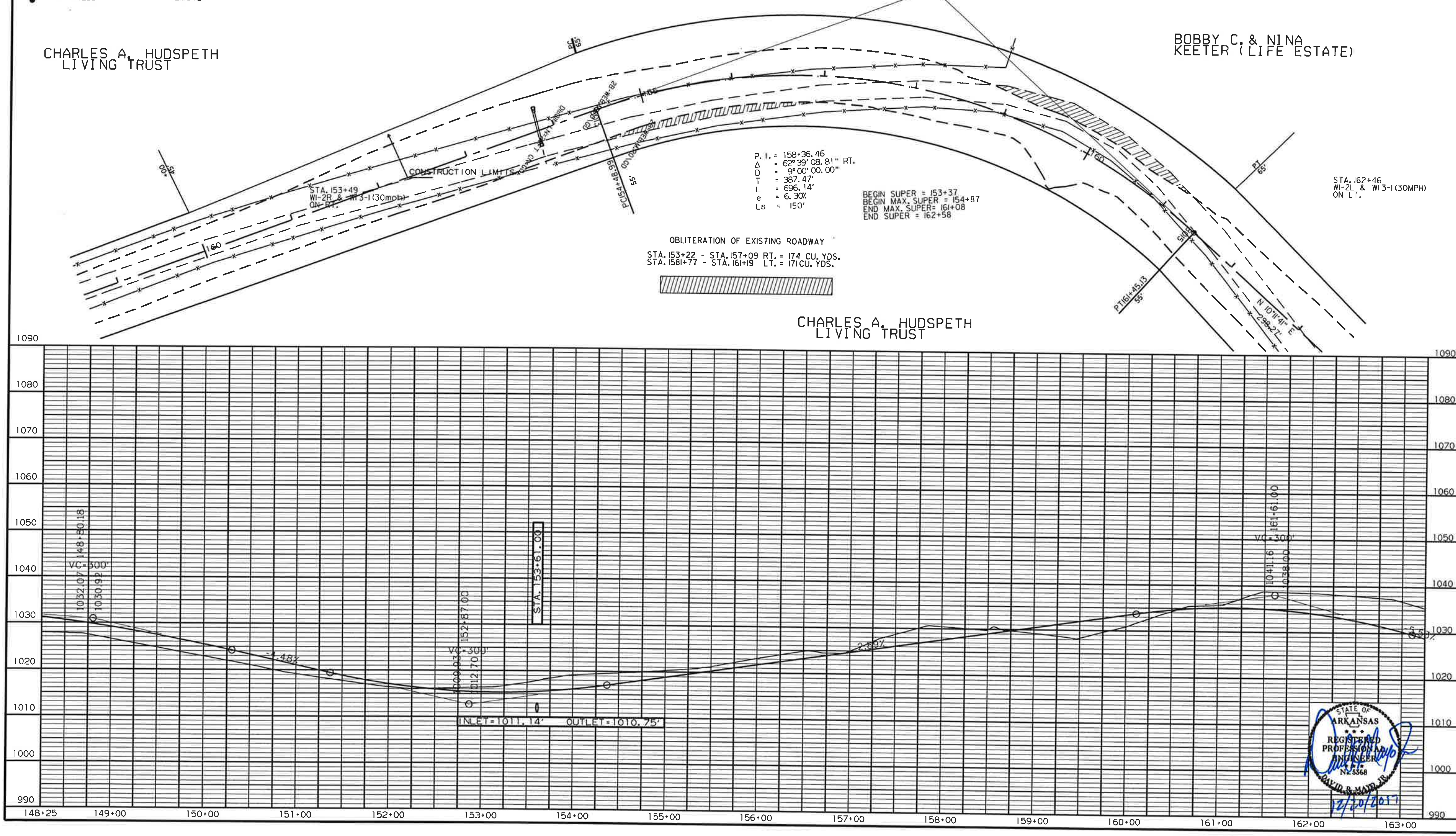
- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- GAS VALVE
- WELL

STA. 153+61 CONSTRUCT
24"PIPE CULVERT CROSS DRAIN
D.A. 0.8 AC. 025 = 2.7 CFS
24" R.C.P (CLASS III) (TYPE 3 BEDDING) = 33 LIN. FT.
24" C.M.P OR PLASTIC (TYPE 2 BEDDING) = 38 LIN FT.
24" FES ON LT. AND RT. = 2 EACH

STA. 153+61 IN PLACE
18" X 29' PIPE CULVERT C.M.
CROSS DRAIN
REMOVE

WIRE FENCE (TYPE D)
STA. 148+25 - STA. 158+75 LT. = 1050 LIN. FT.
STA. 148+25 - STA. 163+25 RT. = 1500 LIN. FT.

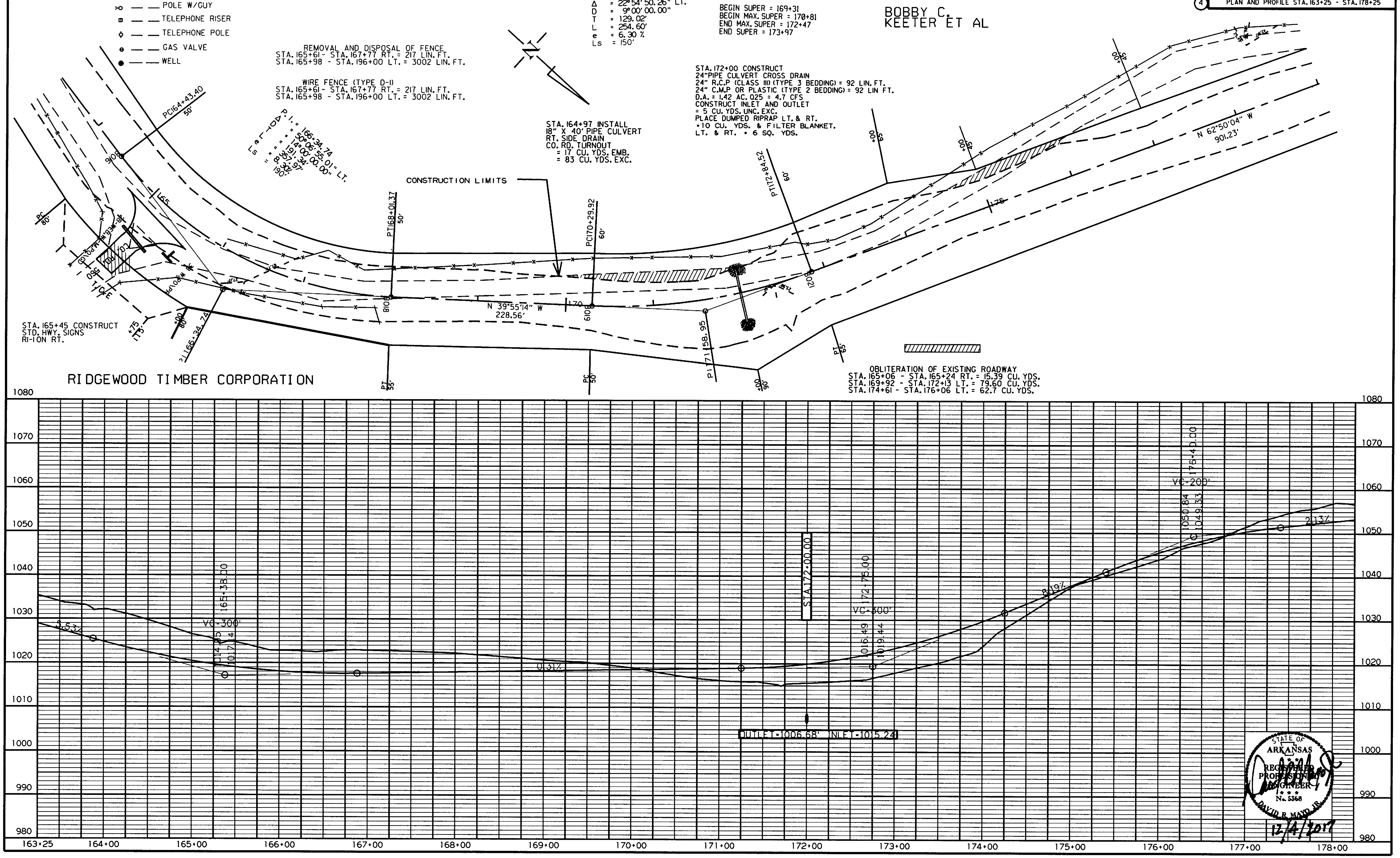
REMOVAL AND DISPOSAL OF FENCE
STA. 148+25 - STA. 158+75 LT. = 1050 LIN. FT.
STA. 148+25 - STA. 163+25 RT. = 1500 LIN. FT.



CHARLES A. HUDSPETH
LIVING TRUST
BOBBY C. & NINA
KEETER (LIFE ESTATE)
PI 158+36.46
PC
65'
PT
65'
CONSTRUCTION LIMITS
STA. 153+49
WI-2R & WI3-1(30mph)
ON RT.
150
155
160
PC154+48.99
55'
PT161+45.13
55'
N 10°11'41" E
298.27'
P. I. = 158+36.46
Δ = 62° 39' 08. 81" RT.
D = 9° 00' 00. 00"
T = 387. 47'
L = 696. 14'
e = 6. 30%
Ls = 150'
BEGIN SUPER = 153+37
BEGIN MAX. SUPER = 154+87
END MAX. SUPER= 161+08
END SUPER = 162+58
STA. 162+46
WI-2L & WI3-1(30MPH)
ON LT.
OBLITERATION OF EXISTING ROADWAY
STA. 153+22 - STA. 157+09 RT. = 174 CU. YDS.
STA. 1581+77 - STA. 161+19 LT. = 171 CU. YDS.
CHARLES A. HUDSPETH
LIVING TRUST
VC=300'
1032.07 148+80.18
1030.92
-1.48%
VC=300'
152+87.00
1012.70
STA. 153+61.00
INLET=1011.14'
OUTLET=1010.75'
2.39%
VC=300'
1041.6 161+61.00
1038.00
1090
1080
1070
1060
1050
1040
1030
1020
1010
1000
990
148+25
149+00
150+00
151+00
152+00
153+00
154+00
155+00
156+00
157+00
158+00
159+00
160+00
161+00
162+00
163+00
STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 5368
DAVID R. MAYO, JR.
12/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	27	69

(4) PLAN AND PROFILE STA. 163+25 - STA. 178+25



LEGEND
POWER POLE
COMBINATION POLE
POLE W/GUY
TELEPHONE RISER
TELEPHONE POLE
GAS VALVE
WELL
BOBBY C. & NINA KEETER (LIFE ESTATE)
BEGIN SUPER = 163+01
BEGIN MAX. SUPER = 164+91
END MAX. SUPER= 167+40
END SUPER = 169+30
P. I. = 171+58.95
Δ = 22°54'50.26" LT.
D = 9°00'00.00"
T = 129.02'
L = 254.60'
e = 6.30 %
Ls = 150'
BEGIN SUPER = 169+31
BEGIN MAX. SUPER = 170+81
END MAX. SUPER = 172+47
END SUPER = 173+97
BOBBY C. KEETER ET AL
REMOVAL AND DISPOSAL OF FENCE
STA. 165+61 - STA. 167+77 RT. = 217 LIN. FT.
STA. 165+98 - STA. 196+00 LT. = 3002 LIN. FT.
WIRE FENCE (TYPE D-1)
STA. 165+61 - STA. 167+77 RT. = 217 LIN. FT.
STA. 165+98 - STA. 196+00 LT. = 3002 LIN. FT.
STA. 172+00 CONSTRUCT
24" PIPE CULVERT CROSS DRAIN
24" R.C.P (CLASS III) (TYPE 3 BEDDING) = 92 LIN. FT.
24" C.M.P OR PLASTIC (TYPE 2 BEDDING) = 92 LIN FT.
D.A. = 1.42 AC. Q25 = 4.7 CFS
CONSTRUCT INLET AND OUTLET
= 5 CU. YDS. UNC. EXC.
PLACE DUMPED RIPRAP LT. & RT.
=10 CU. YDS. & FILTER BLANKET.
LT. & RT. = 6 SQ. YDS.
STA. 164+97 INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CO. RD. TURNOUT
= 17 CU. YDS. EMB.
= 83 CU. YDS. EXC.
CONSTRUCTION LIMITS
PC164+43.40
PT168+01.37
PC170+29.92
PT172+84.52
PI171+58.95
N 39°55'14" W
228.56'
N 62°50'04" W
901.23'
STA. 165+45 CONSTRUCT
STD. HWY. SIGNS
R1-1ON RT.
RIDGEWOOD TIMBER CORPORATION
OBLITERATION OF EXISTING ROADWAY
STA. 165+06 - STA. 165+24 RT. = 15.39 CU. YDS.
STA. 169+92 - STA. 172+13 LT. = 79.60 CU. YDS.
STA. 174+61 - STA. 176+06 LT. = 62.7 CU. YDS.
1080
1070
1060
1050
1040
1030
1020
1010
1000
990
980
165+38.00
VC-300'
3.53%
0.31%
STA. 172+00.00
172+75.00
VC-300'
8.19%
176+40.00
VC-200'
1050.84
1049.33
2.13%
OUTLET=1006.68' INLET=1015.24'
163+25
164+00
165+00
166+00
167+00
168+00
169+00
170+00
171+00
172+00
173+00
174+00
175+00
176+00
177+00
178+00
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
12/4/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	28	69
				4	PLAN AND PROFILE STA. 178+25 - STA. 193+25			

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- GAS VALVE
- WELL

BOBBY C.
KEETER ET AL

STA. 179+25-IN PLACE
12' METAL GATE ON LT.
INSTALL

12' METAL WIRE GATE ON LT.

P.I. 184+92.05

P. I. = 184+92.05
Δ = 41°02' 00.96" RT.
D = 7°00' 00.00"
T = 306.30'
L = 586.19'
e = 5.3%
Ls = 150'

BEGIN SUPER = 180+73
BEGIN MAX. SUPER = 182+23
END MAX. SUPER = 184+34
END SUPER = 188+84

PC 181+85.75

PT 187+71.95

CONSTRUCTION LIMITS

N 21°48'03" W
643.97'

STA. 180+86
WI-2R & WI-3-I (30 MPH)
ON RT.

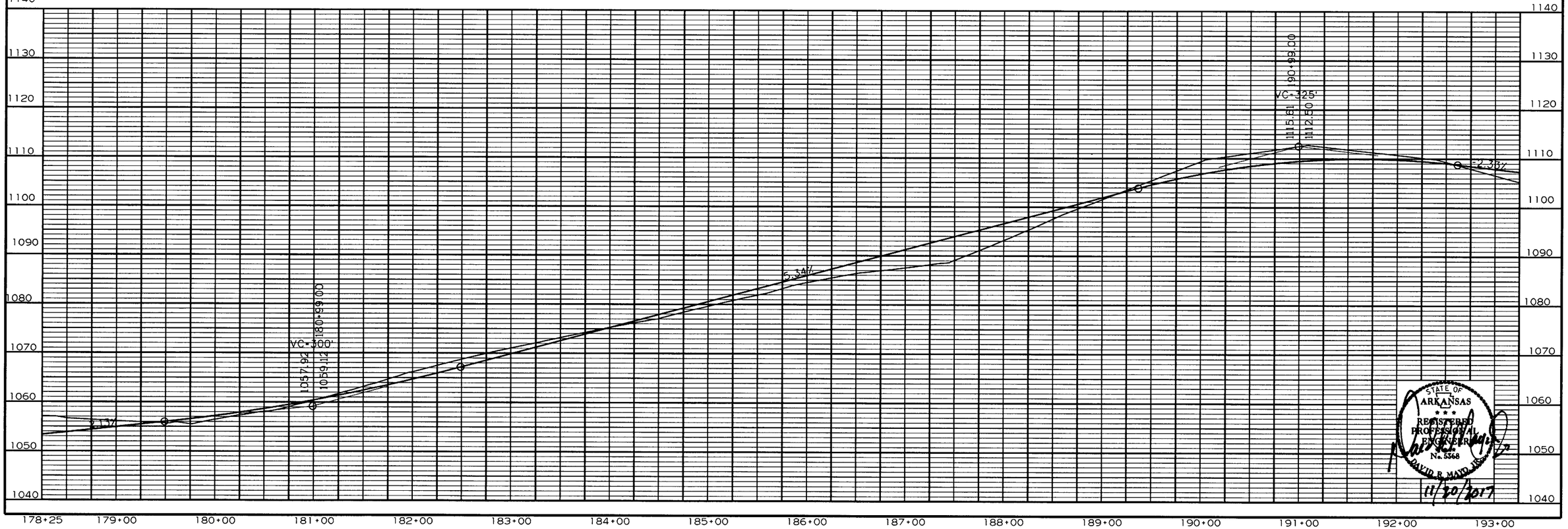
STA. 188+72
WI-2L & WI-3-I (30 MPH)
ON LT.

BOBBY C.
KEETER ET AL

STA. 193I+16
WI-2L & WI-3-I (30 MPH)
ON RT.

BOBBY C.
KEETER ET AL

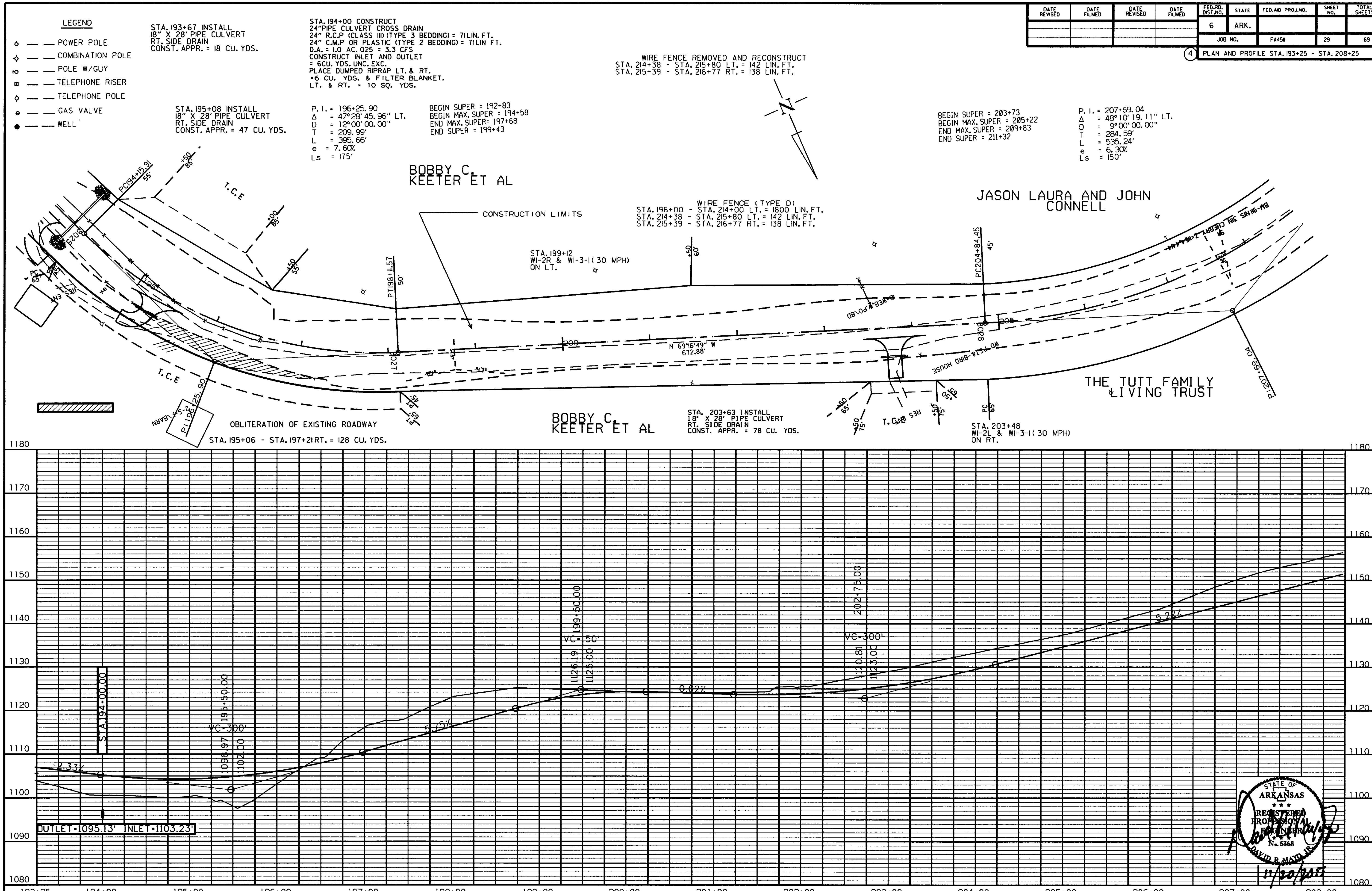
1140



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAHFOOD, JR.
11/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	29	69

(4) PLAN AND PROFILE STA. 193+25 - STA. 208+25


LEGEND
POWER POLE
COMBINATION POLE
POLE W/GUY
TELEPHONE RISER
TELEPHONE POLE
GAS VALVE
WELL
STA. 193+67 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 18 CU. YDS.
STA. 194+00 CONSTRUCT
24" PIPE CULVERT CROSS DRAIN
24" R.C.P (CLASS III) (TYPE 3 BEDDING) = 71 LIN. FT.
24" C.M.P OR PLASTIC (TYPE 2 BEDDING) = 71 LIN FT.
D.A. = 1.0 AC. 025 = 3.3 CFS
CONSTRUCT INLET AND OUTLET
= 6 CU. YDS. UNC. EXC.
PLACE DUMPED RIPRAP LT. & RT.
=6 CU. YDS. & FILTER BLANKET.
LT. & RT. = 10 SQ. YDS.
WIRE FENCE REMOVED AND RECONSTRUCT
STA. 214+38 - STA. 215+80 LT. = 142 LIN. FT.
STA. 215+39 - STA. 216+77 RT. = 138 LIN. FT.
STA. 195+08 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 47 CU. YDS.
P. I. = 196+25.90
Δ = 47°28'45.96" LT.
D = 12°00'00.00"
T = 209.99'
L = 395.66'
e = 7.60%
Ls = 175'
BEGIN SUPER = 192+83
BEGIN MAX. SUPER = 194+58
END MAX. SUPER = 197+68
END SUPER = 199+43
N
BEGIN SUPER = 203+73
BEGIN MAX. SUPER = 205+22
END MAX. SUPER = 209+83
END SUPER = 211+32
P. I. = 207+69.04
Δ = 48°10'19.11" LT.
D = 9°00'00.00"
T = 284.59'
L = 535.24'
e = 6.30%
Ls = 150'
BOBBY C. KEETER ET AL
JASON LAURA AND JOHN CONNELL
WIRE FENCE (TYPE D)
STA. 196+00 - STA. 214+00 LT. = 1800 LIN. FT.
STA. 214+38 - STA. 215+80 LT. = 142 LIN. FT.
STA. 215+39 - STA. 216+77 RT. = 138 LIN. FT.
CONSTRUCTION LIMITS
T.C.E
PC194+15.91
STA. 199+12
W1-2R & W1-3-1 (30 MPH)
ON LT.
PT198+11.57
PC204+84.45
N 69°16'49" W
672.88'
THE TUTT FAMILY LIVING TRUST
P.I.207+69.04
PI196+25.90
OBLITERATION OF EXISTING ROADWAY
STA. 195+06 - STA. 197+21 RT. = 128 CU. YDS.
BOBBY C. KEETER ET AL
STA. 203+63 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 78 CU. YDS.
T.C.E RES ENT
STA. 203+48
W1-2L & W1-3-1 (30 MPH)
ON RT.
STA. 194+00.00
VC=300'
1098.97
195+50.00
1102.00
-2.33%
OUTLET=1095.13' INLET=1103.23'
5.75%
VC=150'
1126.19
199+50.00
1125.00
0.02%
VC=300'
1120.81
202+75.00
1123.00
5.22%
1180
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
193+25
194+00
195+00
196+00
197+00
198+00
199+00
200+00
201+00
202+00
203+00
204+00
205+00
206+00
207+00
208+00
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2015

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.		FA4511	30	69
				4	PLAN AND PROFILE STA. 208+25 - STA. 221+00			

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- GAS VALVE
- WELL

STA. 214+33 CONSTRUCT
24"PIPE CULVERT CROSS DRAIN
24" R.C.P (CLASS III) (TYPE 3 BEDDING) = 70 LIN FT.
24" C.M.P OR PLASTIC (TYPE 2 BEDDING) = 70 LIN T.
D.A. = 0.3AC. 025 = 1.0 CFS
CONSTRUCT INLET AND OUTLET
= 6CU. YDS. UNC. EXC.
PLACE DUMPED RIPRAP LT. & RT.
=6 CU. YDS. & FILTER BLANKET.
LT. & RT. = 10 SQ. YDS.

STA. 214+33 IN PLACE
18" X 28'C.M. PIPE CULVERT
CROSS DRAIN REMOVE

STA. 211+20
WI-2L & WI-3-1(30 MPH)
ON LT.

JASON LAURA AND JOHN CONNELL

STA. 211+00-IN PLACE
12' METAL GATE ON LT.
INSTALL

12' METAL WIRE GATE ON LT.

S 62°32'52" W
408.30'

STA. 213+28
WI-2R & WI-3-1(30 MPH)
ON RT.

CONSTRUCTION LIMITS

THE TUTT FAMILY LIVING TRUST

GEORGE EVAN, ET AL

STA. 219+63
WI-2L & WI-3-1(30 MPH)
ON LT.

REMOVAL AND DISPOSAL OF FENCE
STA. 217+07 - STA. 221+31 RT. = 424 LIN. FT.
STA. 217+72 - STA. 221+21 LT. = 361 LIN. FT.

WIRE FENCE (TYPE D)
STA. 217+07 - STA. 221+31 RT. = 424 LIN. FT.
STA. 217+72 - STA. 221+31 LT. = 359 LIN. FT.

TRAFFIC CONTROL DEVICES

STA. 88+25 (1500)	-	1SIGN = 16.00 SQ. FT.
STA. 93+25 (1000)	-	1SIGN = 16.00 SQ. FT.
STA. 98+25 (500)	-	1SIGN = 16.00 SQ. FT.
STA.103+25 (500)	-	1SIGN = 16.00 SQ. FT.
CO. RD.18 (1500)	-	1SIGN = 16.00 SQ. FT.
CO. RD.18 (1000)	-	1SIGN = 16.00 SQ. FT.
CO. RD.560 (1500)	-	1SIGN = 16.00 SQ. FT.
CO. RD.560 (1000)	-	1SIGN = 16.00 SQ. FT.
CO. RD.561 (1500)	-	1SIGN = 16.00 SQ. FT.
CO. RD.561 (1000)	-	1SIGN = 16.00 SQ. FT.
G20-1		
STA.103+25	-	1SIGN = 10.00 SQ.FT.
STA.221+31	-	1SIGN = 10.00 SQ.FT.
G20-2		
STA.103+25	-	1SIGN = 8.00 SQ.FT.
STA.221+31	-	1SIGN = 8.00 SQ.FT.
TRAFFIC DRUMS		= 40 EACH

DIANE KIERNAN

P. I. = 216+77.27
Δ = 69°40'56.69" RT.
D = 16°00'00.00"
T = 249.27'
L = 435.52'
e = 8.90'
Ls = 200'

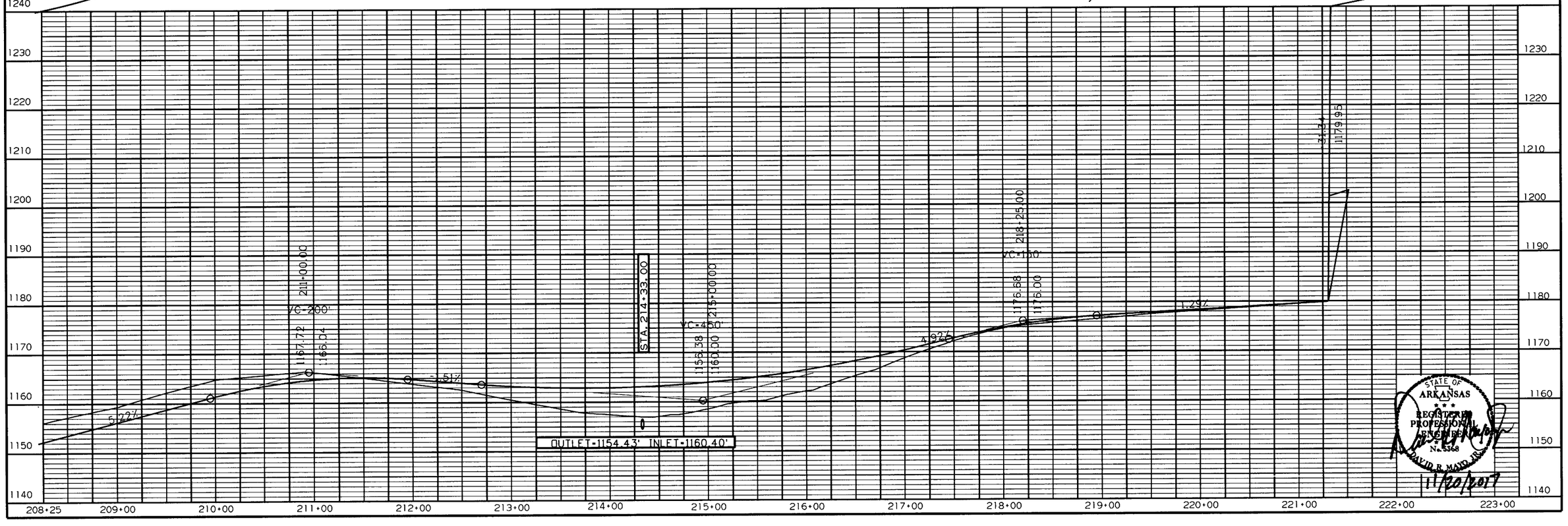
BEGIN SUPER = 212+78
BEGIN MAX. SUPER = 214+78
END MAX. SUPER= 218+14
END SUPER = 220+14

STA. 216+75-IN PLACE
METAL GATE W/TWO CONC.BLOCK
POSTS ON RT.
REMOVE AND RECONSTRUCT

STA. 216+70 INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN CONST.
APPROACH = 27 CU. YDS.

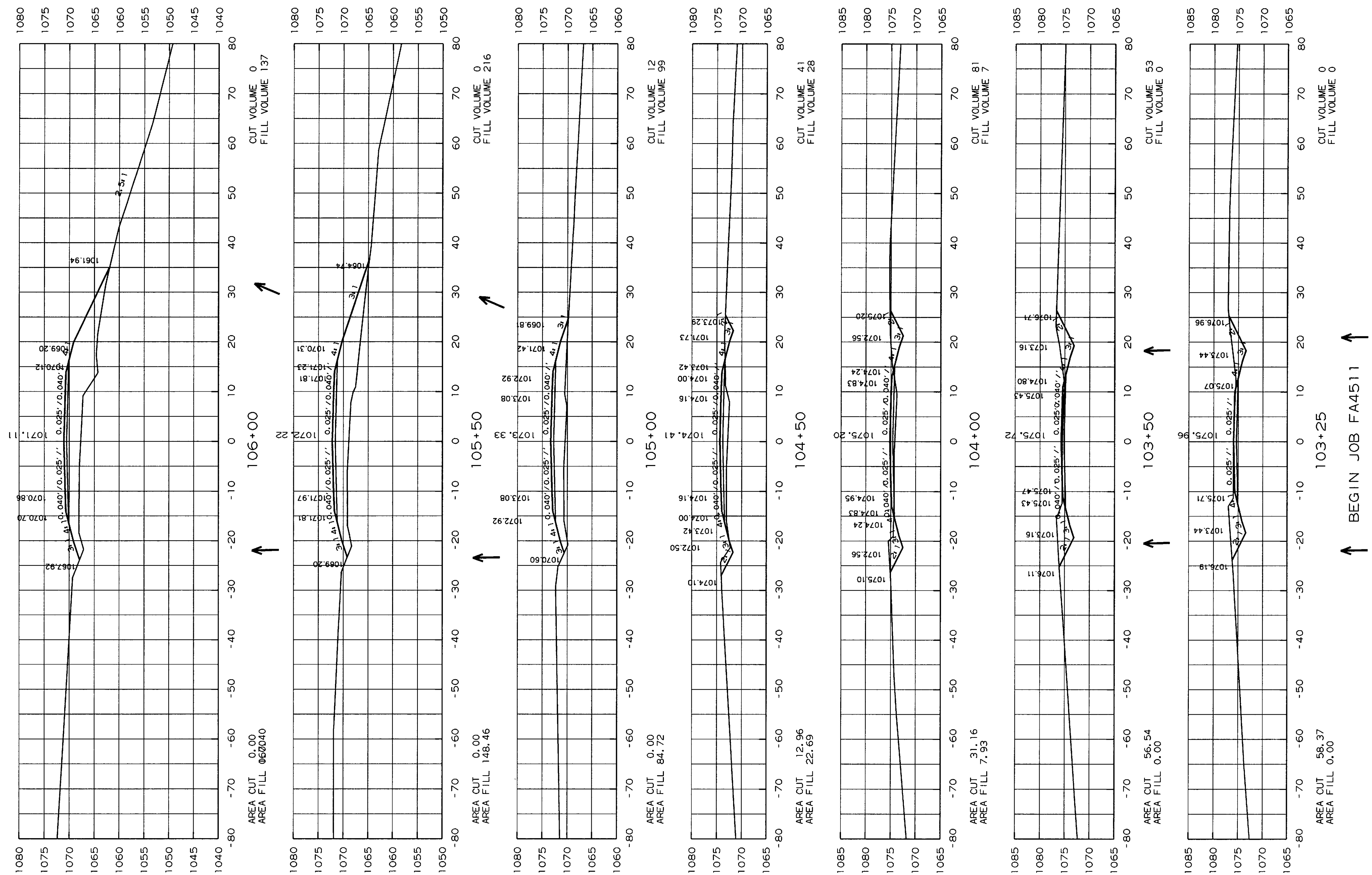
UNKNOWN OWNER
CLAIMED BY DAVID & NELLINE WATTS
(DEED PROVIDED DOES NOT COVER THE AREA)

STA. 221+31.34 END JOB FA4511
FED. AID PROJ. STPR-0045(27)



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5368
DAVID R. MAYO, JR.
11/20/2017

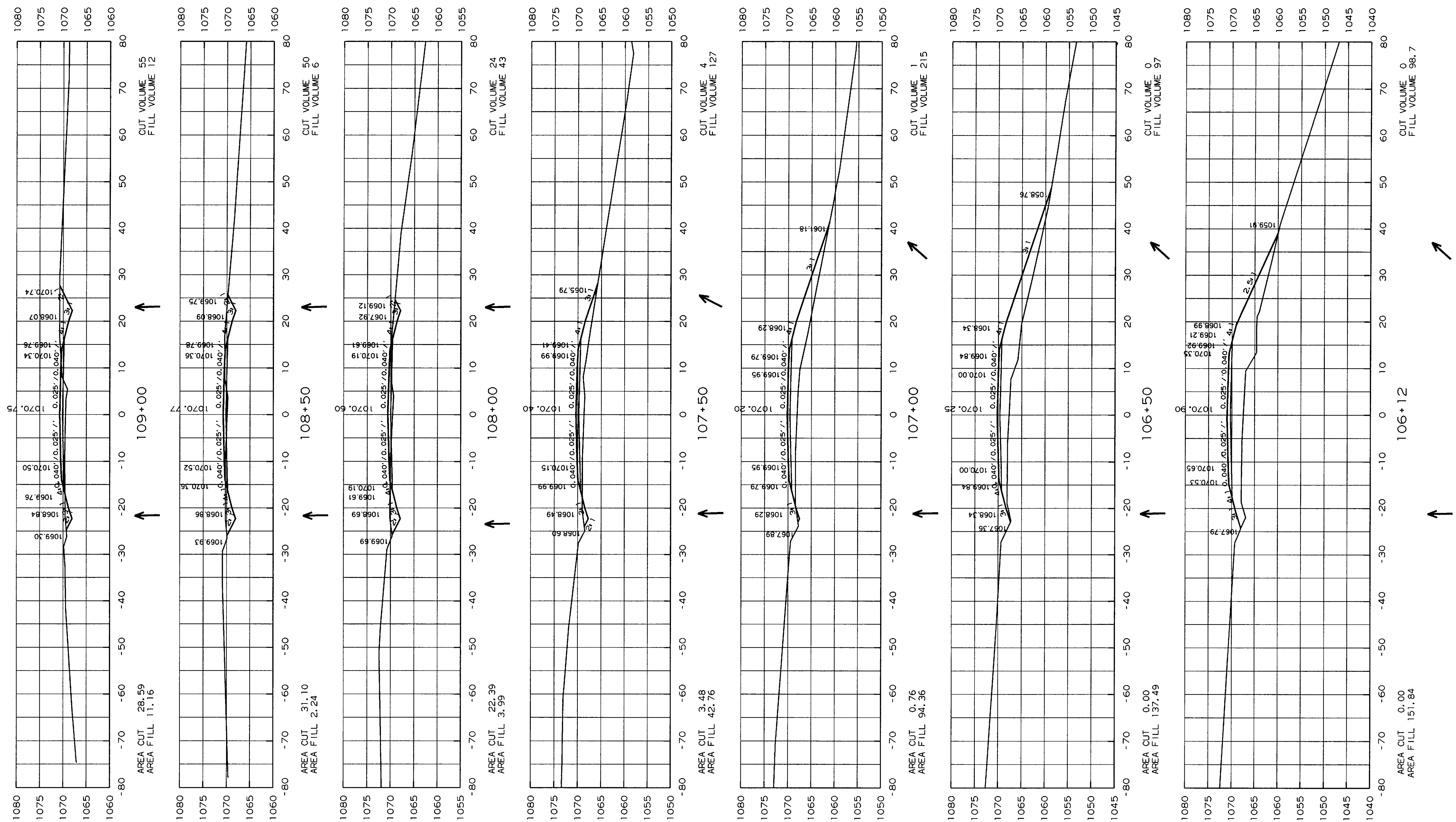
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	31	69
				(4)	STA. 103+25 TO STA. 106+00			



106+00
CUT VOLUME 0
FILL VOLUME 137
AREA CUT 0.00
AREA FILL [illegible]
105+50
CUT VOLUME 0
FILL VOLUME 216
AREA CUT 0.00
AREA FILL 148.46
105+00
CUT VOLUME 12
FILL VOLUME 99
AREA CUT 0.00
AREA FILL 84.72
104+50
CUT VOLUME 41
FILL VOLUME 28
AREA CUT 12.96
AREA FILL 22.69
104+00
CUT VOLUME 81
FILL VOLUME 7
AREA CUT 31.16
AREA FILL 7.93
103+50
CUT VOLUME 53
FILL VOLUME 0
AREA CUT 56.54
AREA FILL 0.00
103+25
CUT VOLUME 0
FILL VOLUME 0
AREA CUT 58.37
AREA FILL 0.00
BEGIN JOB FA4511

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	32	69

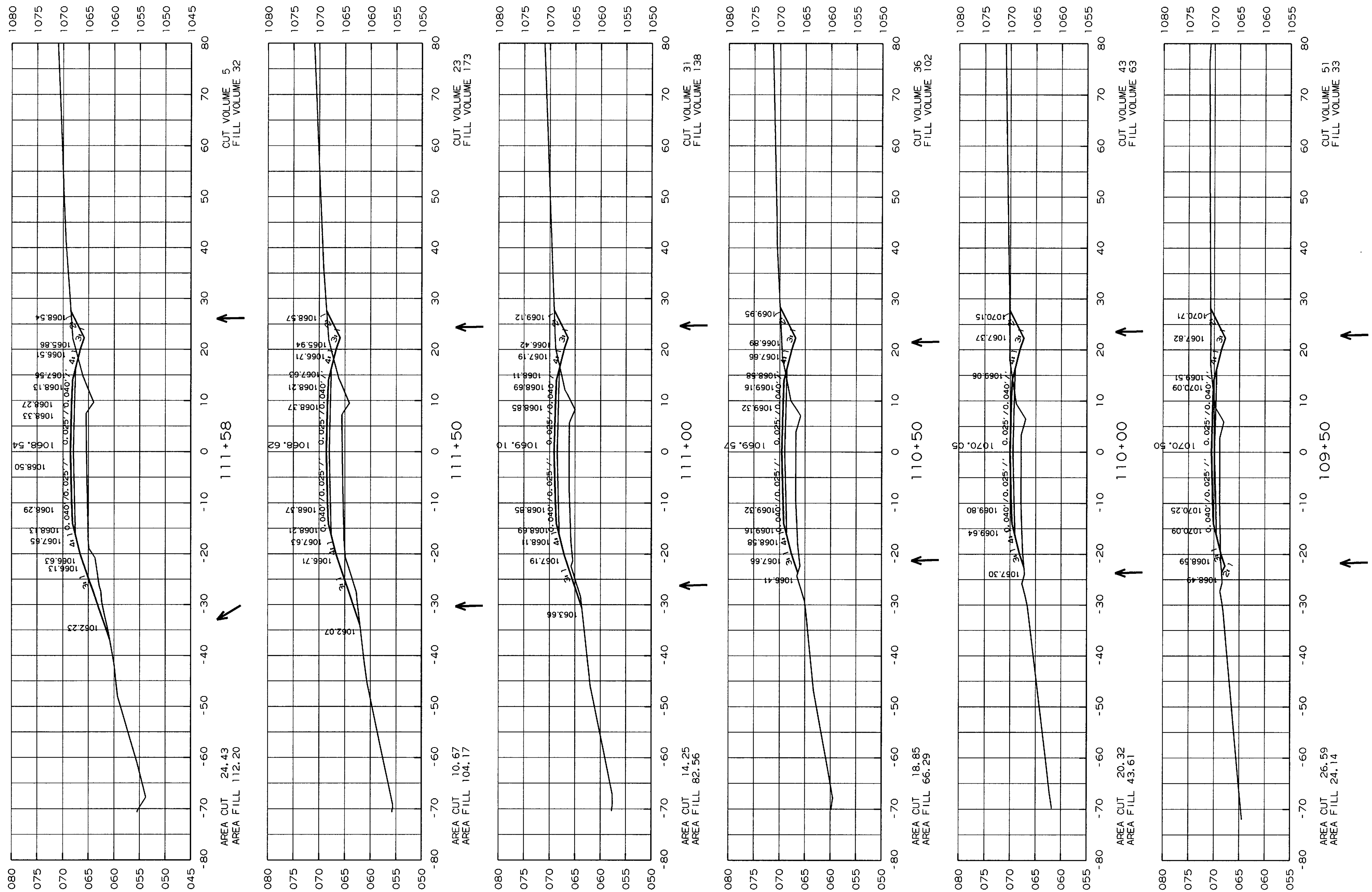
(4) STA. 106+12 TO STA. 109+00



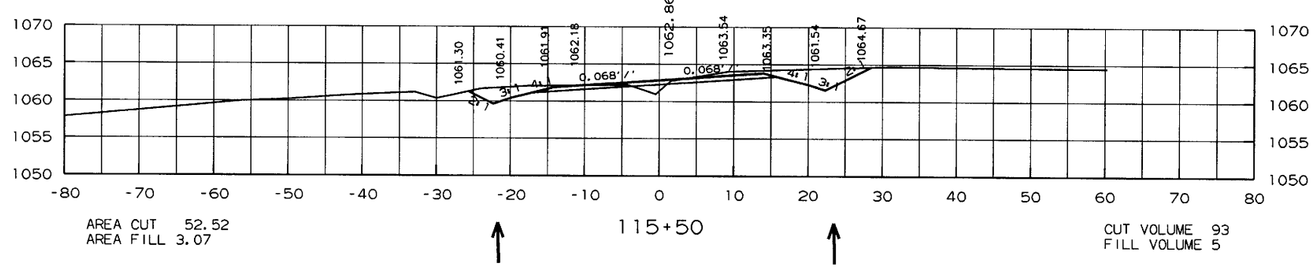
109+00
CUT VOLUME 55
FILL VOLUME 12
AREA CUT 28.59
AREA FILL 11.16
108+50
CUT VOLUME 50
FILL VOLUME 6
AREA CUT 31.10
AREA FILL 2.24
108+00
CUT VOLUME 24
FILL VOLUME 43
AREA CUT 22.39
AREA FILL 3.99
107+50
CUT VOLUME 4
FILL VOLUME 127
AREA CUT 3.48
AREA FILL 42.76
107+00
CUT VOLUME 1
FILL VOLUME 215
AREA CUT 0.76
AREA FILL 94.36
106+50
CUT VOLUME 0
FILL VOLUME 97
AREA CUT 0.00
AREA FILL 137.49
106+12
CUT VOLUME 0
FILL VOLUME 98.7
AREA CUT 0.00
AREA FILL 151.84

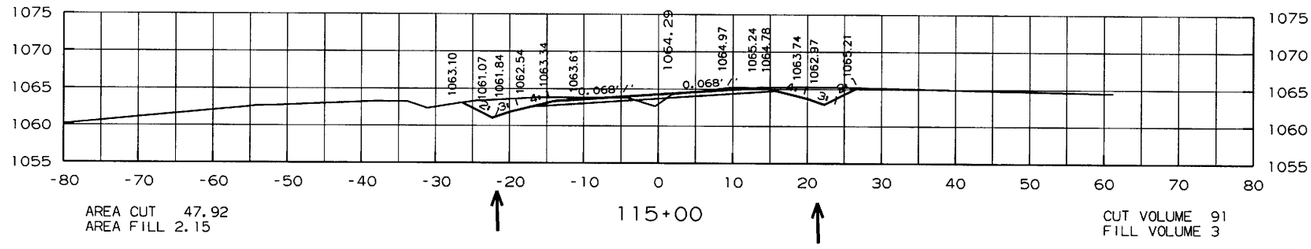
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	33	69

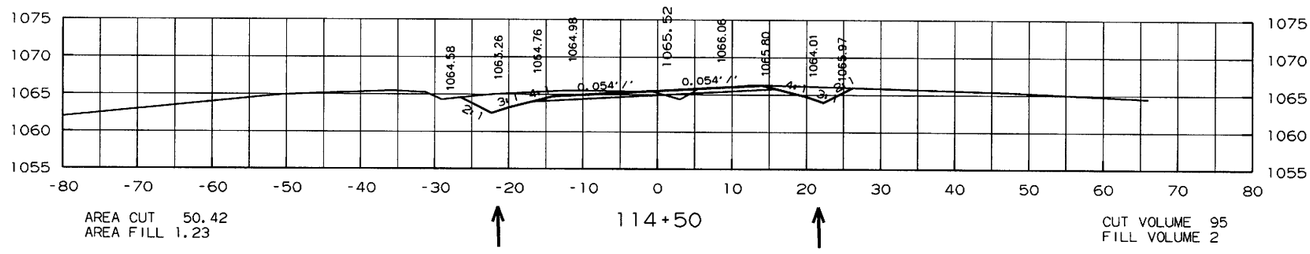
(4) STA. 109+50 TO STA. 111+58

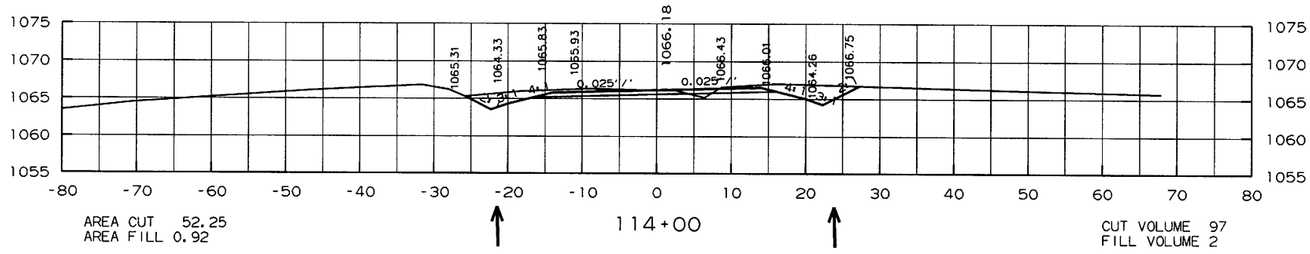


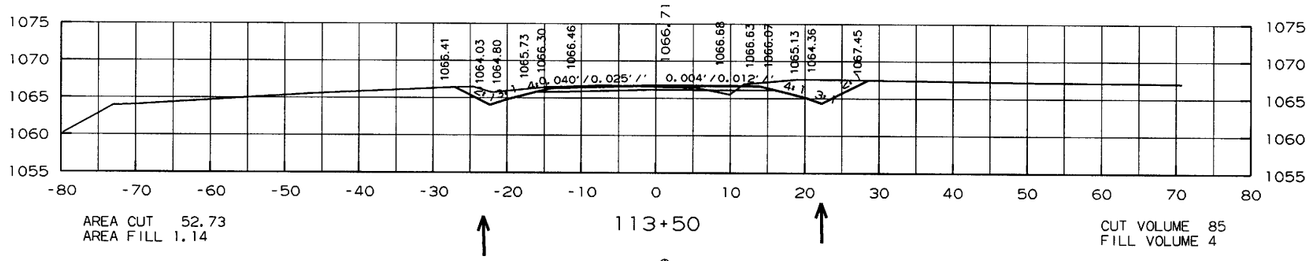
111+58
CUT VOLUME 5
FILL VOLUME 32
AREA CUT 24.43
AREA FILL 112.20
111+50
CUT VOLUME 23
FILL VOLUME 173
AREA CUT 10.67
AREA FILL 104.17
111+00
CUT VOLUME 31
FILL VOLUME 138
AREA CUT 14.25
AREA FILL 82.56
110+50
CUT VOLUME 36
FILL VOLUME 102
AREA CUT 18.85
AREA FILL 66.29
110+00
CUT VOLUME 43
FILL VOLUME 63
AREA CUT 20.32
AREA FILL 43.61
109+50
CUT VOLUME 51
FILL VOLUME 33
AREA CUT 26.59
AREA FILL 24.14

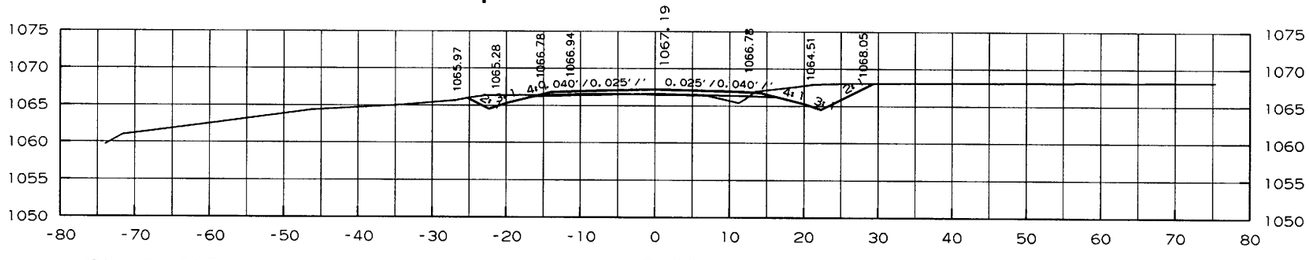


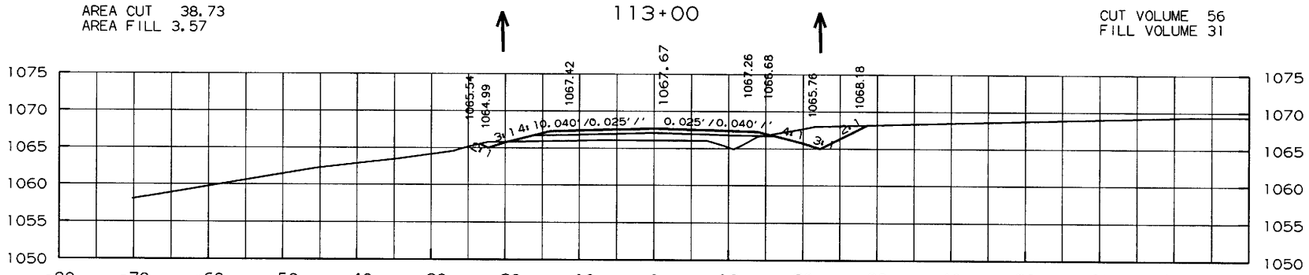


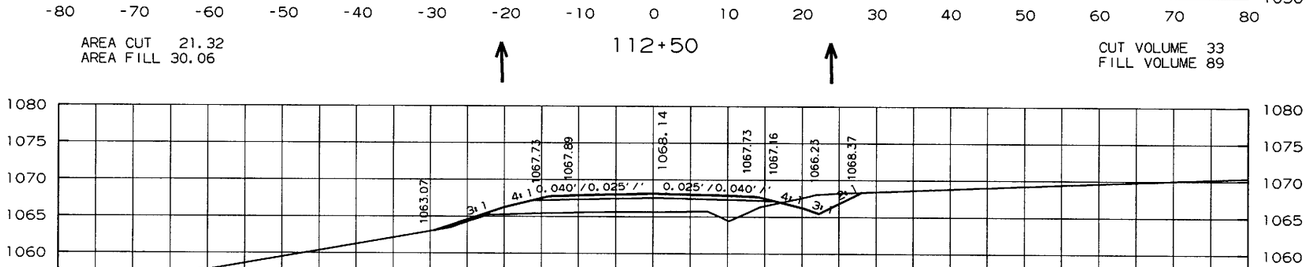








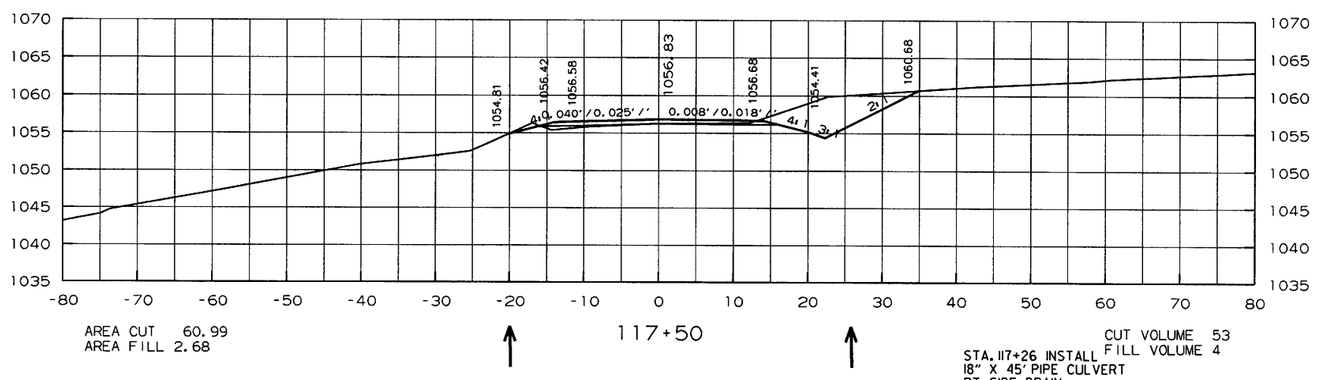




DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.
				6
				STATE
				ARK.
				FED.AID PROJ.NO.
				F445(1)
				SHEET NO.
				34
				TOTAL SHEETS
				69

JOB NO.

STA.112+00 TO STA.115+50

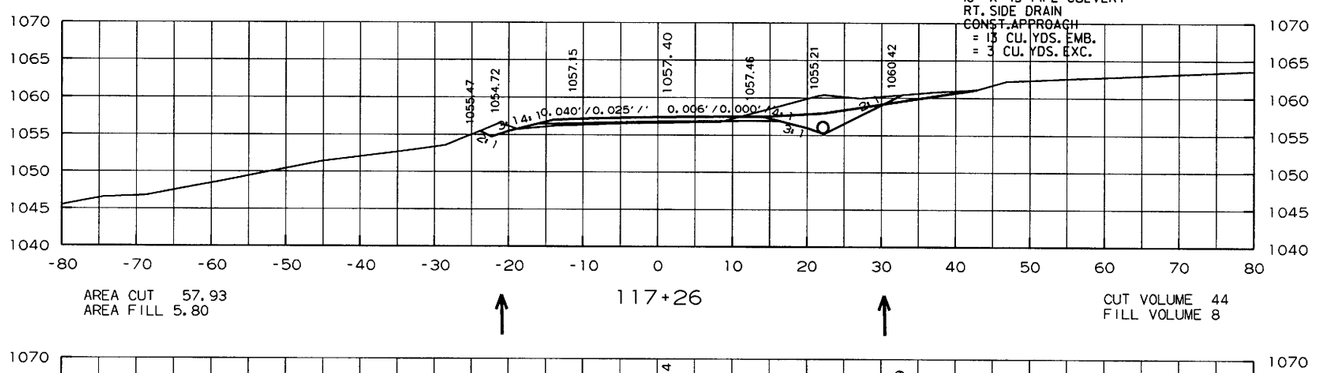


AREA CUT 60.99
AREA FILL 2.68

117+50

CUT VOLUME 53
FILL VOLUME 4

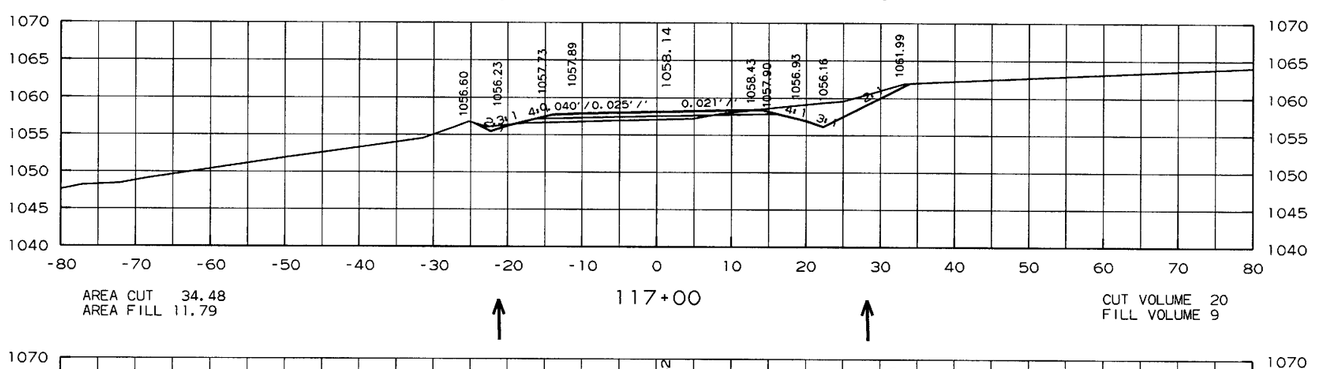
STA. 117+26 INSTALL
18" X 45' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH
= 13 CU. YDS. EMB.
= 3 CU. YDS. EXC.



AREA CUT 57.93
AREA FILL 5.80

117+26

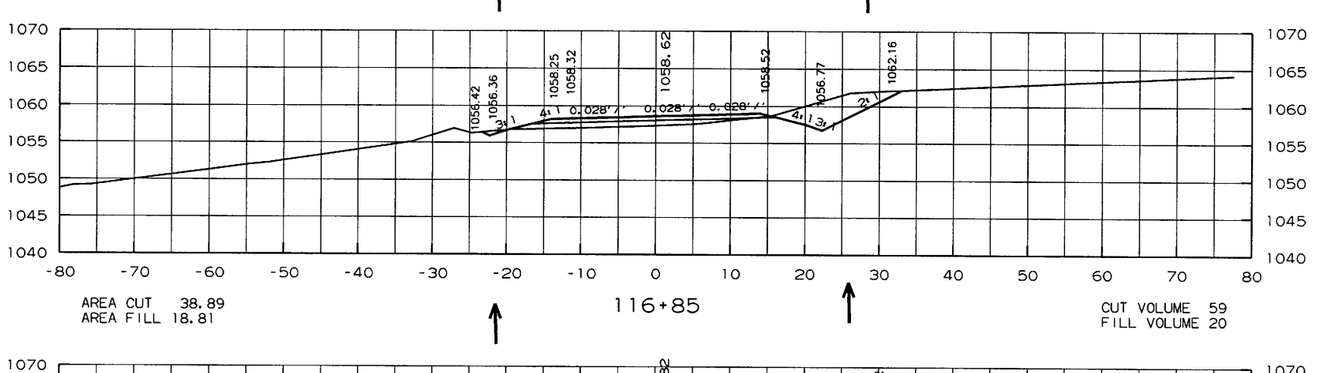
CUT VOLUME 44
FILL VOLUME 8



AREA CUT 34.48
AREA FILL 11.79

117+00

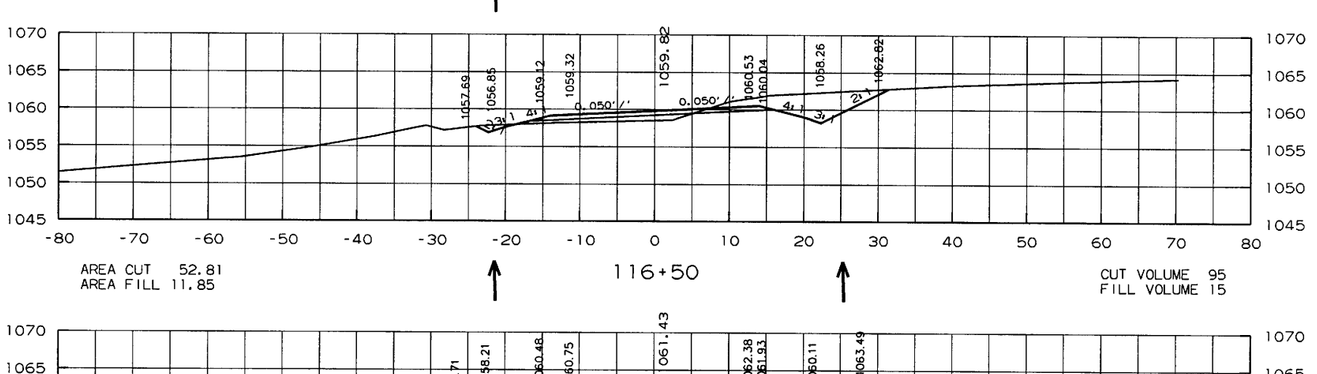
CUT VOLUME 20
FILL VOLUME 9



AREA CUT 38.89
AREA FILL 18.81

116+85

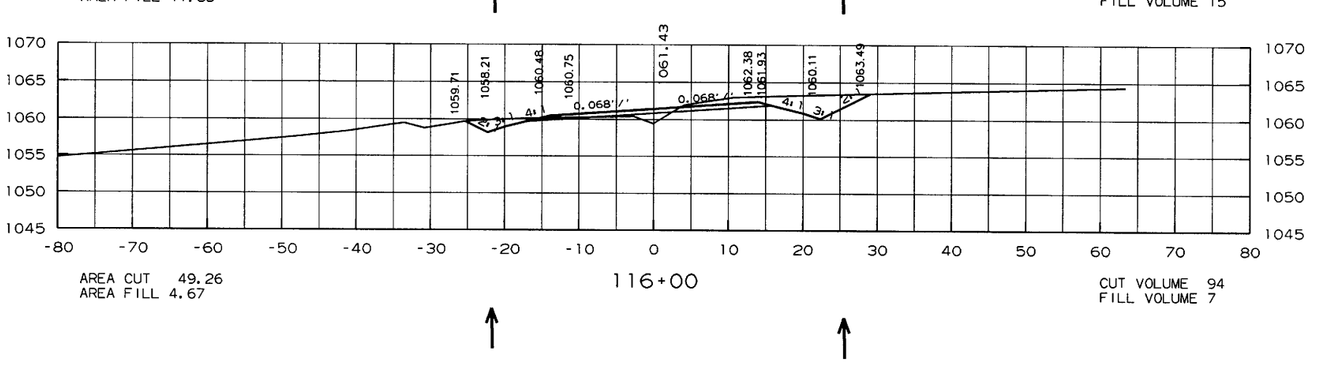
CUT VOLUME 59
FILL VOLUME 20



AREA CUT 52.81
AREA FILL 11.85

116+50

CUT VOLUME 95
FILL VOLUME 15



AREA CUT 49.26
AREA FILL 4.67

116+00

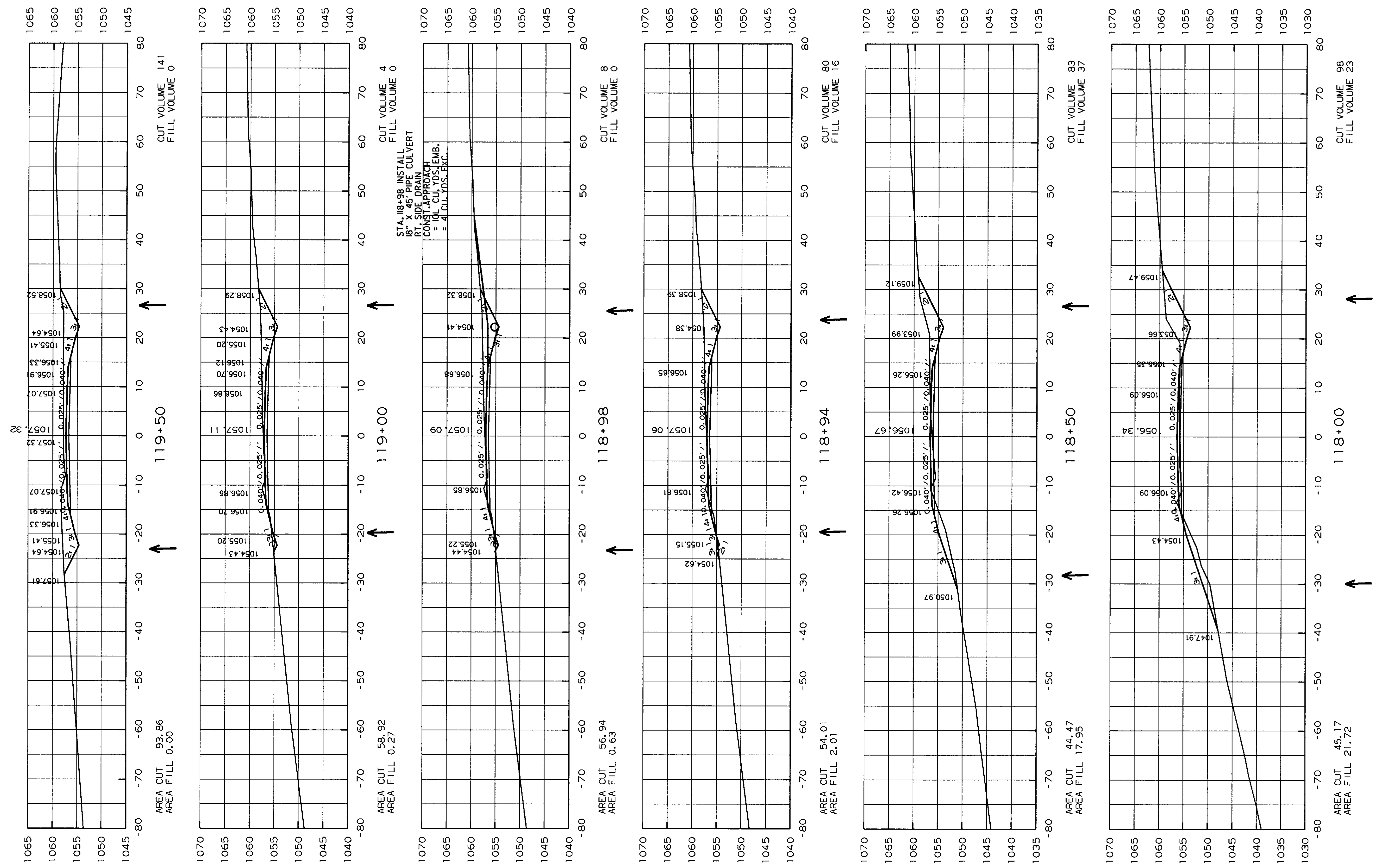
CUT VOLUME 94
FILL VOLUME 7

DATE REVISED	
DATE PLANED	
DATE REVISED	
DATE PLANED	
FED.ROAD DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	F445(1)
SHEET NO.	35
TOTAL SHEETS	69

STA. 115+00 TO STA. 117+00

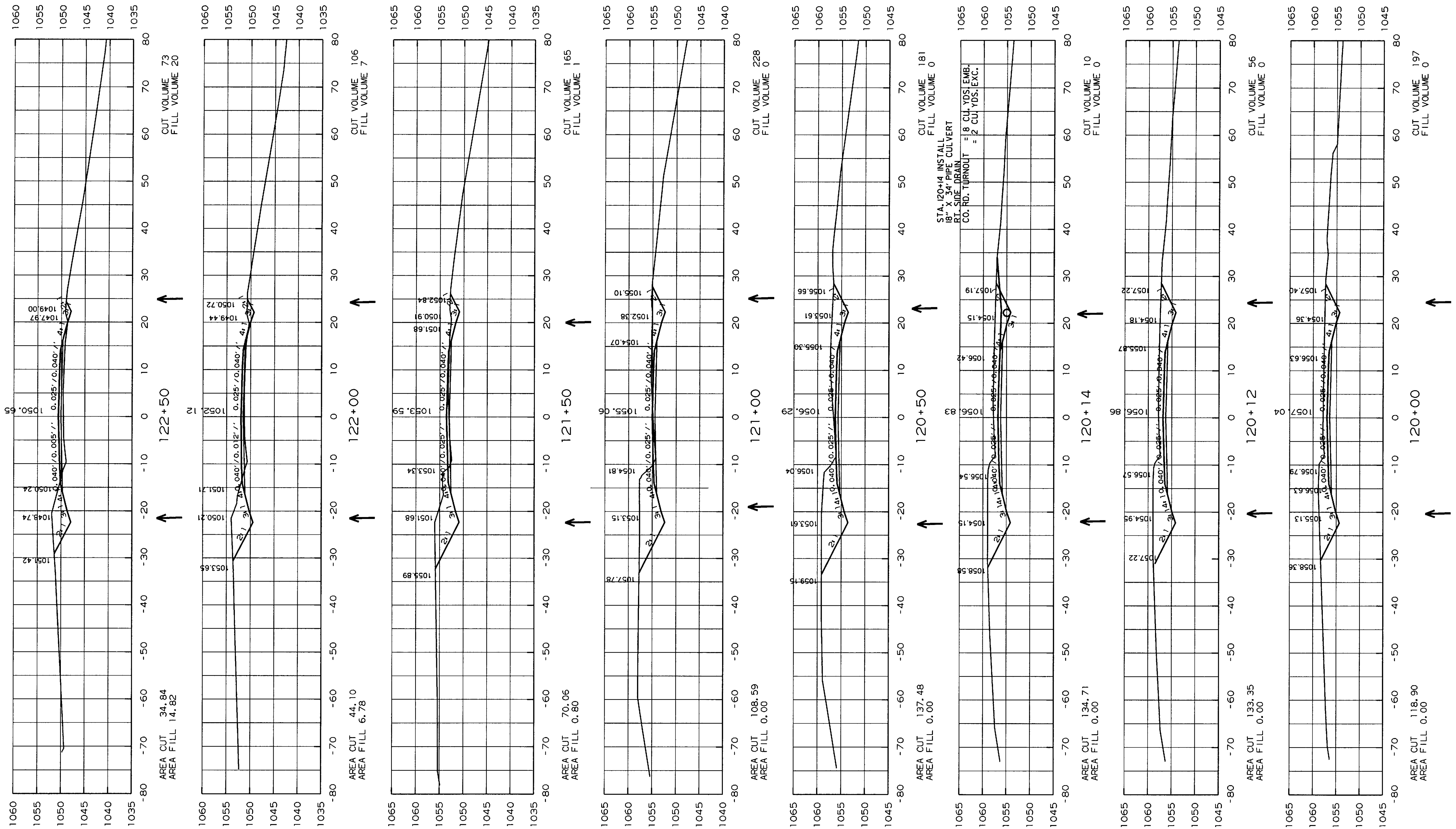
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	36	69

(4) STA. 118+00 TO STA. 119+50



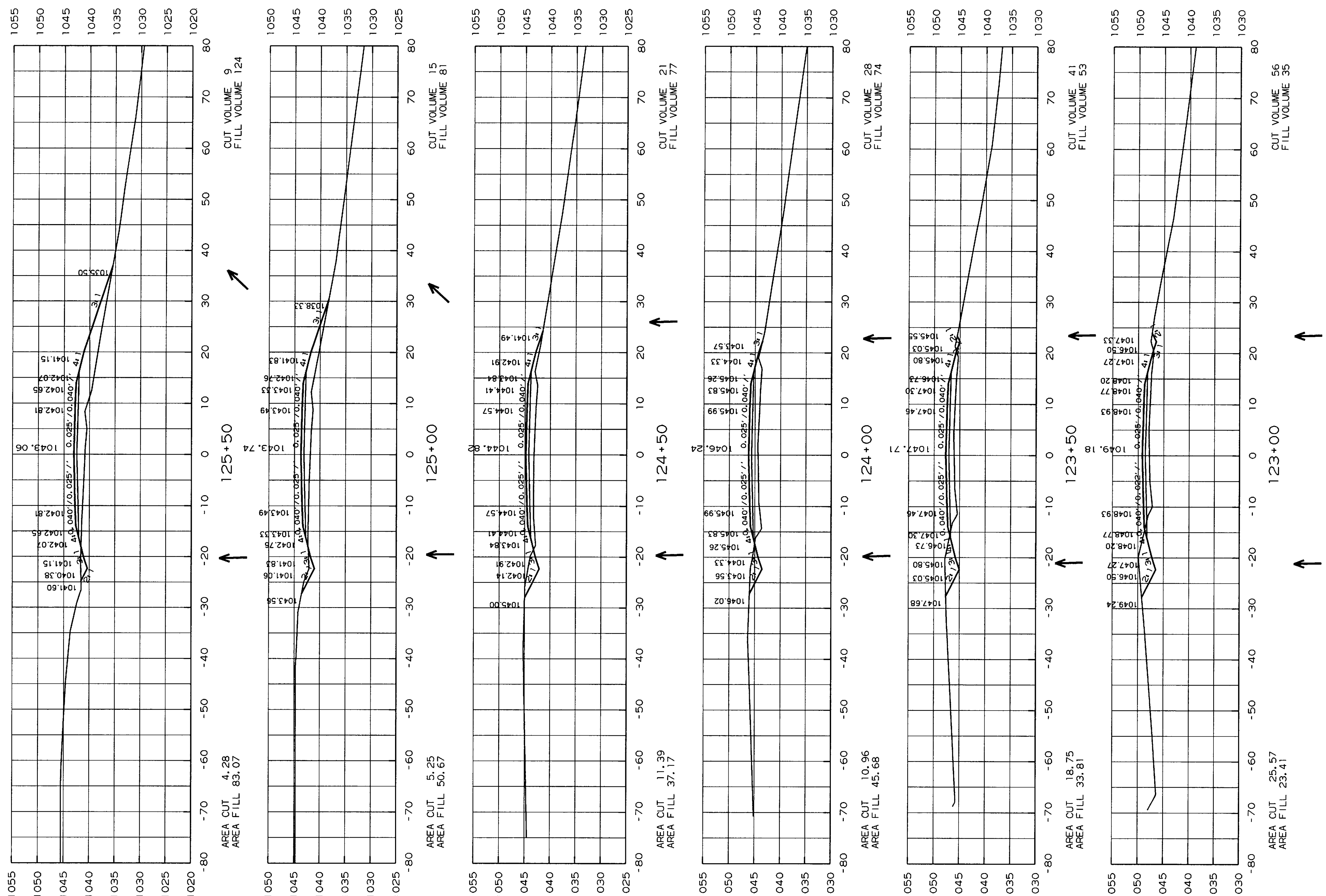
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	37	69

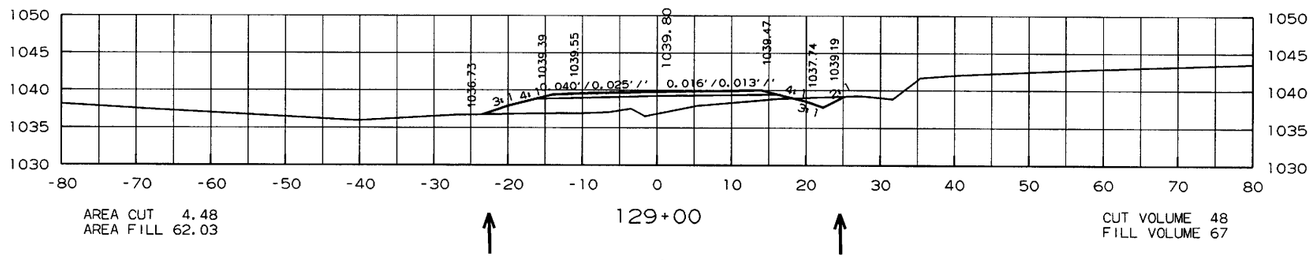
(4) STA. 120+00 TO STA. 122+50



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	38	69

(4) STA. 123+00 TO STA. 125+50

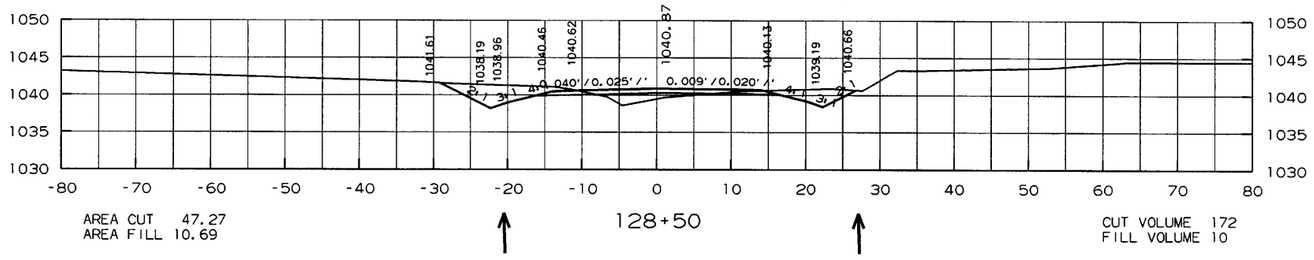




AREA CUT 4.48
AREA FILL 62.03

129+00

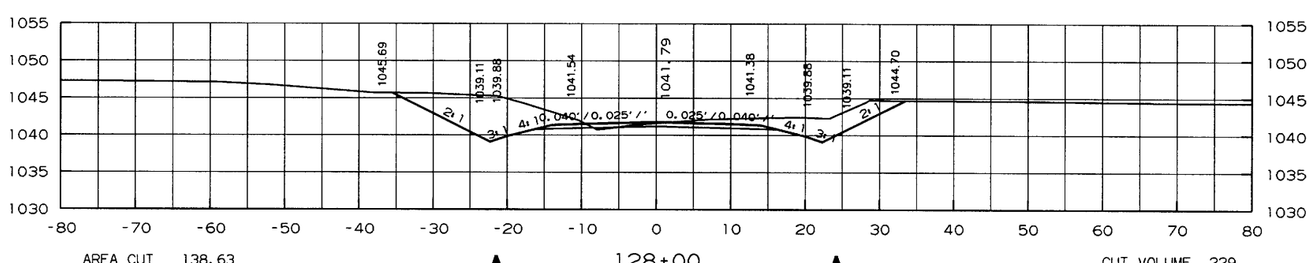
CUT VOLUME 48
FILL VOLUME 67



AREA CUT 47.27
AREA FILL 10.69

128+50

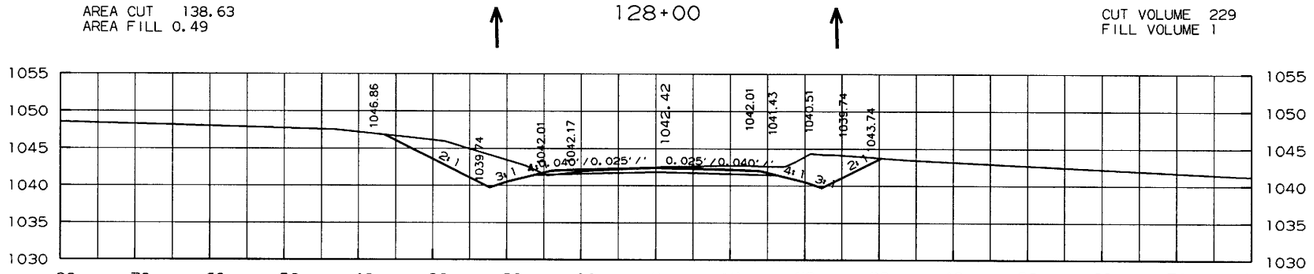
CUT VOLUME 172
FILL VOLUME 10



AREA CUT 138.63
AREA FILL 0.49

128+00

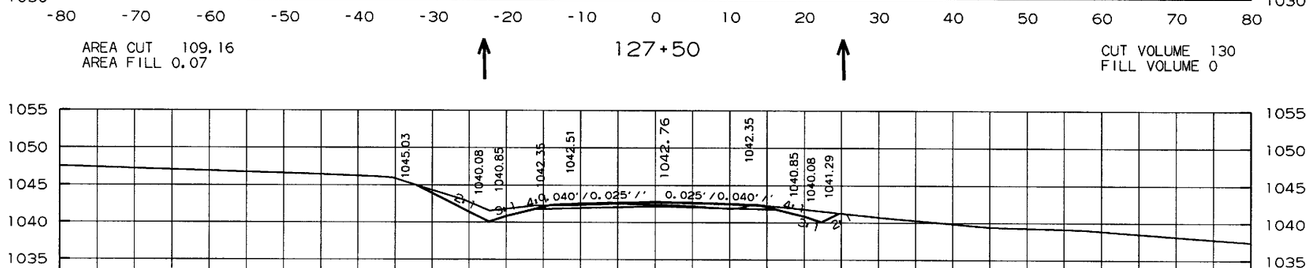
CUT VOLUME 229
FILL VOLUME 1



AREA CUT 109.16
AREA FILL 0.07

127+50

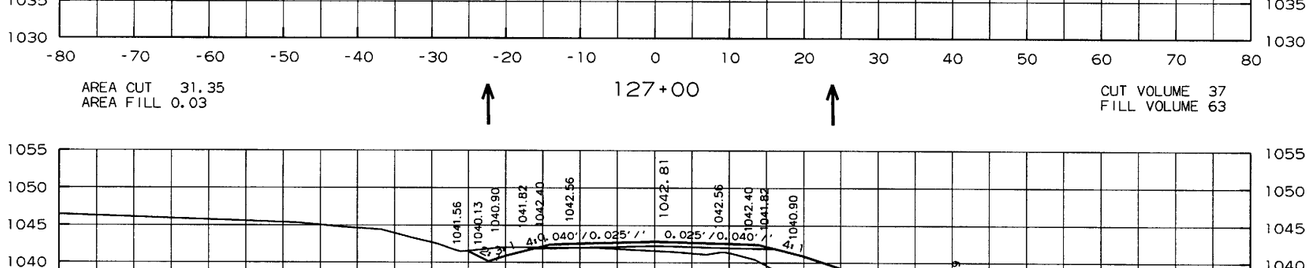
CUT VOLUME 130
FILL VOLUME 0



AREA CUT 31.35
AREA FILL 0.03

127+00

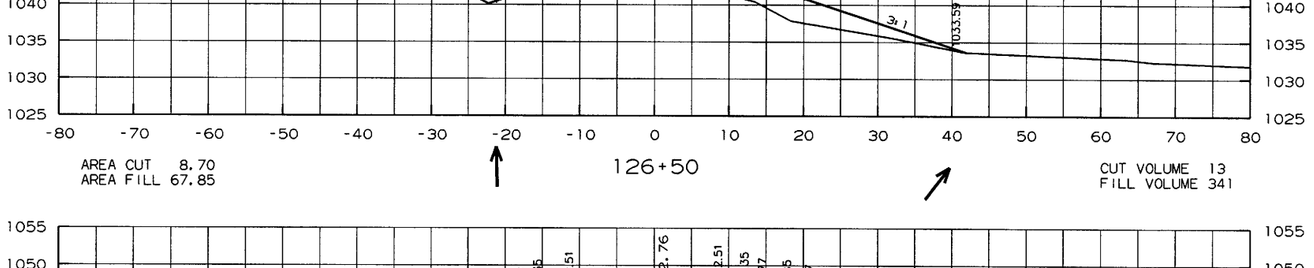
CUT VOLUME 37
FILL VOLUME 63



AREA CUT 8.70
AREA FILL 67.85

126+50

CUT VOLUME 13
FILL VOLUME 341



AREA CUT 5.31
AREA FILL 300.94

126+00

CUT VOLUME 9
FILL VOLUME 356

DATE REVISED
DATE PLOTTED
DATE REVISED
DATE PLOTTED

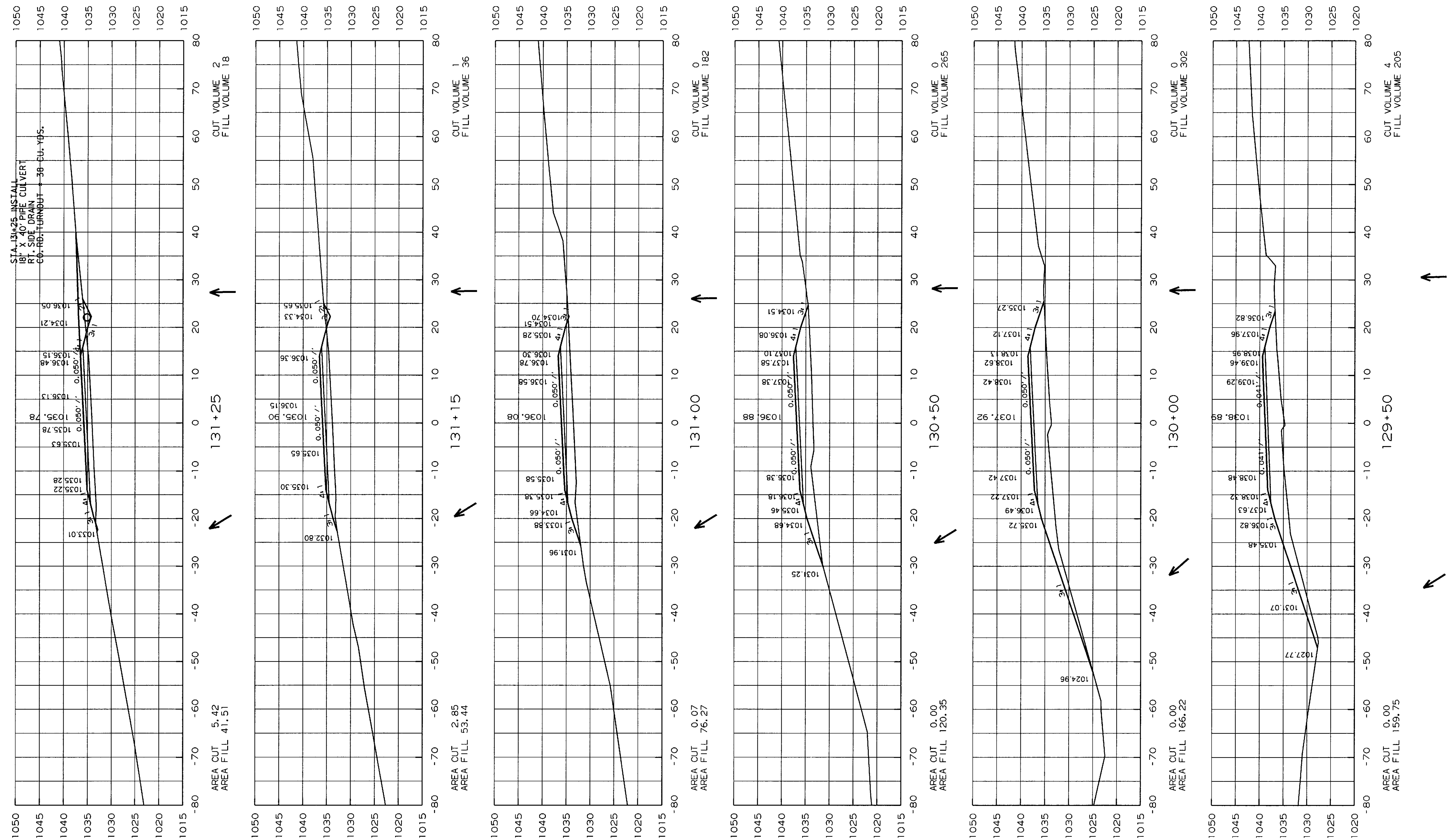
4

JOB NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA95(1)
SHEET NO.	39
TOTAL SHEETS	69

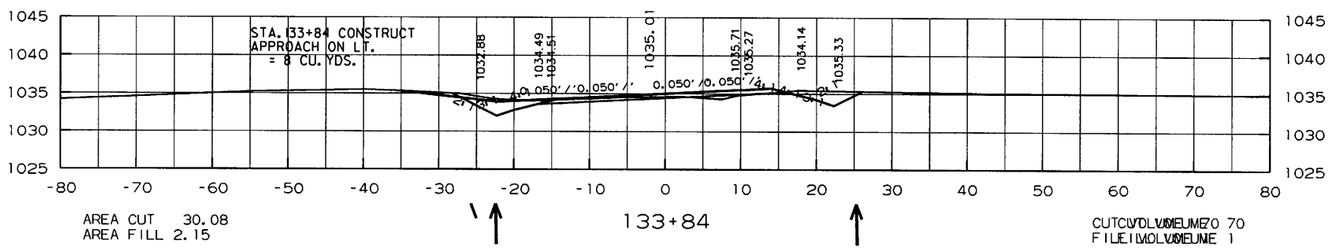
STA.126+00 TO STA.129+00

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.		FA4511	40	69

(4) STA. 129+50 TO STA. 131+25



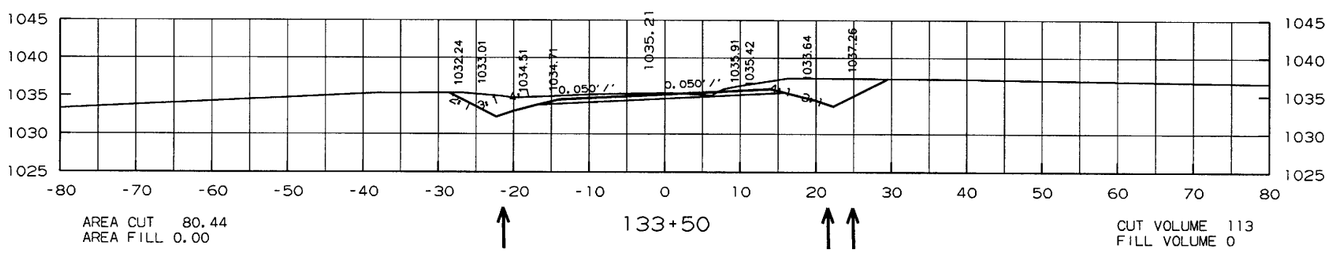
STA. 131+25 INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CO. RD. TURNOUT = 38 CU. YDS.
131+25
CUT VOLUME 2
FILL VOLUME 18
AREA CUT 5.42
AREA FILL 41.51
131+15
CUT VOLUME 1
FILL VOLUME 36
AREA CUT 2.85
AREA FILL 53.44
131+00
CUT VOLUME 0
FILL VOLUME 182
AREA CUT 0.07
AREA FILL 76.27
130+50
CUT VOLUME 0
FILL VOLUME 265
AREA CUT 0.00
AREA FILL 120.35
130+00
CUT VOLUME 0
FILL VOLUME 302
AREA CUT 0.00
AREA FILL 166.22
129+50
CUT VOLUME 4
FILL VOLUME 205
AREA CUT 0.00
AREA FILL 159.75



AREA CUT 30.08
AREA FILL 2.15

133+84

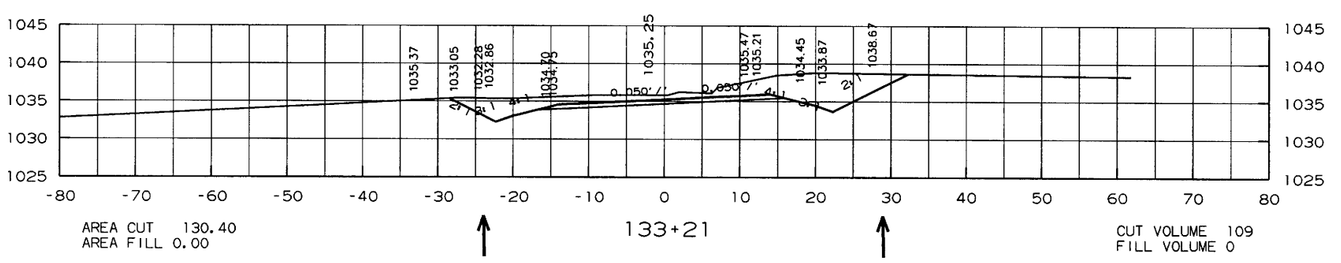
CUT VOLUME 70
FILL VOLUME 1



AREA CUT 80.44
AREA FILL 0.00

133+50

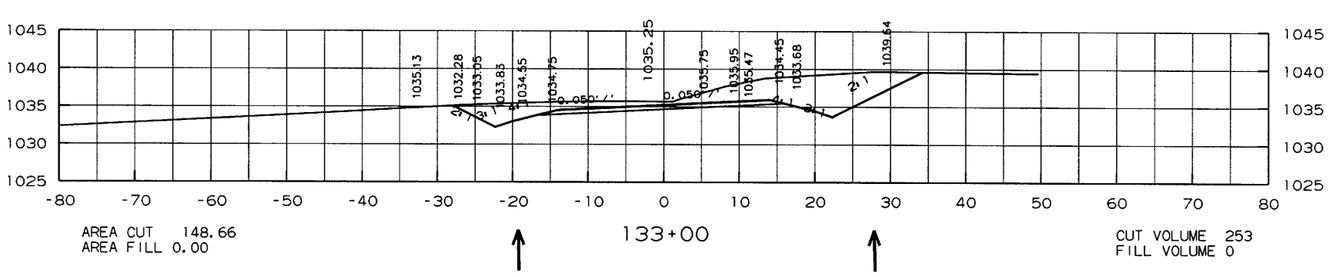
CUT VOLUME 113
FILL VOLUME 0



AREA CUT 130.40
AREA FILL 0.00

133+21

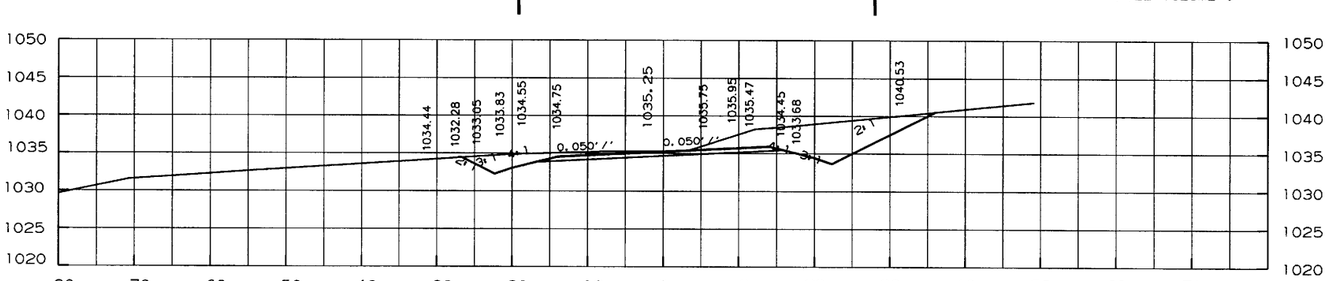
CUT VOLUME 109
FILL VOLUME 0



AREA CUT 148.66
AREA FILL 0.00

133+00

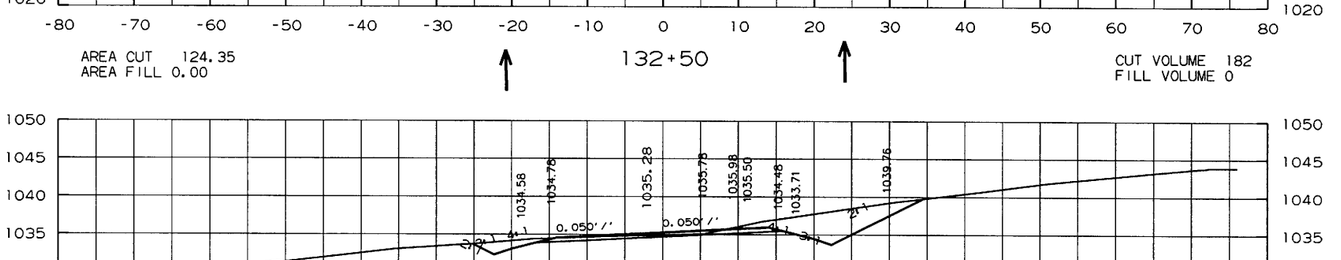
CUT VOLUME 253
FILL VOLUME 0



AREA CUT 124.35
AREA FILL 0.00

132+50

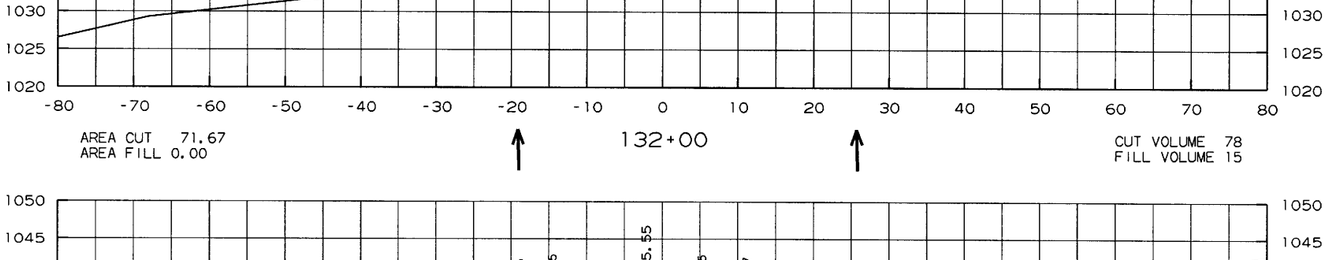
CUT VOLUME 182
FILL VOLUME 0



AREA CUT 71.67
AREA FILL 0.00

132+00

CUT VOLUME 78
FILL VOLUME 15



AREA CUT 12.09
AREA FILL 16.58

131+50

CUT VOLUME 8
FILL VOLUME 27

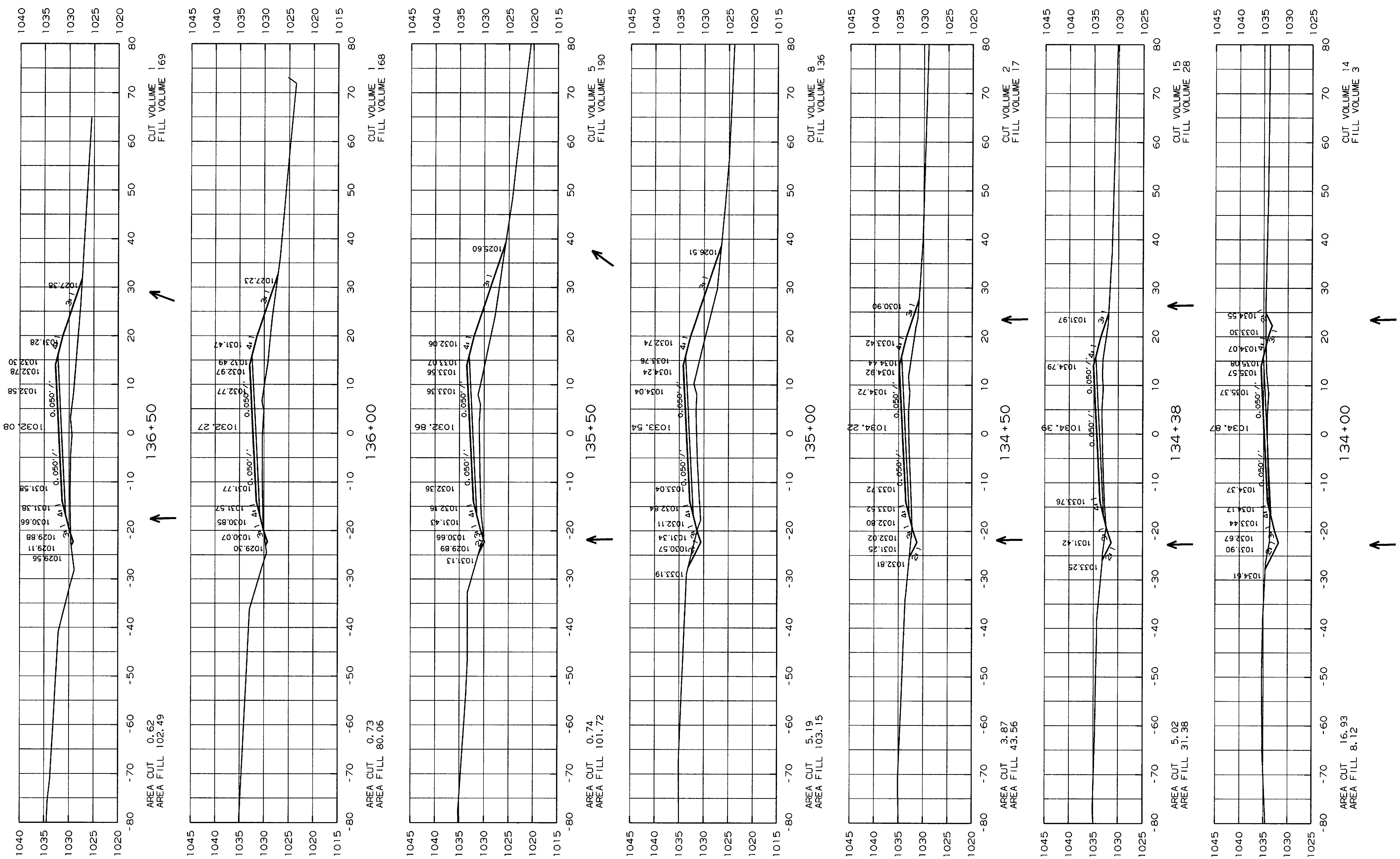
DATE REVISED	
DATE FILMED	
DATE REVISED	
DATE FILMED	
FED.RD. DIV.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA-45(1)
SHEET NO.	41
TOTAL SHEETS	69

4

STA. 129+50 TO STA. 133+84

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	42	69

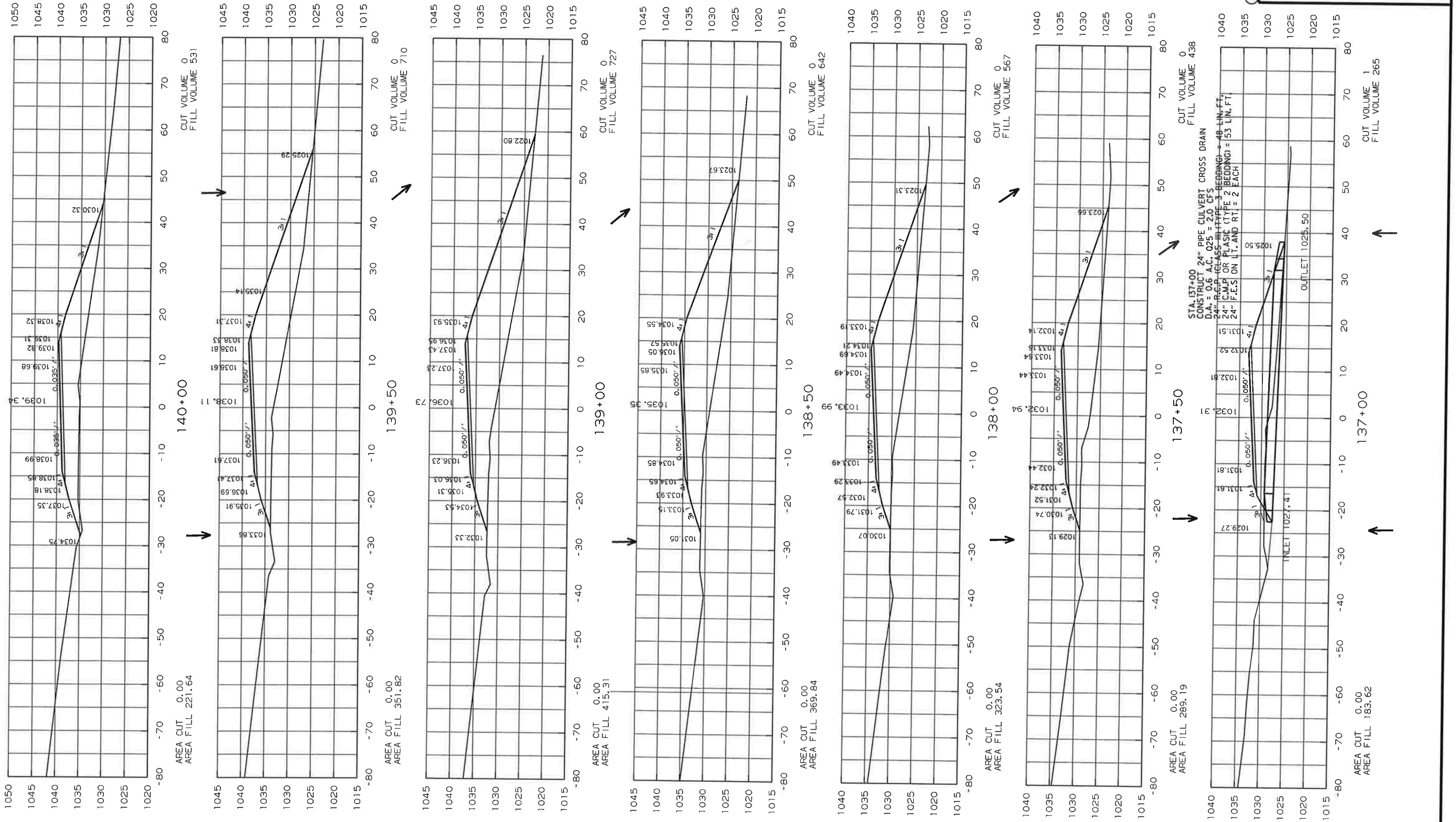
(4) STA. 134+00 TO STA. 136+50



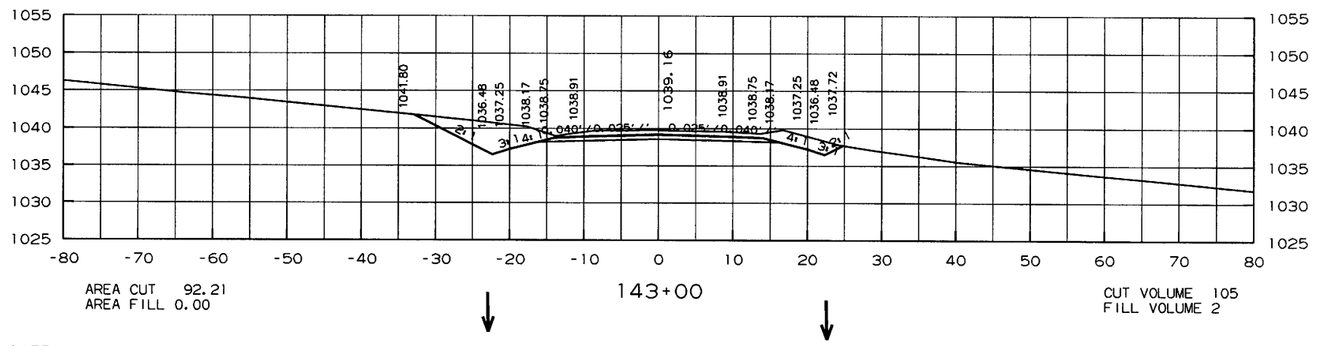
136+50
CUT VOLUME 1
FILL VOLUME 169
AREA CUT 0.62
AREA FILL 102.49
136+00
CUT VOLUME 1
FILL VOLUME 168
AREA CUT 0.73
AREA FILL 80.06
135+50
CUT VOLUME 5
FILL VOLUME 190
AREA CUT 0.74
AREA FILL 101.72
135+00
CUT VOLUME 8
FILL VOLUME 136
AREA CUT 5.19
AREA FILL 103.15
134+50
CUT VOLUME 2
FILL VOLUME 17
AREA CUT 3.87
AREA FILL 43.56
134+38
CUT VOLUME 15
FILL VOLUME 28
AREA CUT 5.02
AREA FILL 31.38
134+00
CUT VOLUME 14
FILL VOLUME 3
AREA CUT 16.93
AREA FILL 8.12

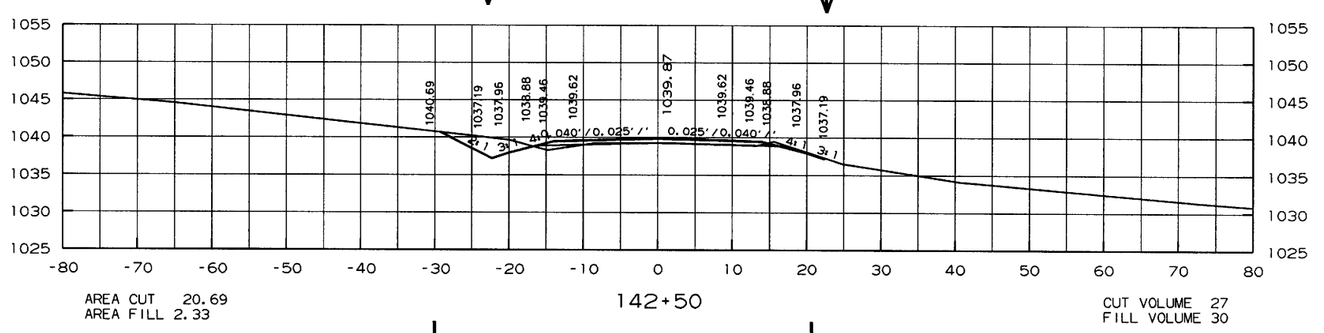
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12/19/17				6	ARK.			
				JOB NO.		FA4511	43	69

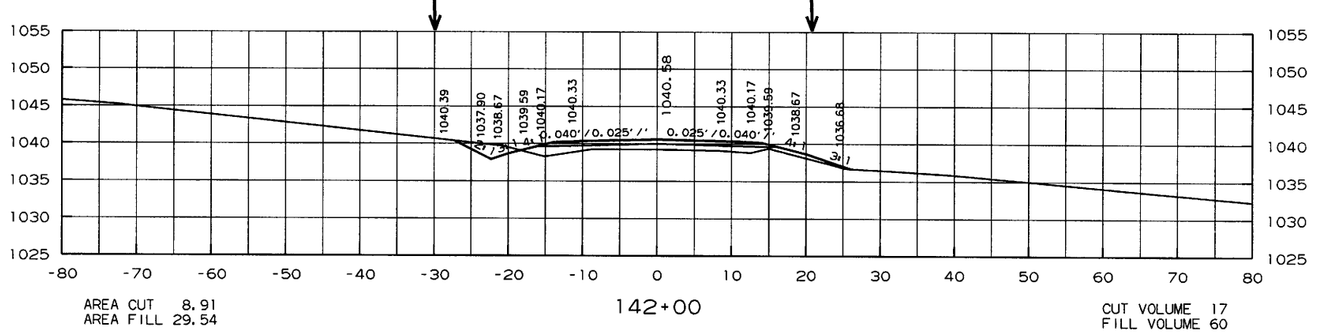
4 STA. 137+00 TO STA. 140+00

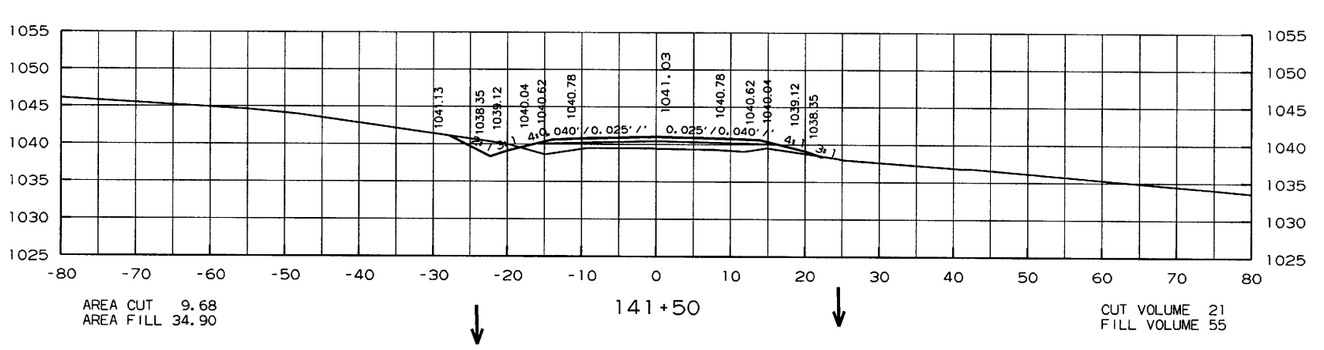


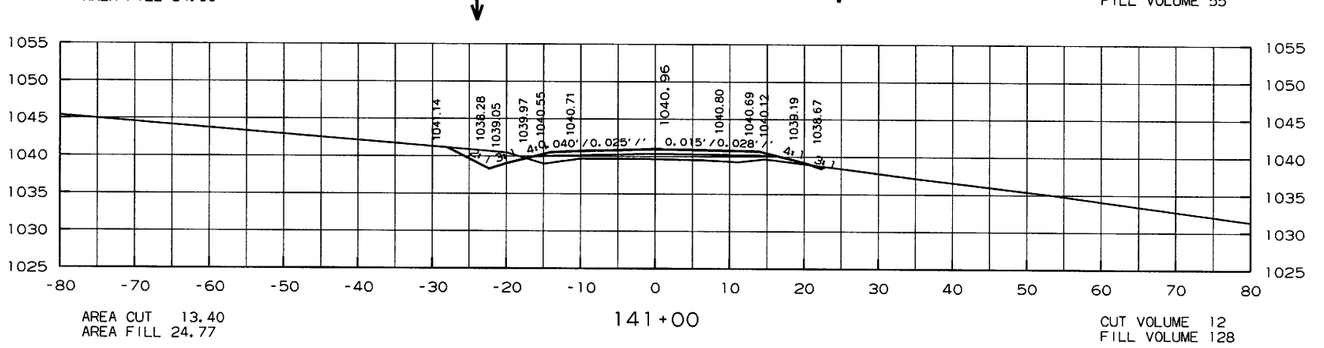
140+00
CUT VOLUME 0
FILL VOLUME 531
AREA CUT 0.00
AREA FILL 221.64
139+50
CUT VOLUME 0
FILL VOLUME 710
AREA CUT 0.00
AREA FILL 351.82
139+00
CUT VOLUME 0
FILL VOLUME 727
AREA CUT 0.00
AREA FILL 415.31
138+50
CUT VOLUME 0
FILL VOLUME 642
AREA CUT 0.00
AREA FILL 369.84
138+00
CUT VOLUME 0
FILL VOLUME 567
AREA CUT 0.00
AREA FILL 323.54
137+50
CUT VOLUME 0
FILL VOLUME 438
AREA CUT 0.00
AREA FILL 289.19
137+00
CUT VOLUME 1
FILL VOLUME 265
AREA CUT 0.00
AREA FILL 183.62
STA. 137+00
CONSTRUCT 24" PIPE CULVERT CROSS DRAIN
D.A. = 0.6 A.C. Q25 = 2.0 CFS
24" R.C.P. (CLASS III) (TYPE 3 BEDDING) = 48 LIN. FT.
24" C.M.P. OR PLASIC (TYPE 2 BEDDING) = 53 LIN. FT.
24" F.E.S. ON LT. AND RT. = 2 EACH
OUTLET 1025.50
INLET 1027.41

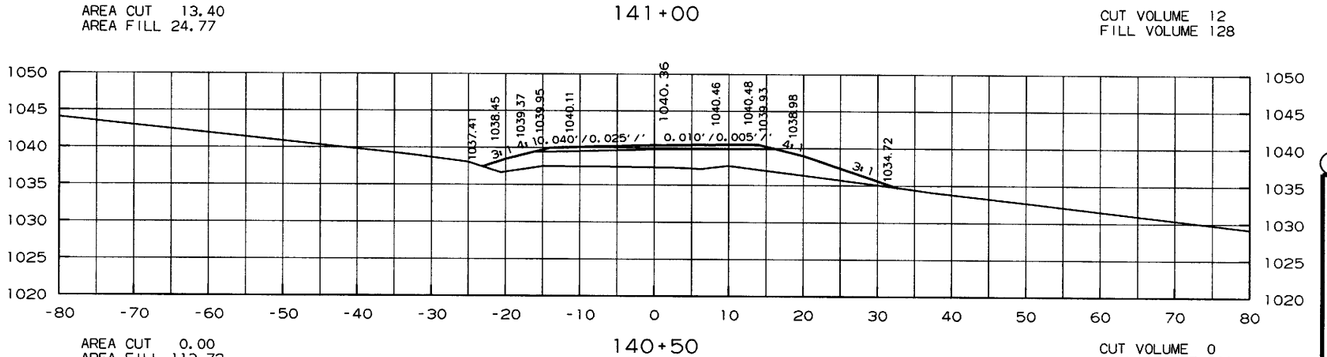










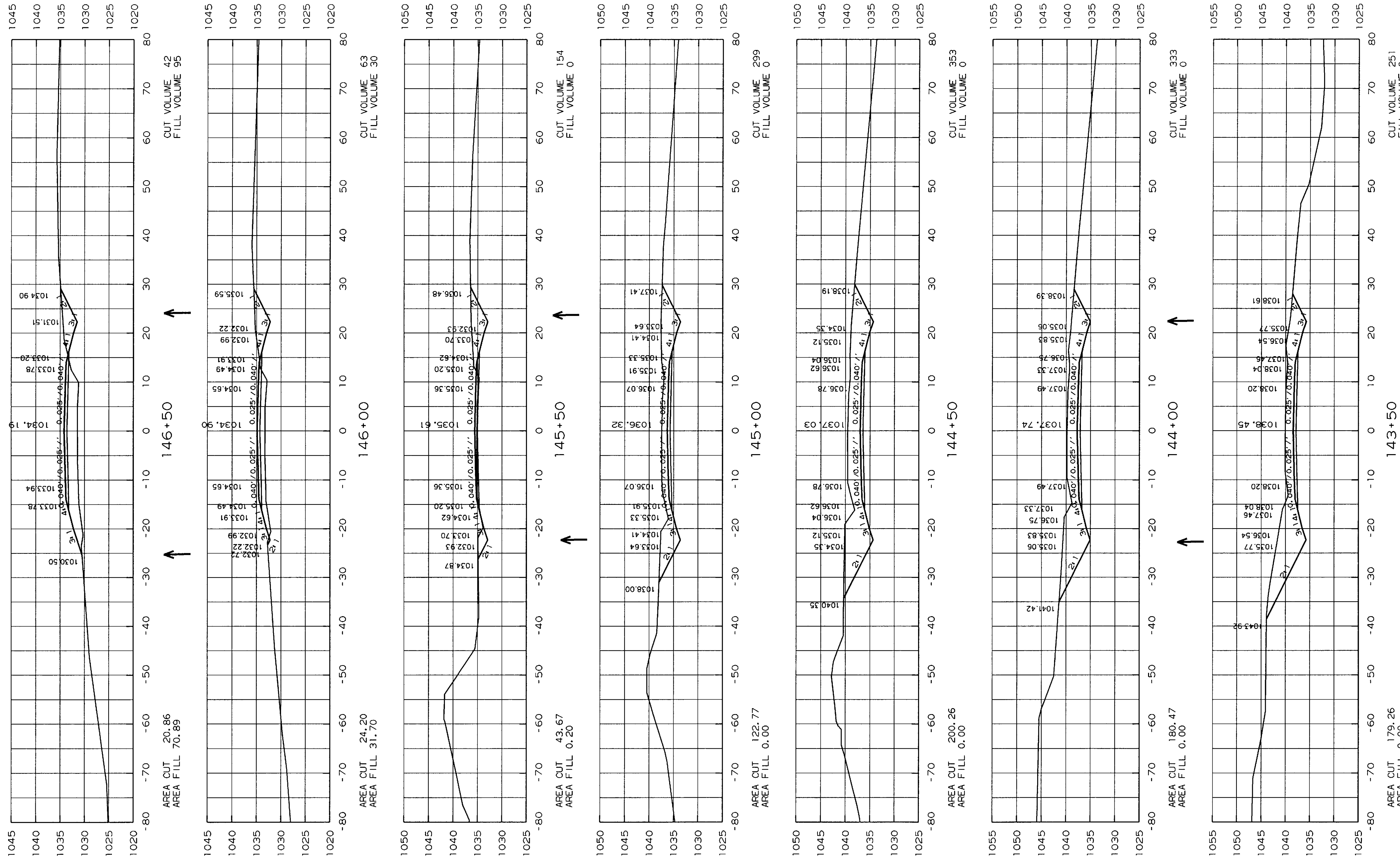


DATE REVISED	
DATE FILMED	
DATE REVISED	
DATE FILMED	
FED.RD. DIST. NO.	6
STATE	ARK.
FED.AID PROJ.NO.	F4458
SHEET NO.	44
TOTAL SHEETS	69

STA. 140+50 TO STA. 143+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	45	69

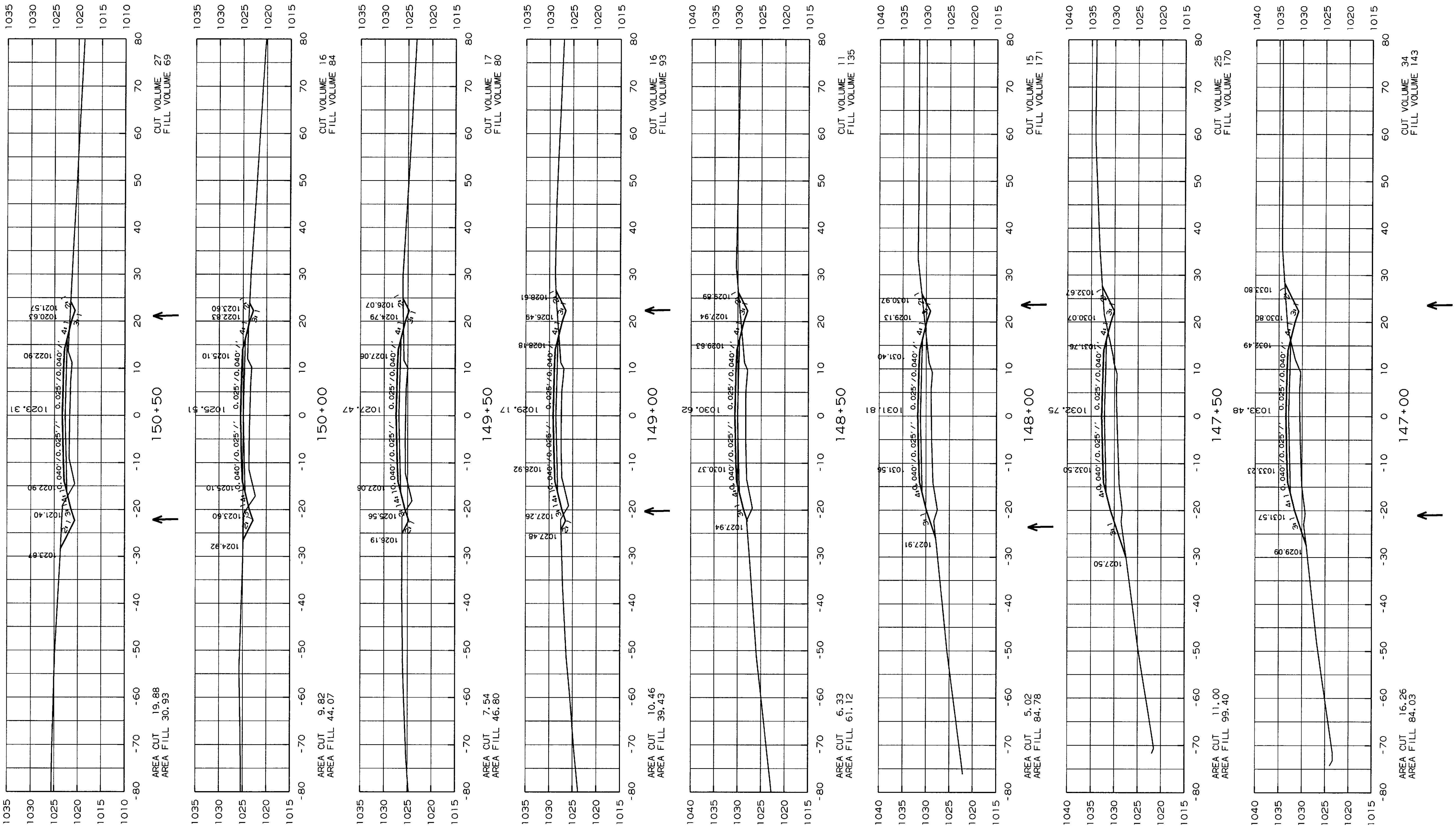
(4) STA. 143+50 TO STA. 146+50



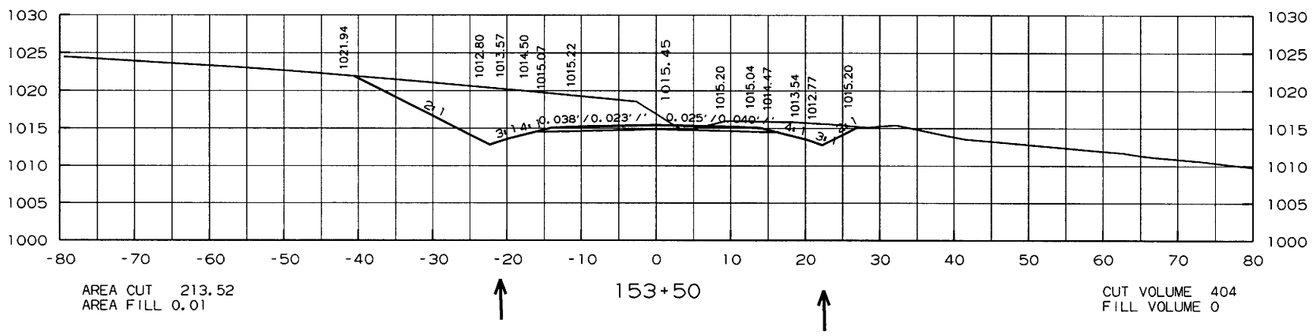
146+50
CUT VOLUME 42
FILL VOLUME 95
AREA CUT 20.86
AREA FILL 70.89
146+00
CUT VOLUME 63
FILL VOLUME 30
AREA CUT 24.20
AREA FILL 31.70
145+50
CUT VOLUME 154
FILL VOLUME 0
AREA CUT 43.67
AREA FILL 0.20
145+00
CUT VOLUME 299
FILL VOLUME 0
AREA CUT 122.77
AREA FILL 0.00
144+50
CUT VOLUME 353
FILL VOLUME 0
AREA CUT 200.26
AREA FILL 0.00
144+00
CUT VOLUME 333
FILL VOLUME 0
AREA CUT 180.47
AREA FILL 0.00
143+50
CUT VOLUME 251
FILL VOLUME 0
AREA CUT 179.26
AREA FILL 0.00

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.		FA4511	46	69

④ STA. 143+50 TO STA. 146+50



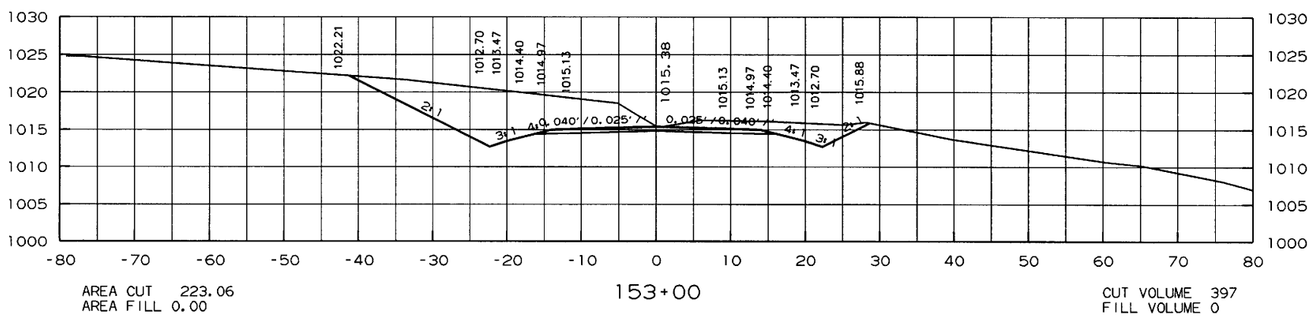
150+50
CUT VOLUME 27
FILL VOLUME 69
AREA CUT 19.88
AREA FILL 30.93
150+00
CUT VOLUME 16
FILL VOLUME 84
AREA CUT 9.82
AREA FILL 44.07
149+50
CUT VOLUME 17
FILL VOLUME 80
AREA CUT 7.54
AREA FILL 46.80
149+00
CUT VOLUME 16
FILL VOLUME 93
AREA CUT 10.46
AREA FILL 39.43
148+50
CUT VOLUME 11
FILL VOLUME 135
AREA CUT 6.33
AREA FILL 61.12
148+00
CUT VOLUME 15
FILL VOLUME 171
AREA CUT 5.02
AREA FILL 84.78
147+50
CUT VOLUME 25
FILL VOLUME 170
AREA CUT 11.00
AREA FILL 99.40
147+00
CUT VOLUME 34
FILL VOLUME 143
AREA CUT 16.26
AREA FILL 84.03



AREA CUT 213.52
AREA FILL 0.01

153+50

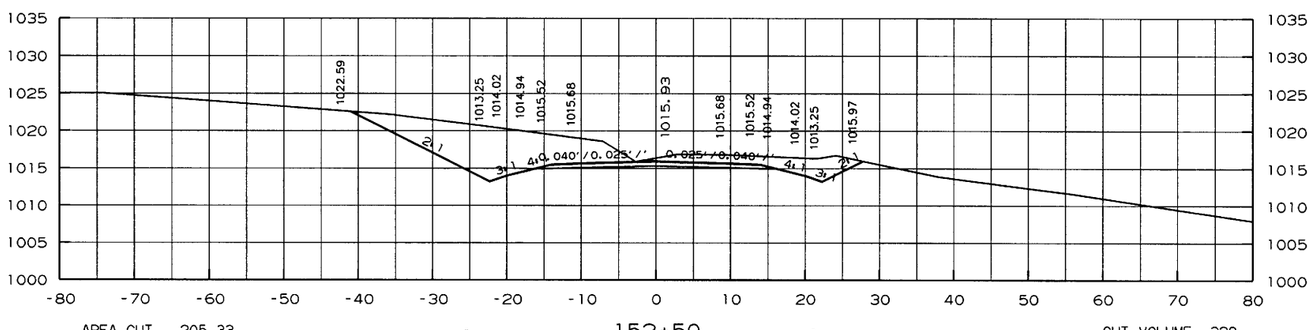
CUT VOLUME 404
FILL VOLUME 0



AREA CUT 223.06
AREA FILL 0.00

153+00

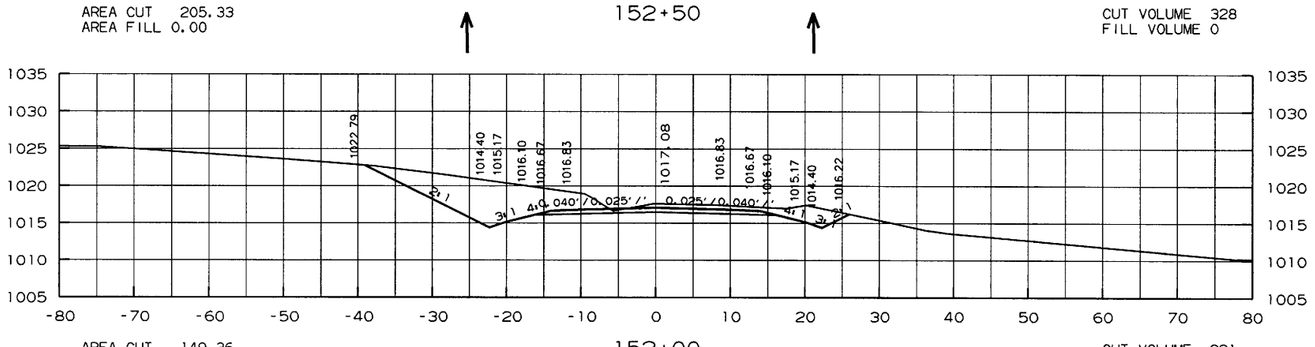
CUT VOLUME 397
FILL VOLUME 0



AREA CUT 205.33
AREA FILL 0.00

152+50

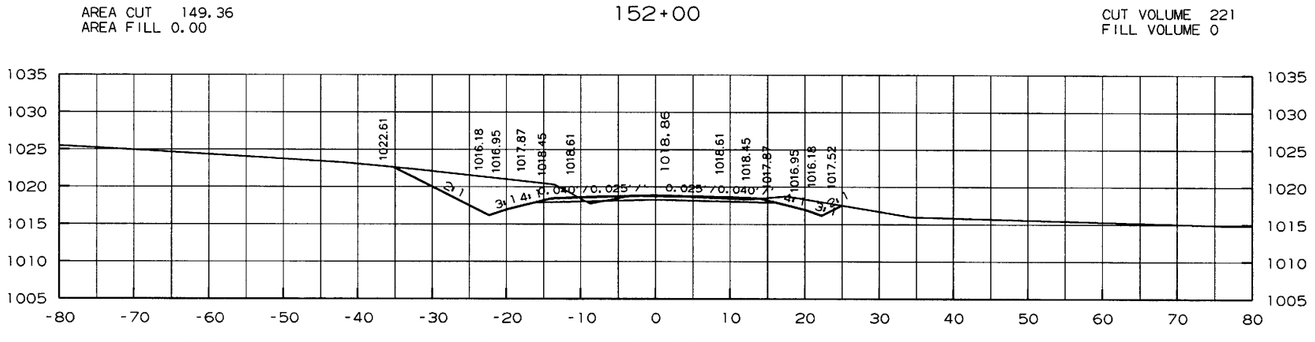
CUT VOLUME 328
FILL VOLUME 0



AREA CUT 149.36
AREA FILL 0.00

152+00

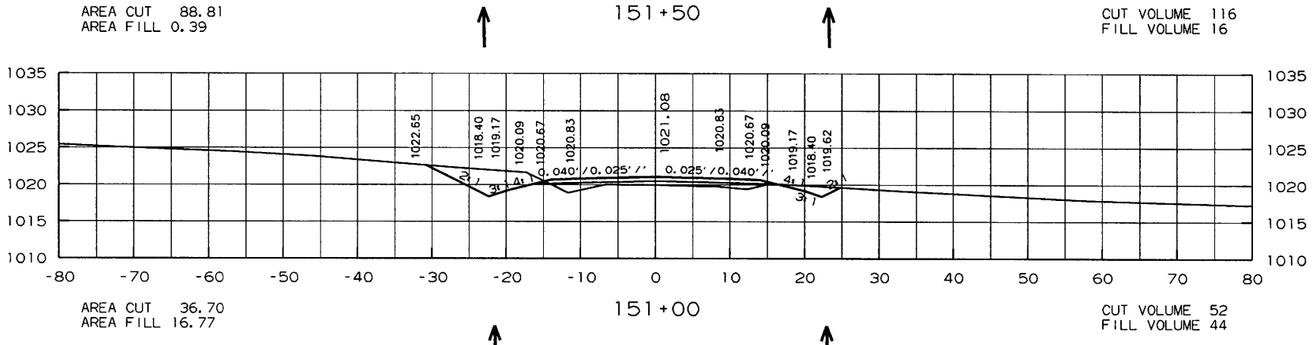
CUT VOLUME 221
FILL VOLUME 0



AREA CUT 88.81
AREA FILL 0.39

151+50

CUT VOLUME 116
FILL VOLUME 16



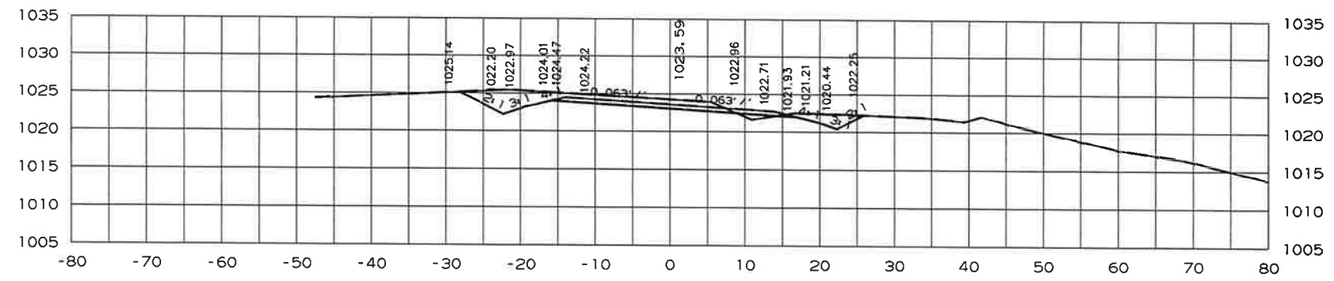
AREA CUT 36.70
AREA FILL 16.77

151+00

CUT VOLUME 52
FILL VOLUME 44

STA. 151+00 TO STA. 153+50

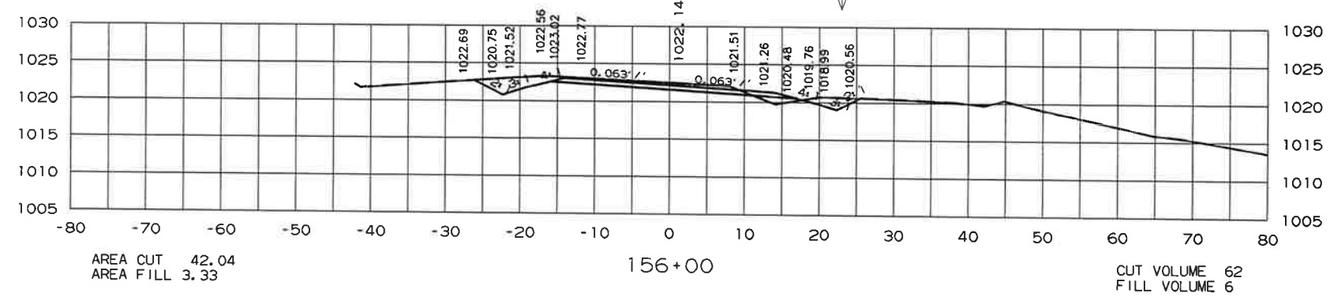
DATE REVISED	
DATE PLOTTED	
DATE REVISED	
DATE PLOTTED	
FED.RD. DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA45(1
SHEET NO.	47
TOTAL SHEETS	69
JOB NO.	



AREA CUT 61.46
AREA FILL 1.90

156+50

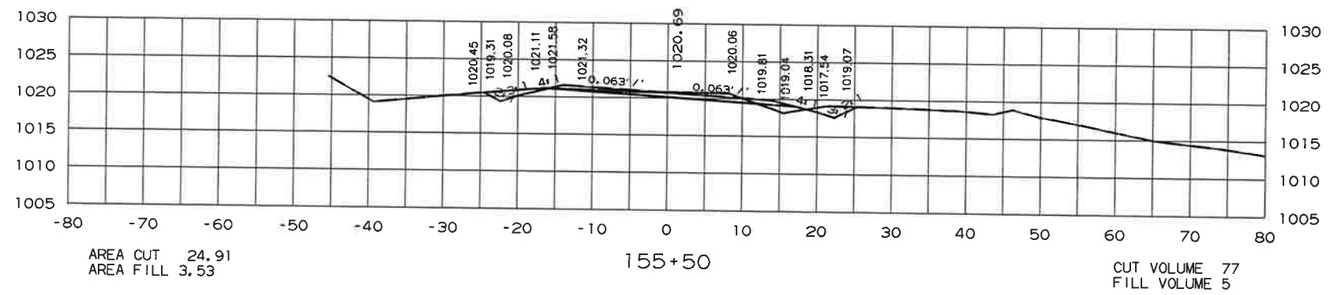
CUT VOLUME 96
FILL VOLUME 5



AREA CUT 42.04
AREA FILL 3.33

156+00

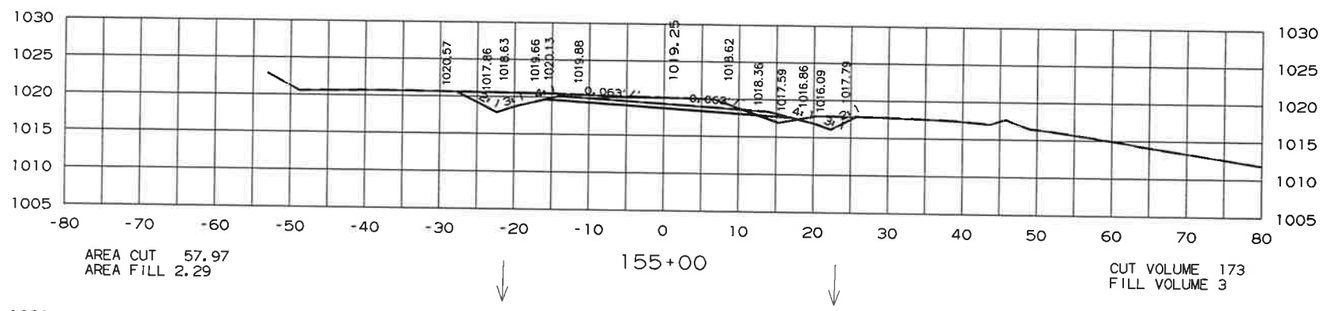
CUT VOLUME 62
FILL VOLUME 6



AREA CUT 24.91
AREA FILL 3.53

155+50

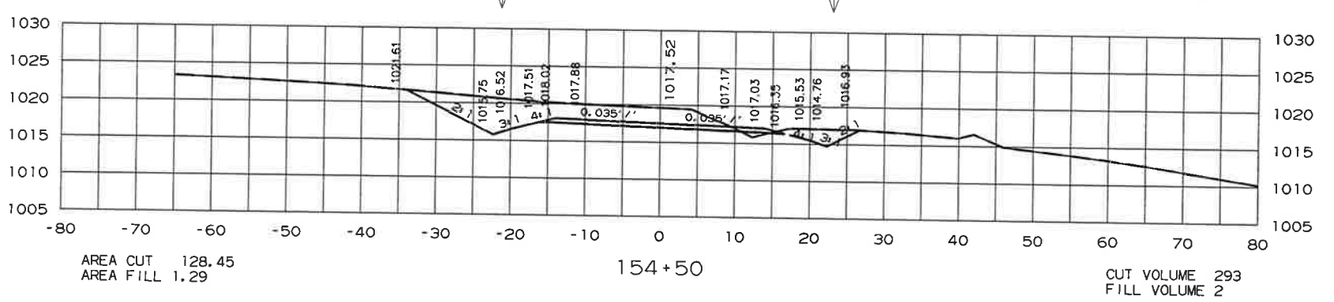
CUT VOLUME 77
FILL VOLUME 5



AREA CUT 57.97
AREA FILL 2.29

155+00

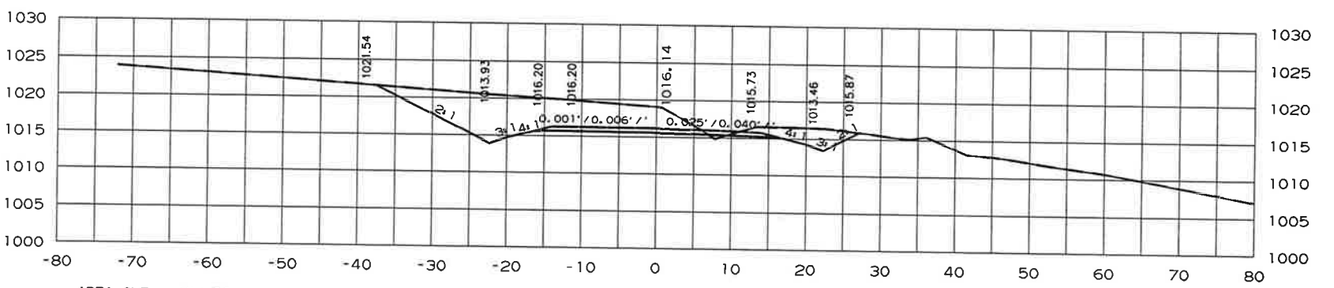
CUT VOLUME 173
FILL VOLUME 3



AREA CUT 128.45
AREA FILL 1.29

154+50

CUT VOLUME 293
FILL VOLUME 2

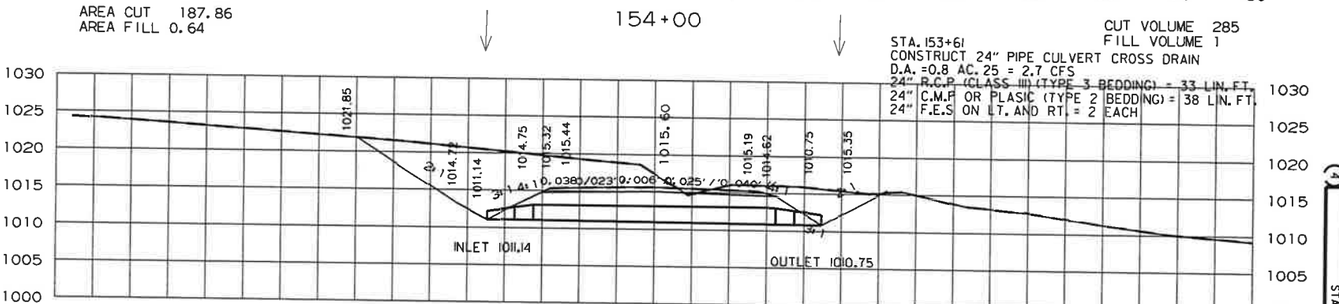


AREA CUT 187.86
AREA FILL 0.64

154+00

CUT VOLUME 285
FILL VOLUME 1

STA. 153+61
CONSTRUCT 24" PIPE CULVERT CROSS DRAIN
D.A. =0.8 AC. 25 = 2.7 CFS
24" R.C.P. (CLASS III)(TYPE 3 BEDDING) = 33 LIN. FT.
24" C.M.P. OR PLASIC (TYPE 2 BEDDING) = 38 LIN. FT.
24" F.E.S ON LT. AND RT. = 2 EACH



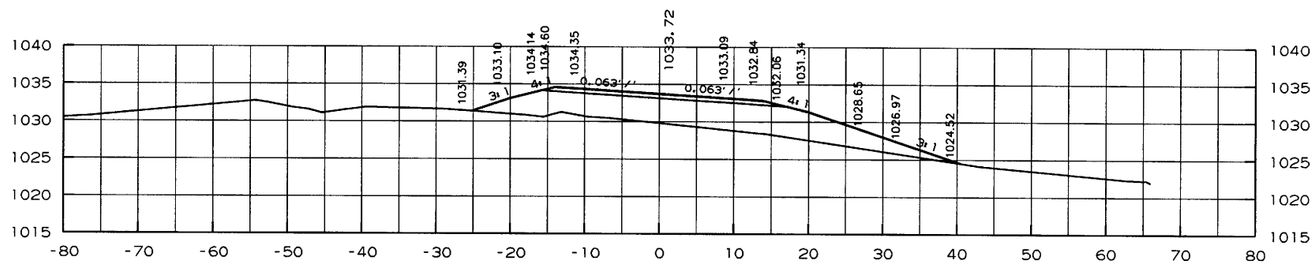
AREA CUT 206.10
AREA FILL 0.23

153+61

CUT VOLUME 85
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID PROJ.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
12/2017				6	ARK.	FA45II	48	69

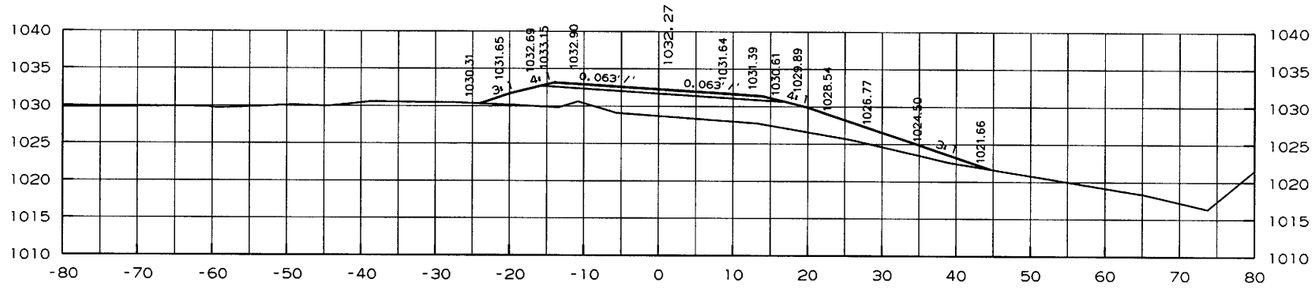
STA. 153+61 TO STA. 156+50



AREA CUT 0.00
AREA FILL 178.33

160+00

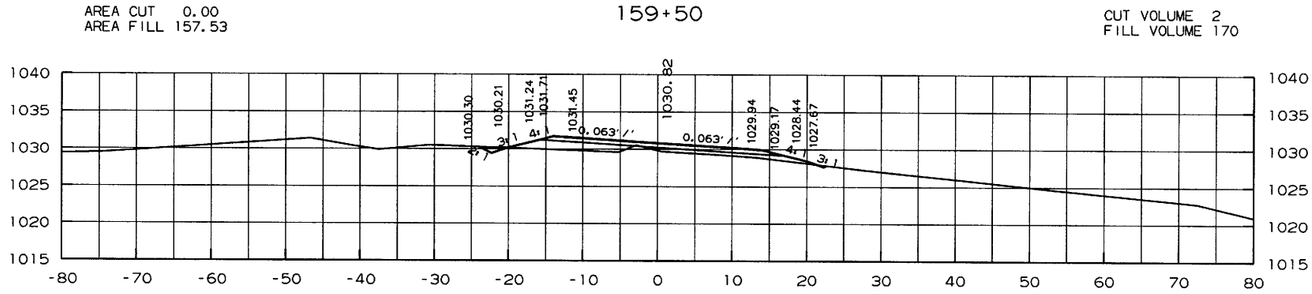
CUT VOLUME 0
FILL VOLUME 311



AREA CUT 0.00
AREA FILL 157.53

159+50

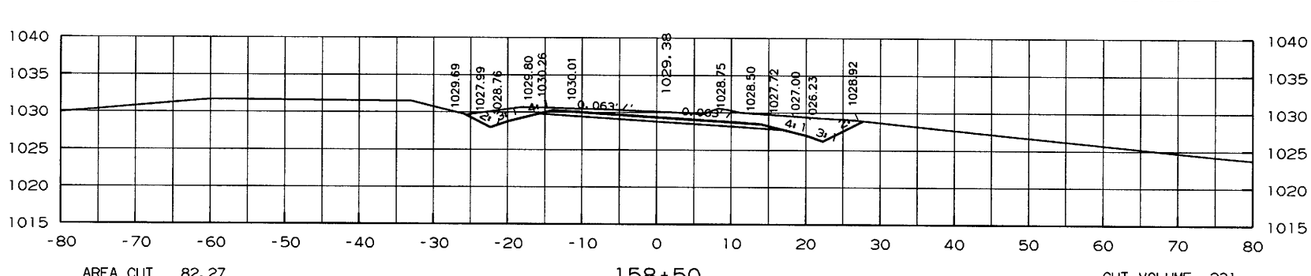
CUT VOLUME 2
FILL VOLUME 170



AREA CUT 1.75
AREA FILL 26.09

159+00

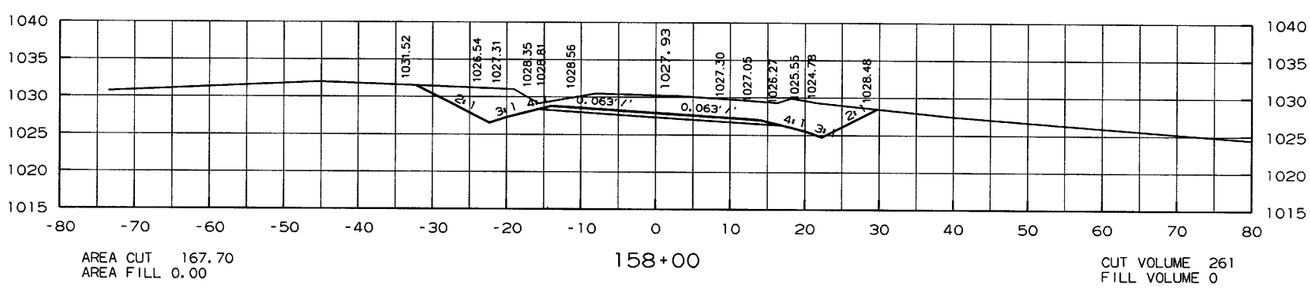
CUT VOLUME 78
FILL VOLUME 24



AREA CUT 82.27
AREA FILL 0.00

158+50

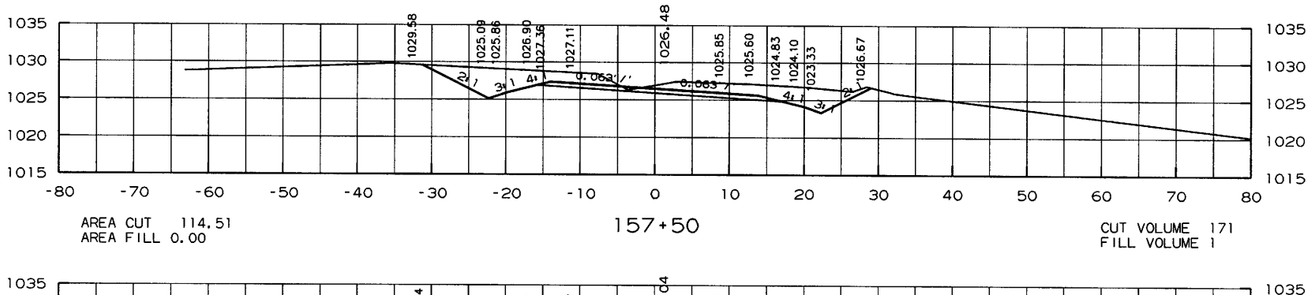
CUT VOLUME 231
FILL VOLUME 0



AREA CUT 167.70
AREA FILL 0.00

158+00

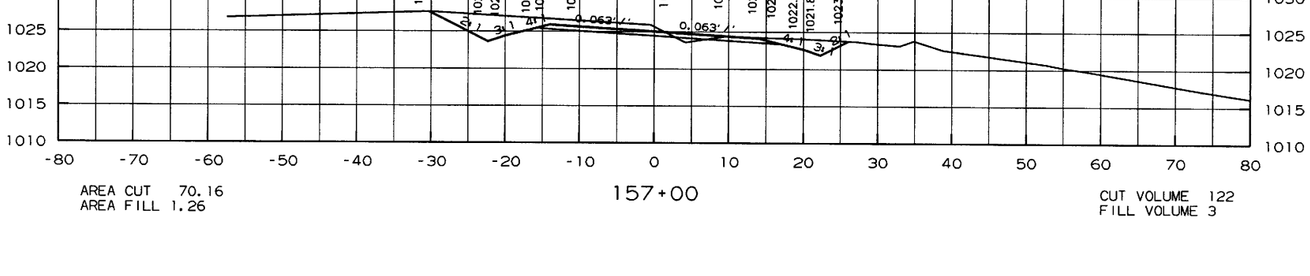
CUT VOLUME 261
FILL VOLUME 0



AREA CUT 114.51
AREA FILL 0.00

157+50

CUT VOLUME 171
FILL VOLUME 1



AREA CUT 70.16
AREA FILL 1.26

157+00

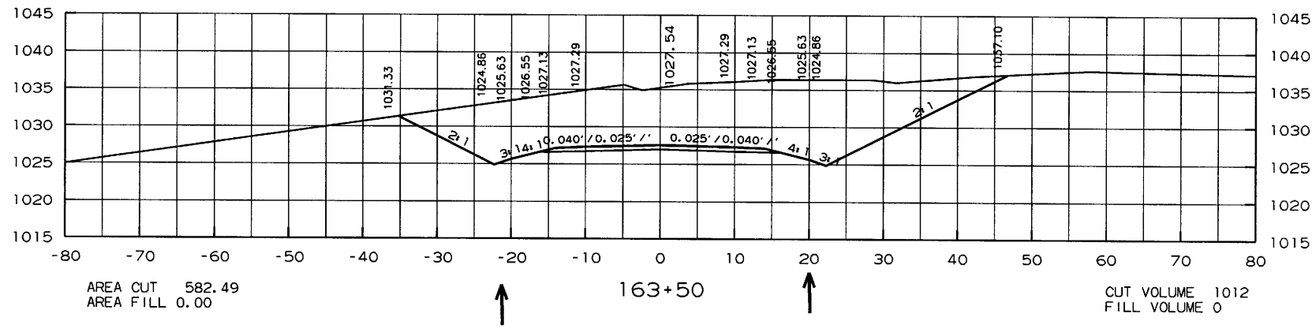
CUT VOLUME 122
FILL VOLUME 3

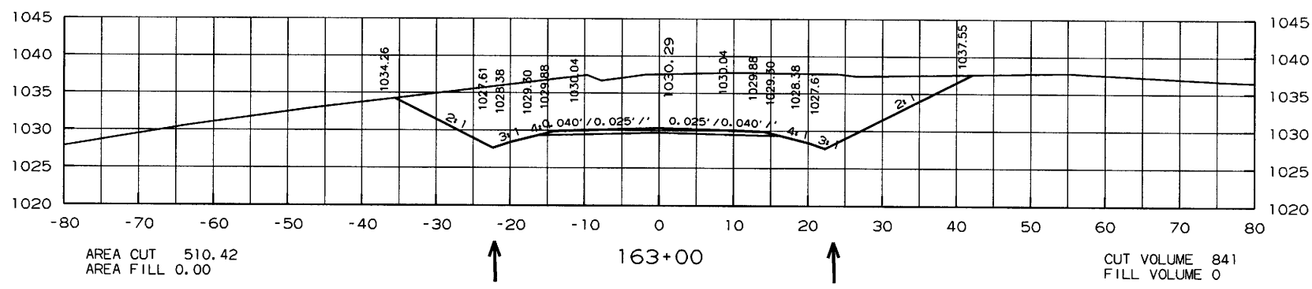
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		49	69

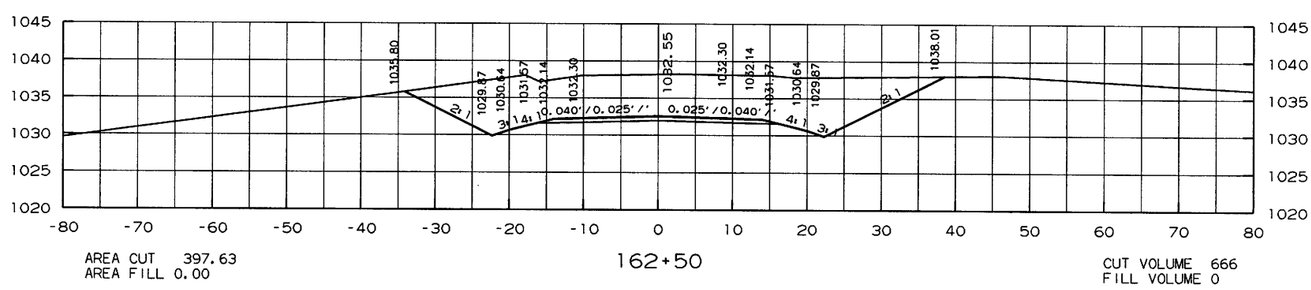
JOB NO. F.445(1)

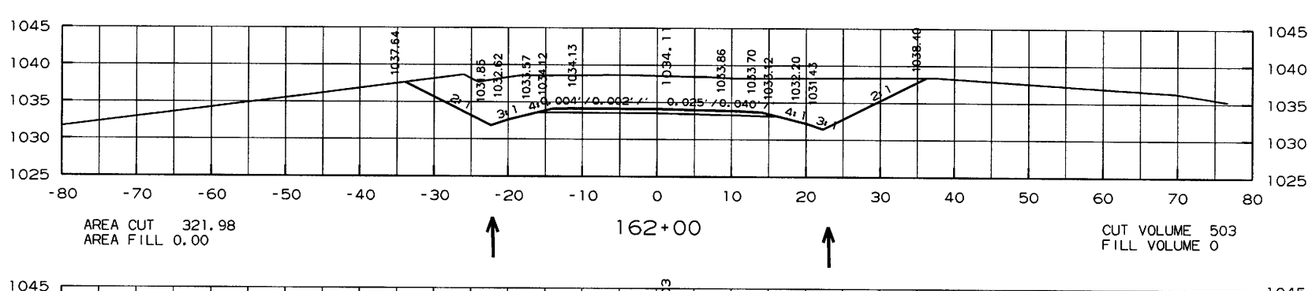
STA. 157+00 TO STA. 160+00

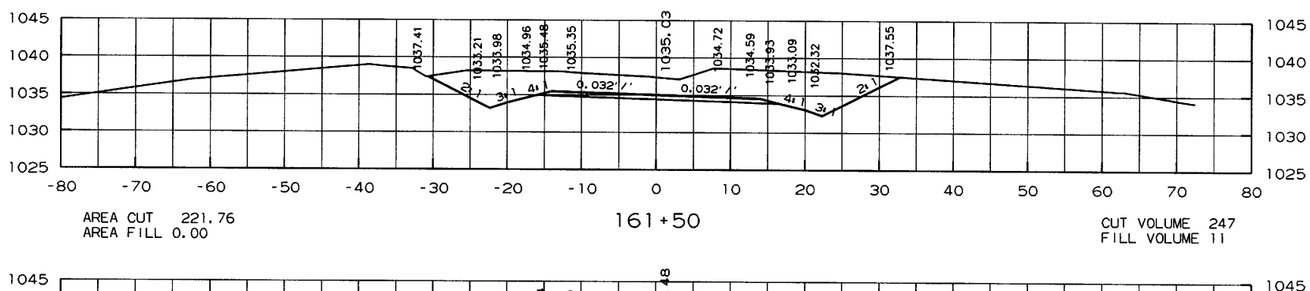
4

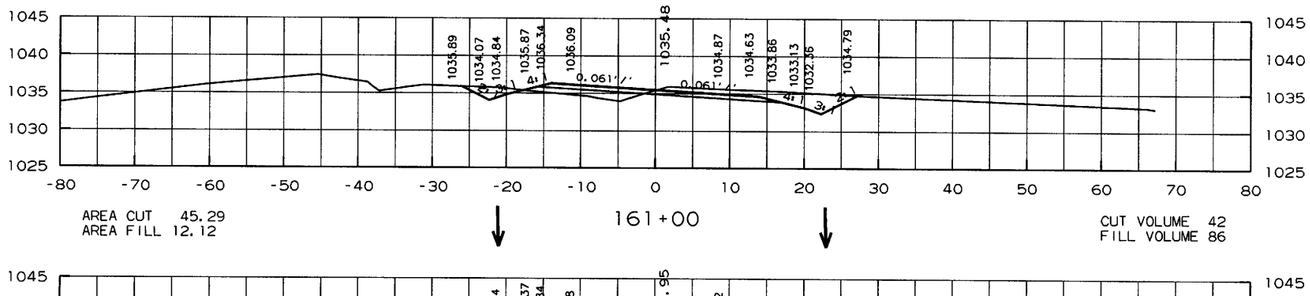


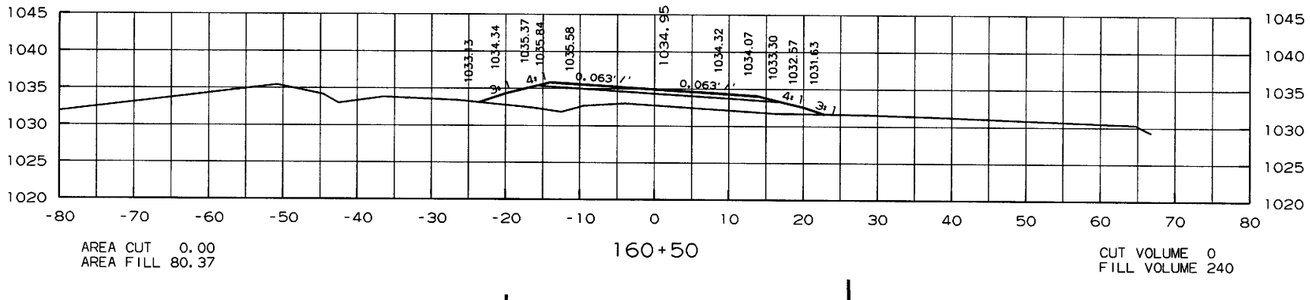










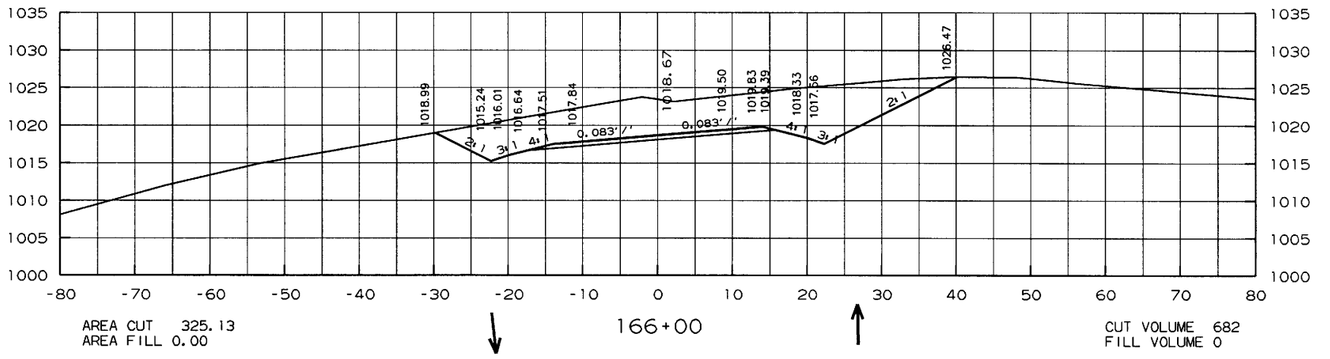


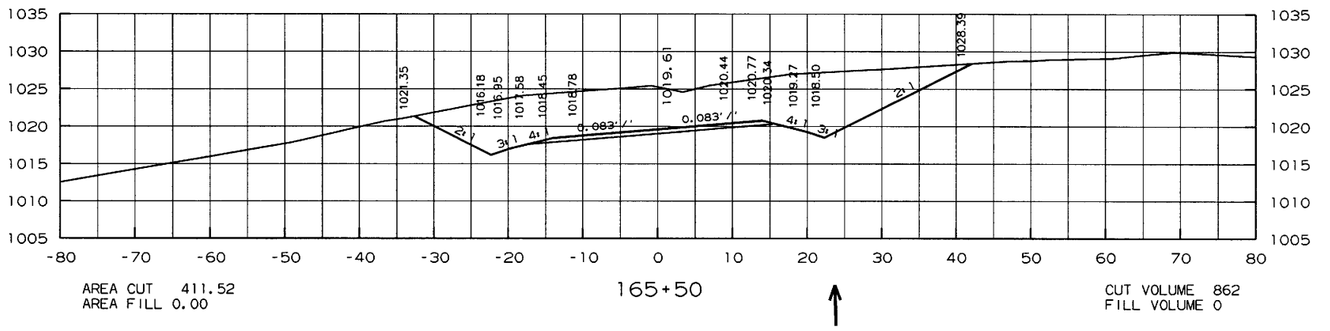
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		50	69

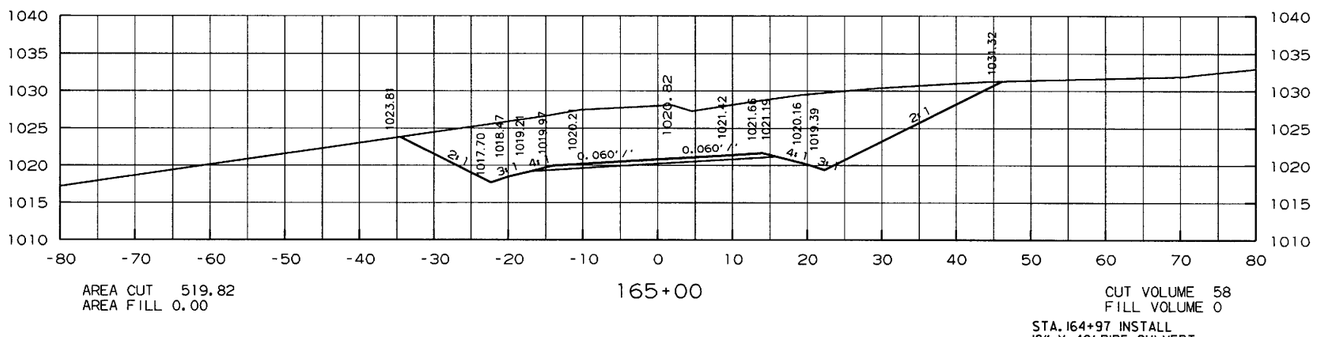
JOB NO. FA45(1)

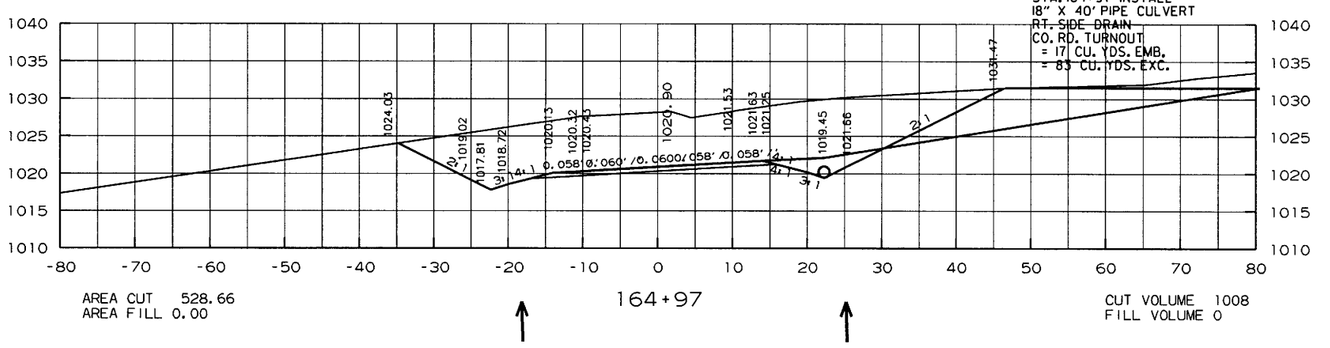
4

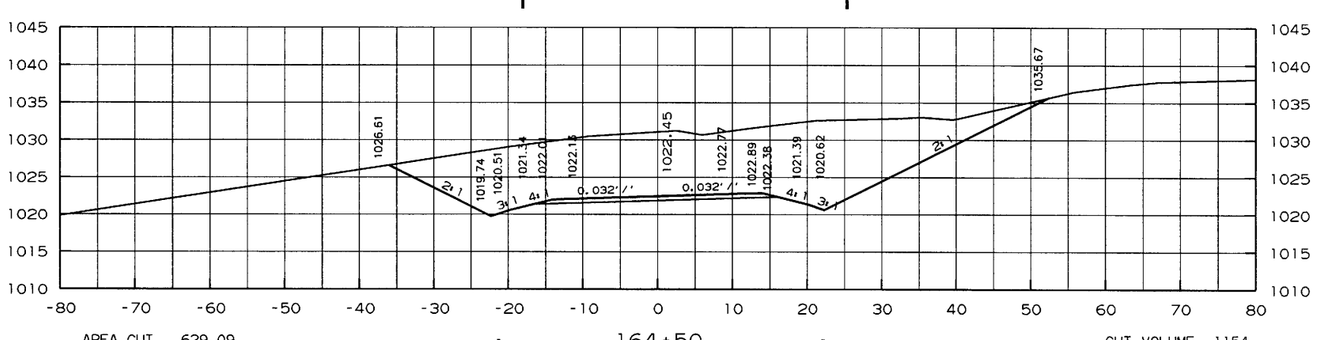
STA. 160+50 TO STA. 163+50

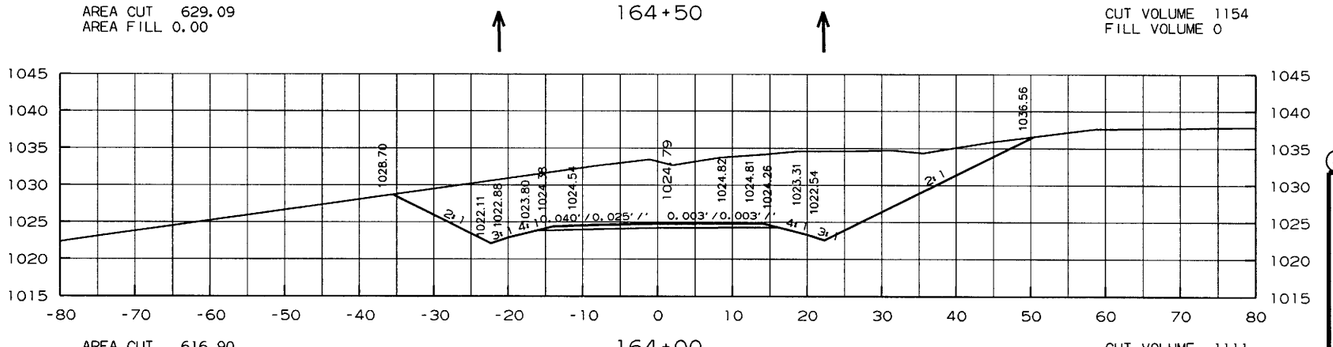








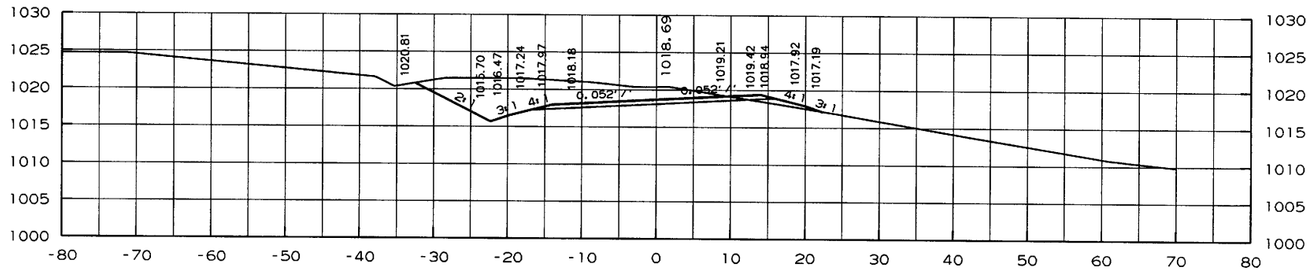




DATE REVISED	
DATE FILMED	
DATE REVISED	
DATE FILMED	
FED.RD. DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	
SHEET NO.	51
TOTAL SHEETS	69

JOB NO. FA45(1)

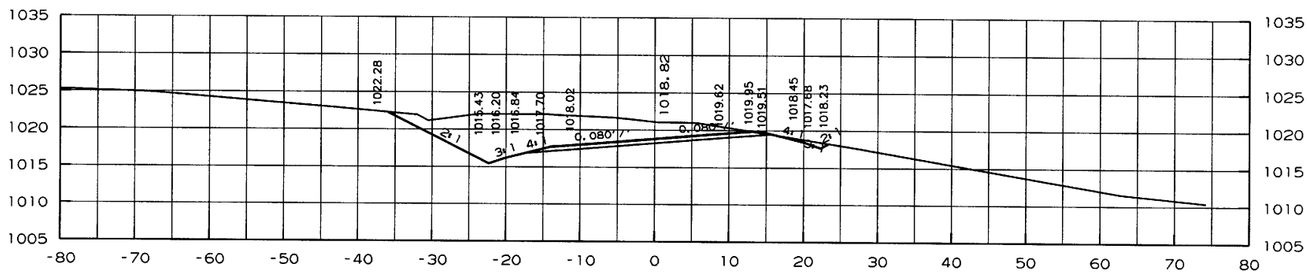
STA. 164+00 TO STA. 166+00



AREA CUT 128.28
AREA FILL 3.90

169+50

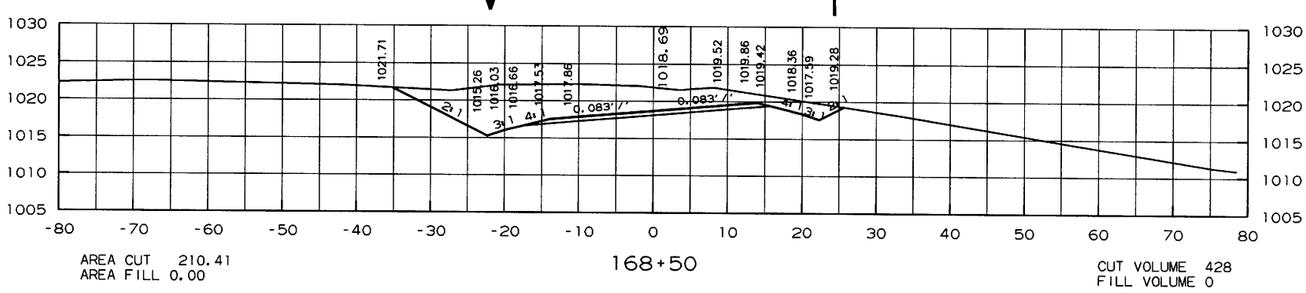
CUT VOLUME 276
FILL VOLUME 4



AREA CUT 169.71
AREA FILL 0.05

169+00

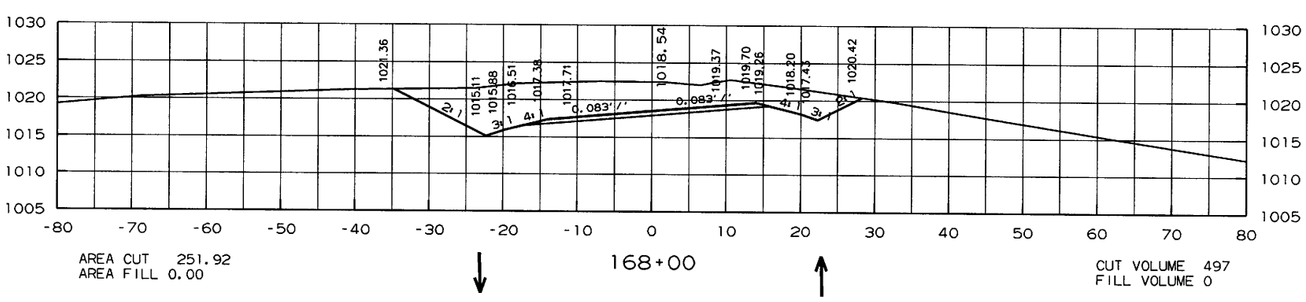
CUT VOLUME 352
FILL VOLUME 0



AREA CUT 210.41
AREA FILL 0.00

168+50

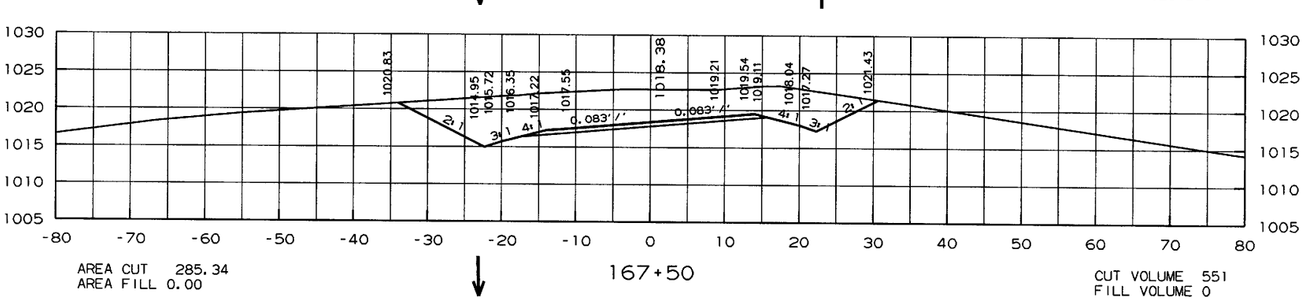
CUT VOLUME 428
FILL VOLUME 0



AREA CUT 251.92
AREA FILL 0.00

168+00

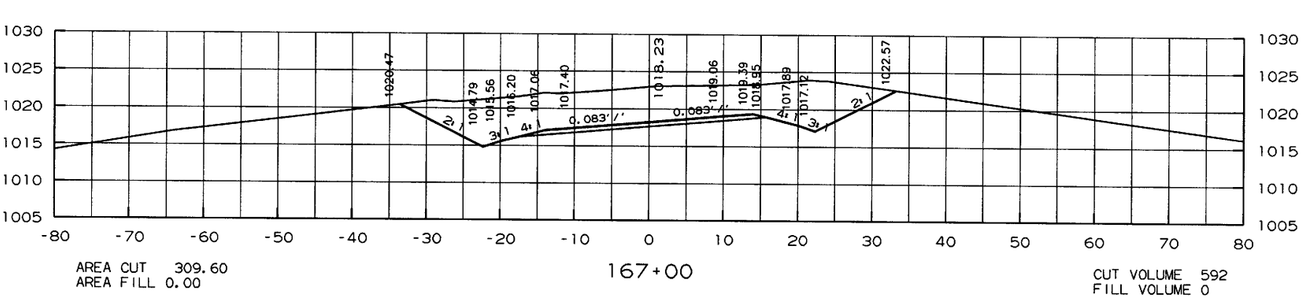
CUT VOLUME 497
FILL VOLUME 0



AREA CUT 285.34
AREA FILL 0.00

167+50

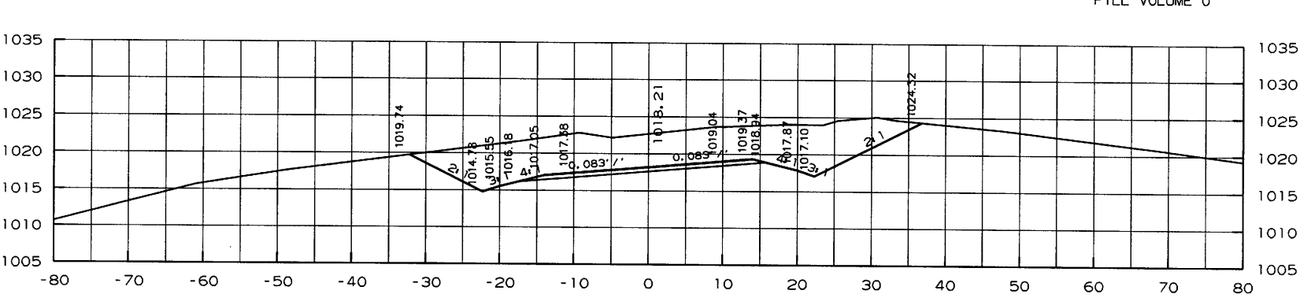
CUT VOLUME 551
FILL VOLUME 0



AREA CUT 309.60
AREA FILL 0.00

167+00

CUT VOLUME 592
FILL VOLUME 0



AREA CUT 329.32
AREA FILL 0.00

166+50

CUT VOLUME 606
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID PROJ.NO.
				6

STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
ARK.	FA45(1)	52	69

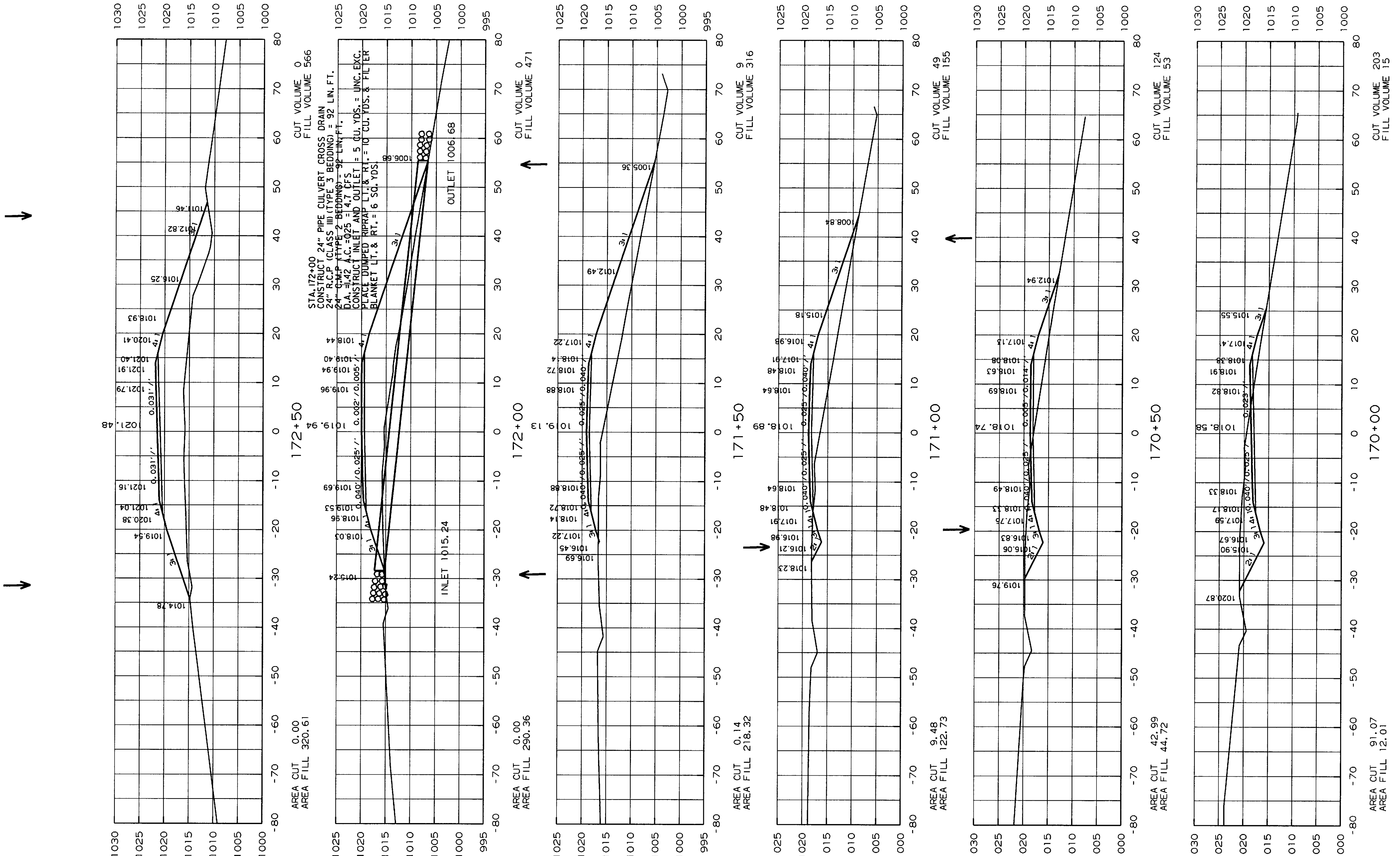
JOB NO.

STA. 166+50 TO STA. 169+50

4

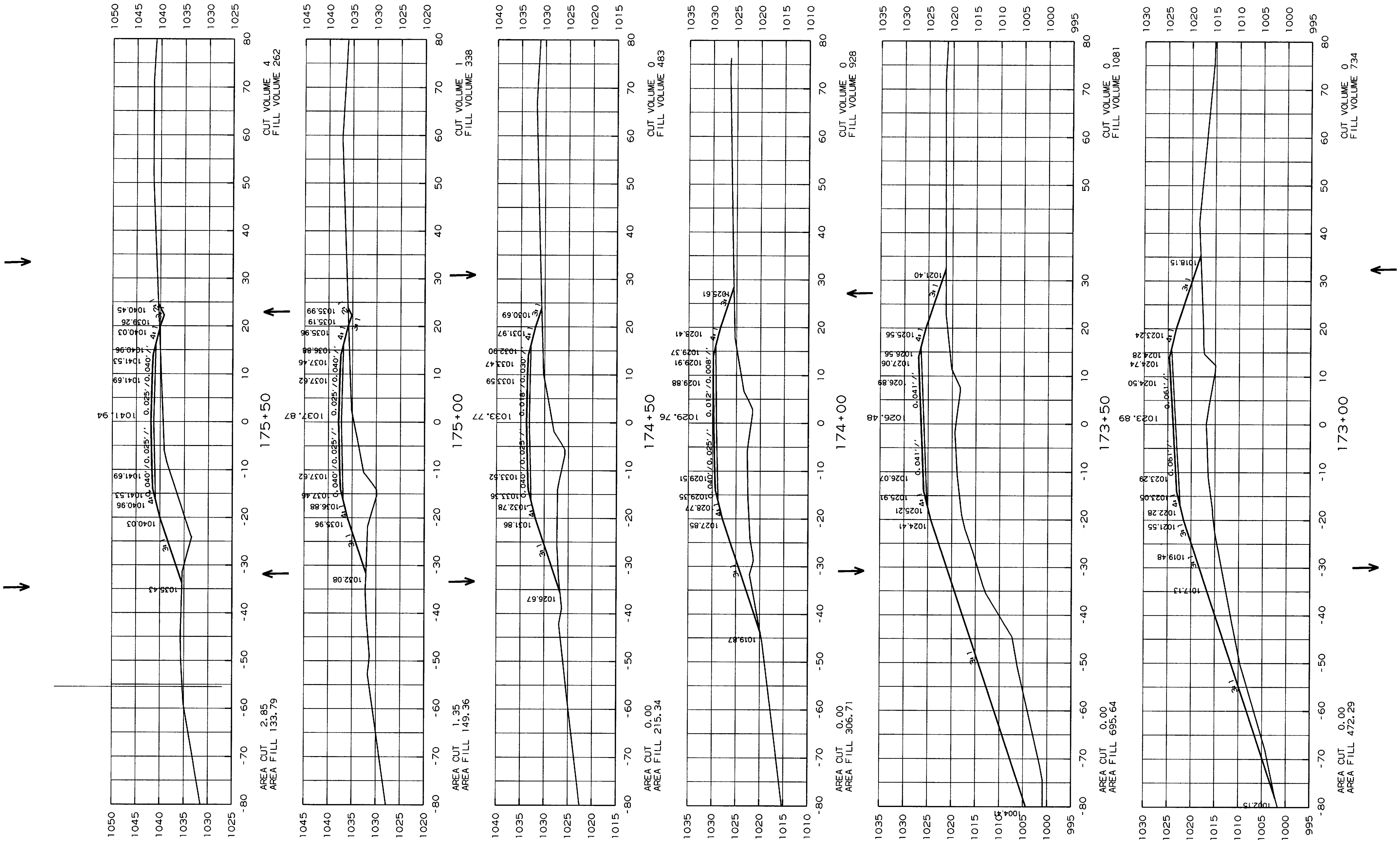
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	53	69

(4) STA. 170+00 TO STA. 172+50



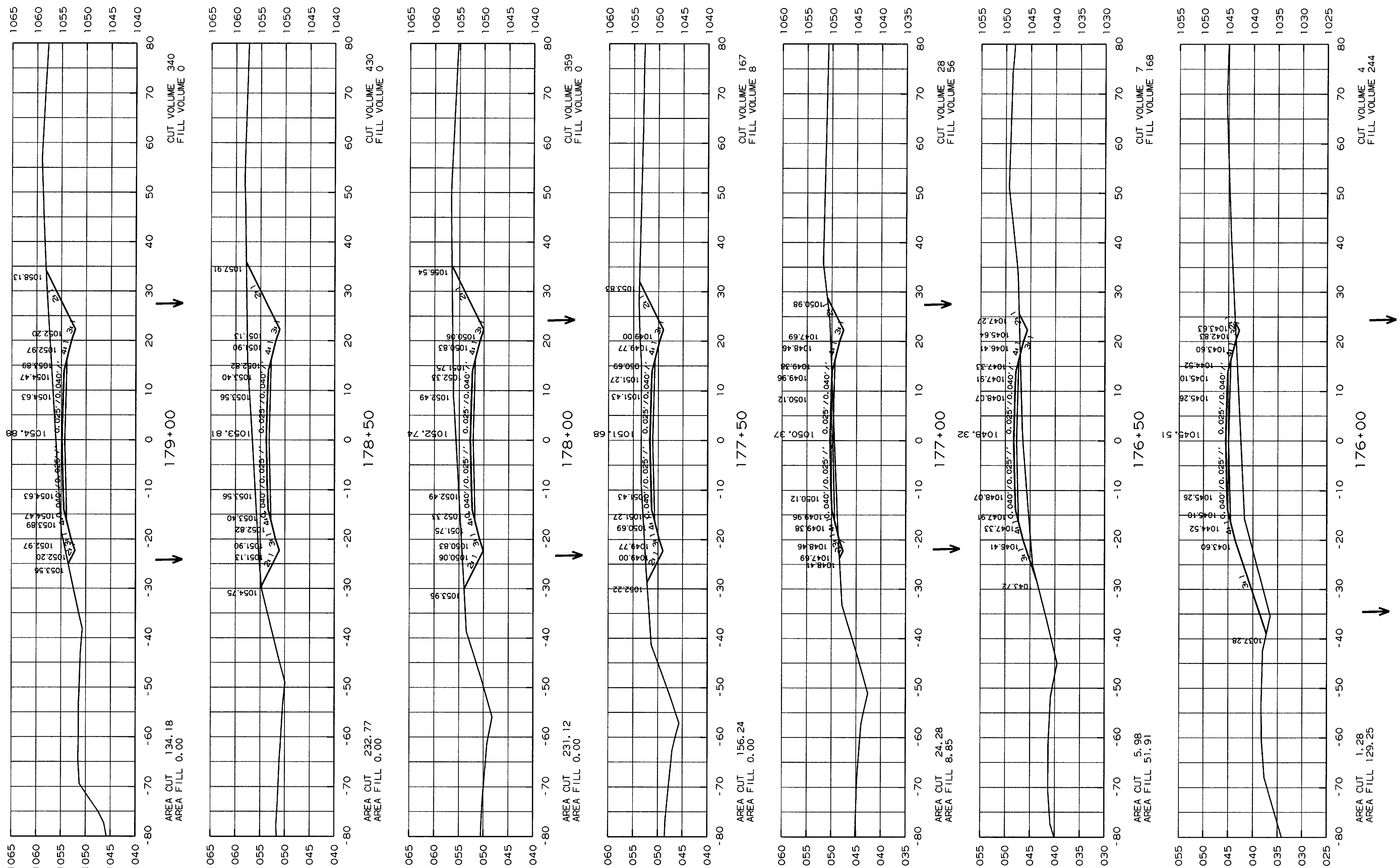
172+50
CUT VOLUME 0
FILL VOLUME 566
AREA CUT 0.00
AREA FILL 320.61
172+00
STA. 172+00
CONSTRUCT 24" PIPE CULVERT CROSS DRAIN
24" R.C.P. (CLASS III)(TYPE 3 BEDDING) = 92 LIN. FT.
24" C.M.P. (TYPE 2 BEDDING) = 92 LIN. FT.
D.A. = 1.42 A.C. = .025 = 4.7 CFS
CONSTRUCT INLET AND OUTLET = 5 CU. YDS. = UNC. EXC.
PLACE DUMPED RIPRAP LT. & RT. = 10 CU. YDS. & FILTER
BLANKET LT. & RT. = 6 SQ. YDS.
OUTLET 1006.68
INLET 1015.24
CUT VOLUME 0
FILL VOLUME 471
AREA CUT 0.00
AREA FILL 290.36
171+50
CUT VOLUME 9
FILL VOLUME 316
AREA CUT 0.14
AREA FILL 218.32
171+00
CUT VOLUME 49
FILL VOLUME 155
AREA CUT 9.48
AREA FILL 122.73
170+50
CUT VOLUME 124
FILL VOLUME 53
AREA CUT 42.99
AREA FILL 44.72
170+00
CUT VOLUME 203
FILL VOLUME 15
AREA CUT 91.07
AREA FILL 12.01

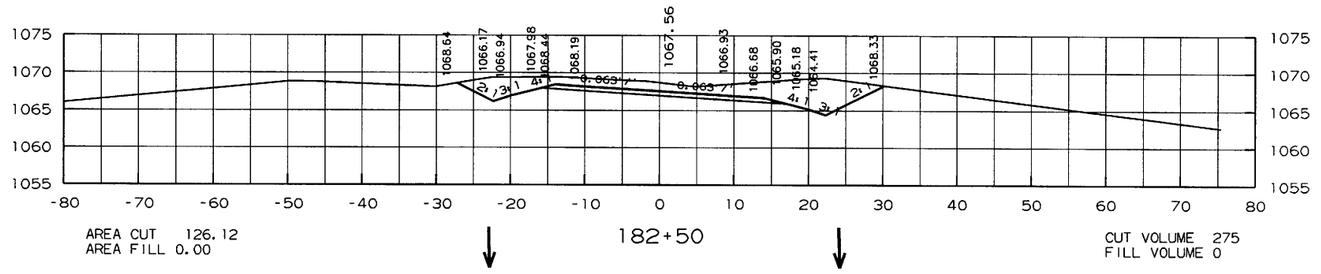
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	54	69
				(4)	STA.173+00 TO STA.175+50			



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	55	69

(4) STA. 176+00 TO STA. 179+00

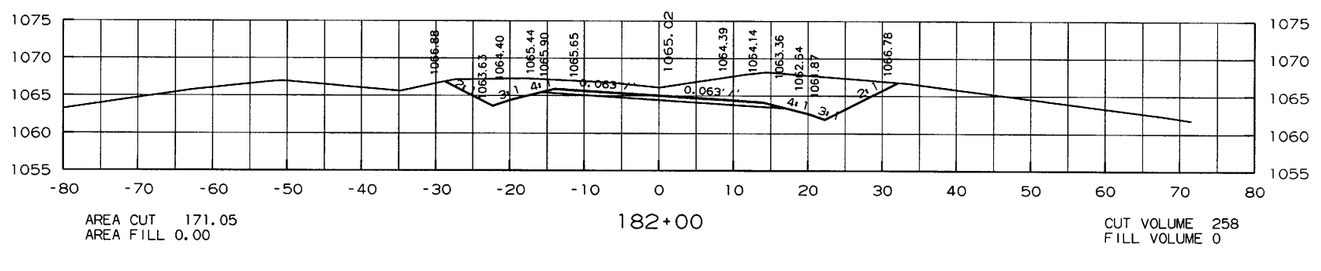




AREA CUT 126.12
AREA FILL 0.00

182+50

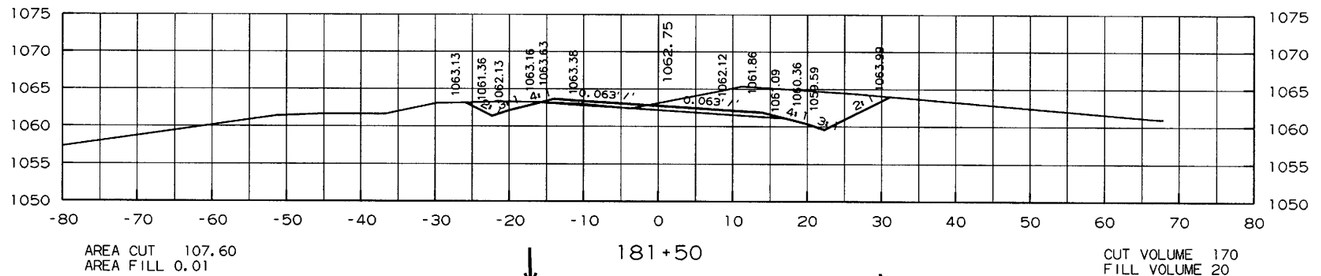
CUT VOLUME 275
FILL VOLUME 0



AREA CUT 171.05
AREA FILL 0.00

182+00

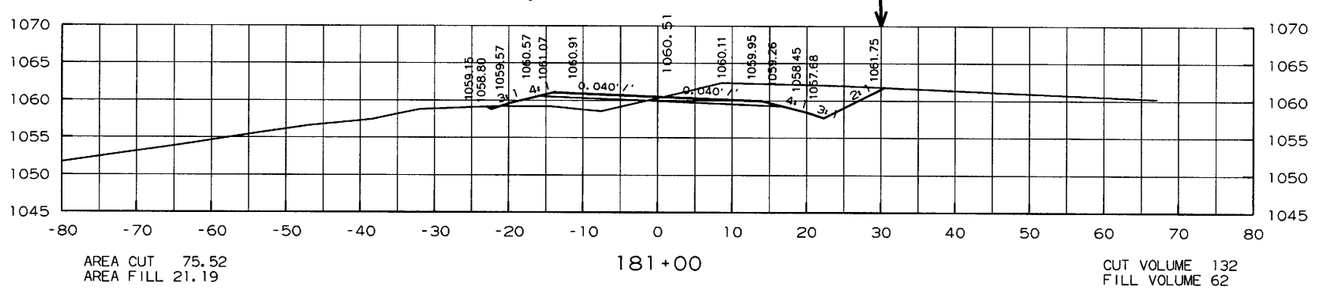
CUT VOLUME 258
FILL VOLUME 0



AREA CUT 107.60
AREA FILL 0.01

181+50

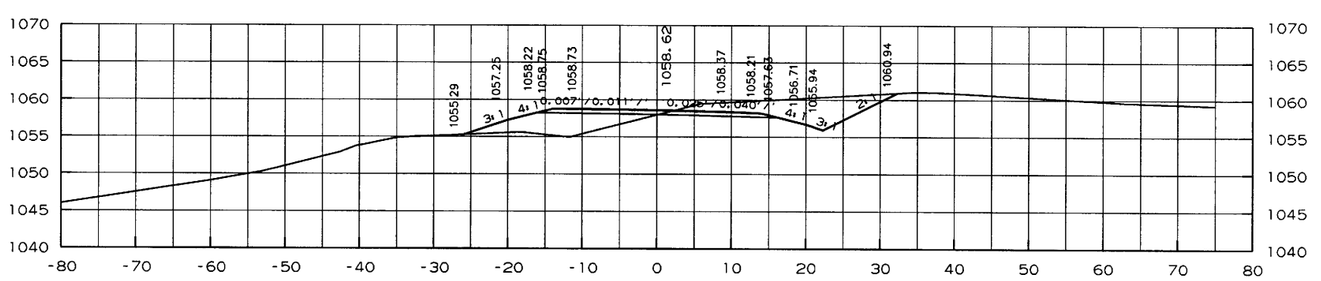
CUT VOLUME 170
FILL VOLUME 20



AREA CUT 75.52
AREA FILL 21.19

181+00

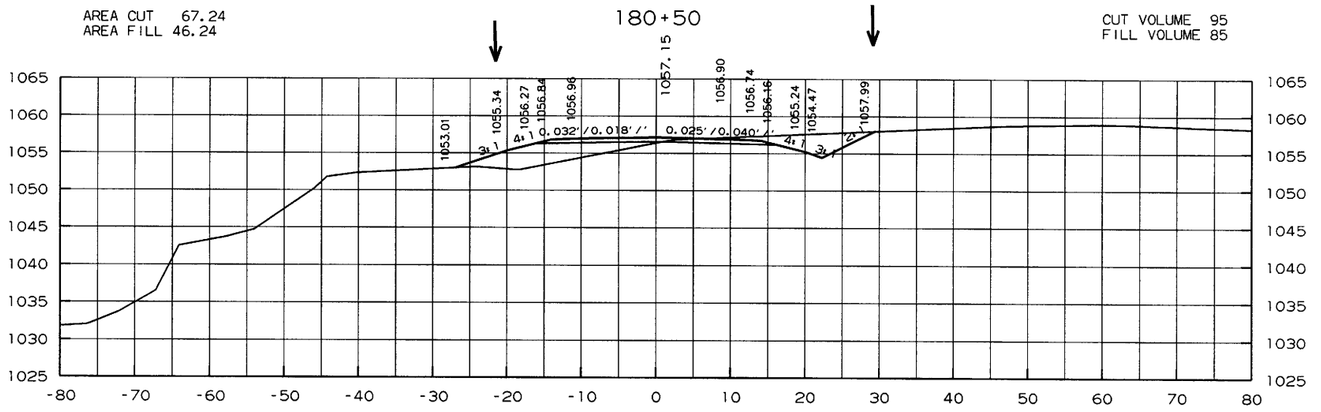
CUT VOLUME 132
FILL VOLUME 62



AREA CUT 67.24
AREA FILL 46.24

180+50

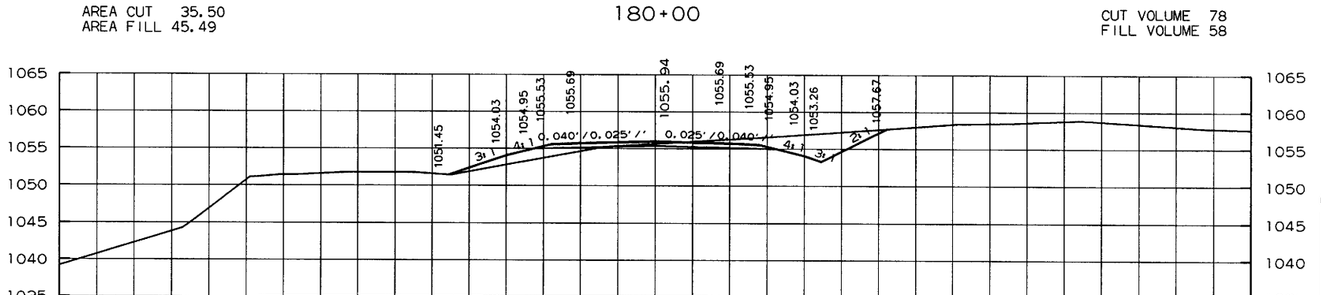
CUT VOLUME 95
FILL VOLUME 85



AREA CUT 35.50
AREA FILL 45.49

180+00

CUT VOLUME 78
FILL VOLUME 58



AREA CUT 49.12
AREA FILL 16.94

179+50

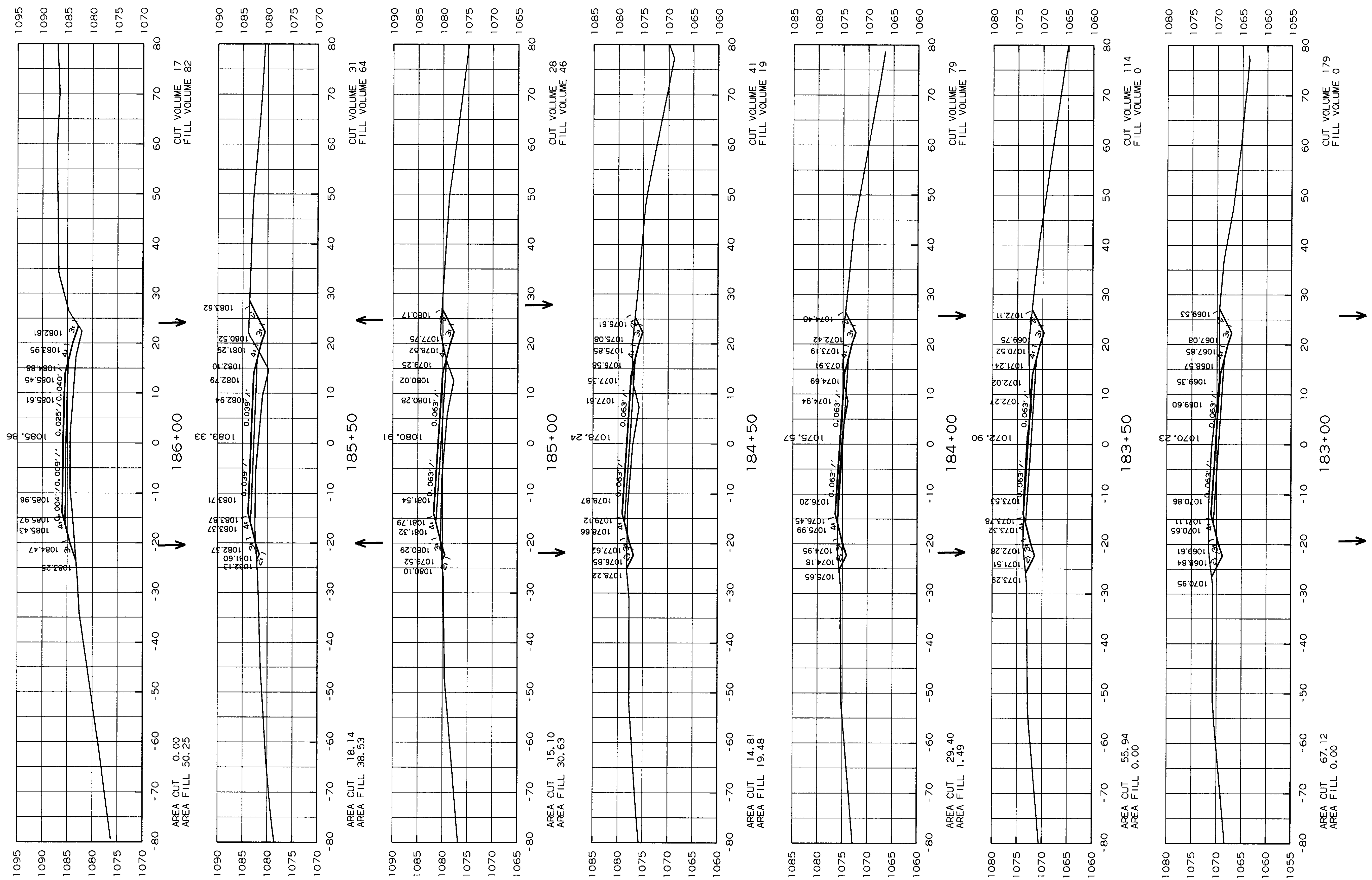
CUT VOLUME 170
FILL VOLUME 16

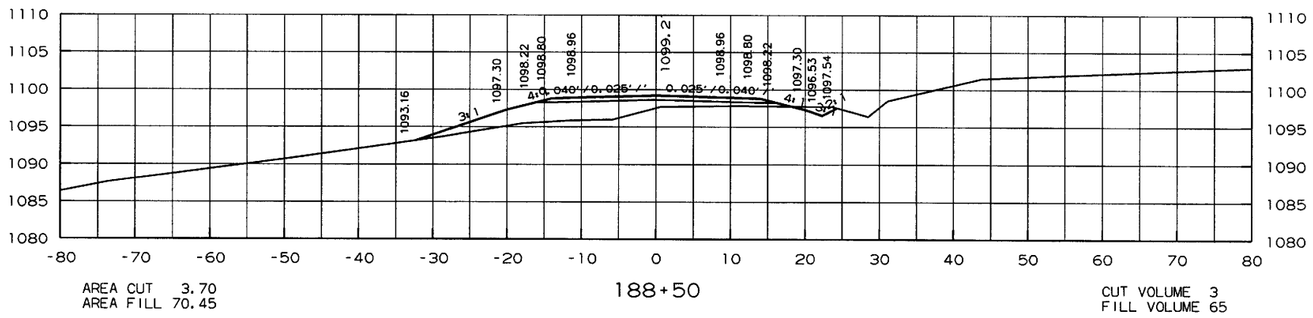
DATE REVISED	
DATE PLATED	
DATE REVISED	
DATE PLATED	
FED.ROAD DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA45(1)
SHEET NO.	56
TOTAL SHEETS	69

JOB NO.

STA. 179+50 TO STA. 182+50

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	57	69
				4	STA. 179+50 TO STA. 182+50			

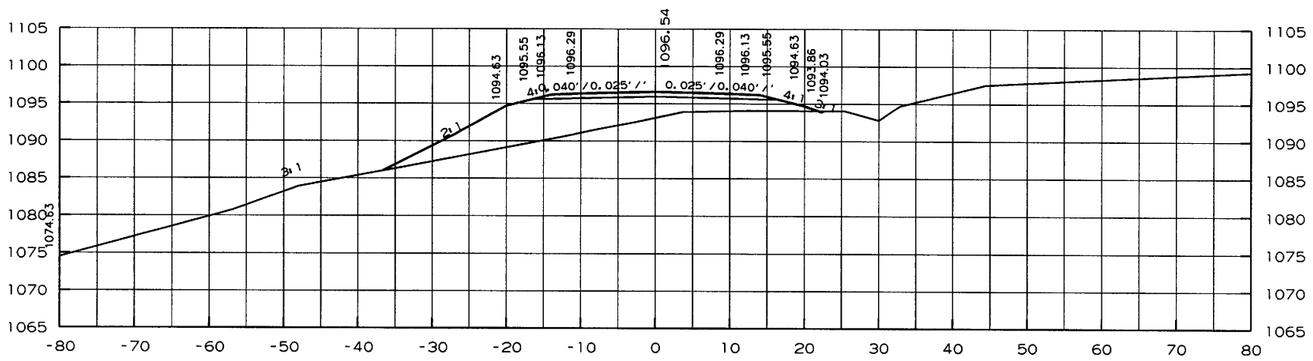




AREA CUT 3.70
AREA FILL 70.45

188+50

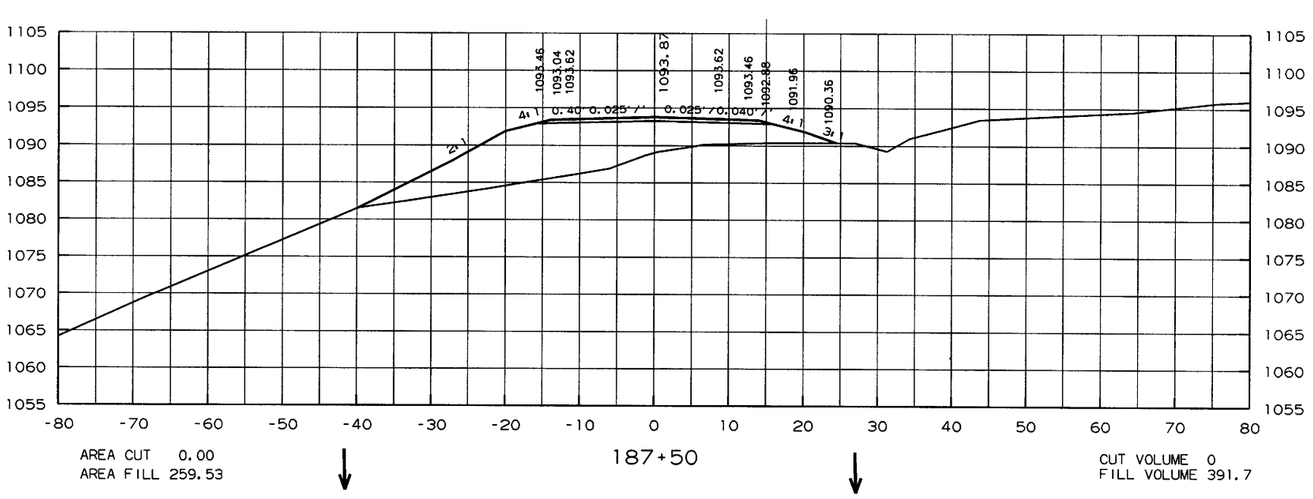
CUT VOLUME 3
FILL VOLUME 65



AREA CUT 0.00
AREA FILL 169.98

188+00

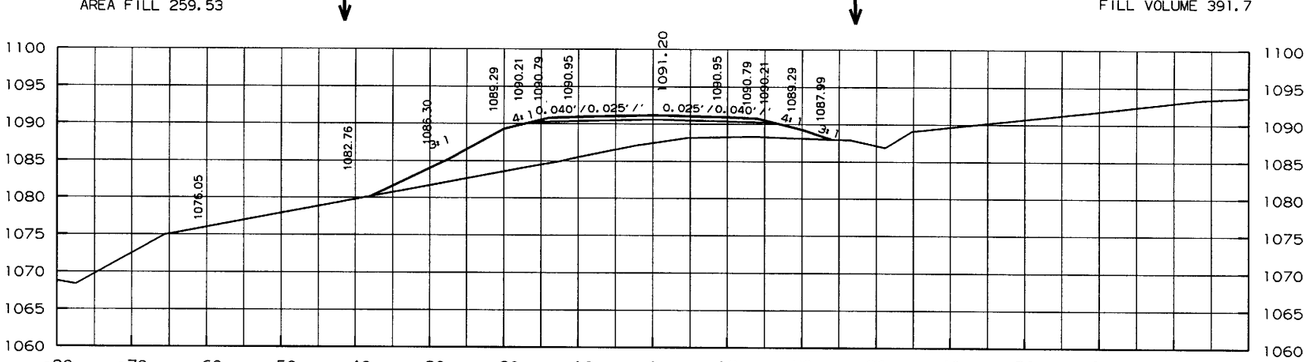
CUT VOLUME 0
FILL VOLUME 222.6



AREA CUT 0.00
AREA FILL 259.53

187+50

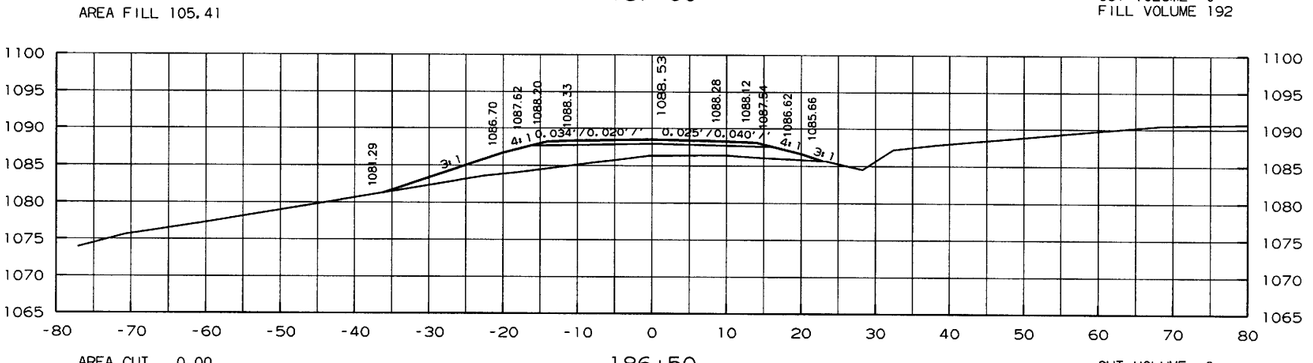
CUT VOLUME 0
FILL VOLUME 391.7



AREA CUT 0.00
AREA FILL 105.41

187+00

CUT VOLUME 0
FILL VOLUME 192



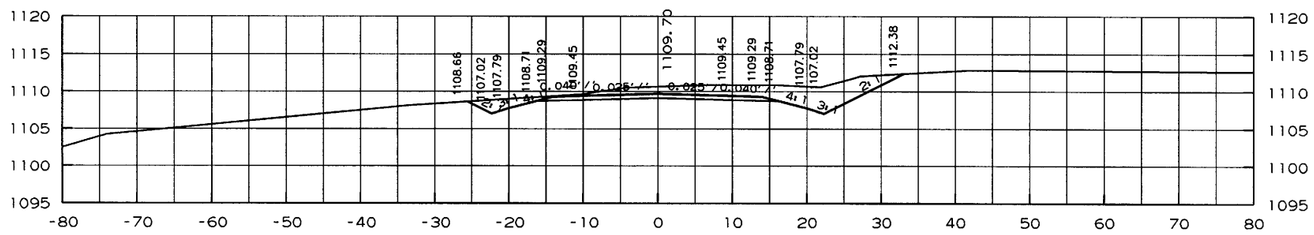
AREA CUT 0.00
AREA FILL 102.96

186+50

CUT VOLUME 0
FILL VOLUME 142

DATE REVISED	
DATE PLANS	
DATE REVISED	
DATE PLANS	
FED. ROAD DIST. NO.	6
STATE	ARK.
FED. AID PROJ. NO.	FA45(1)
SHEET NO.	58
TOTAL SHEETS	69

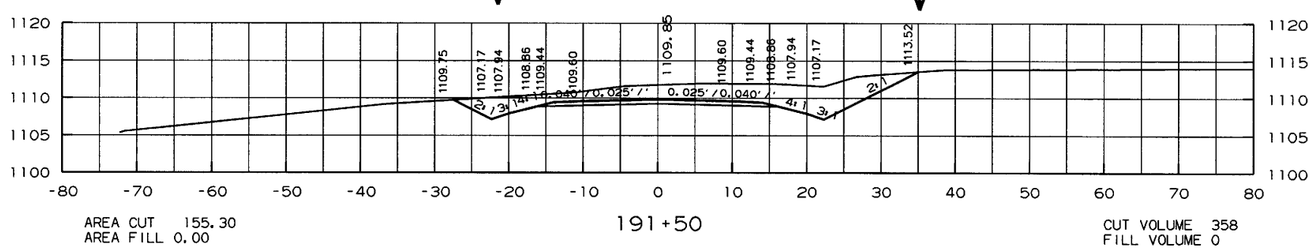
STA. 183+00 TO STA. 186+50



AREA CUT 97.81
AREA FILL 0.00

192+00

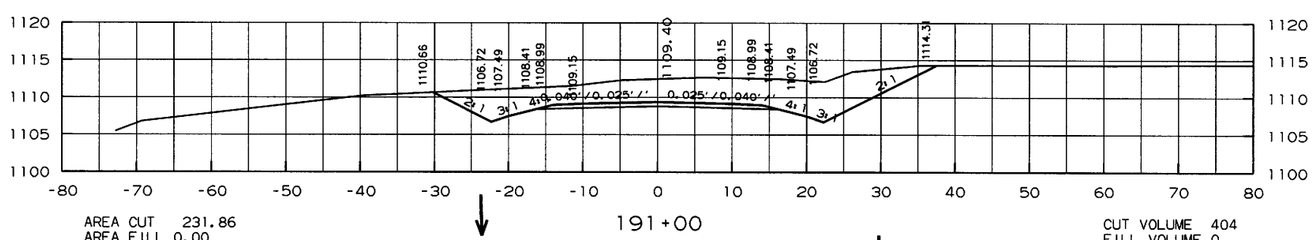
CUT VOLUME 234
FILL VOLUME 0



AREA CUT 155.30
AREA FILL 0.00

191+50

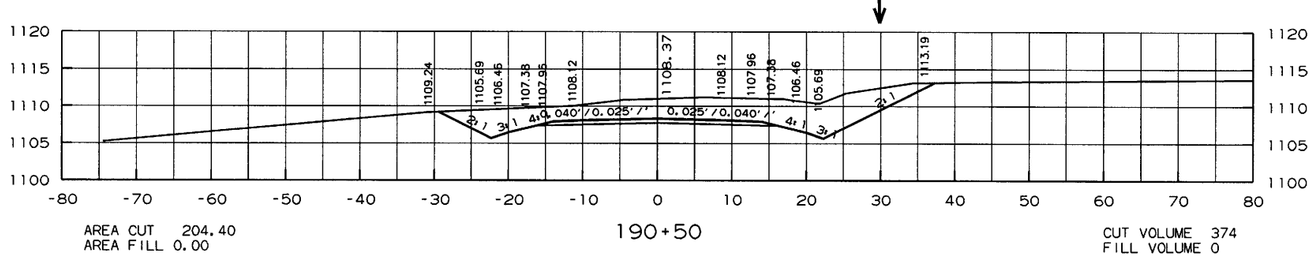
CUT VOLUME 358
FILL VOLUME 0



AREA CUT 231.86
AREA FILL 0.00

191+00

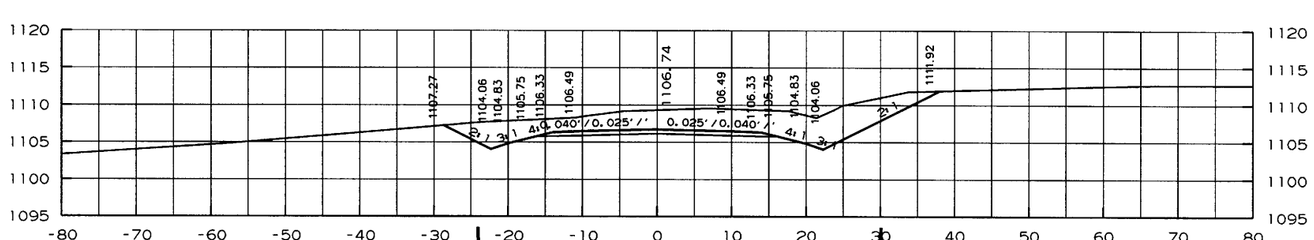
CUT VOLUME 404
FILL VOLUME 0



AREA CUT 204.40
AREA FILL 0.00

190+50

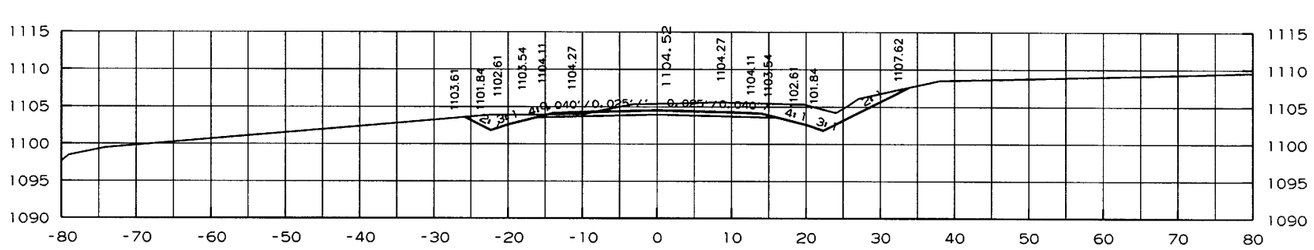
CUT VOLUME 374
FILL VOLUME 0



AREA CUT 199.42
AREA FILL 0.00

190+00

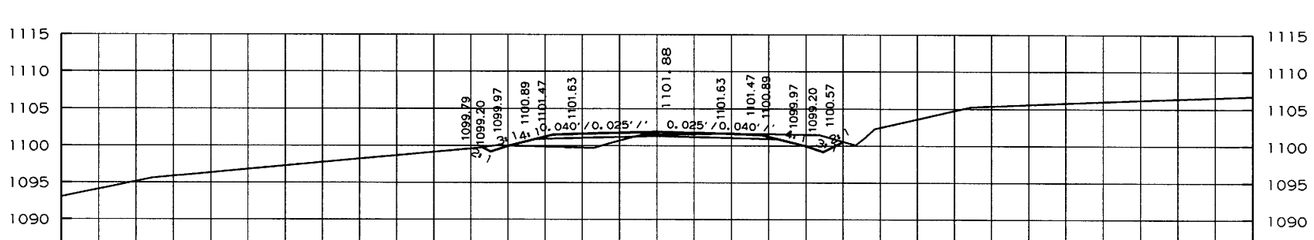
CUT VOLUME 261
FILL VOLUME 0



AREA CUT 82.14
AREA FILL 0.00

189+50

CUT VOLUME 96
FILL VOLUME 14



AREA CUT 21.36
AREA FILL 14.68

189+00

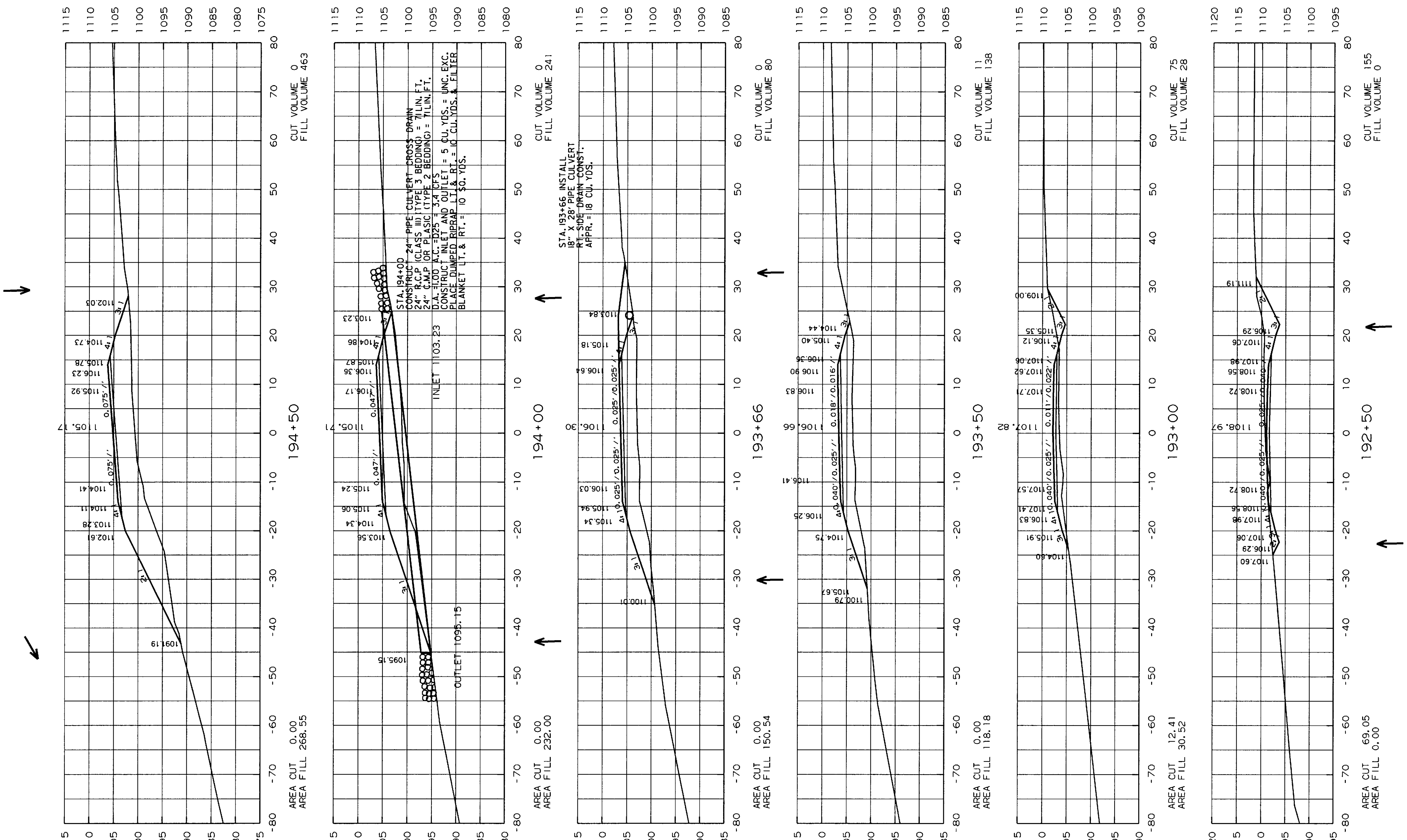
CUT VOLUME 23
FILL VOLUME 79

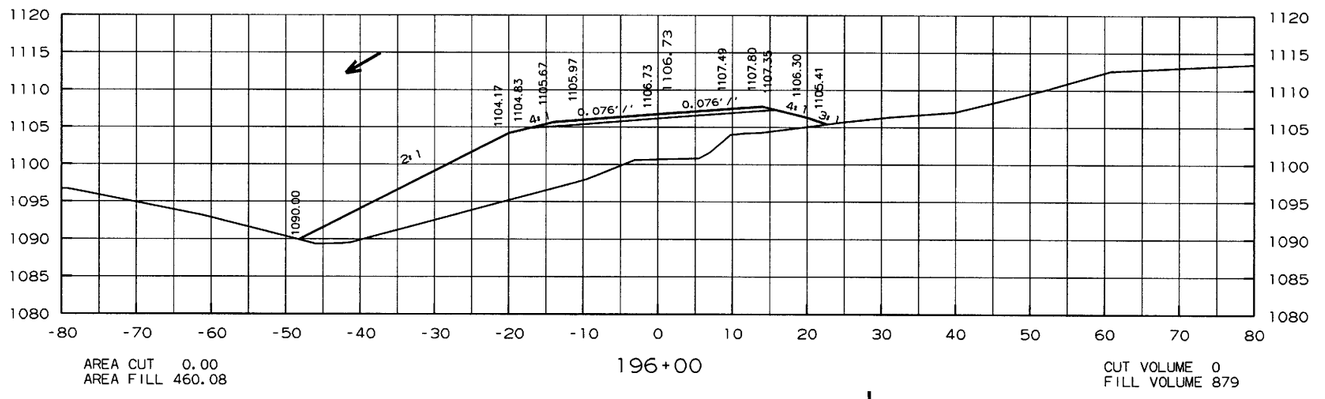
DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED	F.E.D.A.D. DIST. NO. 6
				JOB NO. STATE ARK.
				F.E.D.A.D. PROJ. NO. FA45(1)
				SHEET NO. 59
				TOTAL SHEETS 63

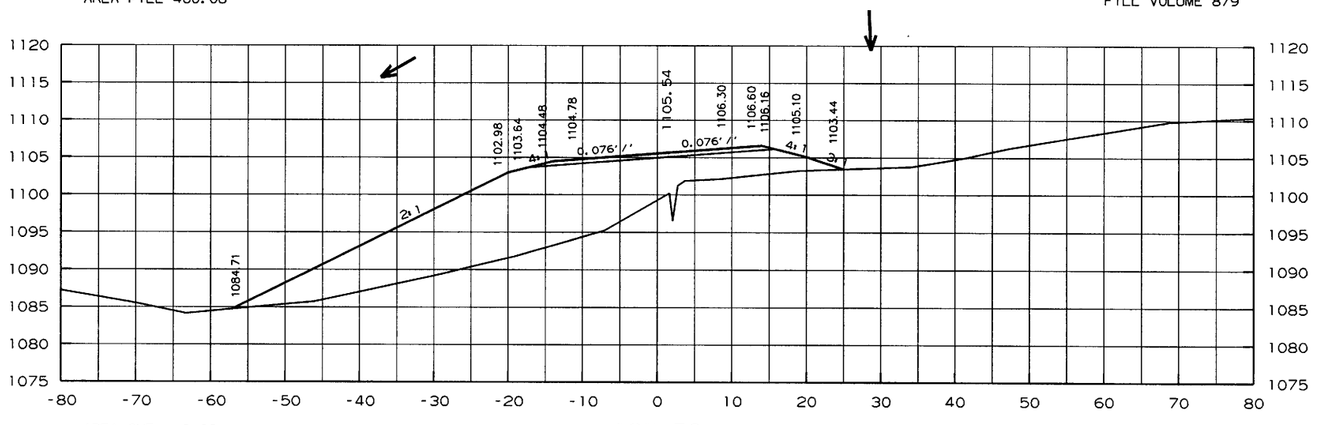
STA. 189+00 TO STA. 192+00

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.		FA4511	60	69

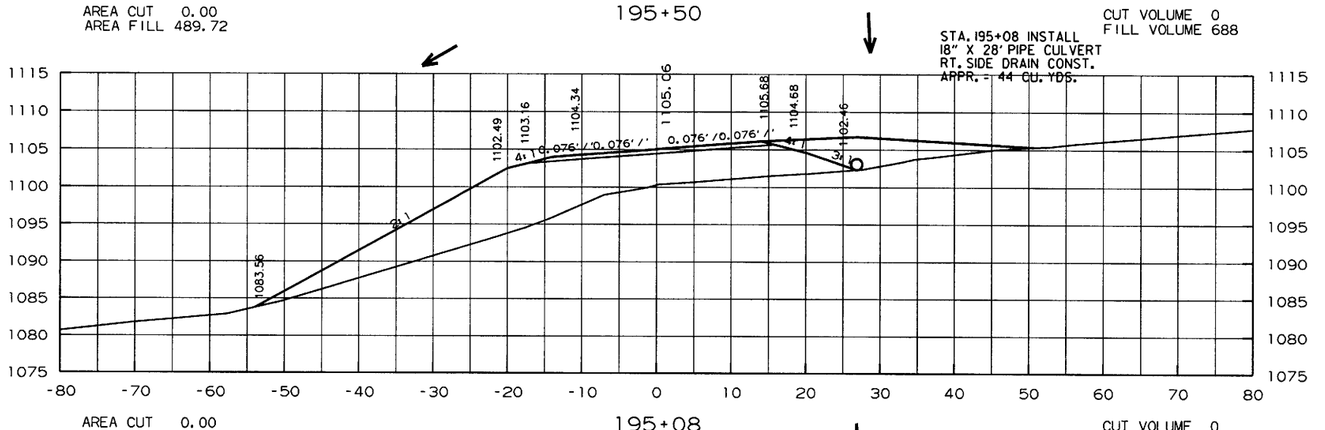
(4) STA. 192+50 TO STA. 194+50

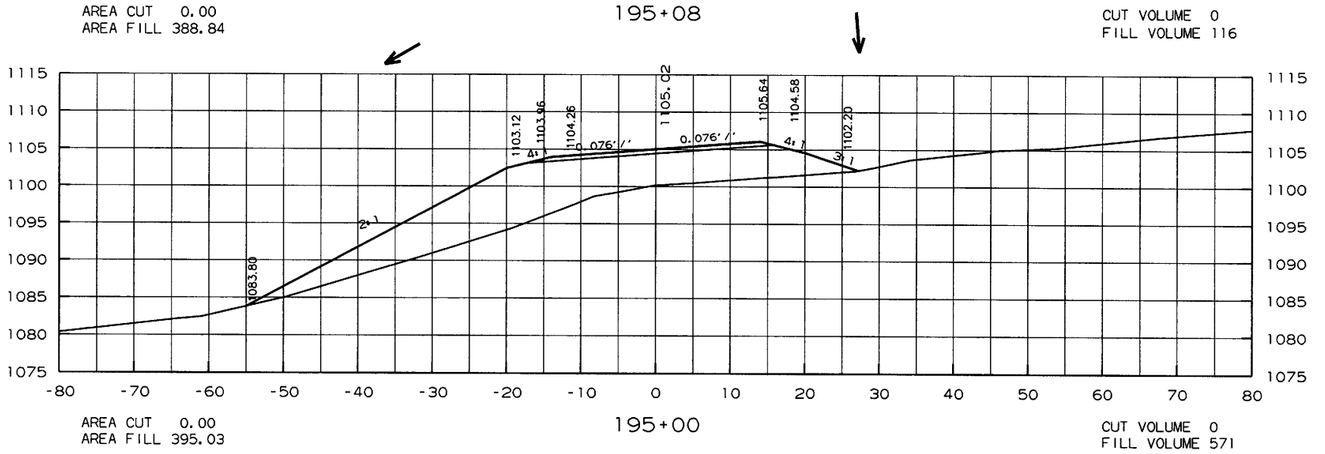


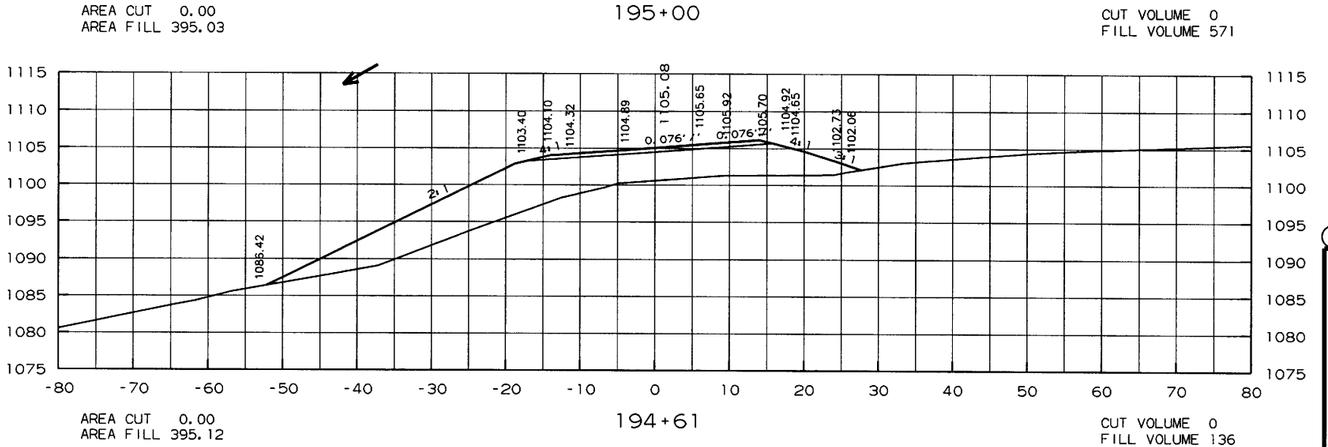




STA. 195+08 INSTALL
18" X 28' PIPE CULVERT
RT. SIDE DRAIN CONST.
APPR. - 44 CU. YDS.

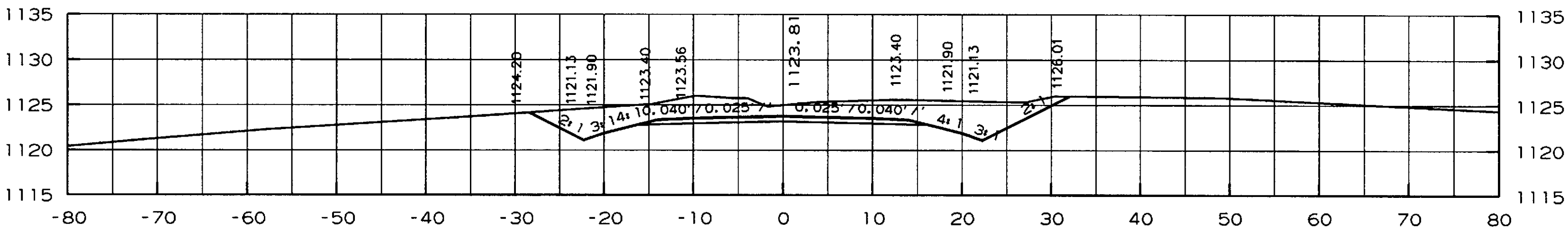






DATE REVISED	
DATE PLANS	
DATE ROW	
DATE PLANS	
FEDERAL OR STATE NO.	6
STATE	ARK.
JOB NO.	
FED.AID PROJ.NO.	FA45(1)
SHEET NO.	61
TOTAL SHEETS	63

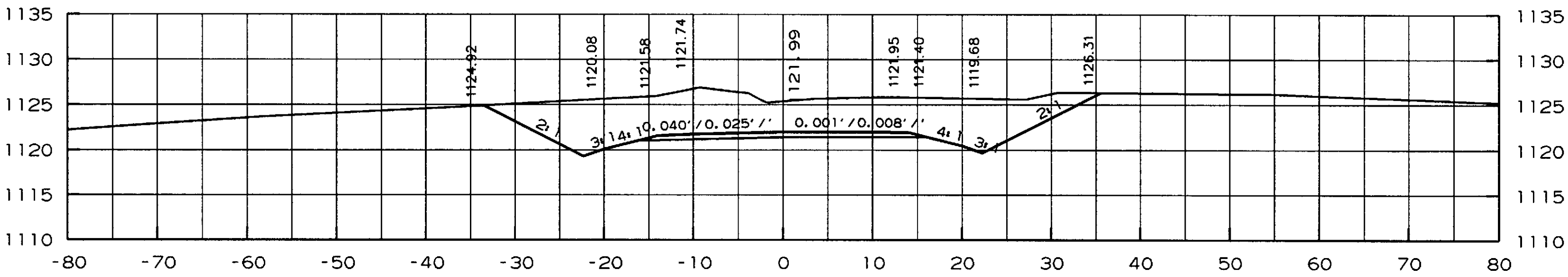
STA. 194+61 TO STA. 196+00



AREA CUT 148.00
AREA FILL 0.00

199+50

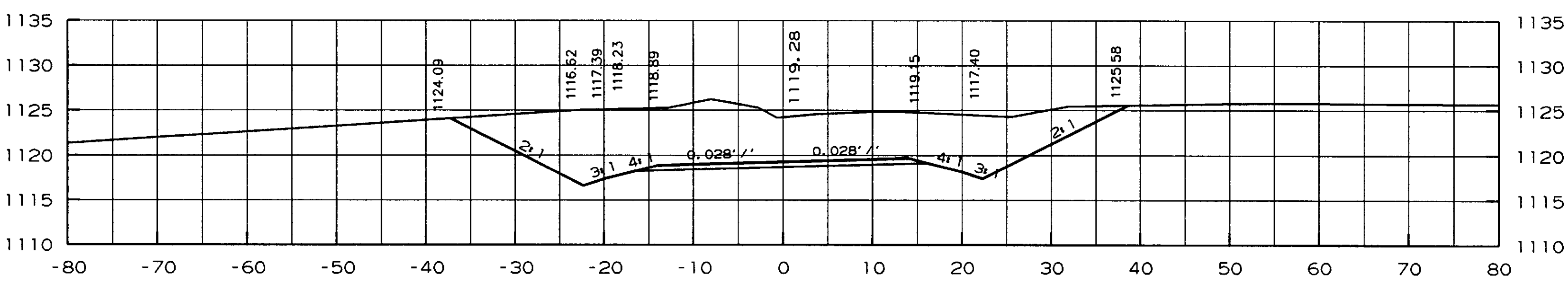
CUT VOLUME 405
FILL VOLUME 0



AREA CUT 289.57
AREA FILL 0.00

199+00

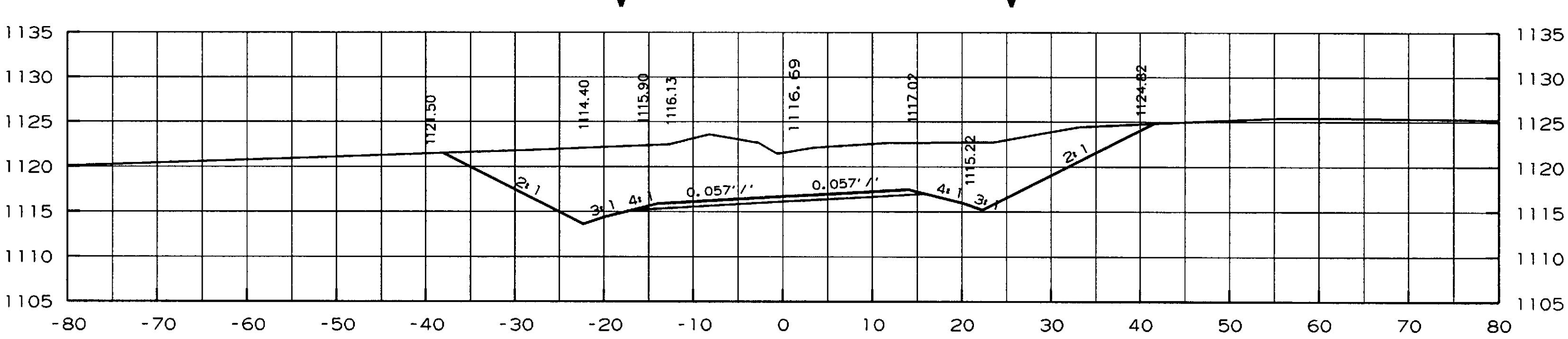
CUT VOLUME 649
FILL VOLUME 0



AREA CUT 411.52
AREA FILL 0.00

198+50

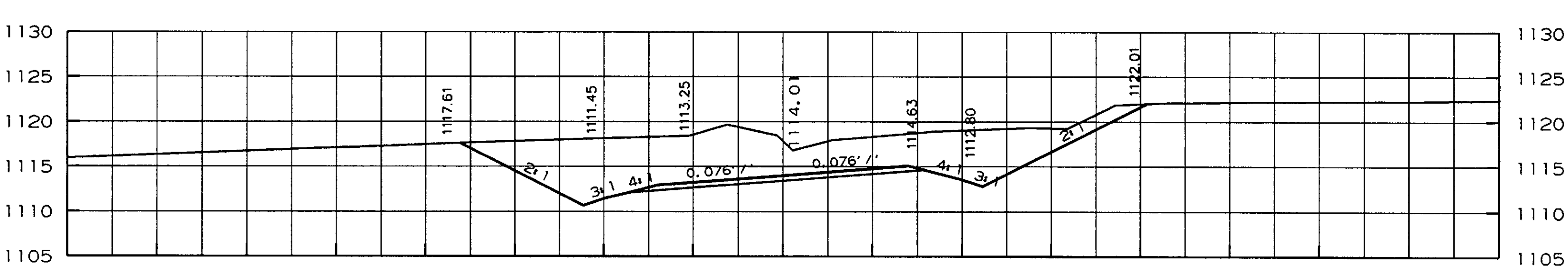
CUT VOLUME 787
FILL VOLUME 0



AREA CUT 437.96
AREA FILL 0.00

198+00

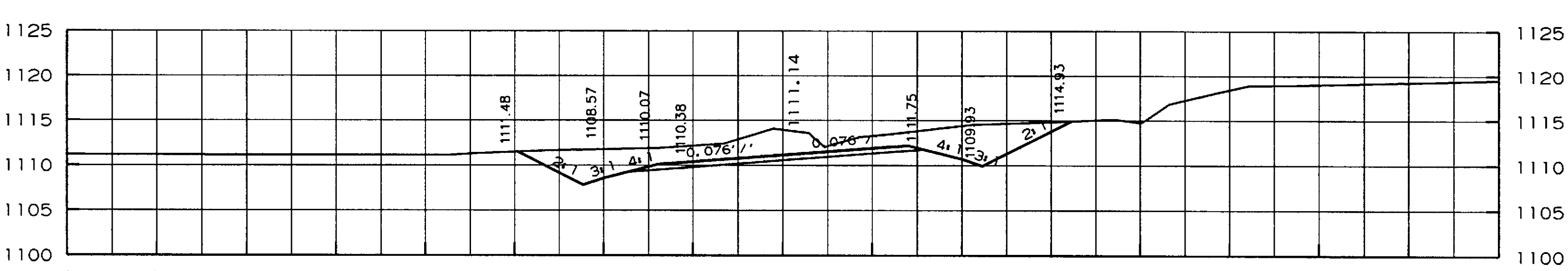
CUT VOLUME 716
FILL VOLUME 0



AREA CUT 335.30
AREA FILL 0.00

197+50

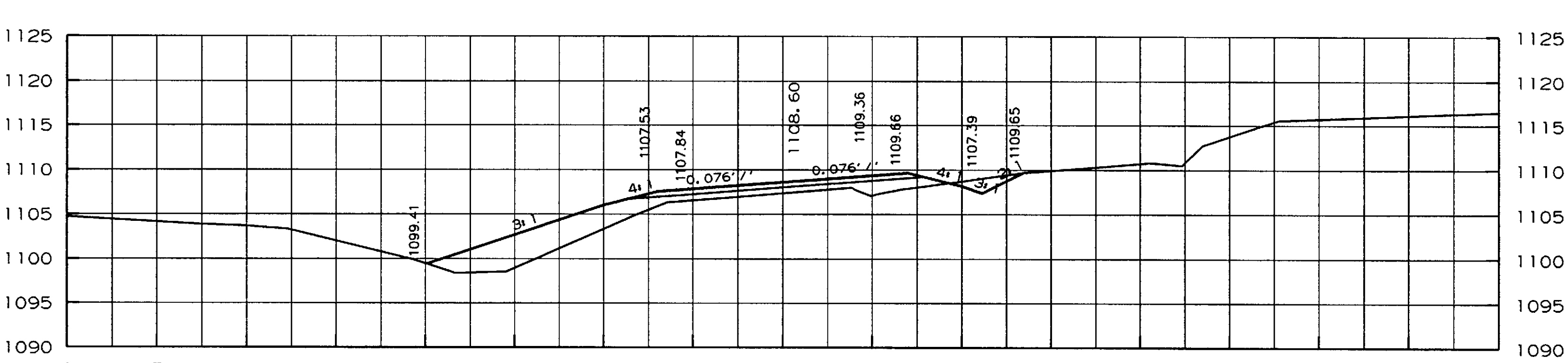
CUT VOLUME 454
FILL VOLUME 0



AREA CUT 154.52
AREA FILL 0.00

197+00

CUT VOLUME 149
FILL VOLUME 88



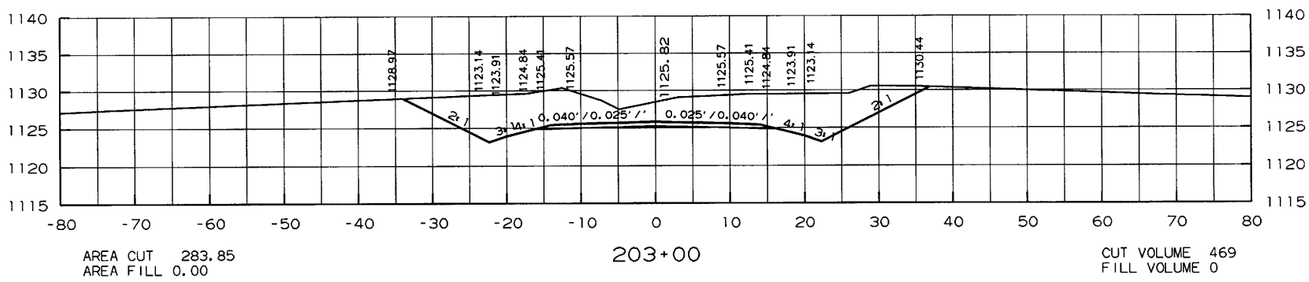
AREA CUT 6.57
AREA FILL 94.79

196+50

CUT VOLUME 6
FILL VOLUME 516

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	62	69

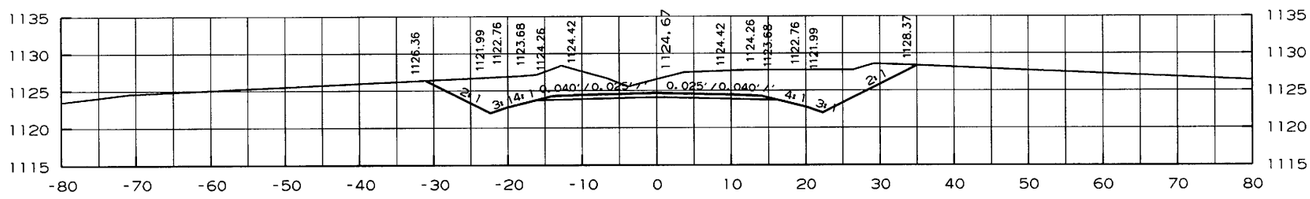
(4) STA. 196+50 TO STA. 199+50



AREA CUT 283.85
AREA FILL 0.00

203+00

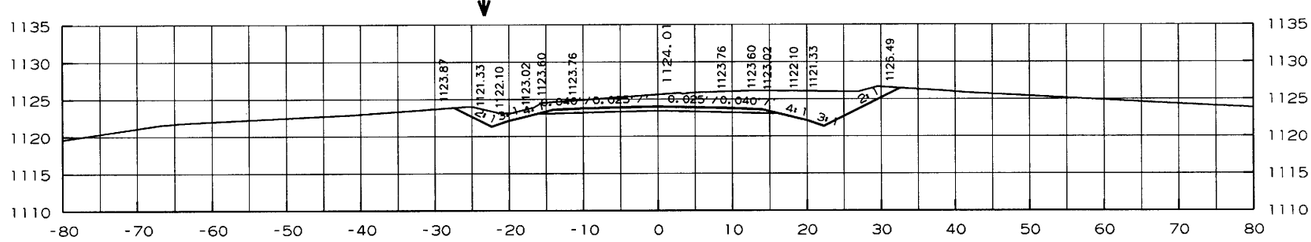
CUT VOLUME 469
FILL VOLUME 0



AREA CUT 222.31
AREA FILL 0.00

202+50

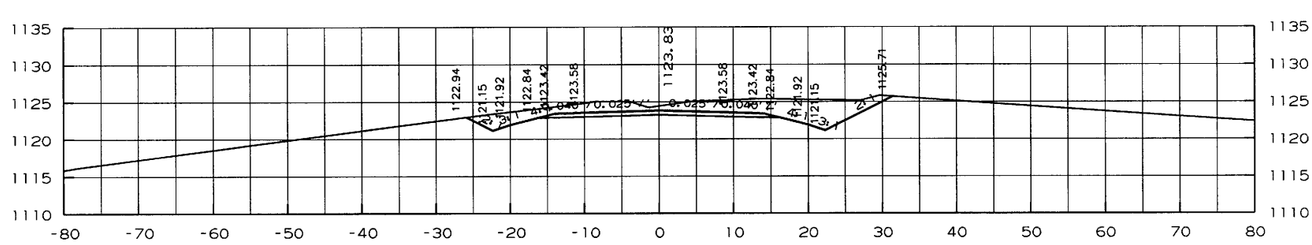
CUT VOLUME 330
FILL VOLUME 0



AREA CUT 134.52
AREA FILL 0.00

202+00

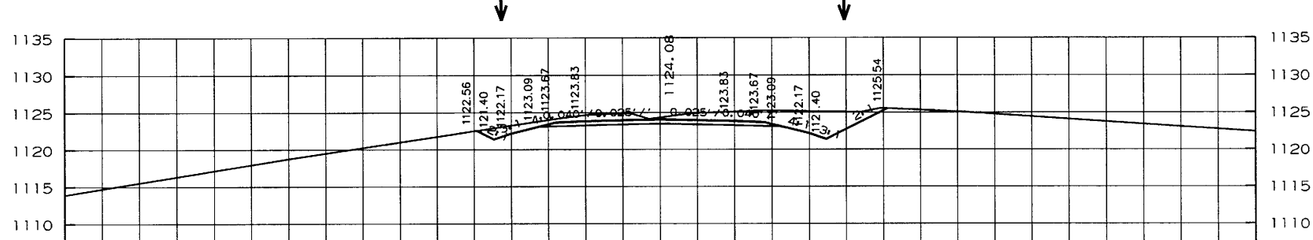
CUT VOLUME 228
FILL VOLUME 0



AREA CUT 111.79
AREA FILL 0.00

201+50

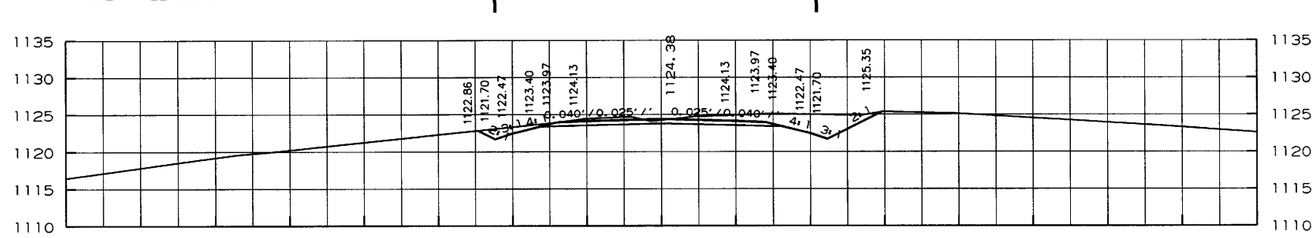
CUT VOLUME 183
FILL VOLUME 0



AREA CUT 86.36
AREA FILL 0.00

201+00

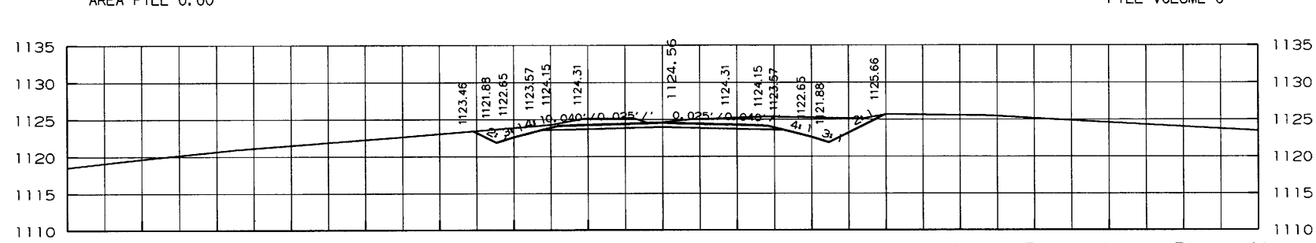
CUT VOLUME 139
FILL VOLUME 0



AREA CUT 63.25
AREA FILL 0.00

200+50

CUT VOLUME 129
FILL VOLUME 0



AREA CUT 75.62
AREA FILL 0.00

200+00

CUT VOLUME 207
FILL VOLUME 0

DATE REVISED	DATE PLANED	DATE REVISED	DATE PLANED	FEDERAL DES. NO.	STATE	FEDERAL PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		63	69

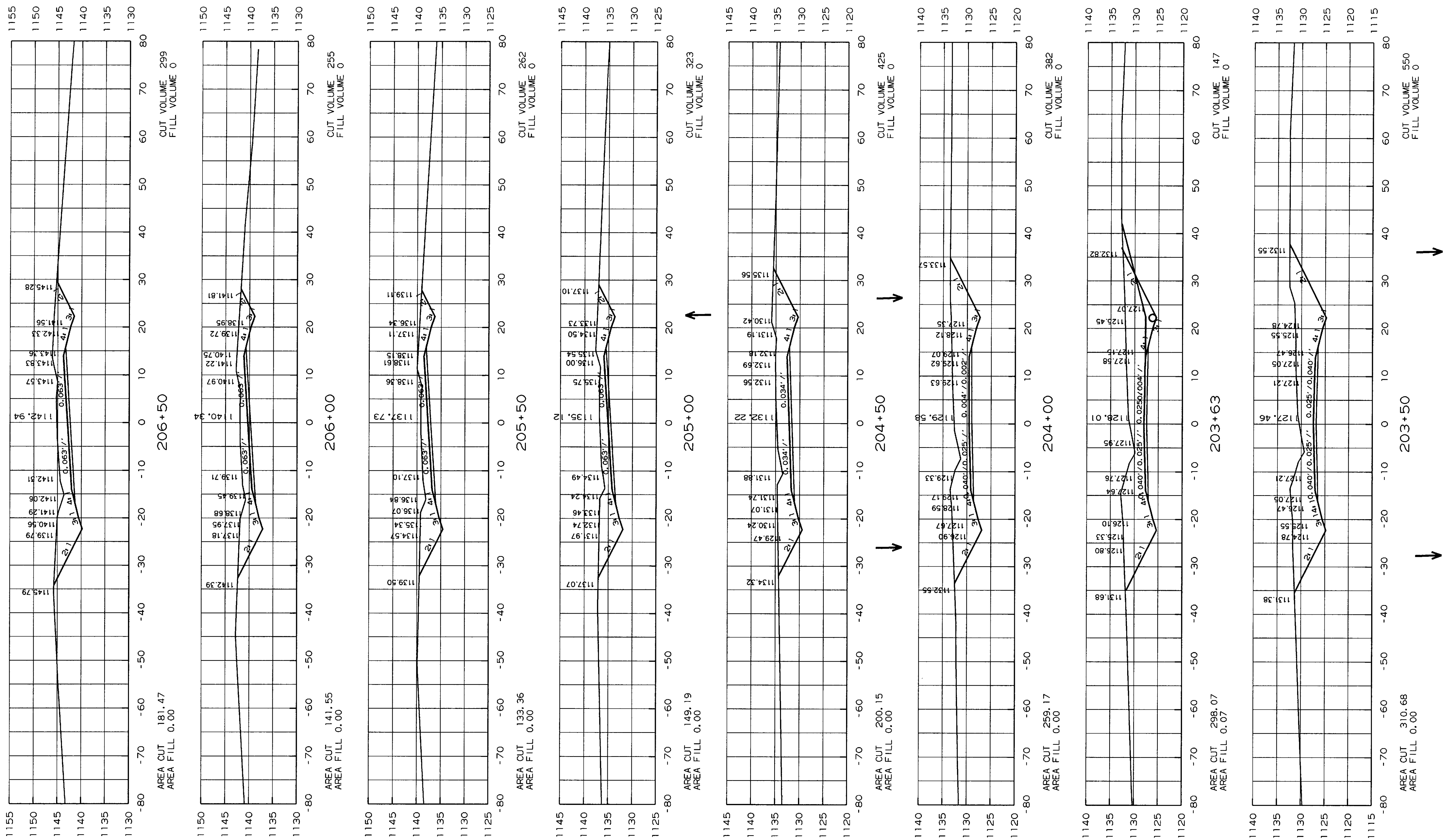
JOB NO.

STA. 200+00 TO STA. 203+00

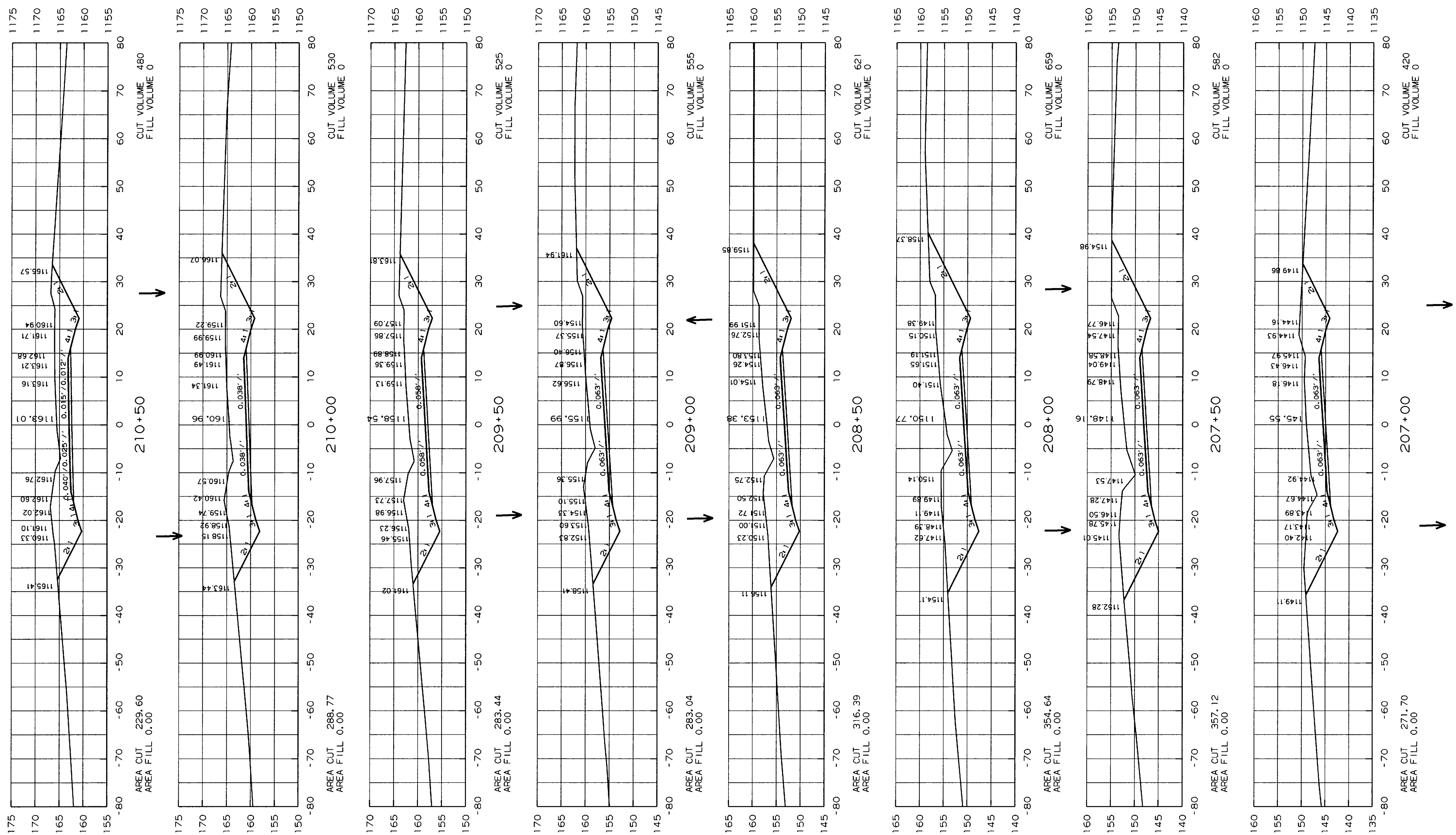
4

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	64	69

(4) STA. 203+50 TO STA. 206+50

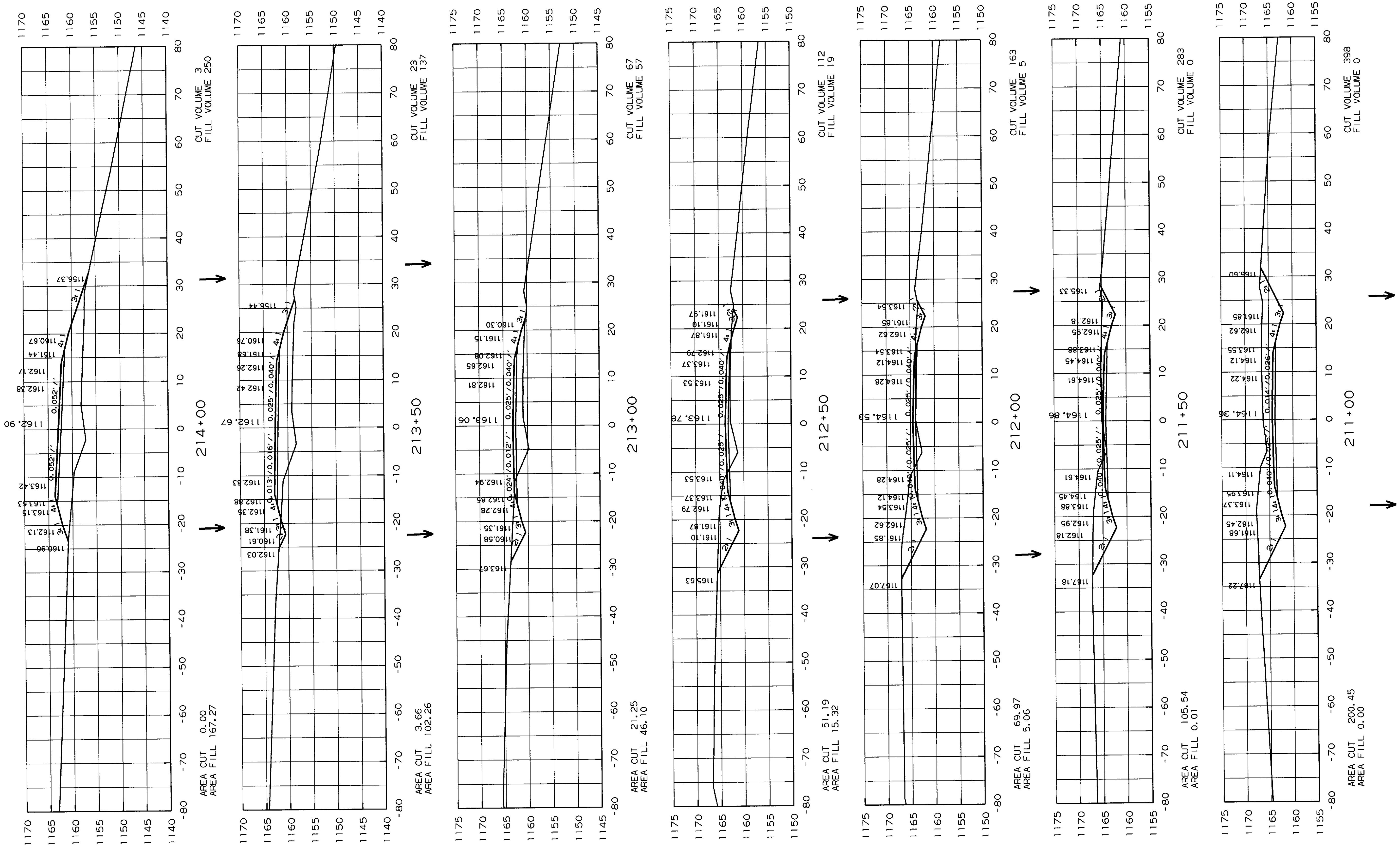


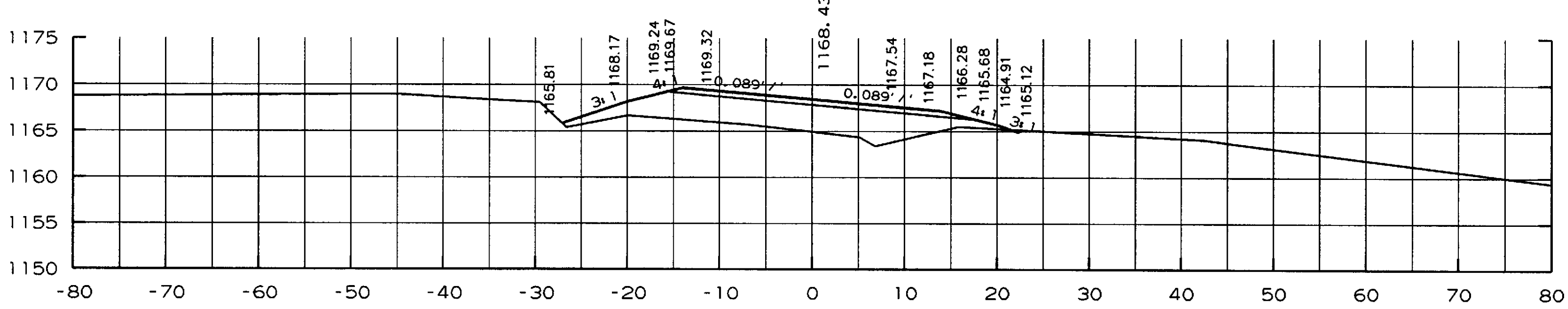
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	65	69
				(4)	STA. 207+00 TO STA. 210+50			



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA4511	66	69

4 STA. 211+00 TO STA. 214+00

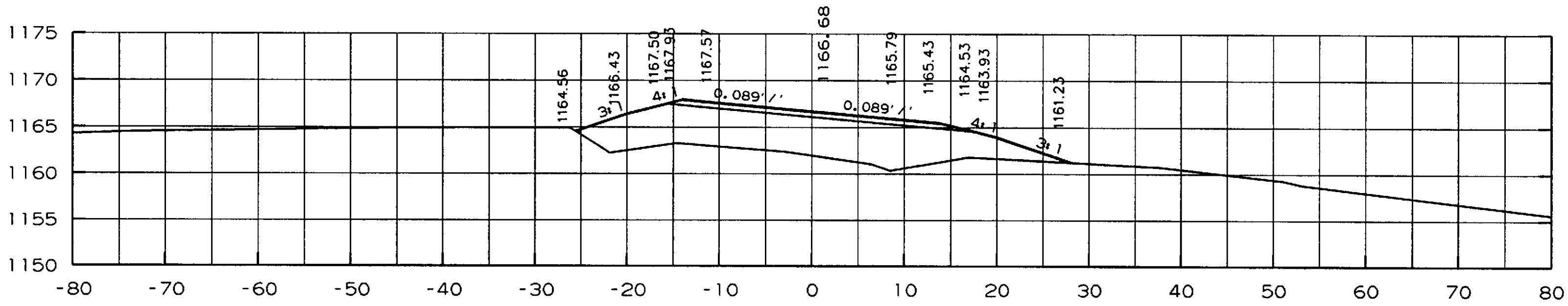




AREA CUT 0.15
AREA FILL 107.22

216+50

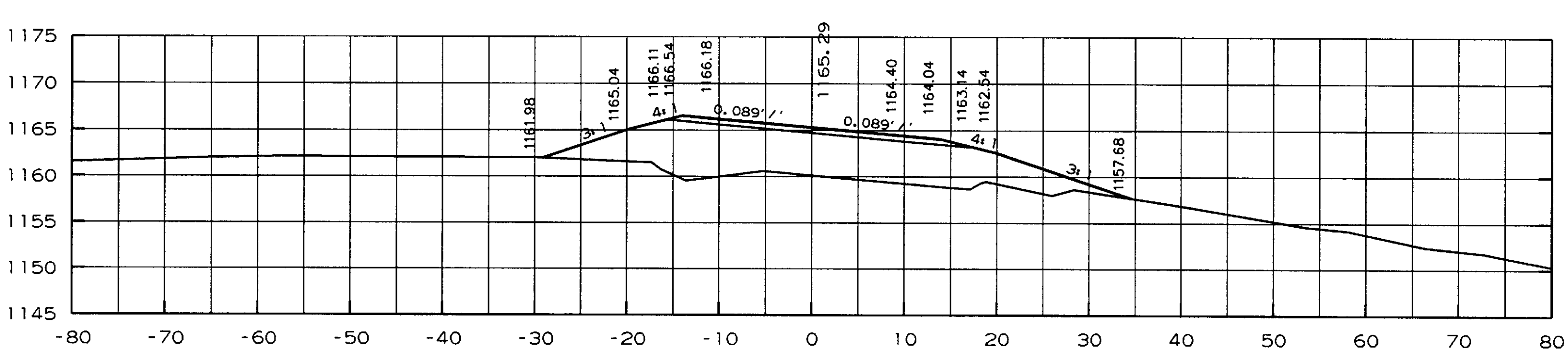
CUT VOLUME 0
FILL VOLUME 268



AREA CUT 0.00
AREA FILL 182.57

216+00

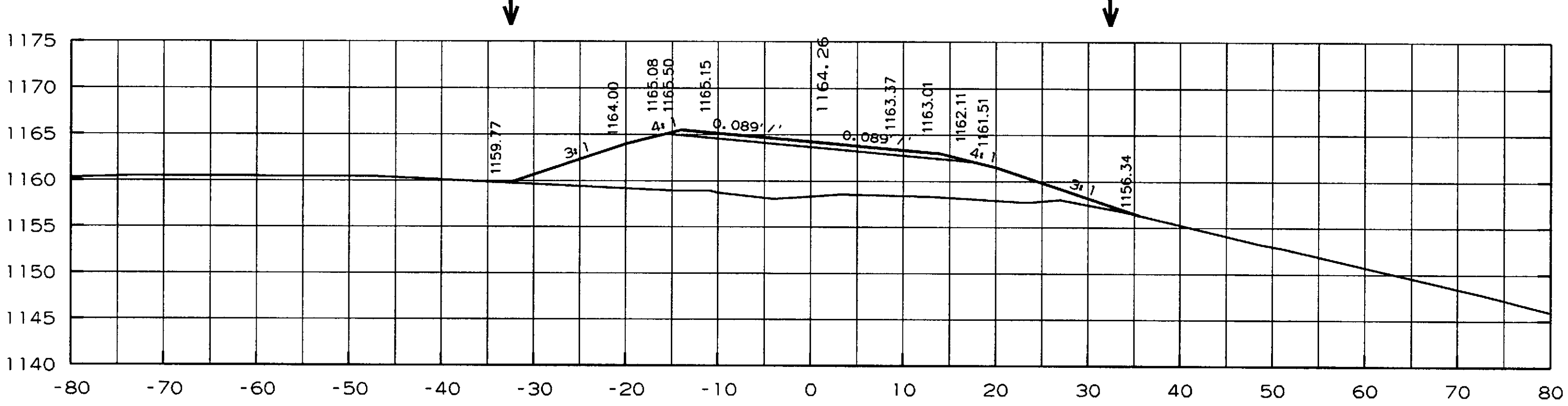
CUT VOLUME 0
FILL VOLUME 383



AREA CUT 0.00
AREA FILL 231.11

215+50

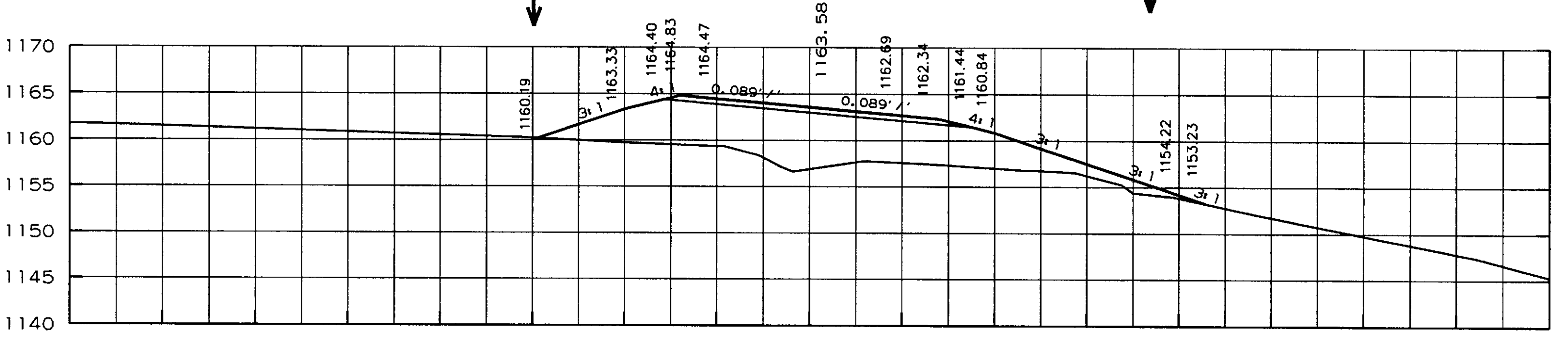
CUT VOLUME 0
FILL VOLUME 452



AREA CUT 0.00
AREA FILL 257.14

215+00

CUT VOLUME 0
FILL VOLUME 465

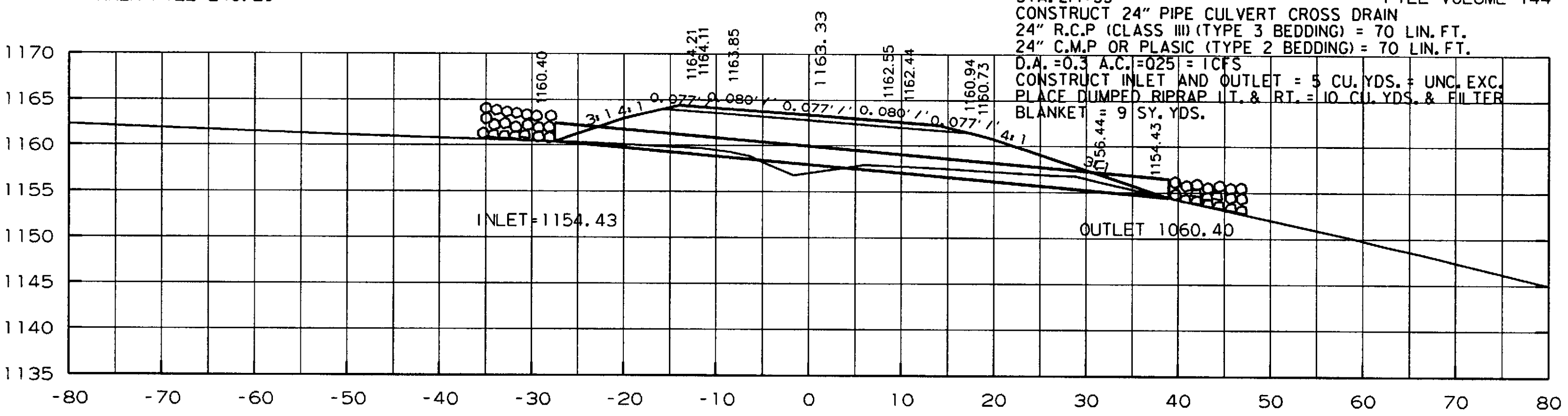


AREA CUT 0.00
AREA FILL 245.29

214+50

CUT VOLUME 0
FILL VOLUME 144

STA. 214+33
CONSTRUCT 24" PIPE CULVERT CROSS DRAIN
24" R.C.P (CLASS III) (TYPE 3 BEDDING) = 70 LIN. FT.
24" C.M.P OR PLASIC (TYPE 2 BEDDING) = 70 LIN. FT.
D.A. =0.3 A.C. =025 = 1CFS
CONSTRUCT INLET AND OUTLET = 5 CU. YDS. ± UNC. EXC.
PLACE DUMPED RIPRAP LT. & RT. = 10 CU. YDS. & FILTER BLANKET = 9 SY. YDS.

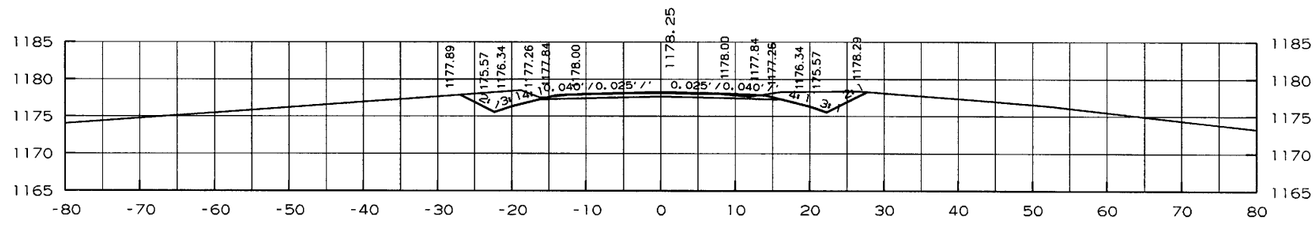


AREA CUT 0.00
AREA FILL 212.90

214+33

CUT VOLUME 0
FILL VOLUME 232

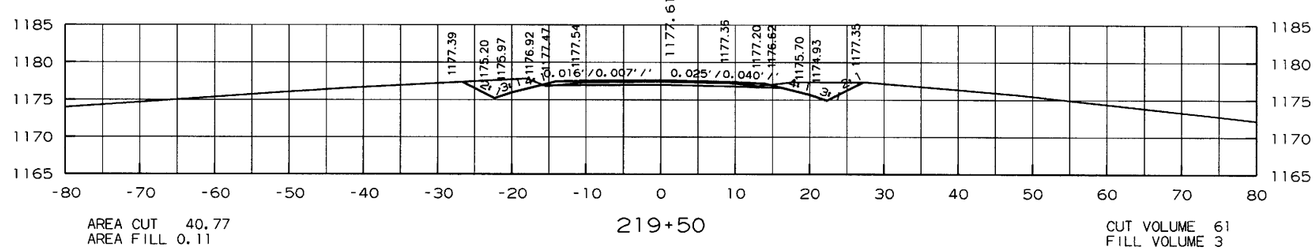
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA45II	67	69
				(4)	STA. 214+33 TO STA. 216+50			



AREA CUT 51.61
AREA FILL 0.00

220+00

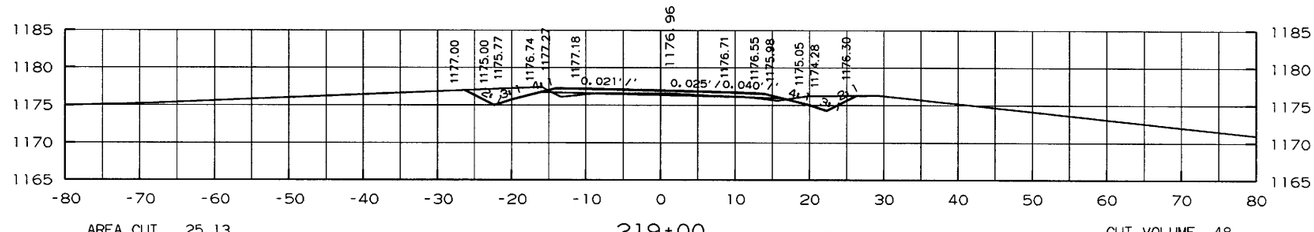
CUT VOLUME 86
FILL VOLUME 0



AREA CUT 40.77
AREA FILL 0.11

219+50

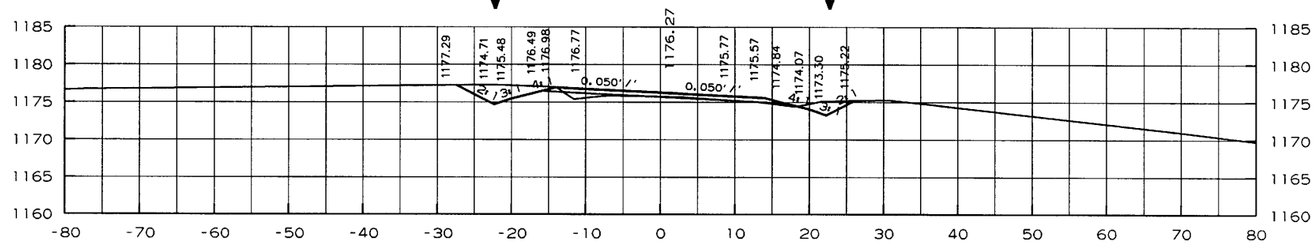
CUT VOLUME 61
FILL VOLUME 3



AREA CUT 25.13
AREA FILL 2.65

219+00

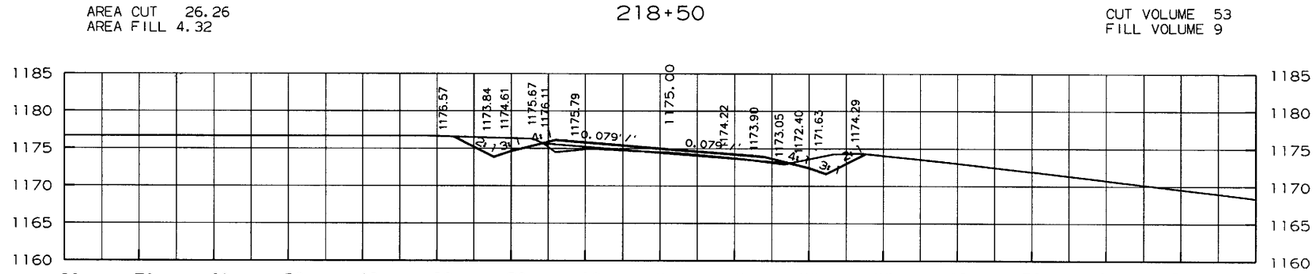
CUT VOLUME 48
FILL VOLUME 6



AREA CUT 26.26
AREA FILL 4.32

218+50

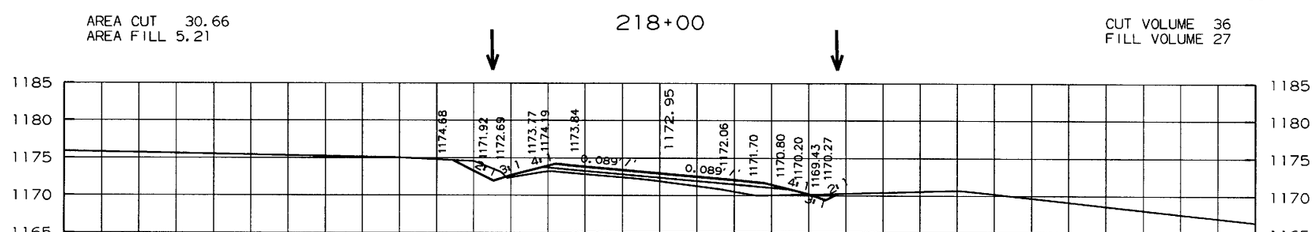
CUT VOLUME 53
FILL VOLUME 9



AREA CUT 30.66
AREA FILL 5.21

218+00

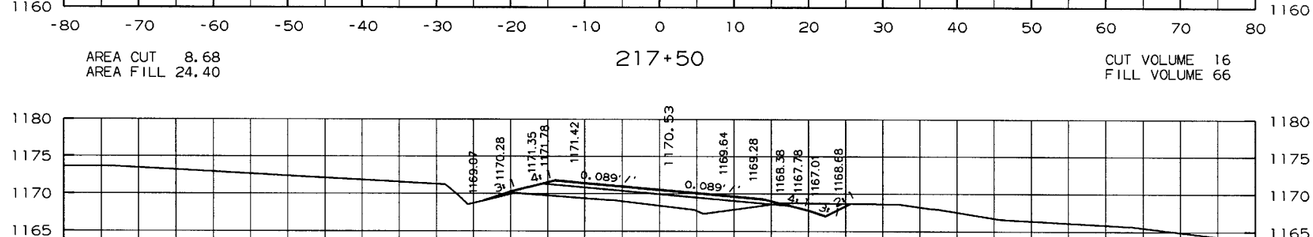
CUT VOLUME 36
FILL VOLUME 27



AREA CUT 8.68
AREA FILL 24.40

217+50

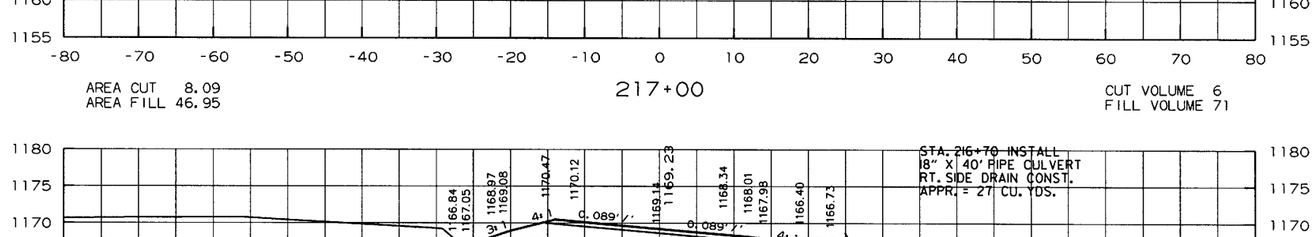
CUT VOLUME 16
FILL VOLUME 66



AREA CUT 8.09
AREA FILL 46.95

217+00

CUT VOLUME 6
FILL VOLUME 71



AREA CUT 3.09
AREA FILL 81.38

216+70

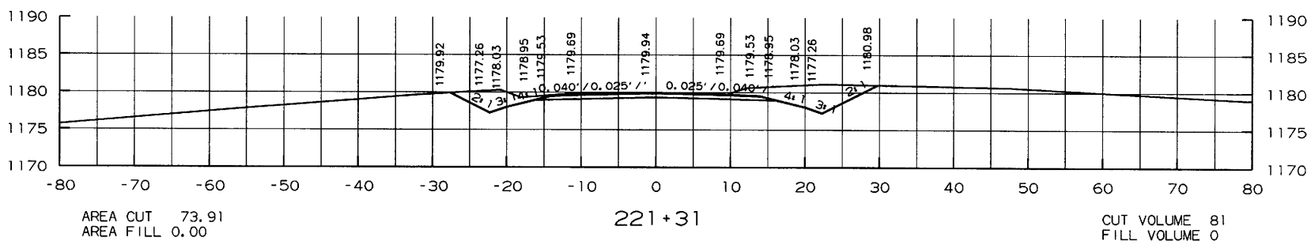
CUT VOLUME 1
FILL VOLUME 70

DATE REVISED	
DATE FILMED	
DATE REVISED	
DATE FILMED	
FED.ROAD DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	F445(1)
SHEET NO.	68
TOTAL SHEETS	69

JOB NO.

STA. 216+70 TO STA. 220+00

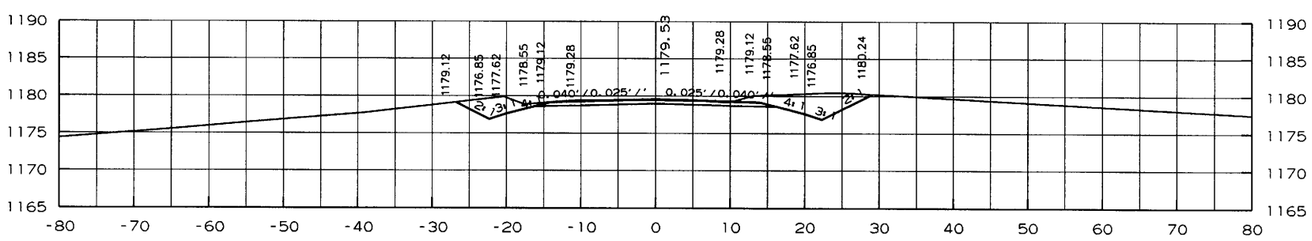
END JOB FA4511



AREA CUT 73.91
AREA FILL 0.00

221+31

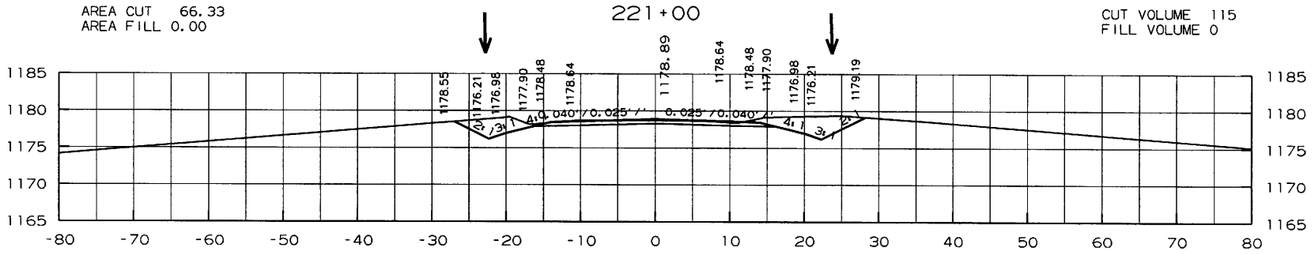
CUT VOLUME 81
FILL VOLUME 0



AREA CUT 66.33
AREA FILL 0.00

221+00

CUT VOLUME 115
FILL VOLUME 0



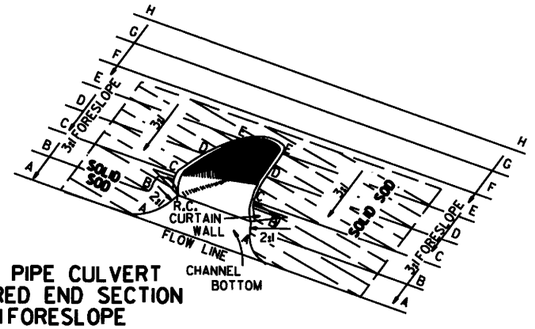
AREA CUT 58.28
AREA FILL 0.00

220+50

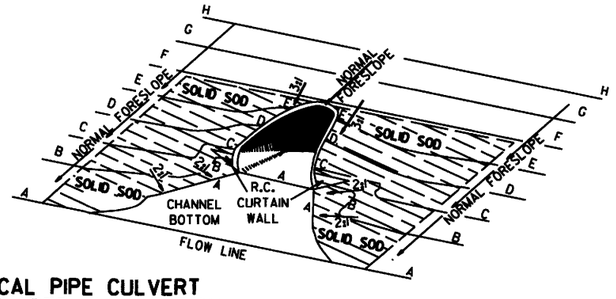
CUT VOLUME 102
FILL VOLUME 0

DATE REVISED	
DATE PLANS	
DATE REVISED	
DATE PLANS	
FED.RD. DIST. NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA45(1)
SHEET NO.	69
TOTAL SHEETS	69
JOB NO.	

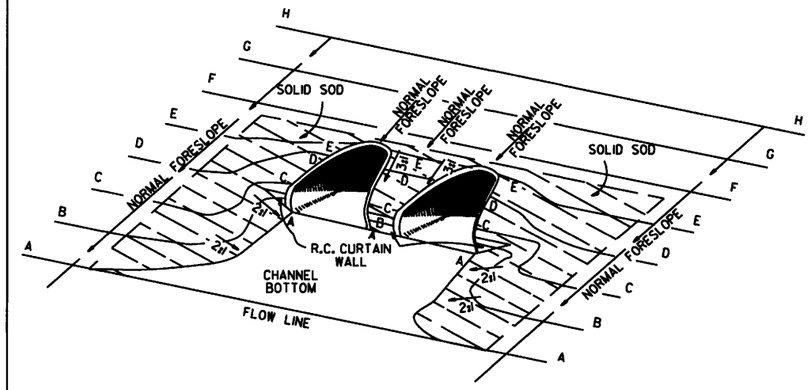
STA. 219+50 TO STA. 221+31



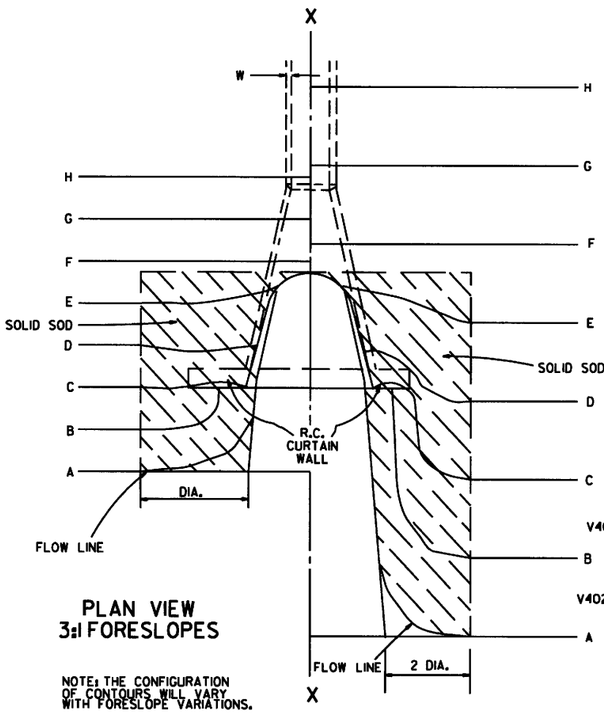
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

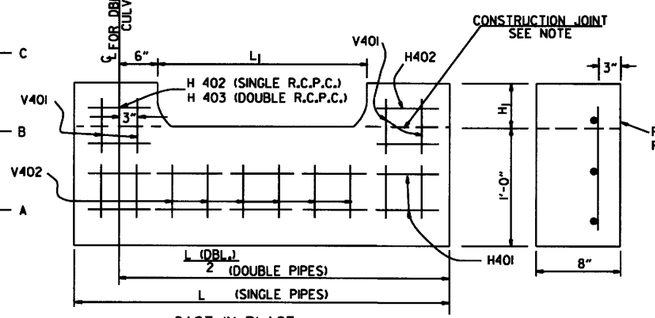
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-1½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"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

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

REINFORCING STEEL SCHEDULE

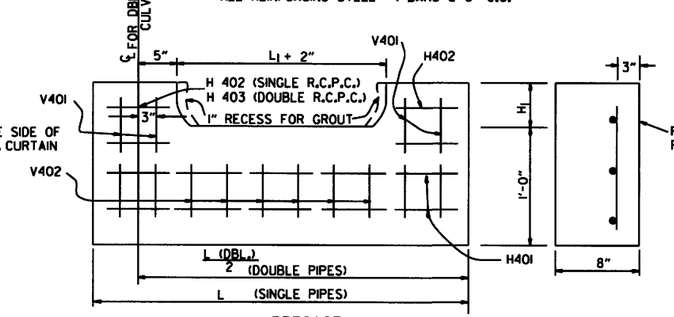
PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"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

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



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

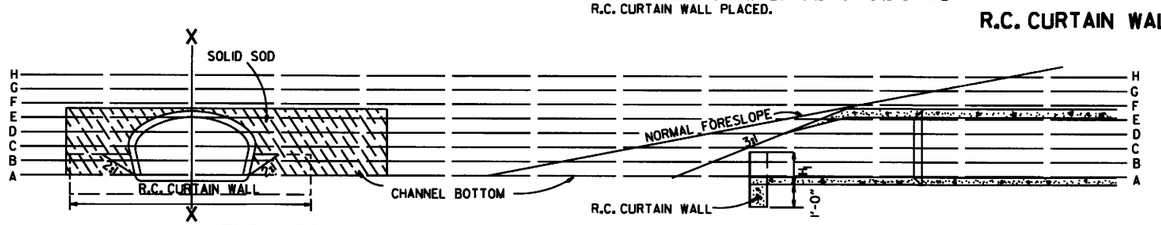
SOLID SODDING

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

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

GENERAL NOTES

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



END VIEW

SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

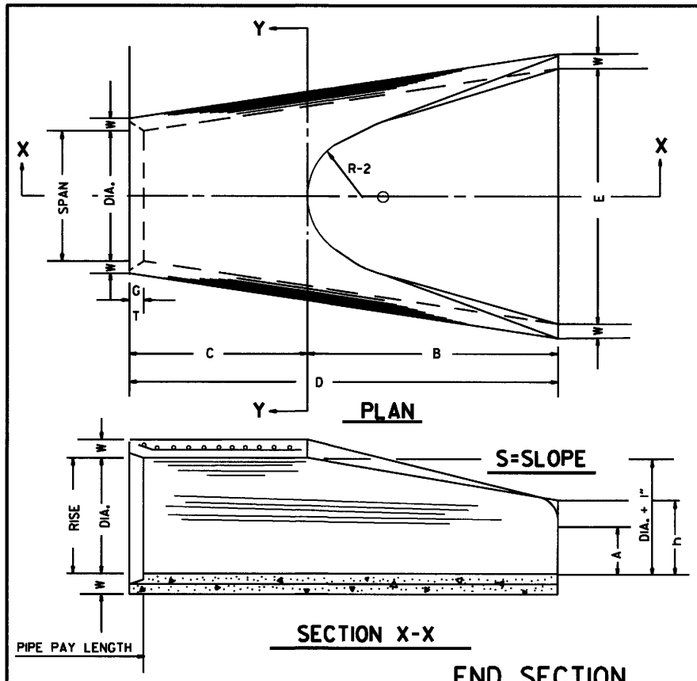
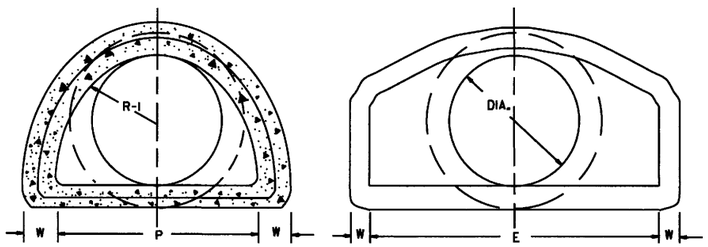


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33¾"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77⅞"	38⅝"	24"	5"	13250	4'-6"



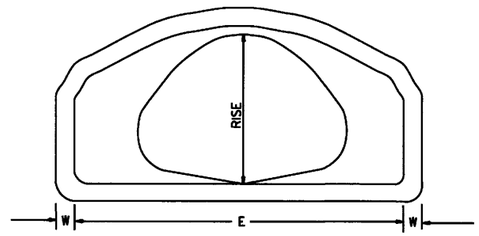
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

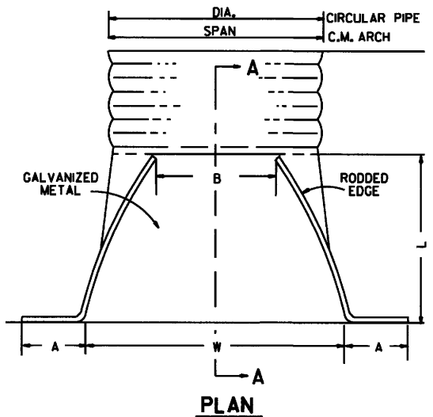
ARCH PIPE

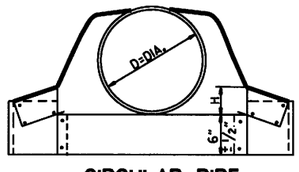
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¼"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2½:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅛"	24"	5"	2½:1

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



END VIEW
CONCRETE ARCH PIPE

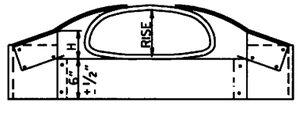




CIRCULAR PIPE

CIRCULAR PIPE

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



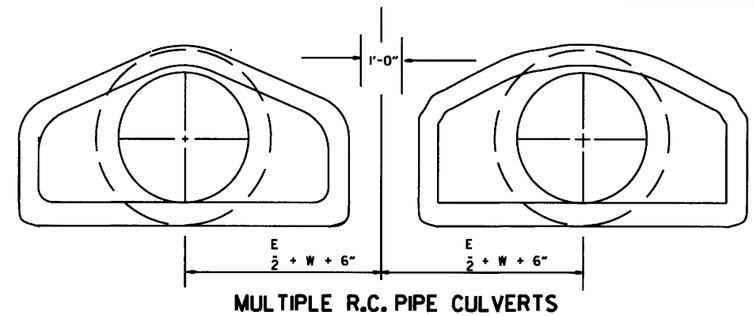
C.M. ARCH PIPE

C.M. ARCH PIPE

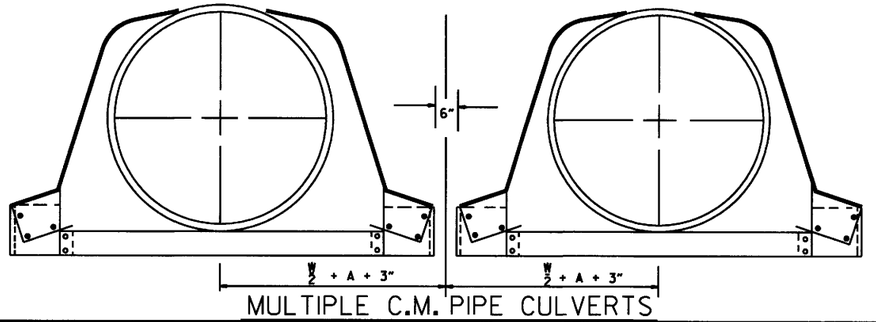
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12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

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



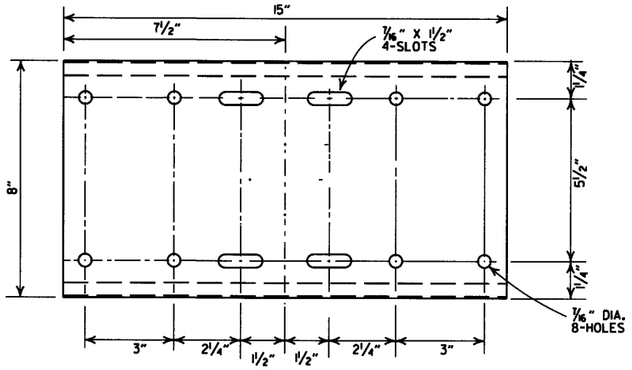
MULTIPLE C.M. PIPE CULVERTS

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

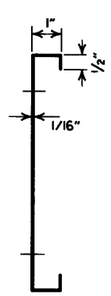
ARKANSAS STATE HIGHWAY COMMISSION

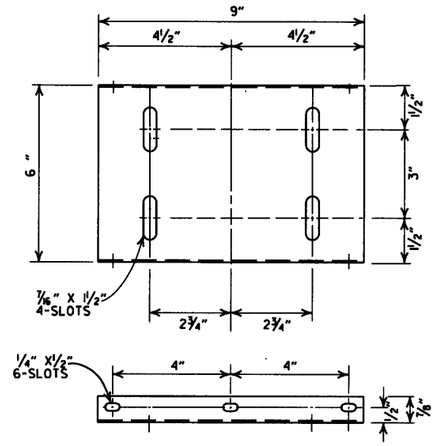
FLARED END SECTION

STANDARD DRAWING FES-2

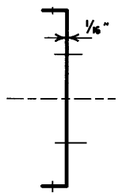


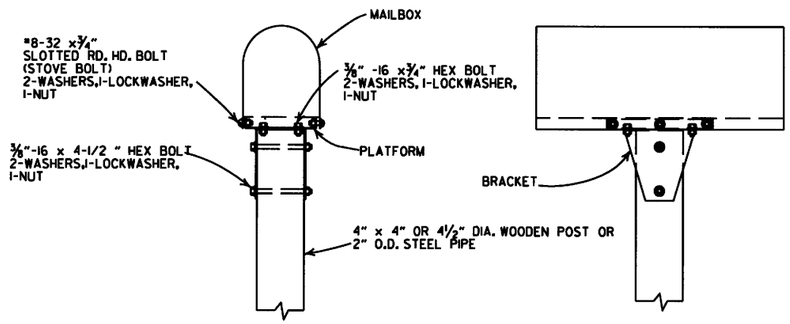
SHELF



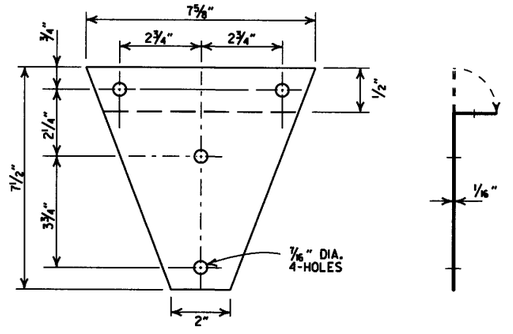


PLATFORM





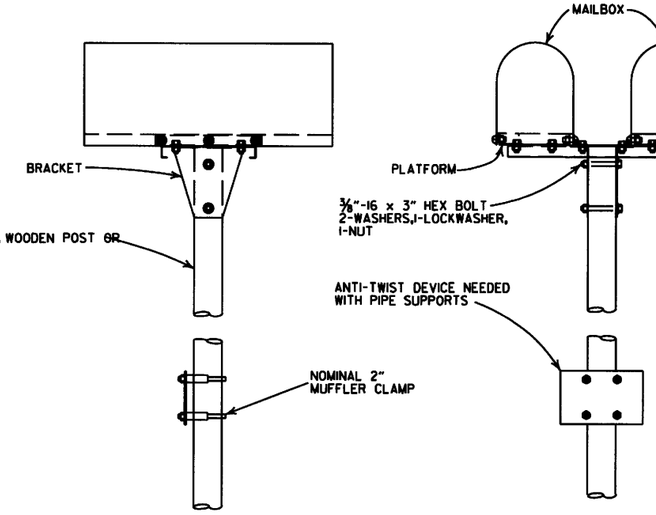
SINGLE INSTALLATION



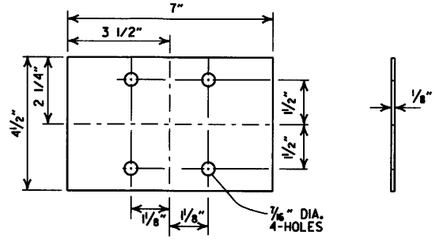
BRACKET

GENERAL NOTES

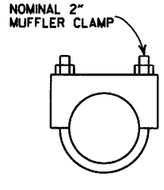
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 x 2½" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



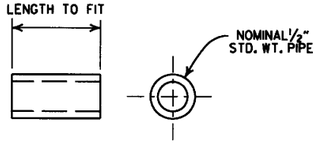
DOUBLE INSTALLATION



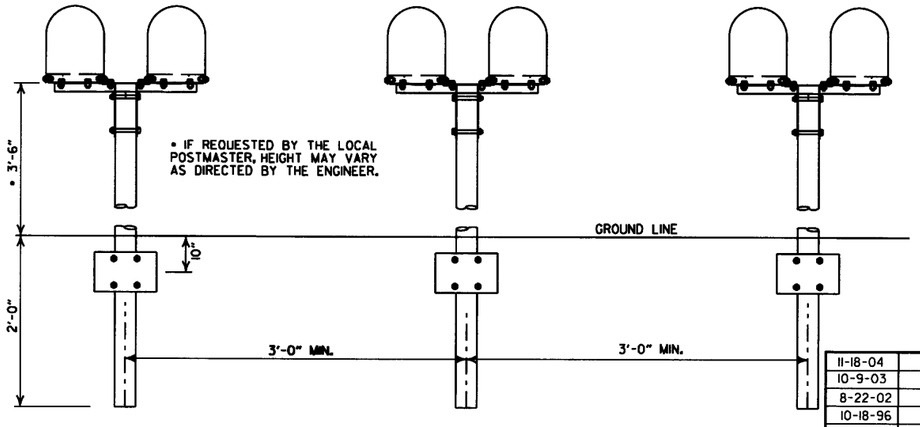
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

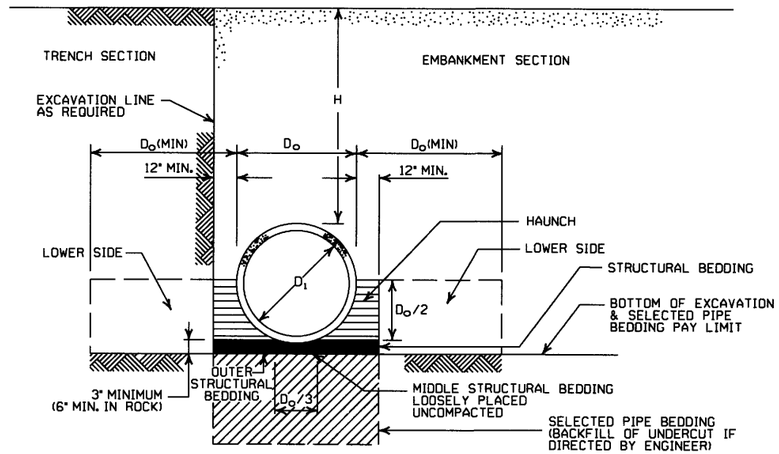
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2		12	15
42	46x36	6	0.079	3	2		13	15
48	53x41	7	0.079	3	2		13	15
54	60x46	8	0.079	3	2		13	15
60	66x51	9	0.079	3	2		13	15
66	73x55	12	0.079	3	2		15	15
72	81x59	14	0.079	3	2		15	15
78	87x63	14	0.079	3	2		15	15
84	95x67	16	0.109	3	2		15	15
90	103x71	16	0.109	3	2		15	15
96	112x75	18	0.109	3	2		15	15
102	117x79	18	0.109	3	2		15	15
108	128x83	18	0.138	3	2		15	15

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

CONSTRUCTION SEQUENCE

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

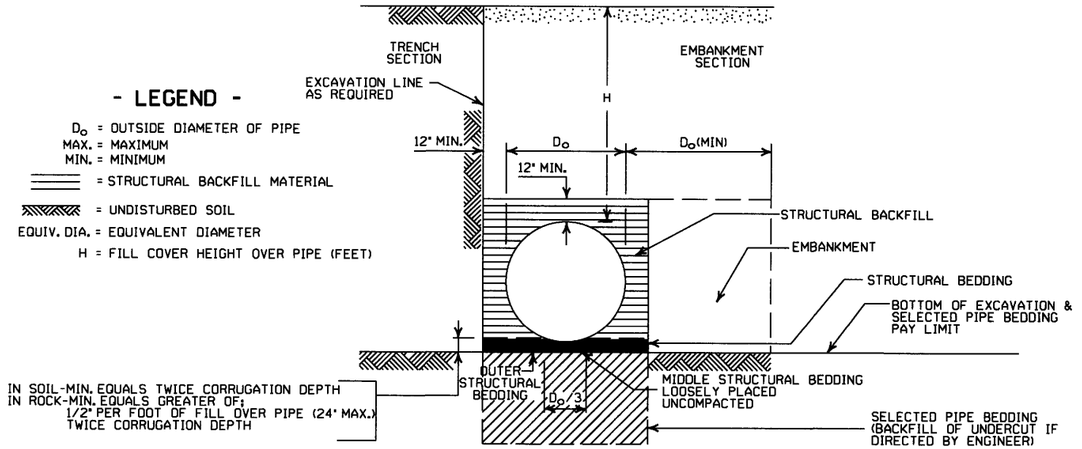
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

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



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

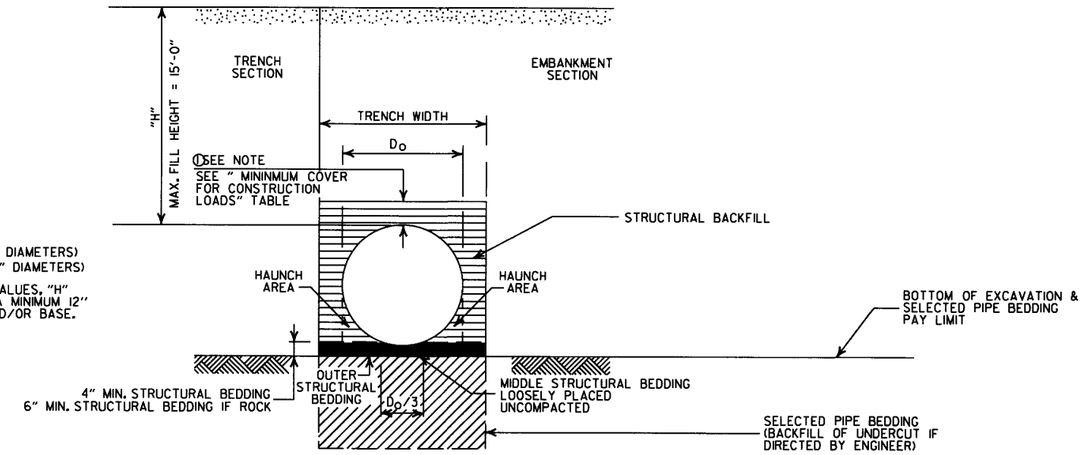
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

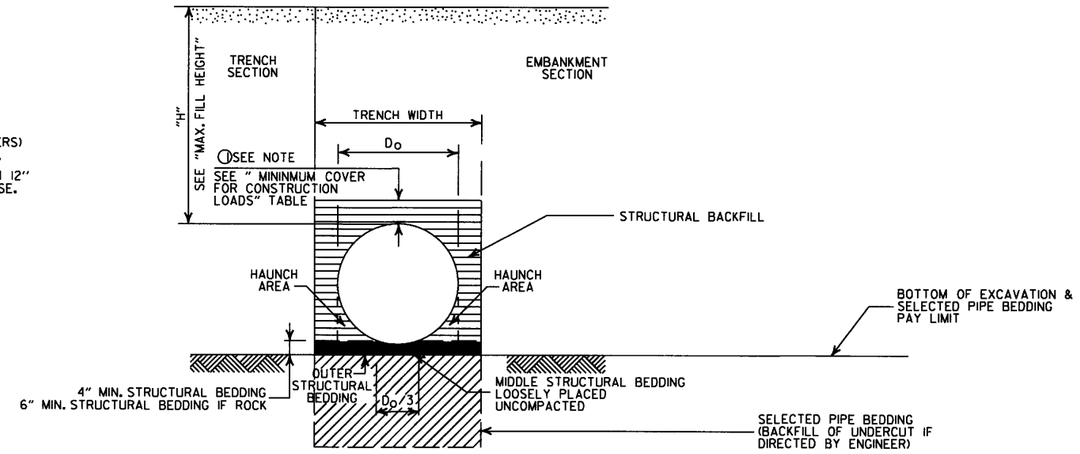
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

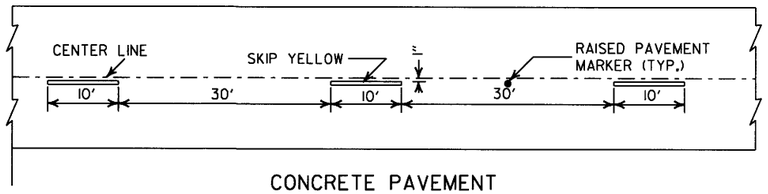
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

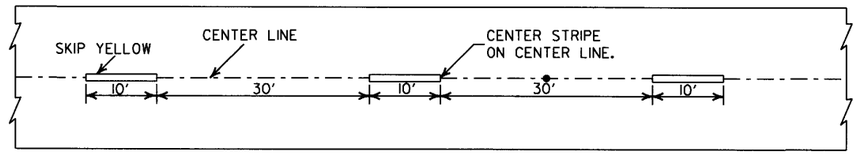
PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

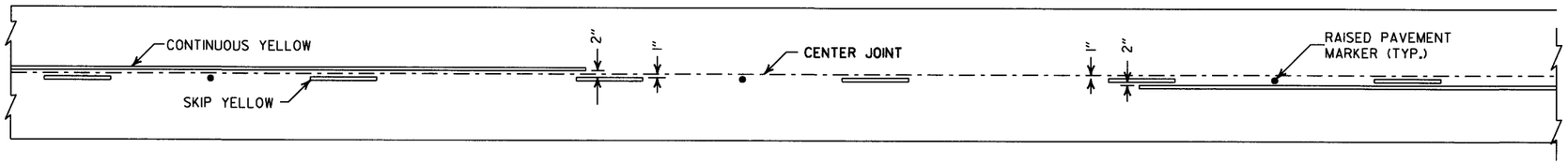


CONCRETE PAVEMENT

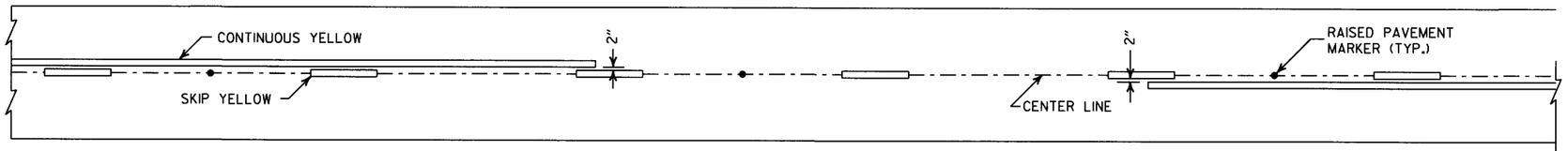


ASPHALT PAVEMENT

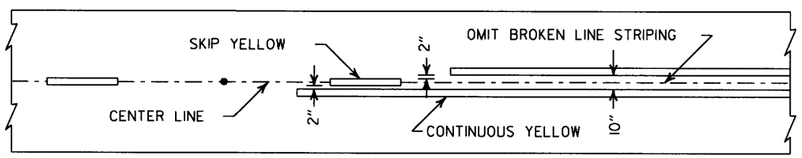
BROKEN LINE STRIPING



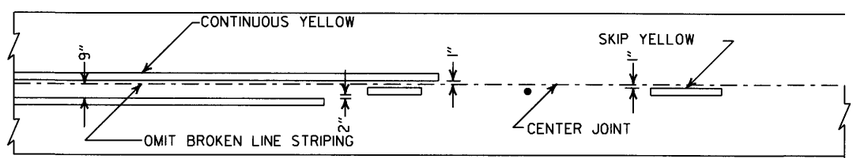
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

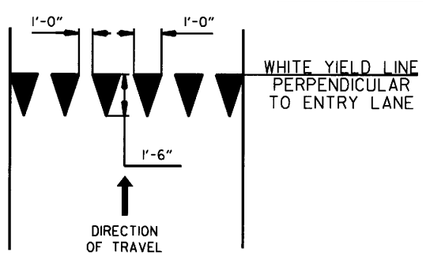


ASPHALT PAVEMENT

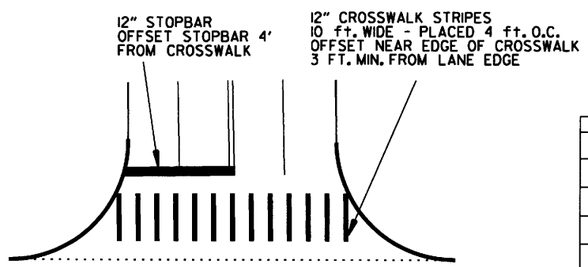


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

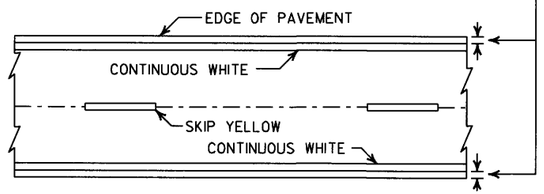


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

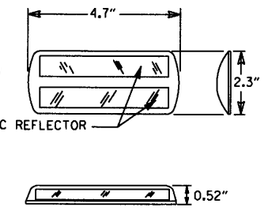
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II RED/CLEAR OR YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

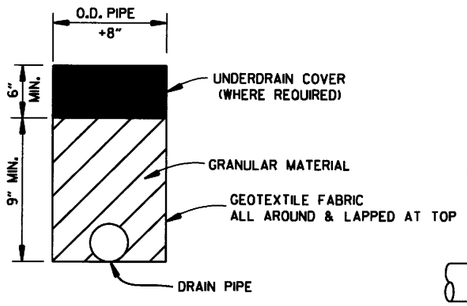
PAVEMENT MARKING DETAILS

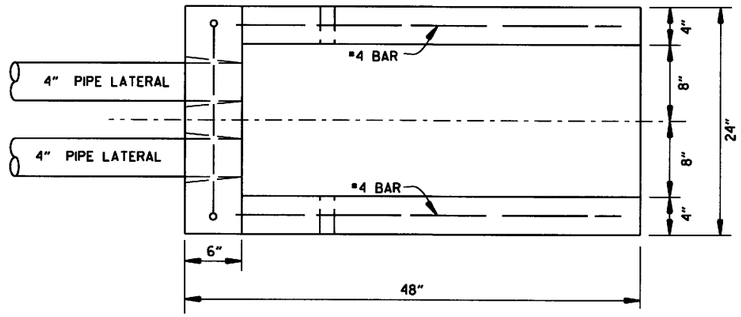
STANDARD DRAWING PM-1

NOTE:

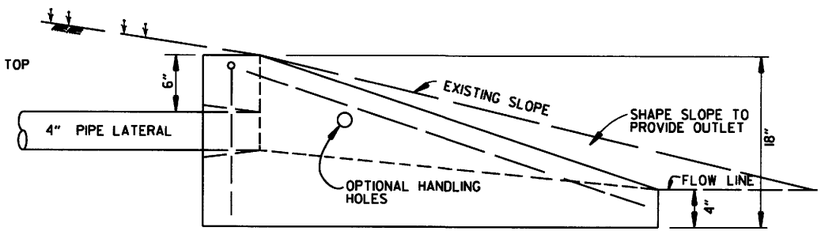
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

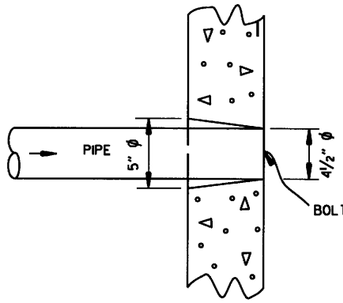




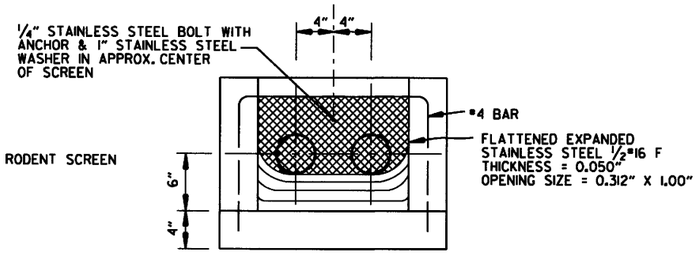
PLAN VIEW



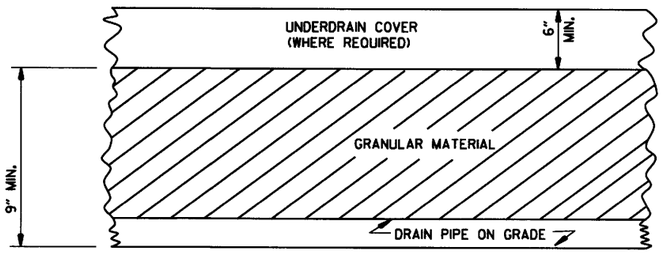
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

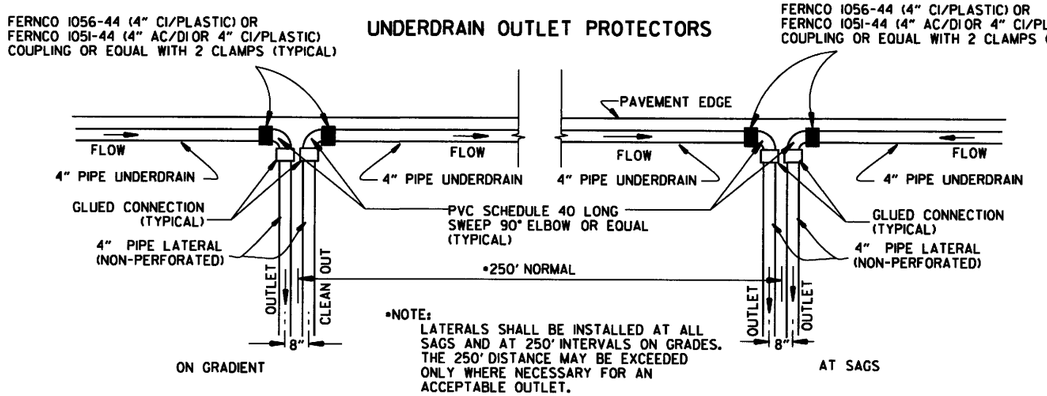


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



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

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

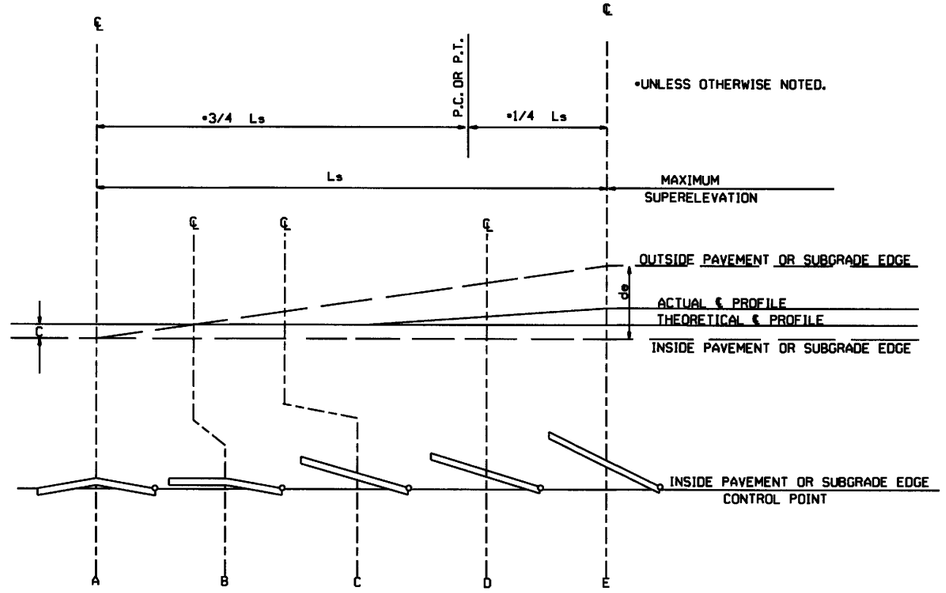
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45'	N.C.			0.025			0.036			0.043			0.049			0.062		
2° 00'	R.C.			0.028	175		0.040			0.048			0.055			0.070		
2° 15'	R.C.			0.031			0.045		250	0.053			0.061			0.078	300	350
2° 30'	0.021			0.034			0.049			0.058			0.067			0.085	315	
2° 45'	0.023			0.037			0.053			0.063			0.072			0.091	335	
3° 00'	0.025			0.040		200	0.057			0.067	230		0.077	260		0.096	350	
3° 15'	0.027	150		0.043			0.061			0.072	245		0.082	275		0.098	360	400
3° 30'	0.029			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45'	0.031			0.049			0.069	215		0.080	265		0.090	295				
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305	350			
4° 30'	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00'	0.040			0.061			0.083	250		0.091	295		0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300	350						
6° 00'	0.046			0.070	190		0.092	270		0.096	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285										
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220	250	0.100	290										
8° 30'	0.061			0.087	225													
9° 00'	0.063			0.089	230													
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	250													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190																
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																

D MAX = 24° 45' | D MAX = 13° 15' | D MAX = 8° 15' | D MAX = 6° 30' | D MAX = 5° 15' | D MAX = 3° 30'

ABBREVIATIONS

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



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

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

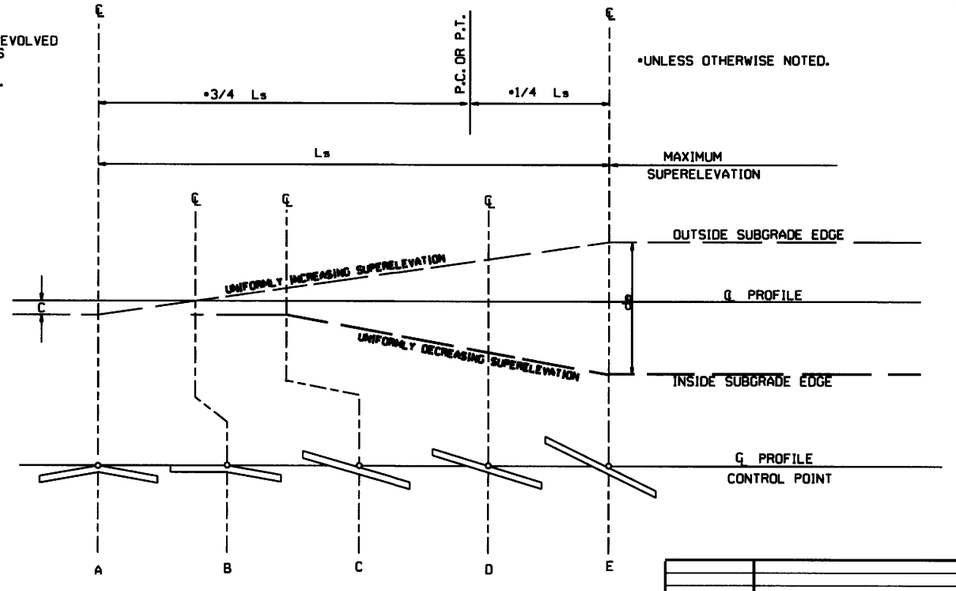
GENERAL NOTES

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

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

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

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

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

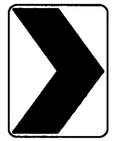
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1
30"X30"

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



W1-8
18"X24"

W2-5
30"X30"

W3-1
36"X36"

W5-1
36"X36"

M6-3
21"X15"

R1-2
36"X36"X36"

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

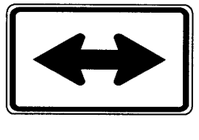
W2-1
30"X30"

S1-1
36"X36"

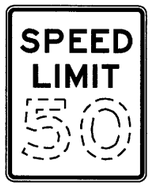
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

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



M6-4
21"X15"



R2-1
24"X30"

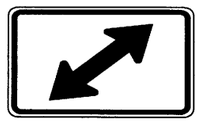
W1-5
30"X30"
(LT. or RT.)

W2-2
30"X30"

W5-2
36"X36"

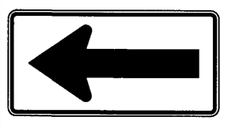
W8-3
36"X36"

R1-3P
18"X6"

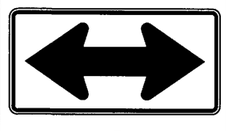


M6-5
21"X15"

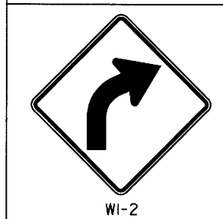
W1-1
30"X30"
(LT. or RT.)



W1-6
48"X24"



W1-7
48"X24"



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

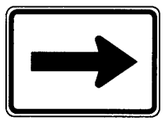
W2-3
30"X30"
(LT. or RT.)

W2-4
30"X30"

W10-1
36" DIAMETER

W5-3
36"X36"

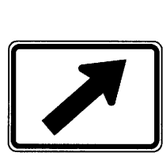
W13-1P
18"X18"



M6-1
21"X15"

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

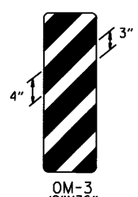
M6-6
21"X15"



M6-2
21"X15"

S4-3P
24"X8"

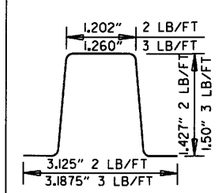
S4-2P
24"X10"



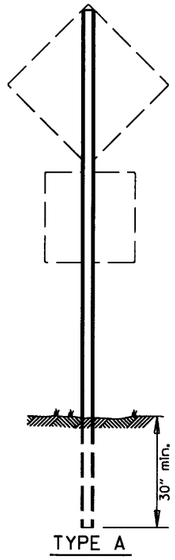
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

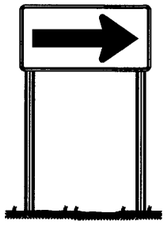


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

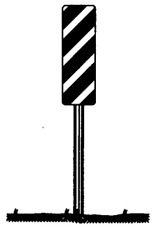


TYPE A

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



TYPE B



TYPE C

MINIMUM WEIGHT

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

STANDARD HIGHWAY SIGNS

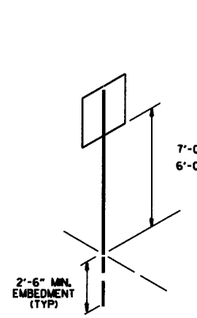
SUPPORT ASSEMBLIES

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

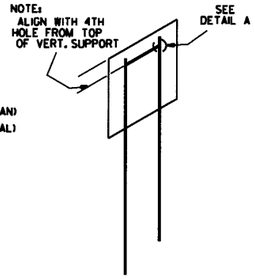
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

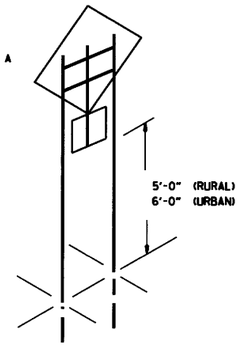
STANDARD DRAWING SHS-1



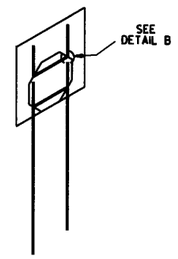
U-1



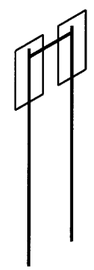
U-2



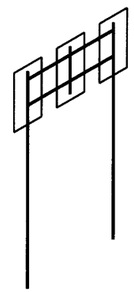
U-2 (A)



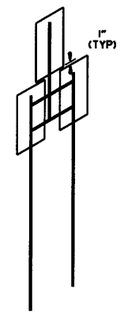
U-2 (B)



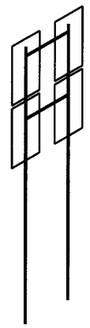
U-2 (1)



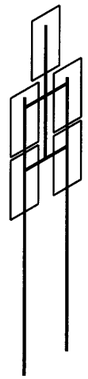
U-2 (2)



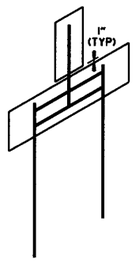
U-2 (3)



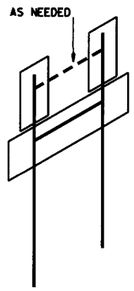
U-2 (4)



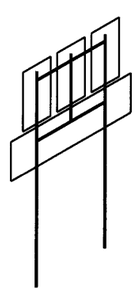
U-2 (5)



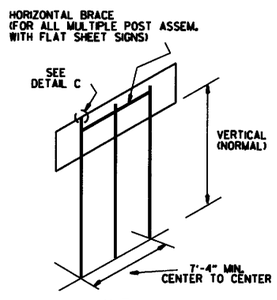
U-2 (6)



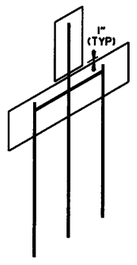
U-2 (7)



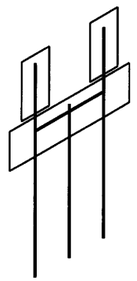
U-2 (8)



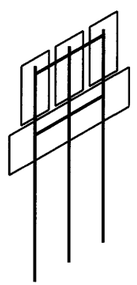
U-3



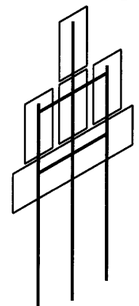
U-3 (1)



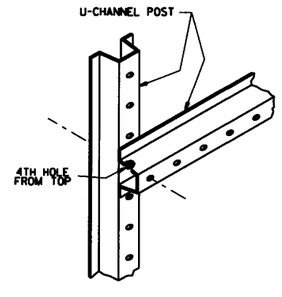
U-3 (2)



U-3 (3)

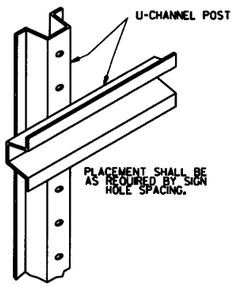


U-3 (4)



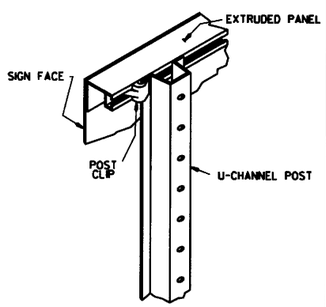
DETAIL A

SHOWING HORIZONTAL BRACE



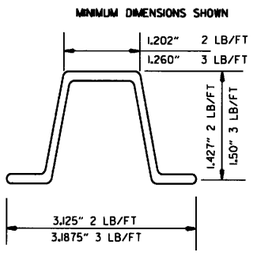
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



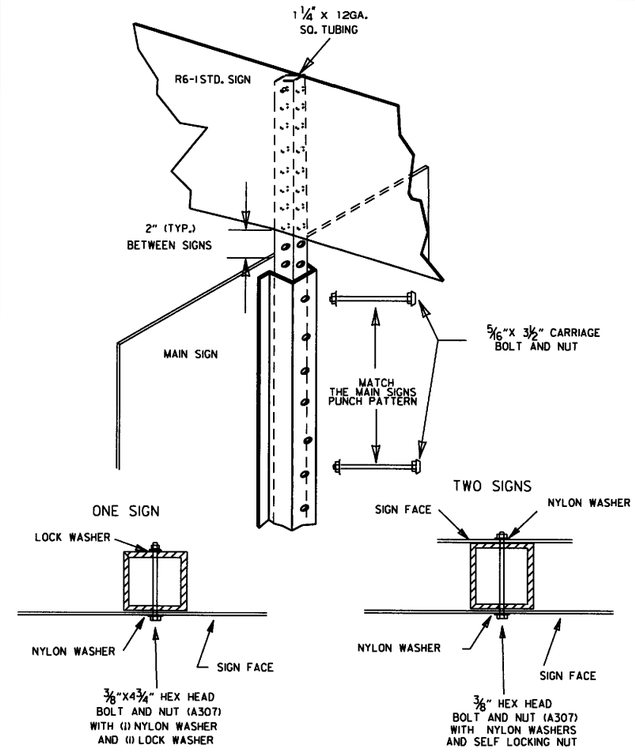
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



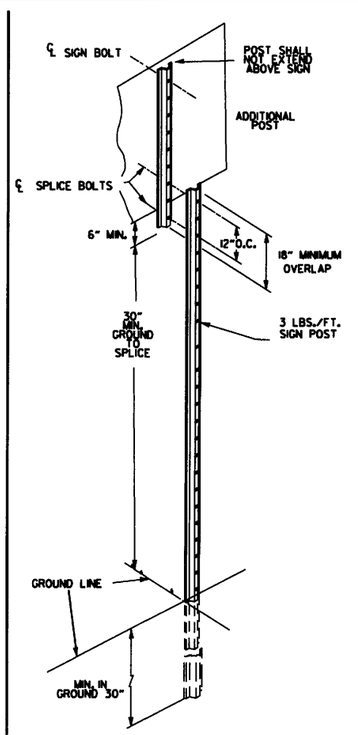
DETAIL D

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

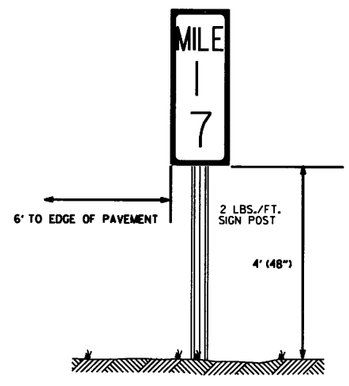
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

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

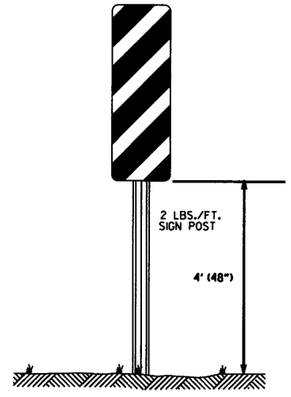
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

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



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

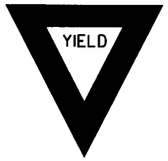
U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

R1-1

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

R1-2



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

R2-1

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

W3-5

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

W3-5a

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

R4-1

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

R4-2

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

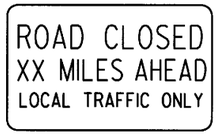
R5-1

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

RII-2

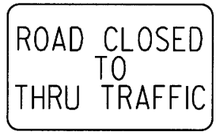
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W21-5a

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

WI-1

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

WI-2

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

WI-3

STD. 48"X48"

WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8

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

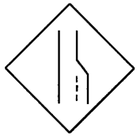
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

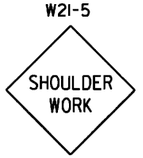
W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

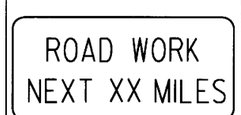
W8-11

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

W8-9

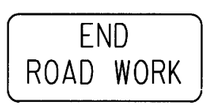
STD. 36"X36"
FWY. 48"X48"

G20-1



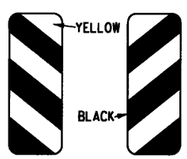
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

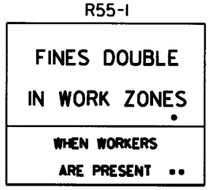
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

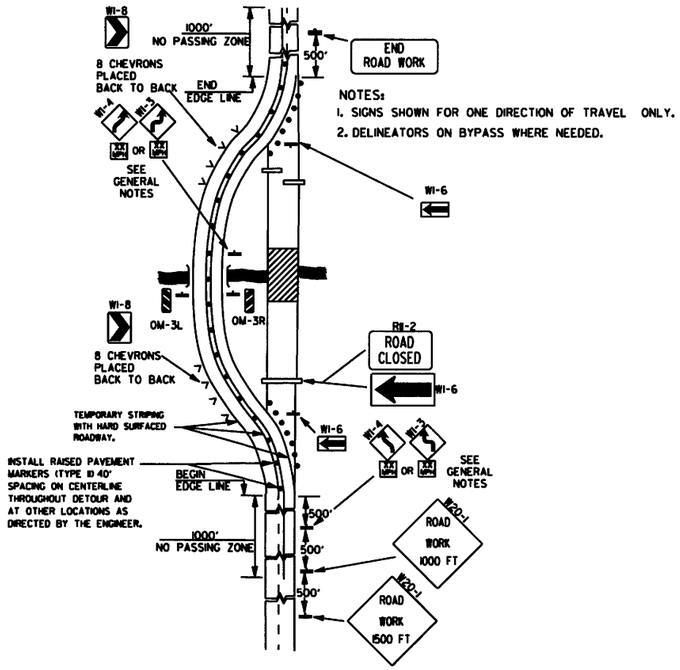
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
8-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
8-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
8-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
8-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

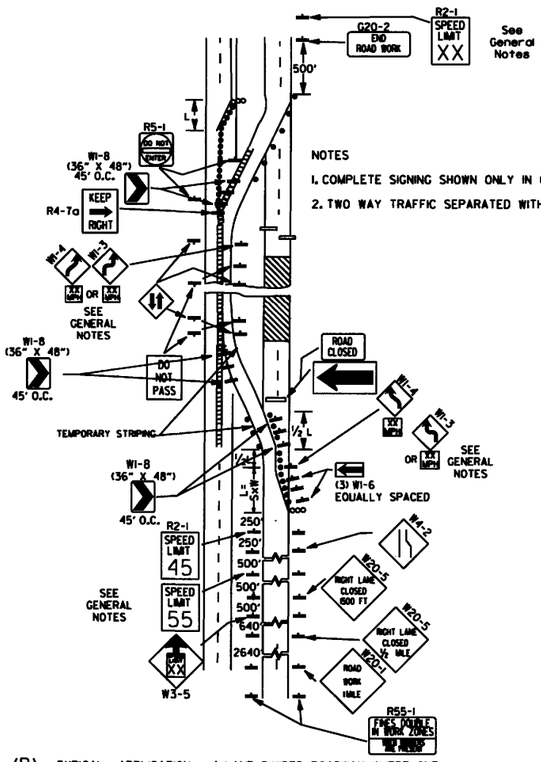
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



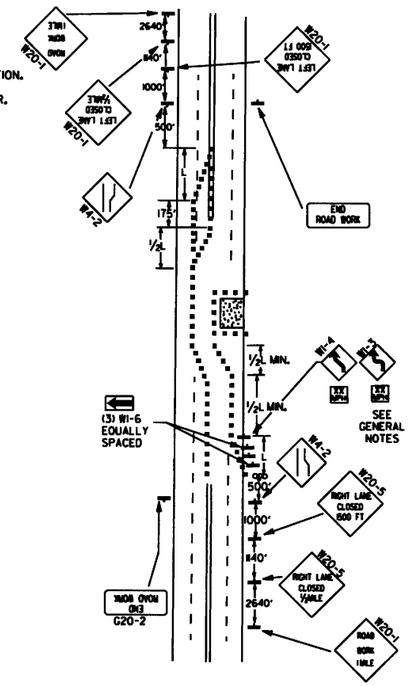
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

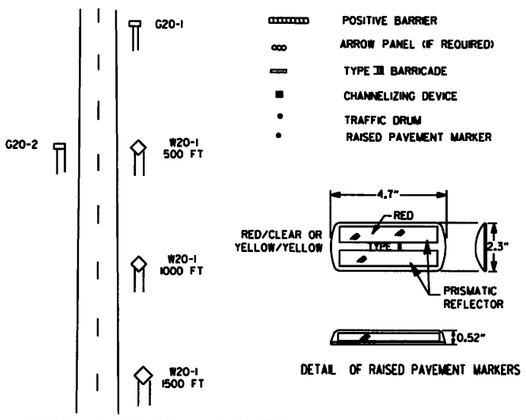


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

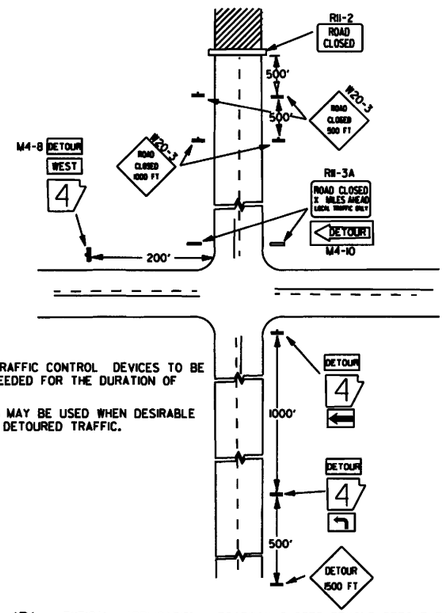
L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

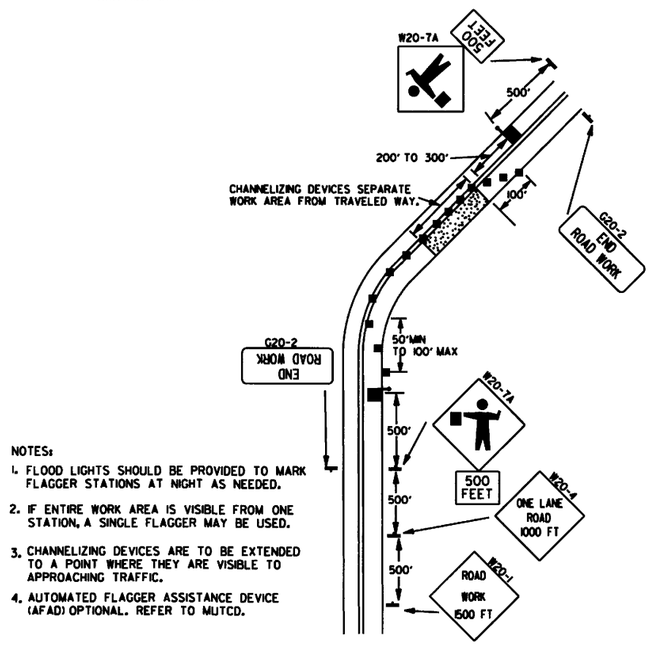
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



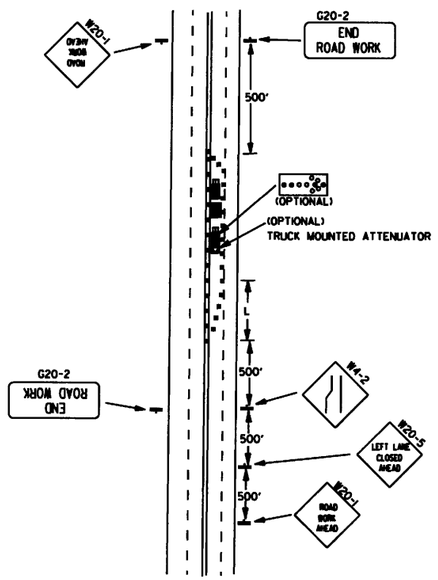
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



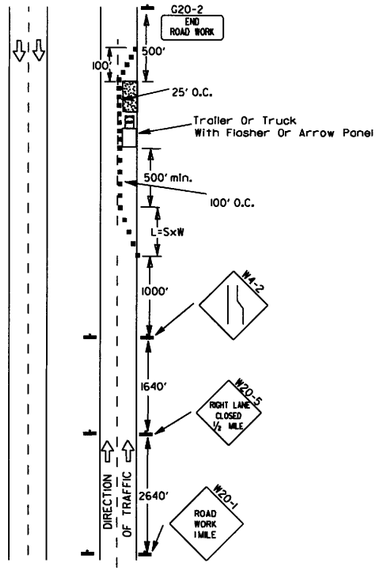
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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

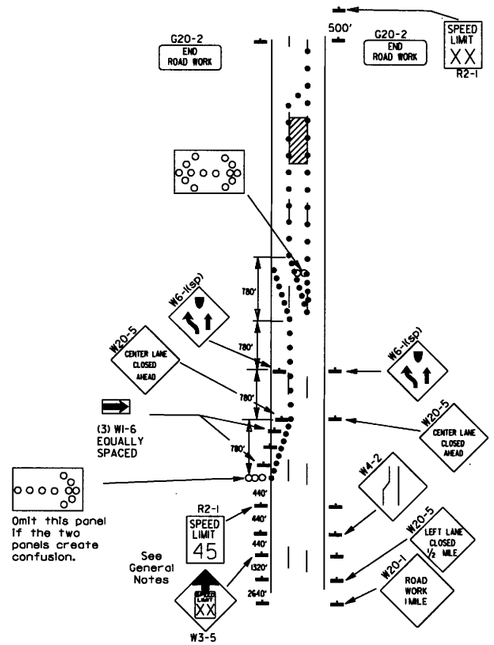
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

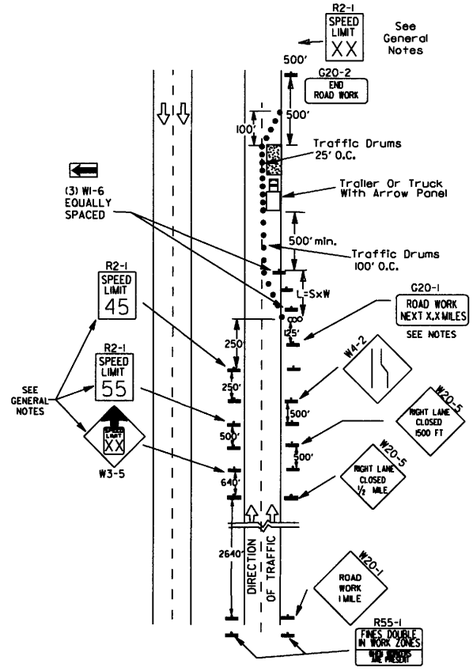
STANDARD DRAWING TC-2



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



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



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

KEY:

ooo Arrow Panel (If Required)

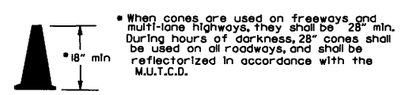
■ Channelizing Device

● Traffic drum

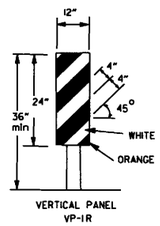
GENERAL NOTES:

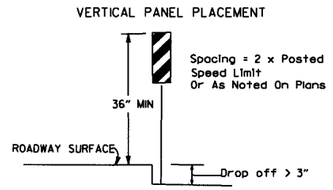
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



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



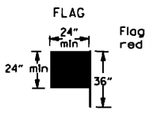


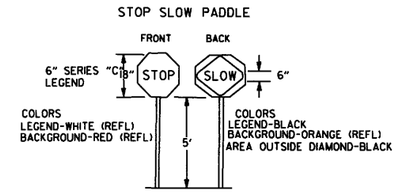
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

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

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



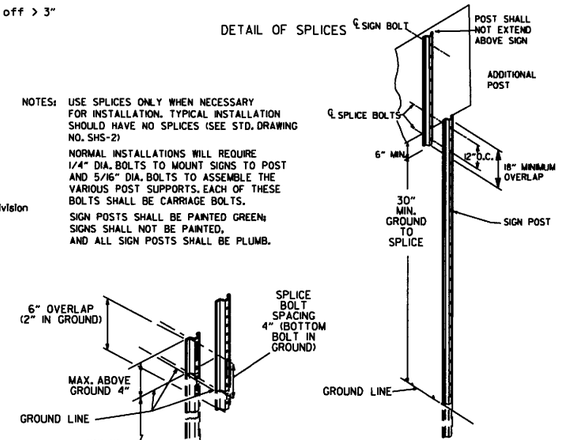


(D) Typical application - closing multiple lanes of a multilane highway.

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



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

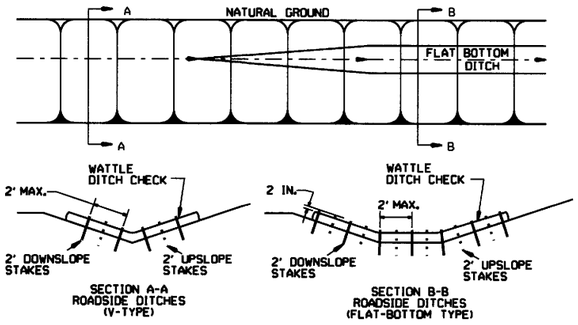
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

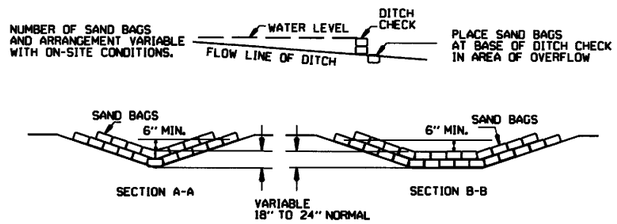
STANDARD DRAWING TC-3

GENERAL NOTES

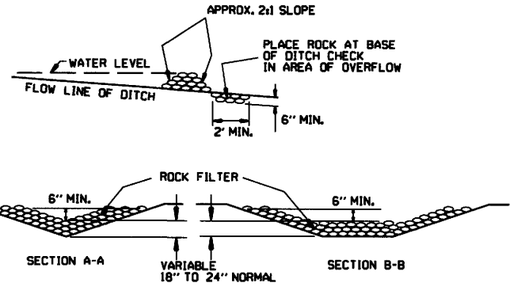
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

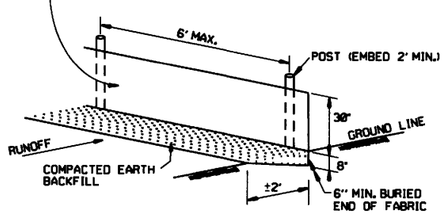


ROCK DITCH CHECK (E-6)

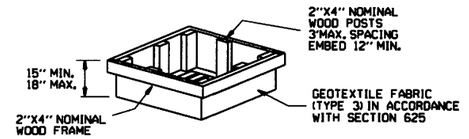
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

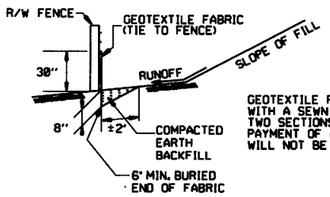
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

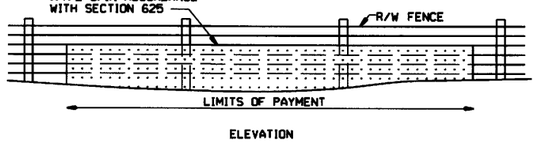


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

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



ELEVATION

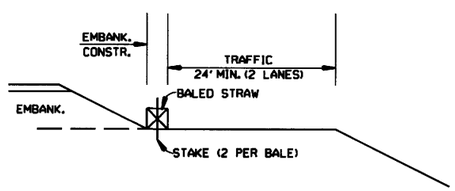
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

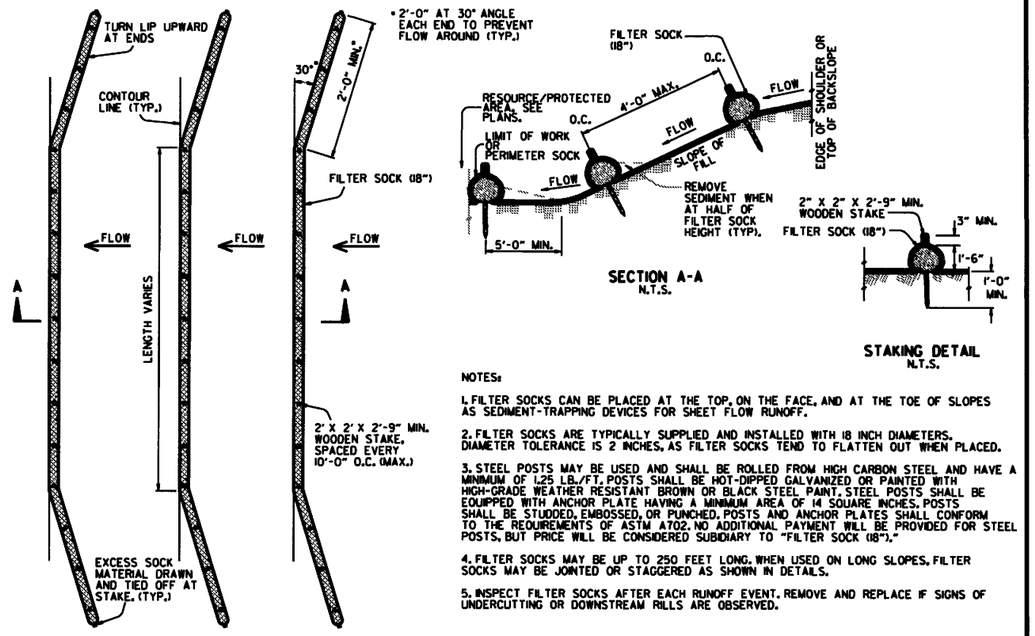
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

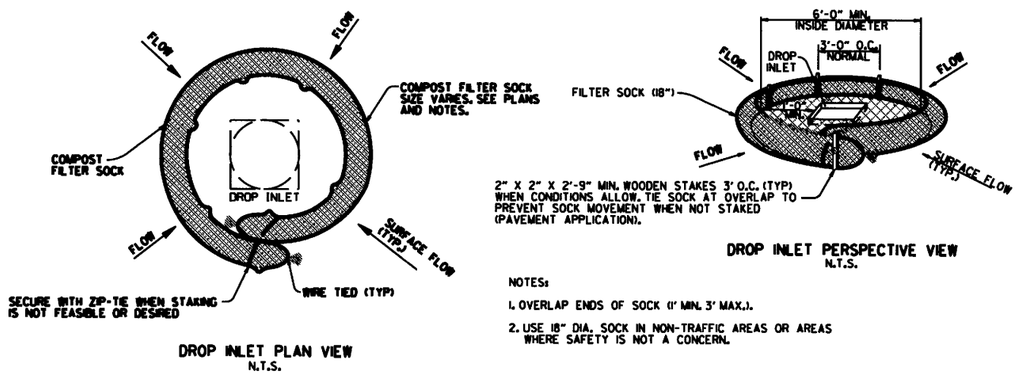
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

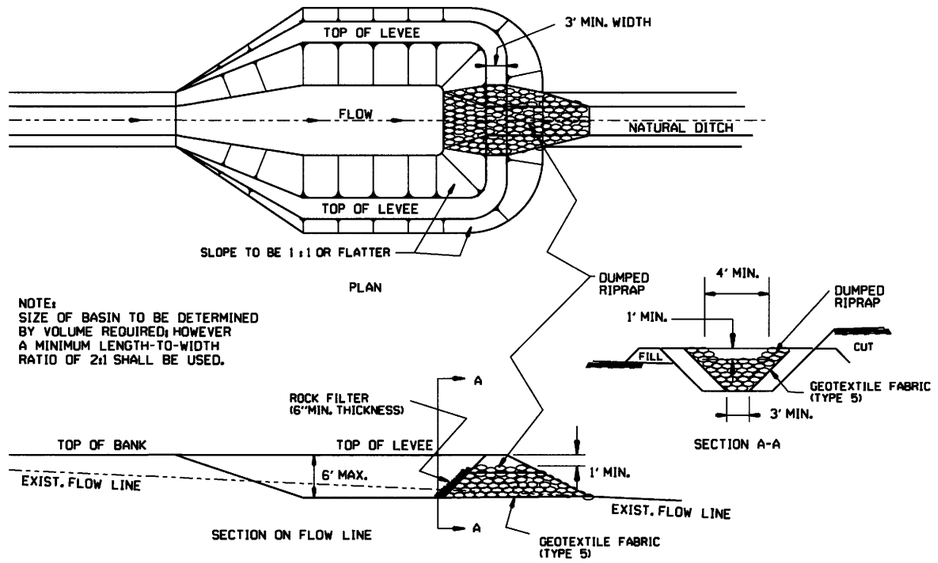
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

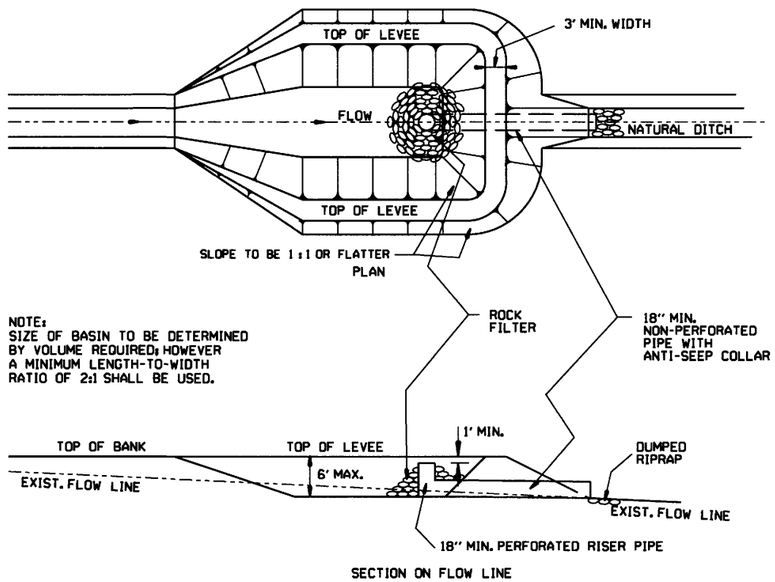
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

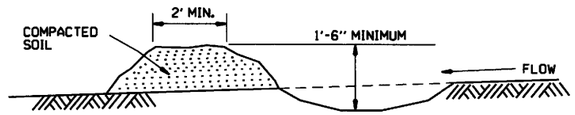
STANDARD DRAWING TEC-1



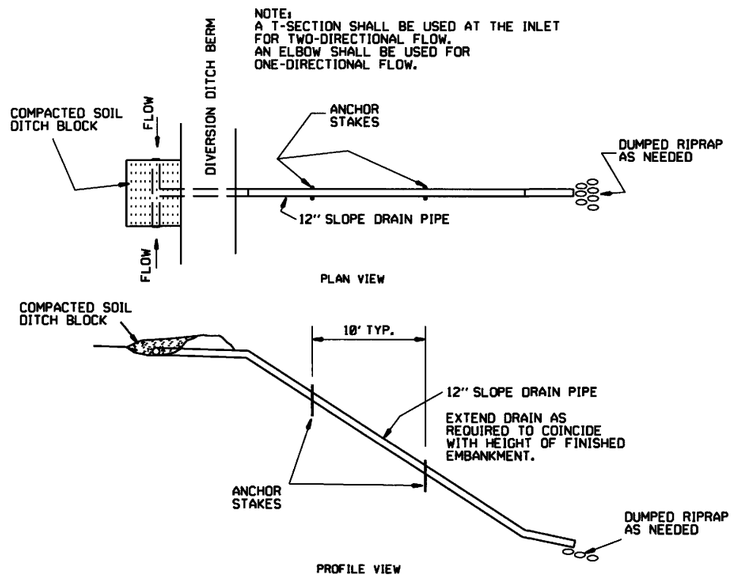
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



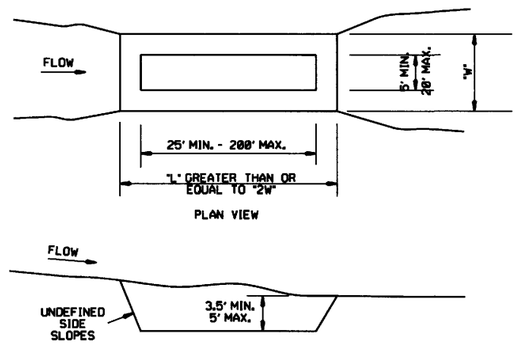
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

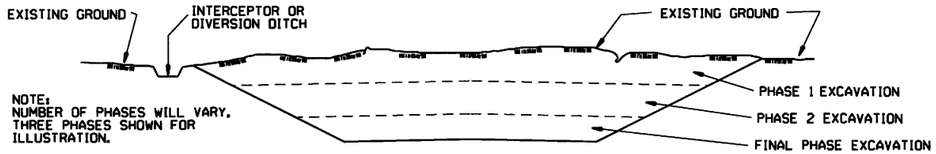
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



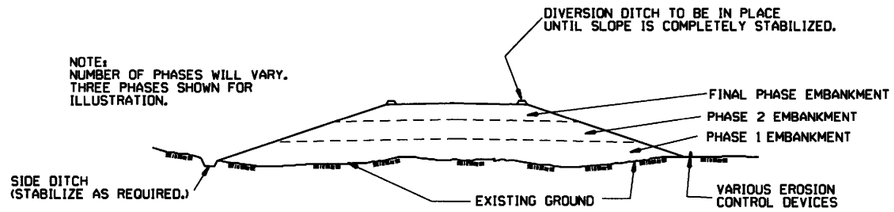
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

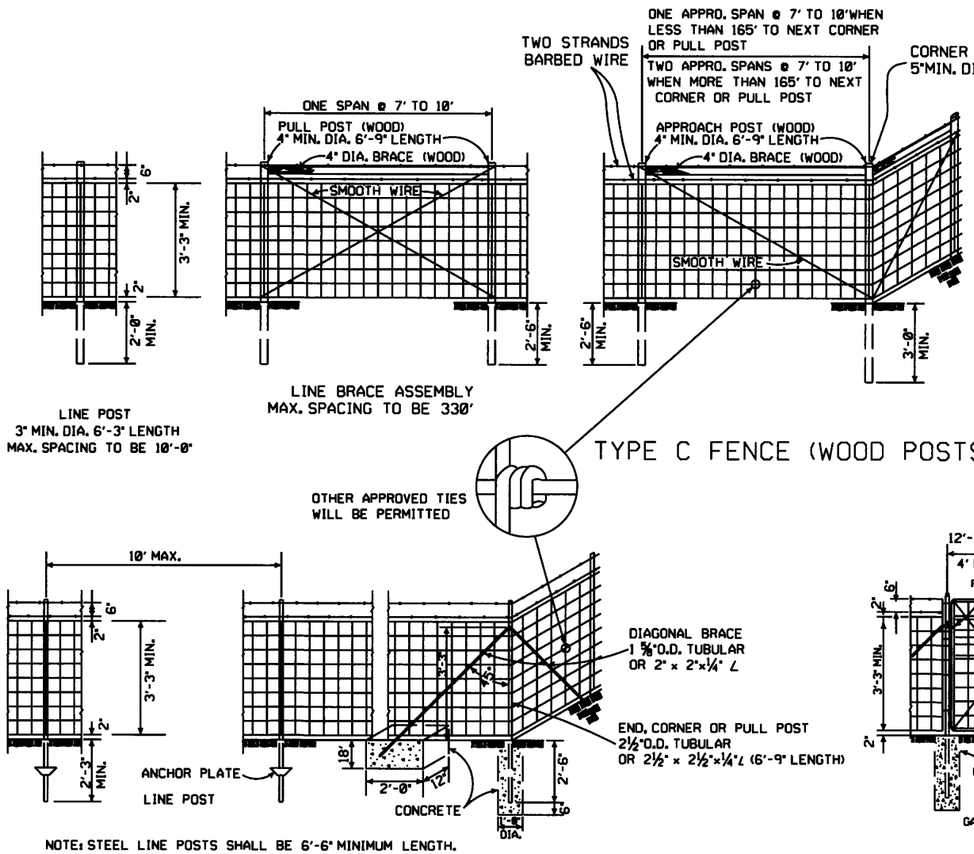
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



GENERAL NOTES:

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

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

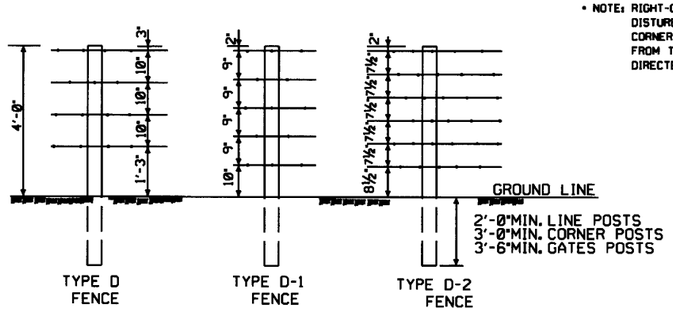
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED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

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

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

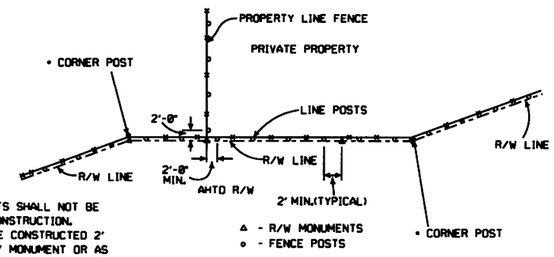
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

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



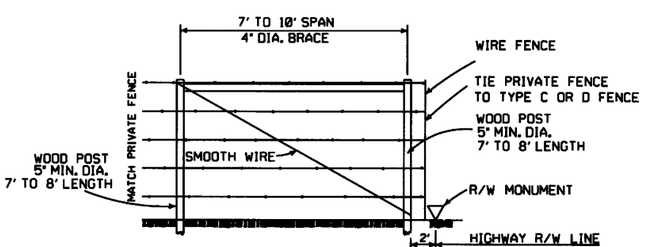
TYPE C FENCE (STEEL POSTS)

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

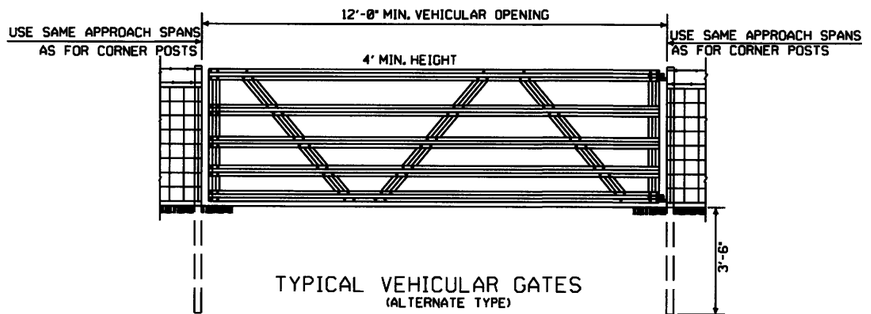


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



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



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

8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4