DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	1	65
				4	HWY. 58 - CO. RD. 38 (RECONSTRUCTION) (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

HWY. 58 - CO. RD. 38 (RECONSTRUCTION) (S)

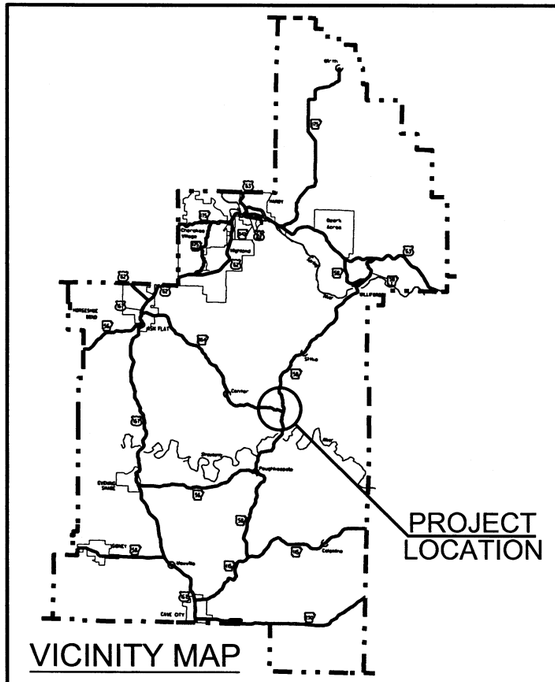
CO. RD. 40

SHARP COUNTY

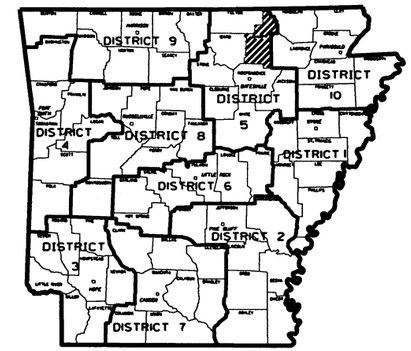
JOB FA6715

FED. AID PROJECT STPR-0067(27)

NOT TO SCALE



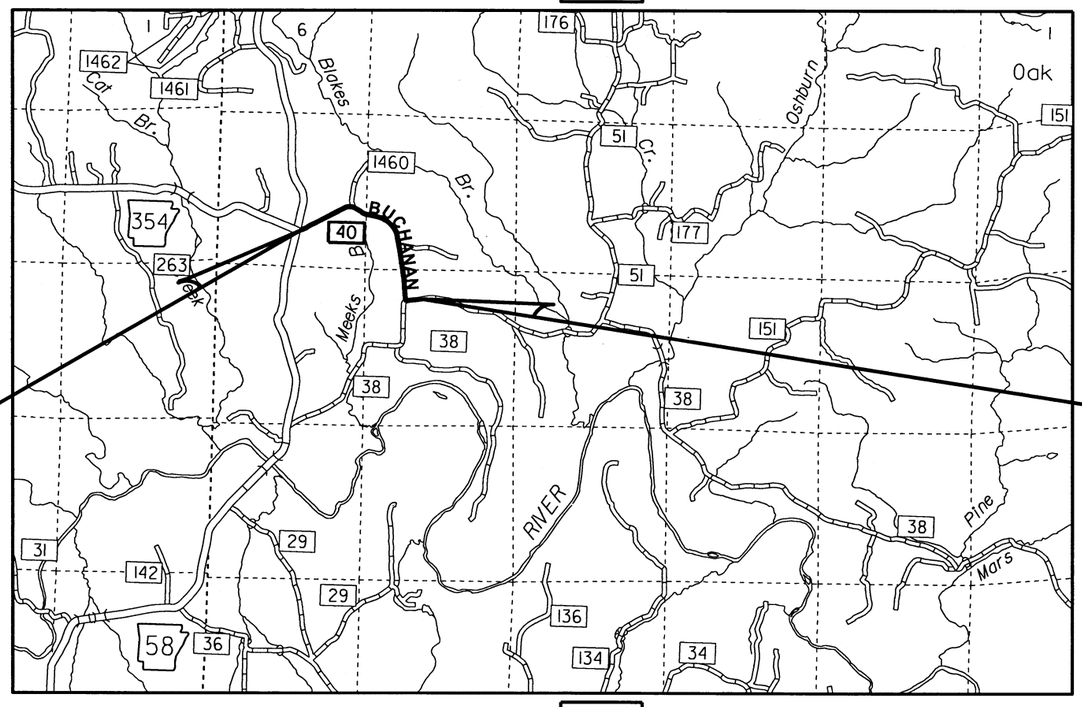
VICINITY MAP



ARKANSAS HIGHWAY DISTRICT 5

R4W

T 17 N



T 17 N

R4W

STA. 100+00.00
BEGIN JOB FA6715

STA. 168+00.00
END JOB FA6715

DESIGN TRAFFIC DATA

DESIGN YEAR	2039
2019 ADT	80
2039 ADT	95
2039 DHV	14
DIRECTIONAL DISTRIBUTON	0.03
TRUCKS	3%
DESIGN SPEED	30 MPH

PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N 36° 07' 58"	N 36° 08' 2"	N 36° 07' 35"
LONG.	W 91° 26' 47"	W 91° 26' 10"	W 91° 25' 55"

GROSS LENGTH OF	PROJECT	6800.00	FEET	OR	1.288	MILES
NET	" "	ROADWAY	6800.00	"	"	1.288	"
NET	" "	BRIDGE	0.00	"	"	0.000	"
NET	" "	PROJECT	6800.00	"	"	1.288	"

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7854
M. E. BANKS

11-15-19

DEPUTY DIRECTOR
AND CHIEF ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-20-19				6	ARK.			
				JOB NO.		FA6715	2	65

4 INDEX OF SHEETS AND STANDARD DRAWINGS

INDEX OF SHEETS

NOTE: CROSS SECTIONS NOT INCLUDED IN PROSPECTIVE BIDDERS' PLANS MAY BE OBTAINED UPON REQUEST.

ROADWAY STANDARD DRAWINGS

DRWG. NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
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
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	11-07-19
PM-1	PAVEMENT MARKING DETAILS	06-01-17
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	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
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. 11240
12/20/19
BRYAN FREELING

INDEX OF SHEETS AND STANDARD DRAWINGS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-20-19				6	ARK.			
				JOB NO.		FA6715	3	65

(4) GOVERNING SPECIFICATIONS AND GENERAL NOTES

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273_____	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273_____	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273_____	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273_____	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273_____	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273_____	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273_____	SUPPLEMENT - WAGE RATE DETERMINATION
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
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
723-1_____	GENERAL REQUIREMENTS FOR SIGNS
JOB FA6715_____	BIDDING REQUIREMENTS AND CONDITIONS
JOB FA6715_____	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB FA6715_____	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB FA6715_____	CARGO PREFERENCE ACT REQUIREMENTS
JOB FA6715_____	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB FA6715_____	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB FA6715_____	MANDATORY ELECTRONIC CONTRACT
JOB FA6715_____	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB FA6715_____	RECYCLED ASPHALT SHINGLES
JOB FA6715_____	SHORING FOR CULVERTS
JOB FA6715_____	STORM WATER POLLUTION PREVENTION PLAN
JOB FA6715_____	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB FA6715_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
JOB FA6715_____	UTILITY ADJUSTMENTS
JOB FA6715_____	WARM MIX ASPHALT
JOB FA6715_____	WATER POLLUTION CONTROL

GENERAL NOTES

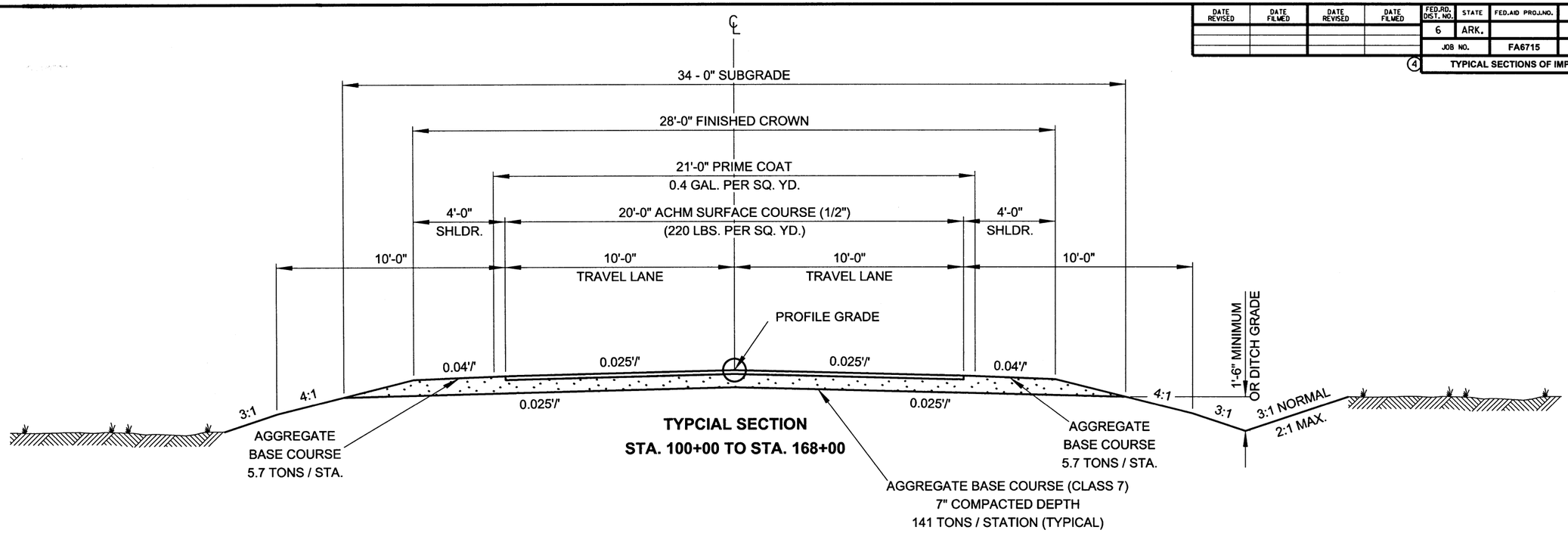
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN IN PLANS
2. UTILITIES INTERFERING WITH CONSTRUCTION SHALL BE MOVED BY THE OWNERS.
3. THE CONTRACTOR SHALL MAINTAIN MAILBOXES WITHIN THE PROJECT LIMITS SUCH THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. THE CONTRACTOR SHALL REMOVE AND RESTORE TO THE PROPER HEIGHT THE EXISTING MAILBOX POSTS AND MAILBOXES AS DIRECTED BY THE ENGINEER. ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT NO COST TO THE DEPARTMENT. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICES BID FOR OTHER ITEMS OF THE CONTRACT.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
6. THE CONTRACTOR SHALL PROVIDE A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
7. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
8. PAVEMENT TO BE REMOVED SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. PAVEMENT SHALL BE REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT RETAINED. ANY DAMAGE TO RETAINED PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. TEMPORARY EASEMENTS ARE PROVIDED FOR CONTRACTOR ACCESS. AREAS OUTSIDE THE CONSTRUCTION LIMITS SHALL NOT BE CLEARED OR GRUBBED UNLESS DIRECTED BY THE ENGINEER.
10. AREAS NOT CLASSIFIED AS CLEARING AND GRUBBING AND THAT ARE WITHIN CONSTRUCTION LIMITS SHALL BE SCALPED AS DIRECTED BY THE ENGINEER. SCALPING WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICES BID FOR OTHER ITEMS OF THE CONTRACT.
11. SUPERELEVATION SHALL BE COMPUTED IN ACCORDANCE WITH STD. DRWG. SE-2 USING 30 M.P.H. DESIGN VALUES AND REVOLVE ABOUT THE INNER EDGE OF TRAVEL LANE UNLESS OTHERWISE SHOWN.
12. THE ROAD SHALL BE MAINTAINED AND REMAIN OPEN TO TRAFFIC THROUGHOUT THE PROJECT.
13. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
14. EDGE LINES SHALL NOT BE PLACED UNTIL AFTER ALL MATERIAL HAS BEEN PLACED OR PULLED UP AGAINST THE EDGE OF PAVEMENT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
12/20/19

GOVERNING SPECIFICATIONS AND GENERAL NOTES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	4	65

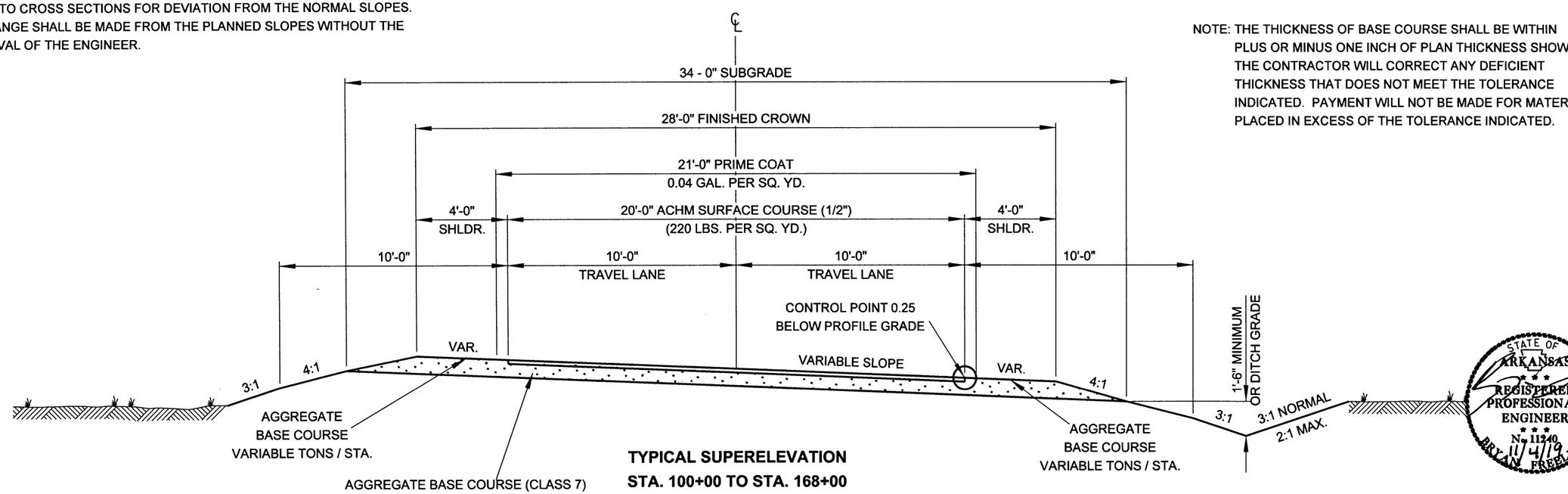
4 TYPICAL SECTIONS OF IMPROVEMENT



TYPCIAL SECTION
STA. 100+00 TO STA. 168+00

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

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



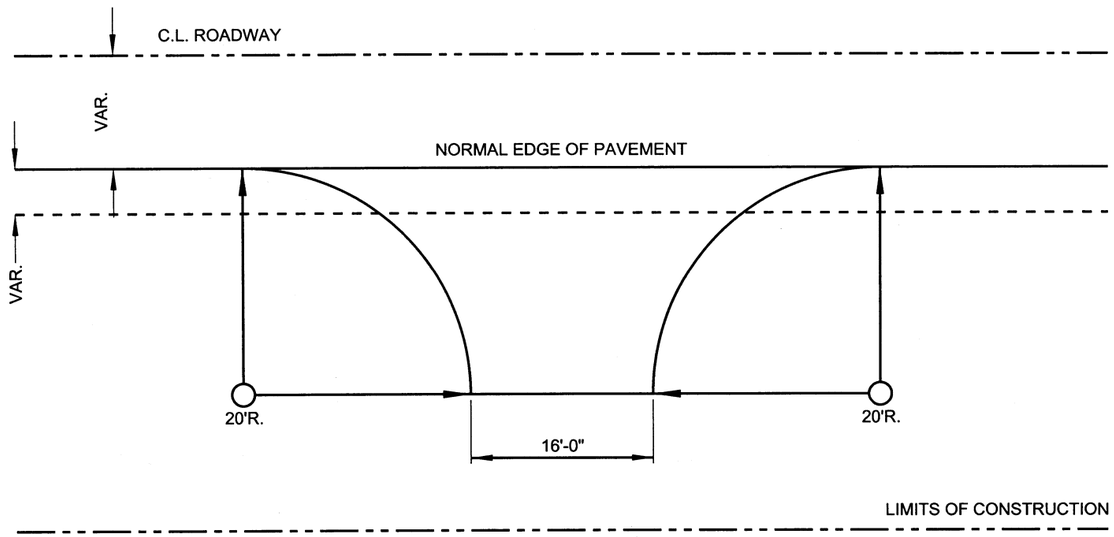
TYPICAL SUPERELEVATION
STA. 100+00 TO STA. 168+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
11/4/19
BRYAN FREELING

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

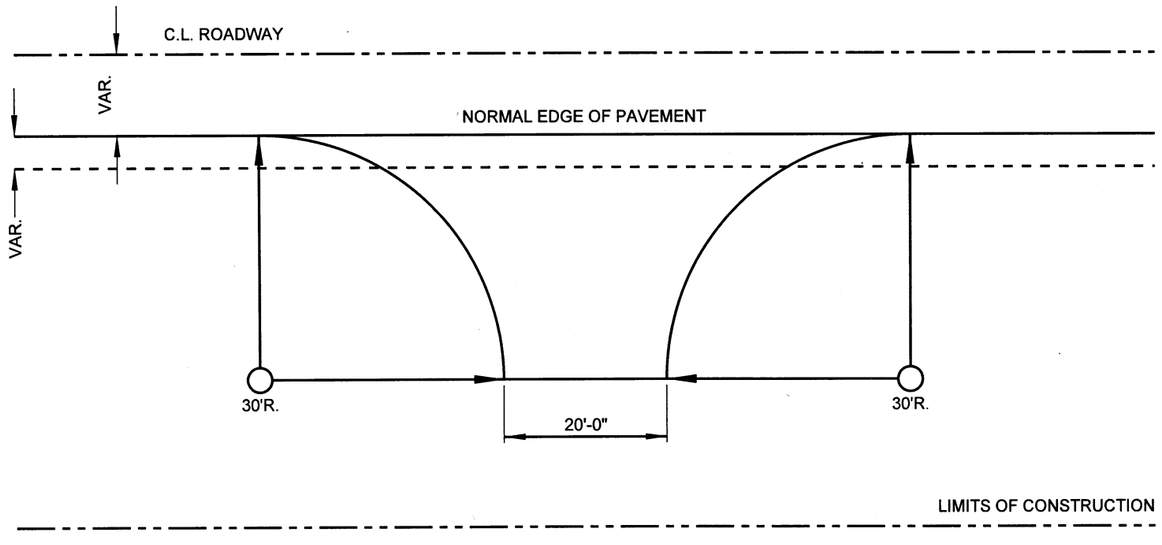
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	5	65
				4	SPECIAL DETAILS			



TYPICAL DRIVEWAY
ADDITIONAL SURFACING AREA = 54.6 SQ. YDS.

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



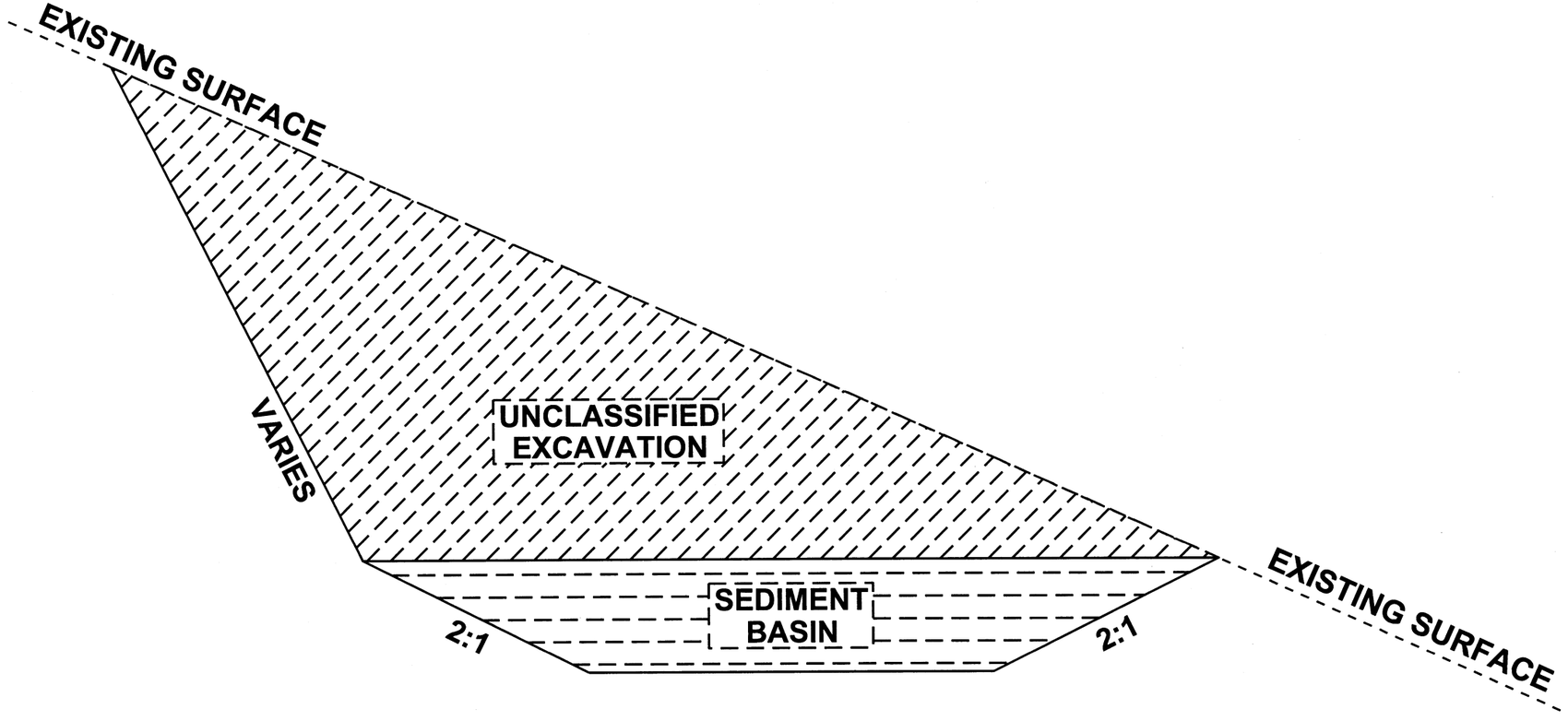
TYPICAL COUNTY TURNOUT
ADDITIONAL SURFACING AREA = 109.6 SQ. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/17

SPECIAL DETAILS

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	6	65
				(4) SPECIAL DETAILS				



DETAIL OF SEDIMENT BASIN EXCAVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
11/4/19
BRYAN FREELING

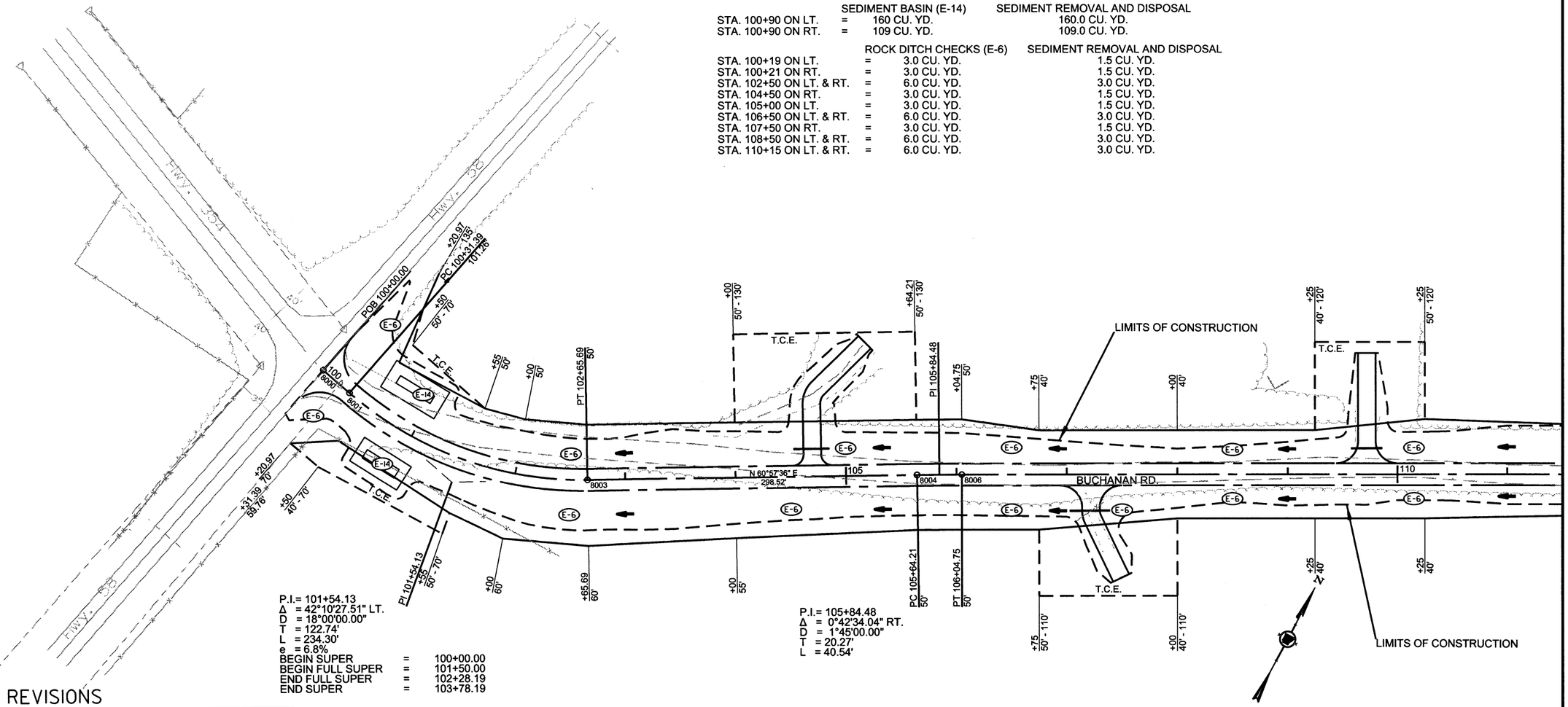
SPECIAL DETAILS

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.		FA6715	7	65

4 **TEMPORARY EROSION CONTROL DETAILS**

		SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 100+90 ON LT.	=	160 CU. YD.	160.0 CU. YD.
STA. 100+90 ON RT.	=	109 CU. YD.	109.0 CU. YD.

		ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 100+19 ON LT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 100+21 ON RT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 102+50 ON LT. & RT.	=	6.0 CU. YD.	3.0 CU. YD.
STA. 104+50 ON RT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 105+00 ON LT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 106+50 ON LT. & RT.	=	6.0 CU. YD.	3.0 CU. YD.
STA. 107+50 ON RT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 108+50 ON LT. & RT.	=	6.0 CU. YD.	3.0 CU. YD.
STA. 110+15 ON LT. & RT.	=	6.0 CU. YD.	3.0 CU. YD.



P.I.= 101+54.13
Δ = 42°10'27.51" LT.
D = 18°00'00.00"
T = 122.74'
L = 234.30'
e = 6.8%
BEGIN SUPER = 100+00.00
BEGIN FULL SUPER = = = 101+50.00
END FULL SUPER = = = 102+28.19
END SUPER = 103+78.19

P.I.= 105+84.48
Δ = 0°42'34.04" RT.
D = 1°45'00.00"
T = 20.27'
L = 40.54'

REVISIONS

DATE	DESCRIPTION

SCALE IN FEET
0 100 200

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 11340
BRYAN KEELING
11/4/12

TEMPORARY EROSION CONTROL DETAILS

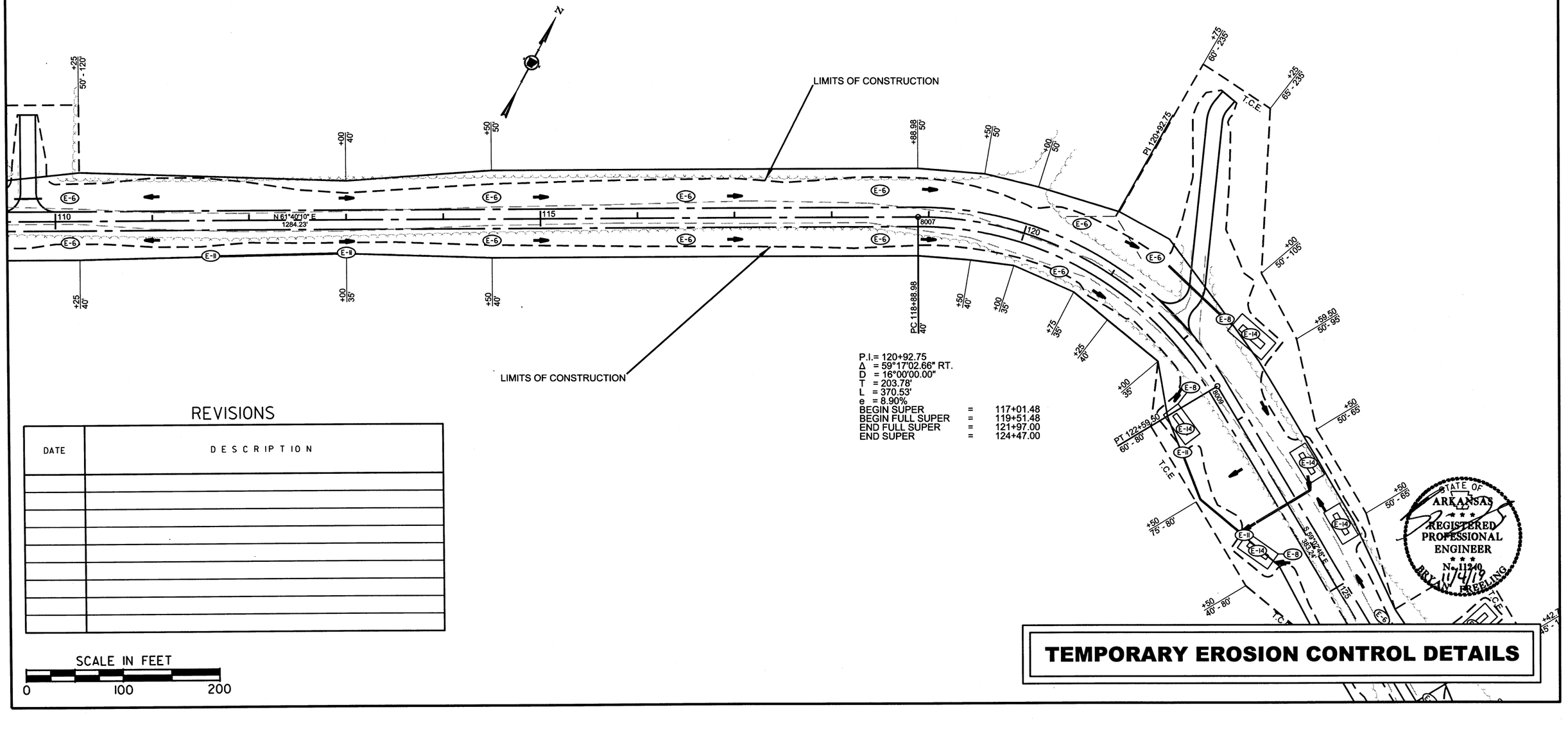
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	8	65
				4	TEMPORARY EROSION CONTROL DETAILS			

	SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 122+35 ON LT.	= 88 CU. YD.	88.0 CU. YD.
STA. 122+80 ON RT.	= 50 CU. YD.	50.0 CU. YD.
STA. 123+75 ON LT.	= 50 CU. YD.	50.0 CU. YD.
STA. 124+25 ON RT.	= 50 CU. YD.	50.0 CU. YD.
STA. 124+50 ON LT.	= 50 CU. YD.	50.0 CU. YD.

	SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL
STA. 111+60 TO 113+00 ON RT.	140 LIN. FT.	15.4 CU. YD.
STA. 123+07 TO 124+05 ON RT.	101 LIN. FT.	11.1 CU. YD.

	DIVERSION DITCH (E-8)
STA. 122+10 TO 122+19 ON LT.	19 LIN. FT.
STA. 122+45 TO 122+54 ON RT.	24 LIN. FT.
STA. 124+39 TO 124+47 ON RT.	15 LIN. FT.

	ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 114+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 116+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 118+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 120+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 121+25 ON LT.	= 3.0 CU. YD.	1.5 CU. YD.



P.I.= 120+92.75
Δ = 59°17'02.66" RT.
D = 16°00'00.00"
T = 203.78'
L = 370.53'
e = 8.90%
BEGIN SUPER = 117+01.48
BEGIN FULL SUPER = 119+51.48
END FULL SUPER = 121+97.00
END SUPER = 124+47.00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
11/4/19
BRYAN FREELING

REVISIONS

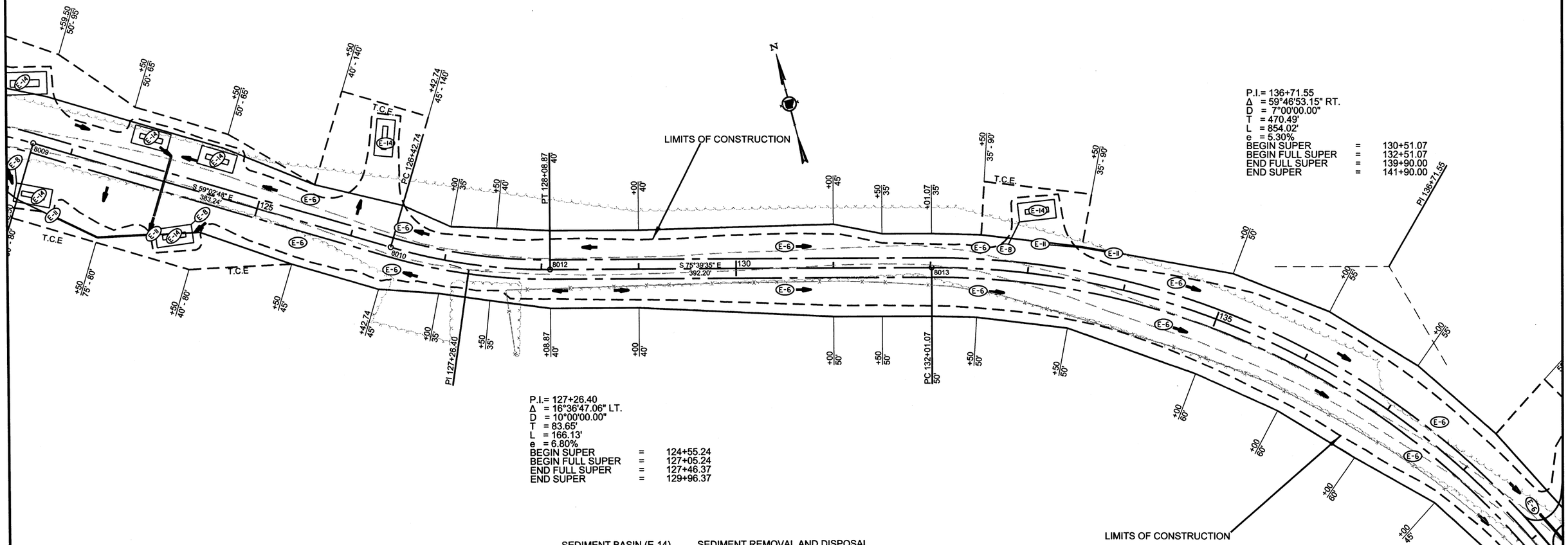
DATE	DESCRIPTION

SCALE IN FEET
0 100 200

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	9	65

(4) TEMPORARY EROSION CONTROL DETAILS



P.I.= 136+71.55
Δ = 59°46'53.15" RT.
D = 7°00'00.00"
T = 470.49'
L = 854.02'
e = 5.30%
BEGIN SUPER = 130+51.07
BEGIN FULL SUPER = 132+51.07
END FULL SUPER = 139+90.00
END SUPER = 141+90.00

P.I.= 127+26.40
Δ = 16°36'47.06" LT.
D = 10°00'00.00"
T = 83.65'
L = 166.13'
e = 6.80%
BEGIN SUPER = 124+55.24
BEGIN FULL SUPER = 127+05.24
END FULL SUPER = 127+46.37
END SUPER = 129+96.37

	SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 126+00 ON LT.	= 50 CU. YD.	50.0 CU. YD.
STA. 133+00 ON LT.	= 50 CU. YD.	50.0 CU. YD.

	SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL
STA. 133+08 TO 133+82 ON LT.	77 LIN. FT.	8.5 CU. YD.

	DIVERSION DITCH (E-8)
STA. 132+75 TO 132+87 ON LT.	33 LIN. FT.

	ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 125+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 126+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 130+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 132+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 134+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 137+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.

REVISIONS

DATE	DESCRIPTION

SCALE IN FEET
0 100 200

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11340
11/4/19
BRYAN FREELING

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	10	65

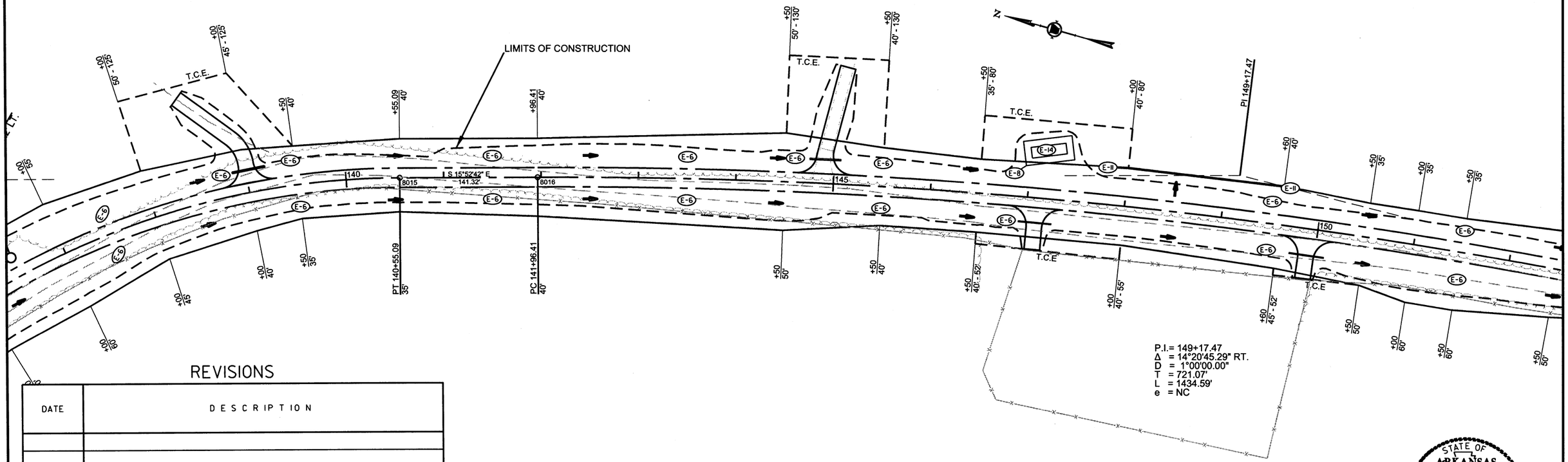
④ TEMPORARY EROSION CONTROL DETAILS

	SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 147+15 ON LT.	= 102 CU. YD.	102.0 CU. YD.

	SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL
STA. 147+79 TO 149+66 ON LT.	189 LIN. FT.	20.8 CU. YD.

	DIVERSION DITCH (E-8)
STA. 146+85 TO 146+96 ON LT.	15 LIN. FT.

	ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 138+75 ON LT.	= 3.0 CU. YD.	1.5 CU. YD.
STA. 139+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 141+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 143+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 144+60 ON LT.	= 3.0 CU. YD.	1.5 CU. YD.
STA. 145+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 146+80 ON RT.	= 3.0 CU. YD.	1.5 CU. YD.
STA. 149+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 151+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.



REVISIONS

DATE	DESCRIPTION

SCALE IN FEET

0 100 200

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/19

TEMPORARY EROSION CONTROL DETAILS

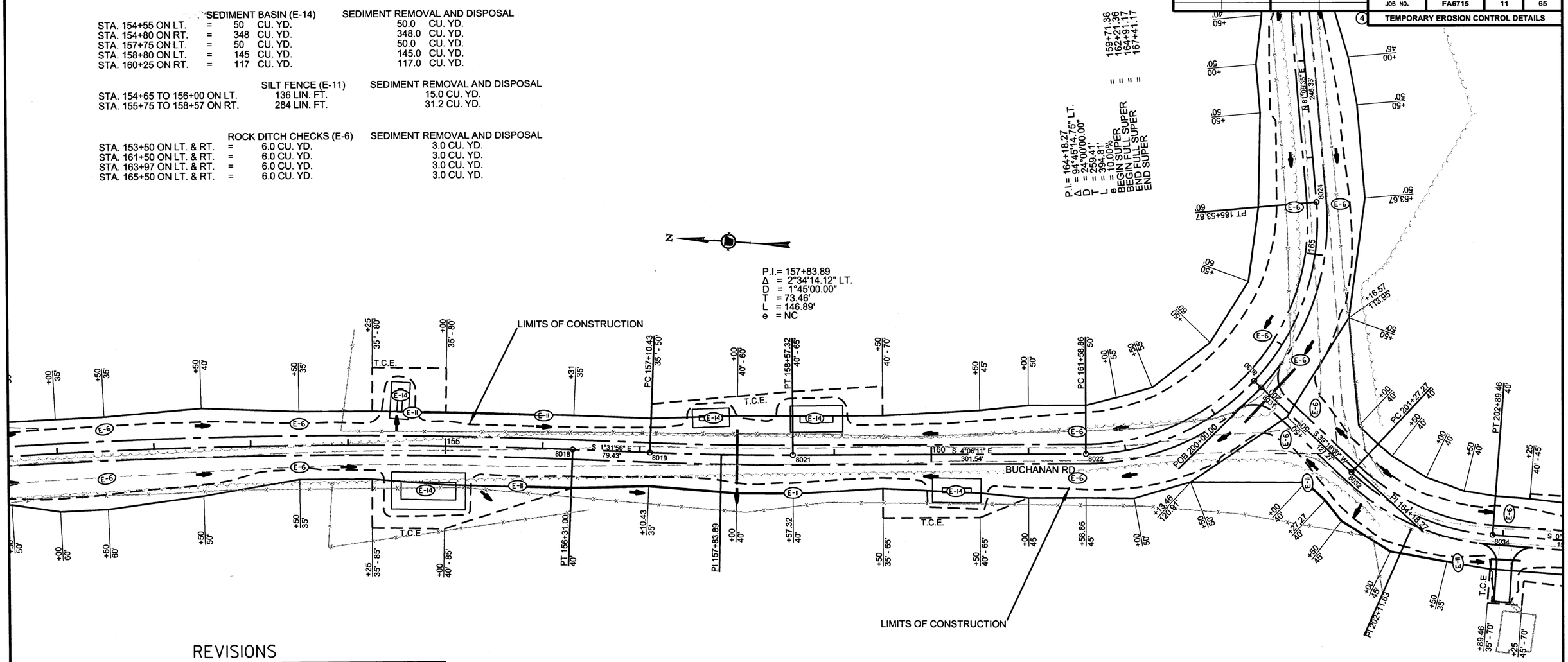
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	11	65

4 TEMPORARY EROSION CONTROL DETAILS

	SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 154+55 ON LT.	= 50 CU. YD.	50.0 CU. YD.
STA. 154+80 ON RT.	= 348 CU. YD.	348.0 CU. YD.
STA. 157+75 ON LT.	= 50 CU. YD.	50.0 CU. YD.
STA. 158+80 ON LT.	= 145 CU. YD.	145.0 CU. YD.
STA. 160+25 ON RT.	= 117 CU. YD.	117.0 CU. YD.

	SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL
STA. 154+65 TO 156+00 ON LT.	136 LIN. FT.	15.0 CU. YD.
STA. 155+75 TO 158+57 ON RT.	284 LIN. FT.	31.2 CU. YD.

	ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 153+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 161+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 163+97 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.
STA. 165+50 ON LT. & RT.	= 6.0 CU. YD.	3.0 CU. YD.



REVISIONS

DATE	DESCRIPTION

SCALE IN FEET
0 100 200

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
11/4/19
BRYAN FREELING

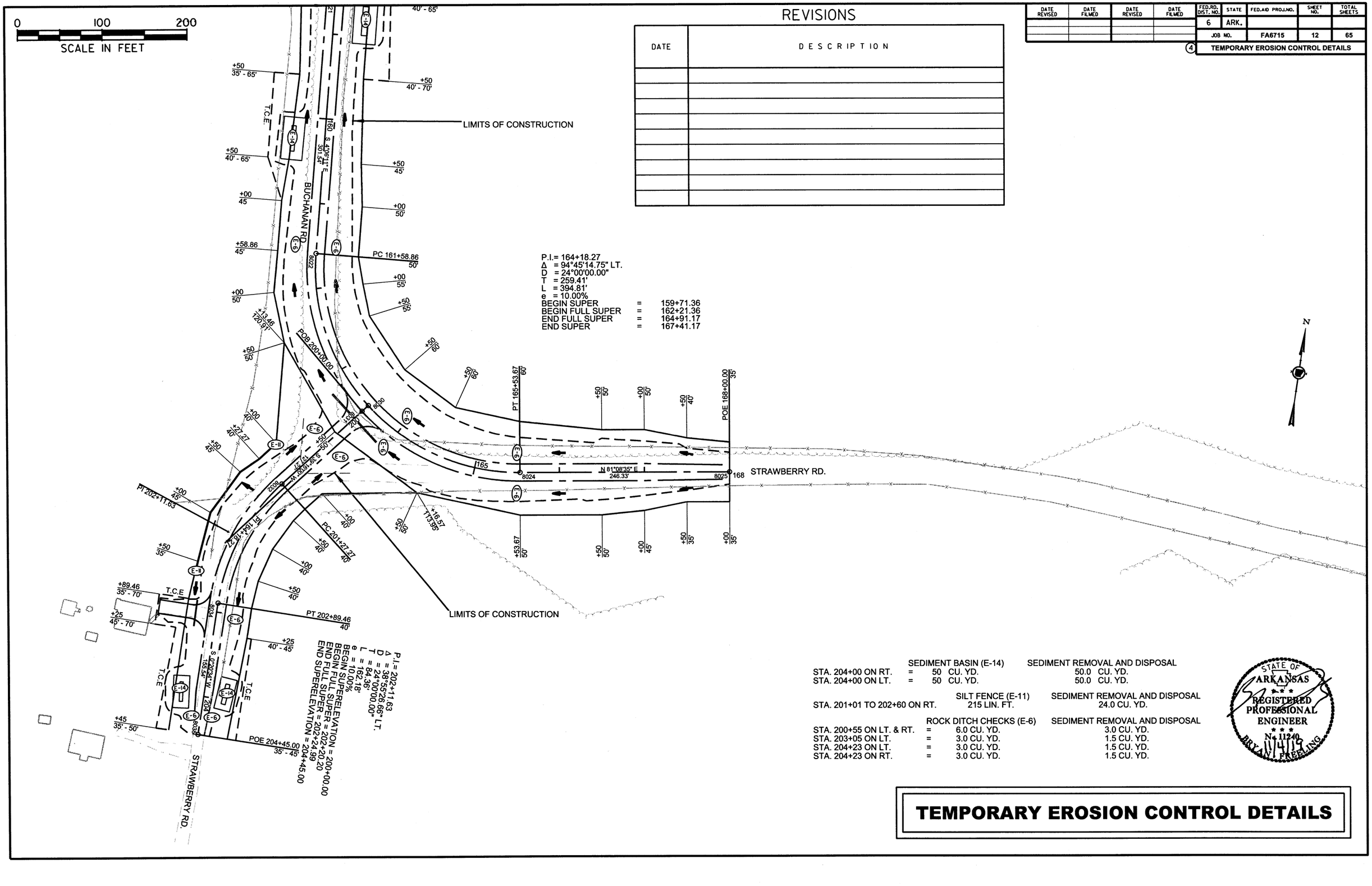
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	12	65
				(4)	TEMPORARY EROSION CONTROL DETAILS			

REVISIONS

DATE	DESCRIPTION

0 100 200
SCALE IN FEET



		SEDIMENT BASIN (E-14)	SEDIMENT REMOVAL AND DISPOSAL
STA. 204+00 ON RT.	=	50 CU. YD.	50.0 CU. YD.
STA. 204+00 ON LT.	=	50 CU. YD.	50.0 CU. YD.

	SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL
STA. 201+01 TO 202+60 ON RT.	215 LIN. FT.	24.0 CU. YD.

		ROCK DITCH CHECKS (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA. 200+55 ON LT. & RT.	=	6.0 CU. YD.	3.0 CU. YD.
STA. 203+05 ON LT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 204+23 ON LT.	=	3.0 CU. YD.	1.5 CU. YD.
STA. 204+23 ON RT.	=	3.0 CU. YD.	1.5 CU. YD.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
1/4/19
BRYAN FABELING

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	13	65

(4) QUANTITIES

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	STATION
100+00	168+00	68	68
200+00	204+45	5	5
TOTALS:		73	73

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	DESCRIPTION	FENCE	GATES	SIGN	PIPE CULVERT
				LIN. FT.	EACH	EACH	EACH
100+31	102+21	RIGHT	FENCE	245			
107+08	107+33	RIGHT	GATE		1		
127+65	145+19	RIGHT	FENCE	1744			
144+89		LEFT	GATES		3		
146+60		RIGHT	PIPE CULVERT				1
150+33	152+87	RIGHT	FENCE	252			
153+93	168+00	LEFT	FENCE	1425			
154+25	156+09	RIGHT	FENCE	183			
159+50	160+84	RIGHT	FENCE	134			
164+50	168+00	RIGHT	FENCE	368			
200+61		LEFT	STOP SIGN			1	
201+03	203+97	LEFT	FENCE	293			
201+73	201+83	RIGHT	FENCE	14			
201+90	202+44	RIGHT	FENCE	62			
TOTALS:				4720	4	1	1

REMOVAL AND RELOCATION OF SIGN

STATION*	SIGN DESCRIPTION	REMOVAL AND RELOCATION OF SIGN
		EACH
100+30	PLEASANT RIDGE COMMUNITY CHRUCH	1
100+30	SUPER-FAST SATELLITE INTERENT PROTECH SATELLITE	1
100+56	LONE OAK MISSIONARY BAPTISTS CHURCH	1
163+72	LONE OAK CHURCH	1
163+74	PLEASANT RIDGE COMMUNITY CHURCH	1
163+76	PUBLIC ACCESS	1
TOTAL:		6

*NOTE: LOCATION APPROXIMATED. SIGNS SHALL BE REMOVED AND RELOCATED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT		
			NORMAL	ADDITIONAL	TOTAL	NORMAL	ADDITIONAL	TOTAL
			CY. YD.					
100+00	168+00	MAIN LANES - BUCHANAN RD.	31426		31426	7823		7823
100+00	168+00	TEMPORARY EROSION CONTROL		3368	3368		3368	3368
101+94	102+88	OBLITERATION OF EXISTING ROADWAY ON LEFT			8			
104+70		FIELD ENTRANCE, LEFT		170	170		27	27
107+22		FIELD ENTRANCE, RIGHT		14	14		104	104
109+72		FIELD ENTRANCE, LEFT		81	81		21	21
121+77		DRIVEWAY, LEFT		78	78		1859	1859
139+02		FIELD ENTRANCE, LEFT		63	63		38	38
144+89		FIELD ENTRANCE, LEFT		60	60		53	53
147+09		DRIVEWAY, RIGHT		9	9		25	25
147+25	149+33	OBLITERATION OF EXISTING ROADWAY ON RIGHT			33			
149+91		DRIVEWAY, RIGHT		3	3		42	42
162+92	163+36	OBLITERATION OF EXISTING ROADWAY ON RIGHT			41			
163+71	164+40	OBLITERATION OF EXISTING ROADWAY ON RIGHT			80			
200+00	204+45	MAIN LANES - STRAWBERRY RD.	545		545	1121		1121
200+00	204+45	TEMPORARY EROSION CONTROL		187	187		187	187
203+04		DRIVEWAY, RIGHT		8	8		40	40
TOTALS:			31971	4041	36174	8944	5764	14708

NOTE: EARTHWORK QUANTITIES SHOWN SHALL BE PAID AS PLAN QUANTITY

FENCING

STATION	STATION	SIDE	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D)
			LIN. FT.	LIN. FT.
100+31	102+21	RIGHT		229
127+67	145+19	RIGHT		1701
150+33	152+87	RIGHT		253
153+95	168+00	LEFT	1316	
154+25	156+09	RIGHT		183
159+50	160+84	RIGHT		134
164+34	168+00	RIGHT		412
201+03	203+97	LEFT		267
201+73	201+83	RIGHT		11
201+90	202+44	RIGHT		67
TOTALS:			1316	3257

GATES

STATION	SIDE	18'-0" GATES
		EACH
107+22	RIGHT	1
144+89	LEFT	1
TOTAL:		2

CONCRETE DITCH PAVING

STATION	STATION	SIDE	WIDTH	CONCRETE DITCH PAVING (TYPE B)	SOLID SODING	WATER
			LIN. FT.	SQ. YD.		M. GAL
120+00	121+40	LT	8	124	62	0.8
TOTALS:				124	62	0.8

BASIS OF ESTIMATE:
WATER..... 12.6 GALLONS PER SQUARE YARD (SOLID SODDING)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
11/4/19
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	14	65

(4) QUANTITIES

BASE AND SURFACING

STARTING STATION	ENDING STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		PRIME COAT				ACHM SURFACE COURSE (1/2")*			
			FEET	TON/STATION	TON	WIDTH	SQ. YDS.	GAL./SQ.YD.	GALLONS	WIDTH	SQ. YDS.	LBS./SQ. YD.	TON
100+00.00	100+30.00	ADDITIONAL AT HWY. 58	30.00	VARIES	17.53	VARIES	42.92	0.4	17.17	VARIES	42.92	220.00	4.72
100+00.00	101+50.00	MAIN LANES	150.00	155.30	232.95	21.00	350.00	0.40	140.00	20.00	333.33	220.00	36.67
101+50.00	102+28.19	MAIN LANES	78.19	156.30	122.21	21.00	182.44	0.40	72.98	20.00	173.76	220.00	19.11
102+28.19	103+78.19	MAIN LANES	150.00	156.20	234.30	21.00	350.00	0.40	140.00	20.00	333.33	220.00	36.67
103+78.19	117+01.48	MAIN LANES	1323.29	151.80	2008.75	21.00	3087.68	0.40	1235.07	20.00	2940.64	220.00	323.47
104+70.00		FIELD ENTRANCE, LEFT	131.00		122.00	VARIES	250.86	0.40	100.34	VARIES	237.71	220.00	26.15
107+22.00		FIELD ENTRANCE, RIGHT	90.00		85.80	VARIES	187.19	0.40	74.88	VARIES	179.08	220.00	19.70
109+72.00		FIELD ENTRANCE, LEFT	100.00		94.60	VARIES	206.08	0.40	82.43	VARIES	196.85	220.00	21.65
117+01.48	119+51.48	MAIN LANES	250.00	156.30	390.75	21.00	583.33	0.40	233.33	20.00	555.56	220.00	61.11
119+51.48	121+97.00	MAIN LANES	245.52	157.40	386.45	21.00	572.88	0.40	229.15	20.00	545.60	220.00	60.02
121+77.00		DRIVEWAY, LEFT	240.00		214.40	VARIES	472.12	0.40	188.85	VARIES	447.22	220.00	49.19
121+97.00	124+47.00	MAIN LANES	250.00	156.30	390.75	21.00	583.33	0.40	233.33	20.00	555.56	220.00	61.11
124+47.00	124+55.24	MAIN LANES	8.24	151.80	12.51	21.00	19.23	0.40	7.69	20.00	18.31	220.00	2.01
124+55.24	127+05.24	MAIN LANES	250.00	155.30	388.25	21.00	583.33	0.40	233.33	20.00	555.56	220.00	61.11
127+05.24	127+46.37	MAIN LANES	41.13	158.40	65.15	21.00	95.97	0.40	38.39	20.00	91.40	220.00	10.05
127+46.37	129+96.37	MAIN LANES	250.00	155.20	388.00	21.00	583.33	0.40	233.33	20.00	555.56	220.00	61.11
129+96.37	130+51.07	MAIN LANES	54.70	151.80	83.03	21.00	127.63	0.40	51.05	20.00	121.56	220.00	13.37
130+51.07	132+51.07	MAIN LANES	200.00	155.10	310.20	21.00	466.67	0.40	186.67	20.00	444.44	220.00	48.89
132+51.07	139+90.00	MAIN LANES	738.93	155.20	1146.82	21.00	1724.17	0.40	689.67	20.00	1642.07	220.00	180.63
139+02.00		FIELD ENTRANCE, LEFT	120.00		111.00	VARIES	244.66	0.40	97.86	VARIES	233.16	220.00	25.65
139+90.00	141+90.00	MAIN LANES	200.00	154.90	309.80	21.00	466.67	0.40	186.67	20.00	444.44	220.00	48.89
141+90.00	159+71.36	MAIN LANES	1781.36	151.80	2704.10	21.00	4156.51	0.40	1662.60	20.00	3958.58	220.00	435.44
144+89.00		FIELD ENTRANCE, LEFT	112.00		99.90	VARIES	231.78	0.40	92.71	VARIES	221.24	220.00	24.34
147+09.00		DRIVEWAY, RIGHT	43.00		56.50	VARIES	98.52	0.40	39.41	VARIES	95.62	220.00	10.52
149+91.00		DRIVEWAY, RIGHT	42.00		55.70	VARIES	96.85	0.40	38.74	VARIES	94.04	220.00	10.34
159+71.36	162+21.36	MAIN LANES	250.00	156.30	390.75	21.00	583.33	0.40	233.33	20.00	555.56	220.00	61.11
162+21.36	164+91.17	MAIN LANES	269.81	158.40	427.38	21.00	629.56	0.40	251.82	20.00	599.58	220.00	65.95
164+91.17	167+41.17	MAIN LANES	250.00	156.30	390.75	21.00	583.33	0.40	233.33	20.00	555.56	220.00	61.11
167+41.17	168+00.00	MAIN LANES	58.83	151.80	89.30	21.00	137.27	0.40	54.91	20.00	130.73	220.00	14.38
200+00.00	200+30.00	ADDITIONAL FOR INTERSECTION	30.00	VARIES	17.53	VARIES	42.92	0.40	17.17	VARIES	42.92	220.00	4.72
200+00.00	202+20.20	MAIN LANES	220.2	156.30	344.17	21.00	513.80	0.40	205.52	20.00	489.33	220.00	53.83
202+20.20	202+24.99	MAIN LANES	4.79	150.40	7.20	21.00	11.18	0.40	4.47	20.00	10.64	220.00	1.17
202+24.99	204+45.00	MAIN LANES	220.01	157.40	346.30	21.00	513.36	0.40	205.34	20.00	488.91	220.00	53.78
203+04.00		DRIVEWAY, RIGHT	58.00		71.60	VARIES	126.87	0.40	50.75	VARIES	122.30	220.00	13.45
MAINTENANCE OF TRAFFIC*		ENTIRE PROJECT			2000.00								
TOTALS:					14116.43				7562.29				1981.42
USE:					14116				7562				1981

BASIS OF ESTIMATE:

AGGREGATE BASE COURSE (CLASS 7) _____ 152 TONS / STA.

PRIME COAT _____ 0.40 GAL. / SQ. YD.

***Nmax=115**

VOLUME CONTROL:

ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") _____ 5.5%

MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") _____ 94.5%

NOTE: RATES MAY BE MODIFIED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICTIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

PAVEMENT MARKING

STATION		REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4") CONTINUOUS	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4") CONTINUOUS
FROM	TO	LIN. FT.	LIN. FT.
100+00	168+00	13600	13600
200+00	204+45	890	890
TOTALS:		14490	14490

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
11/4/19
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	15	65

(4) QUANTITIES

TEMPORARY EROSION CONTROL

STATION	STATION	LOCATION	SEDIMENT BASIN (E-14)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	ROCK DITCH CHECK (E-6)	SAND BAG DITCH CHECK (E-5)	OBLITERATION OF SEDIMENT BASIN	SEDIMENT REMOVAL AND DISPOSAL	STANDARD DRAWING NUMBER
			CU. YD.	LIN. FT.	LIN. FT.	CU. YD.	BAG	CU. YD.	CU. YD.	
100+19		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
100+21		RT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
100+90		LT.	160					160	160.0	TEC-1, TEC-2, & TEC-3
100+90		RT.	109					109	109.0	TEC-1, TEC-2, & TEC-3
102+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
104+50		RT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
105+00		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
106+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
107+50		RT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
108+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
110+15		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
111+60	113+00	RT.		140					15.4	TEC-1, TEC-2, & TEC-3
114+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
116+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
118+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
120+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
121+25		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
122+10	122+19	LT.			19					TEC-1, TEC-2, & TEC-3
122+35		LT.	88					88	88.0	TEC-1, TEC-2, & TEC-3
122+45	122+54	RT.			24					TEC-1, TEC-2, & TEC-3
122+80		RT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
123+07	124+05	RT.		101					11.1	TEC-1, TEC-2, & TEC-3
123+75		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
124+25		RT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
124+39	124+47	RT.			15					TEC-1, TEC-2, & TEC-3
124+50		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
125+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
126+00		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
126+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
130+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
132+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
132+75	132+87	LT.			33					TEC-1, TEC-2, & TEC-3
133+00		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
133+08	133+82	LT		77					8.5	TEC-1, TEC-2, & TEC-3
134+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
137+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
138+75		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
139+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
141+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
143+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
144+60		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
145+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
146+80		RT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
146+85	146+96	LT.			15					TEC-1, TEC-2, & TEC-3
147+15		LT.	102					102	102.0	TEC-1, TEC-2, & TEC-3
147+79	149+66	LT.		189					20.8	TEC-1, TEC-2, & TEC-3
149+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
151+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
153+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
154+55		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
154+65	156+00	LT.		136					15.0	TEC-1, TEC-2, & TEC-3
154+80		RT.	348					348	348.0	TEC-1, TEC-2, & TEC-3
155+75	158+57	RT.		284					31.2	TEC-1, TEC-2, & TEC-3
157+75		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
158+80		LT.	145					145	145.0	TEC-1, TEC-2, & TEC-3
160+25		RT.	117					117	117.0	TEC-1, TEC-2, & TEC-3
161+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
163+97		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
165+50		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
200+55		LT. & RT.				6.0			3.0	TEC-1, TEC-2, & TEC-3
201+01	202+60	RT.		215					24.0	TEC-1, TEC-2, & TEC-3
203+05		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
204+00		RT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
204+00		LT.	50					50	50.0	TEC-1, TEC-2, & TEC-3
204+23		LT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
204+23		RT.				3.0			1.5	TEC-1, TEC-2, & TEC-3
ENTIRE PROJECT AS DIRECTED BY ENGINEER			170	120	50	3.0	300	170	192.2	TEC-1, TEC-2, & TEC-3
TOTALS:			1739	1262	156	189.0	300	1739	1980.2	

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

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

NOTE: ALL TEMPORARY EROSION CONTROL QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS FOR HIGH CONSTRUCTION, EDITION OF 2014.

TEMPORARY & PERMANENT SEEDING

STATION	STATION	LOCATION	TEMPORARY SEEDING	LIME	SEEDING	MULCH COVER	WATER	STANDARD DRAWING NUMBER
			ACRE	TON	ACRE	ACRE	M. GAL.	
100+00	168+00	MAIN LANES	7.41	14.82	7.41	14.82	907.0	TEC-3
200+00	204+45	MAIN LANES	0.33	0.66	0.33	0.66	40.4	TEC-3
ENTIRE PROJECT AS DIRECTED BY ENGINEER								
TOTALS:			7.74	15.48	7.74	15.48	947.4	
USE:			7.74	16.00	7.74	15.48	947.4	

BASIS OF ESTIMATE:
LIME.....2 TON PER ACRE, (SEEDING)
WATER.....102 M.G. / ACRE, (SEEDING)
WATER.....20.4 M.G. / ACRE, (TEMPORARY SEEDING)

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

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

NOTE: ALL TEMPORARY EROSION CONTROL QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014

TRAFFIC CONTROL DEVICES

STATION	W20-1 1500 FT. NO.	W20-1 1500 FT. SQ. FT.	W20-1 1000 FT. NO.	W20-1 1000 FT. SQ. FT.	W20-1 500 FT. NO.	W20-1 500 FT. SQ. FT.	W21-5a NO.	W21-5a SQ. FT.	G20-1 NO.	G20-1 SQ. FT.	G20-2 NO.	G20-2 SQ. FT.	TRAFFIC DRUMS* EACH	STANDARD DRAWING NUMBER
100+00							1	9						TC-1, TC-2, & TC-3
100+06									1	10	1	8		TC-1, TC-2, & TC-3
168+00									1	10				TC-1, TC-2, & TC-3
173+00					1	16					1	8		TC-1, TC-2, & TC-3
178+00			1	16										TC-1, TC-2, & TC-3
183+00	1	16												TC-1, TC-2, & TC-3
204+45									1	10				TC-1, TC-2, & TC-3
209+45					1	16					1	8		TC-1, TC-2, & TC-3
214+45			1	16										TC-1, TC-2, & TC-3
219+45	1	16												TC-1, TC-2, & TC-3
ENTIRE PROJECT													50*	TC-1, TC-2, & TC-3
SUBTOTALS:	2	32	2	32	2	32	1	9	3	30	3	24	50*	
TOTAL:												159	50*	

NOTE: LOCATION OF THE TRAFFIC CONTROL DEVICES TO BE AS DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

*QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11212
11/12/19
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-20-19				6	ARK.			
				JOB NO.		FA6715	16	65

④ QUANTITIES

STRUCTURES

STATION	DESCRIPTION	CROSS DRAIN ALTERNATES		FLARED END SECTION ALTERNATES		SIDE DRAINS			SELECTED PIPE BEDDING*	SOLID SODDING	WATER	STANDARD DRAWING NUMBERS
		24" R.C.P (CLASS III)	24" C.M.P., P.V.C., H.D.P.E., & POLYPROPYLENE	24" F.E.S. R.C.P	24" F.E.S. FOR C.M.P.	18"	21" X 15"	24"				
		LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.			CU. YD.	SQ. YD.	M. GAL.	
104+70	SIDE DRAIN LT.					36						PCM-1, PCC-1, PCP-1& PCP-2
107+22	SIDE DRAIN RT.					36						PCM-1, PCC-1, PCP-1& PCP-2
109+72	SIDE DRAIN LT.					32						PCM-1, PCC-1, PCP-1& PCP-2
121+77	SIDE DRAIN LT.							80				PCM-1, PCC-1, PCP-1& PCP-2
124+00	CROSS DRAIN	60	66	2	2				2	16	0.2	PCM-1, PCC-1, PCP-1, PCP-2, FES-1, & FES-2
139+02	SIDE DRAIN LT.					34						PCM-1, PCC-1, PCP-1& PCP-2
144+89	SIDE DRAIN LT.						32					PCM-1, PCC-1, PCP-1& PCP-2
147+09	SIDE DRAIN RT.					34						PCM-1, PCC-1, PCP-1& PCP-2
149+91	SIDE DRAIN RT.					36						PCM-1, PCC-1, PCP-1& PCP-2
158+00	CROSS DRAIN	50	56	2	2				2	16	0.2	PCM-1, PCC-1, PCP-1, PCP-2, FES-1, & FES-2
200+12	CROSS DRAIN	70	76	2	2				2	16	0.2	PCM-1, PCC-1, PCP-1, PCP-2, FES-1, & FES-2
203+04	SIDE DRAIN RT.					30						PCM-1, PCC-1, PCP-1, & PCP-2
TOTALS:		180	198	6	6	238	32	80	6	48	0.6	

NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR PLASTIC PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 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 FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

BASIS OF ESTIMATE:
WATER..... 12.6 GALLONS PER SQUARE YARD (SOLID SODDING)

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER																SUPPORT ASSEMBLIES		STANDARD DRAWING NUMBER
		R1-1 (STOP)		W1-1R (CURVE)		W1-1L (CURVE)		W1-8 (CHEVRON)		W3-1 (STOP AHEAD)		W8-3 (PAVEMENT ENDS)		*OM-3L (OBJECT MARKER)		*OM-3R (OBJECT MARKER)		TYPE A	TYPE C	
		NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	EACH		
100+06	LEFT	1	6.25															1		SHS-1 & SHS-2
100+66	RIGHT							1	3.00									1		SHS-1 & SHS-2
101+81	LEFT									1	9.00							1		SHS-1 & SHS-2
104+41	LEFT			1	6.25													1		SHS-1 & SHS-2
101+06	RIGHT							1	3.00									1		SHS-1 & SHS-2
101+46	RIGHT							1	3.00									1		SHS-1 & SHS-2
101+86	RIGHT							1	3.00									1		SHS-1 & SHS-2
102+26	RIGHT							1	3.00									1		SHS-1 & SHS-2
102+66	RIGHT							1	3.00									1		SHS-1 & SHS-2
117+13	RIGHT			1	6.25													1		SHS-1 & SHS-2
123+97	RIGHT													1	3.00	1	3.00		1	SHS-1 & SHS-2
124+03	LEFT													1	3.00	1	3.00		1	SHS-1 & SHS-2
124+35	LEFT					1	6.25											1		SHS-1 & SHS-2
124+68	RIGHT			1	6.25													1		SHS-1 & SHS-2
129+84	LEFT			1	6.25													1		SHS-1 & SHS-2
130+26	RIGHT			1	6.25													1		SHS-1 & SHS-2
142+31	LEFT					1	6.25											1		SHS-1 & SHS-2
157+97	RIGHT													1	3.00	1	3.00		1	SHS-1 & SHS-2
158+03	LEFT													1	3.00	1	3.00		1	SHS-1 & SHS-2
159+83	RIGHT					1	6.25											1		SHS-1 & SHS-2
166+25	RIGHT											1	9.00					1		SHS-1 & SHS-2
167+29	LEFT			1	6.25													1		SHS-1 & SHS-2
200+08	LEFT	1	6.25															1		SHS-1 & SHS-2
201+83	LEFT									1	9.00							1		SHS-1 & SHS-2
204+64	LEFT			1	6.25													1		SHS-1 & SHS-2
TOTALS:		2	12.50	7	43.75	3	18.75	6	18.00	2	18.00	1	9.00	4	12.00	4	12.00	21	4	

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

*TWO OM-3'S PLACED BACK TO BACK ON EACH SIDE OF A SINGLE TYPE C SUPPORT ASSEMBLY.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
12/20/19

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	17	65
				(4)	SUMMARY OF QUANTITIES AND REVISIONS			

SUMMARY OF QUANTITIES

ITEM NO.	ITEM		QUANTITY	UNIT
201	CLEARING		73	STATION
201	GRUBBING		73	STATION
202	REMOVAL AND DISPOSAL OF FENCE		4720	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		4	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		1	EACH
202	REMOVAL AND RELOCATION OF SIGN		6	EACH
210	UNCLASSIFIED EXCAVATION		36174	CU. YD.
210	COMPACTED EMBANKMENT		14708	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		14116	TON
SS & 401	PRIME COAT		7562	GAL
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		1872	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		109	TON
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SP, SS, & 604	SIGNS		159	SQ. FT.
SP, SS, & 604	TRAFFIC DRUMS		50	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)		124	SQ. YD.
* 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	180	LIN. FT.
* 606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	198	LIN. FT.
* 606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	198	LIN. FT.
* 606	24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 4)	198	LIN. FT.
* SP & 606	24" POLYPROPYLENE PIPE	(ALTERNATE NO. 5)	198	LIN. FT.
* SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 6)	198	LIN. FT.
* SP & 606	24" PVC PIPE	(ALTERNATE NO. 7)	198	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		238	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		80	LIN. FT.
SS & 606	21" X 15" SIDE DRAIN		32	LIN. FT.
* 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	6	EACH
* 606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	6	EACH
606	SELECTED PIPE BEDDING		6	CU. YD.
619	WIRE FENCE (TYPE C)		1316	LIN. FT.
619	WIRE FENCE (TYPE D)		3257	LIN. FT.
* 619	18' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
* 619	18' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
620	LIME		16	TON
620	SEEDING		7.74	ACRE
SS & 620	MULCH COVER		15.48	ACRE
620	WATER		948.8	M. GAL.
621	TEMPORARY SEEDING		7.74	ACRE
621	SILT FENCE		1262	LIN. FT.
621	SAND BAG DITCH CHECKS		300	BAG
621	DIVERSION DITCH		156	LIN. FT.
621	SEDIMENT BASIN		1739	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		1739	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		1980.2	CU. YD.
621	ROCK DITCH CHECKS		189	CU. YD.
624	SOLID SODDING		110	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")		14490	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		14490	LIN. FT.
SS & 726	STANDARD SIGN		144.00	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE A)		21	EACH
729	CHANNEL POST SIGN SUPPORT (TYPE C)		4	EACH

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
12/20/2019	REVISED ROADWAY STANDARD DRAWINGS, REVISED SPECIAL PROVISION "PLASTIC PIPE", ADDED 24" POLYPROPYLENE PIPE, ADDED SPECIAL PROVISION "TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)"	2, 3, 16, & 17

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
12/30/19

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	18	65

④ SURVEY CONTROL DETAILS

COORDINATES

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

POINT	NORTHING	EASTING	ELEVATION	FEATURE	DESCRIPTION
1	655806.9449	1475019.3627	503.13	CTL	CPS
2	655474.6429	1475763.1746	541.56	CTL	CPS
3	655515.2312	1476062.9994	556.52	SU	5/8" REBAR 2" ALUMINUM CAP
4	655804.2006	1476568.4377	556.62	CTL	5/8" REBAR 2" ALUMINUM CAP
5	656052.8596	1477103.5030	562.33	CTL	5/8" REBAR 2" ALUMINUM CAP
6	656328.9167	1477527.1841	559.18	CTL	5/8" REBAR 2" ALUMINUM CAP
7	656265.8031	1477914.4597	534.57	CTL	5/8" REBAR 2" ALUMINUM CAP
8	655999.0472	1478305.6636	553.46	CTL	5/8" REBAR 2" ALUMINUM CAP
9	655944.4860	1478703.8930	543.50	CTL	5/8" REBAR 2" ALUMINUM CAP
10	655707.6862	1479078.9162	531.88	CTL	5/8" REBAR 2" ALUMINUM CAP
11	655463.3159	1479286.2167	512.09	CTL	5/8" REBAR 2" ALUMINUM CAP
12	654738.9769	1479402.3097	489.09	CTL	5/8" REBAR 2" ALUMINUM CAP
13	654209.7626	1479518.9982	486.05	CTL	5/8" REBAR 2" ALUMINUM CAP
14	653568.9136	1479538.9333	468.87	SU	5/8" REBAR 2" ALUMINUM CAP
15	652995.0134	1479623.4334	489.33	CTL	5/8" REBAR 2" ALUMINUM CAP
16	653123.5345	1480223.8010	490.15	CTL	5/8" REBAR 2" ALUMINUM CAP
17	653121.5186	1480696.2897	477.59	CTL	5/8" REBAR 2" ALUMINUM CAP
150	653624.2829	1479532.5483	467.85	CTL	NID
200	655463.0178	1475577.1237	527.38	IP	1/2" REBAR IN PILE OF STONES
503	655496.9599	1476012.5777	557.03	CTL	REBAR+CAP new
901	655450.8683	1475730.4391	538.96	BM	"CPS IN 18"" RED"
903	655756.1183	1479045.4899	534.19	BM	CPS IS PP LT.
904	654431.6285	1479490.4415	487.77	BM	"CPS IS 14"" HIC"
905	653024.8731	1479838.8666	490.16	BM	CPS IS PP RT
1048	653096.5915	1480996.0657	473.15	SU	5/8" REBAR 2" ALUMINUM CAP
1049	653126.6101	1480248.1242	489.77	SU	5/8" REBAR 2" ALUMINUM CAP
1051	653796.8227	1479520.8867	469.90	SU	5/8" REBAR 2" ALUMINUM CAP
1052	654367.4867	1479499.9104	487.37	SU	5/8" REBAR 2" ALUMINUM CAP
1053	655491.0558	1479267.4554	514.14	SU	5/8" REBAR 2" ALUMINUM CAP
1054	655808.8130	1478945.8477	536.66	SU	5/8" REBAR 2" ALUMINUM CAP
1055	655971.0974	1478591.7363	550.40	SU	5/8" REBAR 2" ALUMINUM CAP
1056	656025.5753	1478215.6435	550.19	SU	5/8" REBAR 2" ALUMINUM CAP
1057	656308.0818	1477830.9893	536.61	SU	5/8" REBAR 2" ALUMINUM CAP
1058	656301.6726	1477470.4303	560.80	SU	5/8" REBAR 2" ALUMINUM CAP
1059	655943.3509	1476905.7435	561.06	SU	5/8" REBAR 2" ALUMINUM CAP
1060	655758.1769	1476478.3991	554.96	SU	5/8" REBAR 2" ALUMINUM CAP
1061	655497.0029	1476012.5919	553.57	SU	5/8" REBAR 2" ALUMINUM CAP

USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.999954855 HAS BEEN USED TO COMPUTE THE ABOVE COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME SFA6704G1.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88
REFERENCES POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS HAVE BEEN ESTABLISHED BY RESECTION.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL.

BASIS OF BEARINGS
GRID NORTH BASED ON GPS CONTROL AT POINT NUMBER 1
LAT: N36° 08' 01" LON: W91° 26' 58"
ARKANSAS STATE PLANE GRID COORDINATES NORTH-SOUTH ZONE,
NORTHING: 655777.3385 EASTING: 1474952.7730

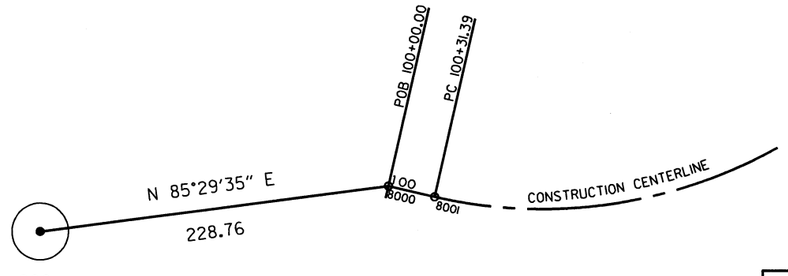
CONVERGENCE ANGLE 0°19'19" RIGHT
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

CONSTRUCTION CENTERLINE COORDINATES FOR BUCHANAN

POINT NAME	NORTHING	EASTING	DESCRIPTION	STATION
8000	655480.99378	1475808.17760	POB	100+00.00
8001	655473.86160	1475835.74374	PC	100+31.39
8003	655505.55277	1476062.58860	PT	102+65.69
8004	655650.46091	1476323.57853	PC	105+64.21
8006	655669.92011	1476359.14299	PT	106+04.75
8007	656279.36225	1477489.54931	PC	118+88.98
8009	656271.25585	1477843.67312	PT	122+59.50
8010	656074.13876	1478172.33638	PC	126+42.74
8012	656010.39395	1478325.12117	PT	128+08.87
8013	655913.25558	1478705.09285	PC	132+01.07
8015	655344.18771	1479289.64436	PT	140+55.09
8016	655208.25815	1479328.30914	PC	141+96.41
8018	653793.89479	1479544.87088	PT	156+31.00
8019	653714.49040	1479546.99501	PC	157+10.43
8021	653567.78944	1479554.21513	PT	158+57.32
8022	653267.02607	1479575.78956	PC	161+58.86
	653099.27855	1479662.80881	STRAWBERRY STA. 99+90.00	163+53.15
8024	653048.22131	1479850.66760	PT	165+53.67
8025	653086.14906	1480094.06341	POE	168+00.00

CONSTRUCTION CENTERLINE COORDINATES FOR STRAWBERRY

POINT NAME	NORTHING	EASTING	DESCRIPTION	STATION
8030	653099.27855	1479662.80881	BUCHANAN STA. 163+53.15	199+90.00
8031	653091.53647	1479656.47949	POB	200+00.00
8032	652993.00140	1479575.92489	PC	201+27.27
8034	652843.32791	1479522.02519	PT	202+89.46
8035	652687.78648	1479521.09489	POE	204+45.00



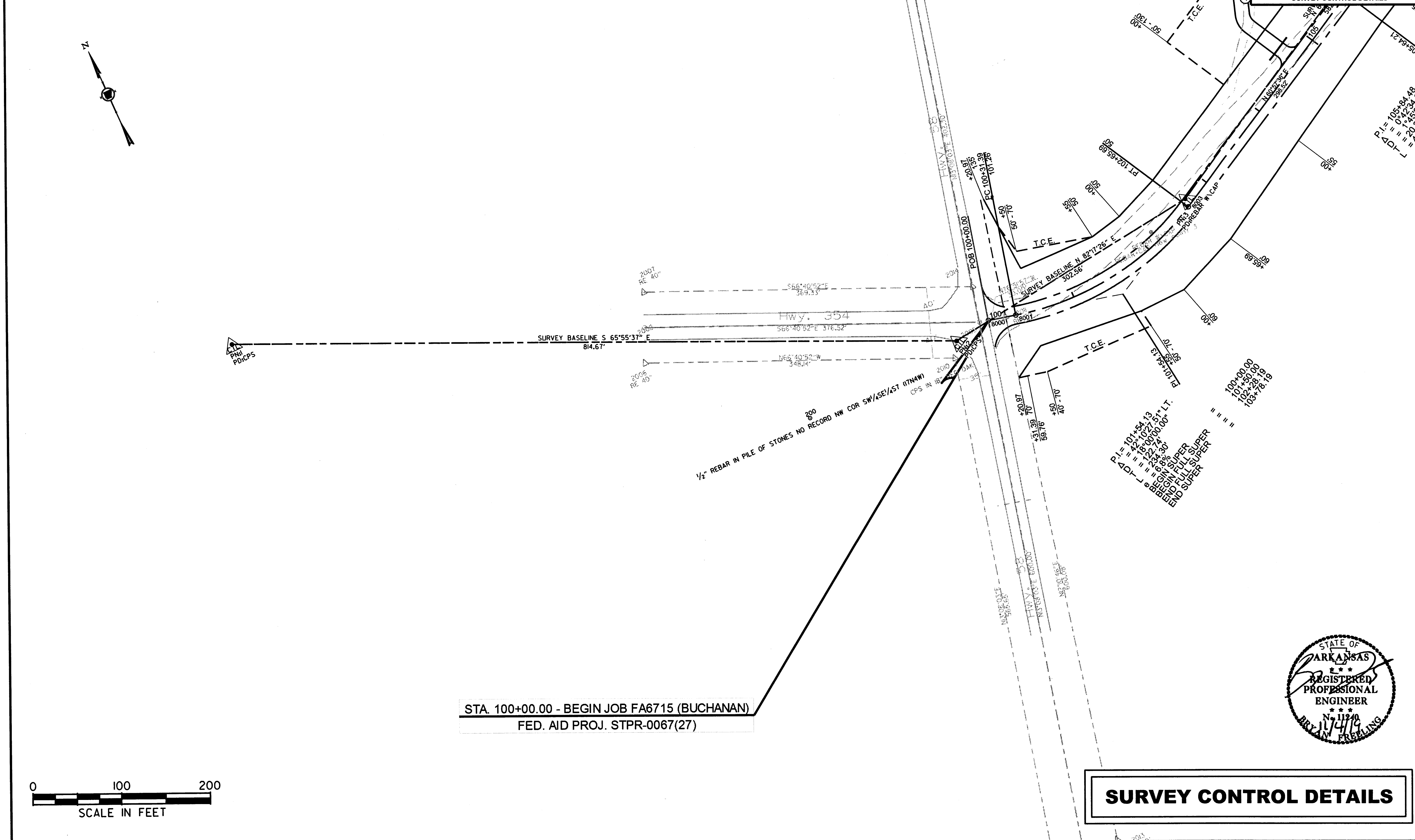
200
½" REBAR IN PILE OF STONES
NW COR SW¼SE¼S7 (17N4W)

LAND TIE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 11240
BRYAN FREELING
11/4/19

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.		FA6715	19	65
				SURVEY CONTROL DETAILS				

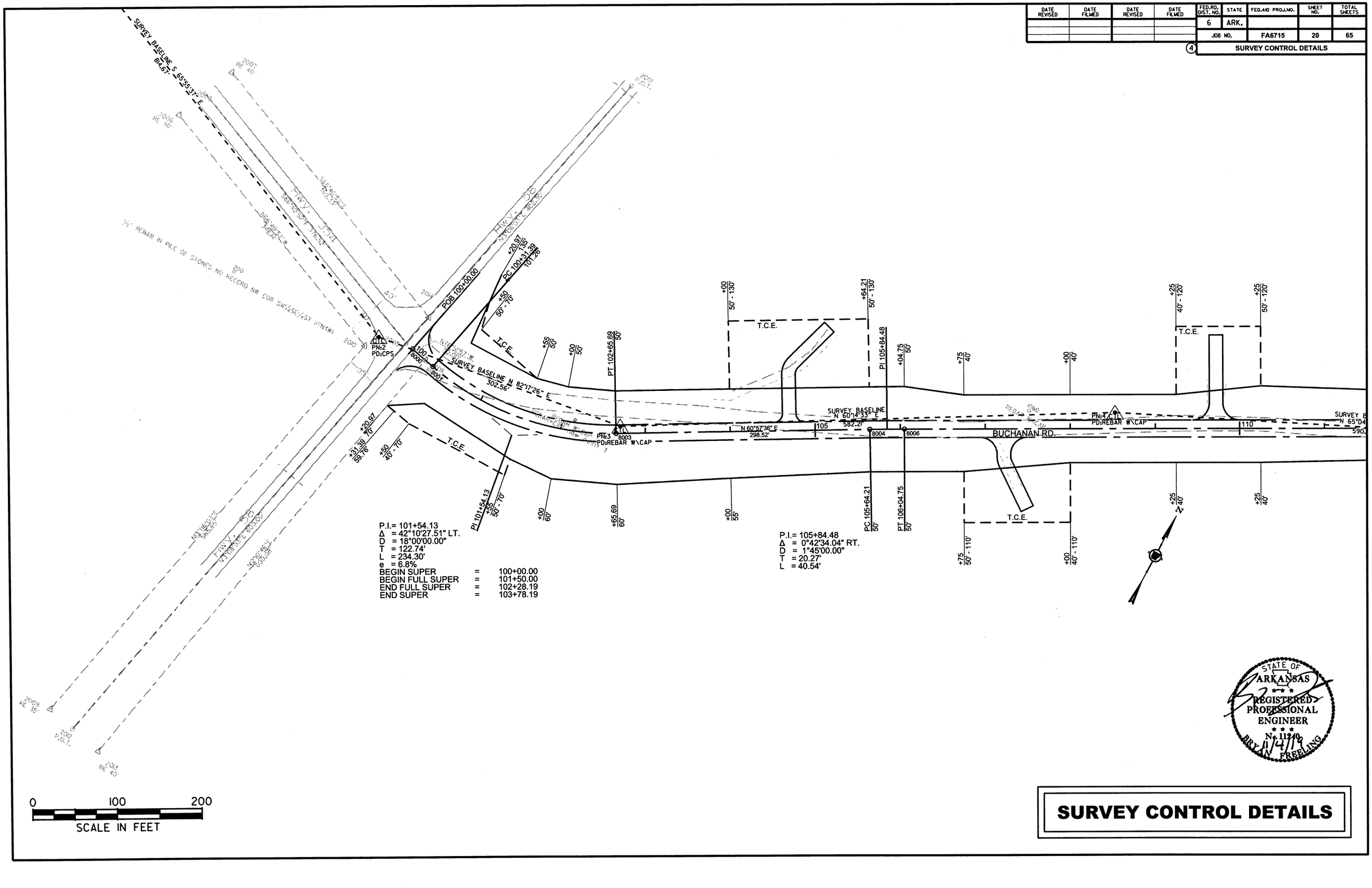


N
SURVEY BASELINE S 65°55'37" E
814.67'
PN1
PD:CPS
SURVEY BASELINE N 82°17'26" E
302.56'
N 60°52'36" E
298.52'
Hwy. 354
POB 100+00.00
PC 100+31.39
PT 102+65.69
PI 101+54.13
T.C.E.
1/2" REBAR IN PILE OF STONES NO RECORD NW COR SW1/4SE1/4S7 (17N4W)
P.I. = 101+54.13
Δ = 42°10'27.51" LT.
D = 18°00'00.00"
T = 122.74'
L = 234.30'
e = 6.8%
BEGIN SUPER = 100+00.00
BEGIN FULL SUPER = 101+50.00
END FULL SUPER = 102+28.19
END SUPER = 103+78.19
P.I. = 105+84.48
Δ = 0°42'34.04" R
D = 1°45'00.00"
T = 20.27'
L = 40.54'
STA. 100+00.00 - BEGIN JOB FA6715 (BUCHANAN)
FED. AID PROJ. STPR-0067(27)
0
100
200
SCALE IN FEET
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/19

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.		FA6715	20	65

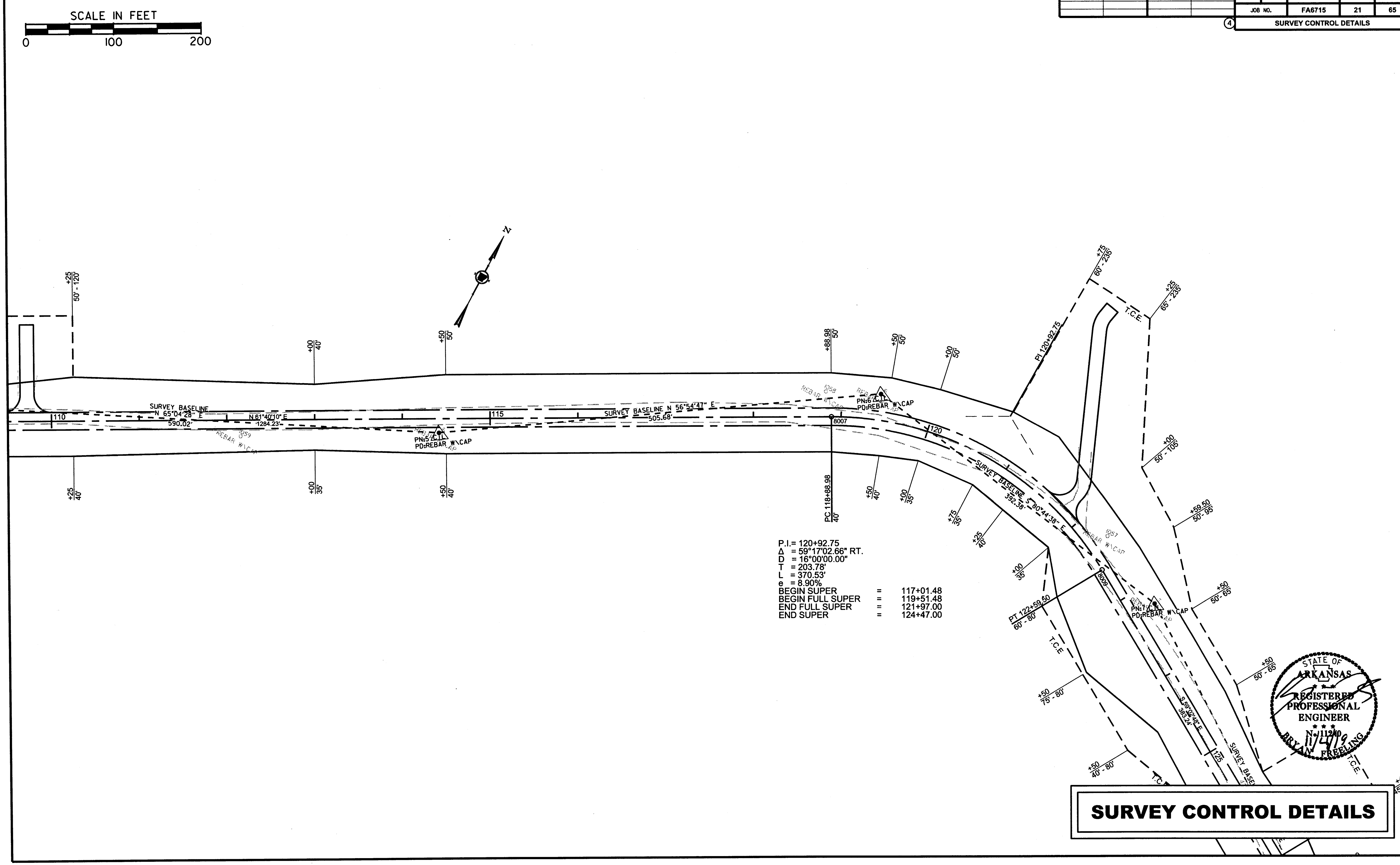
4 SURVEY CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11210
11/4/19
BRYAN FREELING

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.		FA6715	21	65
				4	SURVEY CONTROL DETAILS			



P.I.= 120+92.75
Δ = 59°17'02.66" RT.
D = 16°00'00.00"
T = 203.78'
L = 370.53'
e = 8.90%

BEGIN SUPER	=	117+01.48
BEGIN FULL SUPER	=	119+51.48
END FULL SUPER	=	121+97.00
END SUPER	=	124+47.00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/19

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.		FA6715	22	65

4 SURVEY CONTROL DETAILS

SCALE IN FEET

0 100 200

P.I.= 136+71.55
Δ = 59°46'53.15" RT.
D = 7°00'00.00"
T = 470.49'
L = 854.02'
e = 5.30%
BEGIN SUPER = 130+51.07
BEGIN FULL SUPER = 132+51.07
END FULL SUPER = 139+90.00
END SUPER = 141+90.00

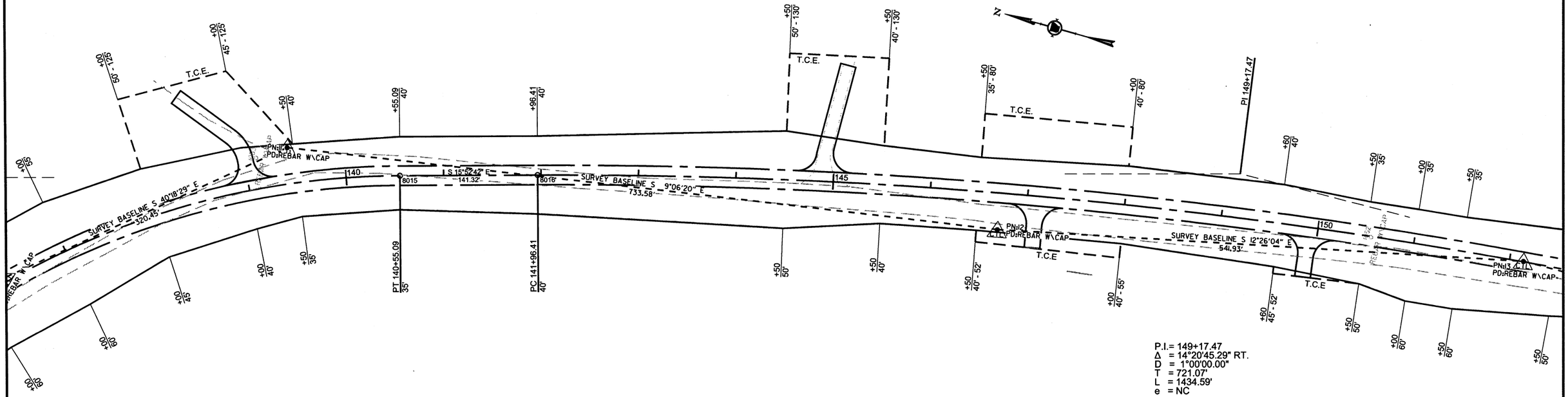
P.I.= 127+26.40
Δ = 16°36'47.06" LT.
D = 10°00'00.00"
T = 83.65'
L = 166.13'
e = 6.80%
BEGIN SUPER = 124+55.24
BEGIN FULL SUPER = 127+05.24
END FULL SUPER = 127+46.37
END SUPER = 129+96.37

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/19

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.		FA6715	23	65
				4	SURVEY CONTROL DETAILS			

SCALE IN FEET
0 100 200



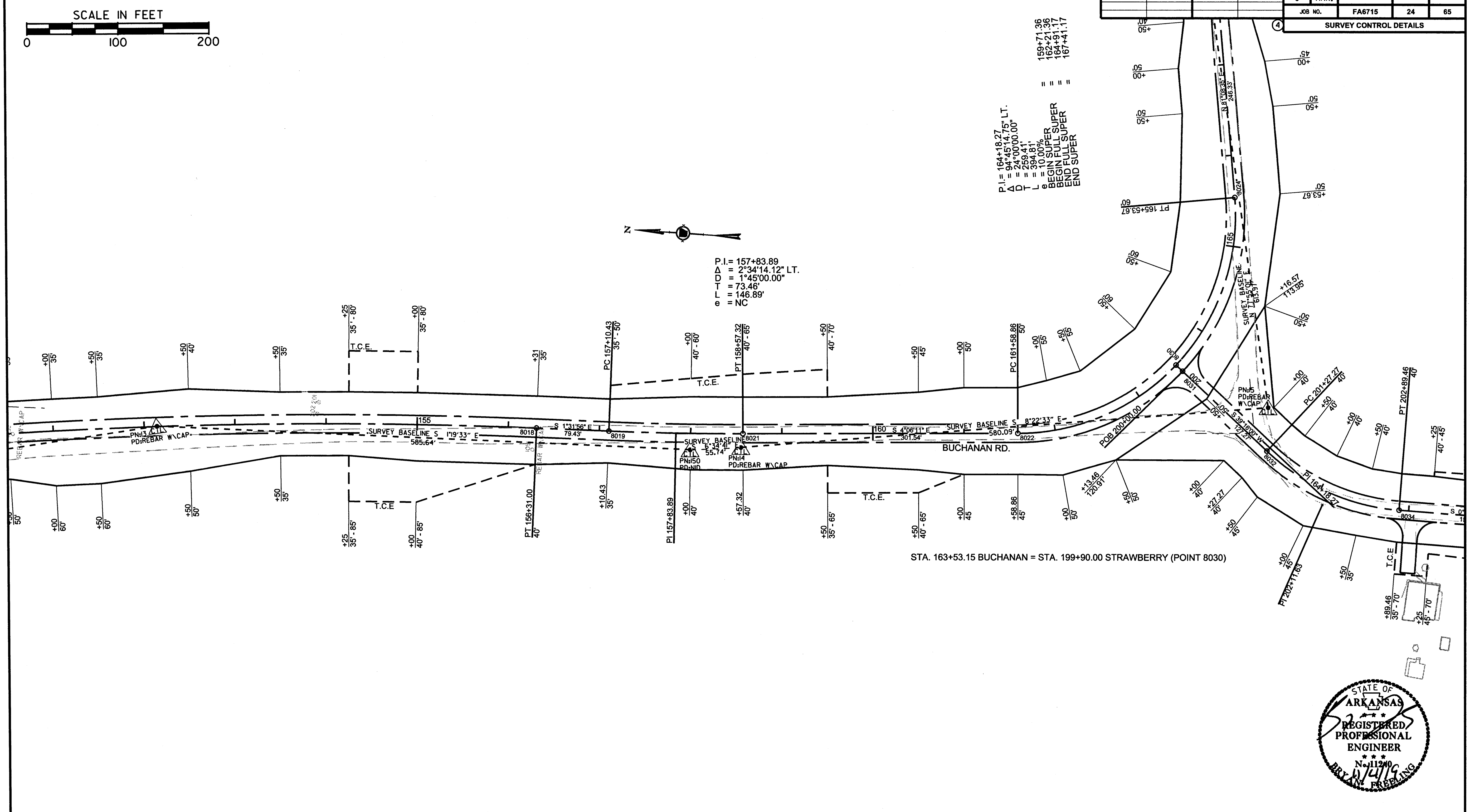
P.I.= 149+17.47
Δ = 14°20'45.29" RT.
D = 1°00'00.00"
T = 721.07'
L = 1434.59'
e = NC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/19

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.		FA6715	24	65

④ SURVEY CONTROL DETAILS



SCALE IN FEET
0
100
200
N
P.I.= 157+83.89
Δ = 2°34'14.12" LT.
D = 1°45'00.00"
T = 73.46'
L = 146.89'
e = NC
P.I.= 164+18.27
Δ = 94°45'14.75" LT.
D = 24°00'00.00"
T = 259.41'
L = 394.81'
e = 10.00%
BEGIN SUPER = 159+71.36
BEGIN FULL SUPER = 162+21.36
END FULL SUPER = 164+91.17
END SUPER = 167+41.17
SURVEY BASELINE S 1°19'33" E 585.64'
S 1°31'56" E 79.43'
SURVEY BASELINE S 6°34'4" E 55.74'
S 4°06'11" E 301.54'
SURVEY BASELINE S 8°22'33" E 580.09'
SURVEY BASELINE N 7°55'01" E 613.91'
N 8°08'35" E 246.33'
S 39°16'00" W 127.27'
BUCHANAN RD.
PN:13 PD:REBAR W\CAP
PN:150 PD:NID
PN:14 PD:REBAR W\CAP
PN:5 PD:REBAR W\CAP
PT 156+31.00
PC 157+10.43
PI 157+83.89
PT 158+57.32
PC 161+58.86
PT 165+53.67
POB 200+00.00
PC 201+27.27
PI 202+11.63
PT 202+89.46
PI 164+18.27
T.C.E.
STA. 163+53.15 BUCHANAN = STA. 199+90.00 STRAWBERRY (POINT 8030)
8018
8019
8021
8022
8024
8030
8031
8032
8034
155
160
165

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11240 BRYAN FREELING

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.		FA6715	25	65

4 SURVEY CONTROL DETAILS

SCALE IN FEET
0 100 200

STA. 168+00.00 - END JOB FA6715 (BUCHANAN)
FED. AID PROJ. STPR-0067(27)

P.I.= 164+18.27
Δ = 94°45'14.75" LT.
D = 24°00'00.00"
T = 259.41'
L = 394.81'
e = 10.00%
BEGIN SUPER = 159+71.36
BEGIN FULL SUPER = 162+21.36
END FULL SUPER = 164+91.17
END SUPER = 167+41.17

STA. 163+53.15 BUCHANAN = STA. 199+90.00 STRAWBERRY (POINT 8030)

STA. 200+00.00 - FA6715 (STRAWBERRY)
FED. AID PROJ. STPR-0067(27)

P.I.= 202+11.63
Δ = 38°55'26.66" LT.
D = 24°00'00.00"
T = 84.38'
L = 162.18'
e = 10.00%
BEGIN SUPERELEVATION = 200+00.00
BEGIN FULL SUPER = 202+20.20
END FULL SUPER = 202+24.99
END SUPERELEVATION = 204+45.00

STA. 204+45.00 - FA6715 (STRAWBERRY)
FED. AID PROJ. STPR-0067(27)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
11/4/19

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.		FA6715	26	65

4 PLAN AND PROFILE SHEETS

TRAFFIC CONTROL DEVICES

	W21-5A		
STA. 100+00	ON RT.	=	9 SQ. FT.
	G20-1		
STA. 100+06	ON RT.	=	10 SQ. FT.
STA. 168+00	ON LT.	=	10 SQ. FT.
STA. 204+45	ON LT.	=	10 SQ. FT.
	G20-2		
STA. 100+06	ON LT.	=	8 SQ. FT.
STA. 173+00	ON RT.	=	8 SQ. FT.
STA. 209+45	ON RT.	=	8 SQ. FT.
	W20-1		
STA. 173+00 (500)	ON LT.	=	16 SQ. FT.
STA. 178+00 (1000)	ON LT.	=	16 SQ. FT.
STA. 183+00 (1500)	ON LT.	=	16 SQ. FT.
STA. 209+45 (500)	ON LT.	=	16 SQ. FT.
STA. 214+45 (1000)	ON LT.	=	16 SQ. FT.
STA. 219+45 (1500)	ON LT.	=	16 SQ. FT.
	TRAFFIC DRUMS		
ENTIRE JOB			50 DRUMS

REMOVE AND RELOCATE SIGN
STA. 100+30 ON RT. = 2 EACH
STA. 100+56 ON RT. = 1 EACH

LEGEND
- POWER POLE
- COMBINATION POLE
- GUY WIRE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- UNDERGROUND CABLE MKR.
- WATER METER
- WATER VALVE

EARTHWORK

UNCLASSIFIED EXCAVATION (BUCHANAN RD.)	=	31426	CU. YD.
UNCLASSIFIED EXCAVATION (STRAWBERRY RD.)	=	545	CU. YD.
UNCLASSIFIED EXCAVATION (ABND. OF RDWY.)	=	162	CU. YD.
COMPACTED EMBANKMENT (BUCHANAN RD.)	=	7823	CU. YD.
COMPACTED EMBANKMENT (STRAWBERRY RD.)	=	1121	CU. YD.

OBLITERATION OF ABANDONED ROADWAY
STA. 101+94 - STA. 102+88 ON LT. = 8 CU. YD.

CLEARING AND GRUBBING
STA. 100+00 - STA. 168+00 = 68.00 STA.

STA. 100+06
R1-1 ON LT.

STA. 101+81
W3-1 ON LT.

STA. 104+41
W1-1R ON LT.

STA. 104+70
INSTALL SIDE DRAIN ON LT.
18" x 36' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 170 CU. YDS.
COMPACTED EMBANKMENT = 27 CU. YDS.
AGGREGATE BASE COURSE = 122.0 TONS

STA. 109+72
INSTALL SIDE DRAIN ON LT.
18" X 28' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 81 CU. YDS.
COMPACTED EMBANKMENT = 21 CU. YDS.
AGGREGATE BASE COURSE = 94.6 TONS

P.I.= 101+54.13
Δ = 42°10'27.51" LT.
D = 18°00'00.00"
T = 122.74'
L = 234.30'
e = 6.8%
BEGIN SUPER = 100+00.00
BEGIN FULL SUPER = 101+50.00
END FULL SUPER = 102+28.19
END SUPER = 103+78.19

INSTALL W1-8
STA. 100+66 RT. ON RT.
STA. 101+06 RT. ON RT.
STA. 101+46 RT. ON RT.
STA. 101+86 RT. ON RT.
STA. 102+26 RT. ON RT.
STA. 102+66 RT. ON RT.

REMOVAL AND DISPOSAL OF FENCE
STA. 100+31 - STA. 102+21 ON RT. = 245 FT.

WIRE FENCE (TYPE D)
STA. 100+31 - STA. 102+21 ON RT. = 229 FT.

P.I.= 105+84.48
Δ = 0°42'34.04" RT.
D = 1°45'00.00"
T = 20.27'
L = 40.54'

HURRICANE CREEK RANCH INC

STA. 107+22
INSTALL SIDE DRAIN ON RT.
18" X 36' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 14 CU. YDS.
COMPACTED EMBANKMENT = 104 CU. YDS.
AGGREGATE BASE COURSE = 85.8 TONS

LIMITS OF CONSTRUCTION

18'-0" GATE
STA. 107+22 ON RT. = 1 EACH

REMOVAL AND DISPOSAL OF GATES
STA. 107+22 ON RT. = 1 EACH

0 100 200
SCALE IN FEET

STA. 100+00.00 - BEGIN JOB FA6715 (BUCHANAN)
FED. AID PROJ. STPR-0067(27)

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11310
BRYAN FREELING
11/4/19

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	27	65
				4	PLAN AND PROFILE SHEETS			

CONSTRUCT CONCRETE DITCH PAVING
WITH ENERGY DISSIPATORS
STA. 120+01 TO STA. 121+40

WALTON
DONNIE

WALTON
DONNIE

N61°40'10" E
1284.23'

STA. 117+13
W1-1R ON RT.

LIMITS OF CONSTRUCTION

P.I.= 120+92.75
Δ = 59°17'02.66" RT.
D = 16°00'00.00"
T = 203.78'
L = 370.53'
e = 8.90%
BEGIN SUPER = 117+01.48
BEGIN FULL SUPER = 119+51.48
END FULL SUPER = 121+97.00
END SUPER = 124+47.00

STA. 121+77
INSTALL SIDE DRAIN ON LT.
24" X 80' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 78 CU. YDS.
COMPACTED EMBANKMENT = 1859 CU. YDS.
AGGREGATE BASE COURSE = 214.4 TONS

0 100 200
SCALE IN FEET

1.75%
LT. DITCH GRADE 1.41%
VC=266'
e=-0.88'
0.90%
LT. DITCH GRADE -0.91%
LT. DITCH GRADE -1.14%
VC=214'
e=-1.47'
6.37%
LT. DITCH GRADE -10.88%
LT. DITCH GRADE -1.84%
VC=482'
e=7.12'
LT. DITCH GRADE 2.74%

111+96.85 564.51
112+24.04 561.00
113+59.52 560.36
117+22.08 557.06
119+55.47 557.65
120+00.85 553.88
121+39.50 538.80
122+11.64 536.46
123+80.20 530.59
124+00.00 533.00

IN LET ELEVATION: 532.85'
OUTLET ELEVATION: 529.12'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11210
11/4/19
BRYAN FREELING

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

PLAN AND PROFILE SHEETS

570 560 550 540 530 520 510 500 490 480 470

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+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.		FA6715	28	65
				4	PLAN AND PROFILE SHEETS			

0 100 200
SCALE IN FEET

OSBORNE
J
L

P.I.= 136+71.55
Δ = 59°46'53.15" RT.
D = 7°00'00.00"
T = 470.49'
L = 854.02'
e = 5.30%
BEGIN SUPER = 130+51.07
BEGIN FULL SUPER = 132+51.07
END FULL SUPER = 139+90.00
END SUPER = 141+90.00

STA. 123+97
OM-3L AND OM-3R
ON RT.

STA. 124+03
OM-3L AND OM-3R
ON LT.

STA. 124+35
W1-1L ON LT.

STA. 124+68
W1-1L ON RT.

STA 124+00 CONSTRUCT
24" PIPE CULVERT
D.A. = 0.67 ACRES Q25 = 1.10 C.F.S.
24" RCP (CLASS III) (TYPE 2 BEDDING) = 60 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 66 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

WALTON
DONNIE

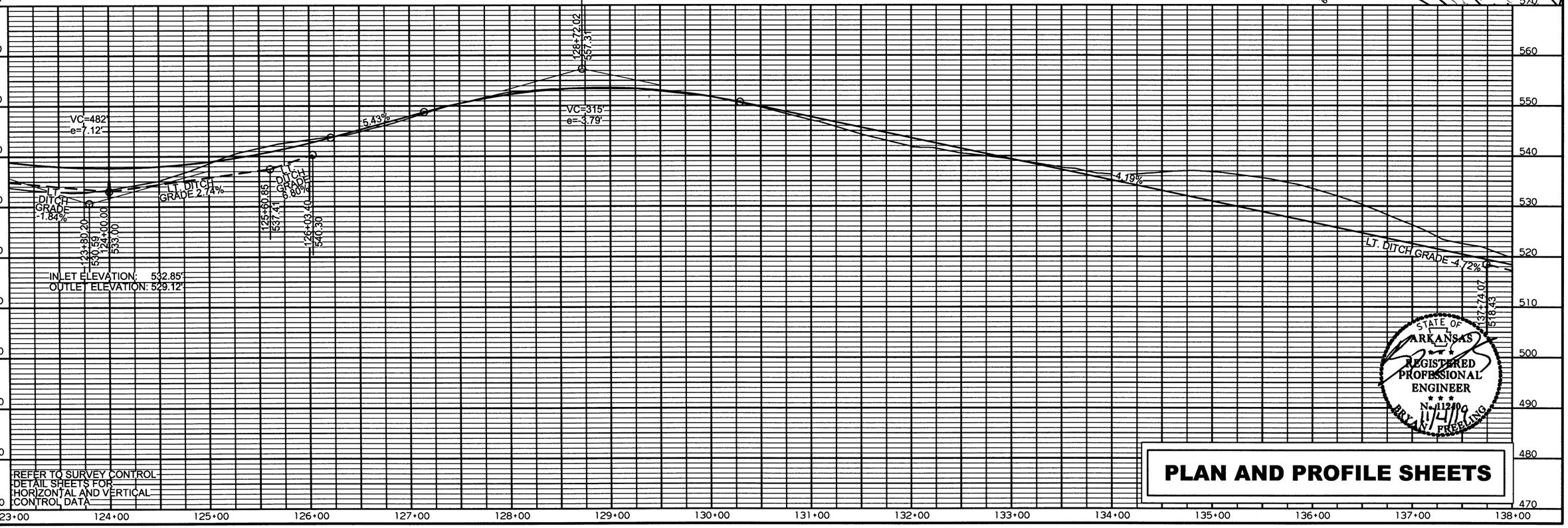
LIMITS OF CONSTRUCTION

P.I.= 127+26.40
Δ = 16°36'47.06" LT.
D = 10°00'00.00"
T = 83.65'
L = 166.13'
e = 6.80%
BEGIN SUPER = 124+55.24
BEGIN FULL SUPER = 127+05.24
END FULL SUPER = 127+46.37
END SUPER = 129+96.37

KELLEY-PREIS
JENNIFER
&
PREIS
HOYT

REMOVAL AND DISPOSAL OF FENCE
STA. 127+65 - STA. 145+19 ON RT. = 1744 FT.

WIRE FENCE (TYPE D)
STA. 127+67 - STA. 145+19 ON RT. = 1701 FT.



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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 112400
BRYAN J. FREELING
11/4/16

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	29	65

4 PLAN AND PROFILE SHEETS

OSBORNE
J
L

STA. 139+02
INSTALL SIDE DRAIN ON LT.
18" X 34' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 63 CU. YDS.
COMPACTED EMBANKMENT = 38 CU. YDS.
AGGREGATE BASE COURSE = 111.0 TONS

0 100 200
SCALE IN FEET

STA. 144+89
INSTALL SIDE DRAIN ON LT.
21" X 15" x 32' ARCH PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 60 CU. YDS.
COMPACTED EMBANKMENT = 53 CU. YDS.
AGGREGATE BASE COURSE = 99.9 TONS

REMOVAL AND DISPOSAL OF GATES
STA. 144+89 ON LT. = 3 EACH

18'-0" GATE
STA. 144+89 ON LT. = 1 EACH

STA. 142+31
W1-1L ON LT.

MORRIS
WARDEL
SR

STA. 149+91
INSTALL SIDE DRAIN ON RT.
18" X 36' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 3 CU. YDS.
COMPACTED EMBANKMENT = 42 CU. YDS.
AGGREGATE BASE COURSE = 55.7 TONS

REMOVAL AND DISPOSAL OF FENCE
STA. 150+33 - STA. 152+87 ON RT. = 252 FT.

WIRE FENCE (TYPE D)
STA. 150+33 - STA. 152+87 ON RT. = 253 FT.

KELLEY-PREIS
JENNIFER
&
PREIS
HOYT

OBLITERATION OF ABANDONED ROADWAY
STA. 147+25- STA. 149+33 ON RT. = 33 CU. YD.

LIMITS OF CONSTRUCTION

REMOVAL AND DISPOSAL OF PIPE CULVERTS CROSS DRAIN
STA. 146+60 = 3 EACH

STA. 147+09
INSTALL SIDE DRAIN ON RT.
18" X 34' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 9 CU. YDS.
COMPACTED EMBANKMENT = 25 CU. YDS.
AGGREGATE BASE COURSE = 56.5 TONS

CHURCH

P.I.= 149+17.47
Δ = 14°20'45.29" RT.
D = 1°00'00.00"
T = 721.07'
L = 1434.59'
e = NC

PI 149+17.47

T.C.E.

S 15°52'42" E
141.32'

8015 PT 140+55.09

8016 PC 141+96.41

137+74.07 518.43

138+94.66 512.74

140+88.39 504.66

144+30.51 488.86

144+69.51 490.35

144+86.51 486.95

145+97.44 486.39

146+57.29 485.76

150+36.62 484.34

152+00.00 481.89

VC=137'
e=0.63'

VC=58'
e=-0.18'

LT. DITCH GRADE -4.72%

-4.19%

LT. DITCH GRADE -4.17%

LT. DITCH GRADE -3.41%

RT. DITCH GRADE -1.05%

LT. DITCH GRADE -0.38%

-0.50%

RT. DITCH GRADE -0.71%

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11210
BRYAN FREEMAN
11/4/19

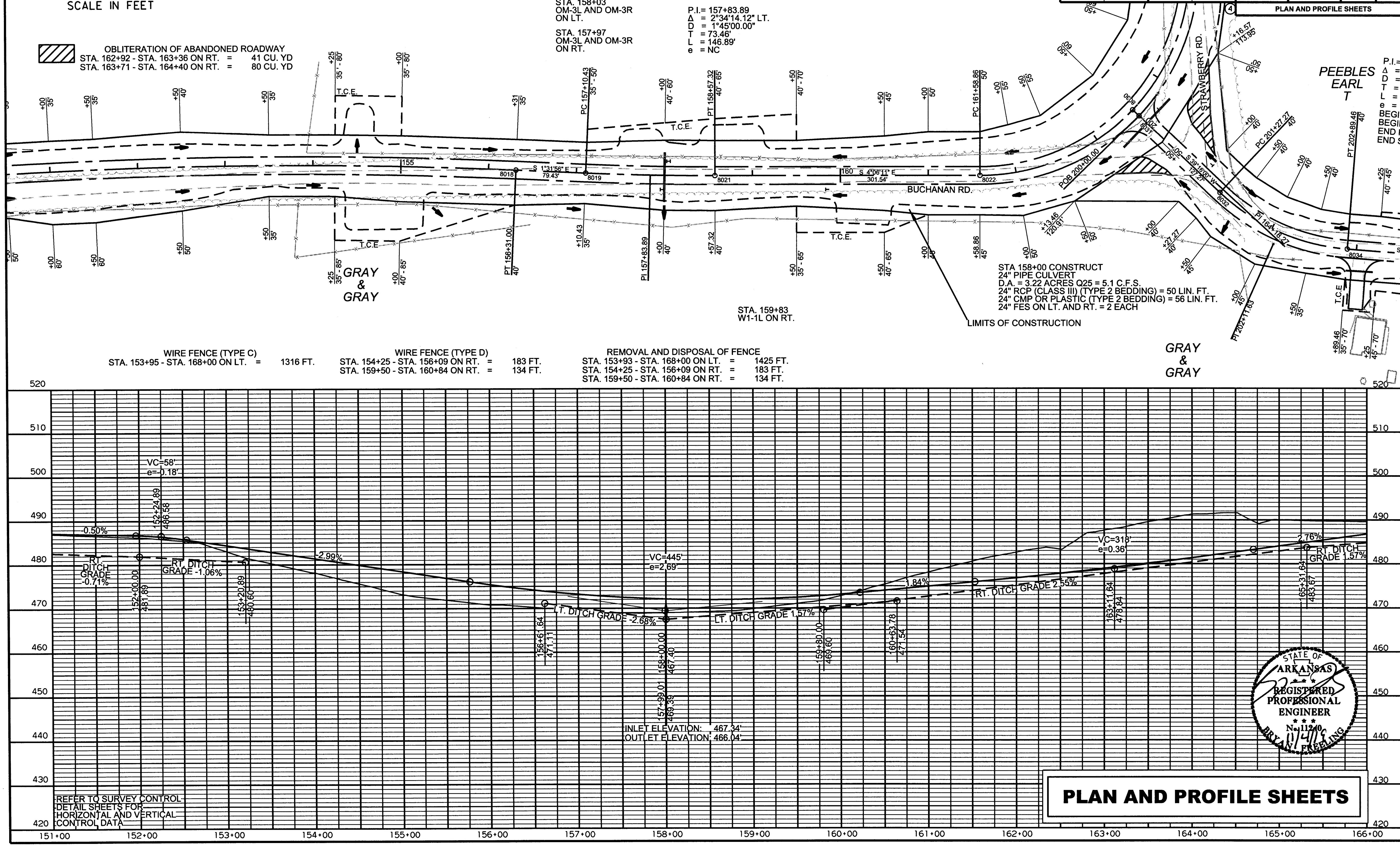
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA

PLAN AND PROFILE SHEETS

540 530 520 510 500 490 480 470 460 450 440

137+00 138+00 139+00 140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00 148+00 149+00 150+00 151+00 152+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	30	65
						PLAN AND PROFILE SHEETS		



0 100 200
SCALE IN FEET
STA. 158+03
OM-3L AND OM-3R
ON LT.
STA. 157+97
OM-3L AND OM-3R
ON RT.
P.I.= 157+83.89
Δ = 2°34'14.12" LT.
D = 1°45'00.00"
T = 73.46'
L = 146.89'
e = NC
OBLITERATION OF ABANDONED ROADWAY
STA. 162+92 - STA. 163+36 ON RT. = 41 CU. YD
STA. 163+71 - STA. 164+40 ON RT. = 80 CU. YD
PEEBLES
EARL
T
STRAWBERRY RD.
BUCHANAN RD.
GRAY
&
GRAY
STA 158+00 CONSTRUCT
24" PIPE CULVERT
D.A. = 3.22 ACRES Q25 = 5.1 C.F.S.
24" RCP (CLASS III) (TYPE 2 BEDDING) = 50 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 56 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH
LIMITS OF CONSTRUCTION
STA. 159+83
W1-1L ON RT.
WIRE FENCE (TYPE C)
STA. 153+95 - STA. 168+00 ON LT. = 1316 FT.
WIRE FENCE (TYPE D)
STA. 154+25 - STA. 156+09 ON RT. = 183 FT.
STA. 159+50 - STA. 160+84 ON RT. = 134 FT.
REMOVAL AND DISPOSAL OF FENCE
STA. 153+93 - STA. 168+00 ON LT. = 1425 FT.
STA. 154+25 - STA. 156+09 ON RT. = 183 FT.
STA. 159+50 - STA. 160+84 ON RT. = 134 FT.
VC=58'
e=0.18'
-0.50%
RT. DITCH GRADE -0.71%
RT. DITCH GRADE -1.06%
-2.99%
VC=445'
e=2.69'
LT. DITCH GRADE -2.68%
LT. DITCH GRADE 1.57%
1.84%
RT. DITCH GRADE 2.55%
VC=318'
e=0.36'
2.76%
RT. DITCH GRADE 1.57%
INLET ELEVATION: 467.34'
OUTLET ELEVATION: 466.04'
REFER TO SURVEY CONTROL
DETAIL SHEETS FOR
HORIZONTAL AND VERTICAL
CONTROL DATA
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+00 164+00 165+00 166+00
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	31	65
				4	PLAN AND PROFILE SHEETS			

P.I.= 164+18.27
Δ = 94°45'14.75" LT.
D = 24°00'00.00"
T = 259.41'
L = 394.81'
e = 10.00%
BEGIN SUPER = 159+71.36
BEGIN FULL SUPER = 162+21.36
END FULL SUPER = 164+91.17
END SUPER = 167+41.17

REMOVAL AND DISPOSAL OF FENCE
STA. 164+50 - STA. 168+00 ON RT. = 368 FT.

WIRE FENCE (TYPE D)
STA. 164+34 - STA. 168+00 ON RT. = 412 FT.

STA. 163+53.15 BUCHANAN = STA. 199+90.00 STRAWBERRY (POINT 8030)

STA. 167+29
W1-1R ON LT

REMOVE AND RELOCATE SIGN
STA. 163+72 ON RT. = 1 EACH
STA. 163+74 ON RT. = 1 EACH
STA. 163+76 ON RT. = 1 EACH

BUCHANAN RD.
STRAWBERRY RD.
GRAY & GRAY
PEEBLES EARL T
PEEBLES EARL T

PC 161+58.86
POB 200+00.00
PT 165+53.67
POE 168+00.00
PT 202+11.63
PC 201+27.27
PT 202+89.46
T.C.E
N 81°08'35" E 246.33'
CPS IS PD 07
LIMITS OF CONSTRUCTION
STA. 166+25
W8-3 ON RT

STA. 168+00.00 - END JOB FA6715 (BUCHANAN)
FED. AID PROJ. STPR-0067(27)

50' TRANSITION
VC=85'
e=-0.31'
VC=318'
e=0.36'
1.84%
RT. DITCH GRADE 2.55%
LT. DITCH GRADE 1.57%
2.76%
RT. DITCH GRADE 1.57%
0.19%
LT. DITCH GRADE 1.49%
LT. DITCH GRADE 2.51%
RT. DITCH GRADE 2.01%

160+63.78 471.54
163+11.64 478.84
165+31.64 483.67
166+66.95 485.87
166+84.72 489.14
167+50.00 487.11
168+00.00 488.11 (RT. DITCH)
168+00.00 488.36 (LT. DITCH)
168+00.00 488.92

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11210
BRYAN FREELING
11/4/19

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

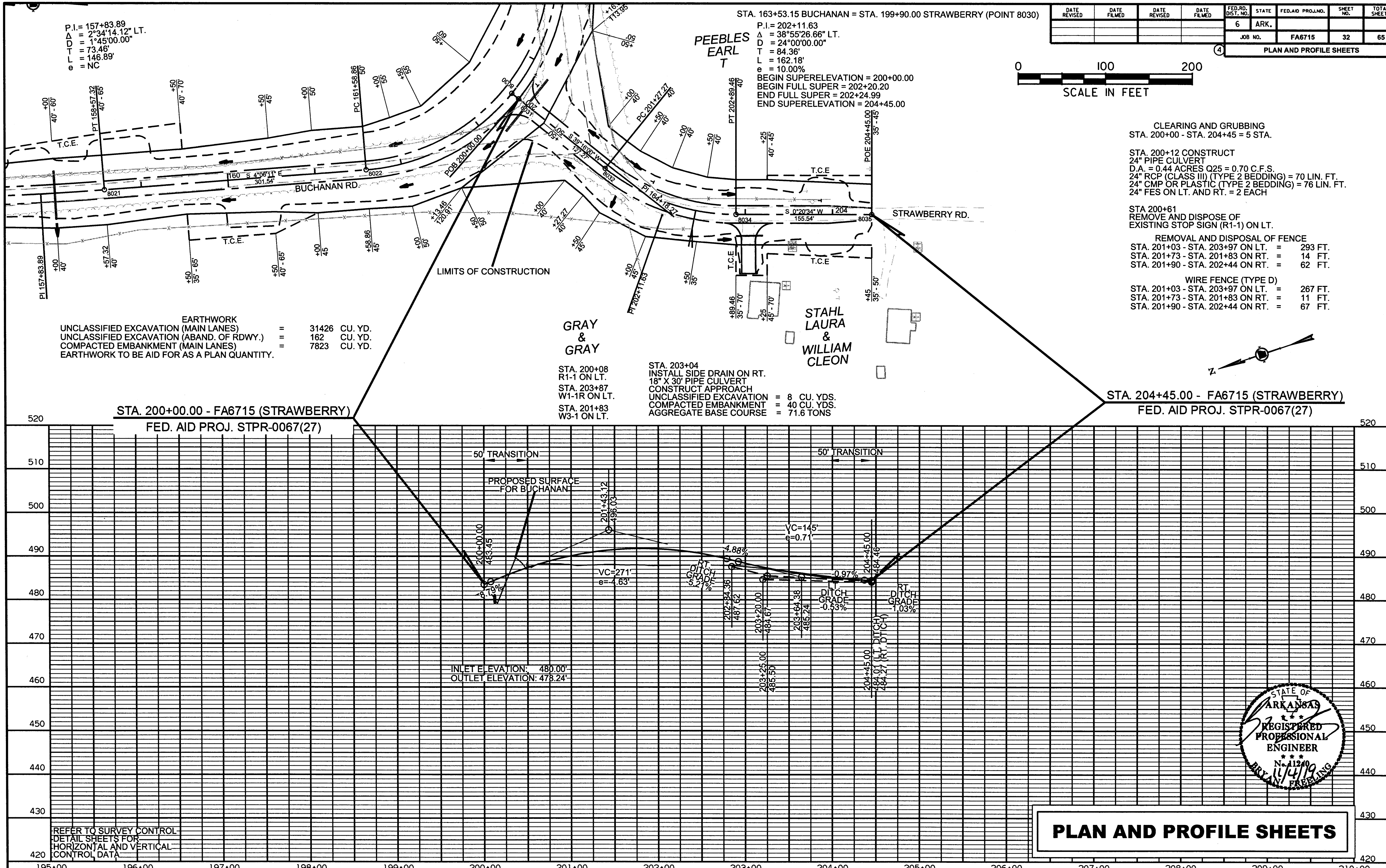
PLAN AND PROFILE SHEETS

160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00

520 510 500 490 480 470 460 450 440 430 420

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	32	65

PLAN AND PROFILE SHEETS



P.I.= 157+83.89
Δ = 2°34'14.12" LT.
D = 1°45'00.00"
T = 73.46'
L = 146.89'
e = NC

P.I.= 202+11.63
Δ = 38°55'26.66" LT.
D = 24°00'00.00"
T = 84.36'
L = 162.18'
e = 10.00%
BEGIN SUPERELEVATION = 200+00.00
BEGIN FULL SUPER = 202+20.20
END FULL SUPER = 202+24.99
END SUPERELEVATION = 204+45.00

CLEARING AND GRUBBING
STA. 200+00 - STA. 204+45 = 5 STA.

STA. 200+12 CONSTRUCT
24" PIPE CULVERT
D.A. = 0.44 ACRES Q25 = 0.70 C.F.S.
24" RCP (CLASS III) (TYPE 2 BEDDING) = 70 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 76 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

STA 200+61
REMOVE AND DISPOSE OF
EXISTING STOP SIGN (R1-1) ON LT.

REMOVAL AND DISPOSAL OF FENCE
STA. 201+03 - STA. 203+97 ON LT. = 293 FT.
STA. 201+73 - STA. 201+83 ON RT. = 14 FT.
STA. 201+90 - STA. 202+44 ON RT. = 62 FT.

WIRE FENCE (TYPE D)
STA. 201+03 - STA. 203+97 ON LT. = 267 FT.
STA. 201+73 - STA. 201+83 ON RT. = 11 FT.
STA. 201+90 - STA. 202+44 ON RT. = 67 FT.

EARTHWORK
UNCLASSIFIED EXCAVATION (MAIN LANES) = 31426 CU. YD.
UNCLASSIFIED EXCAVATION (ABAND. OF RDWY.) = 162 CU. YD.
COMPACTED EMBANKMENT (MAIN LANES) = 7823 CU. YD.
EARTHWORK TO BE AID FOR AS A PLAN QUANTITY.

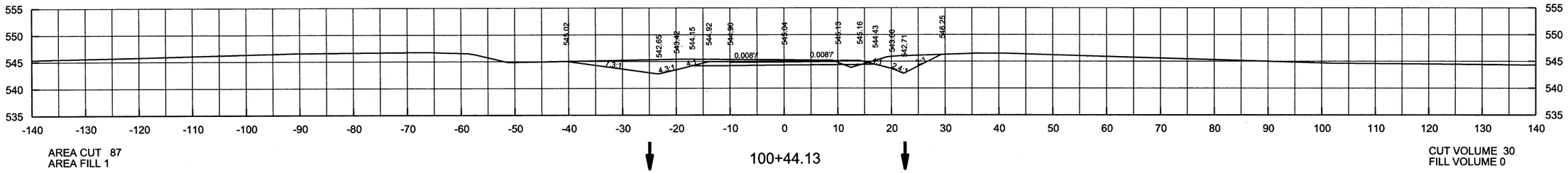
STA. 200+08
R1-1 ON LT.
STA. 203+87
W1-1R ON LT.
STA. 201+83
W3-1 ON LT.

STA. 203+04
INSTALL SIDE DRAIN ON RT.
18" X 30' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 8 CU. YDS.
COMPACTED EMBANKMENT = 40 CU. YDS.
AGGREGATE BASE COURSE = 71.6 TONS

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	33	65

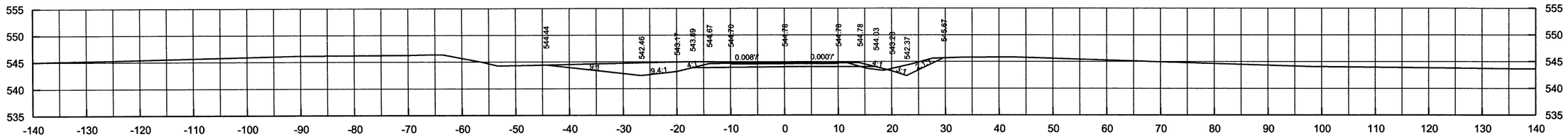
4 CROSS SECTIONS STA.100+00.00 TO 100+44.13



AREA CUT 87
AREA FILL 1

100+44.13

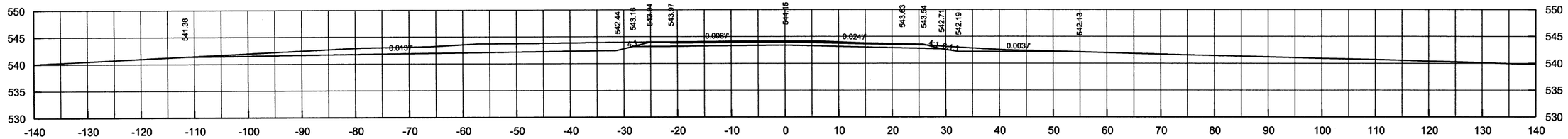
CUT VOLUME 30
FILL VOLUME 0



AREA CUT 78
AREA FILL 2

100+34.29

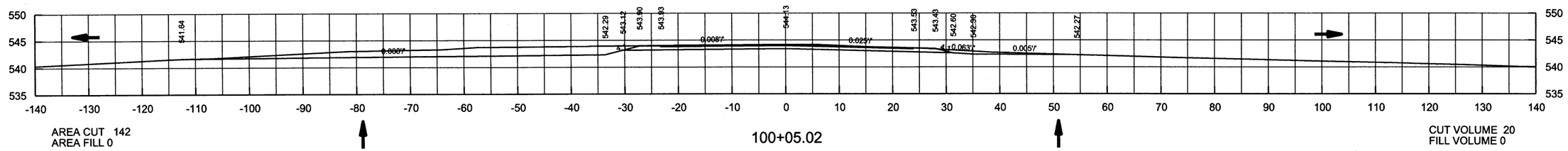
CUT VOLUME 115
FILL VOLUME 1



AREA CUT 146
AREA FILL 0

100+06.48

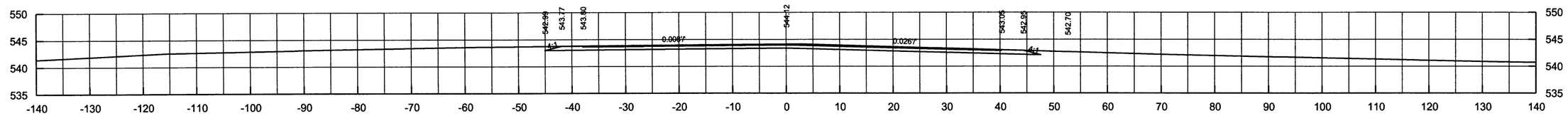
CUT VOLUME 8
FILL VOLUME 0



AREA CUT 142
AREA FILL 0

100+05.02

CUT VOLUME 20
FILL VOLUME 0



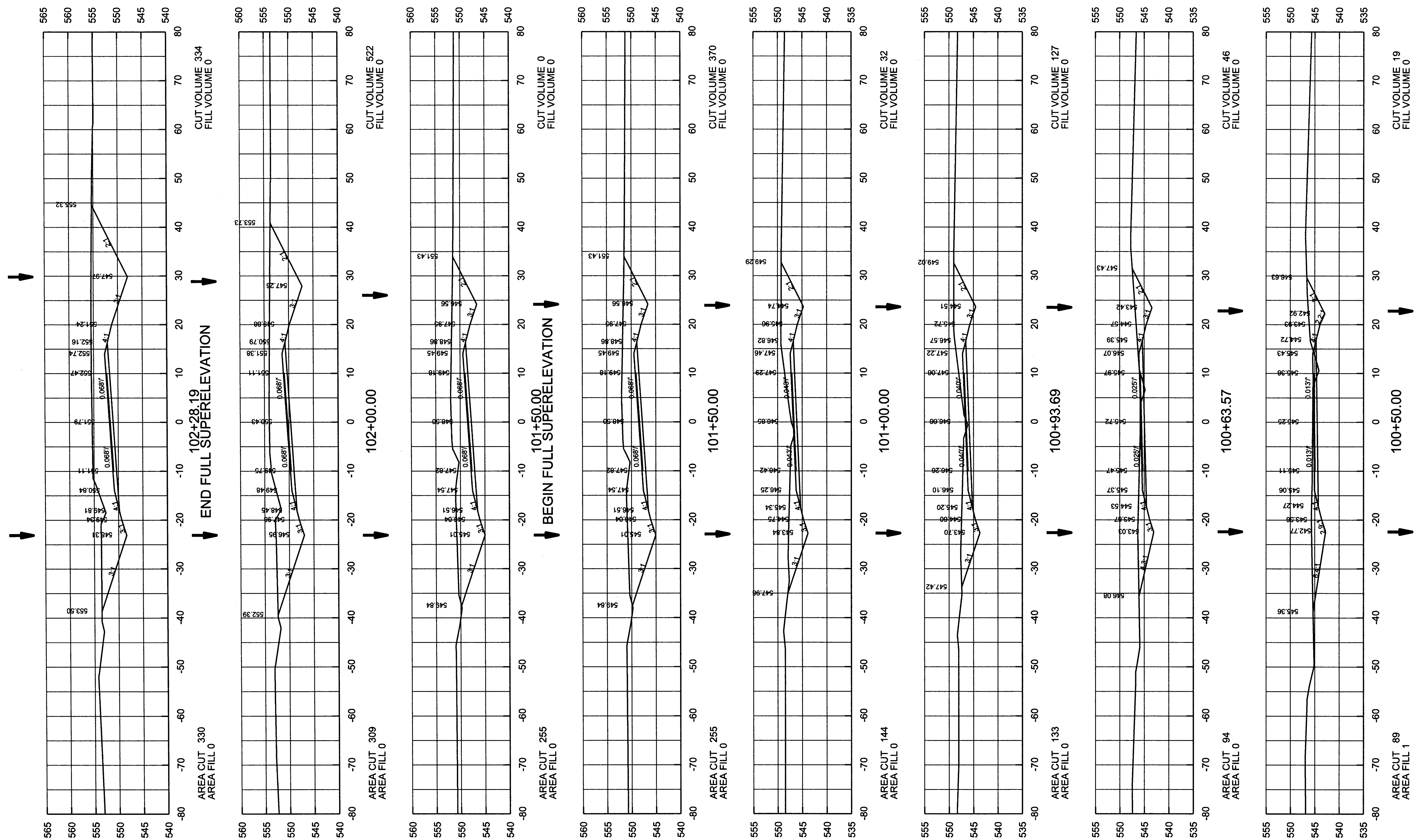
AREA CUT 70
AREA FILL 0

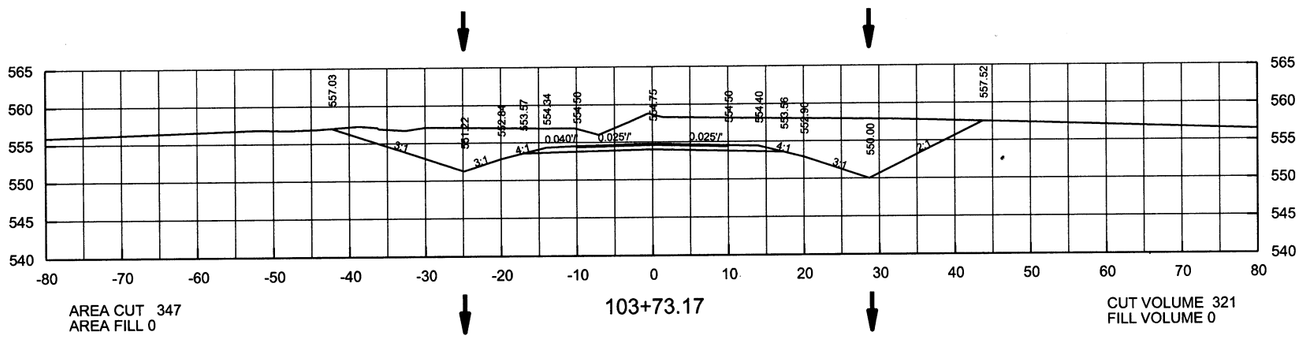
100+00.00
BEGIN JOB FA6715
BEGIN SUPERELEVATION

CUT VOLUME 0
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	34	65

(4) CROSS SECTIONS STA.100+50.00 TO 102+28.19

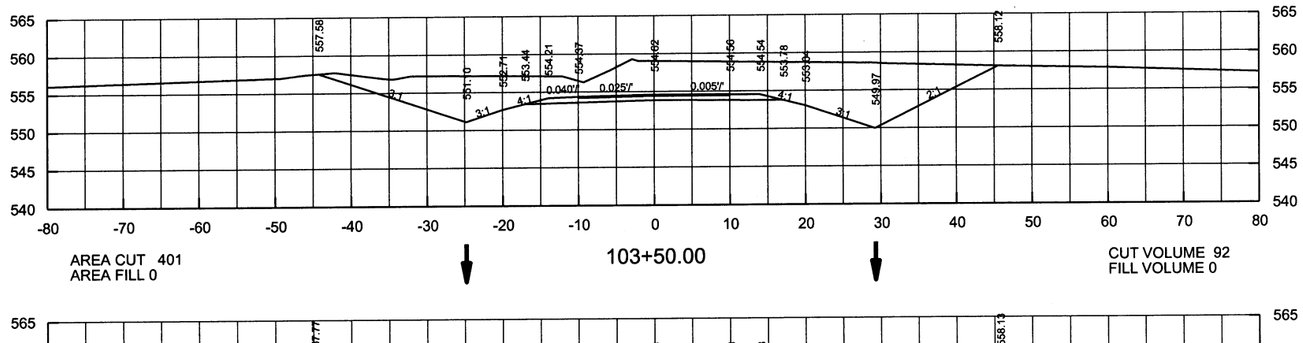




AREA CUT 347
AREA FILL 0

103+73.17

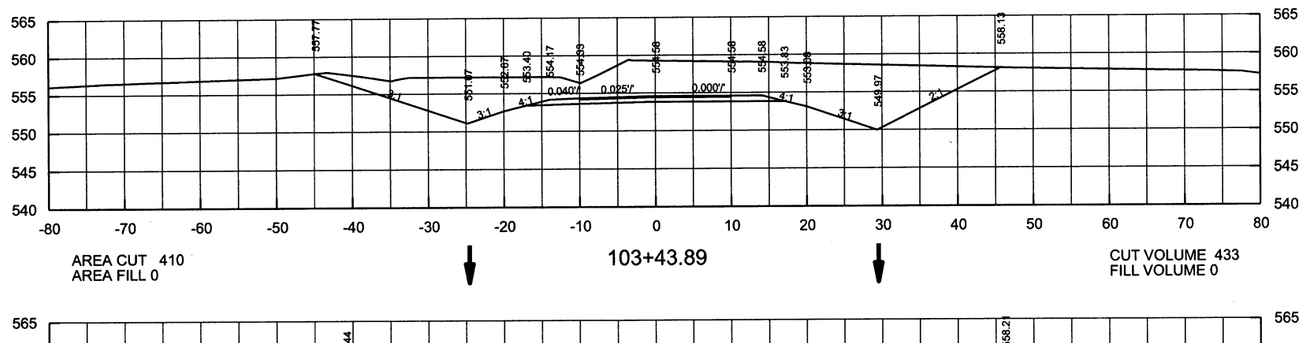
CUT VOLUME 321
FILL VOLUME 0



AREA CUT 401
AREA FILL 0

103+50.00

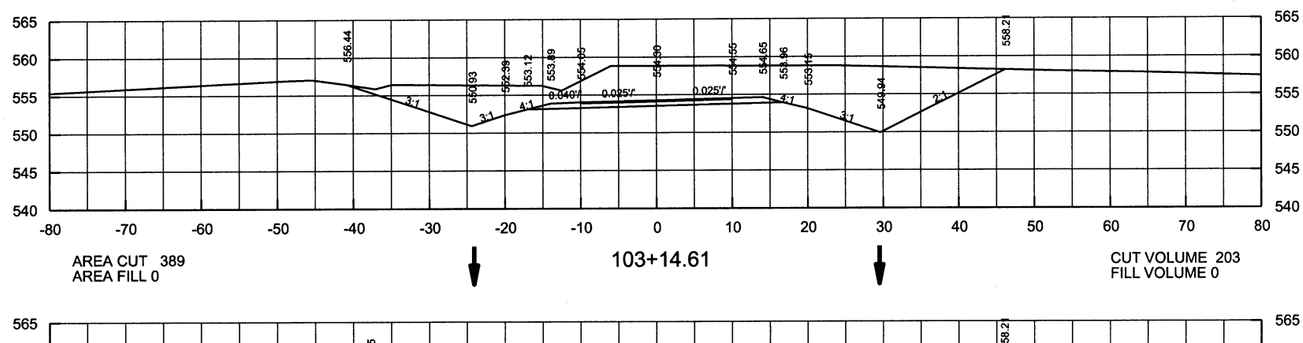
CUT VOLUME 92
FILL VOLUME 0



AREA CUT 410
AREA FILL 0

103+43.89

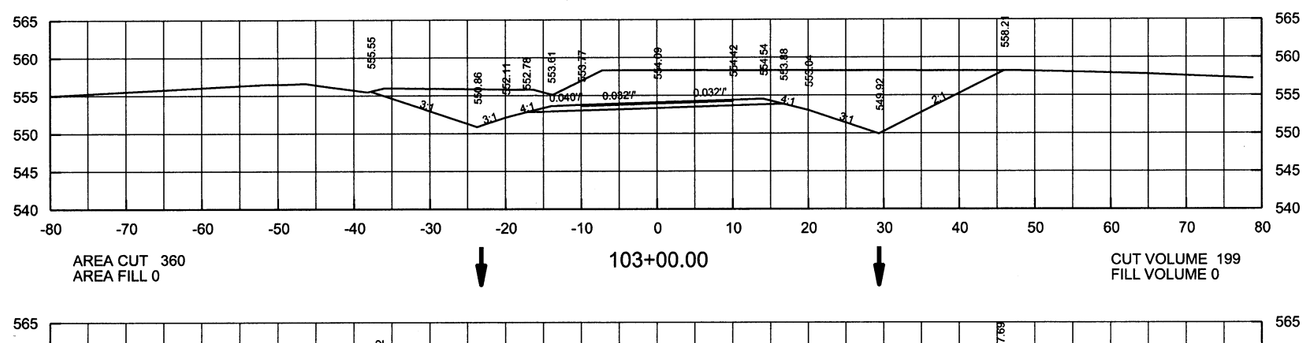
CUT VOLUME 433
FILL VOLUME 0



AREA CUT 389
AREA FILL 0

103+14.61

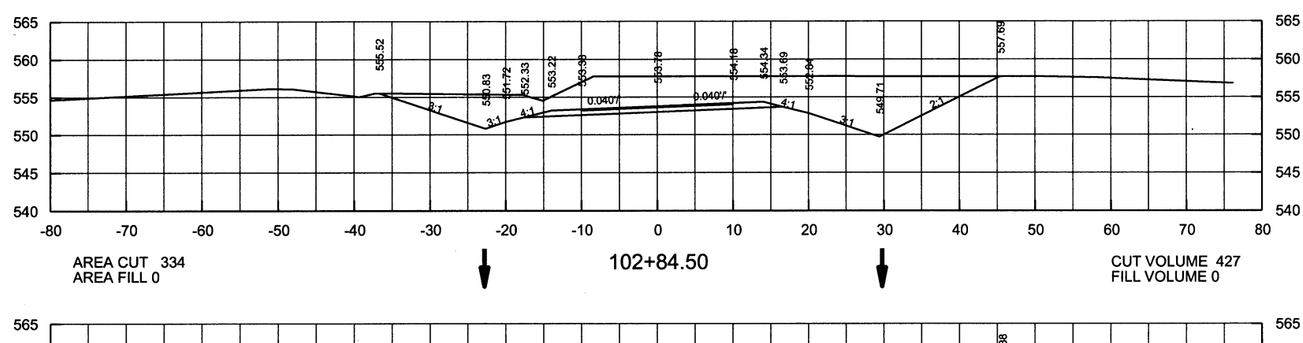
CUT VOLUME 203
FILL VOLUME 0



AREA CUT 360
AREA FILL 0

103+00.00

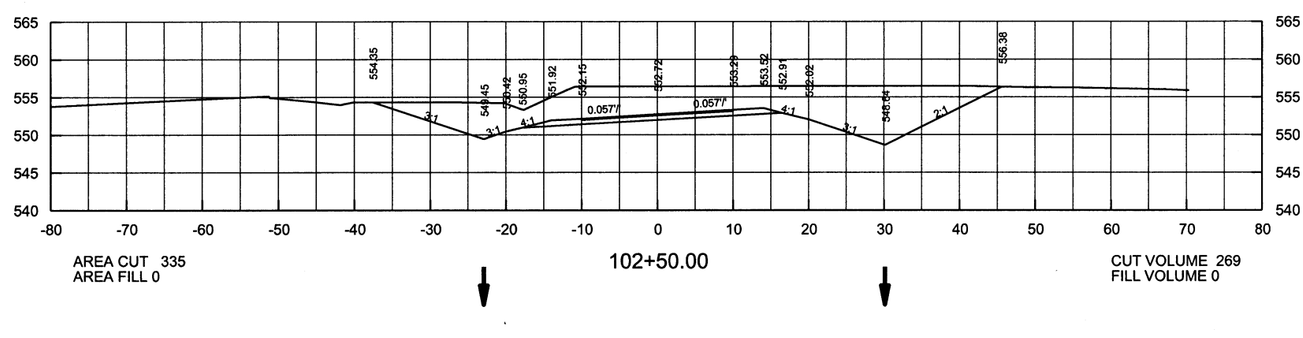
CUT VOLUME 199
FILL VOLUME 0



AREA CUT 334
AREA FILL 0

102+84.50

CUT VOLUME 427
FILL VOLUME 0



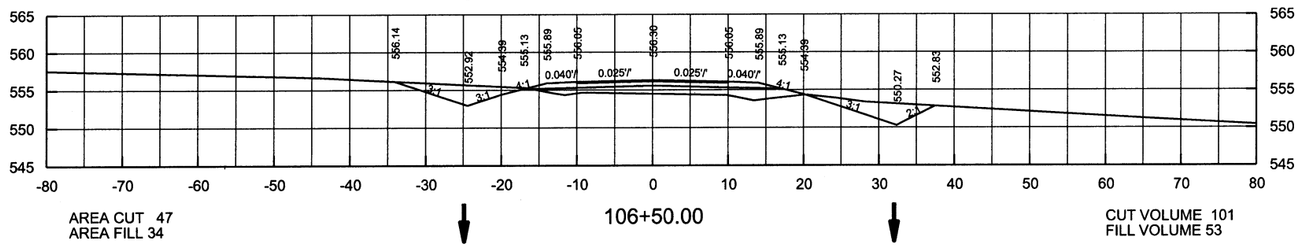
AREA CUT 335
AREA FILL 0

102+50.00

CUT VOLUME 269
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	35	65

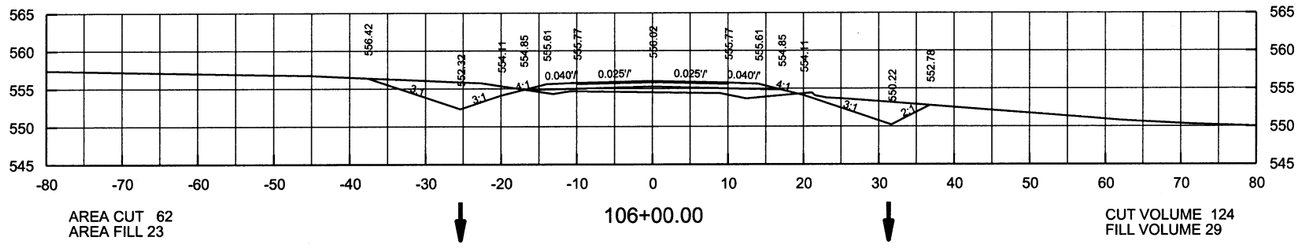
4 CROSS SECTIONS STA.102+50.00 TO 103+73.17



AREA CUT 47
AREA FILL 34

106+50.00

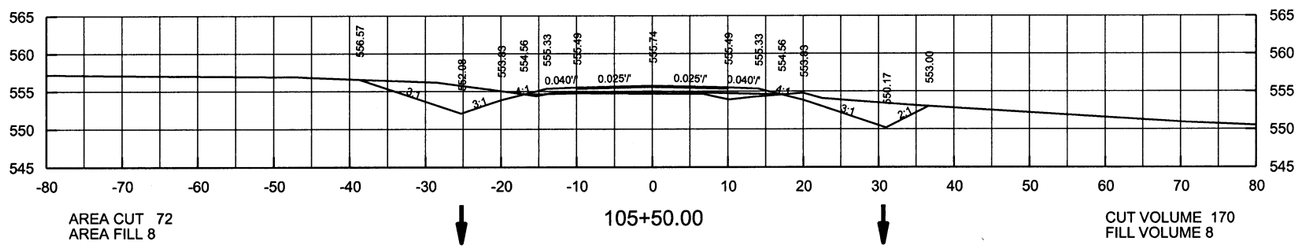
CUT VOLUME 101
FILL VOLUME 53



AREA CUT 62
AREA FILL 23

106+00.00

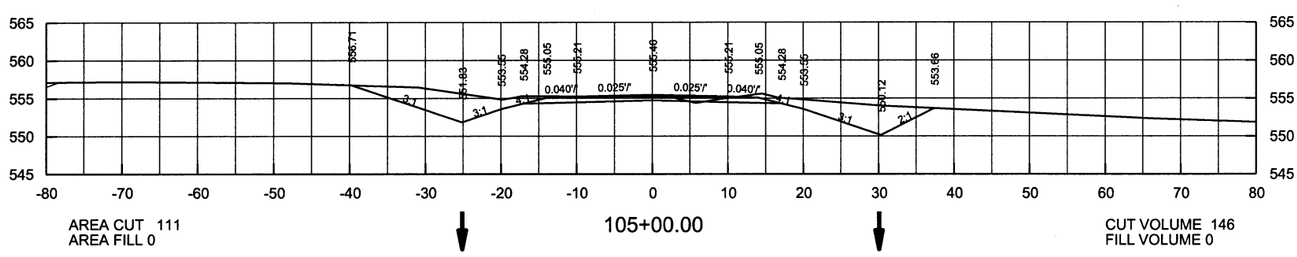
CUT VOLUME 124
FILL VOLUME 29



AREA CUT 72
AREA FILL 8

105+50.00

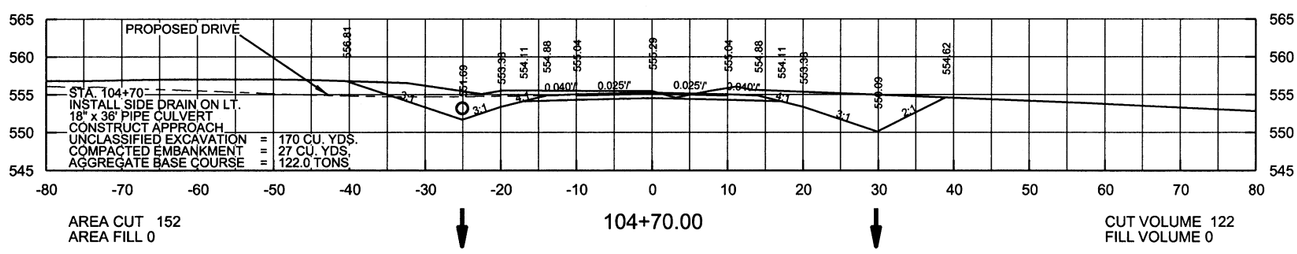
CUT VOLUME 170
FILL VOLUME 8



AREA CUT 111
AREA FILL 0

105+00.00

CUT VOLUME 146
FILL VOLUME 0

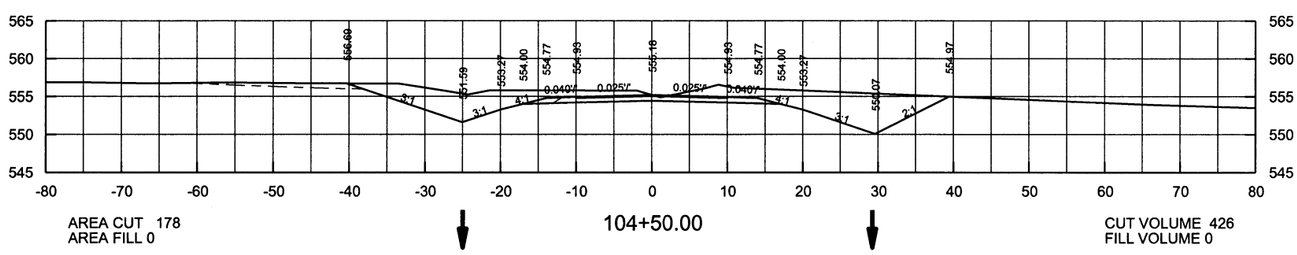


STA. 104+70
INSTALL SIDE DRAIN ON LT.
18" x 36' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 170 CU. YDS.
COMPACTED EMBANKMENT = 27 CU. YDS.
AGGREGATE BASE COURSE = 122.0 TONS

AREA CUT 152
AREA FILL 0

104+70.00

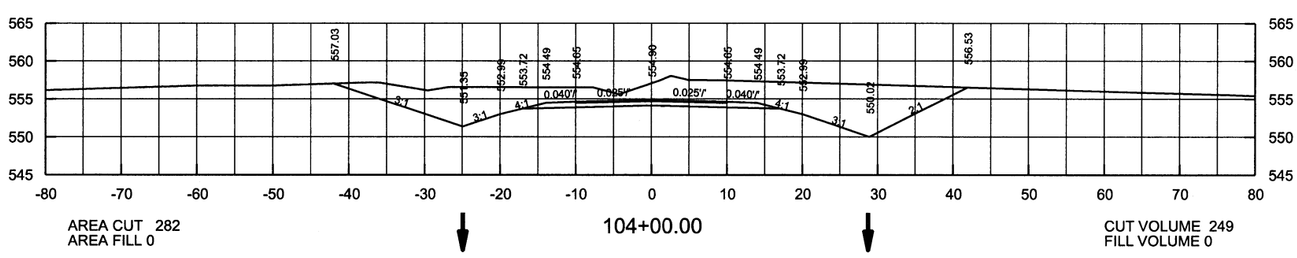
CUT VOLUME 122
FILL VOLUME 0



AREA CUT 178
AREA FILL 0

104+50.00

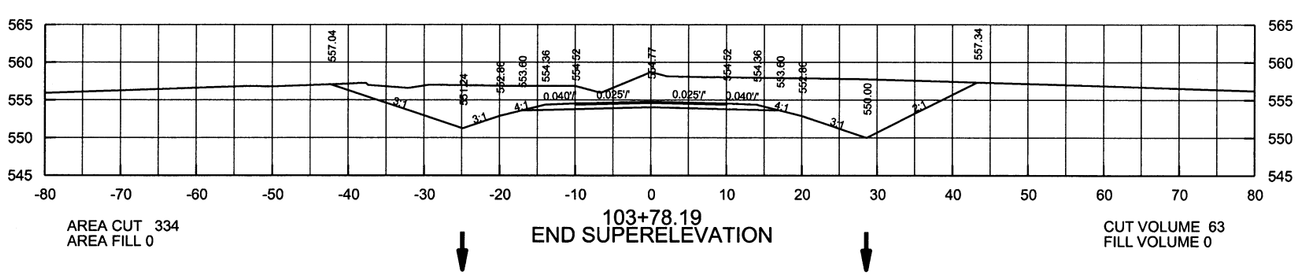
CUT VOLUME 426
FILL VOLUME 0



AREA CUT 282
AREA FILL 0

104+00.00

CUT VOLUME 249
FILL VOLUME 0



AREA CUT 334
AREA FILL 0

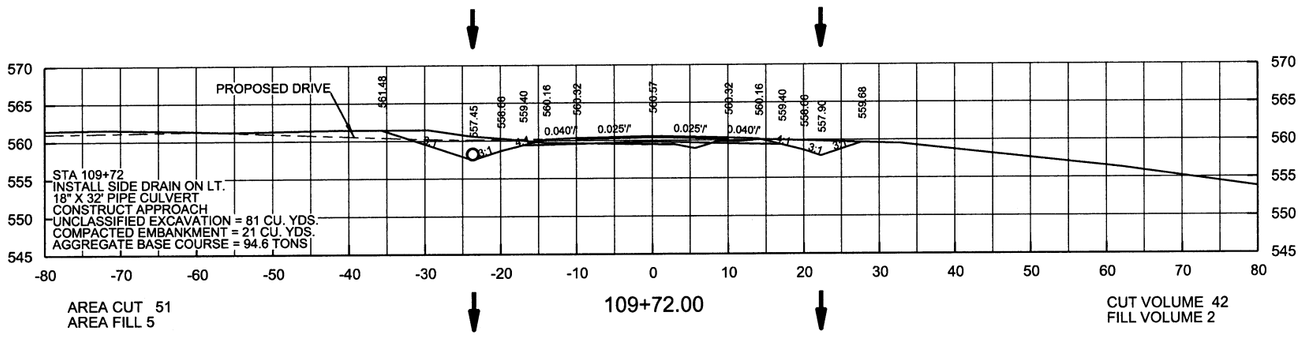
103+78.19
END SUPERELEVATION

CUT VOLUME 63
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

4 CROSS SECTIONS STA. 103+78.19 TO 106+50.00

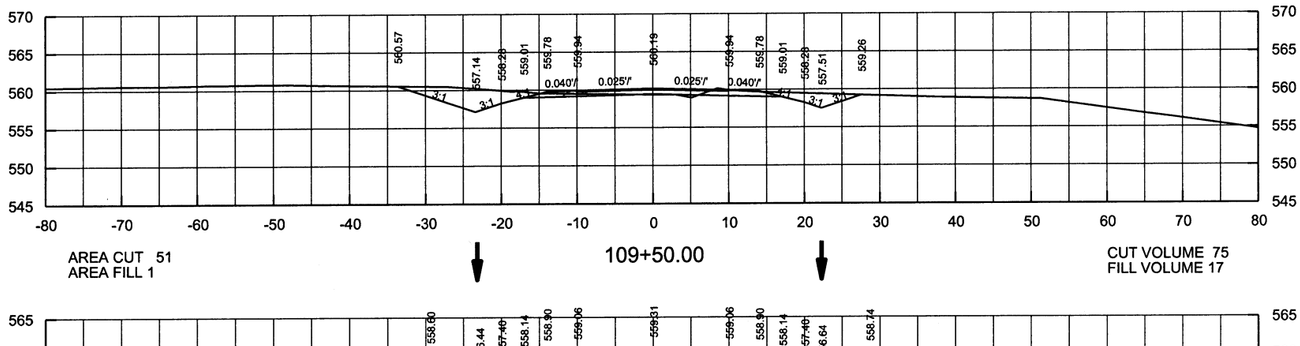
JOB NO.	FED.ROD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
	6	ARK.	FA6715	36	65



AREA CUT 51
AREA FILL 5

109+72.00

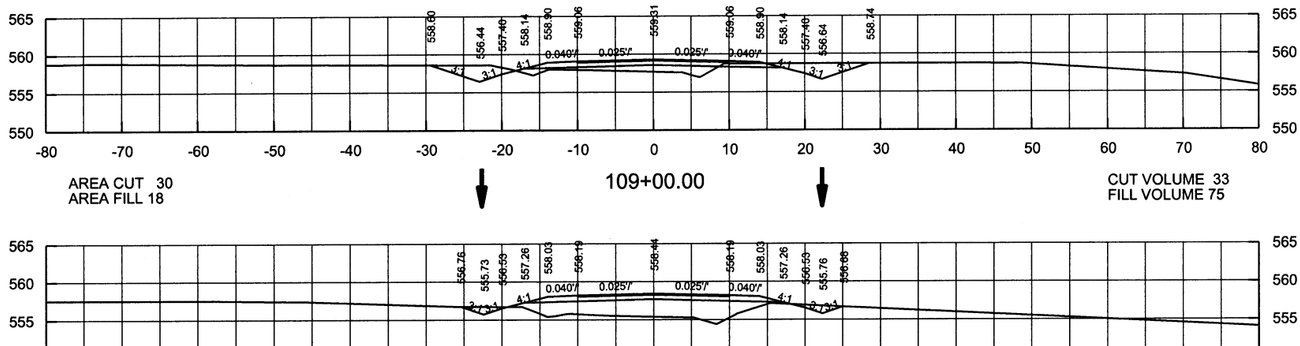
CUT VOLUME 42
FILL VOLUME 2



AREA CUT 51
AREA FILL 1

109+50.00

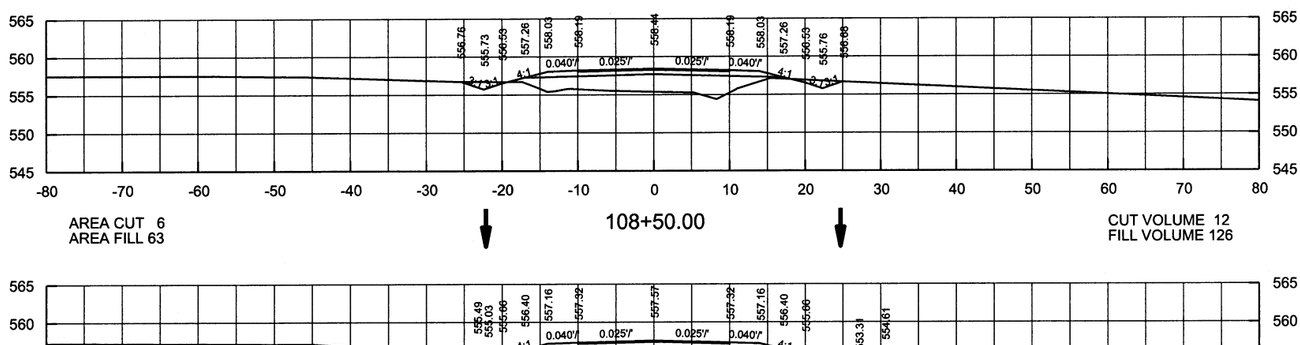
CUT VOLUME 75
FILL VOLUME 17



AREA CUT 30
AREA FILL 18

109+00.00

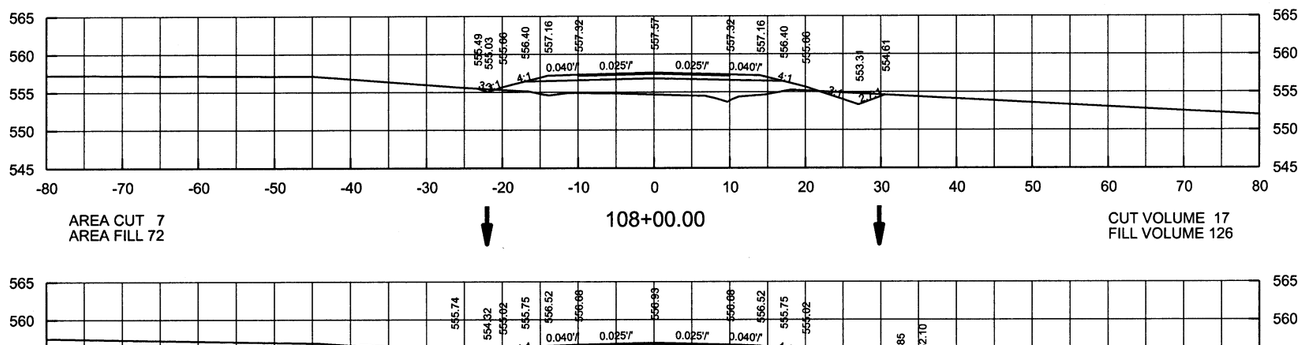
CUT VOLUME 33
FILL VOLUME 75



AREA CUT 6
AREA FILL 63

108+50.00

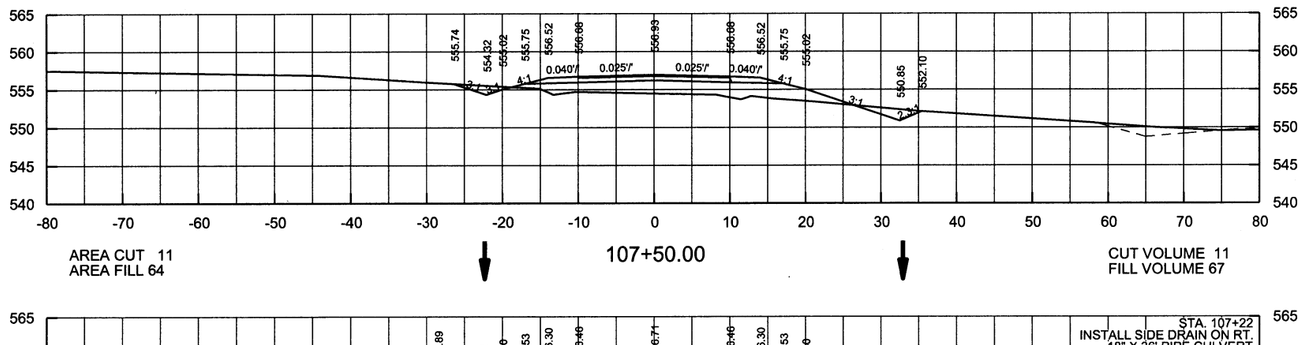
CUT VOLUME 12
FILL VOLUME 126



AREA CUT 7
AREA FILL 72

108+00.00

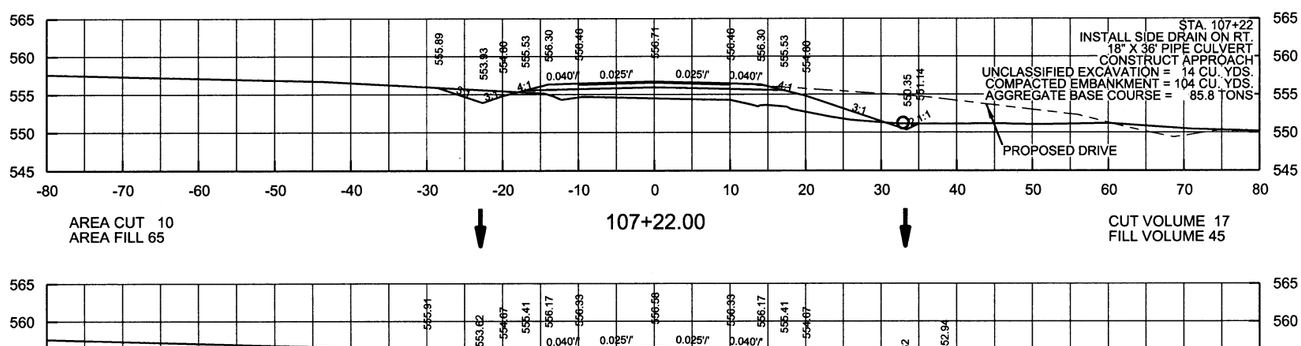
CUT VOLUME 17
FILL VOLUME 126



AREA CUT 11
AREA FILL 64

107+50.00

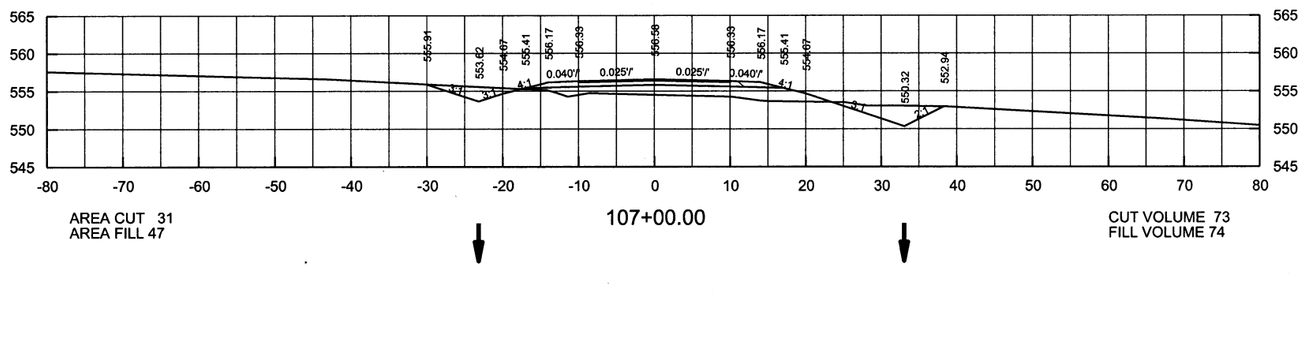
CUT VOLUME 11
FILL VOLUME 67



AREA CUT 10
AREA FILL 65

107+22.00

CUT VOLUME 17
FILL VOLUME 45



AREA CUT 31
AREA FILL 47

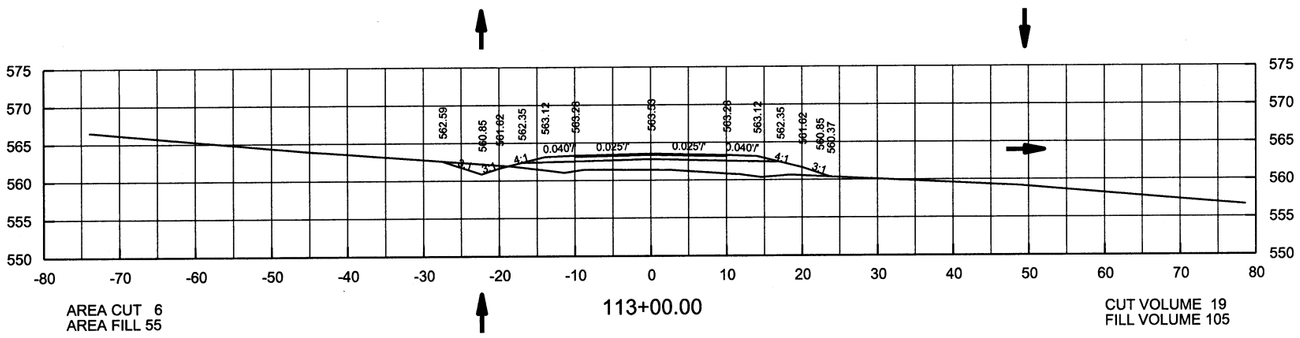
107+00.00

CUT VOLUME 73
FILL VOLUME 74

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

4 CROSS SECTIONS STA.107+00.00 TO 109+72.00

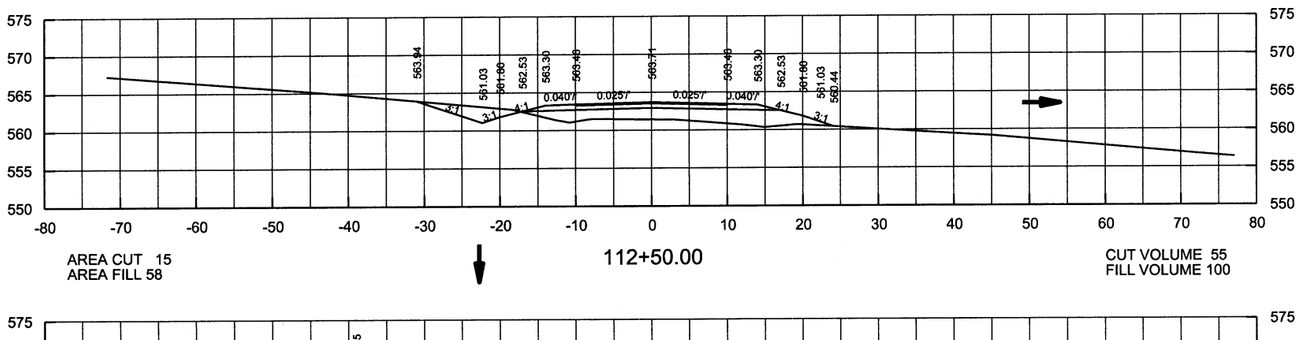
JOB NO.	DESIGNATION	SHEET NO.	TOTAL SHEETS
6	FEB.80		
ARK.	STATE		
FA6715	ROAD OR PROJECT NO.	37	65



AREA CUT 6
AREA FILL 55

113+00.00

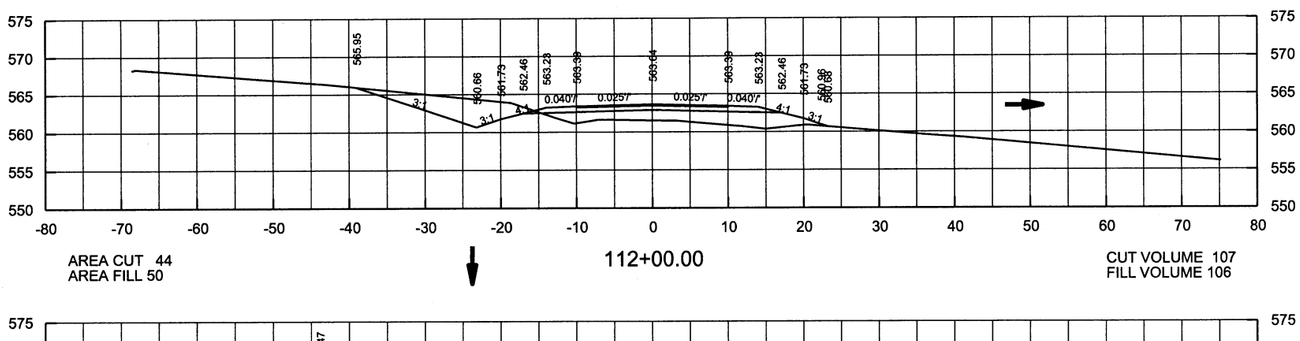
CUT VOLUME 19
FILL VOLUME 105



AREA CUT 15
AREA FILL 58

112+50.00

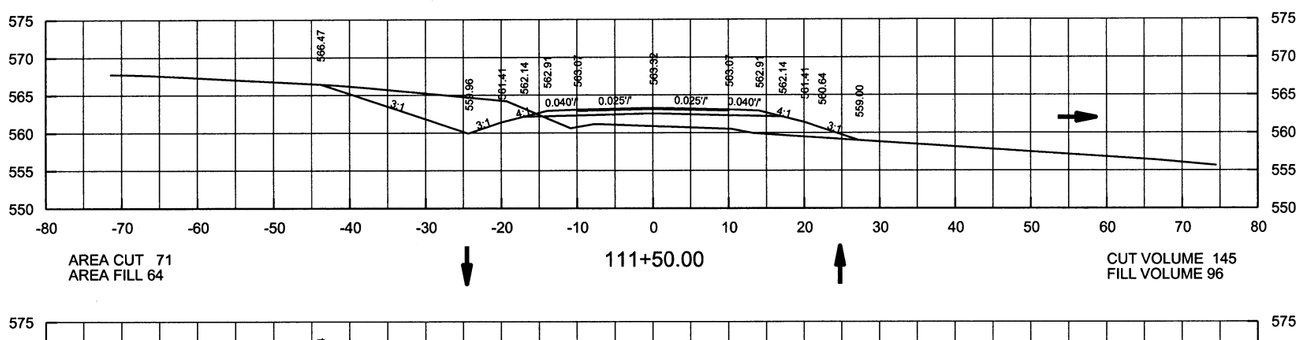
CUT VOLUME 55
FILL VOLUME 100



AREA CUT 44
AREA FILL 50

112+00.00

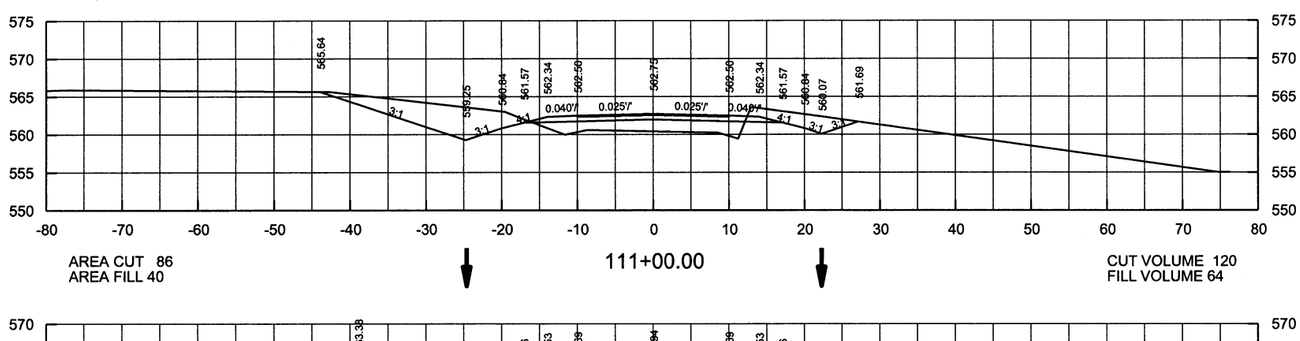
CUT VOLUME 107
FILL VOLUME 106



AREA CUT 71
AREA FILL 64

111+50.00

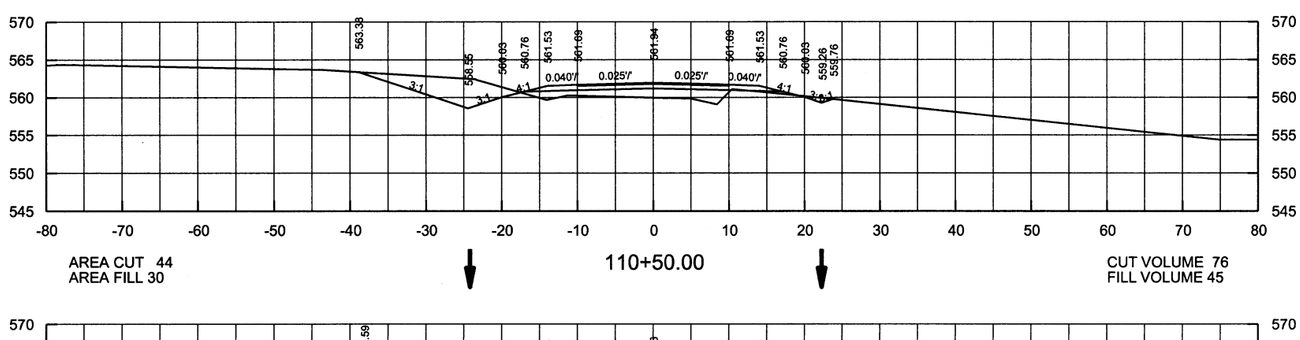
CUT VOLUME 145
FILL VOLUME 96



AREA CUT 86
AREA FILL 40

111+00.00

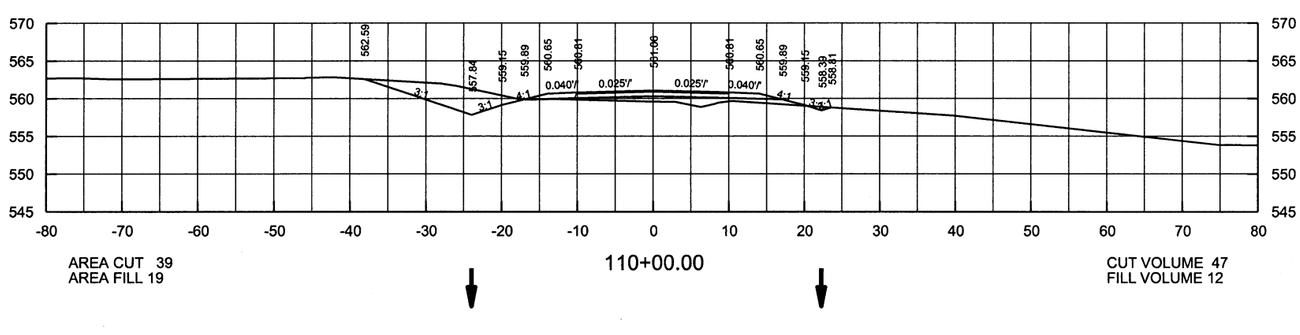
CUT VOLUME 120
FILL VOLUME 64



AREA CUT 44
AREA FILL 30

110+50.00

CUT VOLUME 76
FILL VOLUME 45



AREA CUT 39
AREA FILL 19

110+00.00

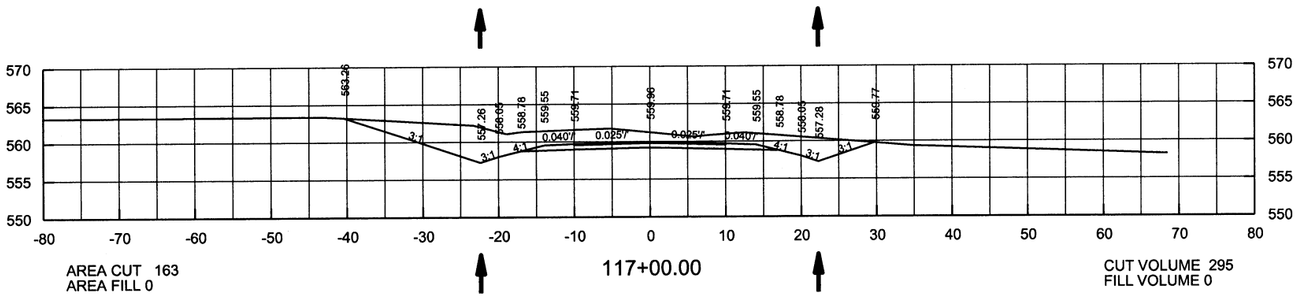
CUT VOLUME 47
FILL VOLUME 12

4 CROSS SECTIONS STA.110+00.00 TO 113+00.00

DATE REVISED	DATE PLOTED	DATE REVISED	DATE PLOTED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		38	65

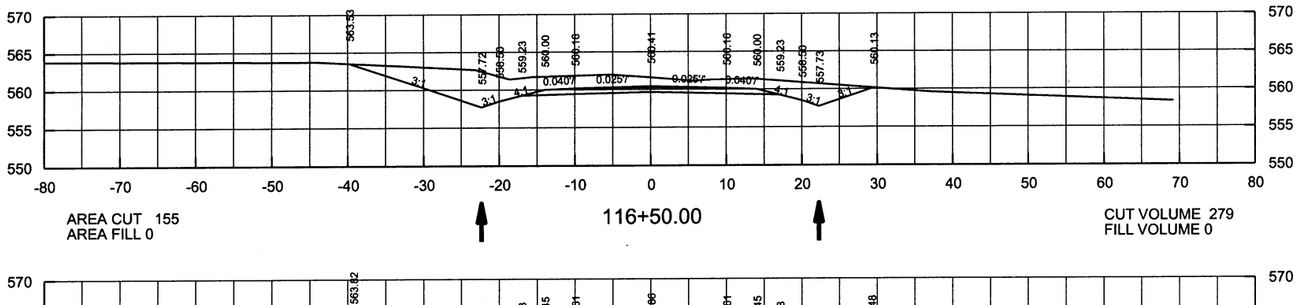
JOB NO. FA6715



AREA CUT 163
AREA FILL 0

117+00.00

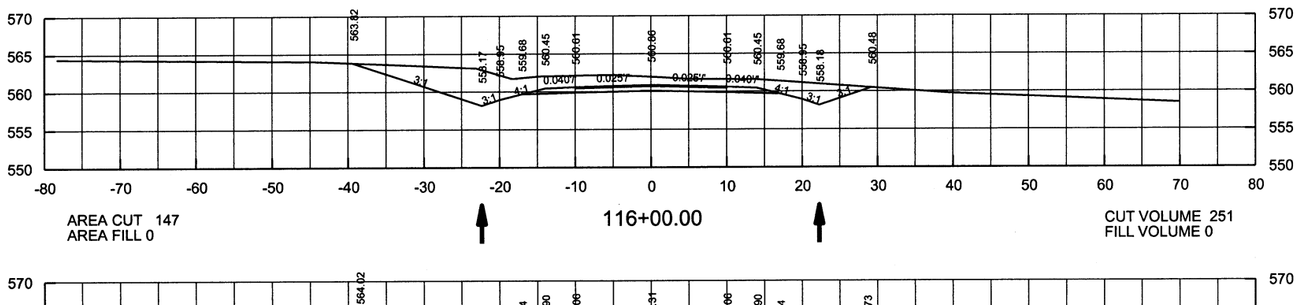
CUT VOLUME 295
FILL VOLUME 0



AREA CUT 155
AREA FILL 0

116+50.00

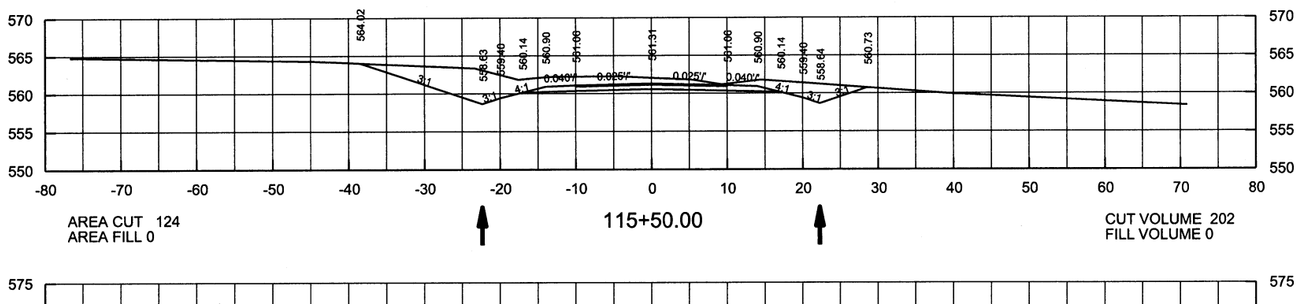
CUT VOLUME 279
FILL VOLUME 0



AREA CUT 147
AREA FILL 0

116+00.00

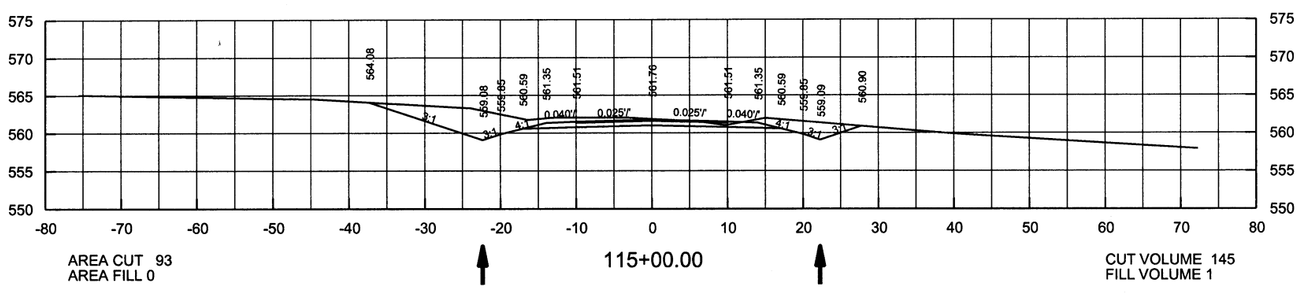
CUT VOLUME 251
FILL VOLUME 0



AREA CUT 124
AREA FILL 0

115+50.00

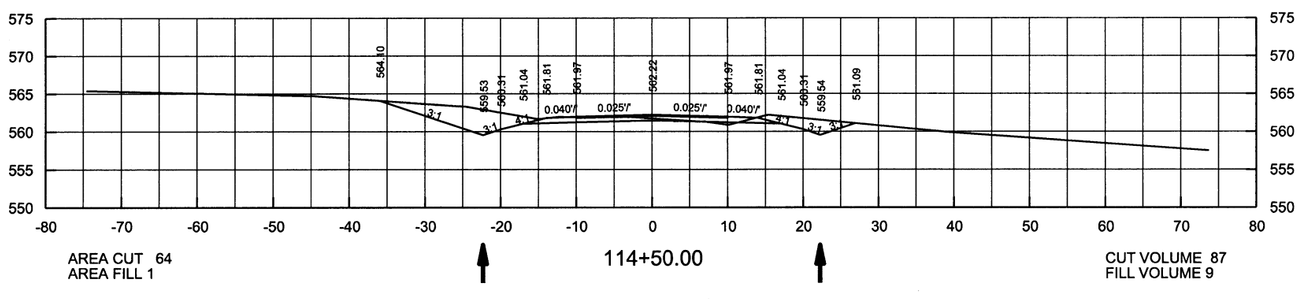
CUT VOLUME 202
FILL VOLUME 0



AREA CUT 93
AREA FILL 0

115+00.00

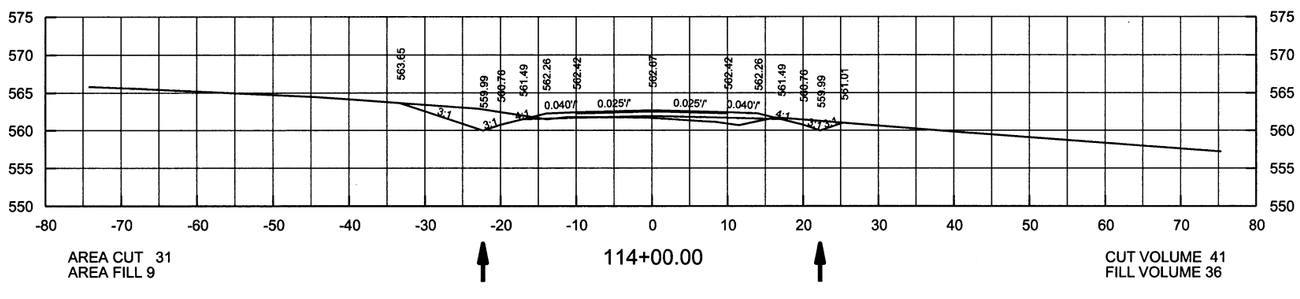
CUT VOLUME 145
FILL VOLUME 1



AREA CUT 64
AREA FILL 1

114+50.00

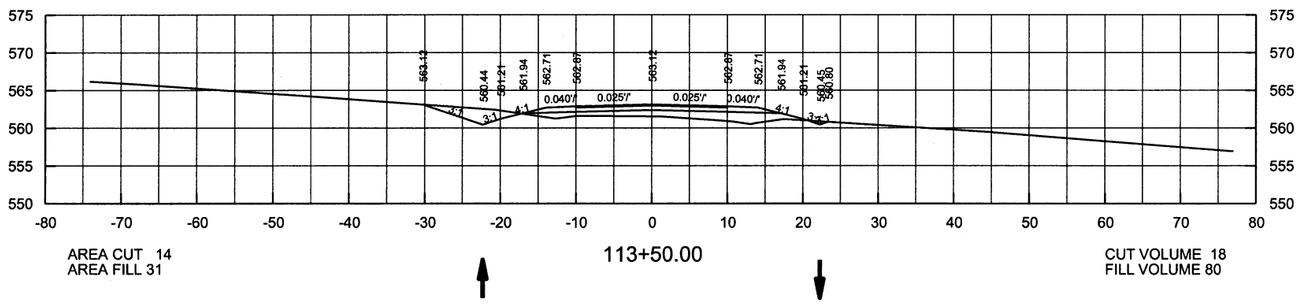
CUT VOLUME 87
FILL VOLUME 9



AREA CUT 31
AREA FILL 9

114+00.00

CUT VOLUME 41
FILL VOLUME 36



AREA CUT 14
AREA FILL 31

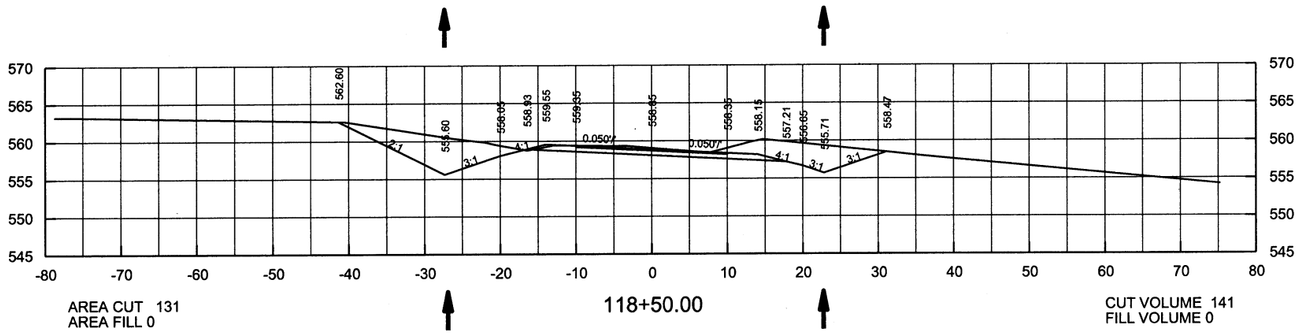
113+50.00

CUT VOLUME 18
FILL VOLUME 80

4 CROSS SECTIONS STA.113+50.00 TO 117+00.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	39	65

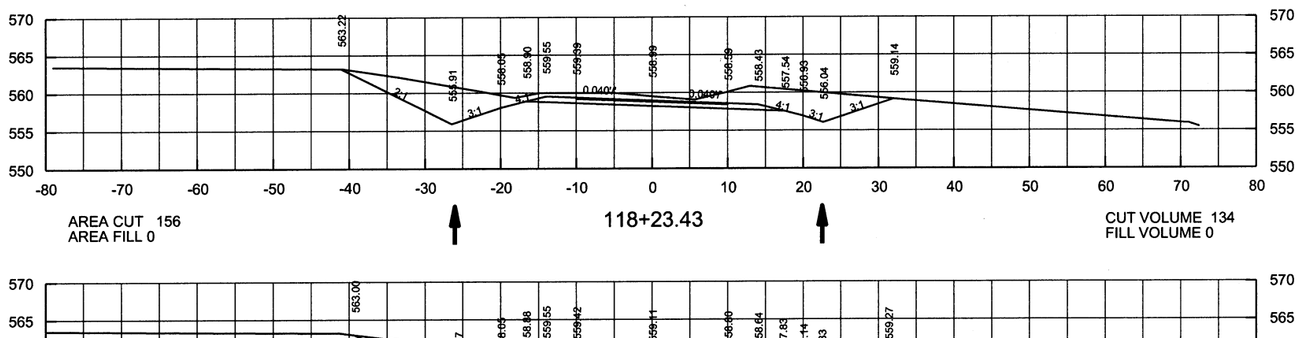
JOB NO.



AREA CUT 131
AREA FILL 0

118+50.00

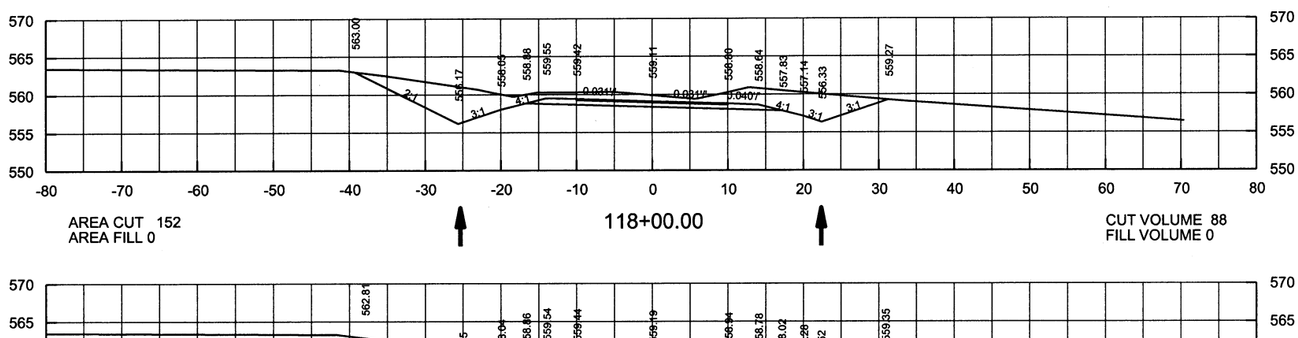
CUT VOLUME 141
FILL VOLUME 0



AREA CUT 156
AREA FILL 0

118+23.43

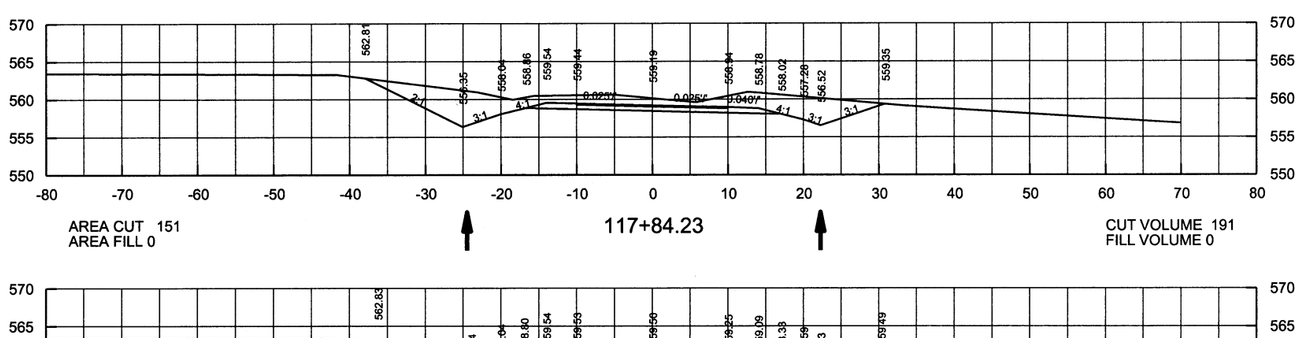
CUT VOLUME 134
FILL VOLUME 0



AREA CUT 152
AREA FILL 0

118+00.00

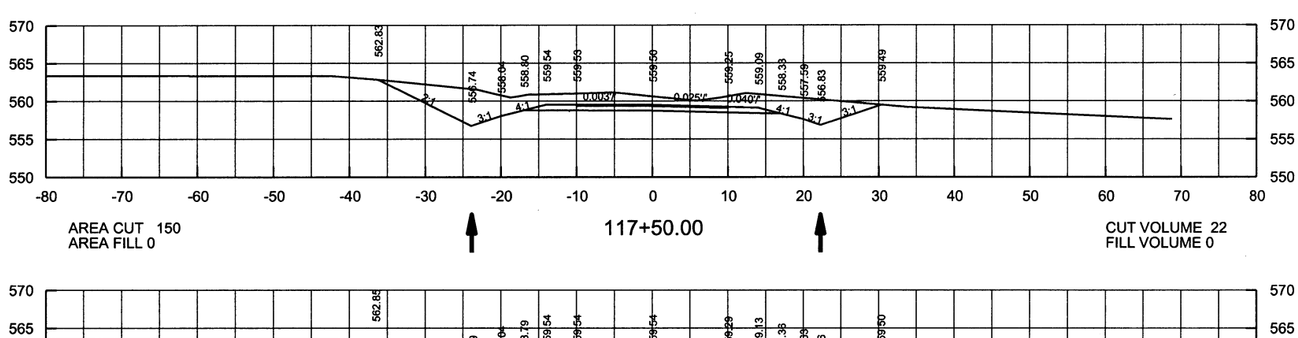
CUT VOLUME 88
FILL VOLUME 0



AREA CUT 151
AREA FILL 0

117+84.23

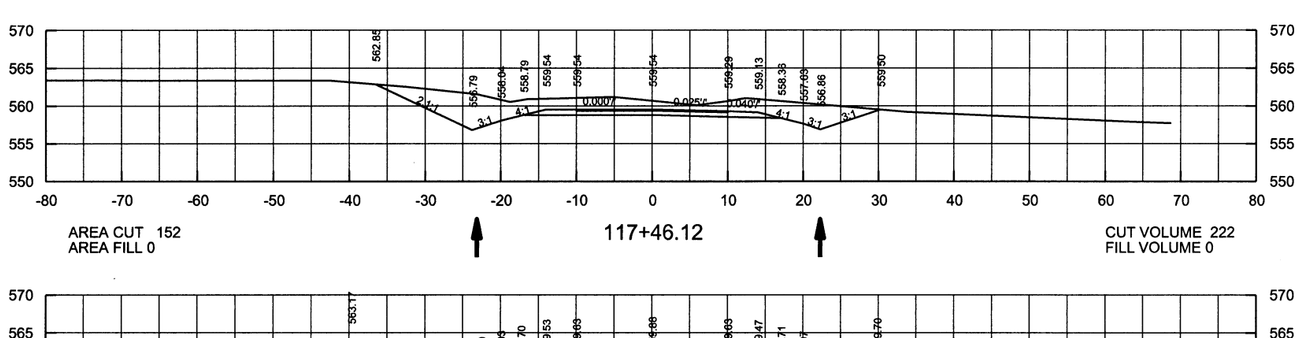
CUT VOLUME 191
FILL VOLUME 0



AREA CUT 150
AREA FILL 0

117+50.00

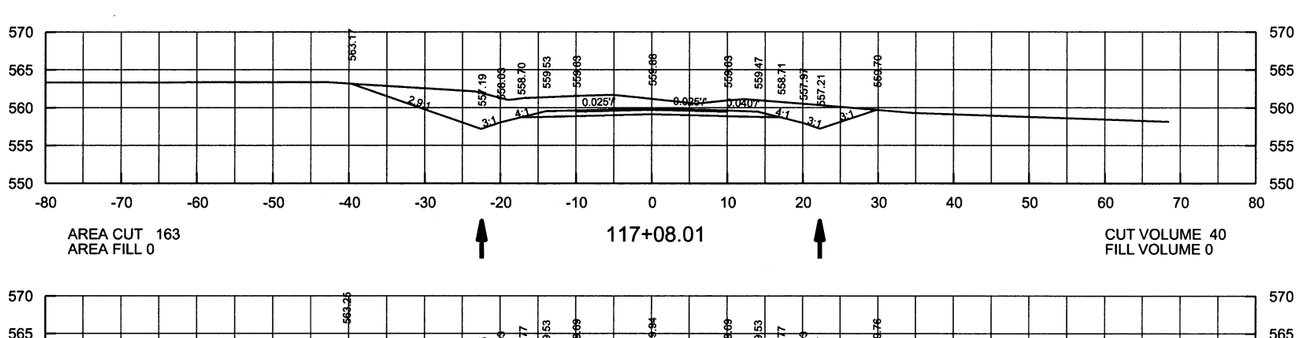
CUT VOLUME 22
FILL VOLUME 0



AREA CUT 152
AREA FILL 0

117+46.12

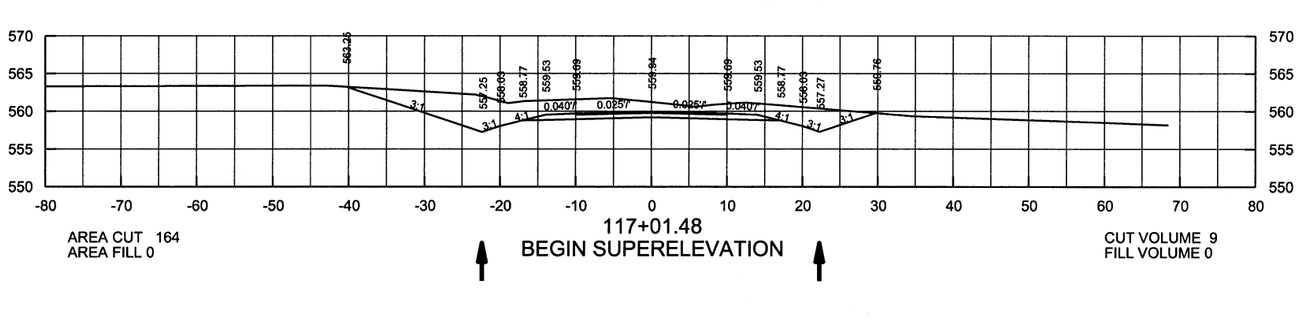
CUT VOLUME 222
FILL VOLUME 0



AREA CUT 163
AREA FILL 0

117+08.01

CUT VOLUME 40
FILL VOLUME 0



AREA CUT 164
AREA FILL 0

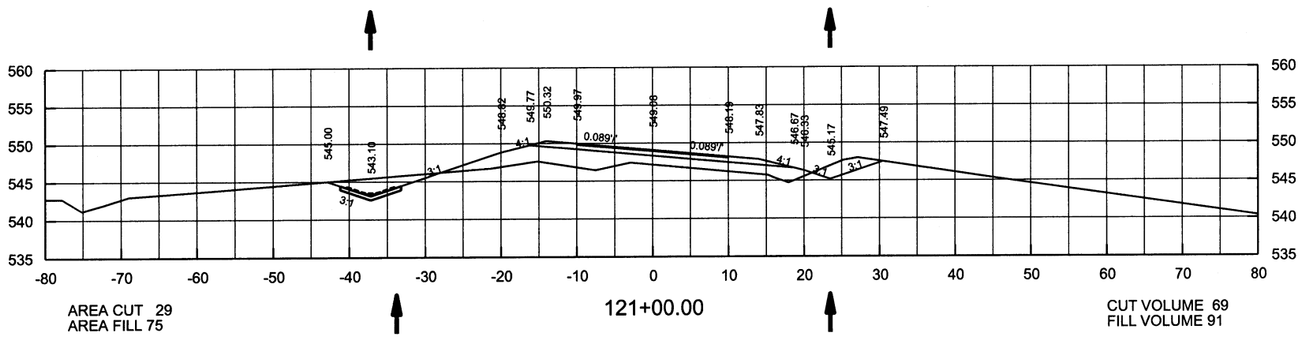
117+01.48
BEGIN SUPERELEVATION

CUT VOLUME 9
FILL VOLUME 0

4 CROSS SECTIONS STA.117+01.48 TO 118+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	40	65

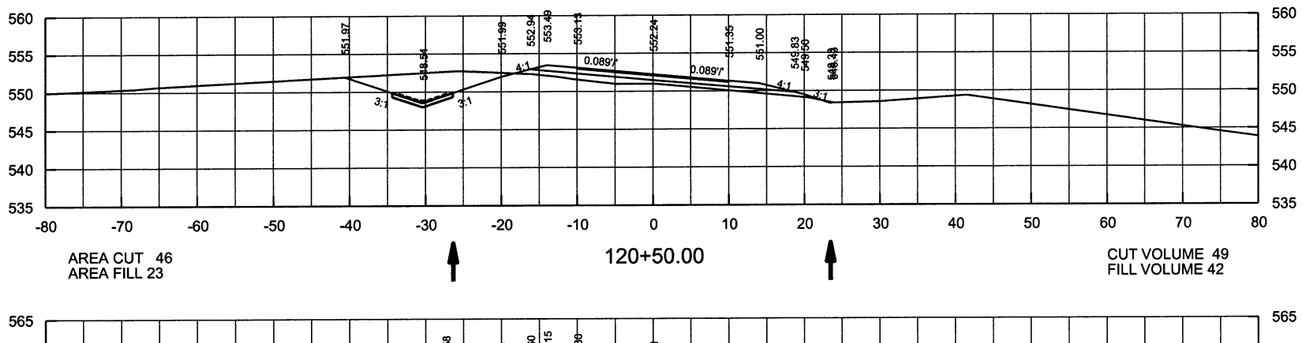
JOB NO



AREA CUT 29
AREA FILL 75

121+00.00

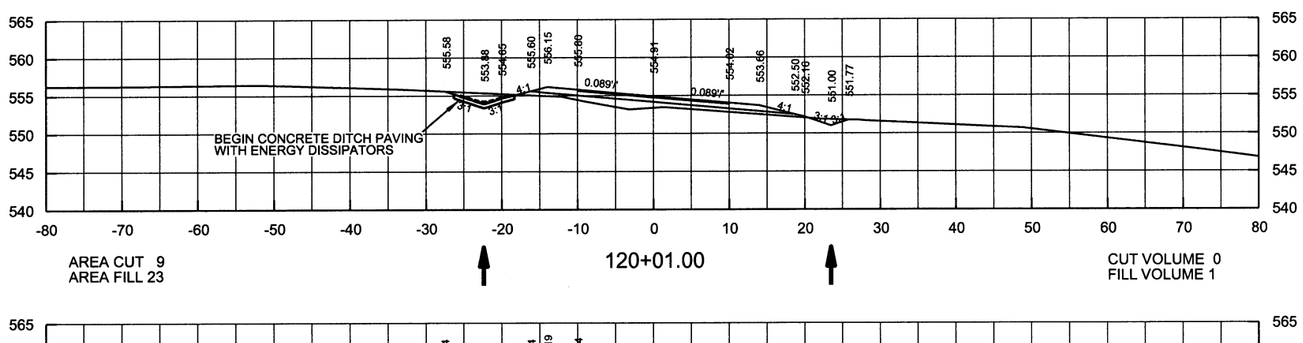
CUT VOLUME 69
FILL VOLUME 91



AREA CUT 46
AREA FILL 23

120+50.00

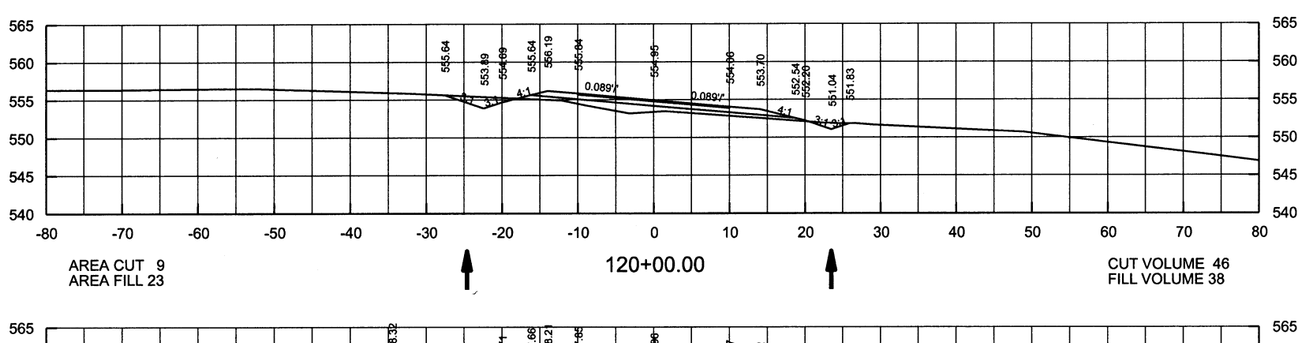
CUT VOLUME 49
FILL VOLUME 42



AREA CUT 9
AREA FILL 23

120+01.00

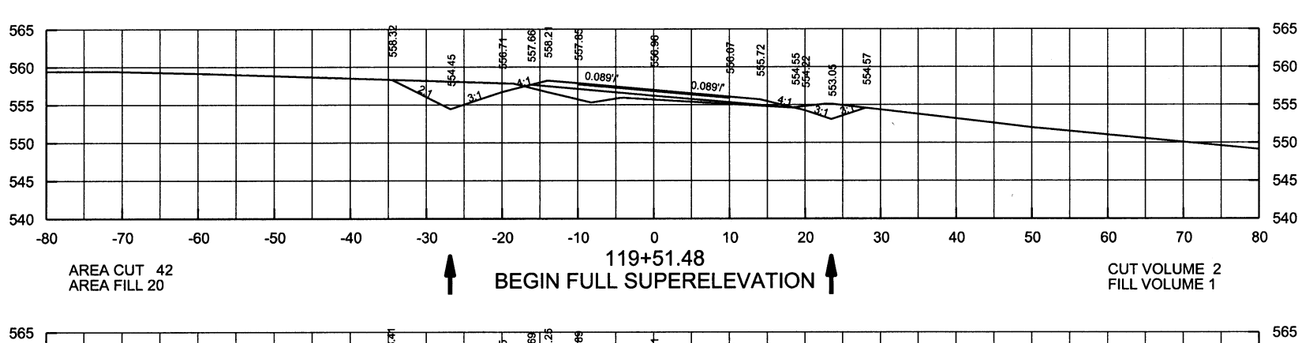
CUT VOLUME 0
FILL VOLUME 1



AREA CUT 9
AREA FILL 23

120+00.00

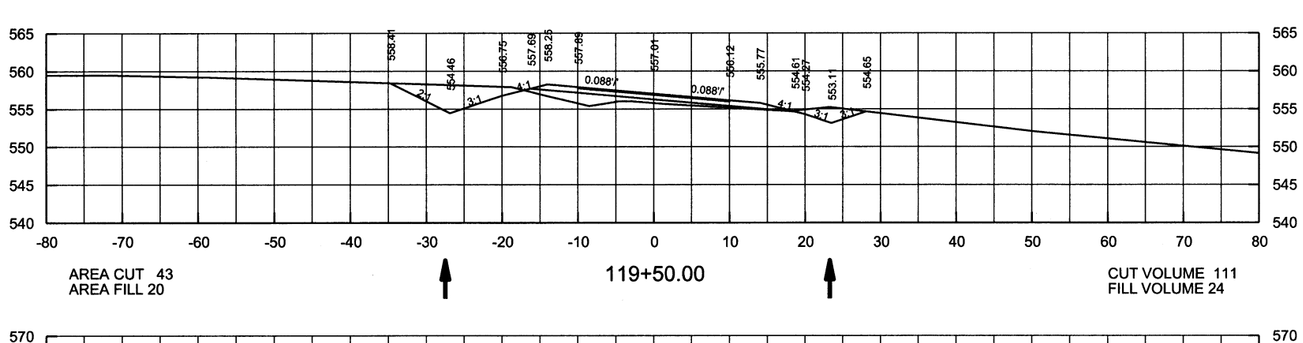
CUT VOLUME 46
FILL VOLUME 38



AREA CUT 42
AREA FILL 20

119+51.48
BEGIN FULL SUPERELEVATION

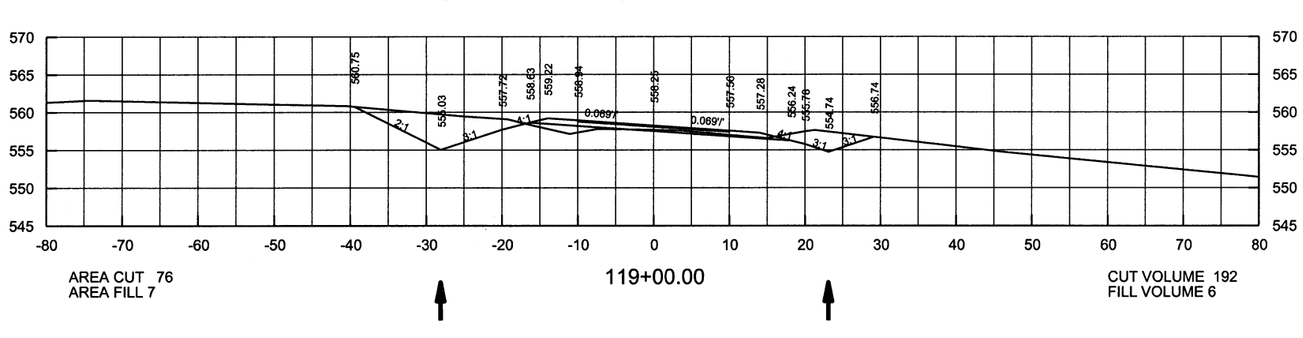
CUT VOLUME 2
FILL VOLUME 1



AREA CUT 43
AREA FILL 20

119+50.00

CUT VOLUME 111
FILL VOLUME 24



AREA CUT 76
AREA FILL 7

119+00.00

CUT VOLUME 192
FILL VOLUME 6

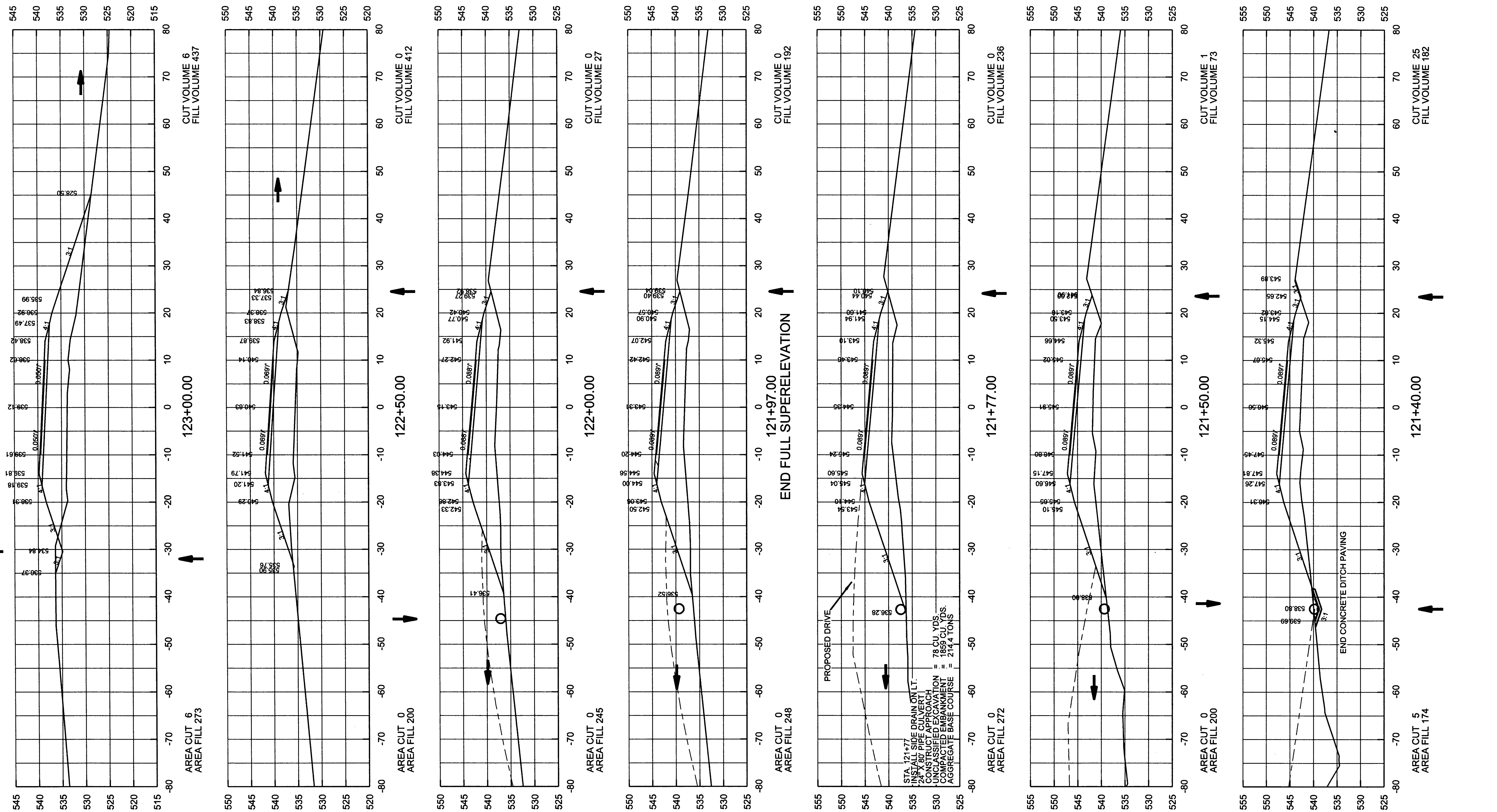
4 CROSS SECTIONS STA.119+00.00 TO 121+00.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	41	65

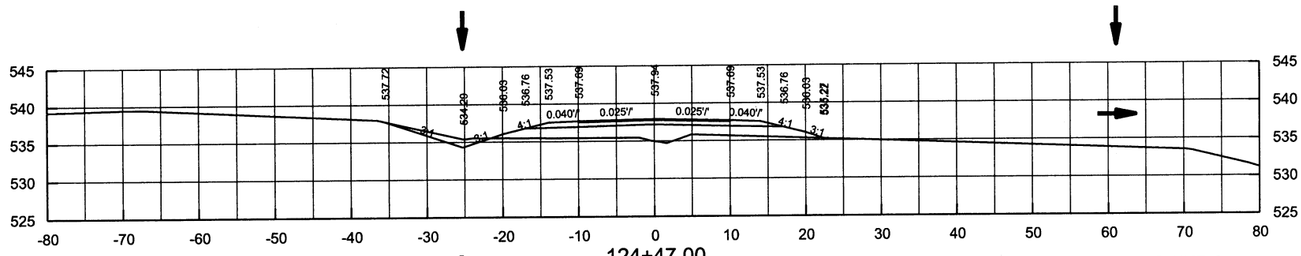
JOB NO

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	42	65

(4) CROSS SECTIONS STA.121+39.50 TO 123+00.00



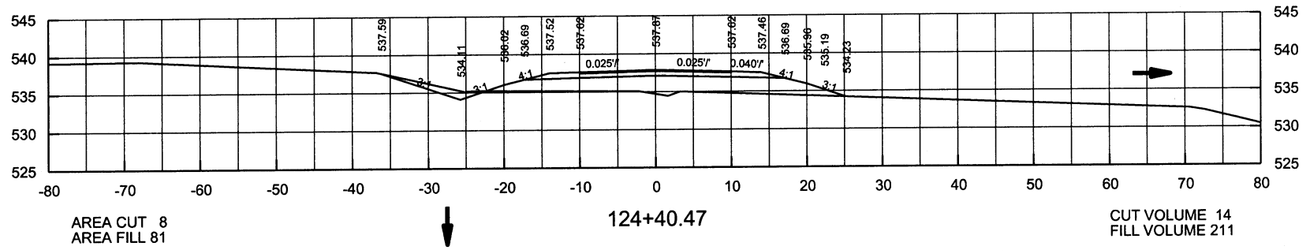
123+00.00
CUT VOLUME 6
FILL VOLUME 437
AREA CUT 6
AREA FILL 273
122+50.00
CUT VOLUME 0
FILL VOLUME 412
AREA CUT 0
AREA FILL 200
122+00.00
CUT VOLUME 0
FILL VOLUME 27
AREA CUT 0
AREA FILL 245
121+97.00
END FULL SUPERELEVATION
CUT VOLUME 0
FILL VOLUME 192
AREA CUT 0
AREA FILL 248
121+77.00
CUT VOLUME 0
FILL VOLUME 236
AREA CUT 0
AREA FILL 272
PROPOSED DRIVE
STA. 121+77
INSTALL SIDE DRAIN ON LT.
24" X 80' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 78 CU. YDS.
COMPACTED EMBANKMENT = 1859 CU. YDS.
AGGREGATE BASE COURSE = 214.4 TONS
121+50.00
CUT VOLUME 1
FILL VOLUME 73
AREA CUT 0
AREA FILL 200
121+40.00
CUT VOLUME 25
FILL VOLUME 182
AREA CUT 5
AREA FILL 174
END CONCRETE DITCH PAVING



AREA CUT 8
AREA FILL 59

124+47.00
END SUPERELEVATION

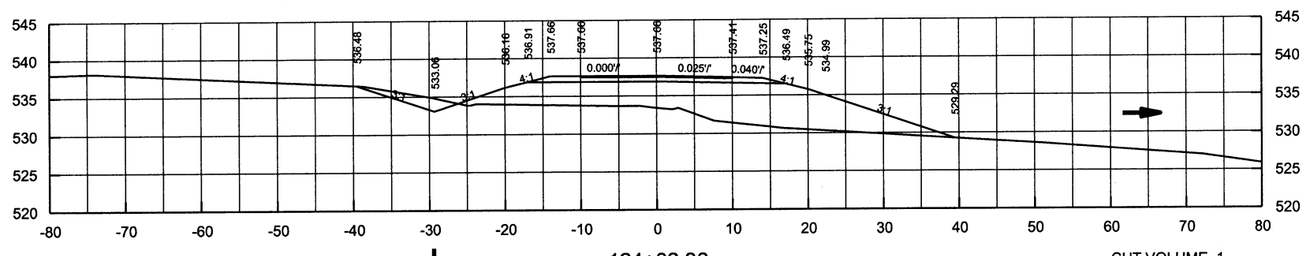
CUT VOLUME 2
FILL VOLUME 17



AREA CUT 8
AREA FILL 81

124+40.47

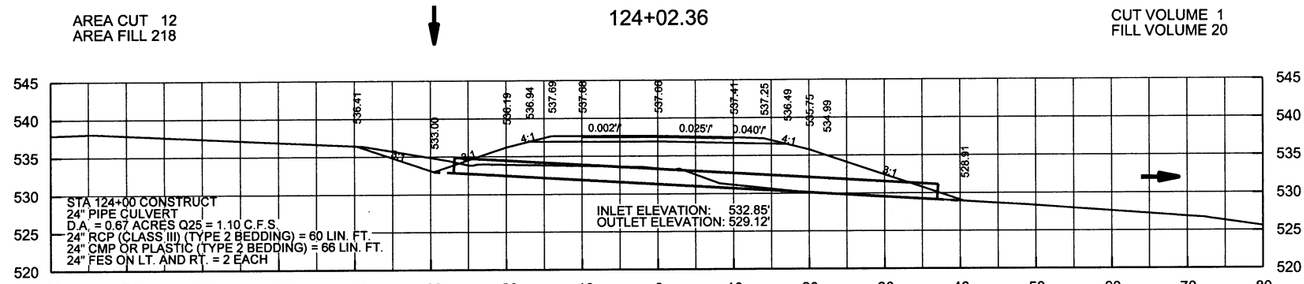
CUT VOLUME 14
FILL VOLUME 211



AREA CUT 12
AREA FILL 218

124+02.36

CUT VOLUME 1
FILL VOLUME 20



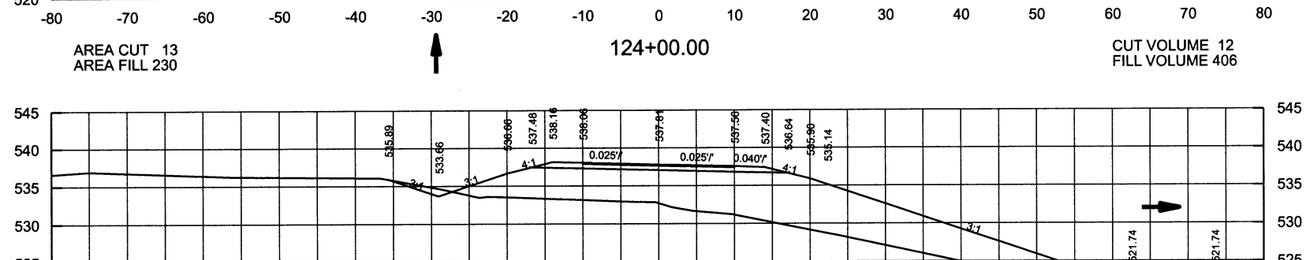
STA 124+00 CONSTRUCT
24" PIPE CULVERT
D.A. = 0.67 ACRES Q25 = 1.10 C.F.S.
24" RCP (CLASS III) (TYPE 2 BEDDING) = 60 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 66 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

INLET ELEVATION: 532.85'
OUTLET ELEVATION: 529.12'

AREA CUT 13
AREA FILL 230

124+00.00

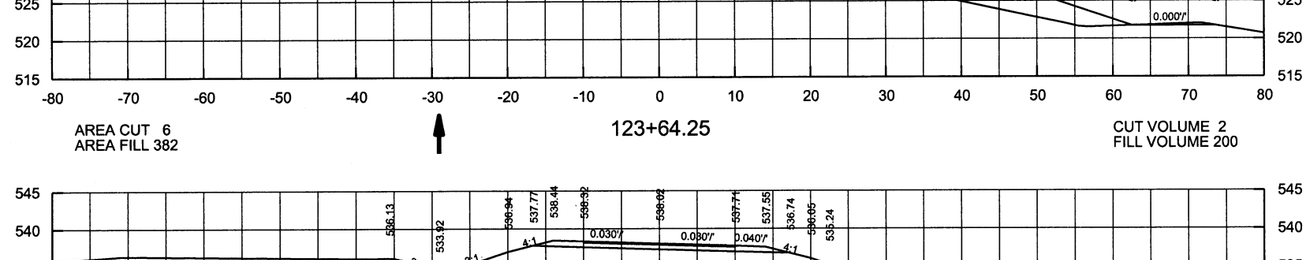
CUT VOLUME 12
FILL VOLUME 406



AREA CUT 6
AREA FILL 382

123+64.25

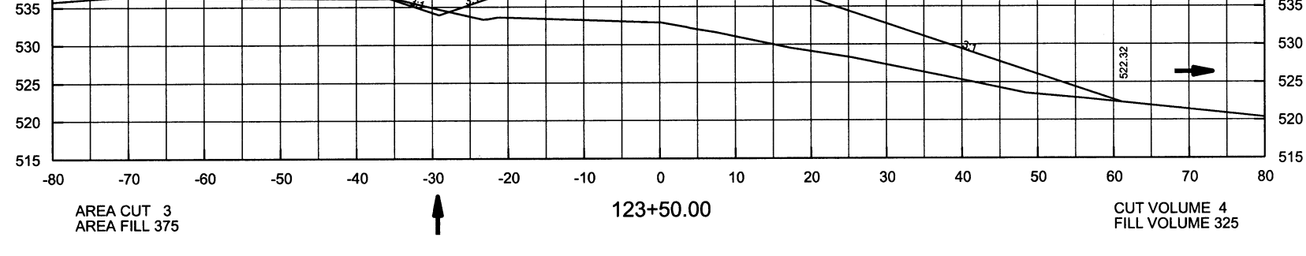
CUT VOLUME 2
FILL VOLUME 200



AREA CUT 3
AREA FILL 375

123+50.00

CUT VOLUME 4
FILL VOLUME 325



AREA CUT 5
AREA FILL 329

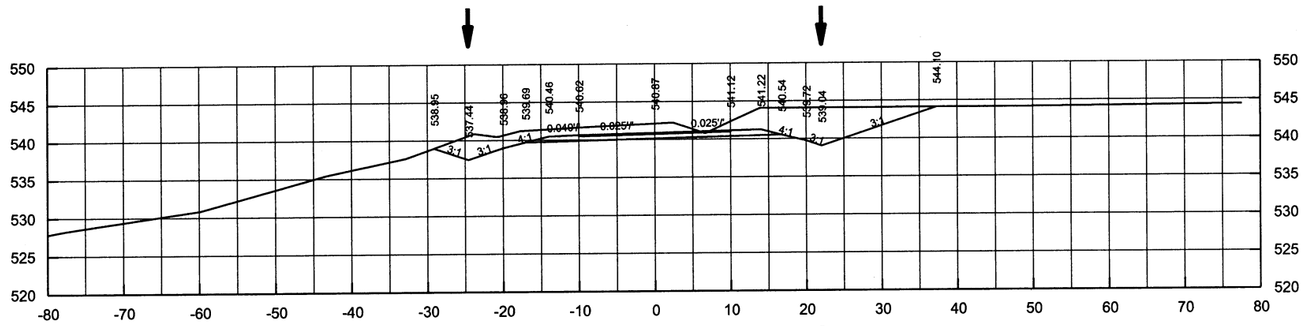
123+25.05

CUT VOLUME 5
FILL VOLUME 279

4 CROSS SECTIONS STA 123+25.05 TO 124+47.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	43	65

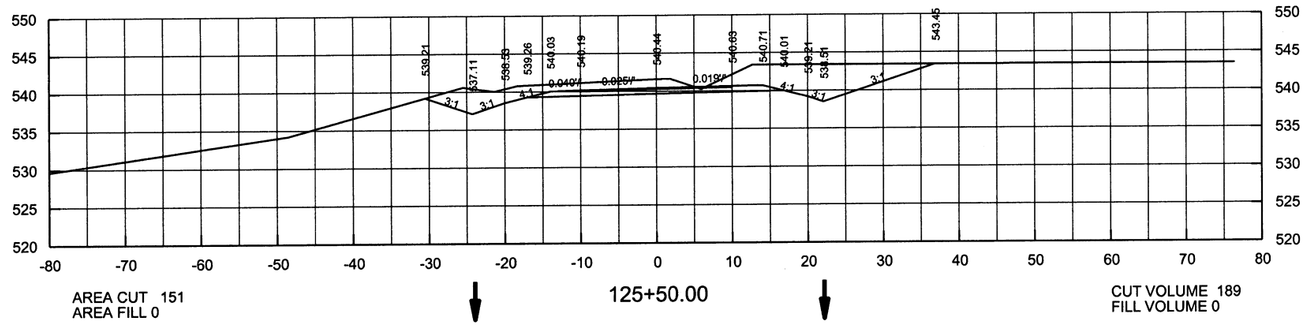
JOB NO.



AREA CUT 149
AREA FILL 0

125+61.27

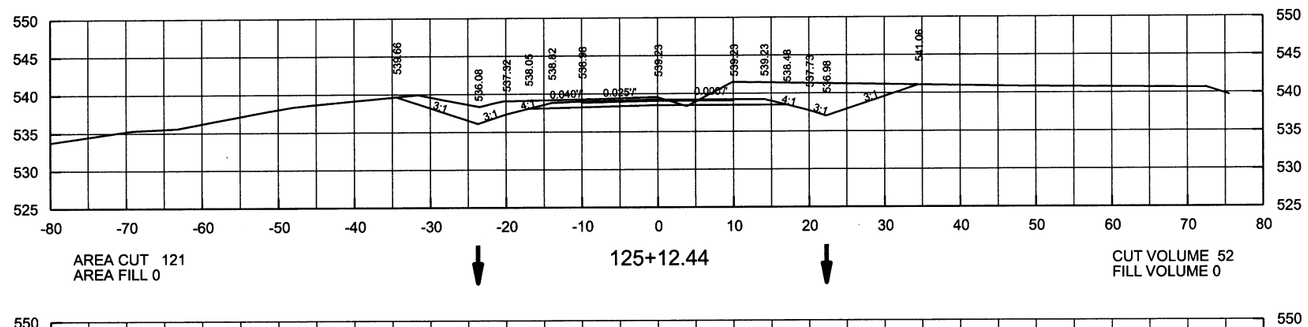
CUT VOLUME 63
FILL VOLUME 0



AREA CUT 151
AREA FILL 0

125+50.00

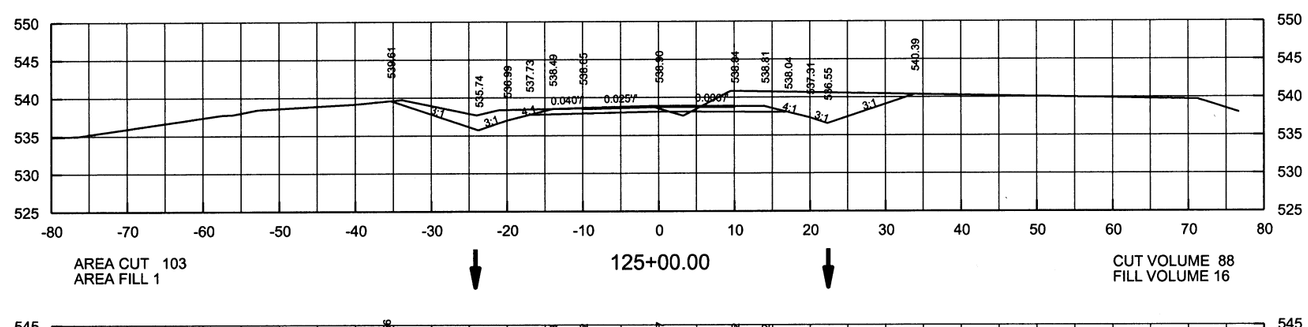
CUT VOLUME 189
FILL VOLUME 0



AREA CUT 121
AREA FILL 0

125+12.44

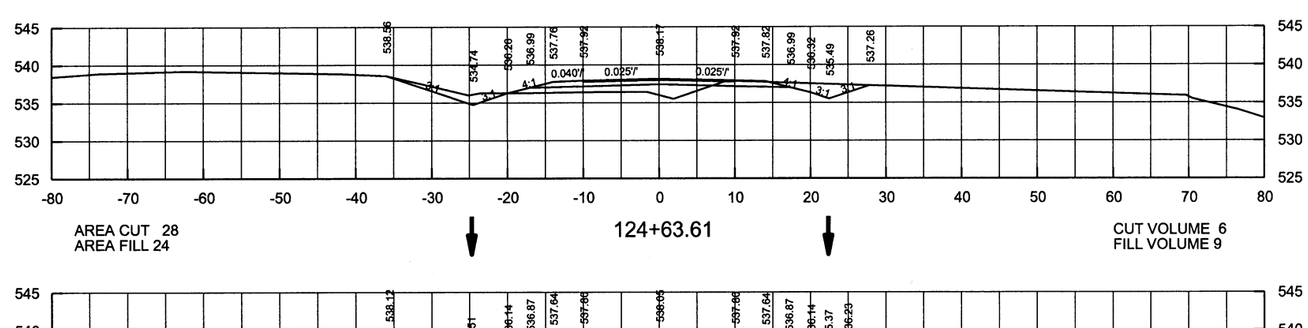
CUT VOLUME 52
FILL VOLUME 0



AREA CUT 103
AREA FILL 1

125+00.00

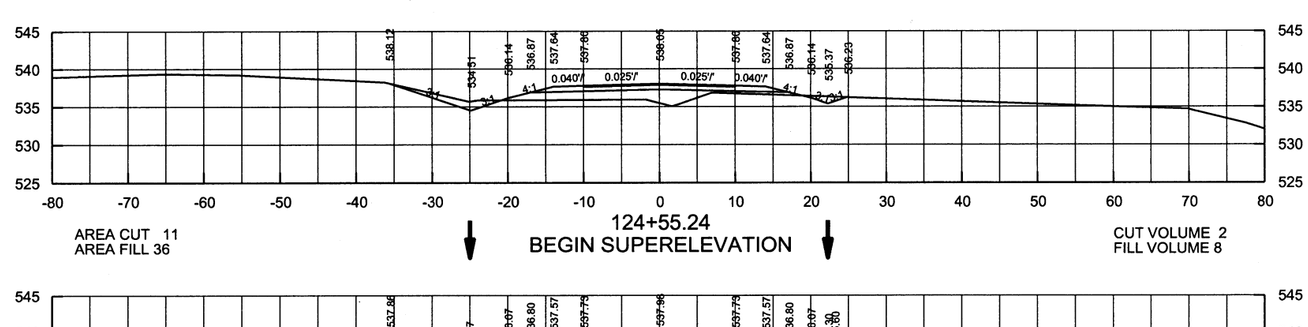
CUT VOLUME 88
FILL VOLUME 16



AREA CUT 28
AREA FILL 24

124+63.61

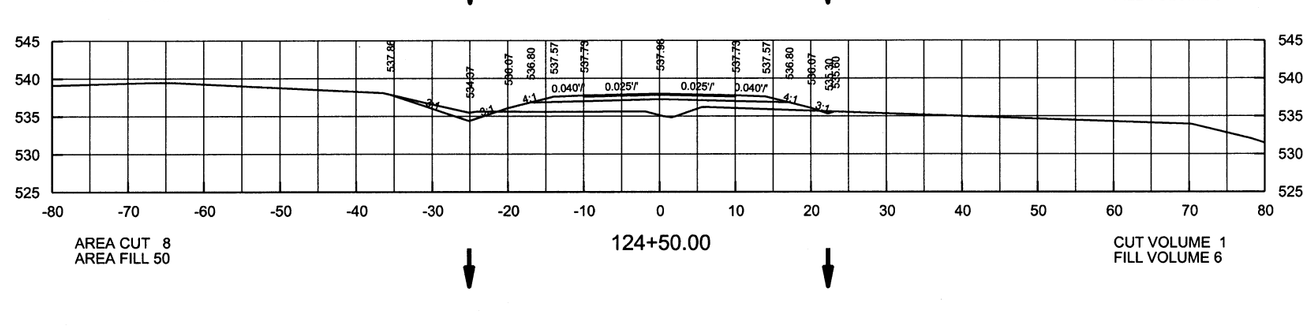
CUT VOLUME 6
FILL VOLUME 9



AREA CUT 11
AREA FILL 36

124+55.24
BEGIN SUPERELEVATION

CUT VOLUME 2
FILL VOLUME 8



AREA CUT 8
AREA FILL 50

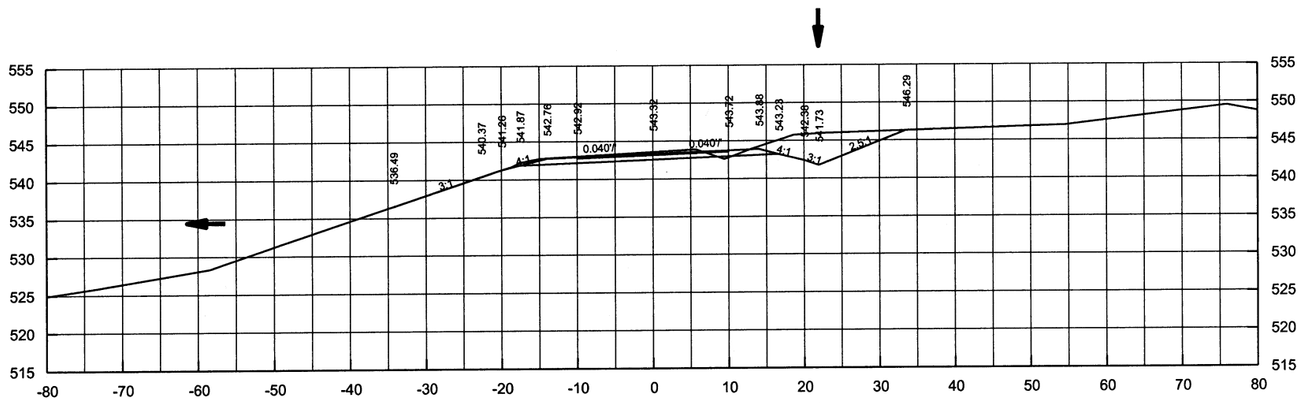
124+50.00

CUT VOLUME 1
FILL VOLUME 6

4 CROSS SECTIONS STA.124+50.00 TO 125+61.27

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	44	65

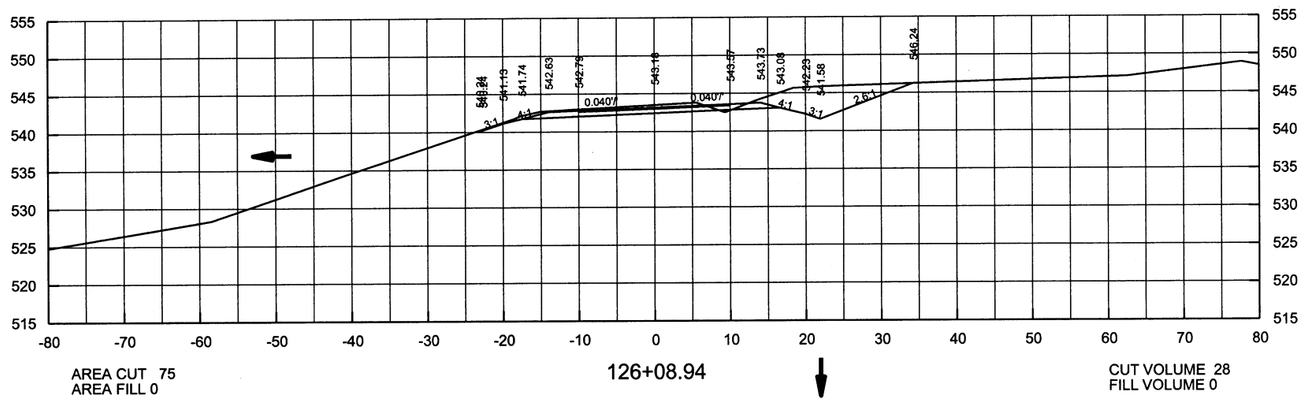
JOB NO.



AREA CUT 69
AREA FILL 0

126+11.49

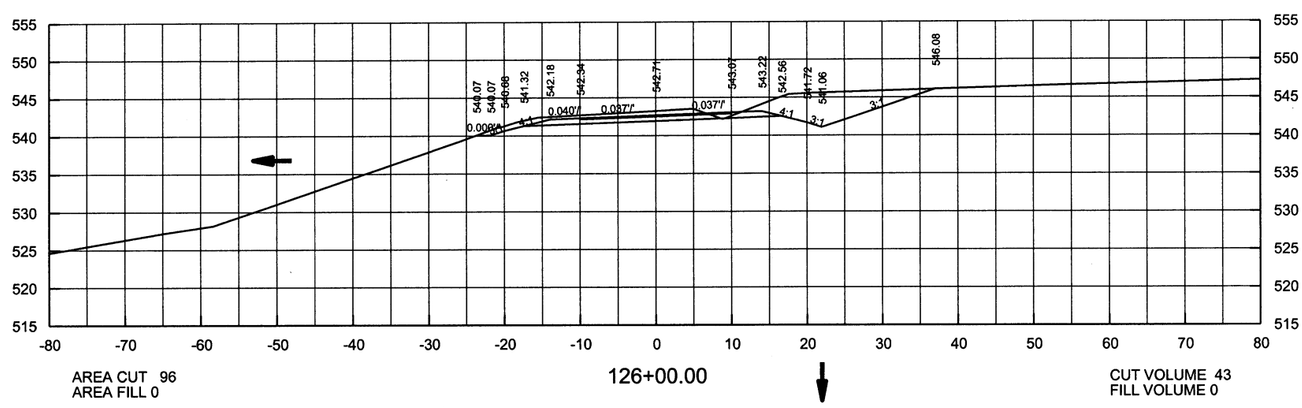
CUT VOLUME 7
FILL VOLUME 0



AREA CUT 75
AREA FILL 0

126+08.94

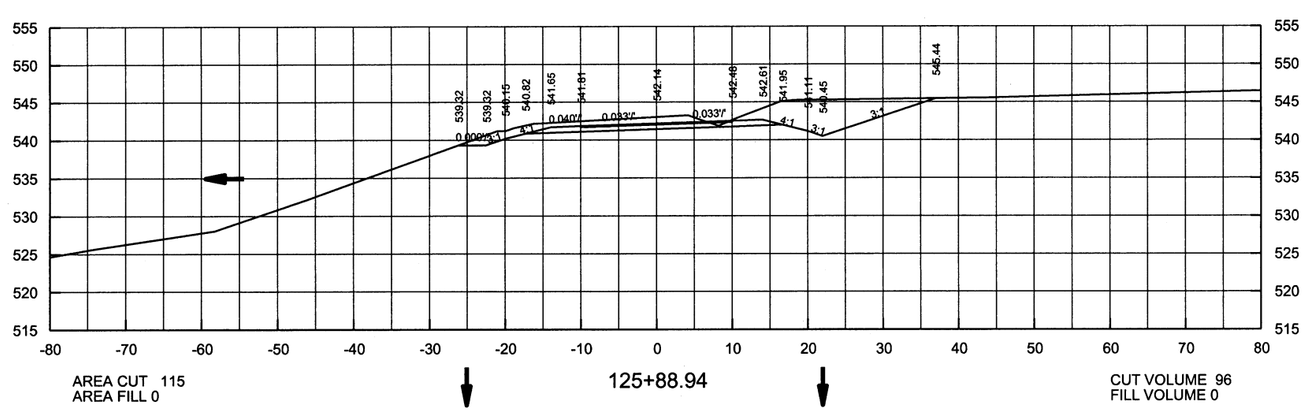
CUT VOLUME 28
FILL VOLUME 0



AREA CUT 96
AREA FILL 0

126+00.00

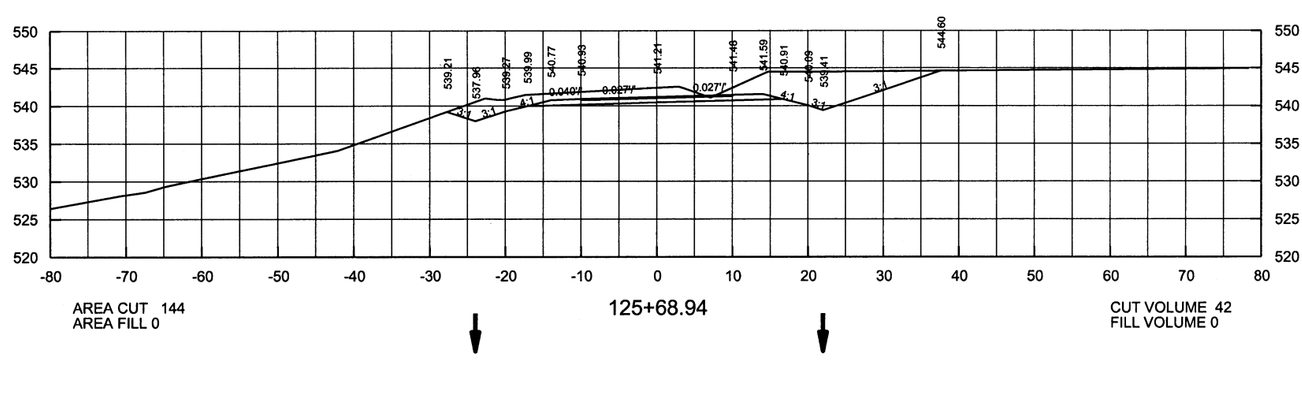
CUT VOLUME 43
FILL VOLUME 0



AREA CUT 115
AREA FILL 0

125+88.94

CUT VOLUME 96
FILL VOLUME 0



AREA CUT 144
AREA FILL 0

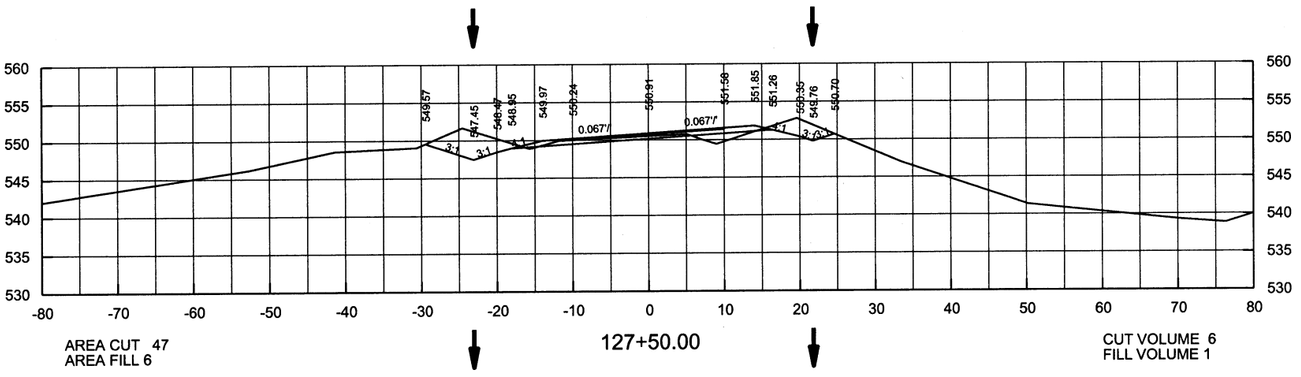
125+68.94

CUT VOLUME 42
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

4 CROSS SECTIONS STA.125+68.94 TO 126+11.49

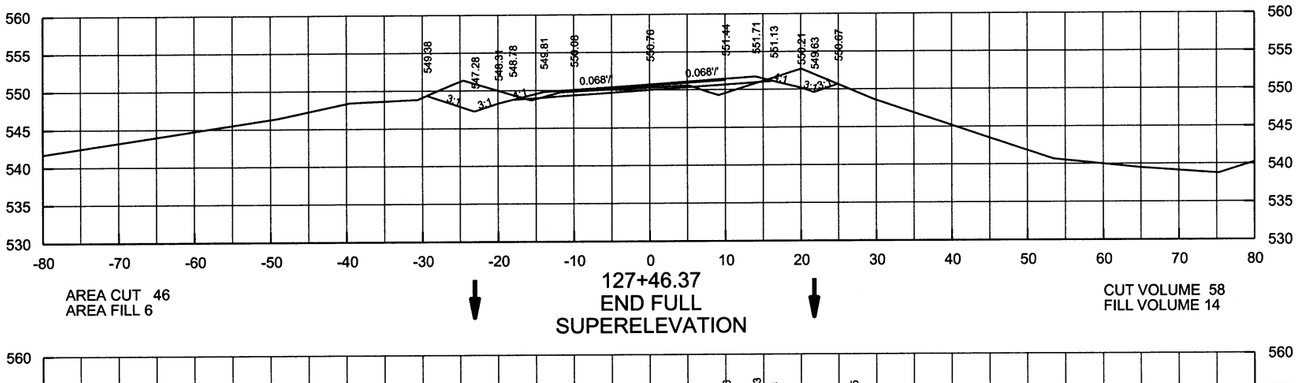
JOB NO.		STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6		ARK.	FA6715	45	65



AREA CUT 47
AREA FILL 6

127+50.00

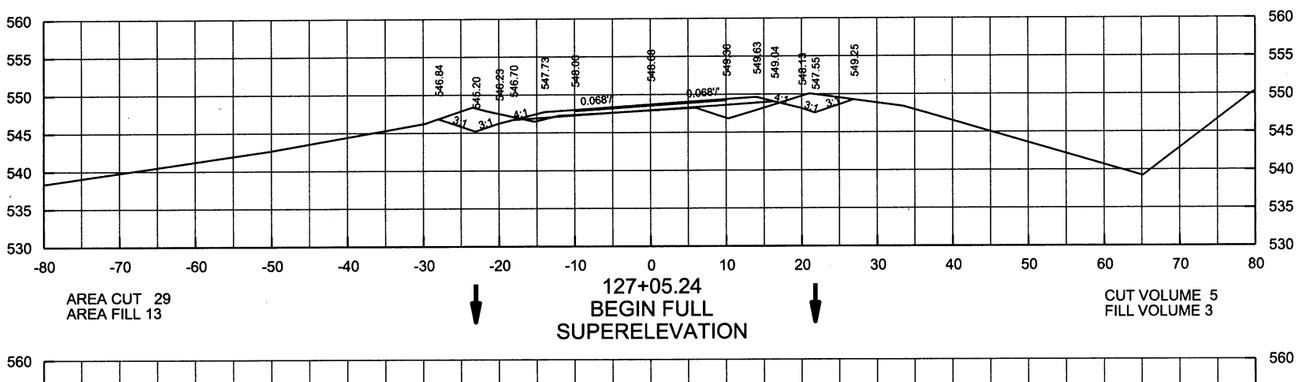
CUT VOLUME 6
FILL VOLUME 1



AREA CUT 46
AREA FILL 6

127+46.37
END FULL
SUPERELEVATION

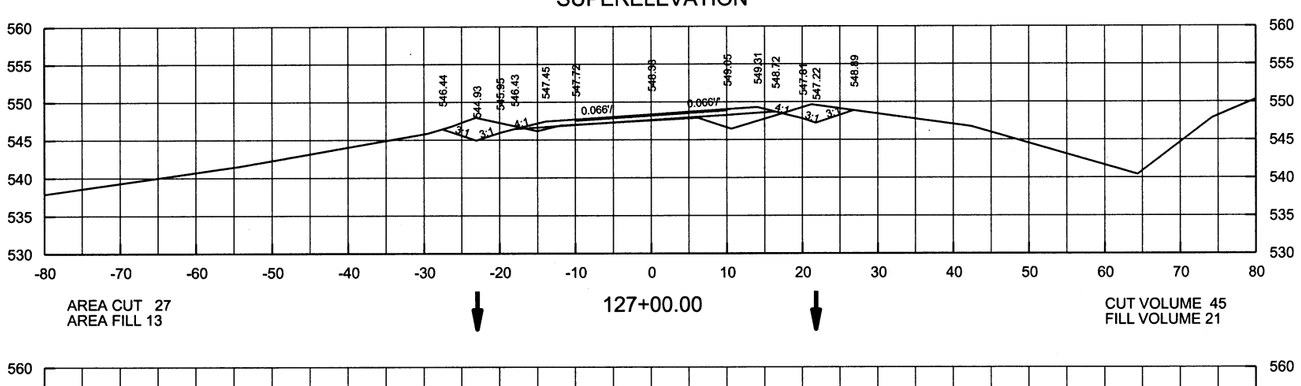
CUT VOLUME 58
FILL VOLUME 14



AREA CUT 29
AREA FILL 13

127+05.24
BEGIN FULL
SUPERELEVATION

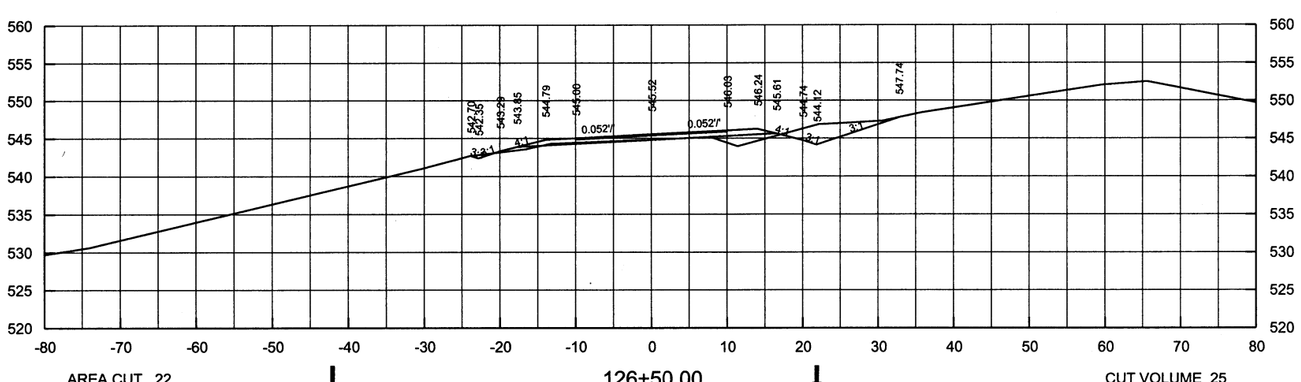
CUT VOLUME 5
FILL VOLUME 3



AREA CUT 27
AREA FILL 13

127+00.00

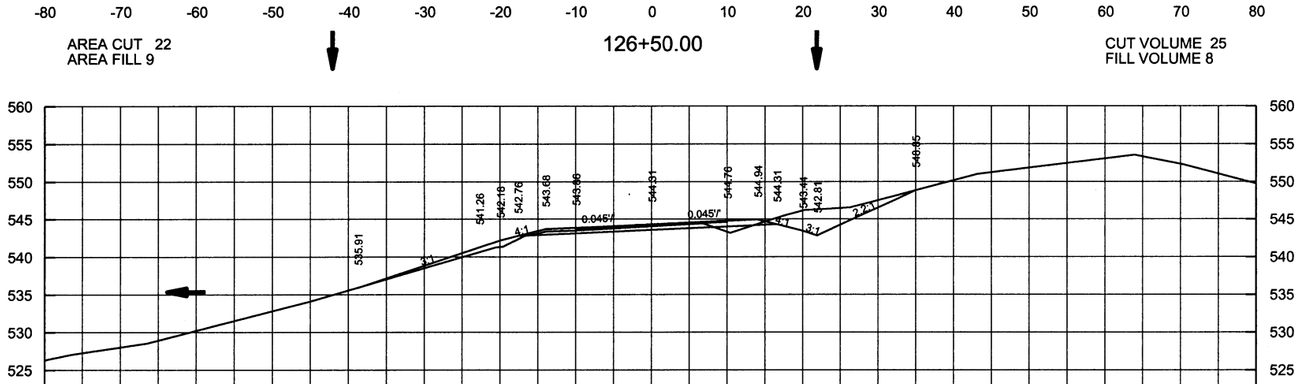
CUT VOLUME 45
FILL VOLUME 21



AREA CUT 22
AREA FILL 9

126+50.00

CUT VOLUME 25
FILL VOLUME 8



AREA CUT 42
AREA FILL 11

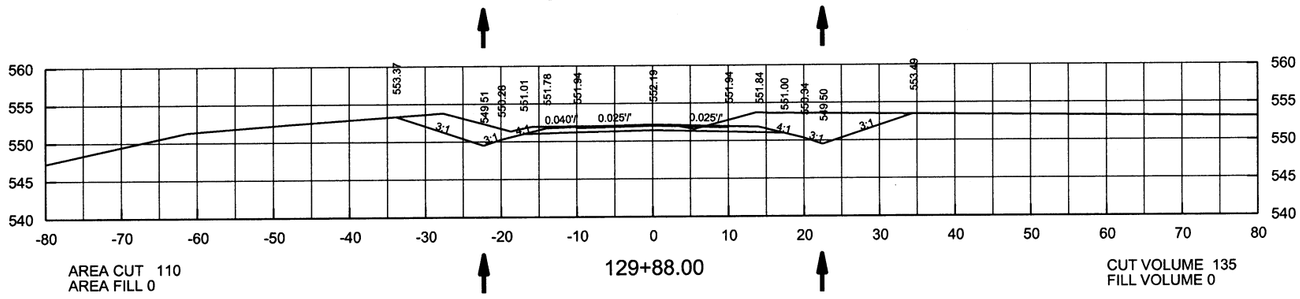
126+28.94

CUT VOLUME 36
FILL VOLUME 4

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		46	65

4 CROSS SECTIONS STA.126+28.94 TO 127+50.00

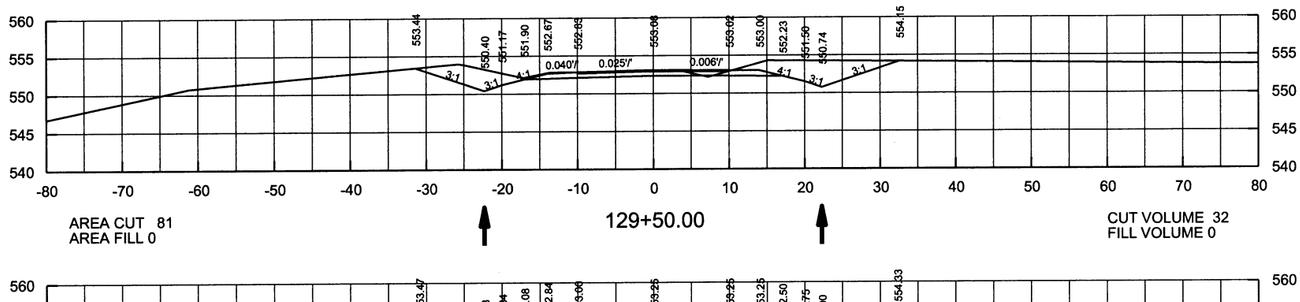
JOB NO. FA6715



AREA CUT 110
AREA FILL 0

129+88.00

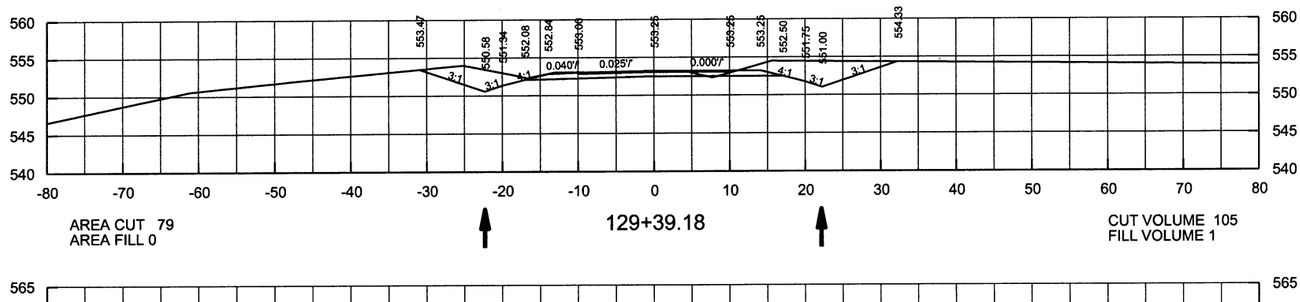
CUT VOLUME 135
FILL VOLUME 0



AREA CUT 81
AREA FILL 0

129+50.00

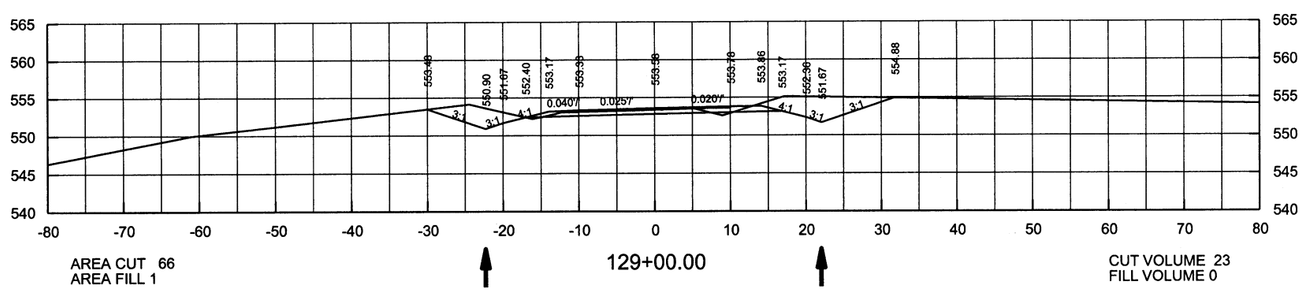
CUT VOLUME 32
FILL VOLUME 0



AREA CUT 79
AREA FILL 0

129+39.18

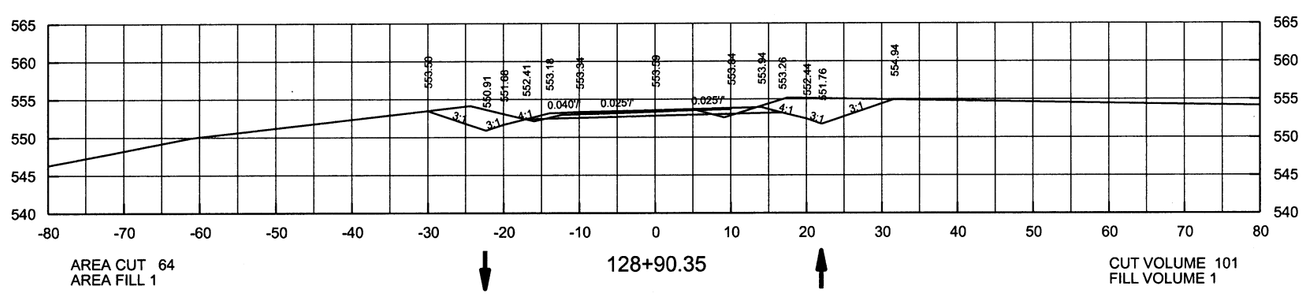
CUT VOLUME 105
FILL VOLUME 1



AREA CUT 66
AREA FILL 1

129+00.00

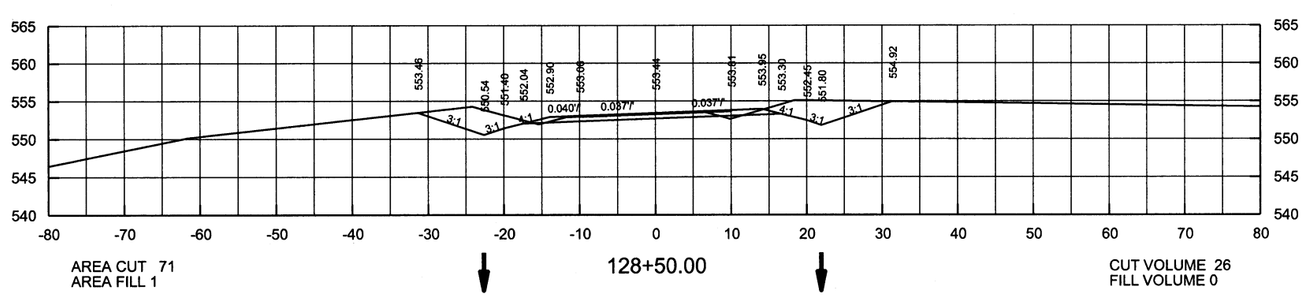
CUT VOLUME 23
FILL VOLUME 0



AREA CUT 64
AREA FILL 1

128+90.35

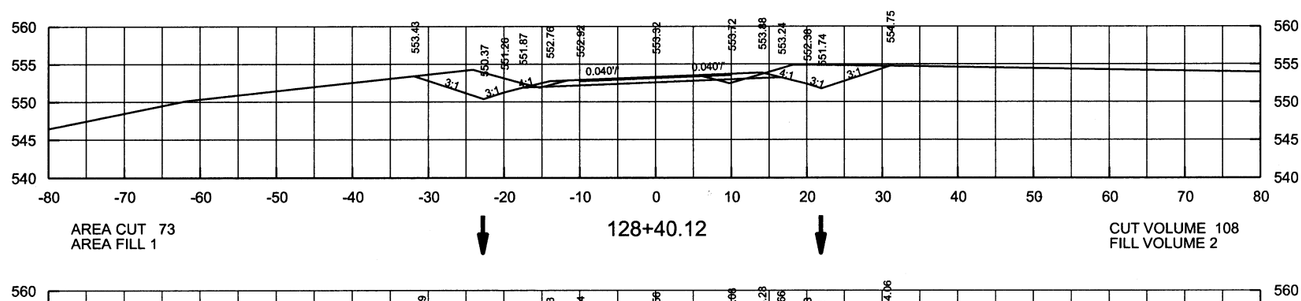
CUT VOLUME 101
FILL VOLUME 1



AREA CUT 71
AREA FILL 1

128+50.00

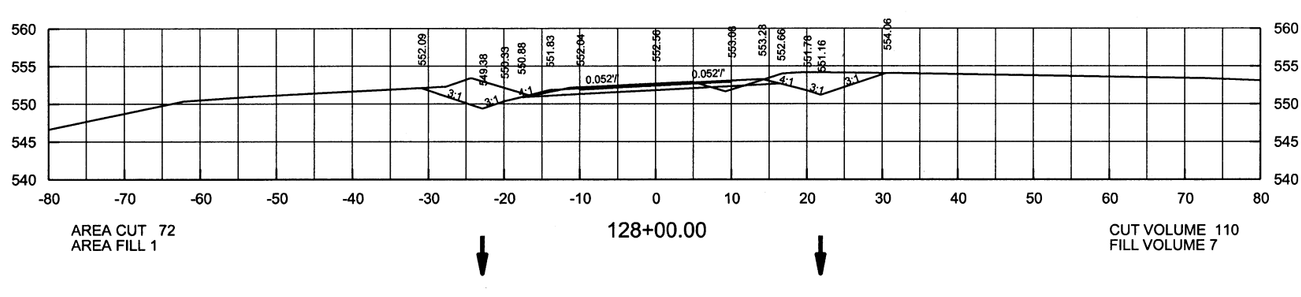
CUT VOLUME 26
FILL VOLUME 0



AREA CUT 73
AREA FILL 1

128+40.12

CUT VOLUME 108
FILL VOLUME 2



AREA CUT 72
AREA FILL 1

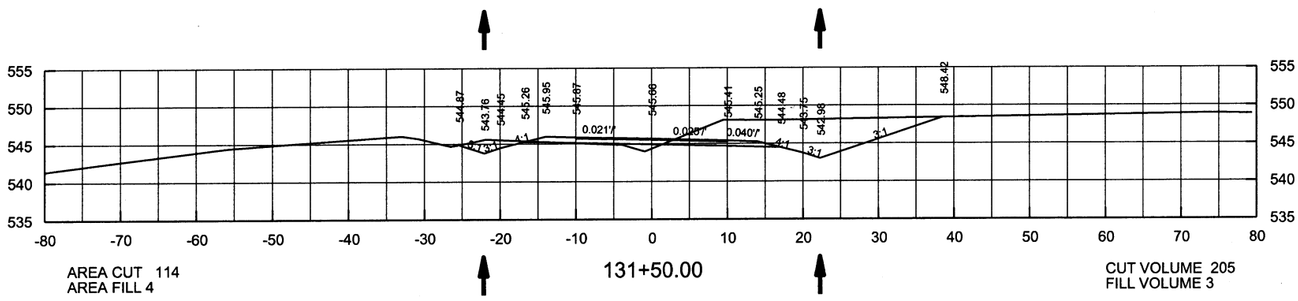
128+00.00

CUT VOLUME 110
FILL VOLUME 7

4 CROSS SECTIONS STA.128+00.00 TO 129+88.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.NO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	47	65

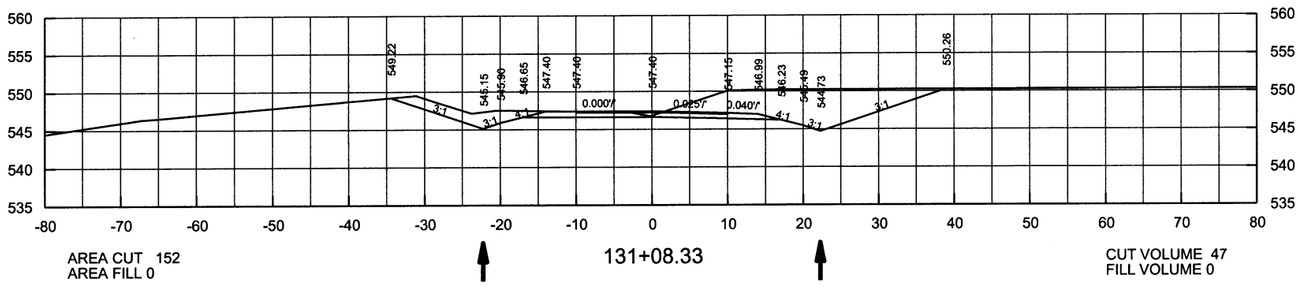
JOB NO.



AREA CUT 114
AREA FILL 4

131+50.00

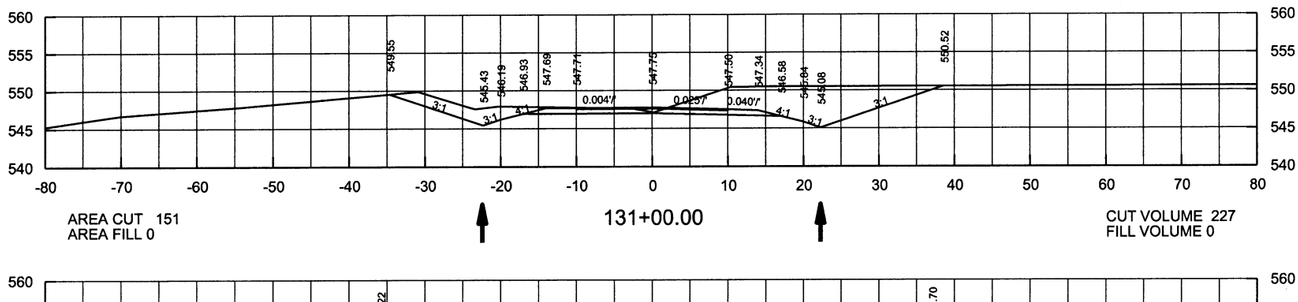
CUT VOLUME 205
FILL VOLUME 3



AREA CUT 152
AREA FILL 0

131+08.33

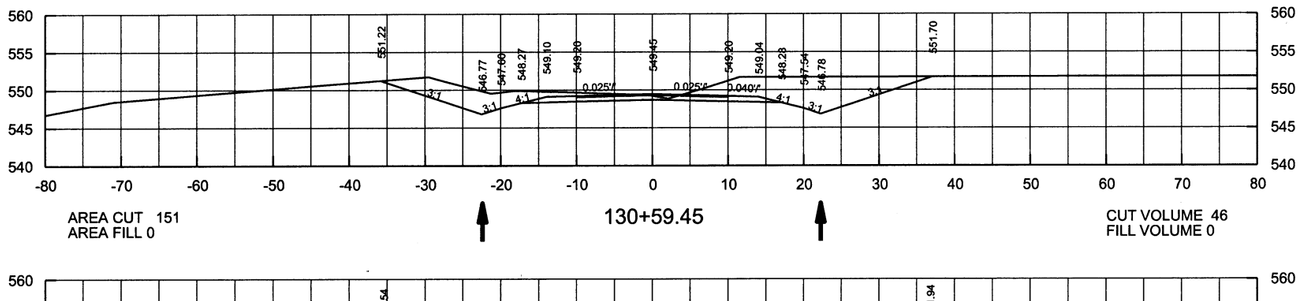
CUT VOLUME 47
FILL VOLUME 0



AREA CUT 151
AREA FILL 0

131+00.00

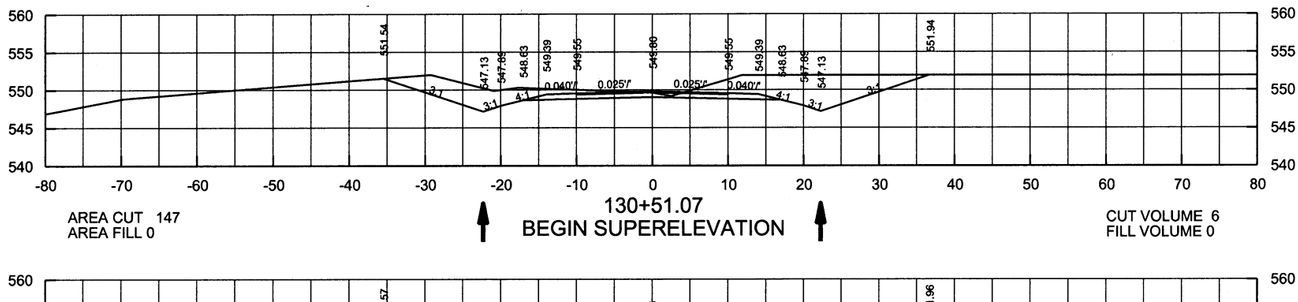
CUT VOLUME 227
FILL VOLUME 0



AREA CUT 151
AREA FILL 0

130+59.45

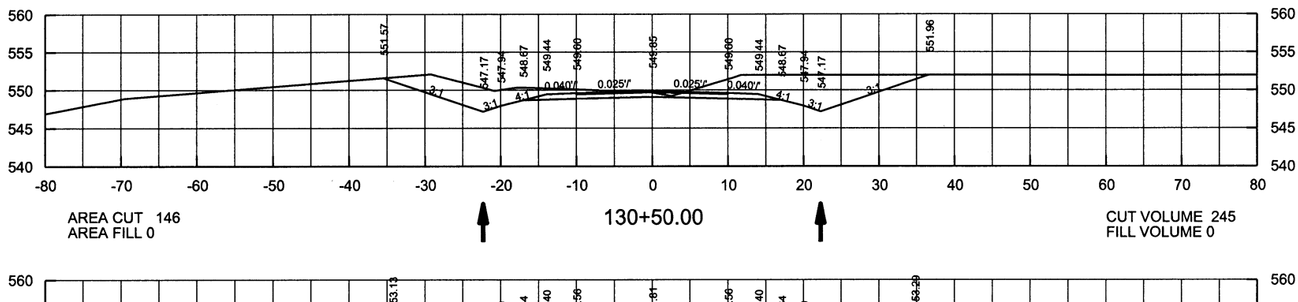
CUT VOLUME 46
FILL VOLUME 0



AREA CUT 147
AREA FILL 0

130+51.07
BEGIN SUPERELEVATION

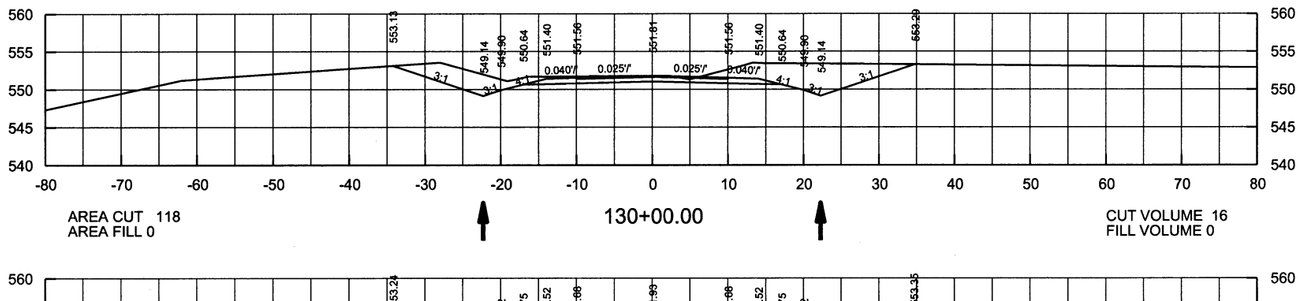
CUT VOLUME 6
FILL VOLUME 0



AREA CUT 146
AREA FILL 0

130+50.00

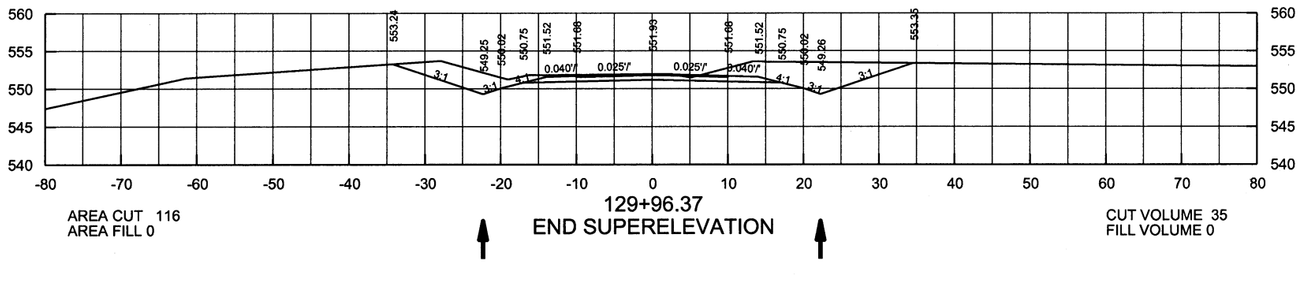
CUT VOLUME 245
FILL VOLUME 0



AREA CUT 118
AREA FILL 0

130+00.00

CUT VOLUME 16
FILL VOLUME 0



AREA CUT 116
AREA FILL 0

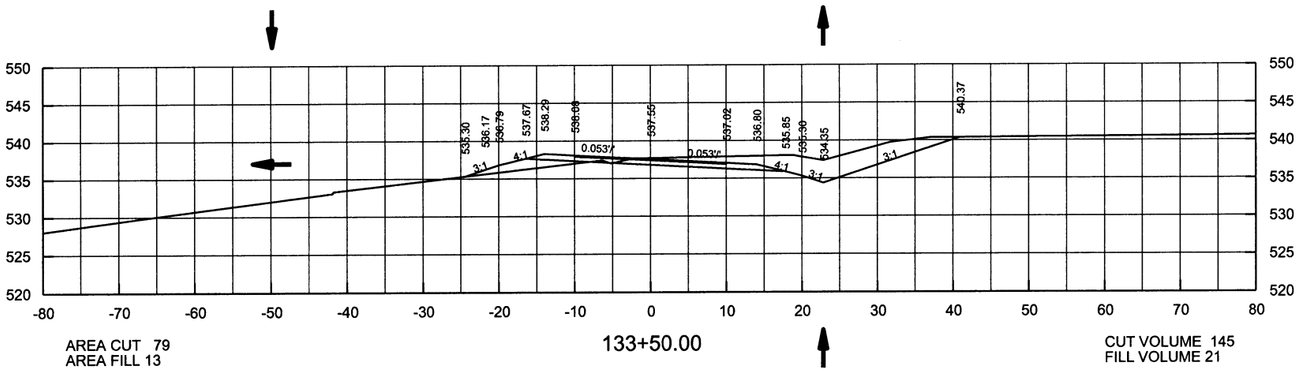
129+96.37
END SUPERELEVATION

CUT VOLUME 35
FILL VOLUME 0

4 CROSS SECTIONS STA.129+96.37 TO 131+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	48	65

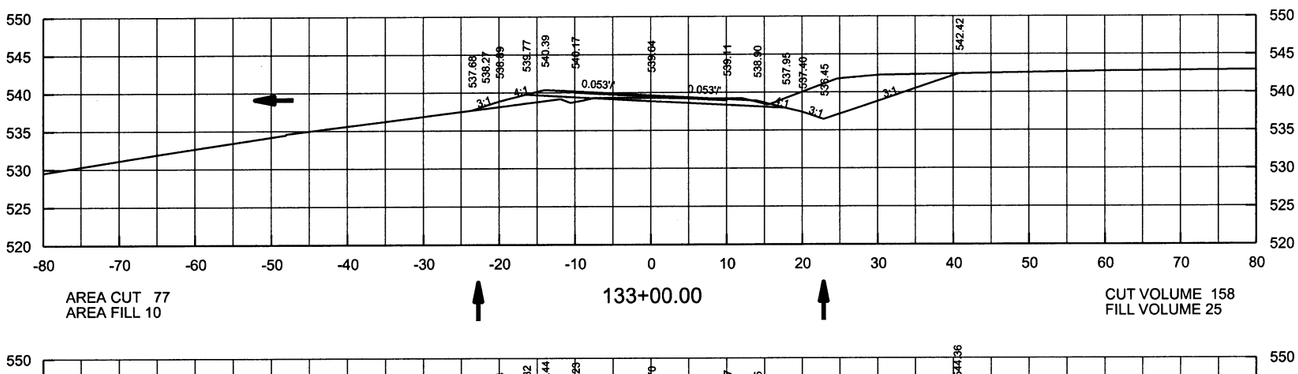
JOB NO.



AREA CUT 79
AREA FILL 13

133+50.00

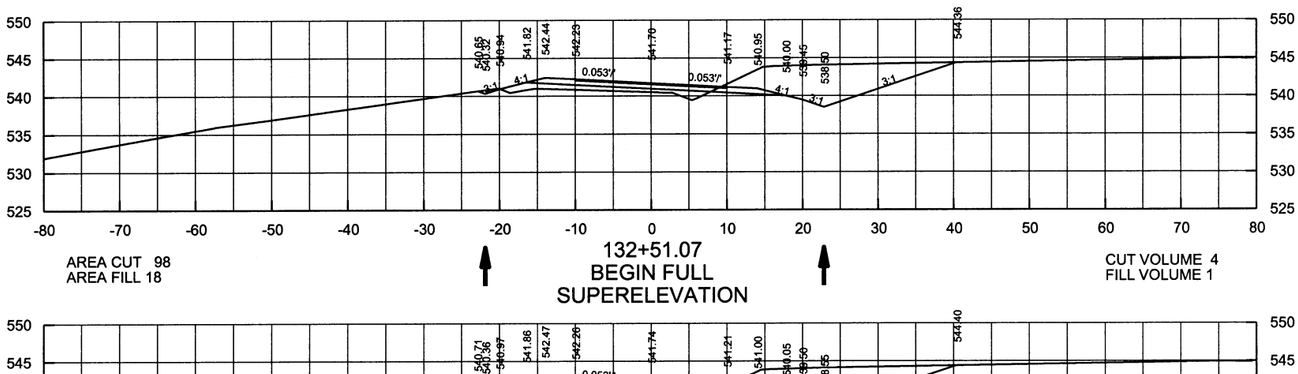
CUT VOLUME 145
FILL VOLUME 21



AREA CUT 77
AREA FILL 10

133+00.00

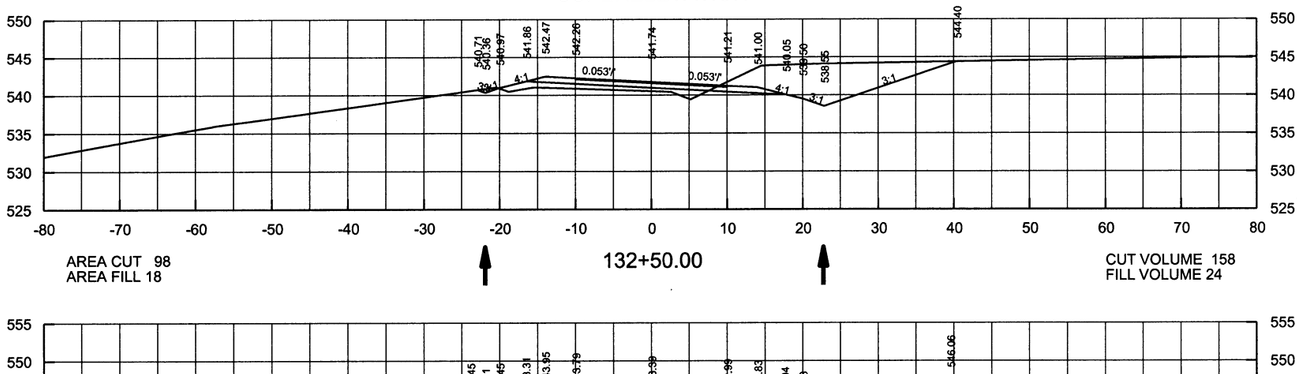
CUT VOLUME 158
FILL VOLUME 25



AREA CUT 98
AREA FILL 18

132+51.07
BEGIN FULL
SUPERELEVATION

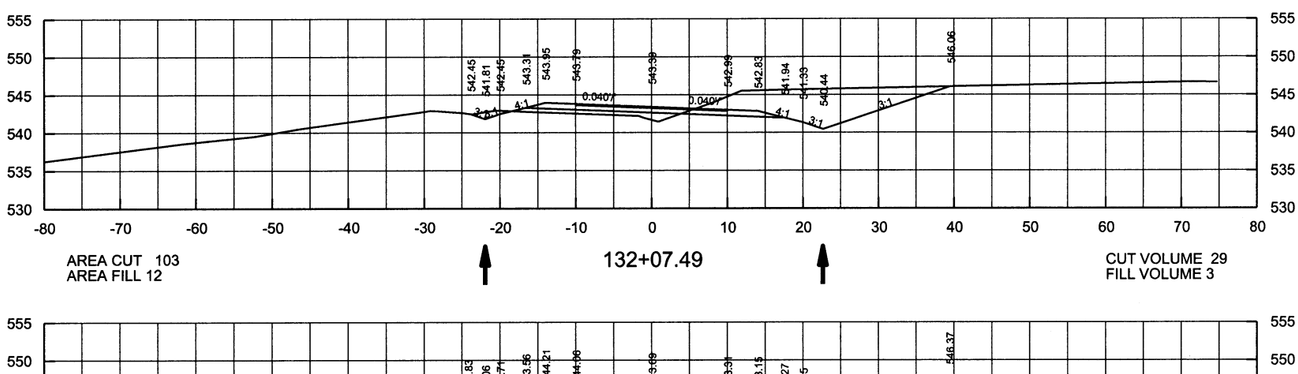
CUT VOLUME 4
FILL VOLUME 1



AREA CUT 98
AREA FILL 18

132+50.00

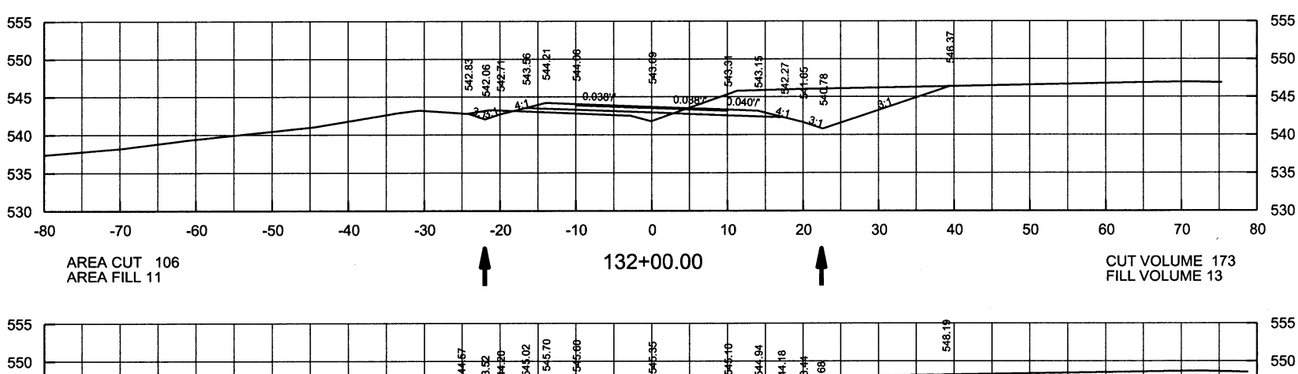
CUT VOLUME 158
FILL VOLUME 24



AREA CUT 103
AREA FILL 12

132+07.49

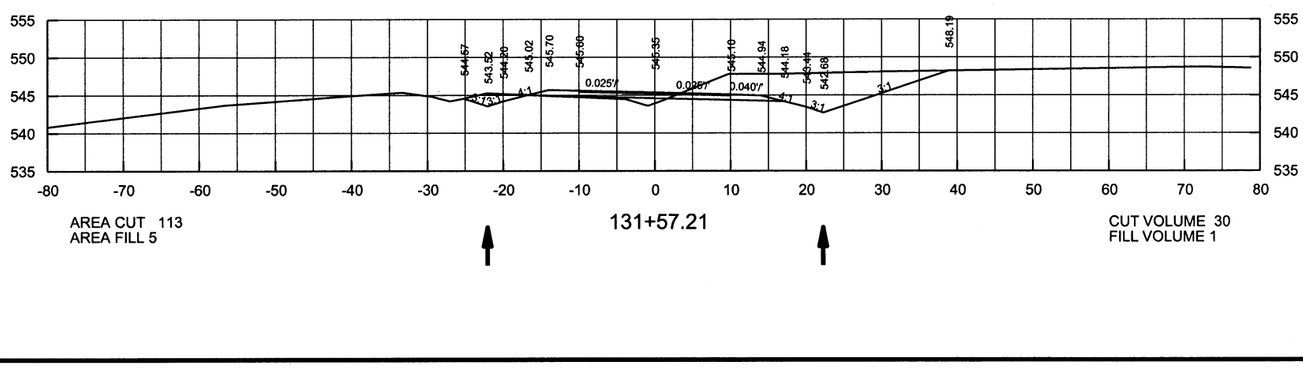
CUT VOLUME 29
FILL VOLUME 3



AREA CUT 106
AREA FILL 11

132+00.00

CUT VOLUME 173
FILL VOLUME 13



AREA CUT 113
AREA FILL 5

131+57.21

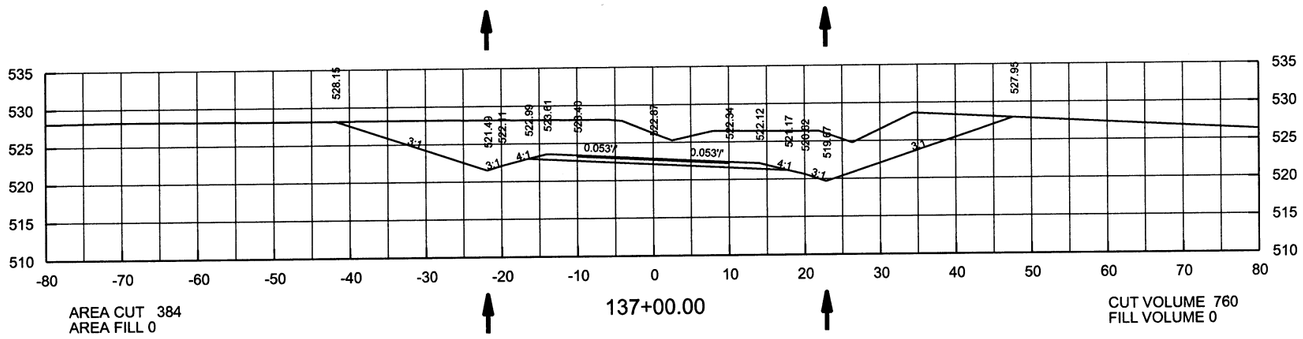
CUT VOLUME 30
FILL VOLUME 1

4 CROSS SECTIONS STA.131+57.21 TO 133+50.00

DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		49	65

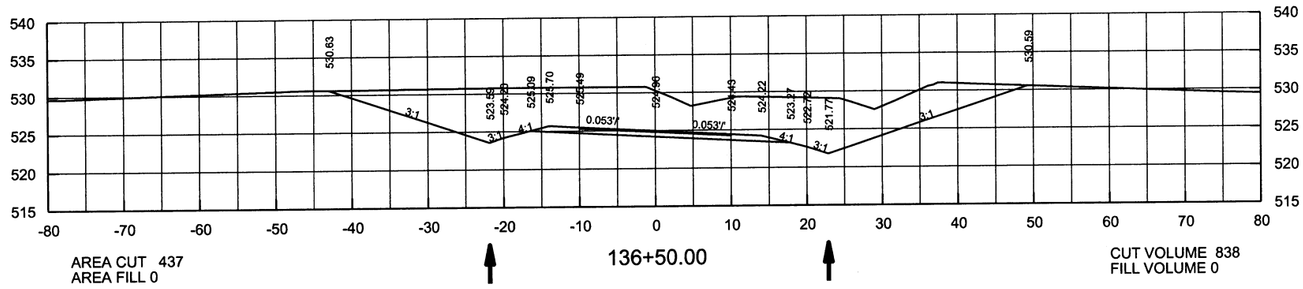
JOB NO. FA6715



AREA CUT 384
AREA FILL 0

137+00.00

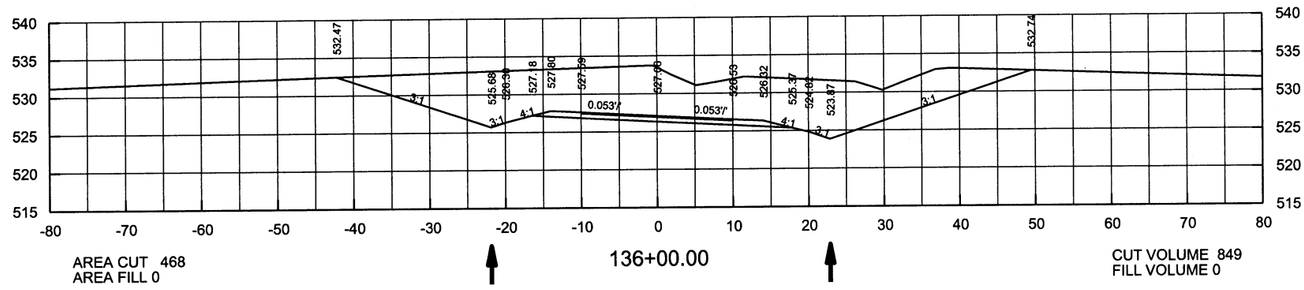
CUT VOLUME 760
FILL VOLUME 0



AREA CUT 437
AREA FILL 0

136+50.00

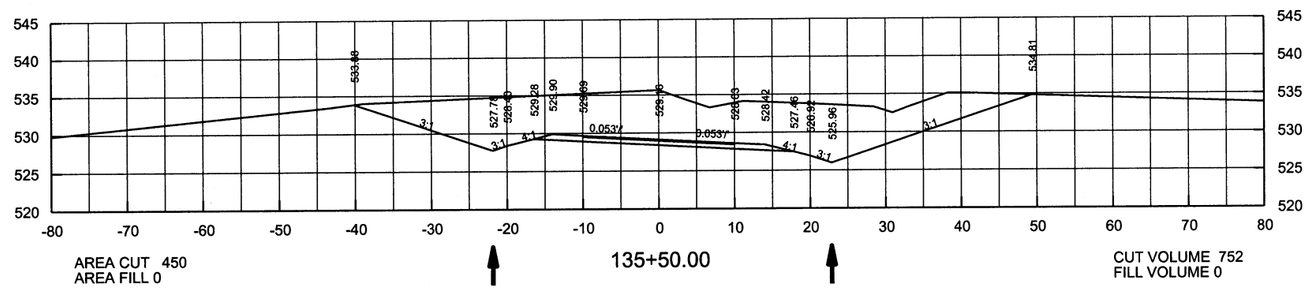
CUT VOLUME 838
FILL VOLUME 0



AREA CUT 468
AREA FILL 0

136+00.00

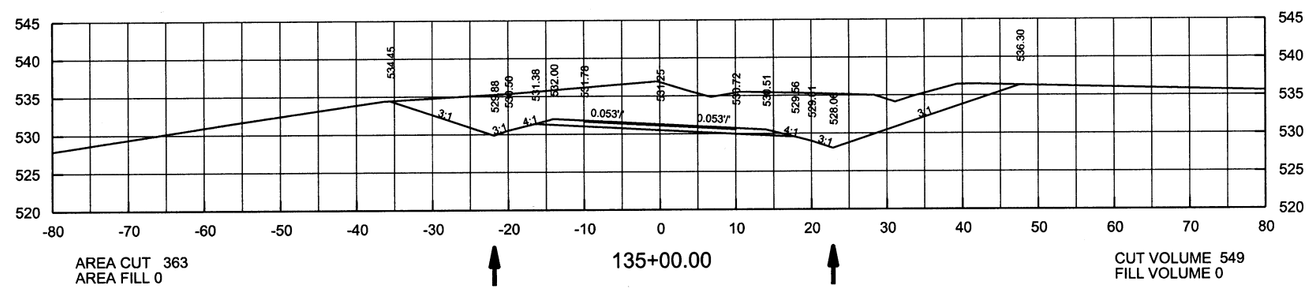
CUT VOLUME 849
FILL VOLUME 0



AREA CUT 450
AREA FILL 0

135+50.00

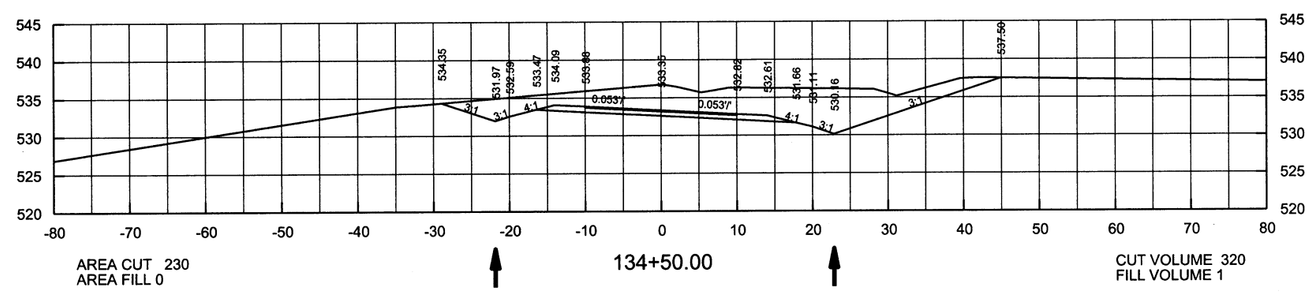
CUT VOLUME 752
FILL VOLUME 0



AREA CUT 363
AREA FILL 0

135+00.00

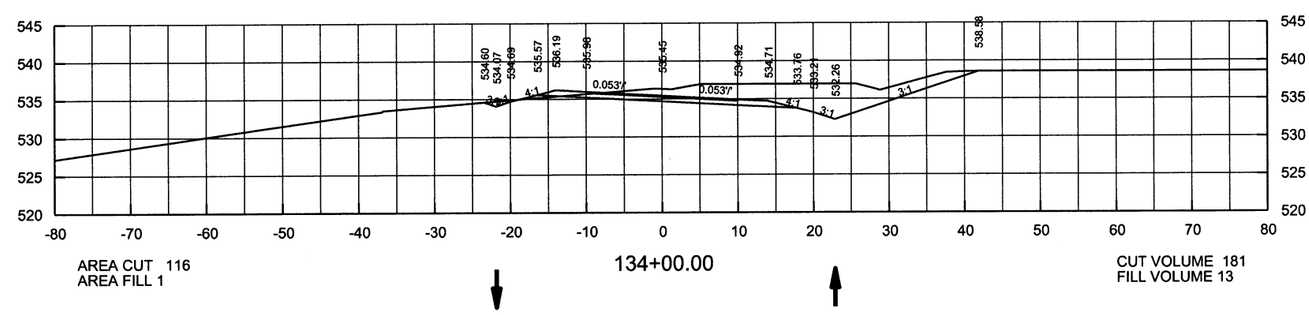
CUT VOLUME 549
FILL VOLUME 0



AREA CUT 230
AREA FILL 0

134+50.00

CUT VOLUME 320
FILL VOLUME 1



AREA CUT 116
AREA FILL 1

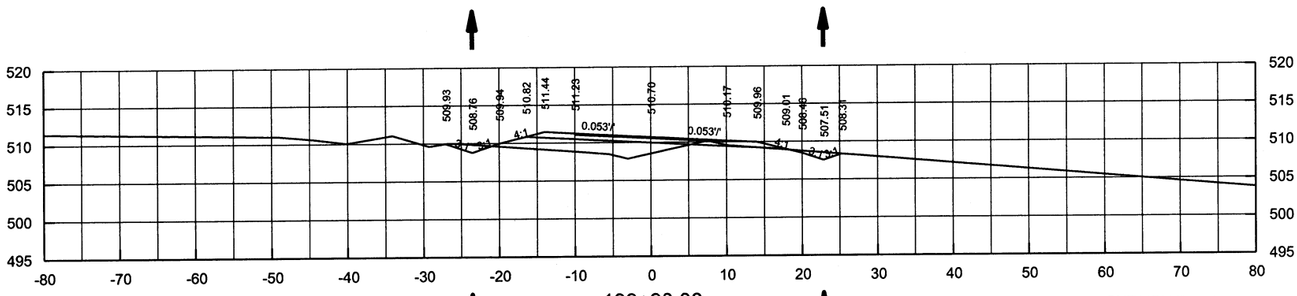
134+00.00

CUT VOLUME 181
FILL VOLUME 13

	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
4				

CROSS SECTIONS STA.134+00.00 TO 137+00.00

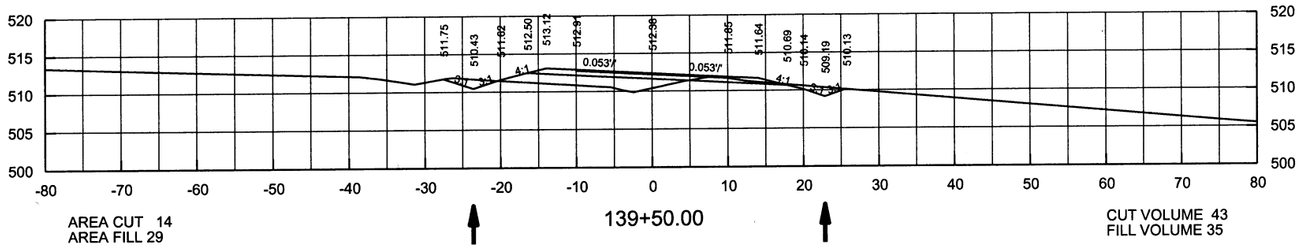
JOB NO.		FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
	6	ARK.		FA5715	50	65



AREA CUT 8
AREA FILL 36

139+90.00
END FULL
SUPERELEVATION

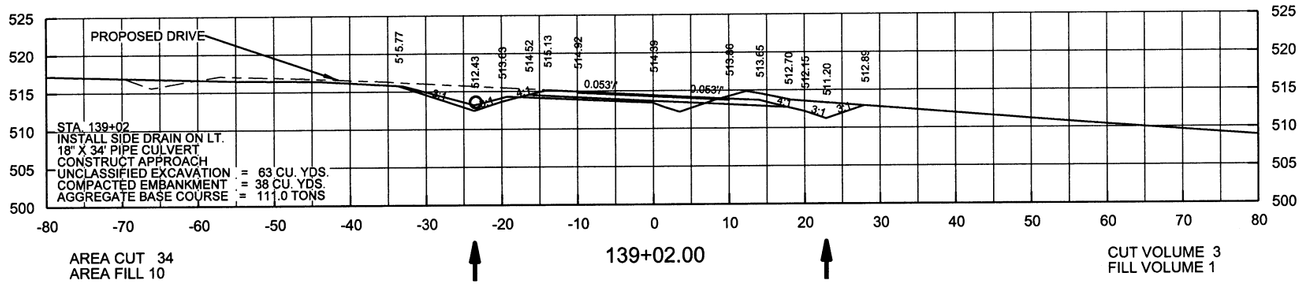
CUT VOLUME 17
FILL VOLUME 48



AREA CUT 14
AREA FILL 29

139+50.00

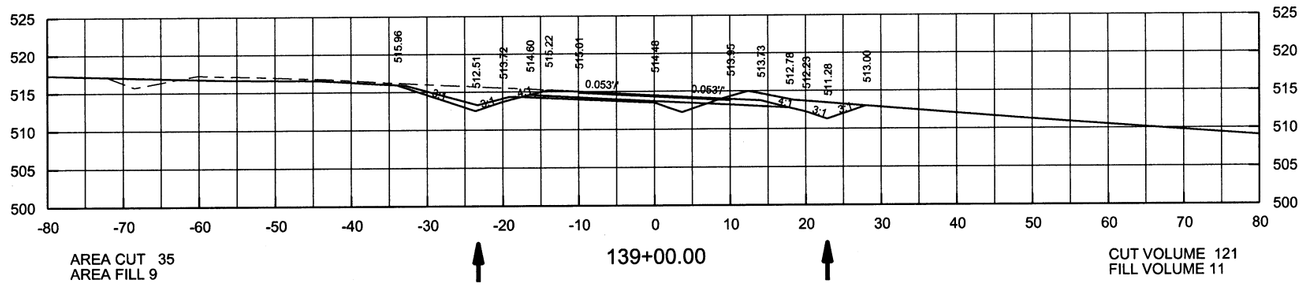
CUT VOLUME 43
FILL VOLUME 35



AREA CUT 34
AREA FILL 10

139+02.00

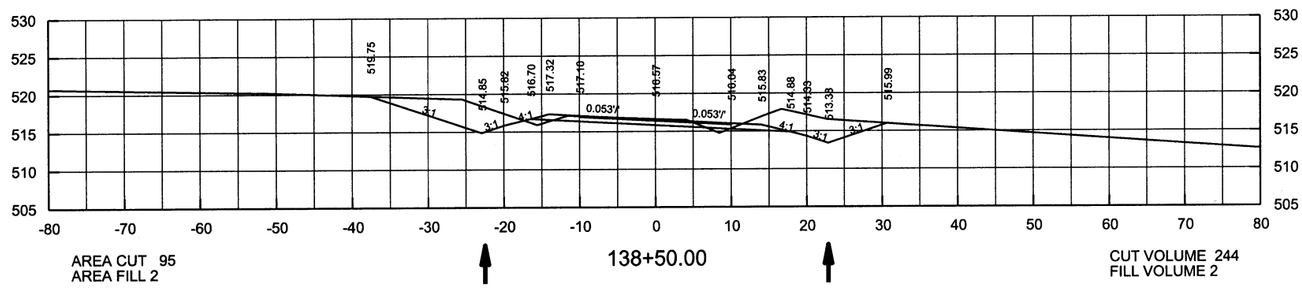
CUT VOLUME 3
FILL VOLUME 1



AREA CUT 35
AREA FILL 9

139+00.00

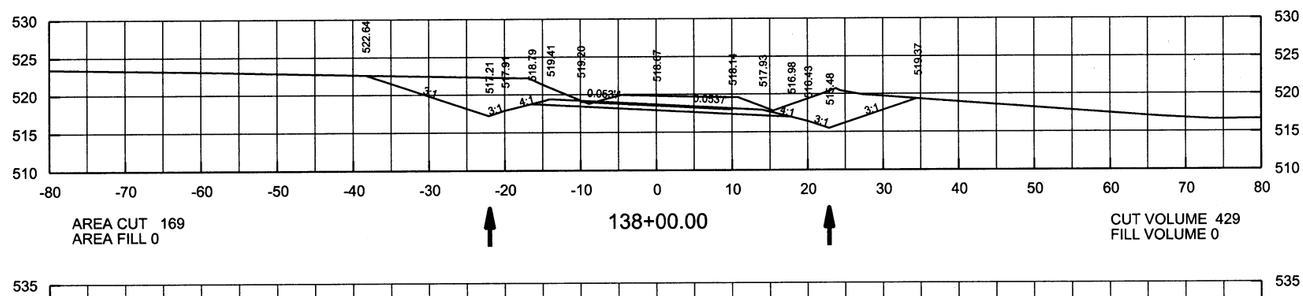
CUT VOLUME 121
FILL VOLUME 11



AREA CUT 95
AREA FILL 2

138+50.00

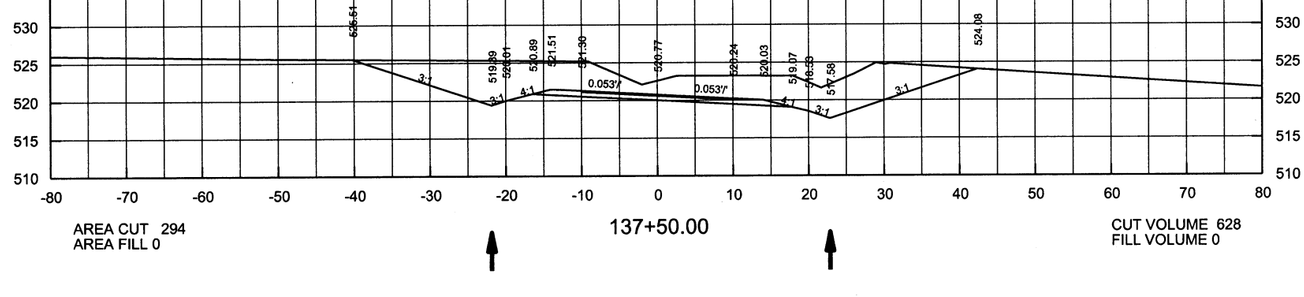
CUT VOLUME 244
FILL VOLUME 2



AREA CUT 169
AREA FILL 0

138+00.00

CUT VOLUME 429
FILL VOLUME 0



AREA CUT 294
AREA FILL 0

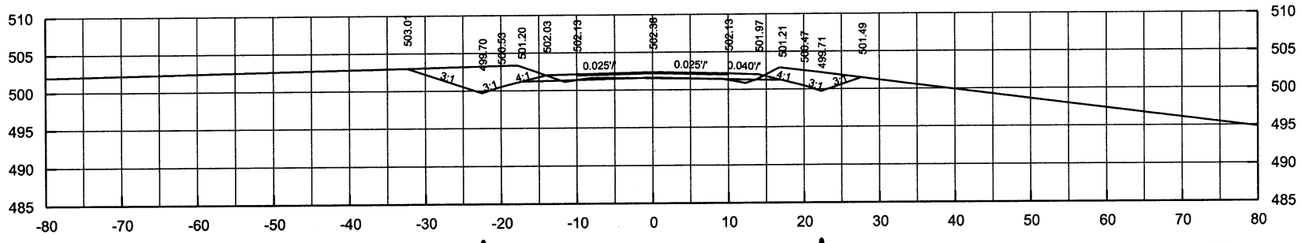
137+50.00

CUT VOLUME 628
FILL VOLUME 0

4 CROSS SECTIONS STA 137+50.00 TO 139+90.00

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		51	65

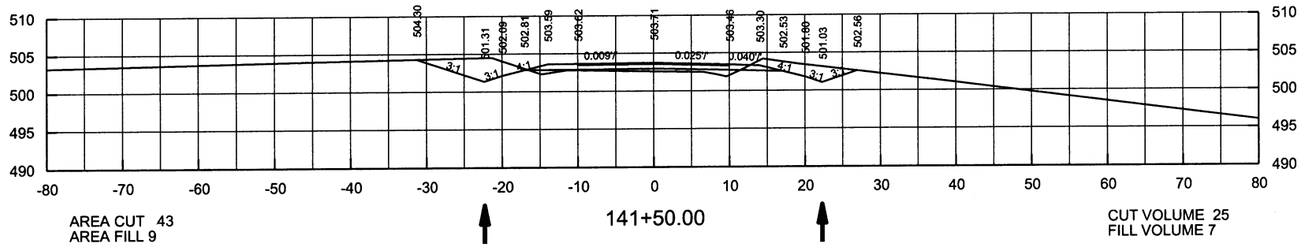
JOB NO. FA6715



AREA CUT 58
AREA FILL 2

141+81.62

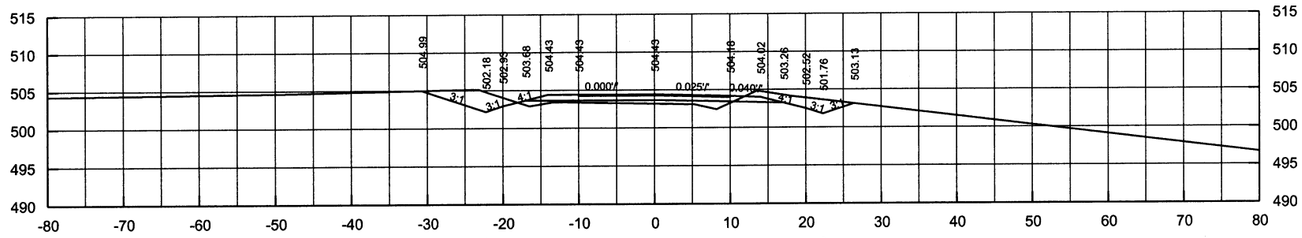
CUT VOLUME 59
FILL VOLUME 6



AREA CUT 43
AREA FILL 9

141+50.00

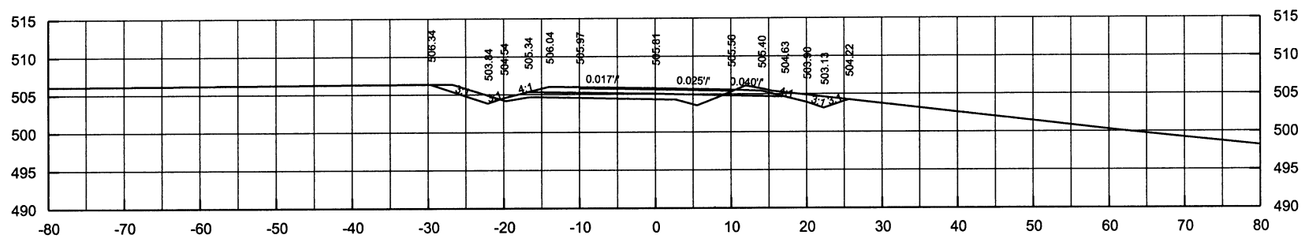
CUT VOLUME 25
FILL VOLUME 7



AREA CUT 35
AREA FILL 13

141+32.74

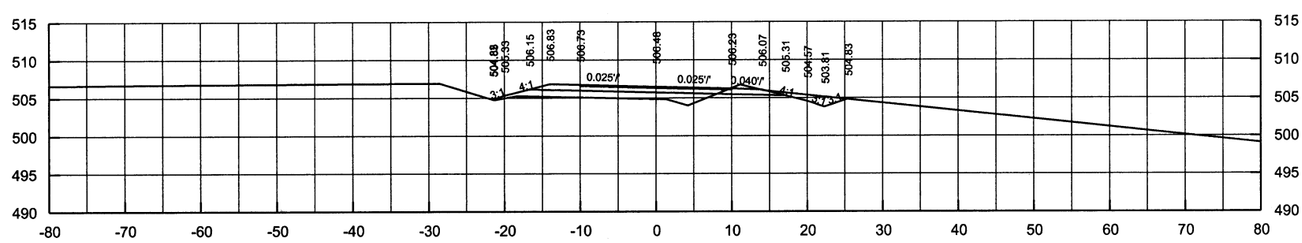
CUT VOLUME 34
FILL VOLUME 21



AREA CUT 21
AREA FILL 21

141+00.00

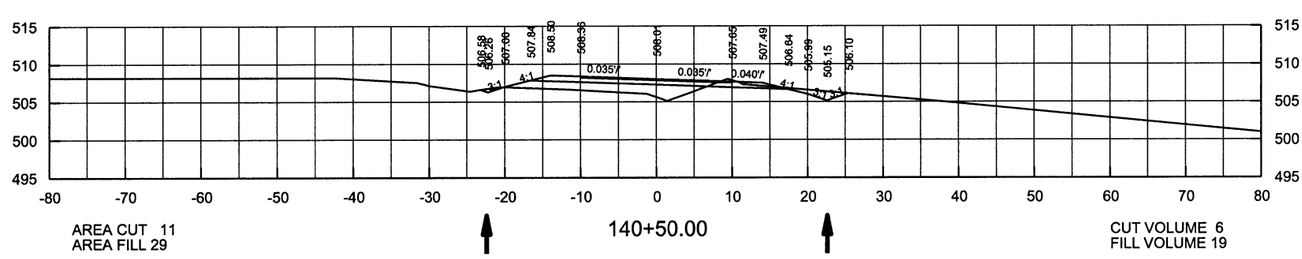
CUT VOLUME 10
FILL VOLUME 14



AREA CUT 13
AREA FILL 25

140+83.85

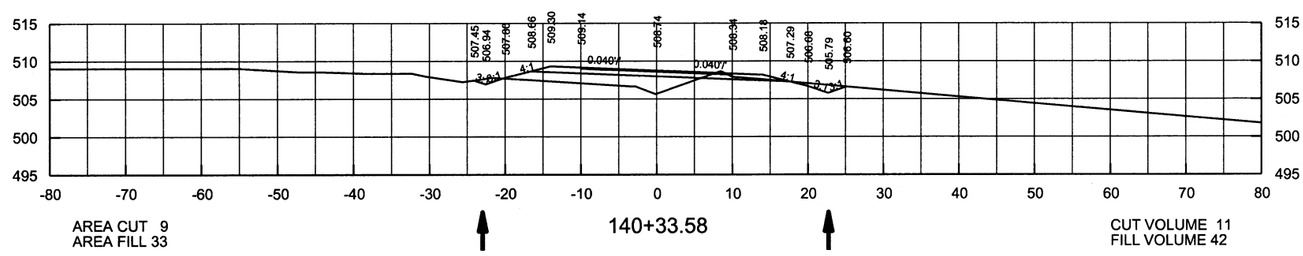
CUT VOLUME 15
FILL VOLUME 34



AREA CUT 11
AREA FILL 29

140+50.00

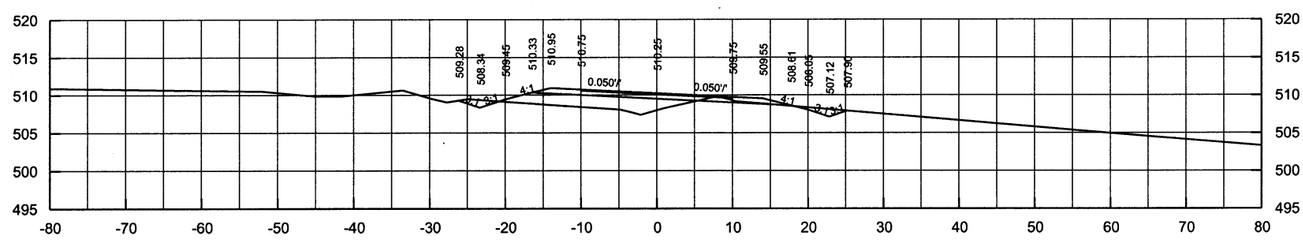
CUT VOLUME 6
FILL VOLUME 19



AREA CUT 9
AREA FILL 33

140+33.58

CUT VOLUME 11
FILL VOLUME 42



AREA CUT 9
AREA FILL 35

140+00.00

CUT VOLUME 3
FILL VOLUME 13

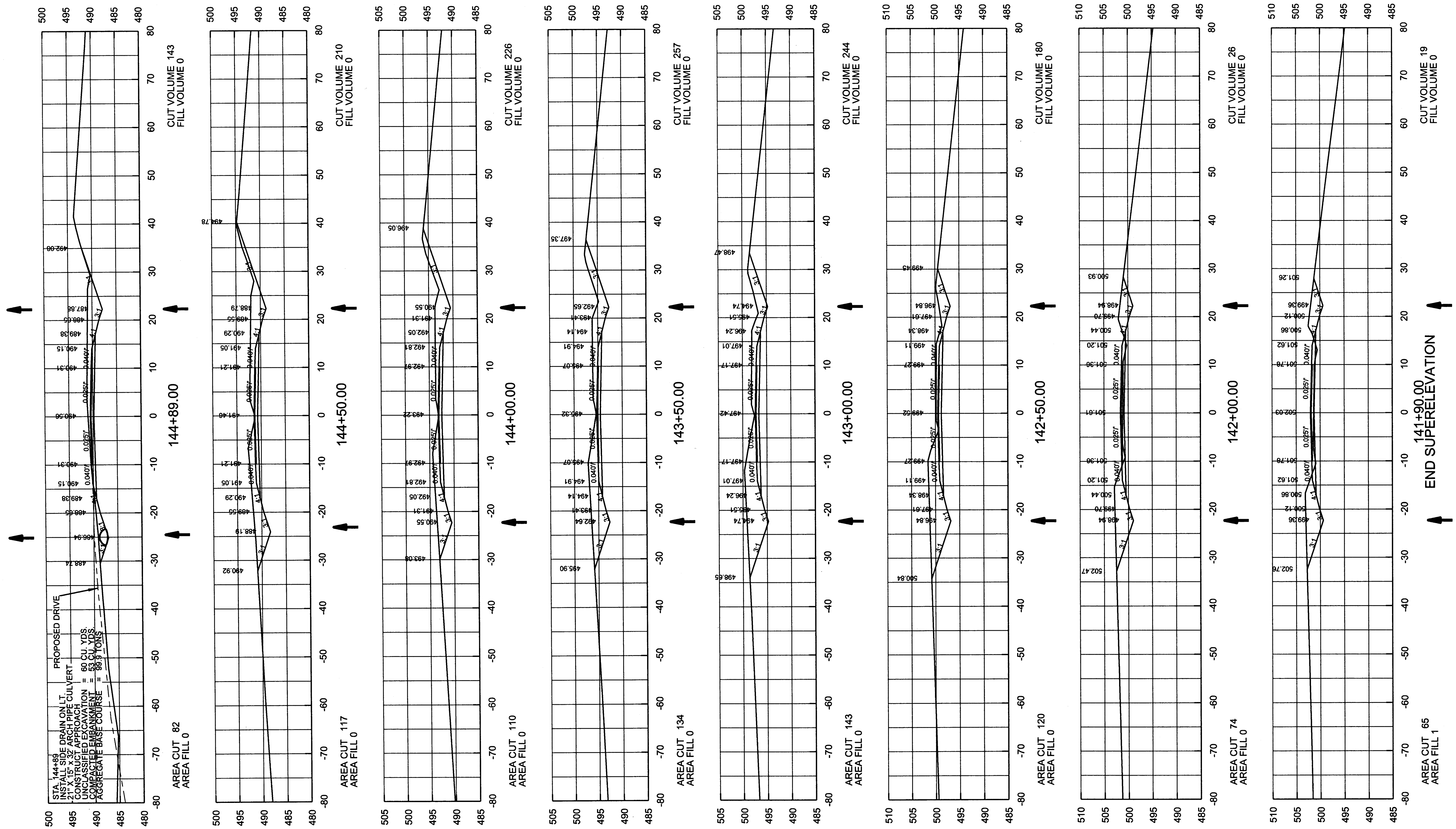
4 CROSS SECTIONS STA.140+00.00 TO 141+81.62

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	52	65

JOB NO.

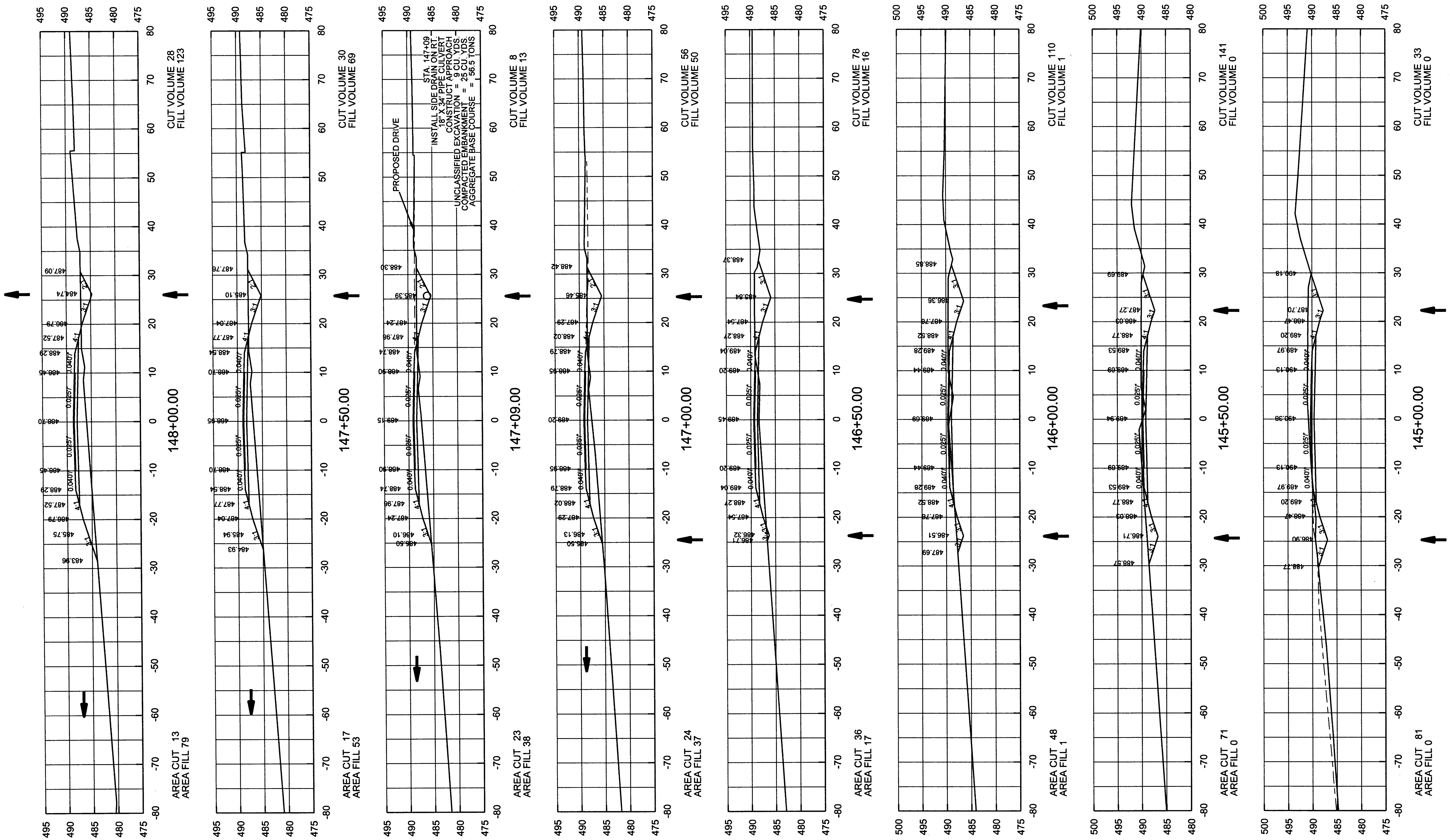
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	53	65

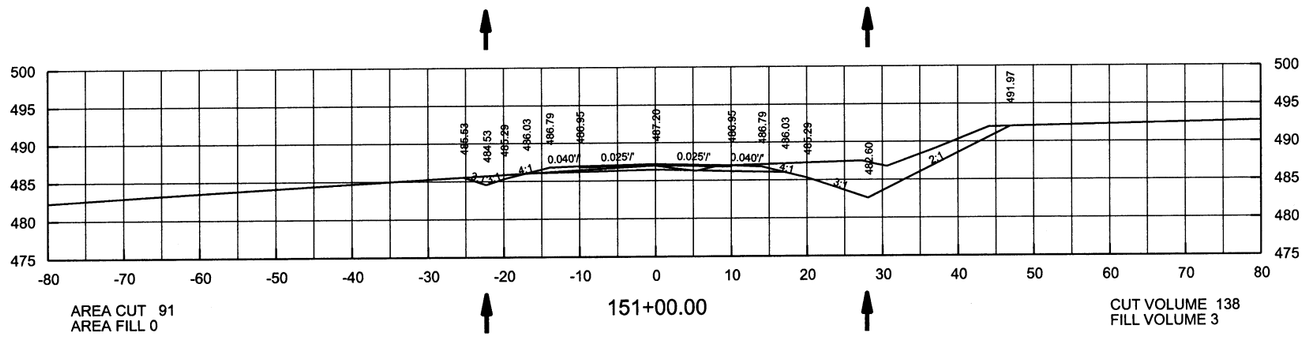
(4) CROSS SECTIONS STA.141+90.00 TO 144+89.00



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.		FA6715	54	65

(4) CROSS SECTIONS STA.145+00.00 TO 148+00.00

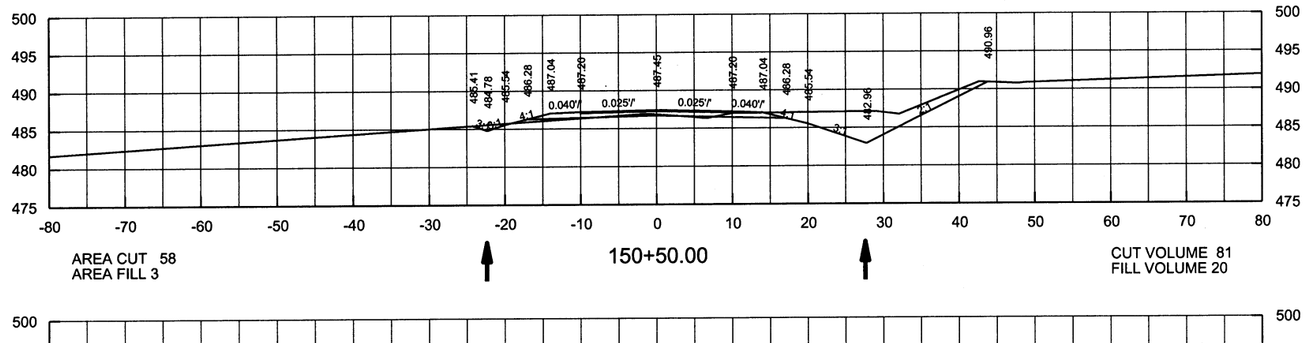




AREA CUT 91
AREA FILL 0

151+00.00

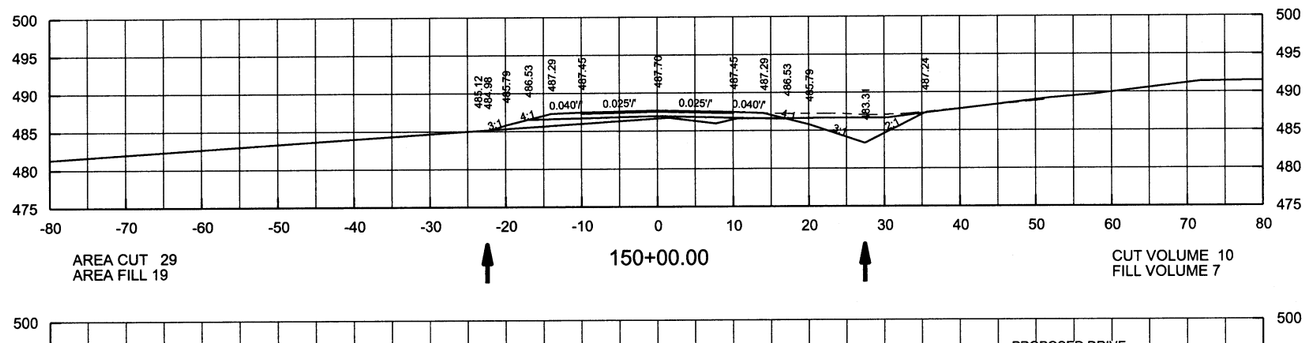
CUT VOLUME 138
FILL VOLUME 3



AREA CUT 58
AREA FILL 3

150+50.00

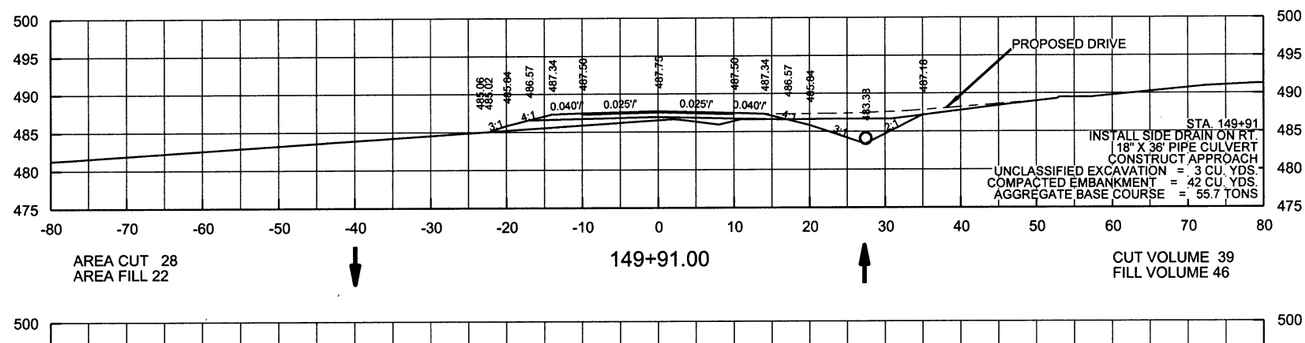
CUT VOLUME 81
FILL VOLUME 20



AREA CUT 29
AREA FILL 19

150+00.00

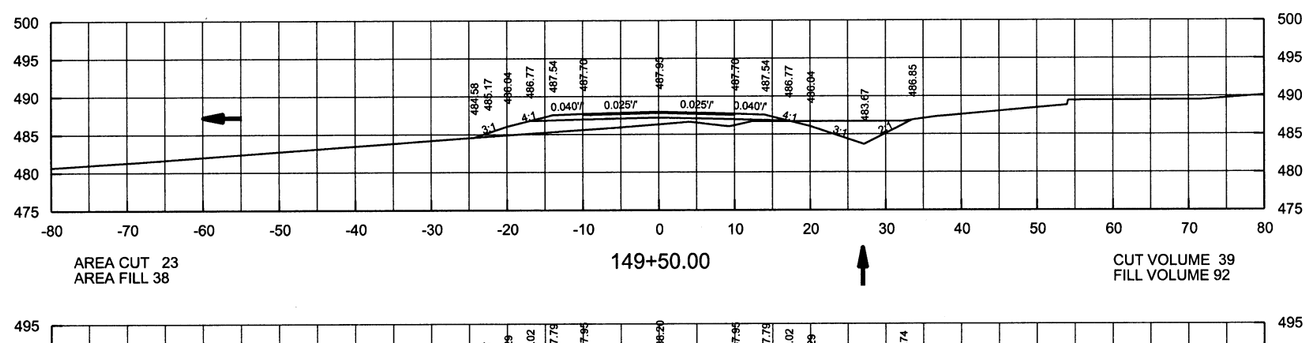
CUT VOLUME 10
FILL VOLUME 7



AREA CUT 28
AREA FILL 22

149+91.00

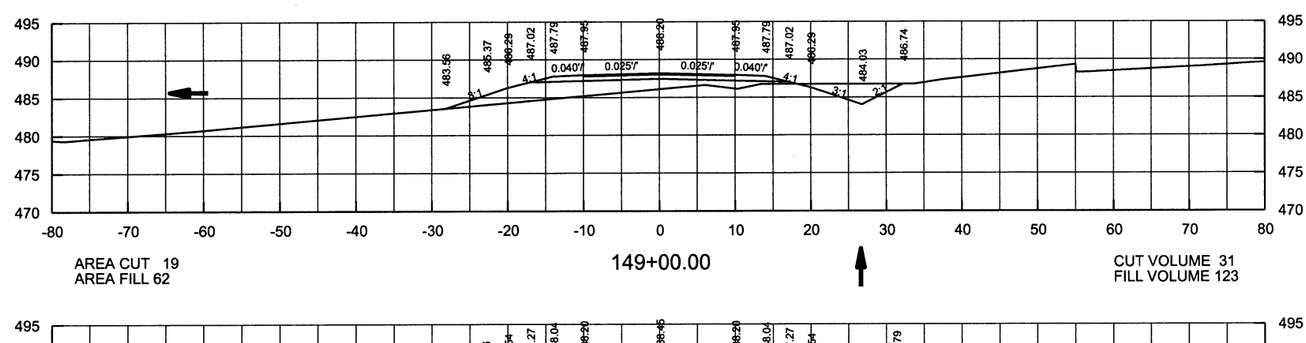
CUT VOLUME 39
FILL VOLUME 46



AREA CUT 23
AREA FILL 38

149+50.00

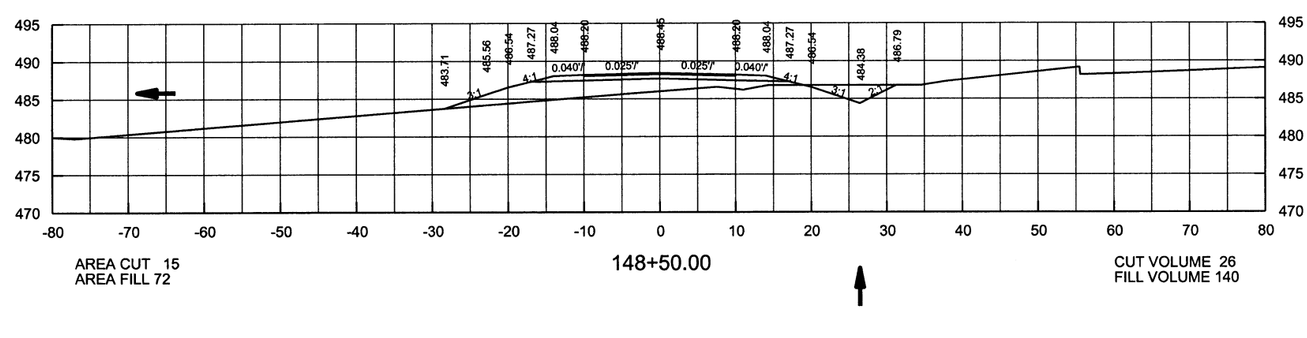
CUT VOLUME 39
FILL VOLUME 92



AREA CUT 19
AREA FILL 62

149+00.00

CUT VOLUME 31
FILL VOLUME 123



AREA CUT 15
AREA FILL 72

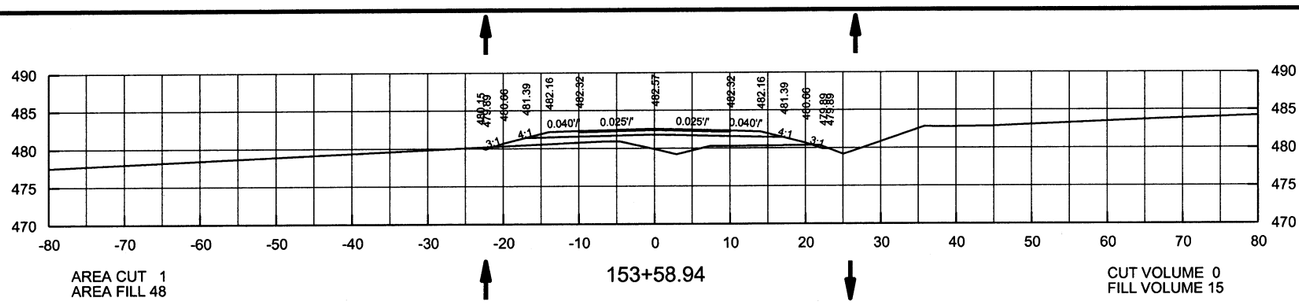
148+50.00

CUT VOLUME 26
FILL VOLUME 140

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		55	65

4 CROSS SECTIONS STA.149+50.00 TO 151+00.00

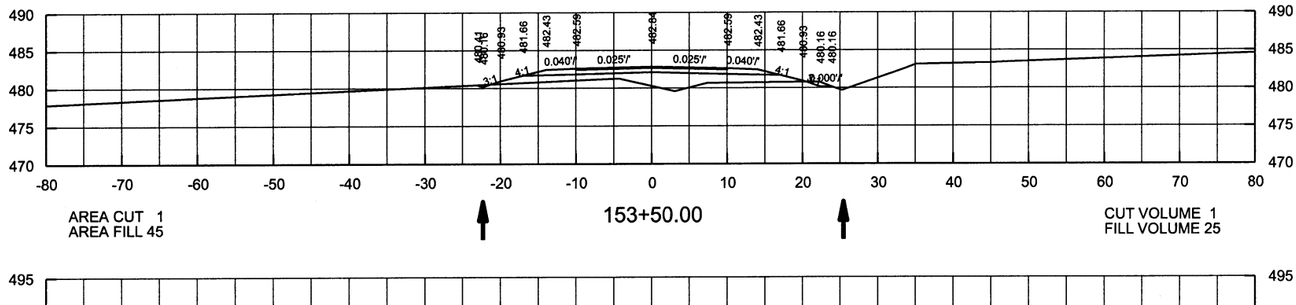
JOB NO. FA6715



AREA CUT 1
AREA FILL 48

153+58.94

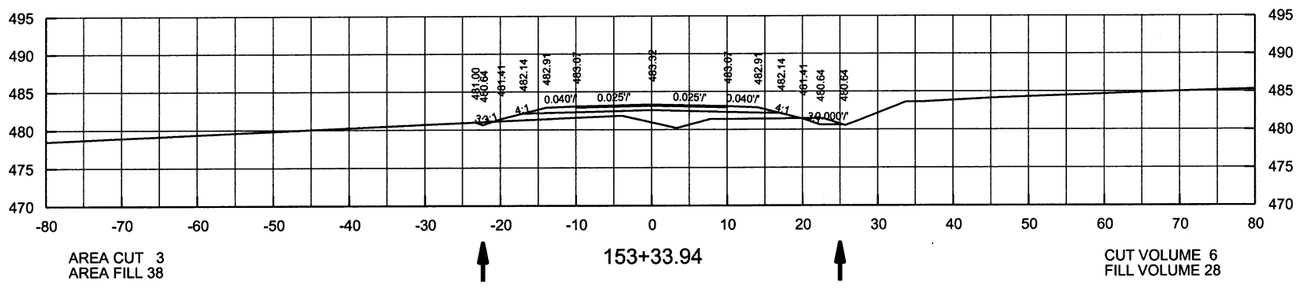
CUT VOLUME 0
FILL VOLUME 15



AREA CUT 1
AREA FILL 45

153+50.00

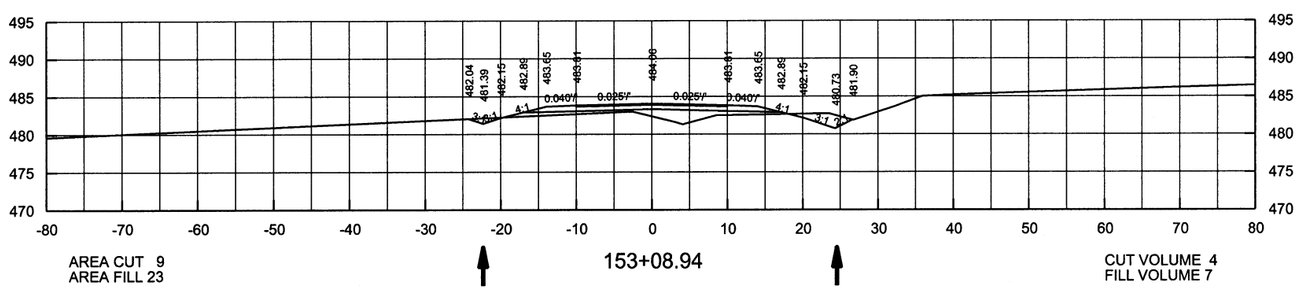
CUT VOLUME 1
FILL VOLUME 25



AREA CUT 3
AREA FILL 38

153+33.94

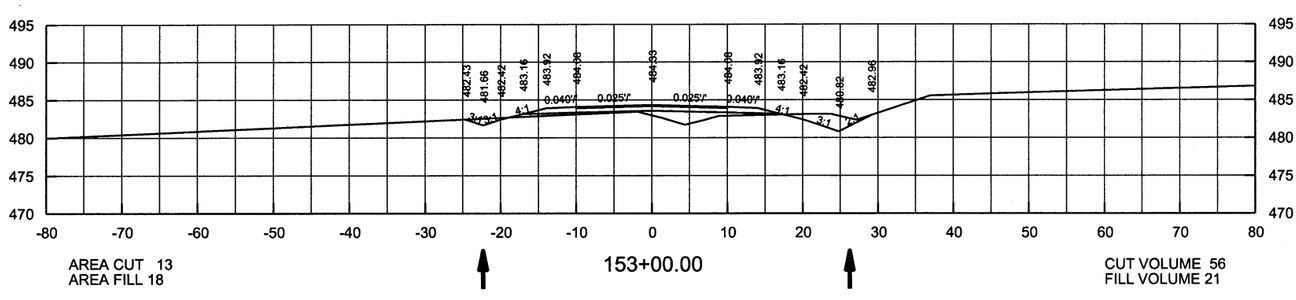
CUT VOLUME 6
FILL VOLUME 28



AREA CUT 9
AREA FILL 23

153+08.94

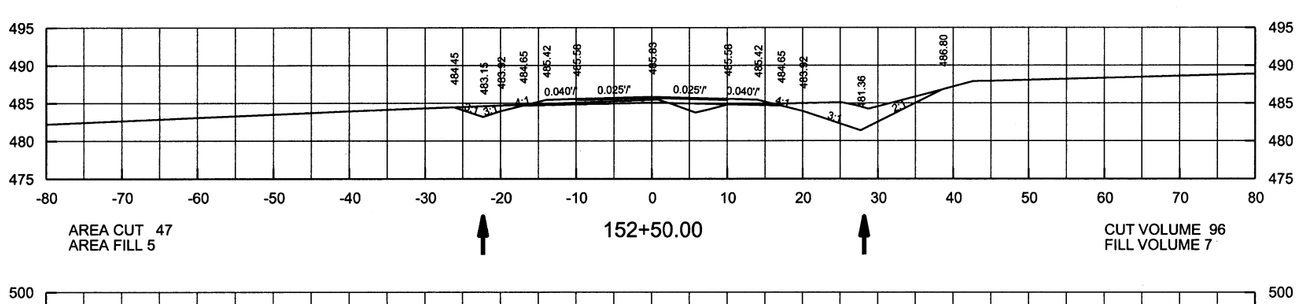
CUT VOLUME 4
FILL VOLUME 7



AREA CUT 13
AREA FILL 18

153+00.00

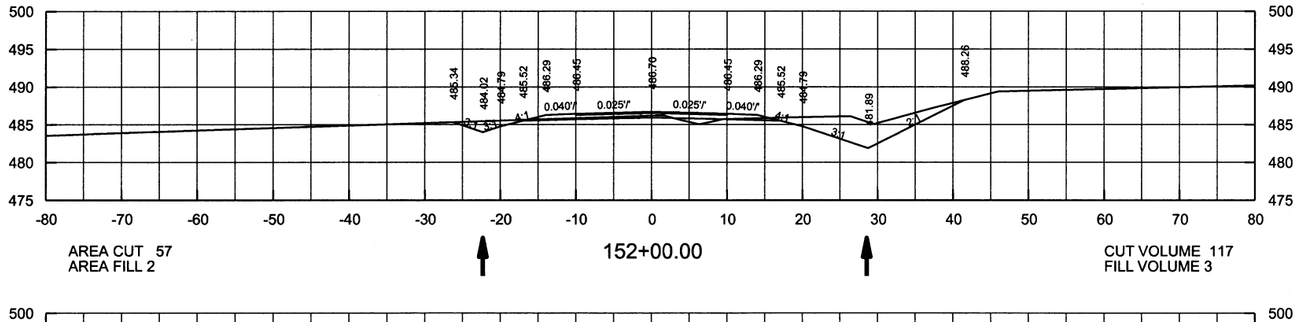
CUT VOLUME 56
FILL VOLUME 21



AREA CUT 47
AREA FILL 5

152+50.00

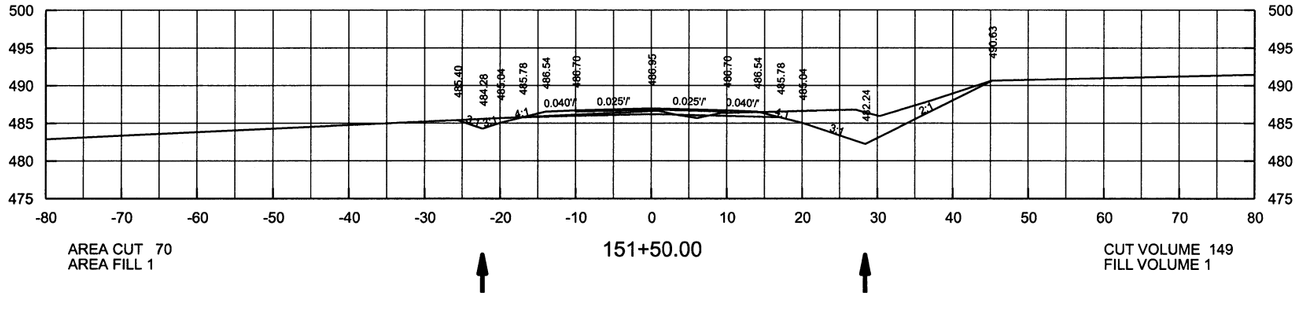
CUT VOLUME 96
FILL VOLUME 7



AREA CUT 57
AREA FILL 2

152+00.00

CUT VOLUME 117
FILL VOLUME 3



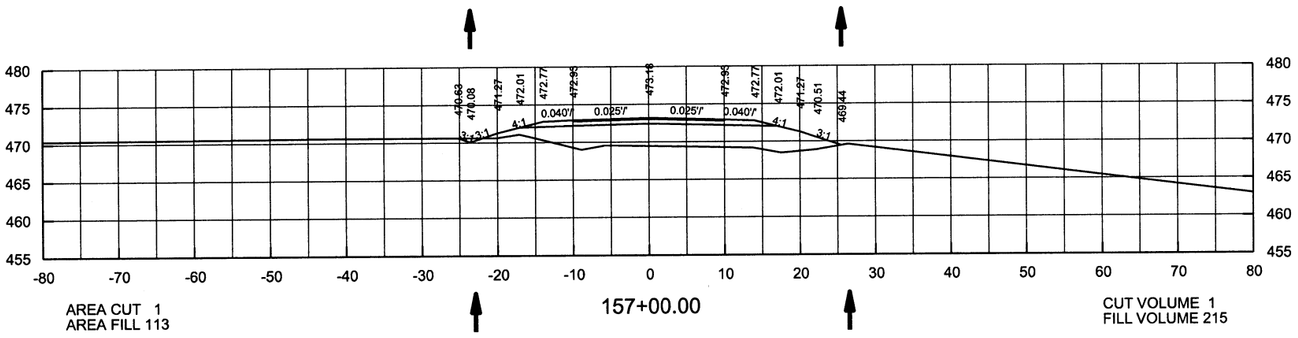
AREA CUT 70
AREA FILL 1

151+50.00

CUT VOLUME 149
FILL VOLUME 1

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	6
				STATE	ARK.
				FED.AID PROJ.NO.	FA6715
				SHEET NO.	56
				TOTAL SHEETS	65

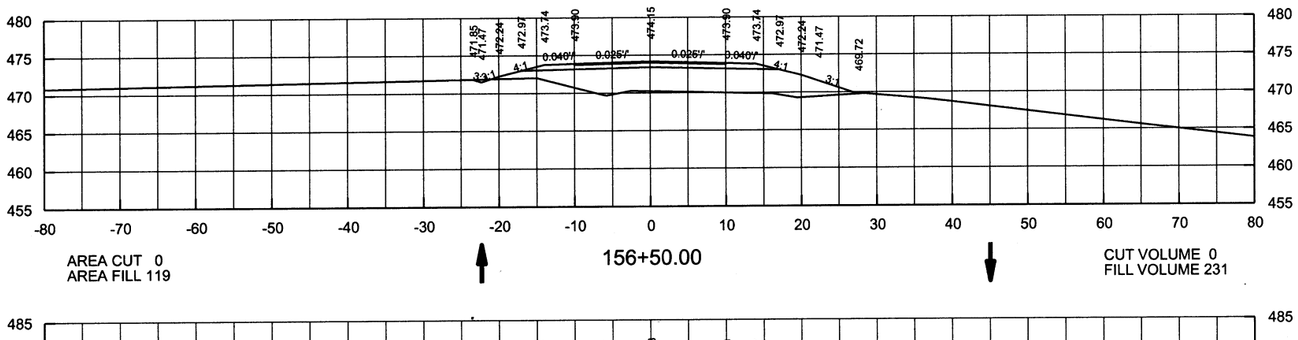
4 CROSS SECTIONS STA 151+50.00 TO 153+58.94



AREA CUT 1
AREA FILL 113

157+00.00

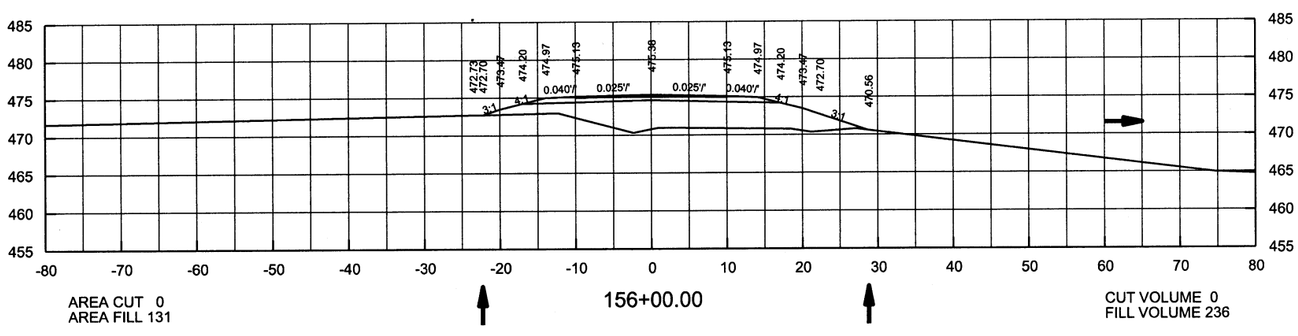
CUT VOLUME 1
FILL VOLUME 215



AREA CUT 0
AREA FILL 119

156+50.00

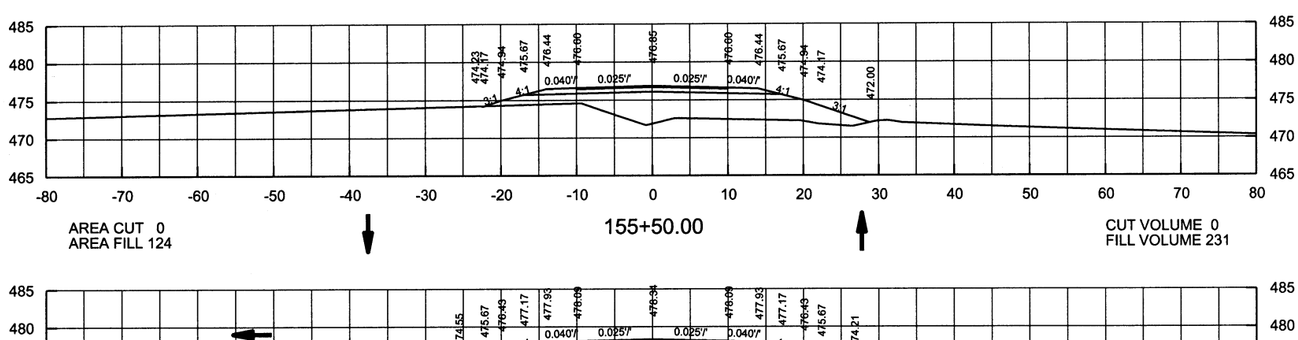
CUT VOLUME 0
FILL VOLUME 231



AREA CUT 0
AREA FILL 131

156+00.00

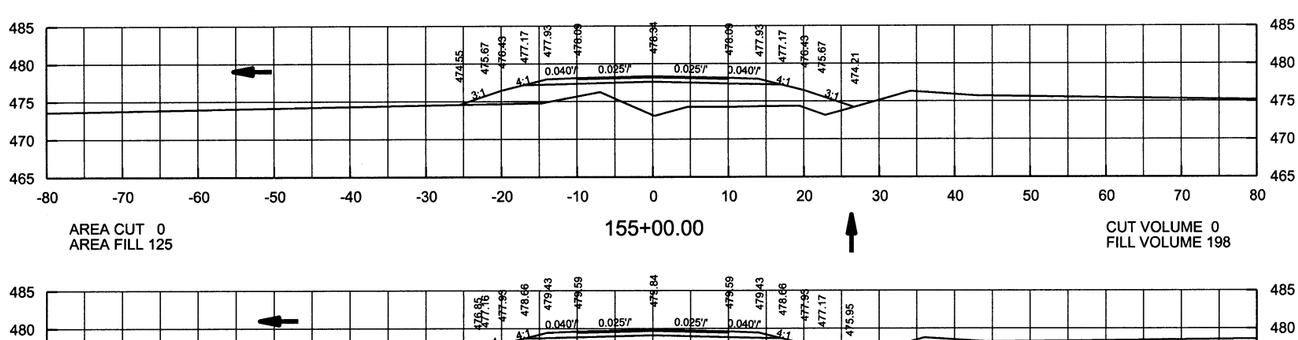
CUT VOLUME 0
FILL VOLUME 236



AREA CUT 0
AREA FILL 124

155+50.00

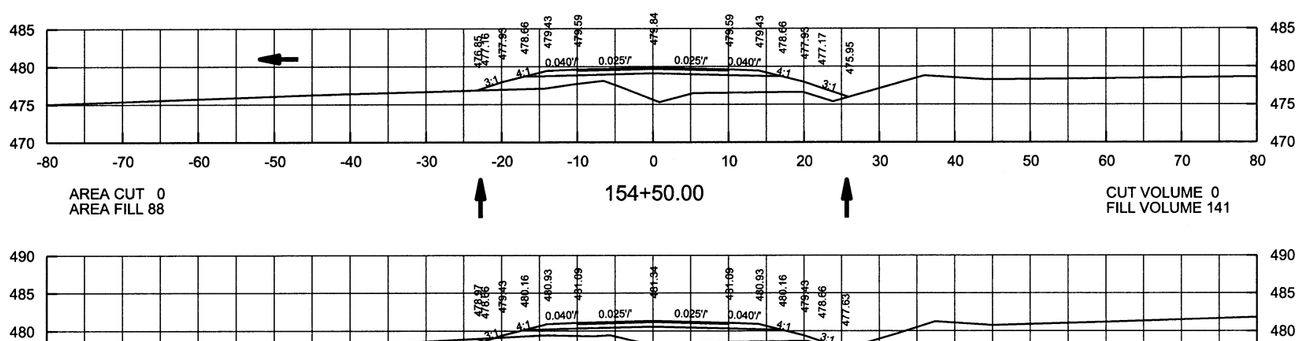
CUT VOLUME 0
FILL VOLUME 231



AREA CUT 0
AREA FILL 125

155+00.00

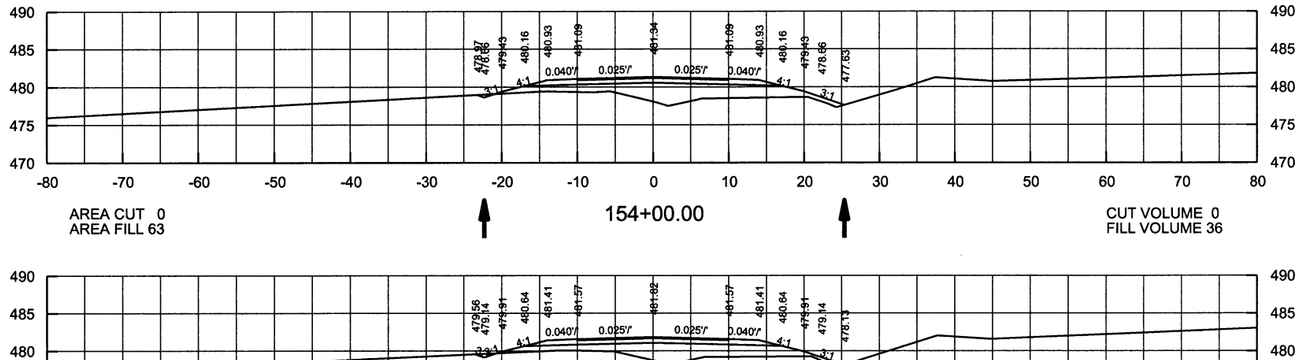
CUT VOLUME 0
FILL VOLUME 198



AREA CUT 0
AREA FILL 88

154+50.00

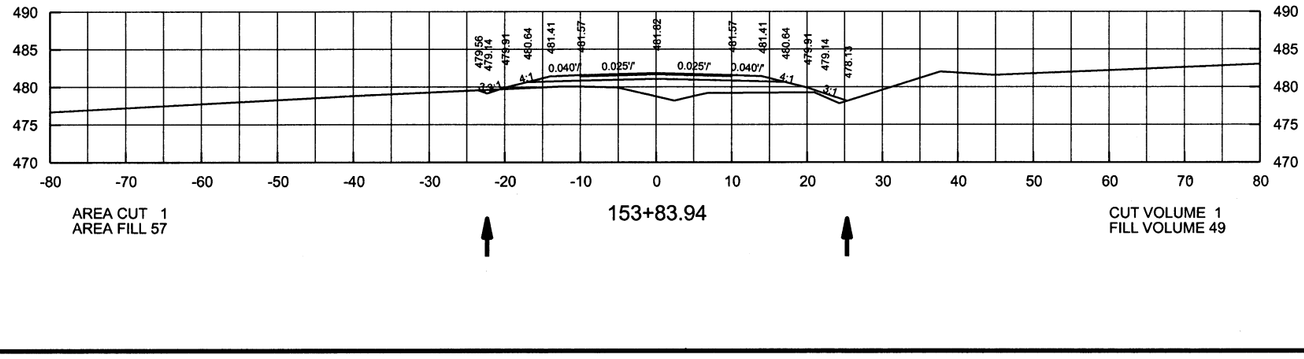
CUT VOLUME 0
FILL VOLUME 141



AREA CUT 0
AREA FILL 63

154+00.00

CUT VOLUME 0
FILL VOLUME 36



AREA CUT 1
AREA FILL 57

153+83.94

CUT VOLUME 1
FILL VOLUME 49

4 CROSS SECTIONS STA.153+83.94 TO 157+00.00

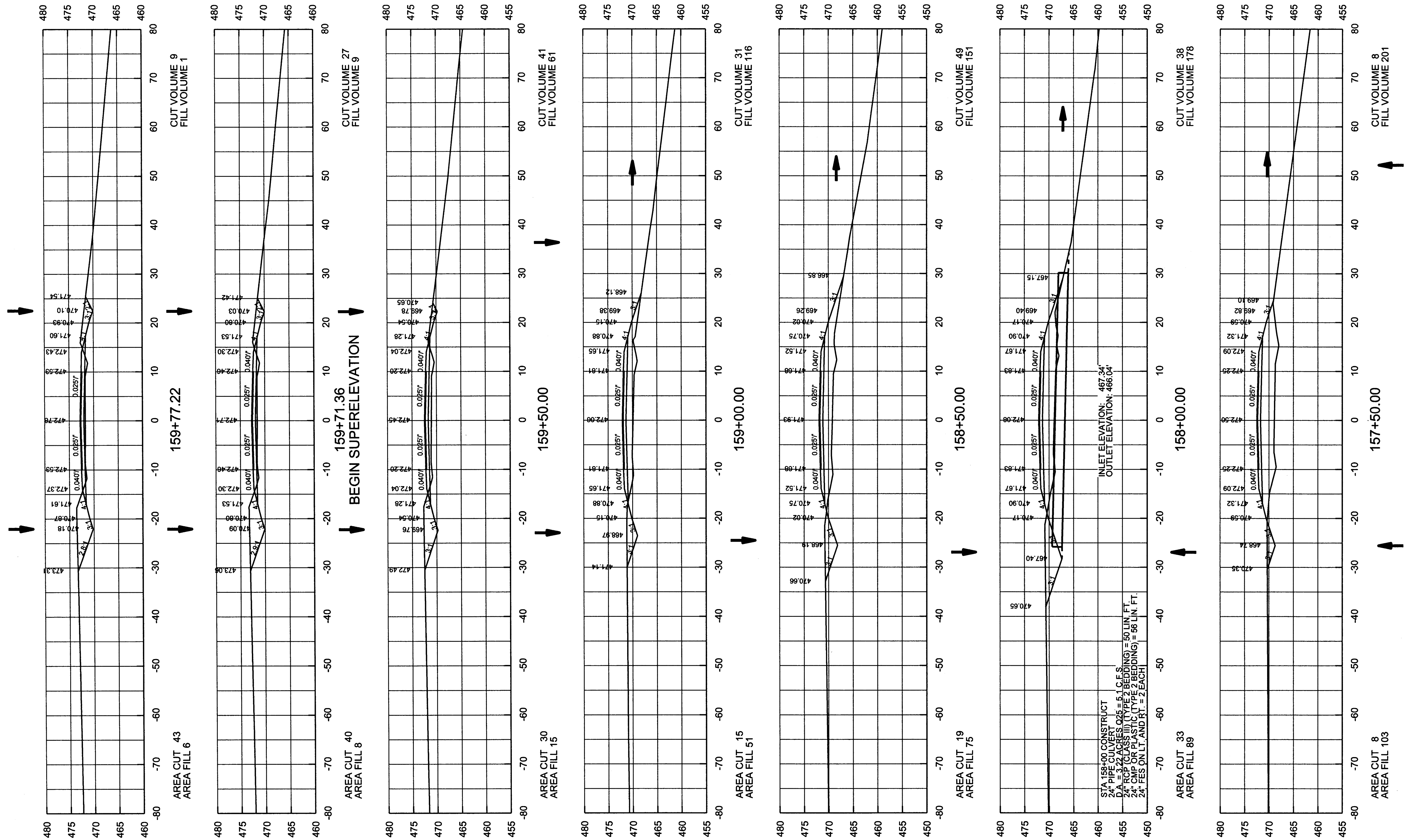
DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED

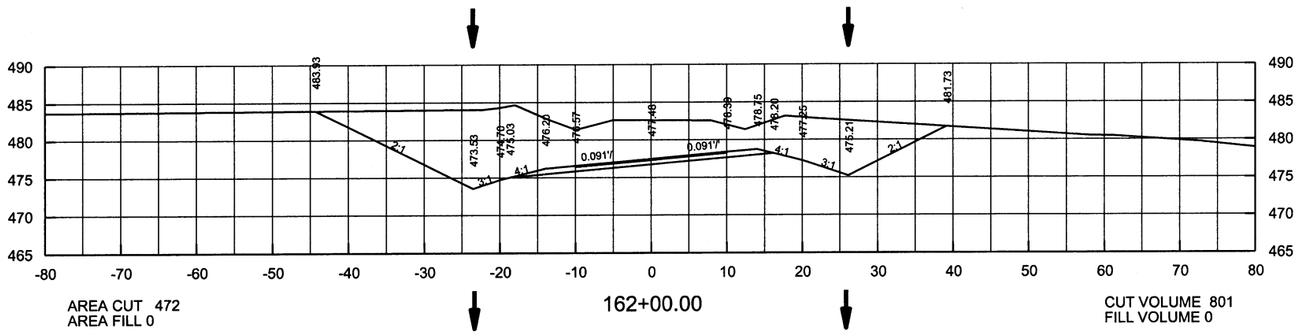
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	FA6715	57	65

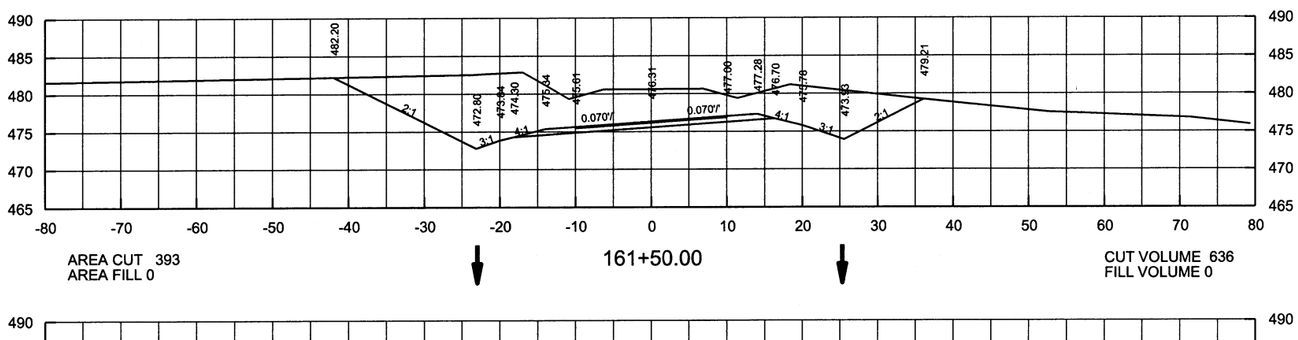
JOB NO.

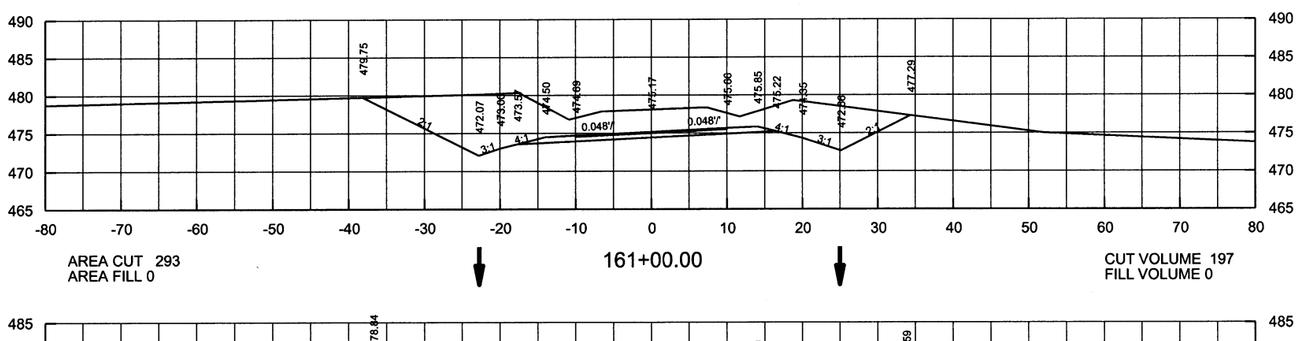
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA6715	58	65

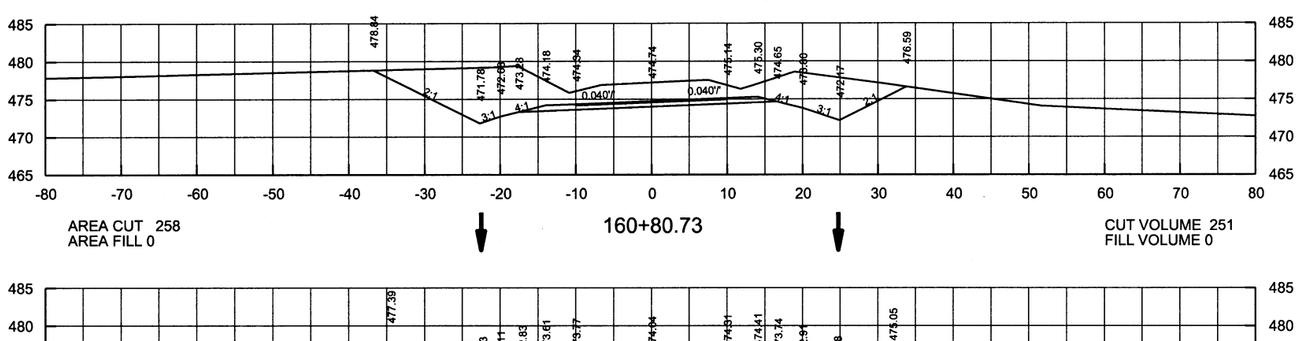
(4) CROSS SECTIONS STA.157+50.00 TO 159+77.22

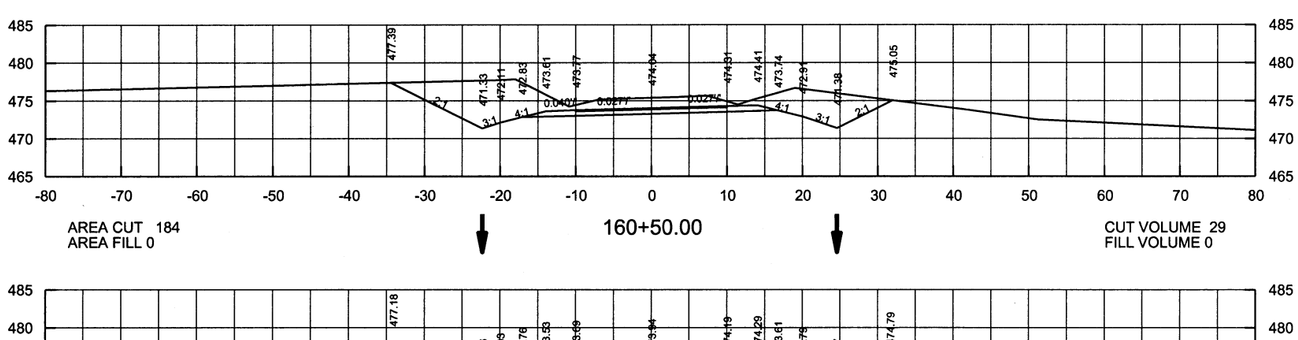

159+77.22
CUT VOLUME 9
FILL VOLUME 1
AREA CUT 43
AREA FILL 6
159+71.36
BEGIN SUPERELEVATION
CUT VOLUME 27
FILL VOLUME 9
AREA CUT 40
AREA FILL 8
159+50.00
CUT VOLUME 41
FILL VOLUME 61
AREA CUT 30
AREA FILL 15
159+00.00
CUT VOLUME 31
FILL VOLUME 116
AREA CUT 15
AREA FILL 51
158+50.00
CUT VOLUME 49
FILL VOLUME 151
AREA CUT 19
AREA FILL 75
158+00.00
CUT VOLUME 38
FILL VOLUME 178
AREA CUT 33
AREA FILL 89
INLET ELEVATION: 467.34'
OUTLET ELEVATION: 466.04'
STA 158+00 CONSTRUCT
24" PIPE CULVERT
D.A. = 3.22 ACRES Q25 = 5.1 C.F.S.
24" RCP (CLASS III) (TYPE 2 BEDDING) = 50 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 56 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH
157+50.00
CUT VOLUME 8
FILL VOLUME 201
AREA CUT 8
AREA FILL 103

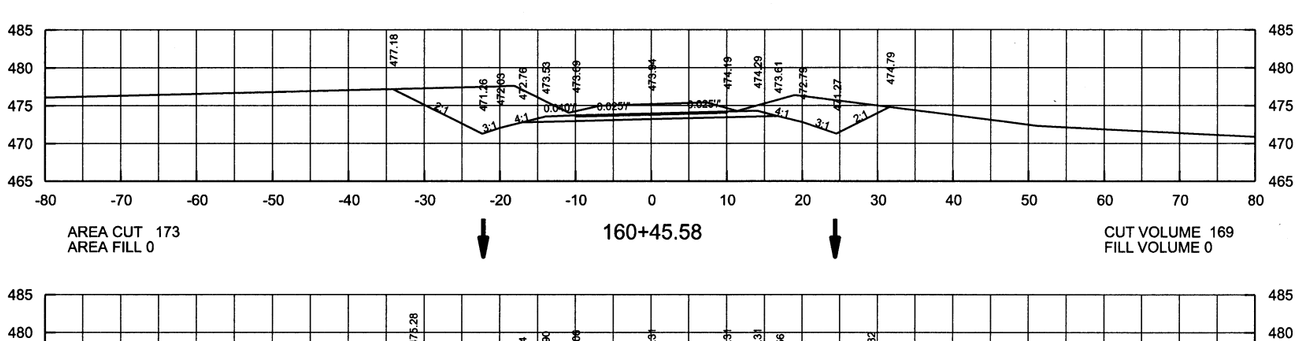


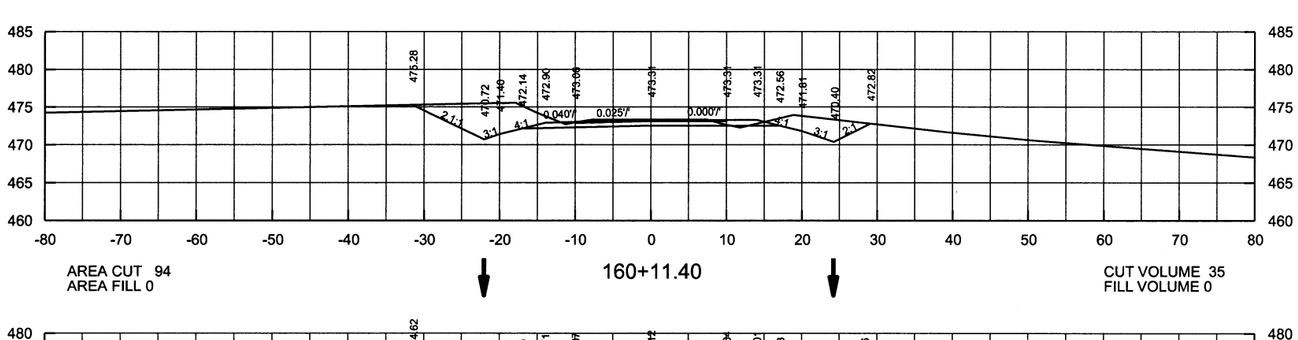


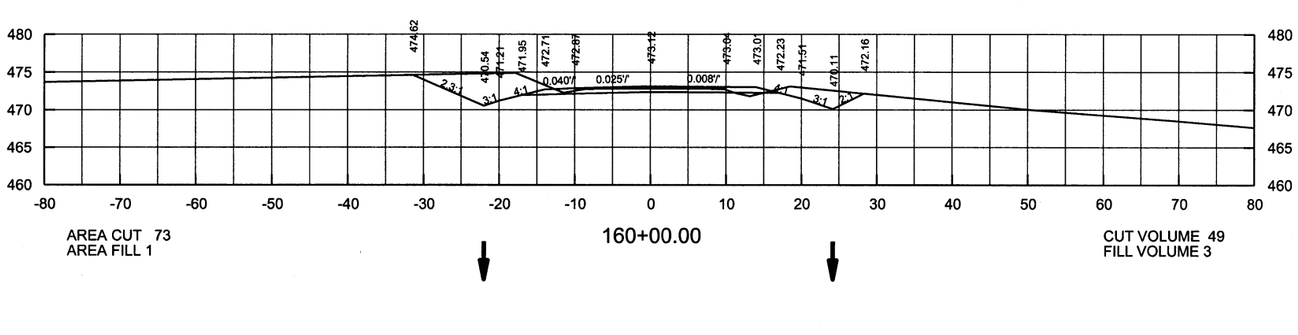






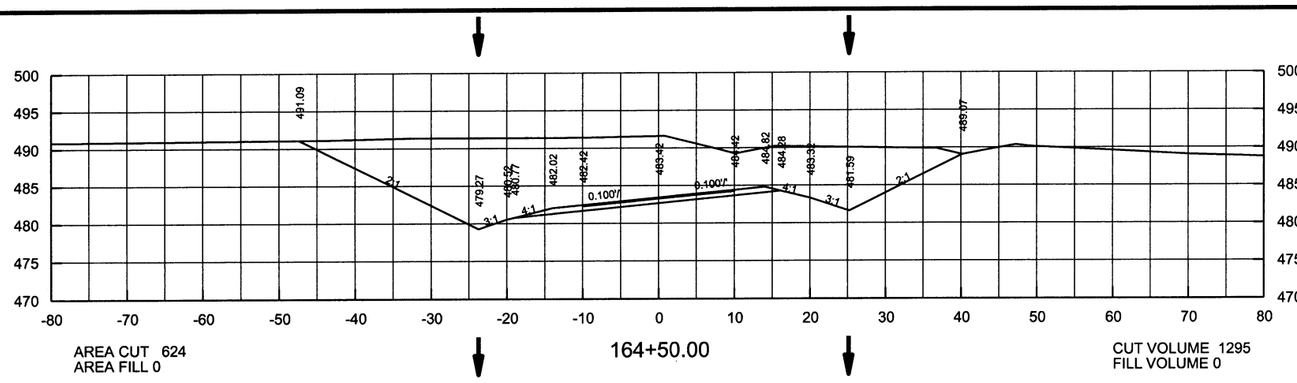






DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	59	65

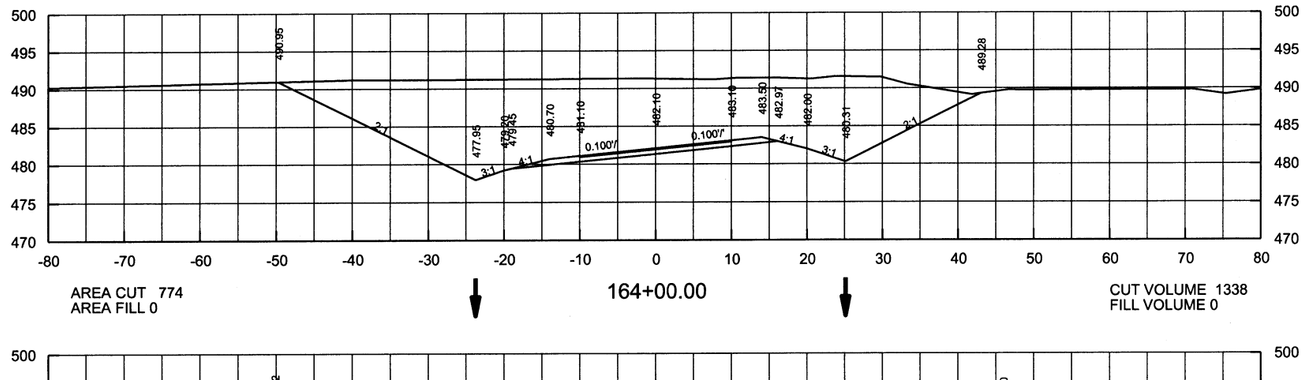
4 CROSS SECTIONS STA.160+00.00 TO 162+00.00



AREA CUT 624
AREA FILL 0

164+50.00

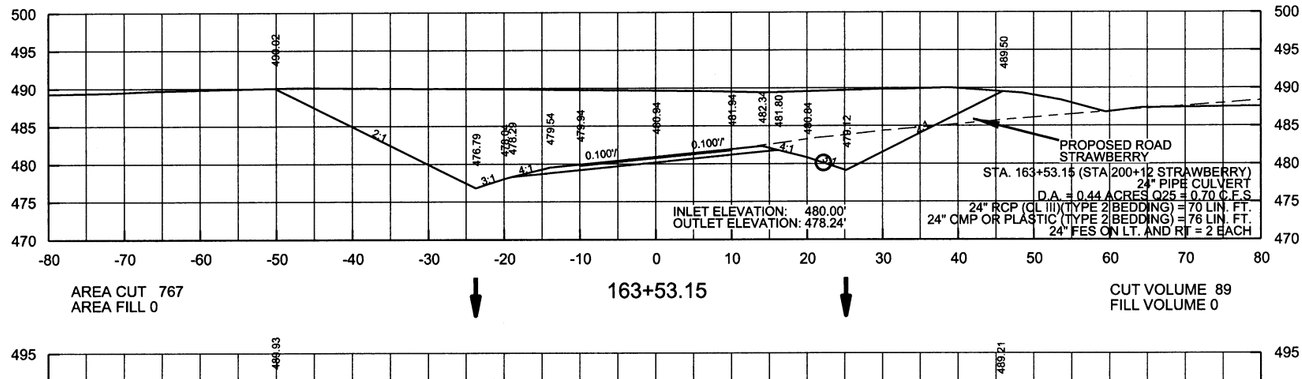
CUT VOLUME 1295
FILL VOLUME 0



AREA CUT 774
AREA FILL 0

164+00.00

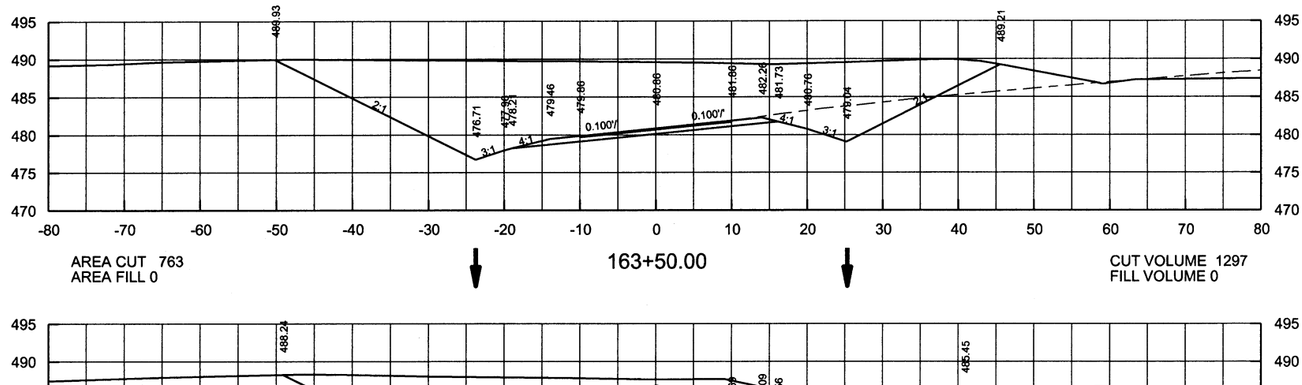
CUT VOLUME 1338
FILL VOLUME 0



AREA CUT 767
AREA FILL 0

163+53.15

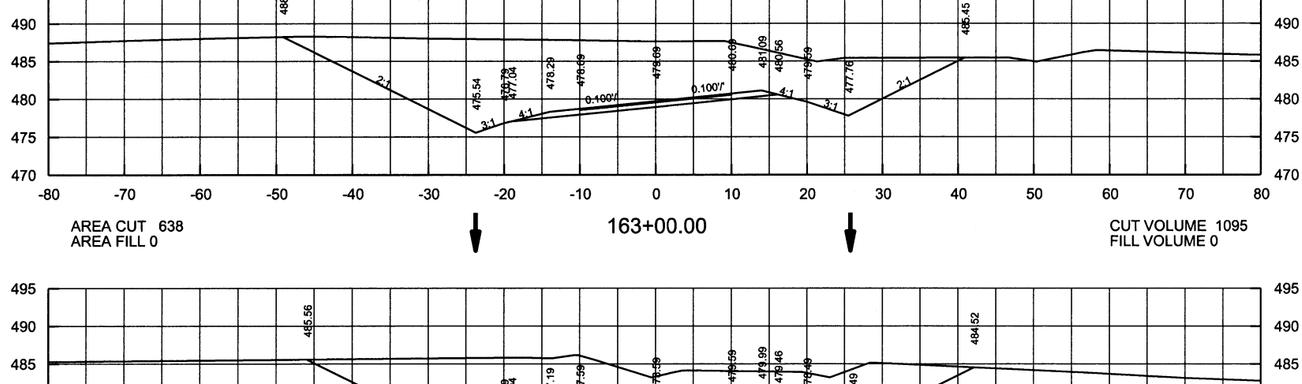
CUT VOLUME 89
FILL VOLUME 0



AREA CUT 763
AREA FILL 0

163+50.00

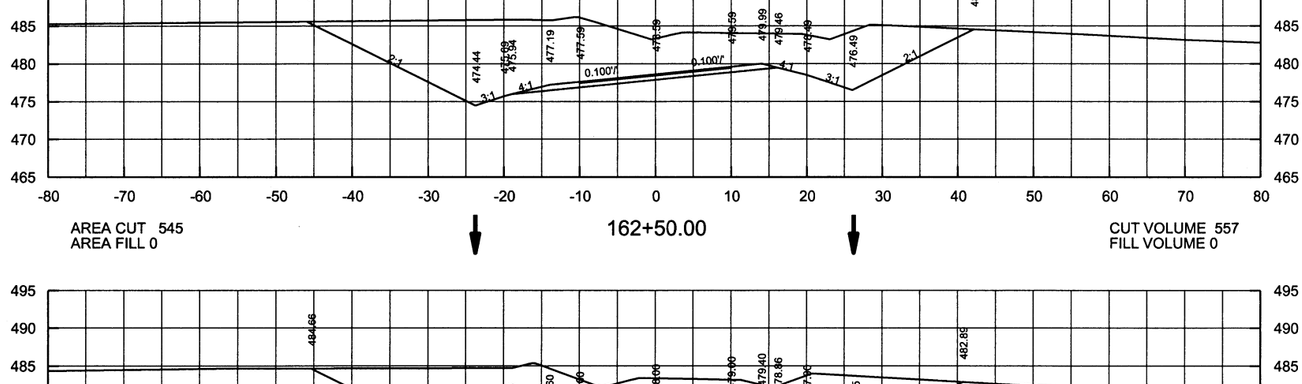
CUT VOLUME 1297
FILL VOLUME 0



AREA CUT 638
AREA FILL 0

163+00.00

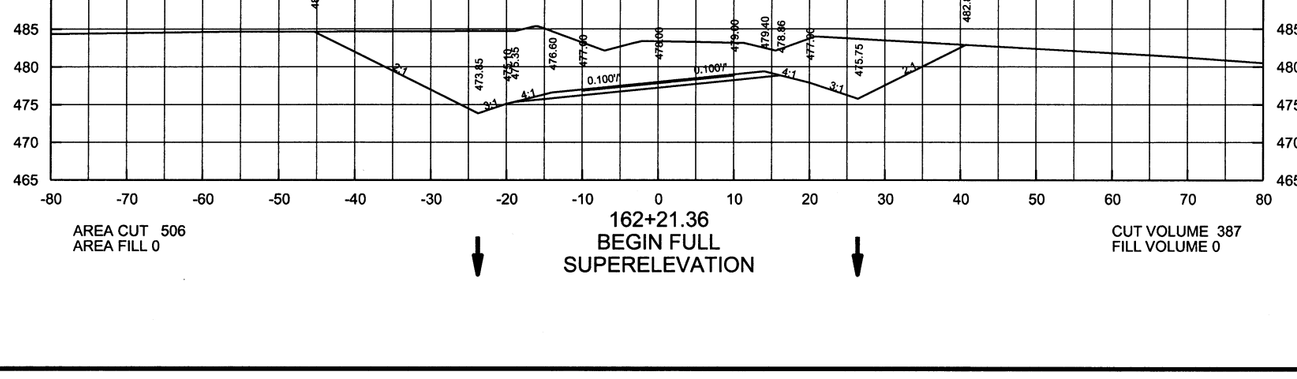
CUT VOLUME 1095
FILL VOLUME 0



AREA CUT 545
AREA FILL 0

162+50.00

CUT VOLUME 557
FILL VOLUME 0



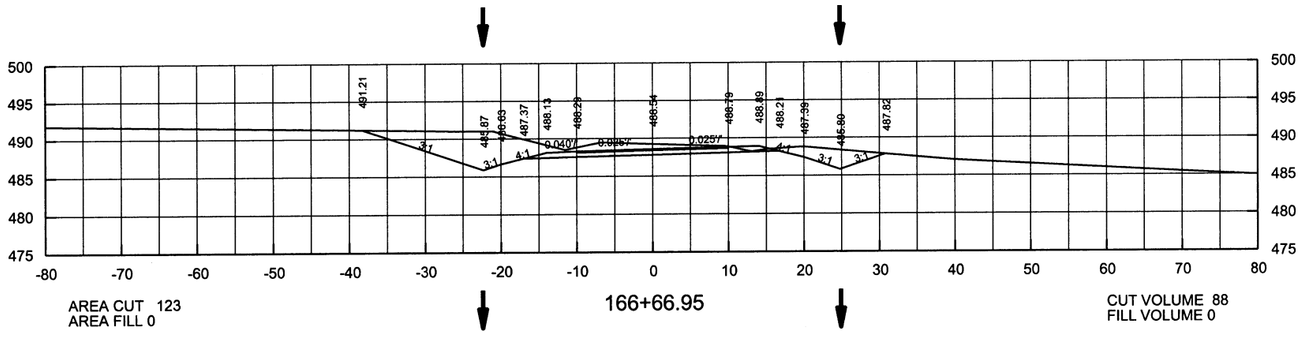
AREA CUT 506
AREA FILL 0

162+21.36
BEGIN FULL
SUPERELEVATION

CUT VOLUME 387
FILL VOLUME 0

	DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
					6	ARK.	FA6715	60	65

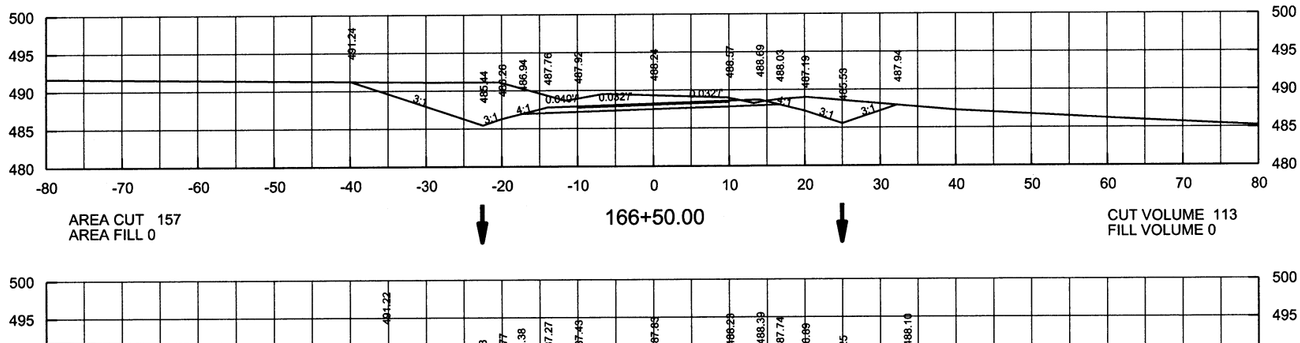
4 CROSS SECTIONS STA.162+21.36 TO 164+50.00



AREA CUT 123
AREA FILL 0

166+66.95

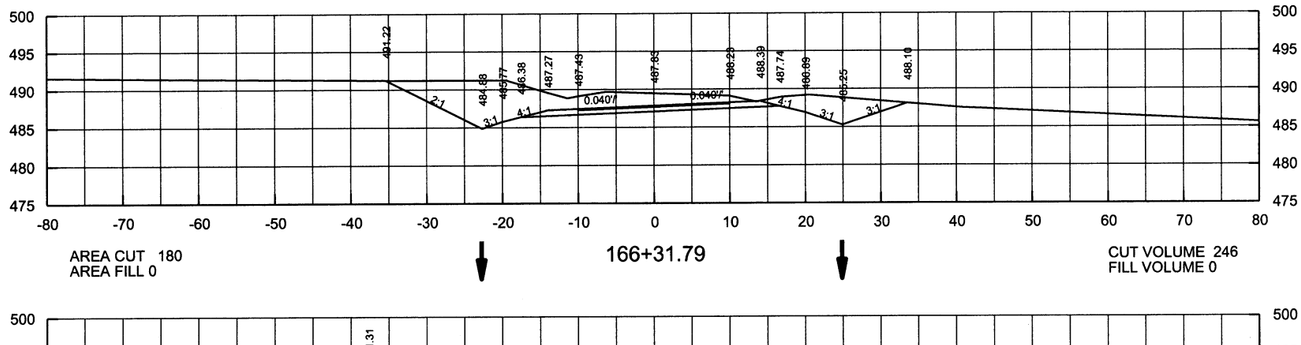
CUT VOLUME 88
FILL VOLUME 0



AREA CUT 157
AREA FILL 0

166+50.00

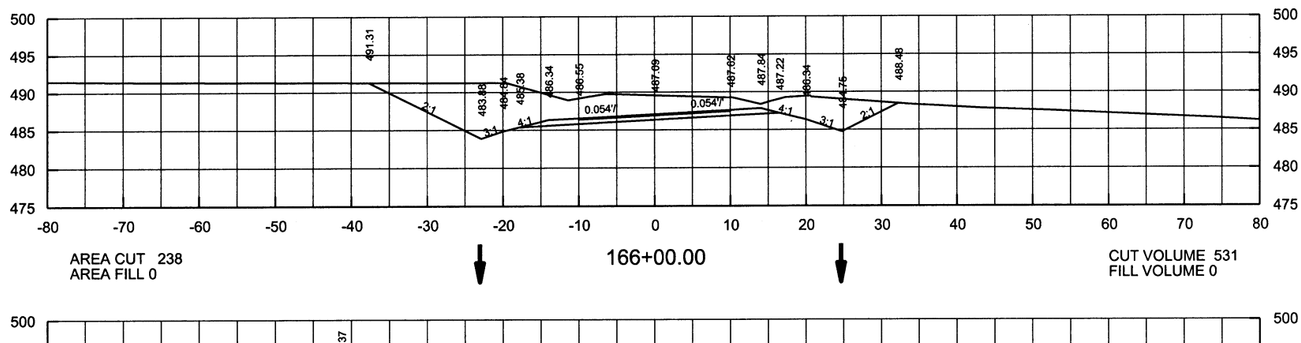
CUT VOLUME 113
FILL VOLUME 0



AREA CUT 180
AREA FILL 0

166+31.79

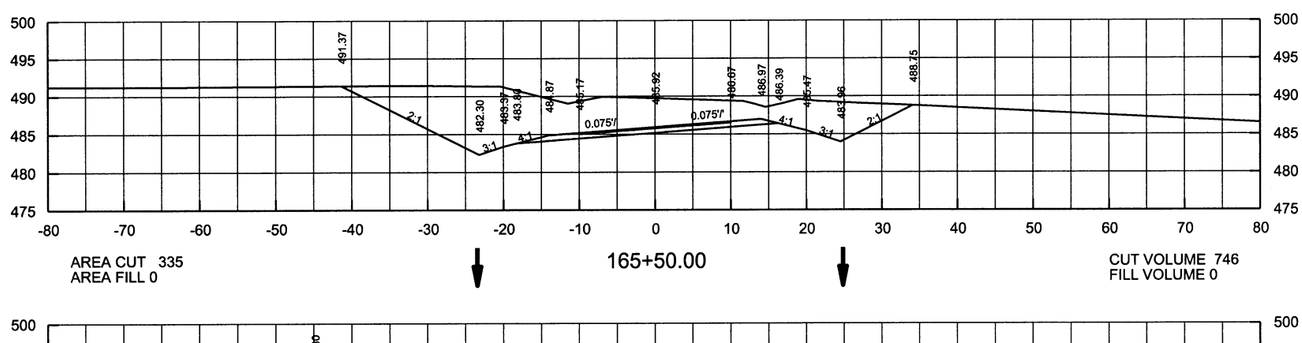
CUT VOLUME 246
FILL VOLUME 0



AREA CUT 238
AREA FILL 0

166+00.00

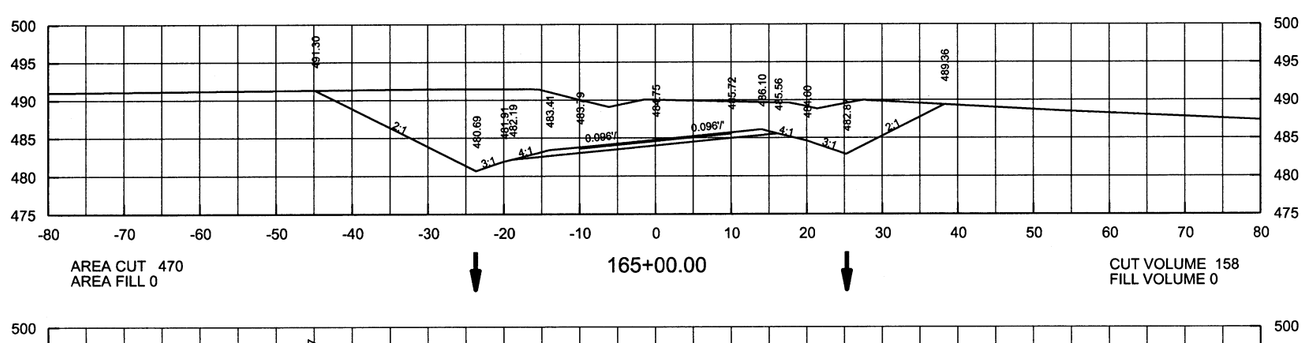
CUT VOLUME 531
FILL VOLUME 0



AREA CUT 335
AREA FILL 0

165+50.00

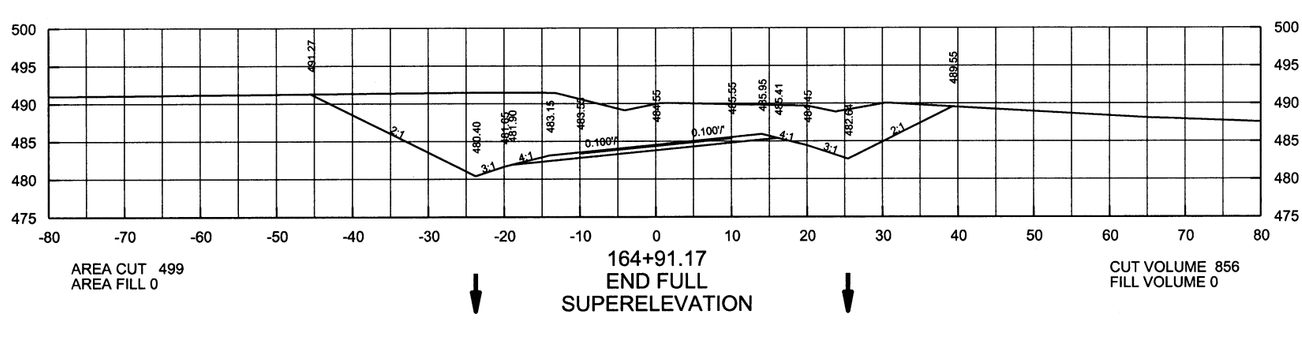
CUT VOLUME 746
FILL VOLUME 0



AREA CUT 470
AREA FILL 0

165+00.00

CUT VOLUME 158
FILL VOLUME 0



AREA CUT 499
AREA FILL 0

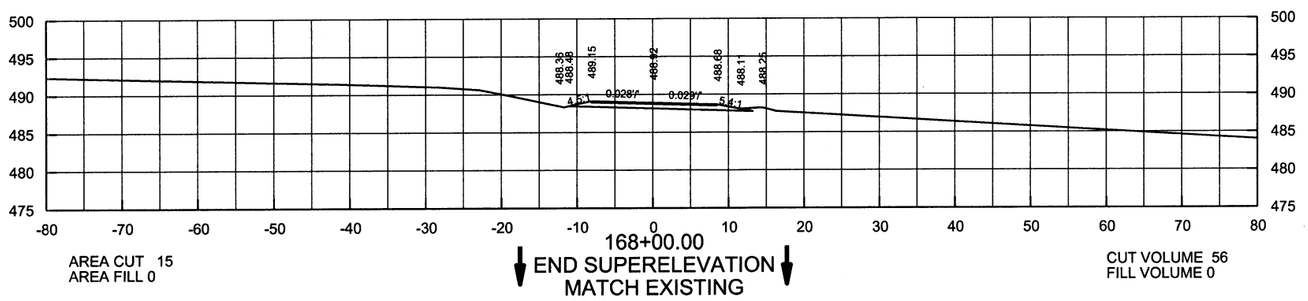
164+91.17
END FULL
SUPERELEVATION

CUT VOLUME 856
FILL VOLUME 0

4 CROSS SECTIONS STA 164+91.17 TO 168+66.95

JOB NO	FED.RD DIST.NO	STATE	FED.AID PROJ.NO.	SHEET NO	TOTAL SHEETS
FA6715	6	ARK.		61	65

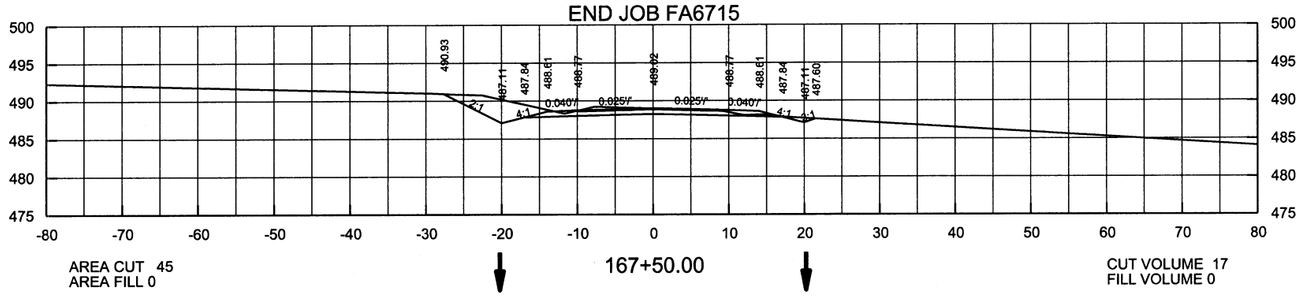
DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED



168+00.00
END SUPERELEVATION
MATCH EXISTING
END JOB FA6715

AREA CUT 15
AREA FILL 0

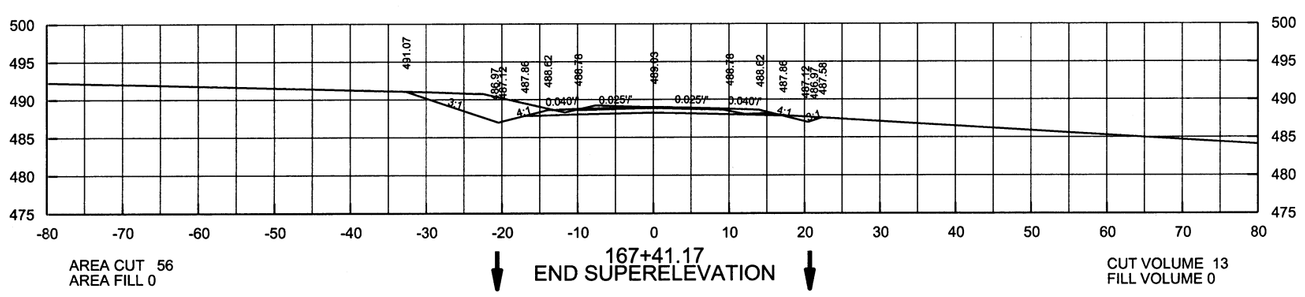
CUT VOLUME 56
FILL VOLUME 0



167+50.00

AREA CUT 45
AREA FILL 0

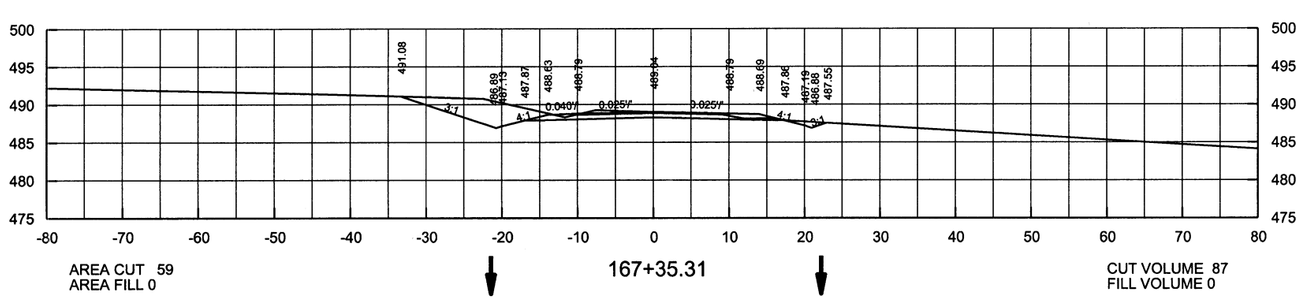
CUT VOLUME 17
FILL VOLUME 0



167+41.17
END SUPERELEVATION

AREA CUT 56
AREA FILL 0

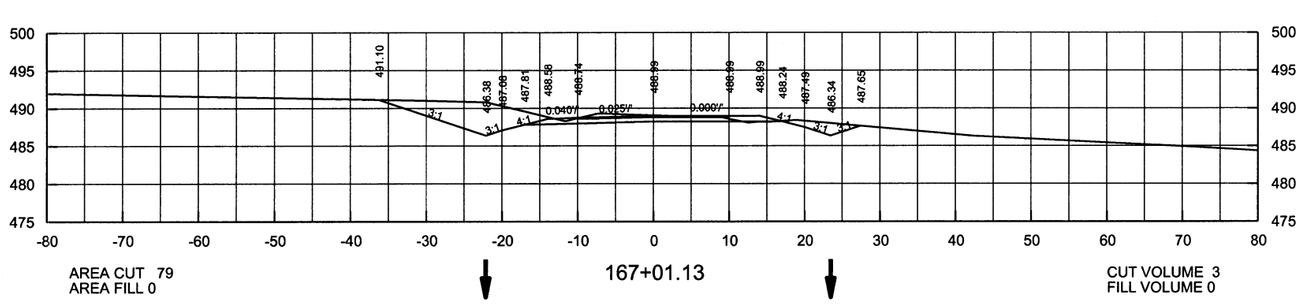
CUT VOLUME 13
FILL VOLUME 0



167+35.31

AREA CUT 59
AREA FILL 0

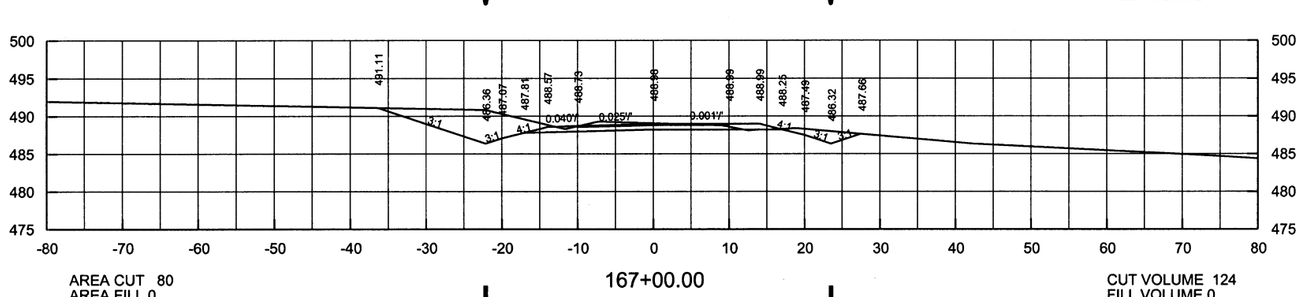
CUT VOLUME 87
FILL VOLUME 0



167+01.13

AREA CUT 79
AREA FILL 0

CUT VOLUME 3
FILL VOLUME 0



167+00.00

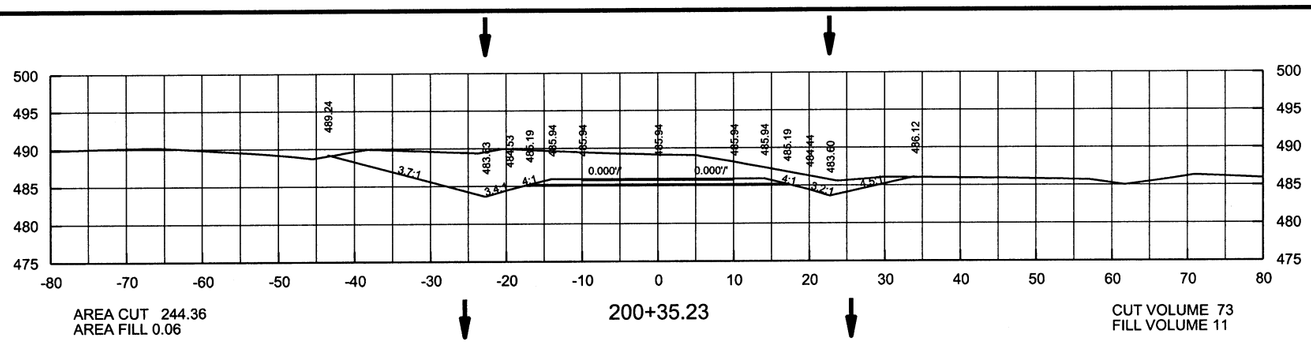
AREA CUT 80
AREA FILL 0

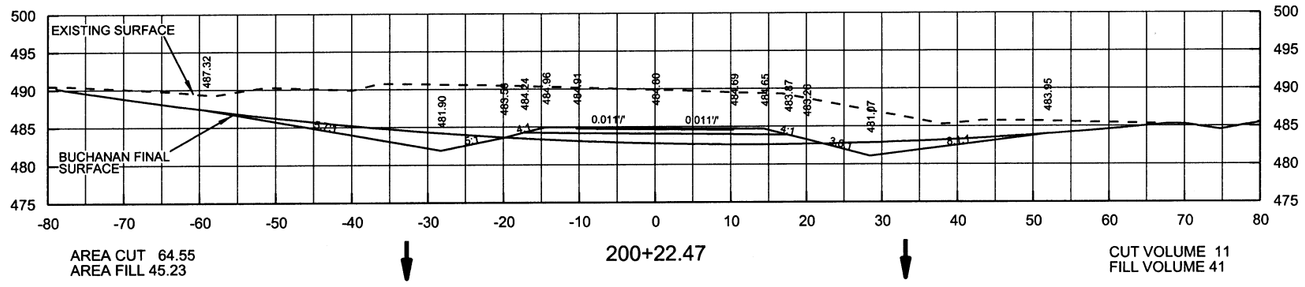
CUT VOLUME 124
FILL VOLUME 0

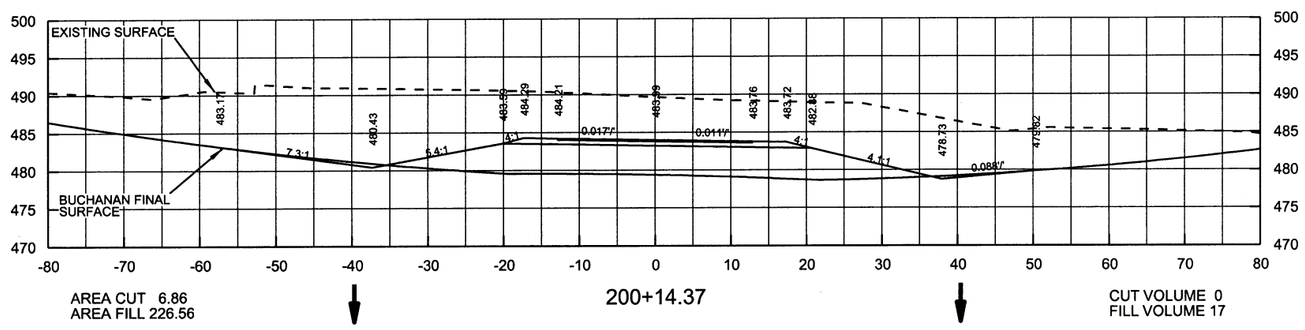
4 CROSS SECTIONS STA.167+00.00 TO 169+00.00

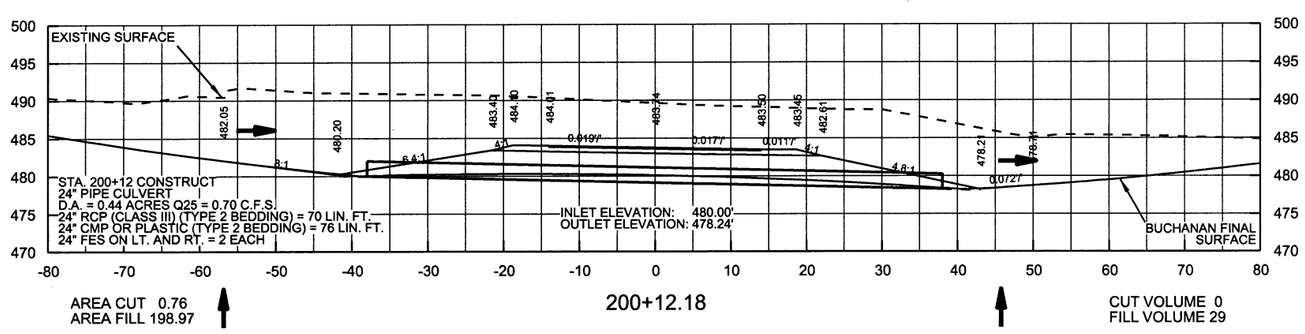
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		62	65

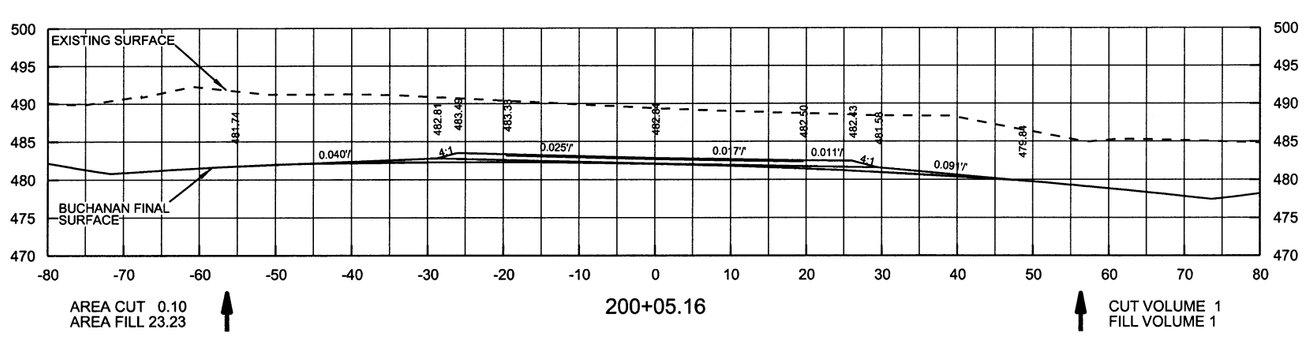
JOB NO. FA6715

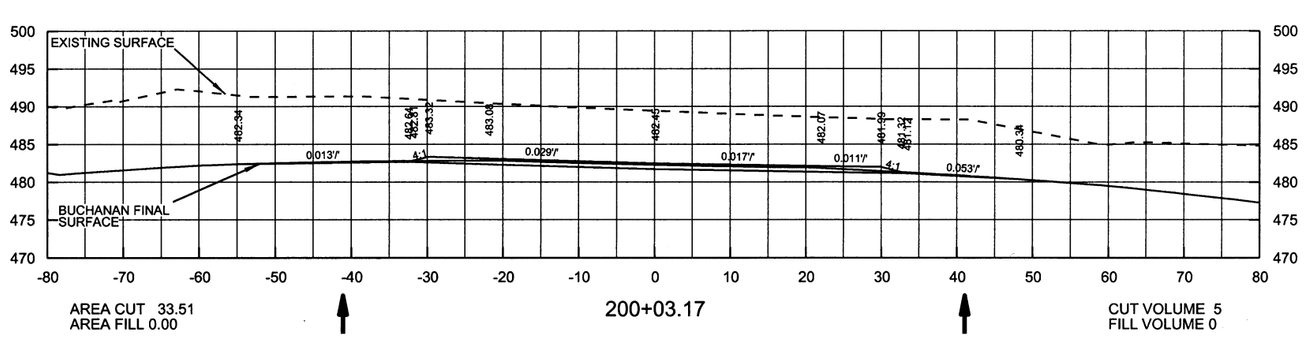


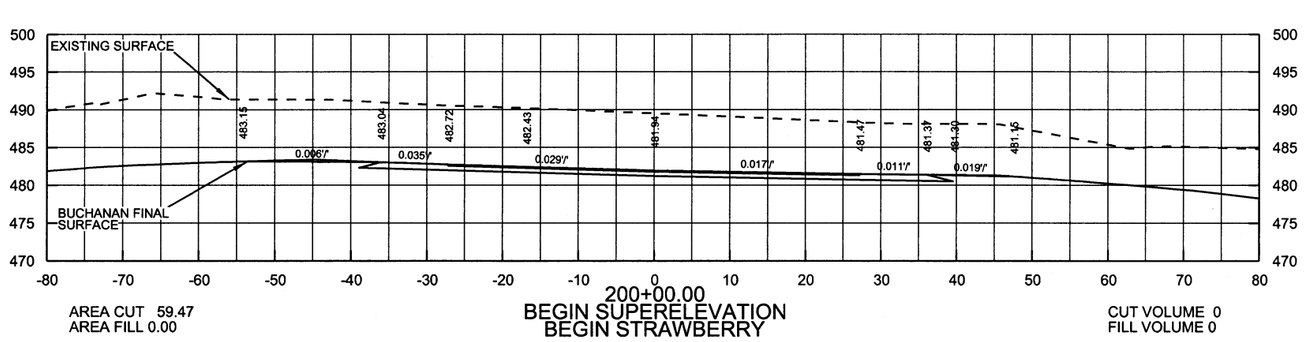








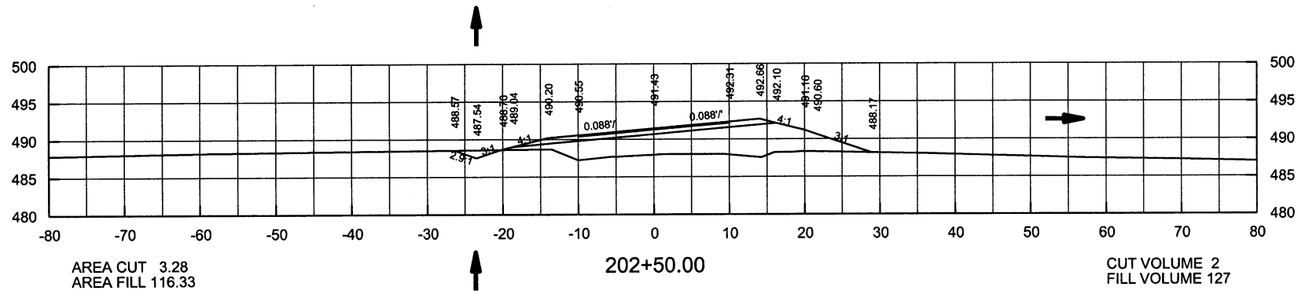




DATE REVISED	DATE PLOTED	DATE REVISED	DATE PLOTED	FED.RD. DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	FA6715	63	65

4 CROSS SECTIONS STA.200+00.00 TO 200+35.23

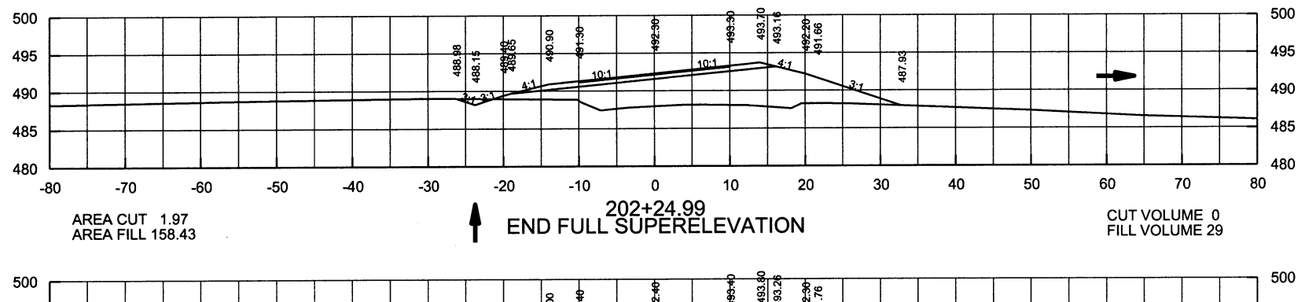
JOB NO.



AREA CUT 3.28
AREA FILL 116.33

202+50.00

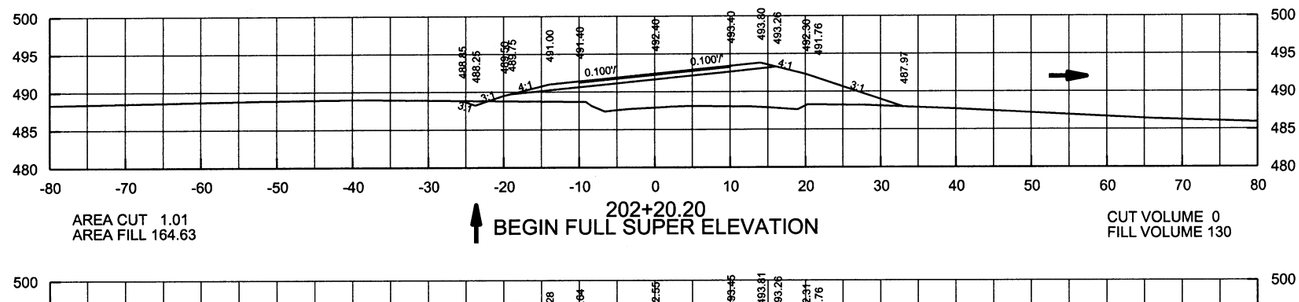
CUT VOLUME 2
FILL VOLUME 127



AREA CUT 1.97
AREA FILL 158.43

202+24.99
END FULL SUPERELEVATION

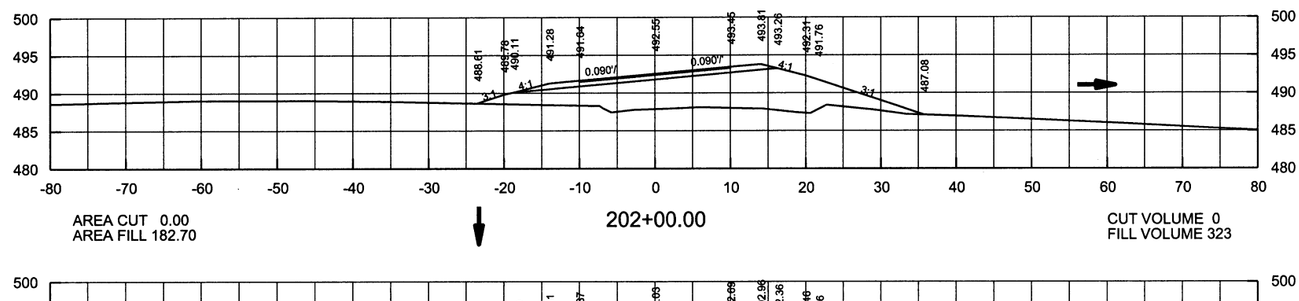
CUT VOLUME 0
FILL VOLUME 29



AREA CUT 1.01
AREA FILL 164.63

202+20.20
BEGIN FULL SUPER ELEVATION

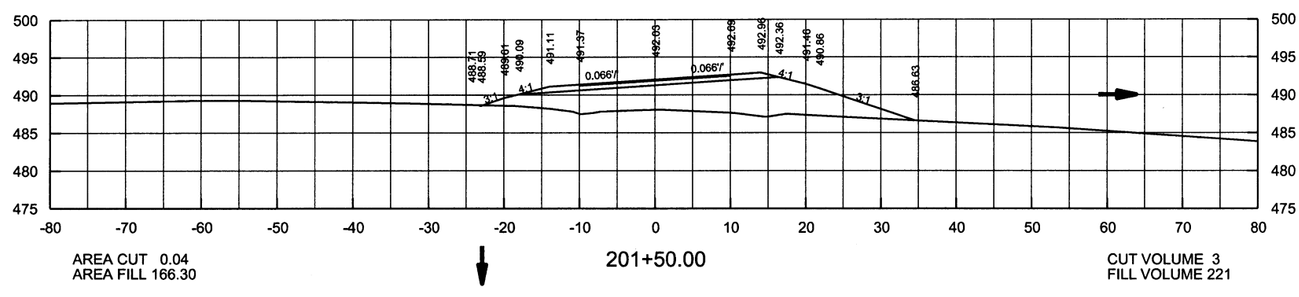
CUT VOLUME 0
FILL VOLUME 130



AREA CUT 0.00
AREA FILL 182.70

202+00.00

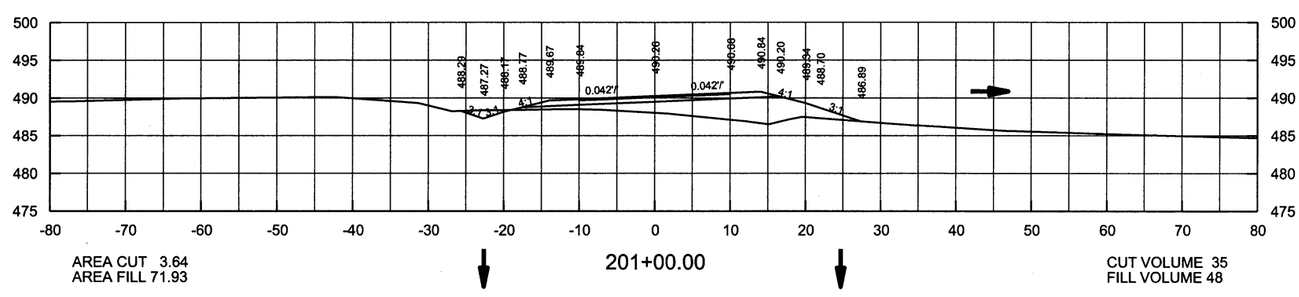
CUT VOLUME 0
FILL VOLUME 323



AREA CUT 0.04
AREA FILL 166.30

201+50.00

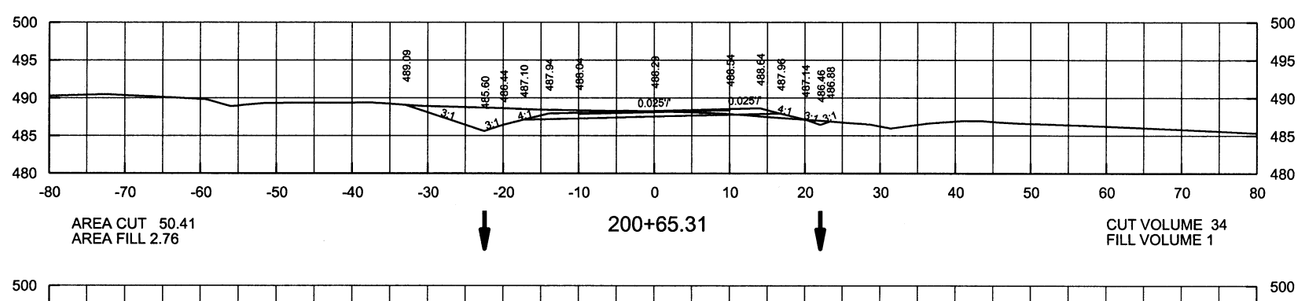
CUT VOLUME 3
FILL VOLUME 221



AREA CUT 3.64
AREA FILL 71.93

201+00.00

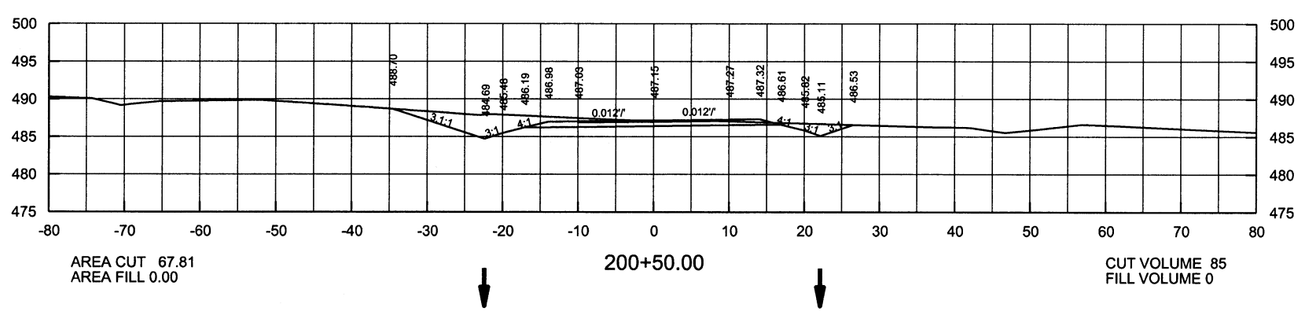
CUT VOLUME 35
FILL VOLUME 48



AREA CUT 50.41
AREA FILL 2.76

200+65.31

CUT VOLUME 34
FILL VOLUME 1



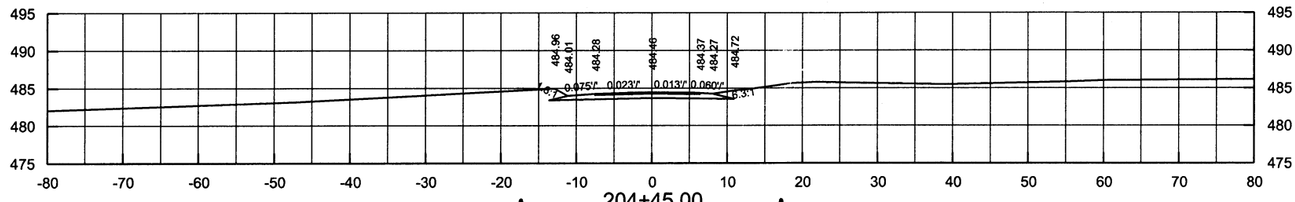
AREA CUT 67.81
AREA FILL 0.00

200+50.00

CUT VOLUME 85
FILL VOLUME 0

4 CROSS SECTIONS STA.200+50.00 TO 202+50.00

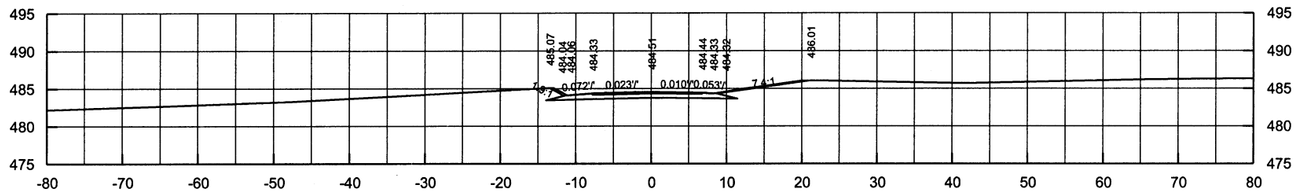
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.DIST. NO. 6	STATE ARK.	FED.AID PROJ.NO. FA6715	SHEET NO. 64	TOTAL SHEETS 65
				JOB NO.				



AREA CUT 19.72
AREA FILL 0.00

204+45.00
END SUPERELEVATION
MATCH EXISTING
END STRAWBERRY

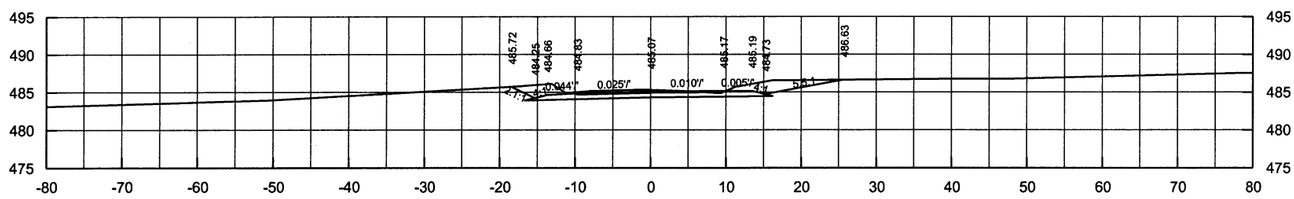
CUT VOLUME 4
FILL VOLUME 0



AREA CUT 21.19
AREA FILL 0.00

204+39.89

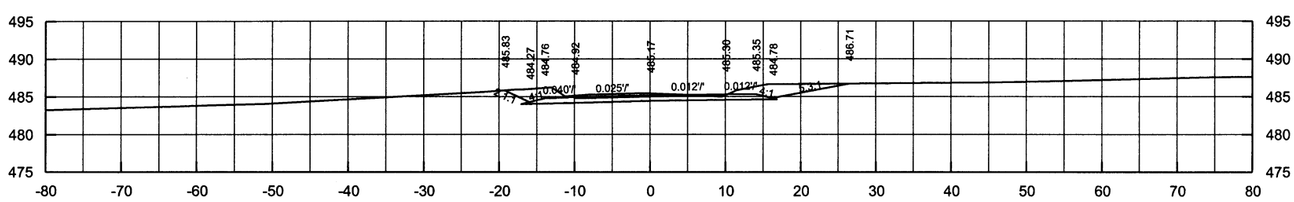
CUT VOLUME 50
FILL VOLUME 0



AREA CUT 46.13
AREA FILL 0.00

204+00.00

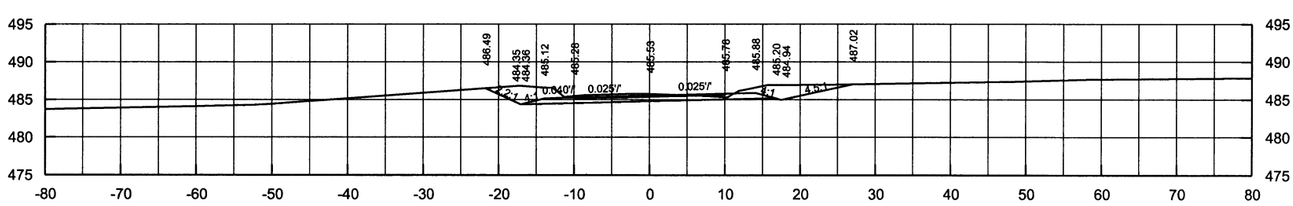
CUT VOLUME 9
FILL VOLUME 0



AREA CUT 49.44
AREA FILL 0.00

203+95.00
BEGIN TRANSITION

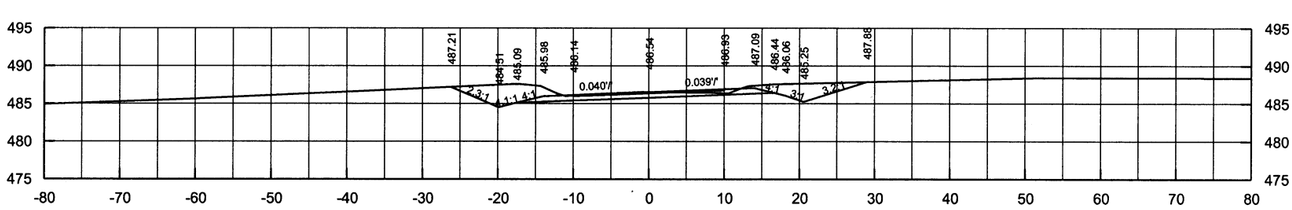
CUT VOLUME 30
FILL VOLUME 0



AREA CUT 54.68
AREA FILL 0.00

203+79.68

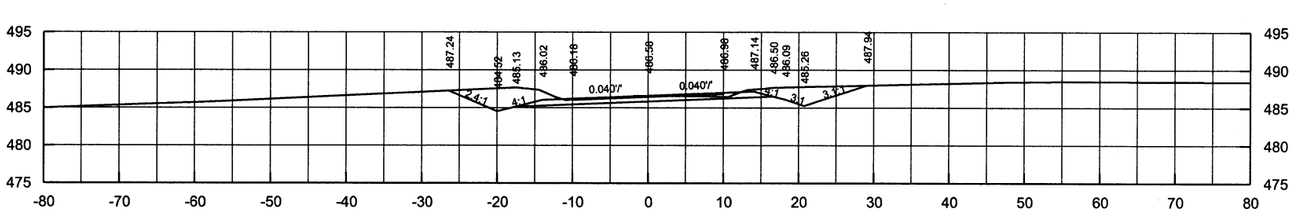
CUT VOLUME 65
FILL VOLUME 0



AREA CUT 63.80
AREA FILL 0.00

203+50.00

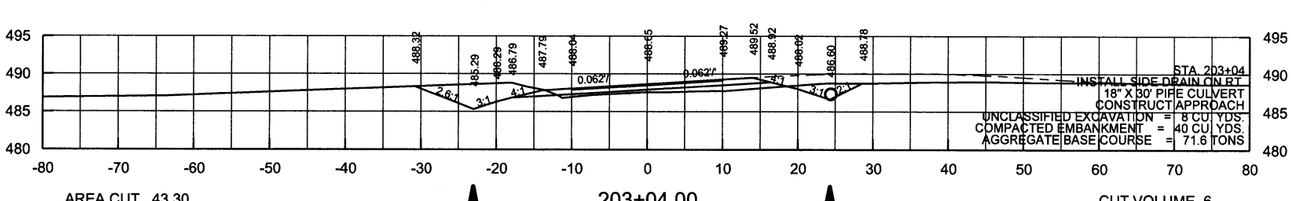
CUT VOLUME 3
FILL VOLUME 0



AREA CUT 64.22
AREA FILL 0.00

203+48.74

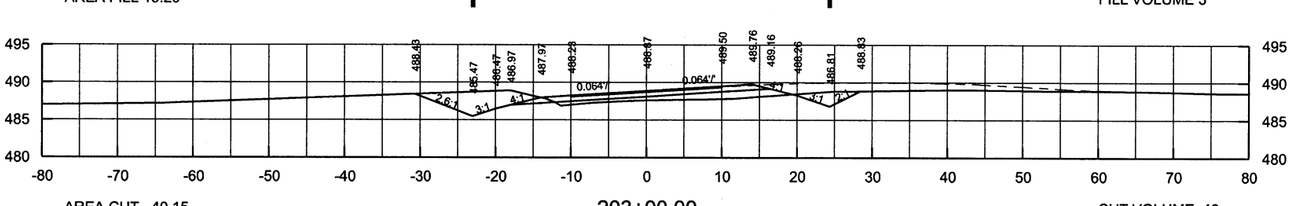
CUT VOLUME 89
FILL VOLUME 13



AREA CUT 43.30
AREA FILL 15.20

203+04.00

CUT VOLUME 6
FILL VOLUME 3



AREA CUT 40.15
AREA FILL 20.64

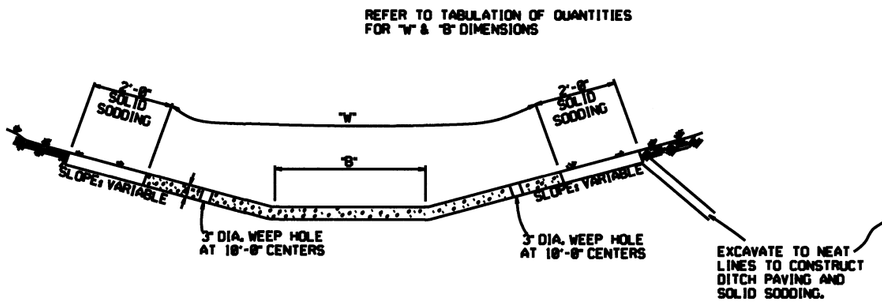
203+00.00

CUT VOLUME 40
FILL VOLUME 127

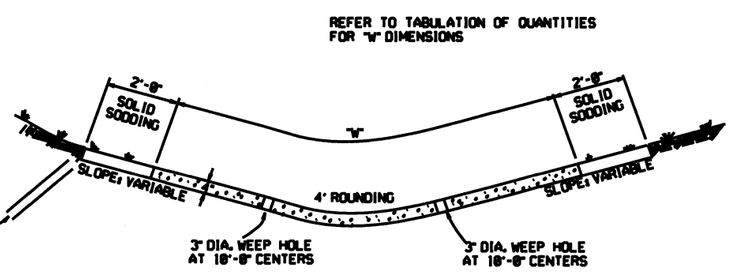
4 CROSS SECTIONS STA.203+00.00 TO 204+45.00

DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED	REVISED SHEET NO.

JOB NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
FA6715			65	65

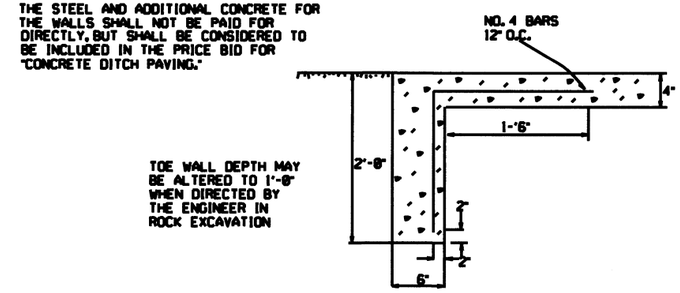


TYPE A



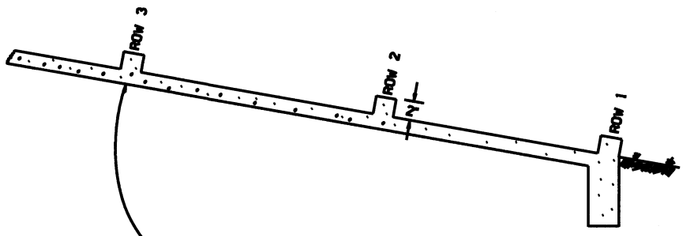
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."

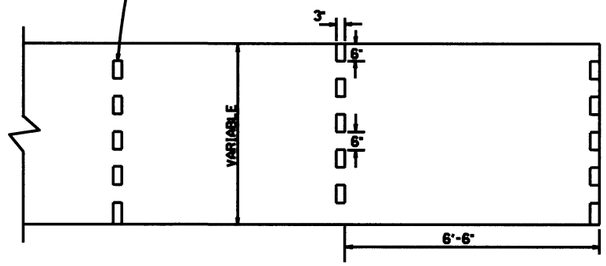


TOE WALL DEPTH MAY BE ALTERED TO 1'-8" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED



ENERGY DISSIPATORS
(NO SCALE)

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

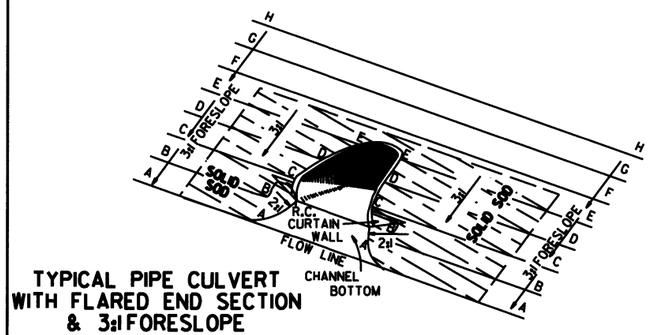
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILMED
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
10-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-19-88	REVISED DISSIPATOR NOTE	661-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-6-87	MODIFIED NOTE ON ENERGY DISS.	432-1-6-87
11-3-86	ADDED NOTE TO ENERGY DISS.	208-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	208-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

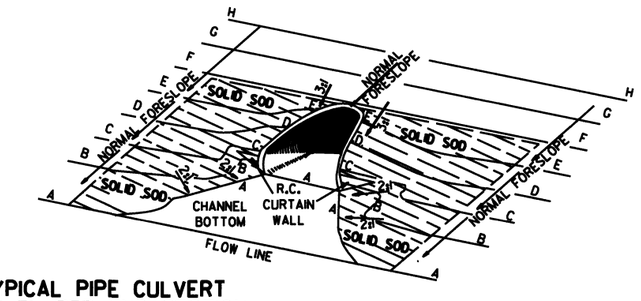
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

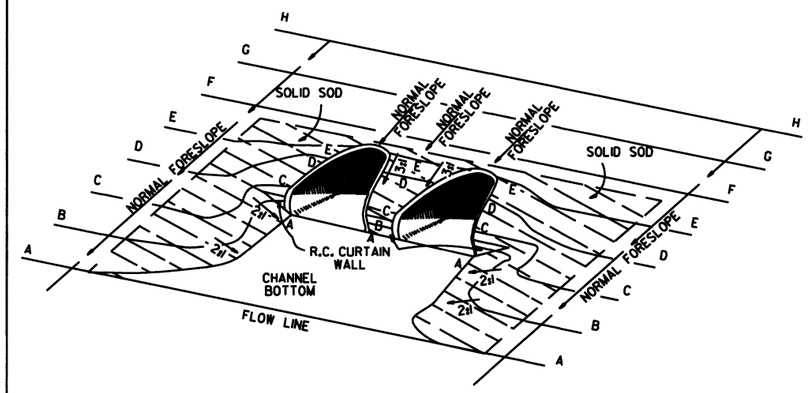
STANDARD DRAWING CDP-1



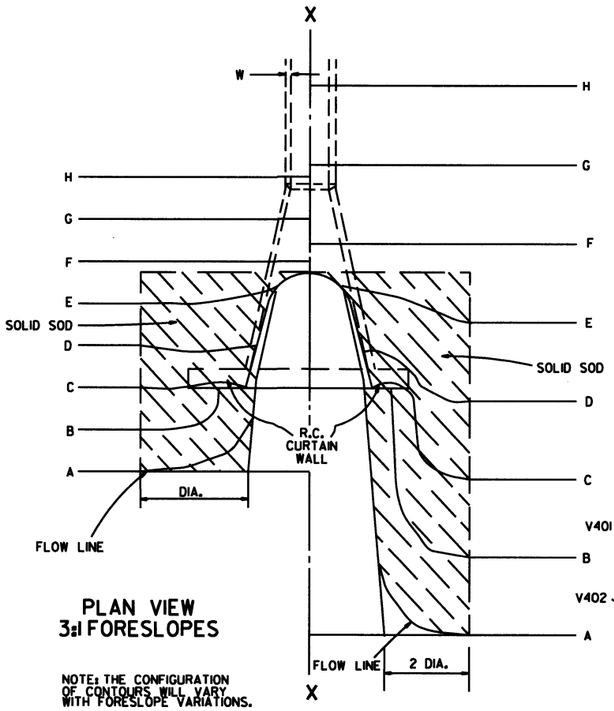
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

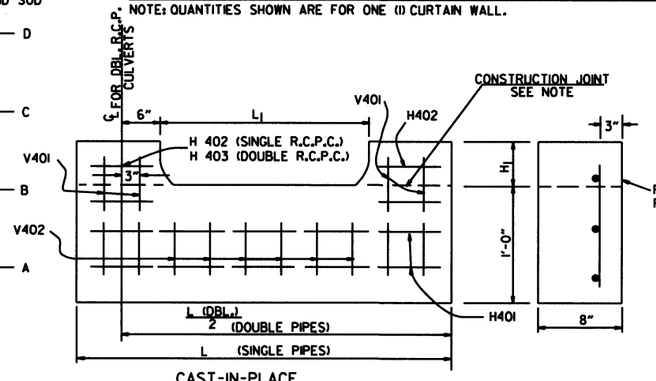
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

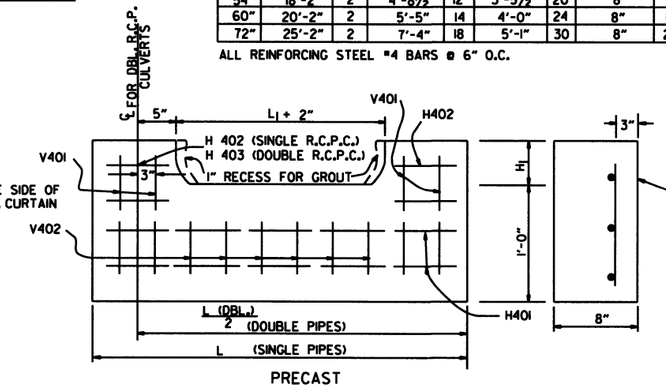
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

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



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

REINFORCING STEEL SCHEDULE

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

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

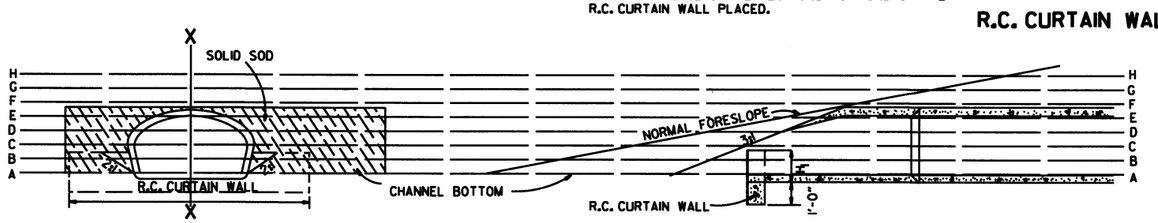
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	4:1	6:1	DOUBLE R.C.P.C. 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"	38	57	85	41	59	87
60"	45	66	104	48	69	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

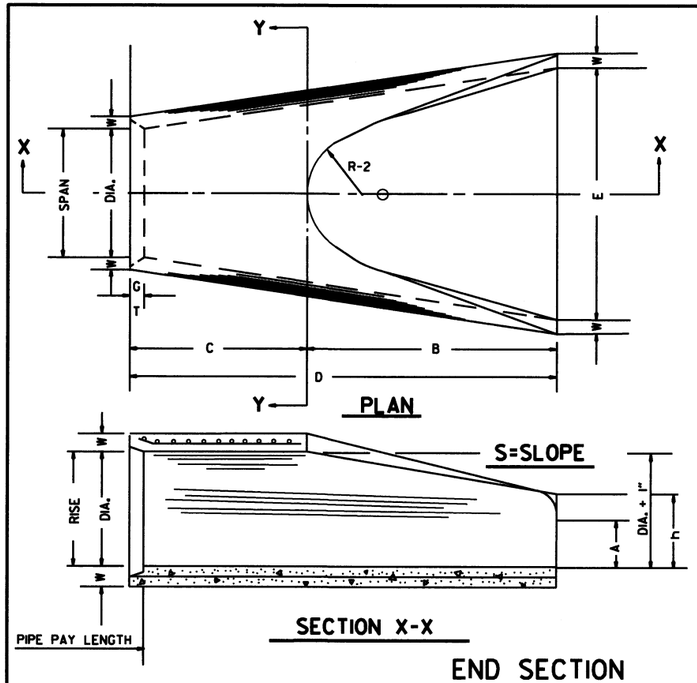
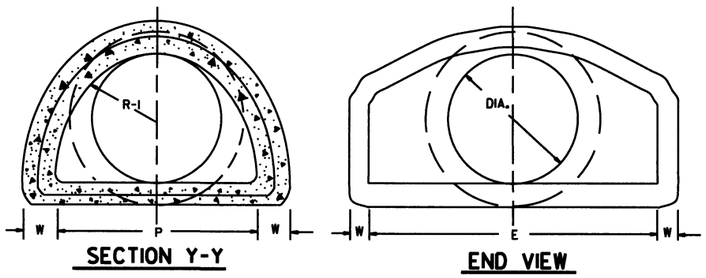


TABLE OF DIMENSIONS

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"	3sl	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3sl	25"	33⅜"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3sl	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3sl	37"	47⅝"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3sl	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3sl	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3sl	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3sl	61"	72½"	36⅝"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3sl	73"	77⅝"	38⅝"	24"	5"	13250	4'-6"



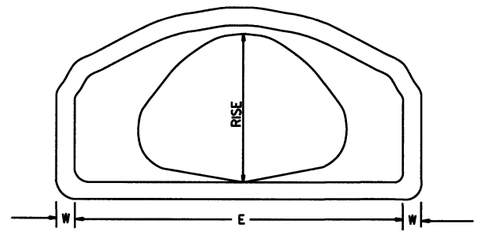
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

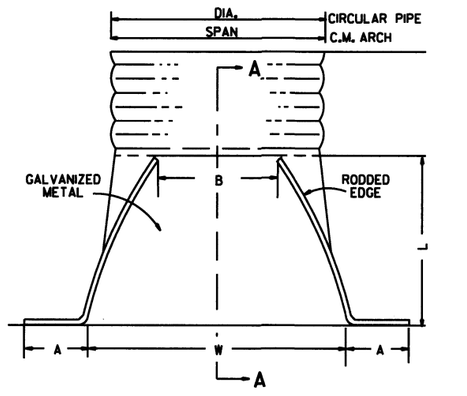
ARCH PIPE

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"	2½sl
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½sl
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½sl
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2½sl
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅝"	20"	3"	2½sl
36	43¾	44	26⅞	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½sl
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½sl
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½sl
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼sl
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2¼sl

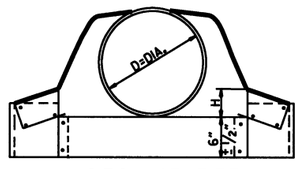
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



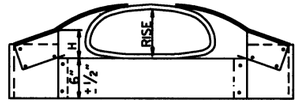
END VIEW
CONCRETE ARCH PIPE



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



CIRCULAR PIPE



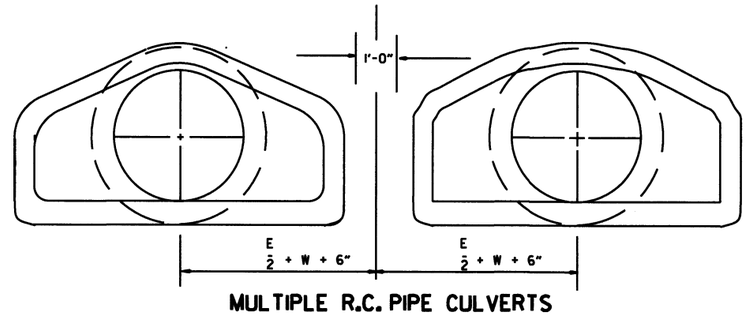
C.M. ARCH PIPE

CIRCULAR PIPE

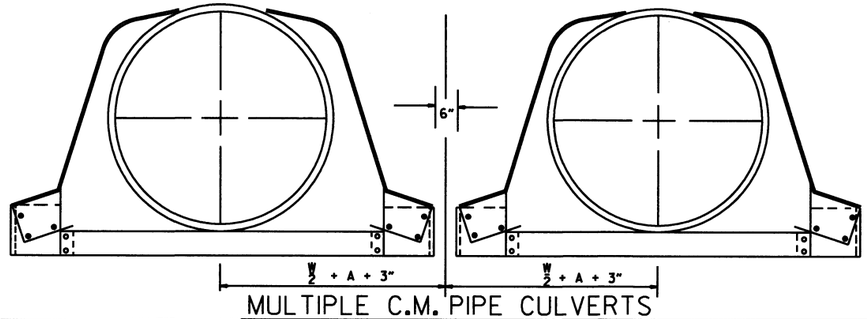
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½sl
15	16	7	8	6	26	30	2½sl
18	16	8	10	6	31	36	2½sl
21	16	9	12	6	36	42	2½sl
24	16	10	13	6	41	48	2½sl
30	14	12	16	8	51	60	2½sl
36	14	14	19	9	60	72	2½sl
42	12	16	22	11	69	84	2½sl
48	12	18	27	12	78	90	2½sl
54	12	18	30	12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

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	2½sl	16
18"	21	15	7	10	6	23	36	2½sl	16
21"	24	18	8	12	6	28	42	2½sl	16
24"	28	20	9	14	6	32	48	2½sl	16
30"	35	24	10	16	6	39	60	2½sl	14
36"	42	29	12	18	8	46	75	2½sl	14
42"	49	33	13	21	9	53	85	2½sl	12
48"	57	38	18	26	12	63	90	2½sl	12
54"	64	43	18	30	12	70	102	2¼sl	12
60"	71	47	18	33	12	77	114	2¼sl	12



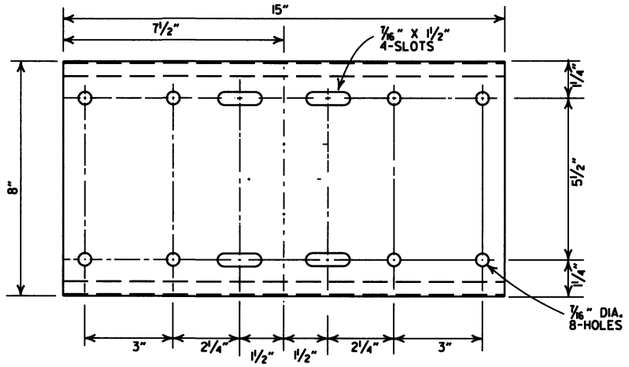
MULTIPLE R.C. PIPE CULVERTS



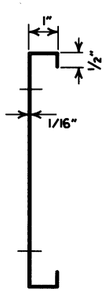
MULTIPLE C.M. PIPE CULVERTS

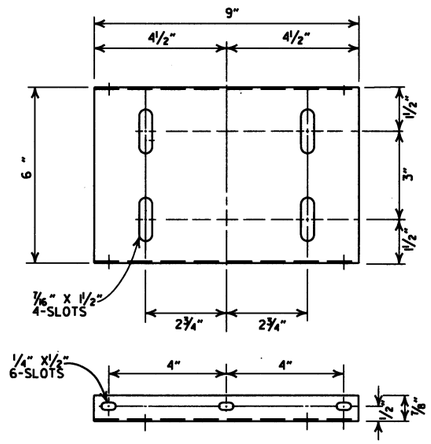
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

DATE	REVISION	ENGR.	
10-18-96	REVISED ASTM REF. TO AASHTO		ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	FLARED END SECTION
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	STANDARD DRAWING FES-2
10-2-72	REVISED AND REDRAWN	760-10-2-72	

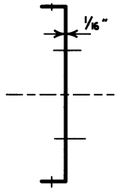


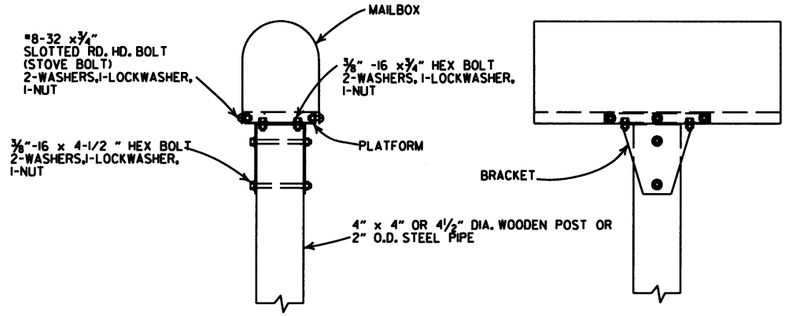
SHELF



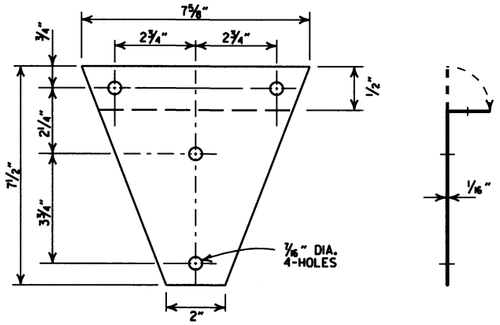


PLATFORM





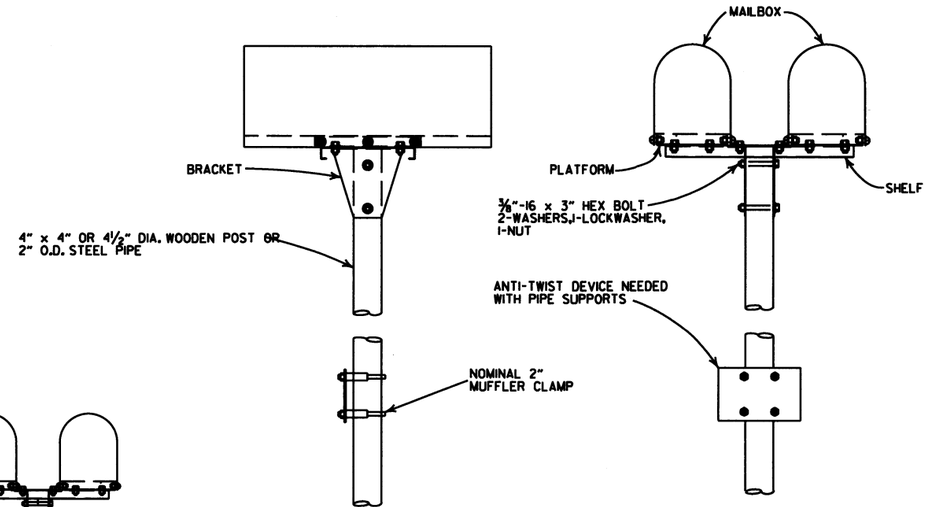
SINGLE INSTALLATION



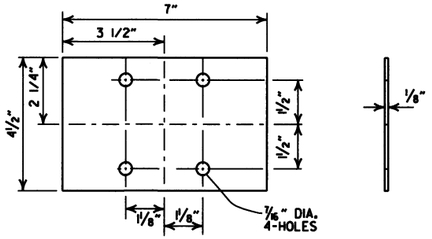
BRACKET

GENERAL NOTES

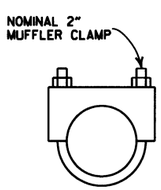
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED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



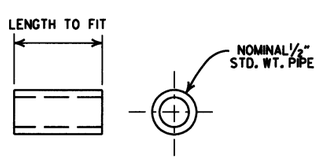
DOUBLE INSTALLATION



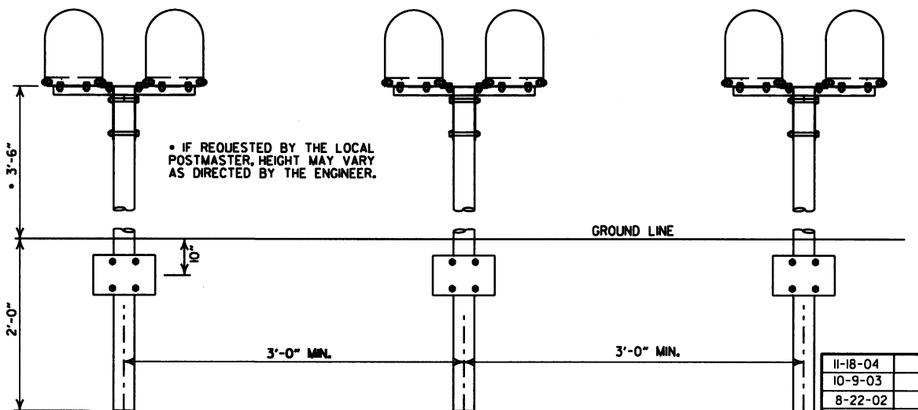
ANTI-TWIST PLATE



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.

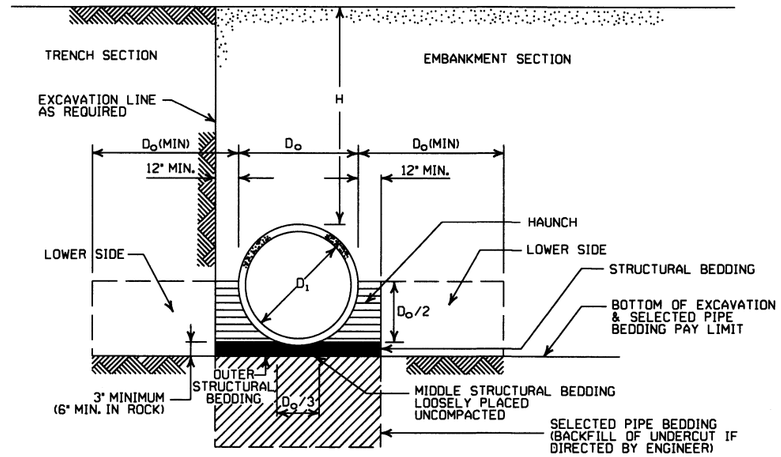
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

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

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

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

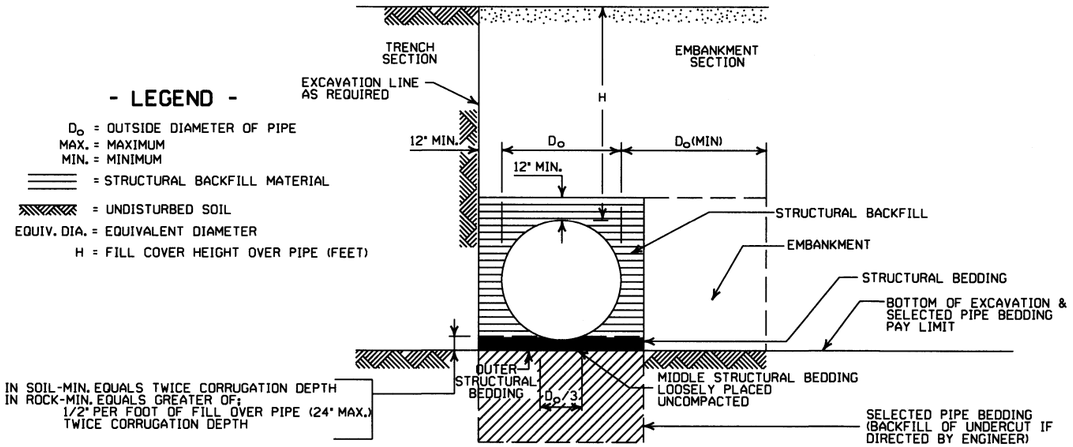
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

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



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."

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2		12	15
42	46x36	6	0.079	3	2		13	15
48	53x41	7	0.079	3	2		13	15
54	60x46	8	0.079	3	2		13	15
60	66x51	9	0.079	3	2		13	15
66	73x55	12	0.079	3	2		15	15
72	81x59	14	0.079	3	2		15	15
78	87x63	14	0.079	3	2		15	15
84	95x67	16	0.109	3	2		15	15
90	103x71	16	0.109	3	2		15	15
96	112x75	18	0.109	3	2		15	15
102	117x79	18	0.109	3	2		15	15
108	128x83	18	0.138	3	2		15	15

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

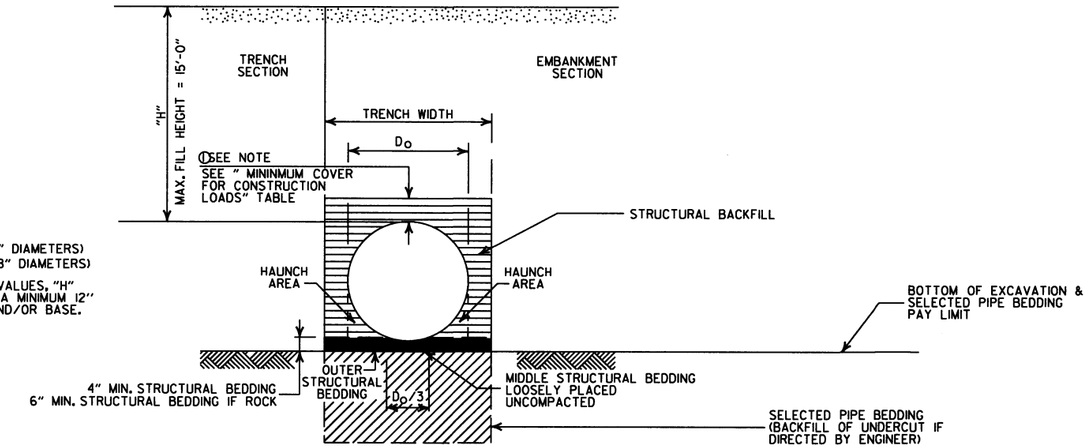
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

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 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

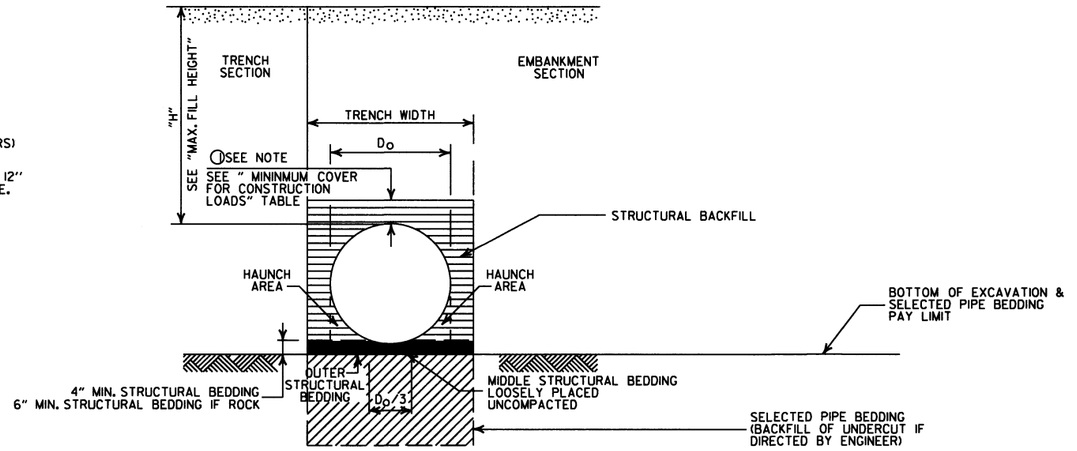
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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)

• SM3 WILL NOT BE ALLOWED.

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

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

MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

MULTIPLE INSTALLATION OF PVC 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"
60"	5'-0"

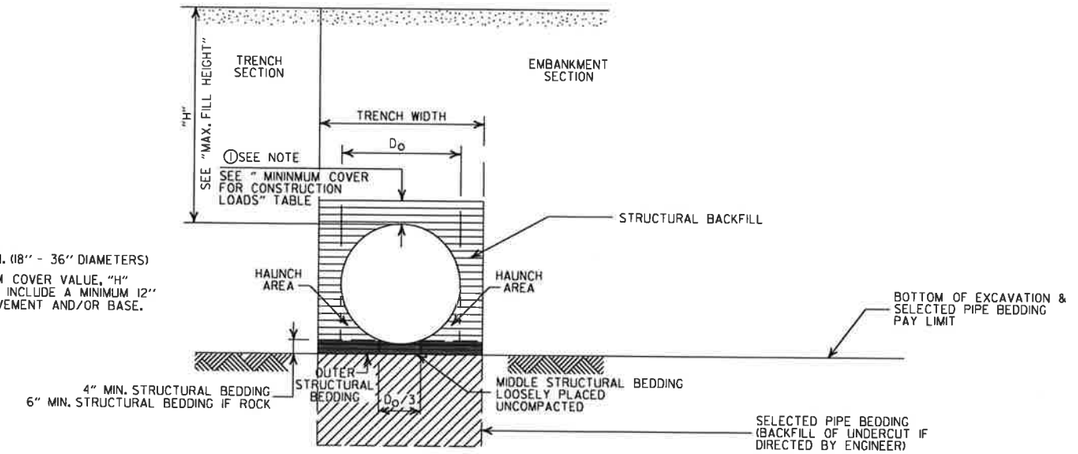
MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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"
60"	10'-0"	15'-0"

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "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.

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 CONFORM 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

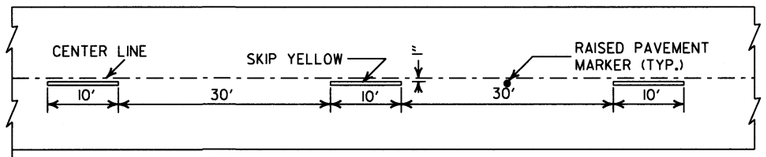
DATE	REVISION	DATE FILMED
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

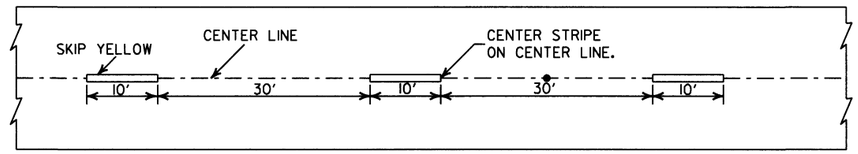
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

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.

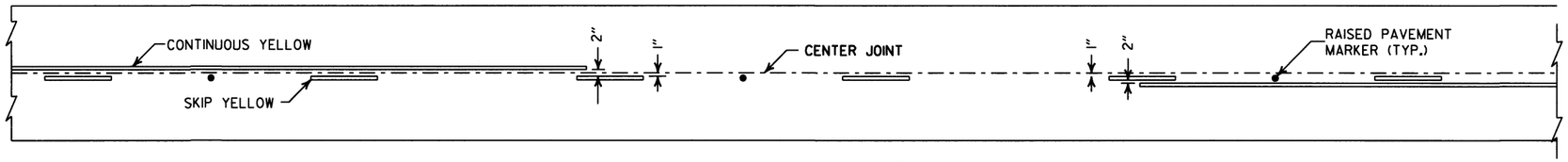


CONCRETE PAVEMENT

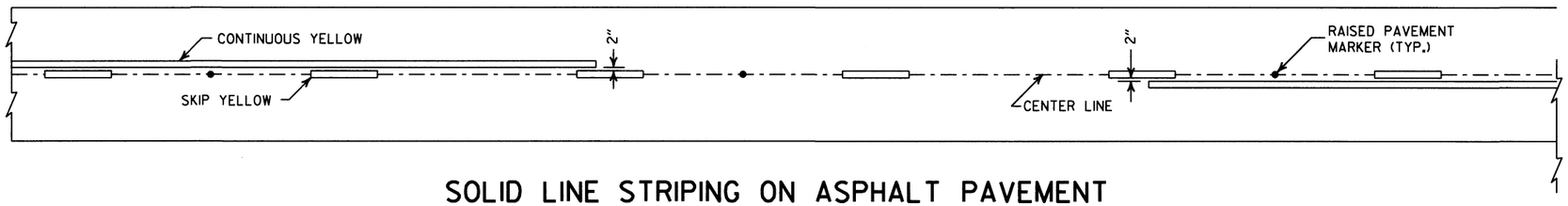


ASPHALT PAVEMENT

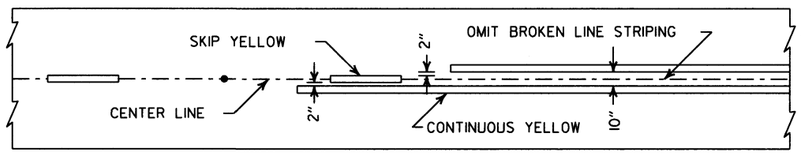
BROKEN LINE STRIPING



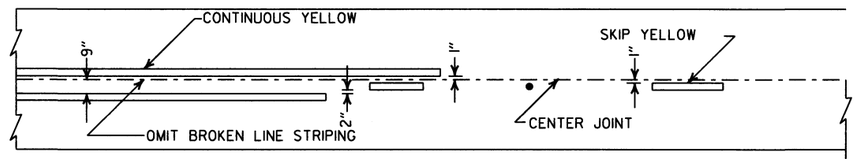
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

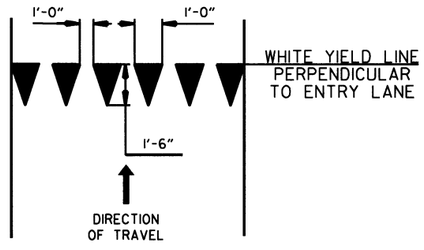


ASPHALT PAVEMENT

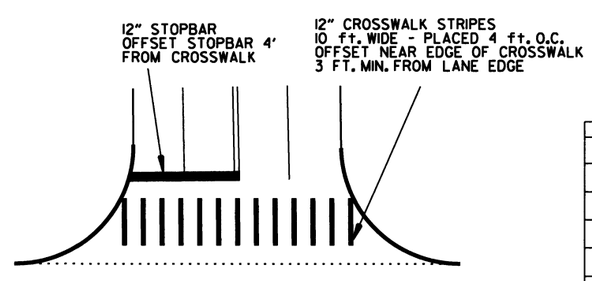


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

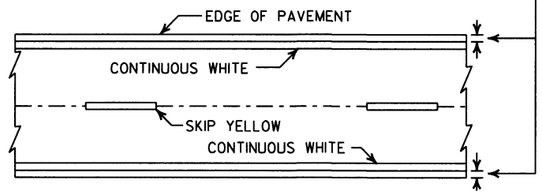


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

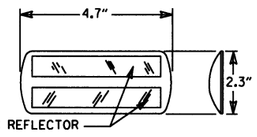
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



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

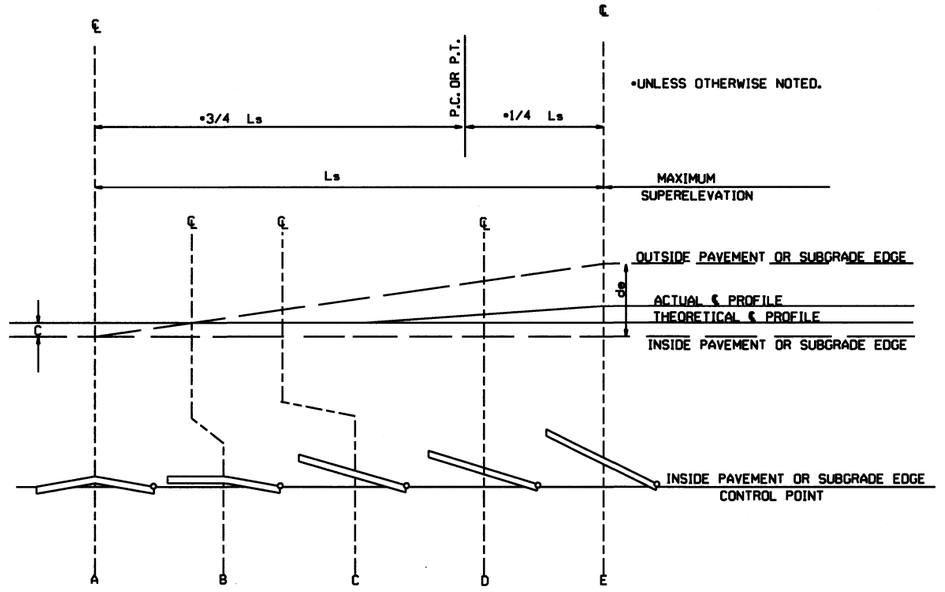
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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			0.032		
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.037	275	300
1° 30'	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.046		
1° 45'	N.C.			0.025	175		0.036			0.043		300	0.049		300	0.054		
2° 00'	R.C.			0.028			0.040			0.048			0.055			0.062		
2° 15'	R.C.			0.031			0.045		250	0.053			0.061			0.070		
2° 30'	0.021			0.034			0.049			0.058			0.067			0.078	300	350
2° 45'	0.023			0.037			0.053			0.063			0.072			0.085	315	
3° 00'	0.025			0.040		200	0.057			0.067	230		0.077	260		0.091	335	
3° 15'	0.027	150		0.043			0.061			0.072	245		0.082	275		0.096	350	
3° 30'	0.029			0.046			0.065	205		0.076	255		0.086	285		0.098	360	400
3° 45'	0.031		200	0.049			0.069	215		0.080	265		0.090	295	350	0.100	360	
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305				
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'	0.045			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.

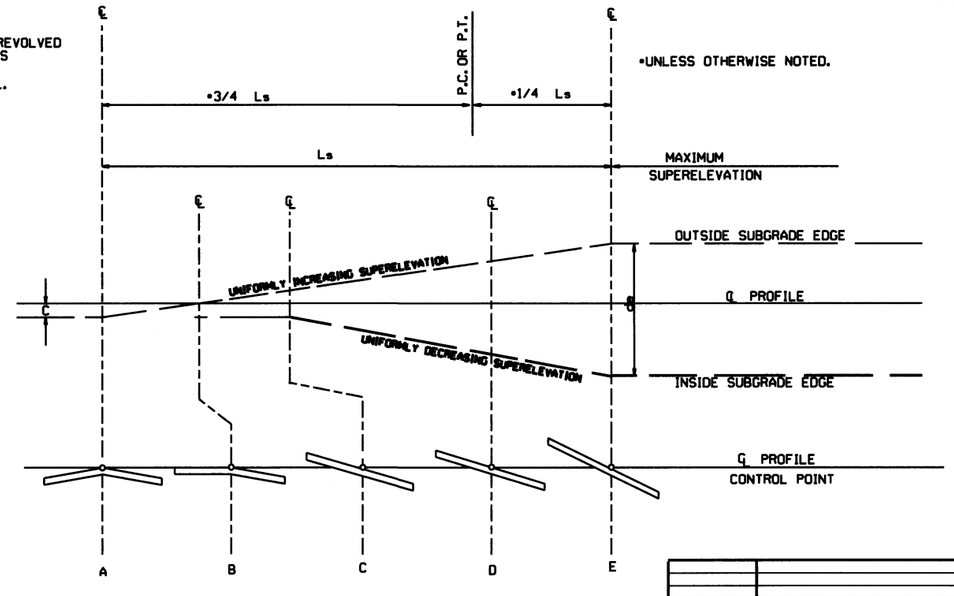
GENERAL NOTES

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 = $\frac{L_c d e}{L s}$

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

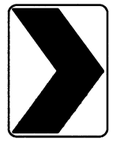
ARKANSAS STATE HIGHWAY COMMISSION

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.)

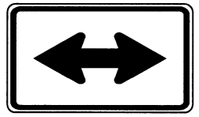
W2-1
30"X30"

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"

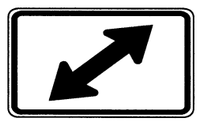
W1-5
30"X30"
(LT. or RT.)

W2-2
30"X30"

W5-2
36"X36"

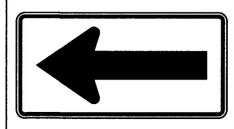
W8-3
36"X36"

R1-3P
18"X6"

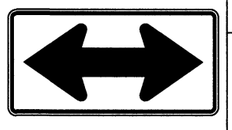


M6-5
21"X15"

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



W1-6
48"X24"

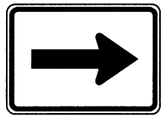


W1-7
48"X24"

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

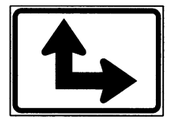
W5-3
36"X36"

W13-1P
18"X18"



M6-1
21"X15"

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

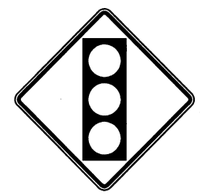


M6-6
21"X15"

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

W2-4
30"X30"

W10-1
36" DIAMETER

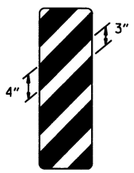


W3-3
36"X36"

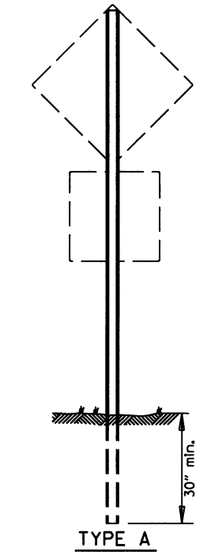
M6-2
21"X15"

S4-3P
24"X8"

S4-2P
24"X10"



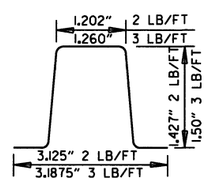
OM-3
12"X36"
(LT. or RT.)



TYPE A

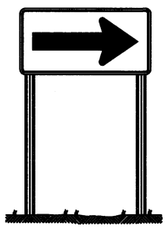
MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

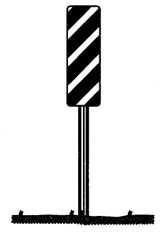


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

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

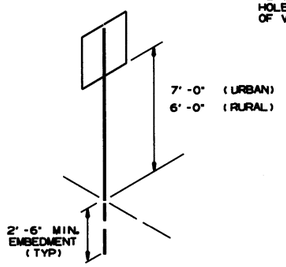
DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & 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

SUPPORT ASSEMBLIES

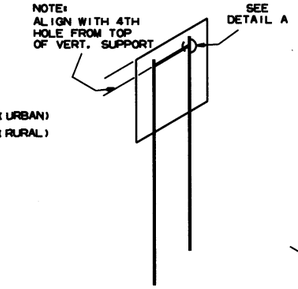
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

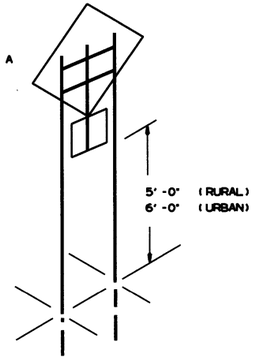
STANDARD DRAWING SHS-1



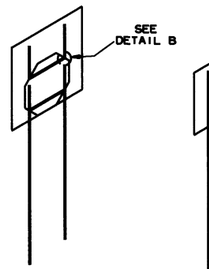
U-1



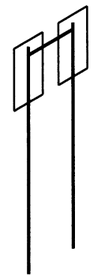
U-2



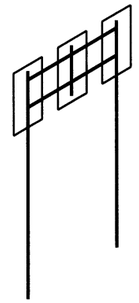
U-2 (A)



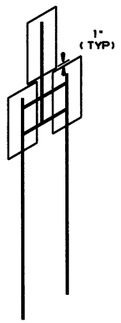
U-2 (B)



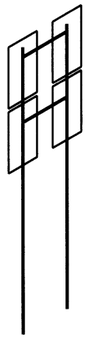
U-2 (1)



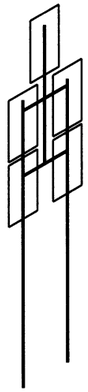
U-2 (2)



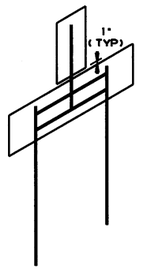
U-2 (3)



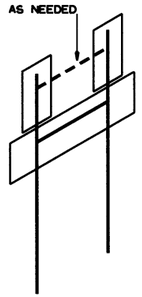
U-2 (4)



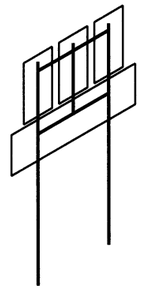
U-2 (5)



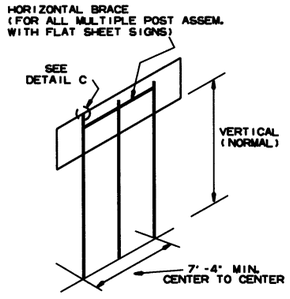
U-2 (6)



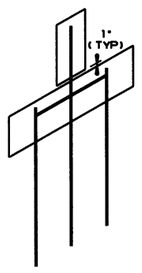
U-2 (7)



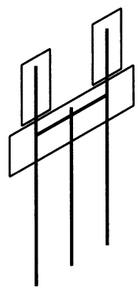
U-2 (8)



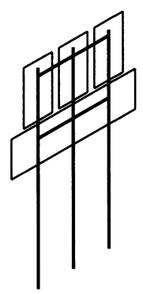
U-3



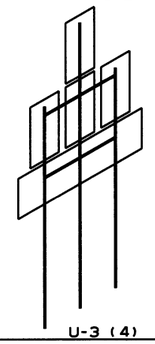
U-3 (1)



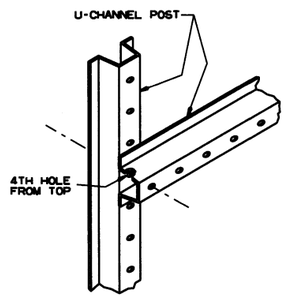
U-3 (2)



U-3 (3)

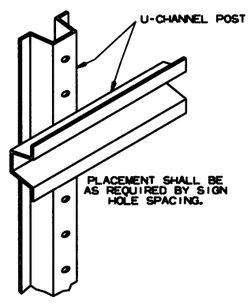


U-3 (4)



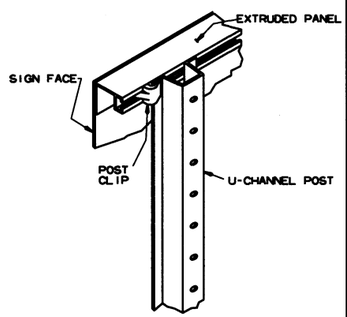
DETAIL A

SHOWING HORIZONTAL BRACE



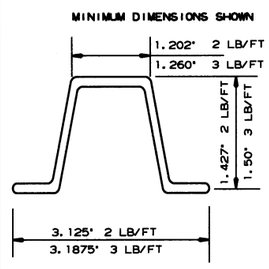
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



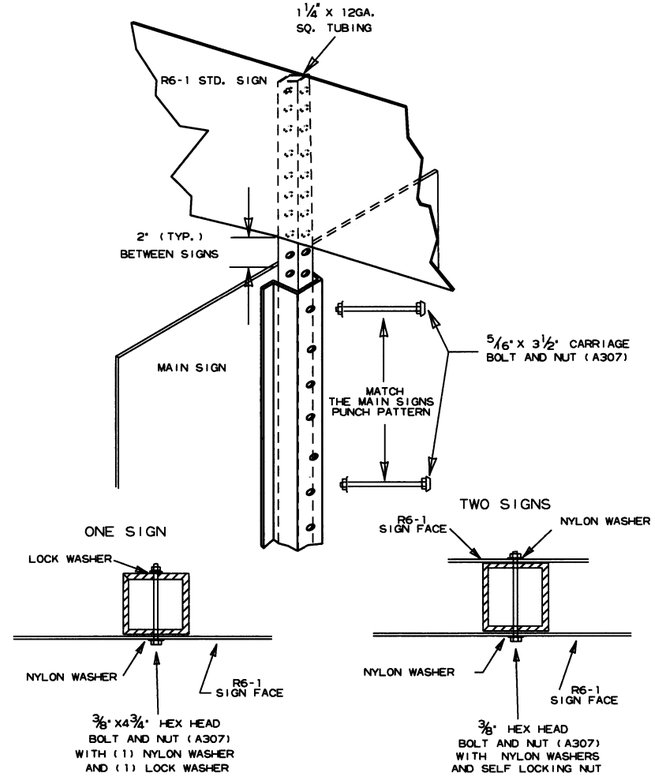
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



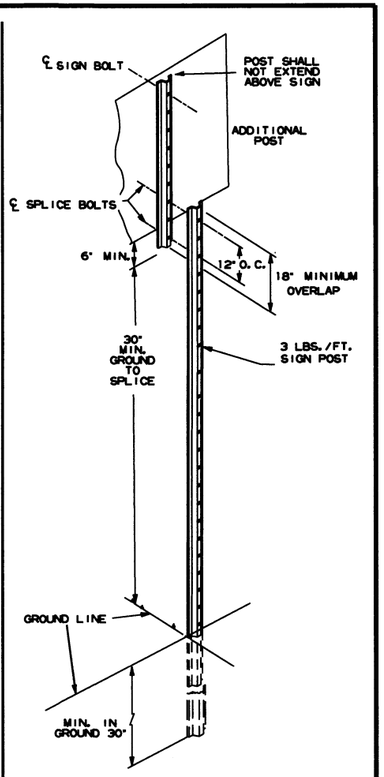
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

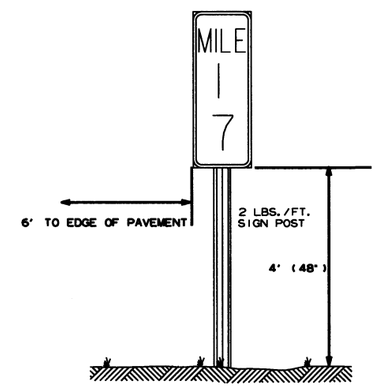
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

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

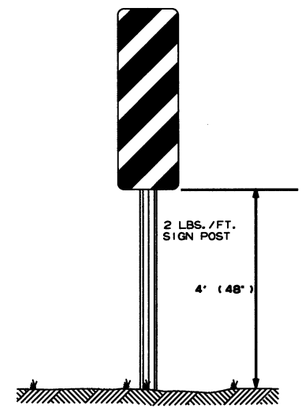
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

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
7-25-19	REVISED CARRIAGE BOLT WITH MATERIAL REQUIREMENT	
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"

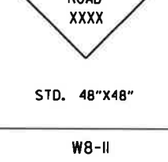
R4-1

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

R4-2

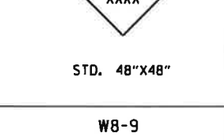
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



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

RII-2

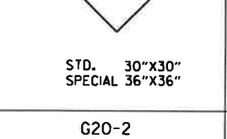


48"X30"

RII-3A

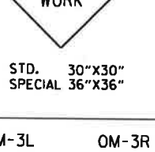
60"X30"

RII-4



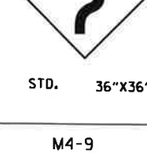
60"X30"

W21-5a



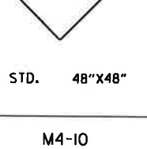
STD. 36"X36"
FWY. 48"X48"

WI-1



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

WI-2

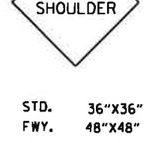


STD. 36"X36"
FWY. 48"X48"

WI-3

STD. 48"X48"

WI-4

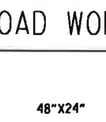


STD. 48"X48"

WI-6

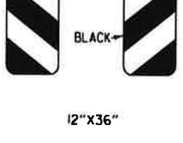
STD. 48"X24"
SPECIAL 60"X30"

WI-8



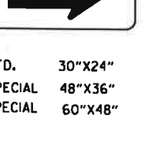
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

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.

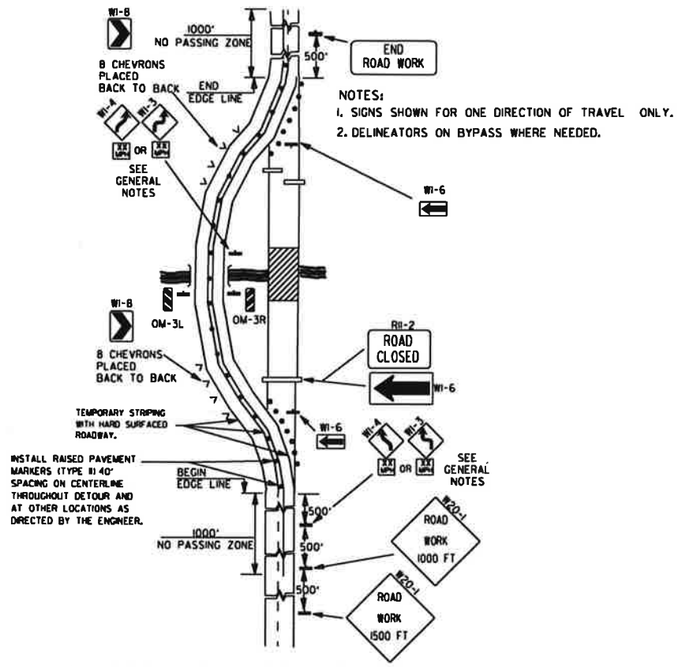
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
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	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

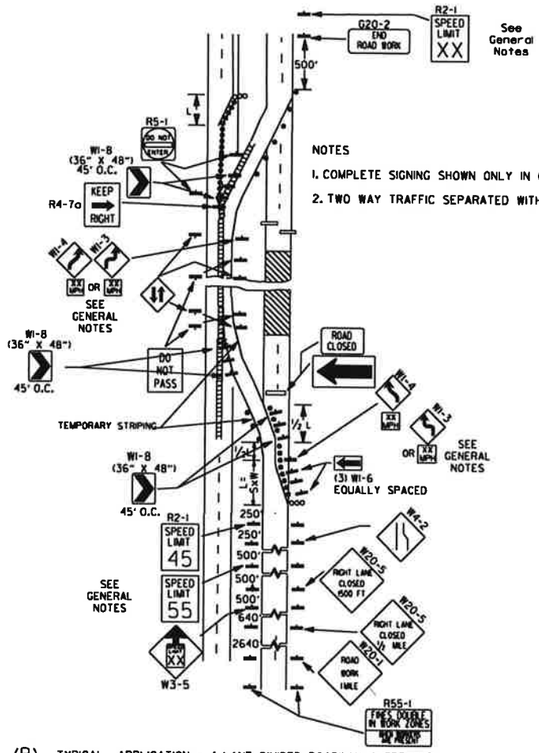
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



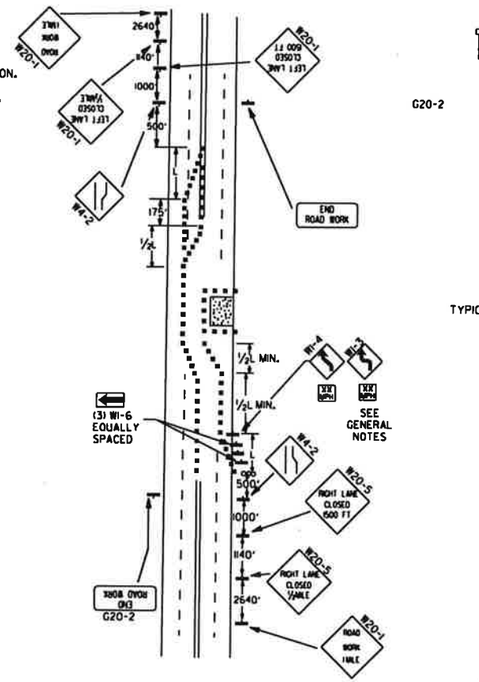
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

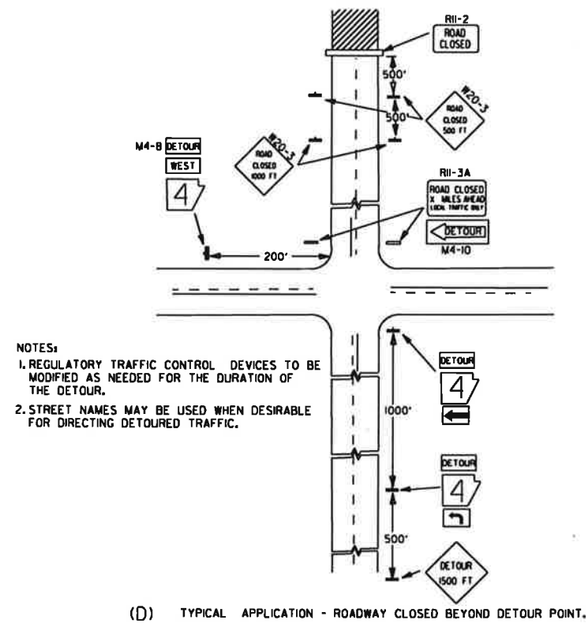


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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

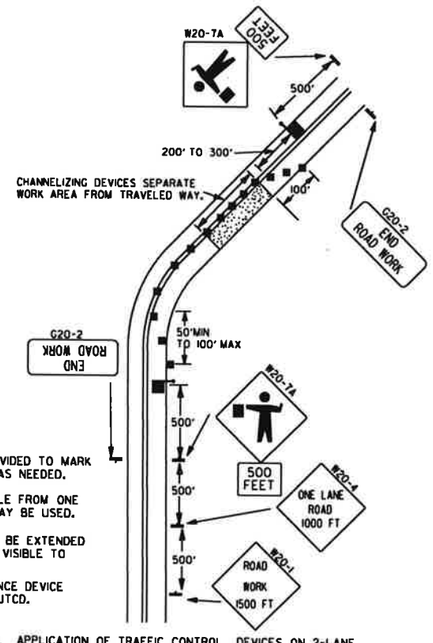


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



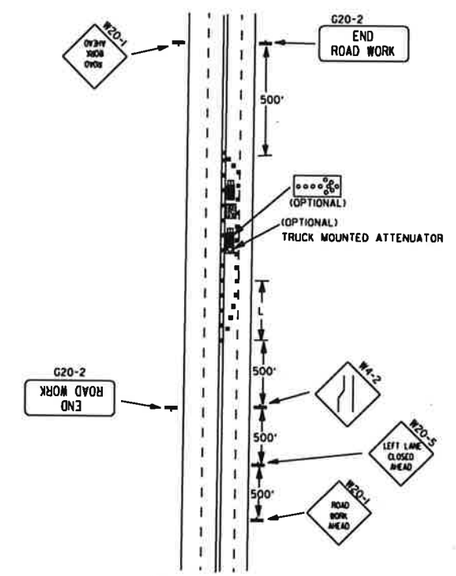
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

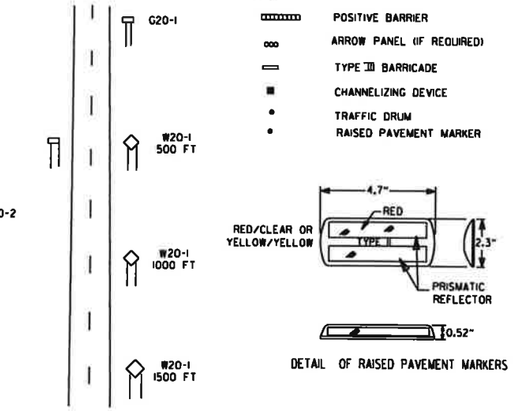


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE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

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



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



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:

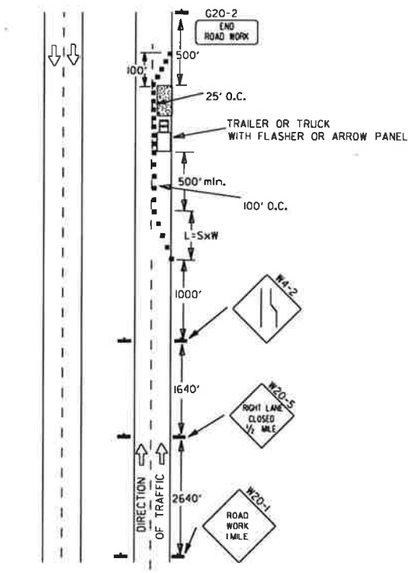
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT 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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

DATE	REVISION	FILMED
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

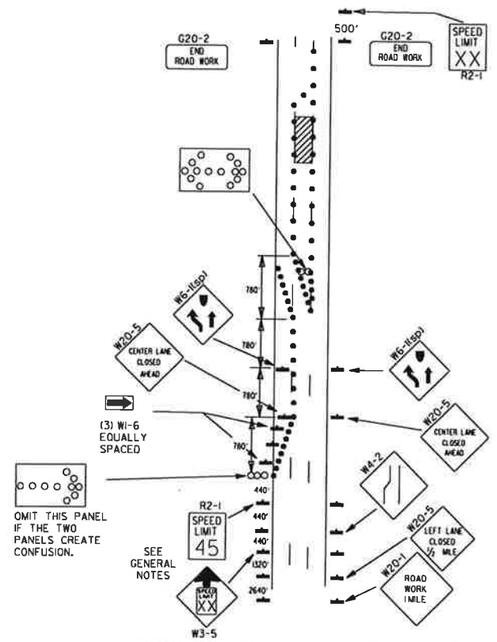
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



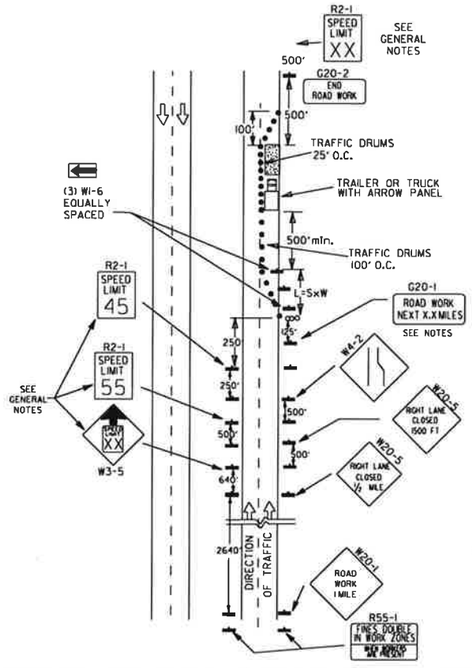
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

- ARROW PANEL (IF REQUIRED)
- CHANNELIZING DEVICE
- TRAFFIC DRUM

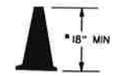
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



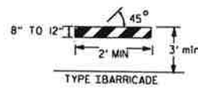
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

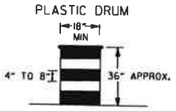
CHANNELIZING DEVICES

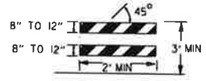


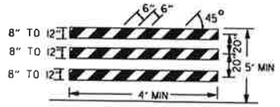
CONES

* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

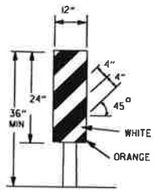




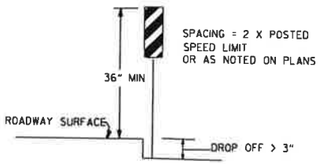


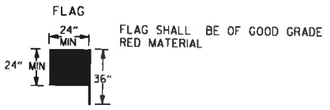


NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT

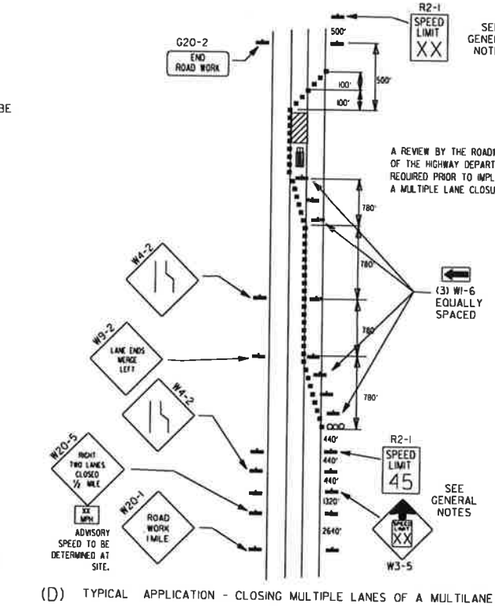




FLAG SHALL BE OF GOOD GRADE RED MATERIAL

STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES			
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 12"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 12" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	PRECAST CONCRETE BARRIER[3] & EDGE LINES
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[3] & EDGE LINES	PRECAST CONCRETE BARRIER[3] & EDGE LINES

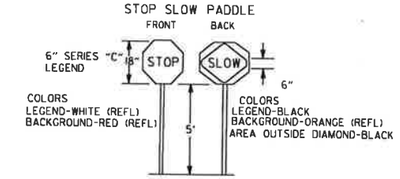
INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

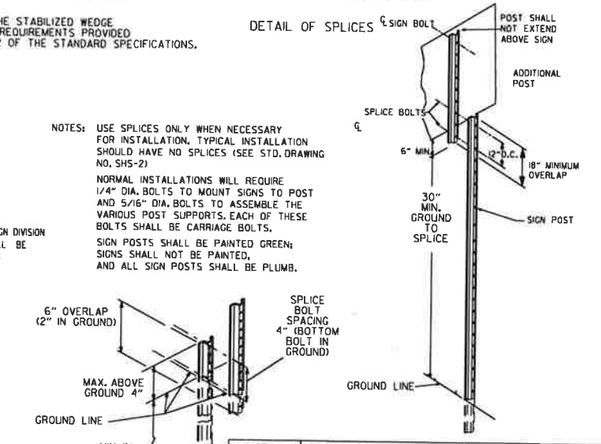
GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
4. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE



DETAIL OF SPLICES



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

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

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

DATE	REVISION	FILMED
8-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
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	

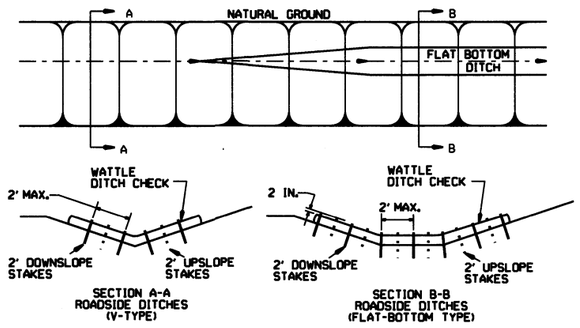
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

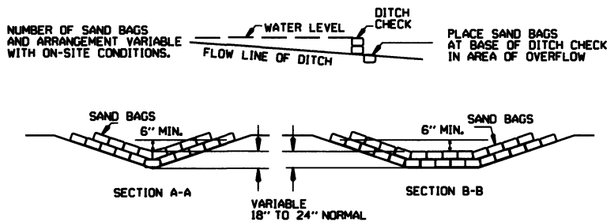
STANDARD DRAWING TC-3

GENERAL NOTES

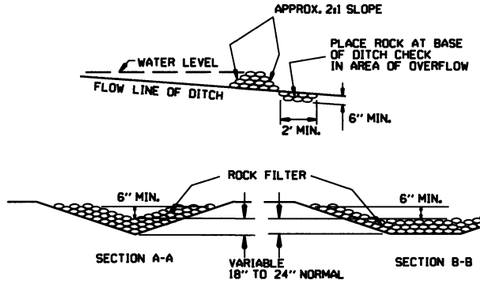
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

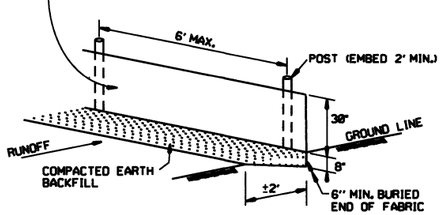


ROCK DITCH CHECK (E-6)

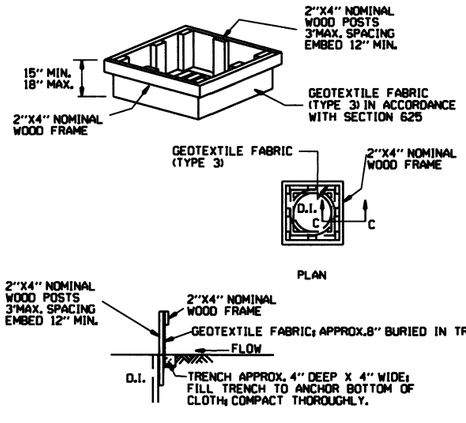
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

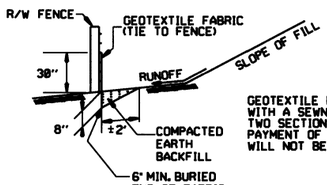
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

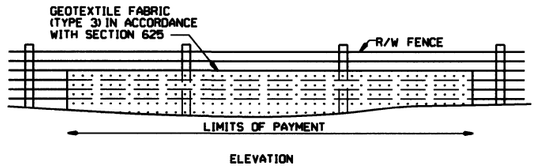


DROP INLET SILT FENCE (E-7)



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

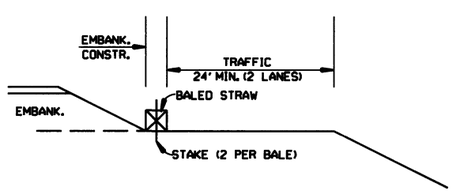
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

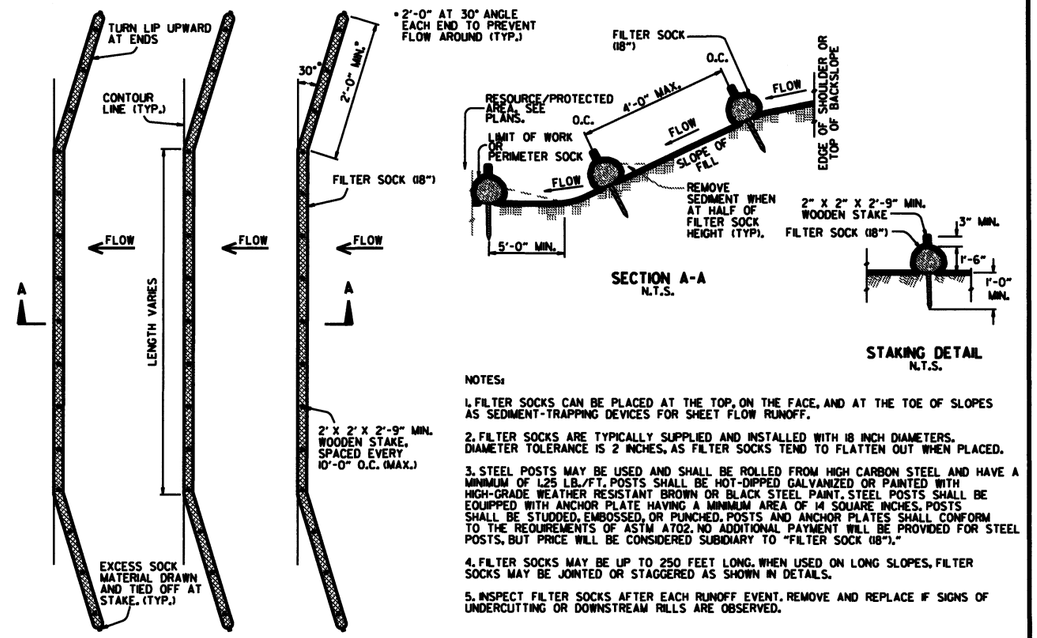
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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)



FILTER SOCK ALONG SLOPE (E-3)

NOTES:

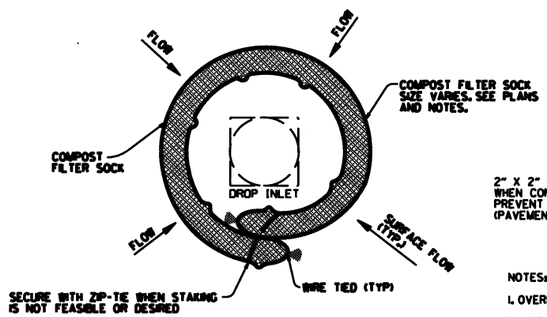
1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

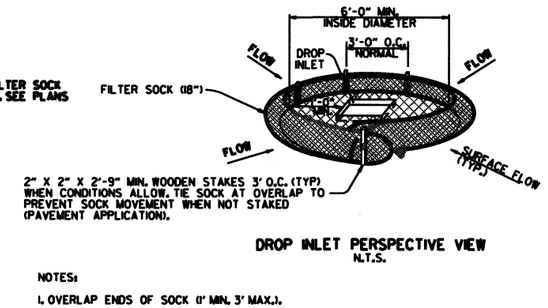
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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.





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.

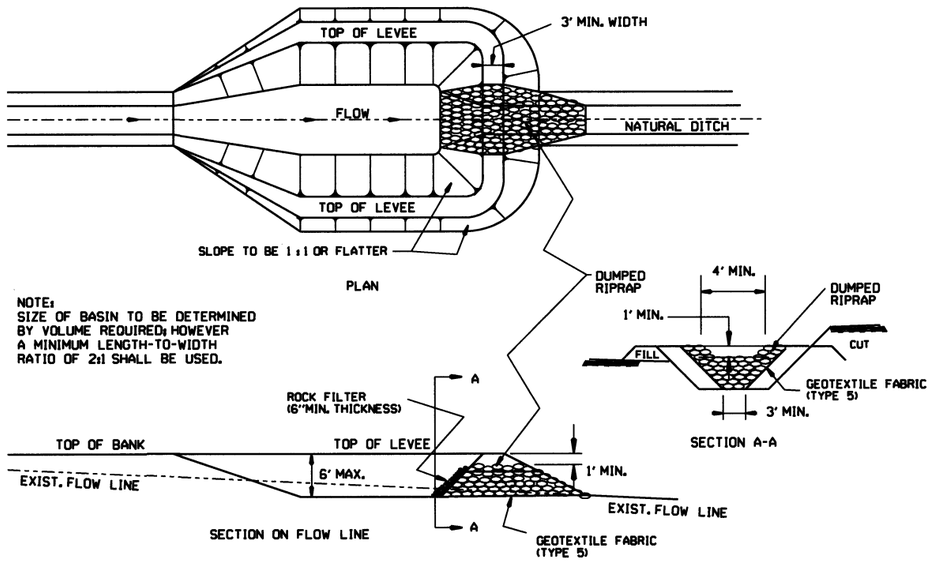
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

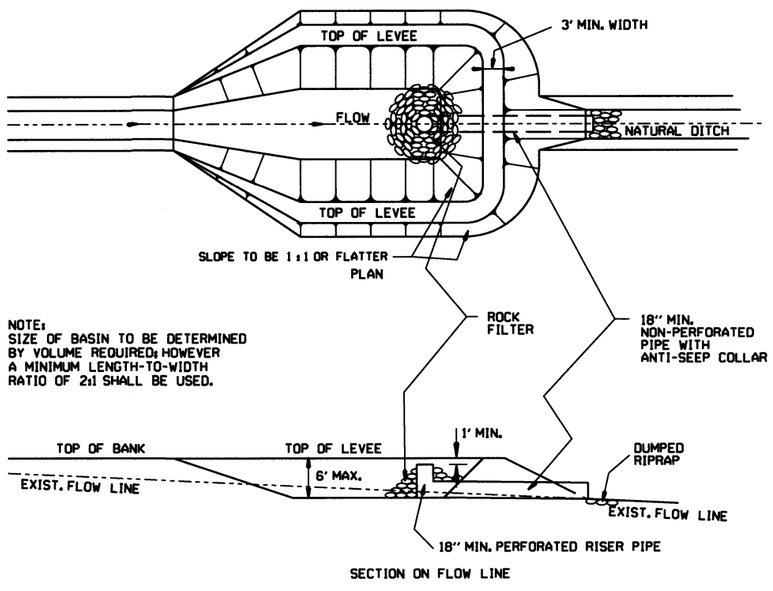
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

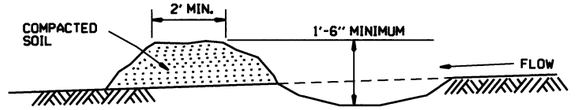
STANDARD DRAWING TEC-1



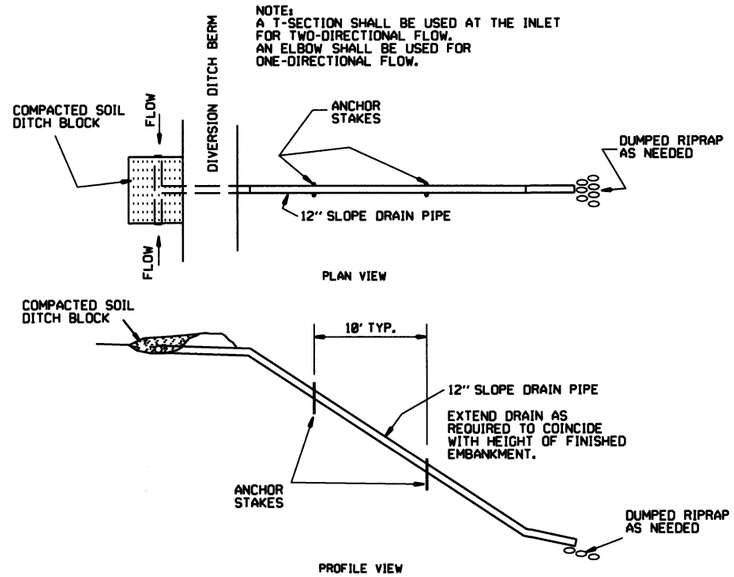
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



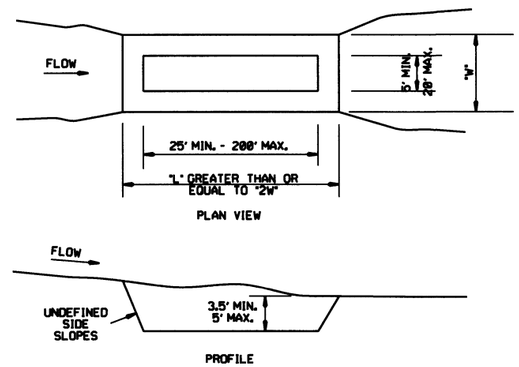
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

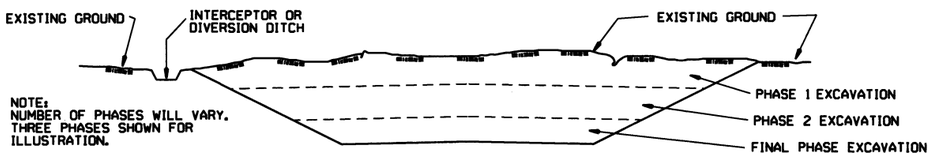
STANDARD DRAWING TEC-2

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



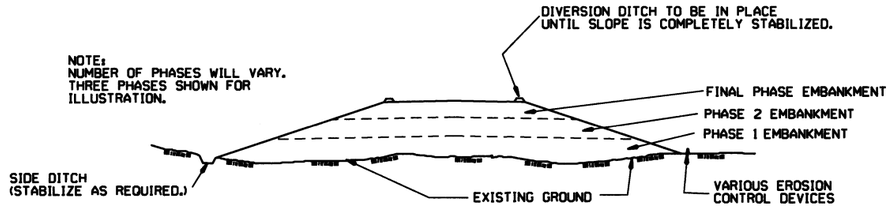
GENERAL NOTE

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

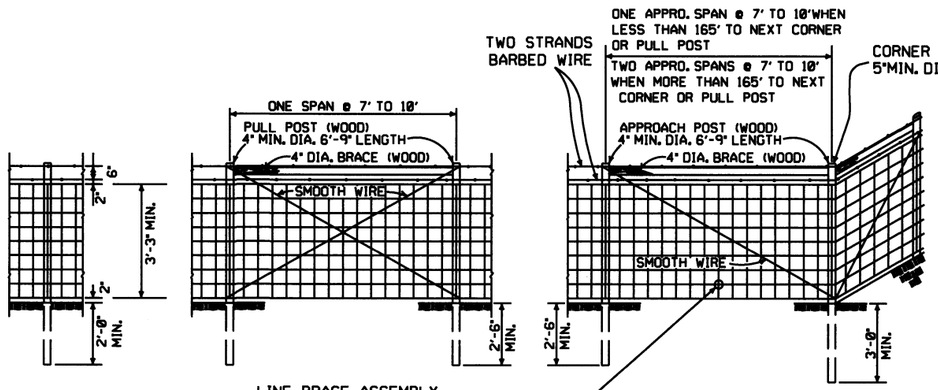
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

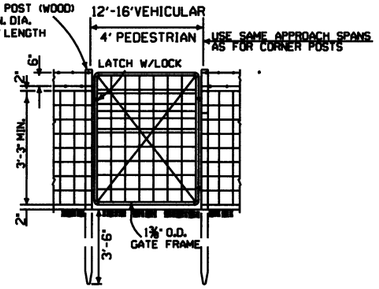
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

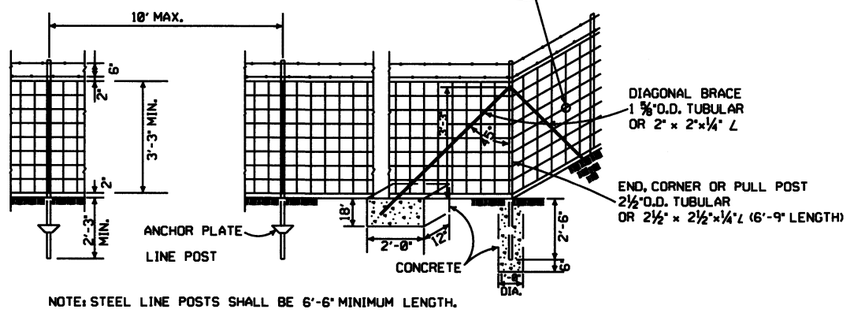


LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

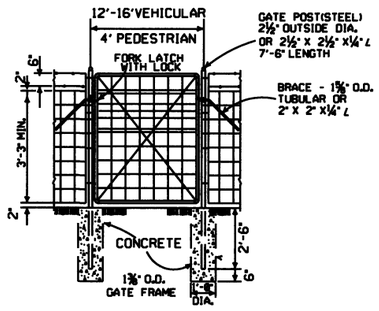
LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

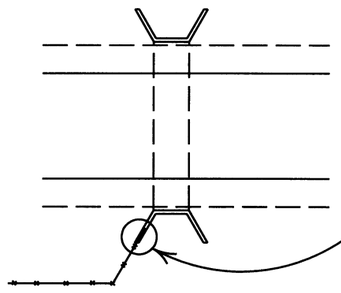


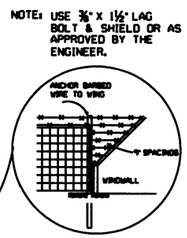
TYPE C FENCE (WOOD POSTS)



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







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

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.

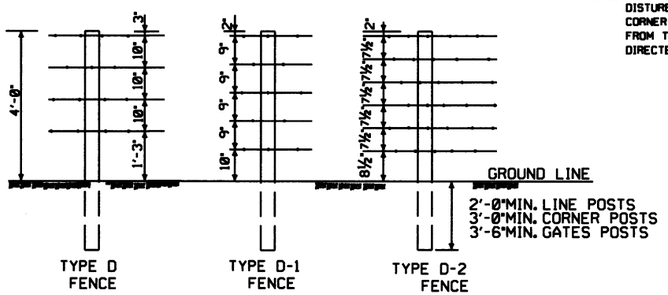
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

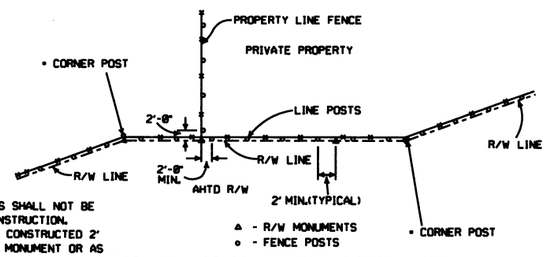
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

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

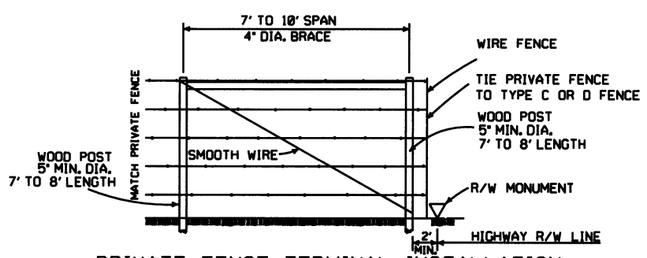


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

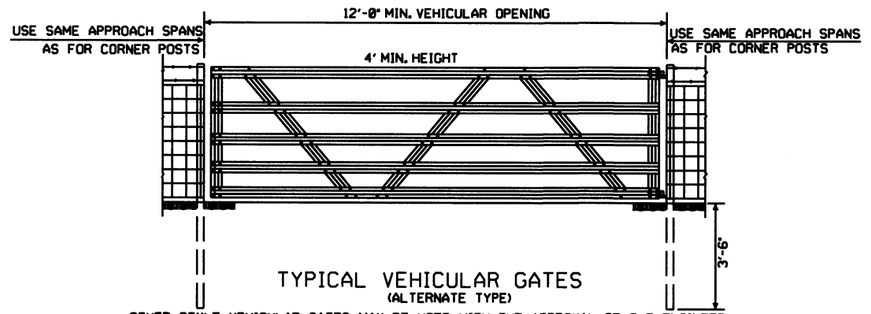


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

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

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4