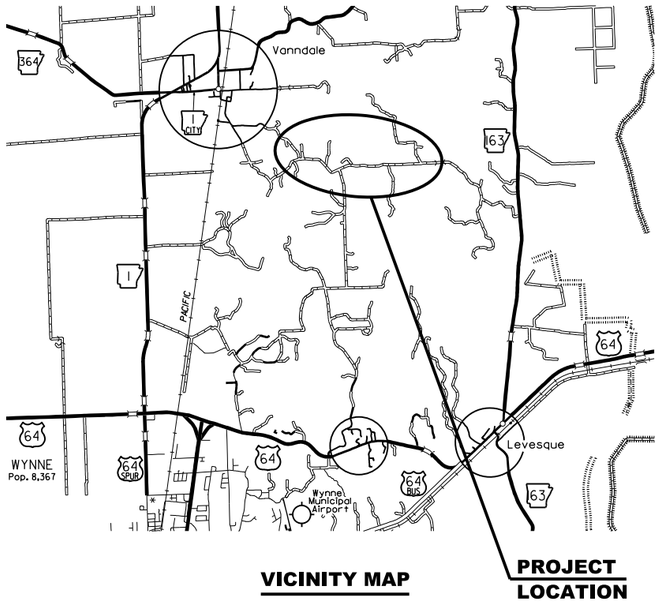
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	STPR-0019(35)		
				JOB NO.		FA1913	1	46
				4	HWY. 163-WEST (PHASE 2) (RECONSTRUCTION) (S)			



VICINITY MAP

PROJECT LOCATION

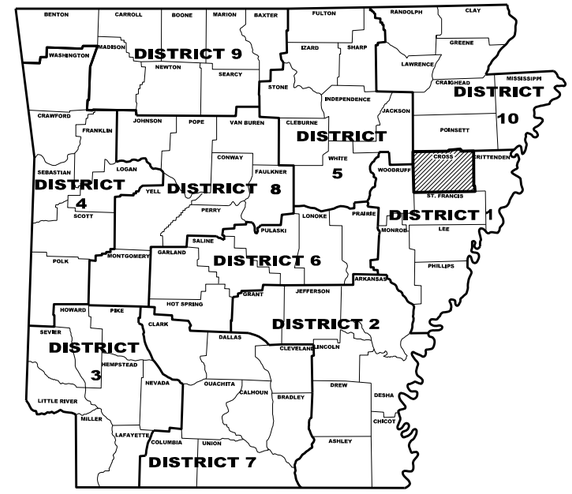
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

HWY. 163 - WEST (PHASE 2) (RECONSTRUCTION) (S)

COUNTY ROAD 53 & 140
CROSS COUNTY
FED. AID PROJECT STPR-0019(35)

JOB FA1913

NOT TO SCALE



STA. 108+21.00

BEGIN JOB FA1913
FED. AID PROJECT STPR-0019(39)
START PARTICIPATING SECTION

STA. 120+40.00

END PARTICIPATING SECTION

STA. 120+40.00

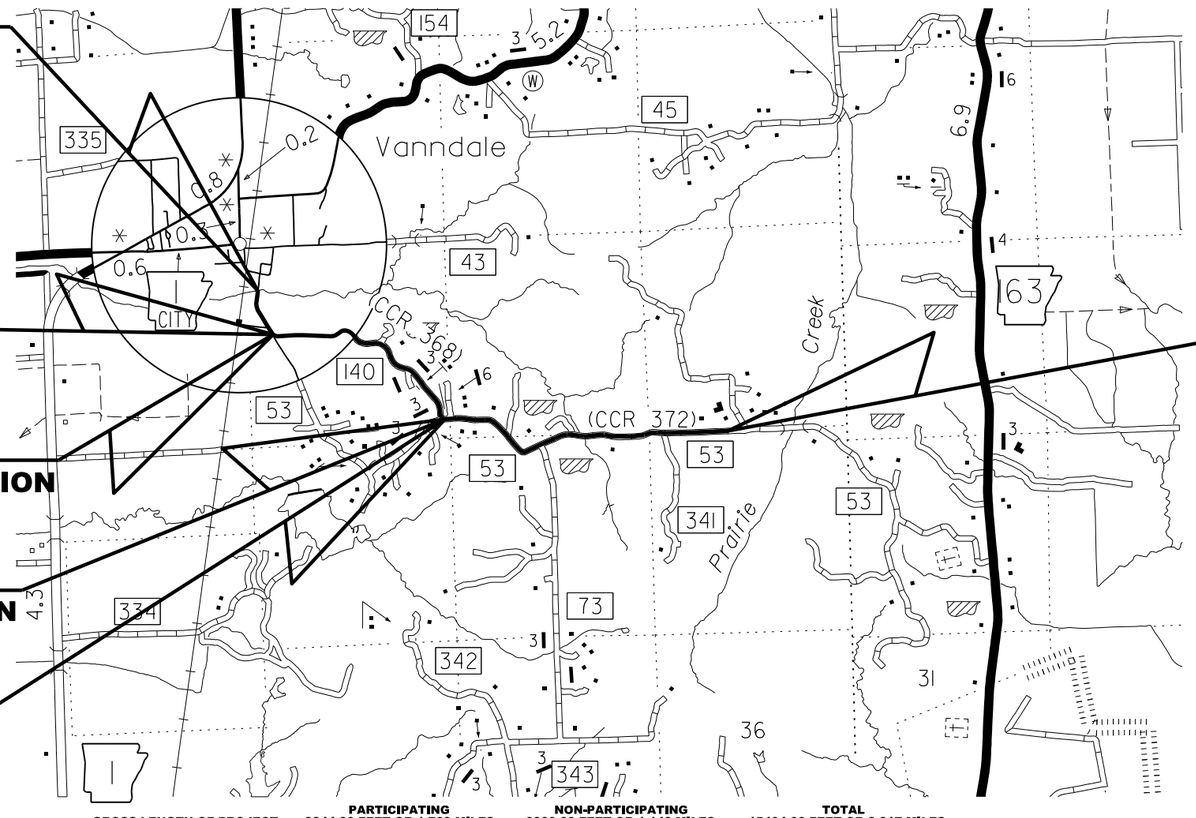
START NON-PARTICIPATING SECTION

STA. 181+00.00

END NON-PARTICIPATING SECTION

STA. 181+00.00

START PARTICIPATING SECTION



STA. 262+25.00

END JOB FA1913
END PARTICIPATING SECTION
FED. AID PROJECT STPR-0019(35)

ARKANSAS HIGHWAY DIST. 1

DESIGN TRAFFIC DATA

DESIGN YEAR	2043
2023 ADT	100
2043 ADT	130
2043 DHV	20
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	30 MPH

	BEGIN	MID-POINT	END
LATITUDE	N 35°18'01"	N 35°17'54"	N 35°17'54"
LONGITUDE	W 90°45'19"	W 90°44'34"	W 90°43'47"

	PARTICIPATING	NON-PARTICIPATING	TOTAL
GROSS LENGTH OF PROJECT	9344.00 FEET OR 1.769 MILES	6060.00 FEET OR 1.148 MILES	15404.00 FEET OR 2.917 MILES
NET " " ROADWAY	9344.00 " " 1.769 "	6060.00 " " 1.148 "	15404.00 " " 2.917 "
NET " " BRIDGE	0000.00 " " 0.000 "	0000.00 " " 0.000 "	0000.00 " " 0.000 "
NET " " PROJECT	9344.00 " " 1.769 "	6060.00 " " 1.148 "	15404.00 " " 2.917 "

P.E. JOB FA1911

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10045
KELVIN REX VINES

DEPUTY DIRECTOR
AND CHIEF ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FA1913	2	46

4 INDEX OF SHEETS AND STANDARD DRAWINGS

INDEX OF SHEETS

ROADWAY STANDARD DRAWINGS

DRAWING NO.	TITLE	DATE
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PM-1	PAVEMENT MARKING DETAILS	02-27-20
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	07-25-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
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

Dec 9 2022 1:52 PM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-30-22				6	ARK.			
				JOB NO.		FA1913	3	46

4 GOVERNING SPECIFICATIONS AND GERNERAL 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
105-4	MAINTENANCE DURING CONSTRUCTION
107-2	RESTRAINING CONDITIONS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
400-1	TACK COATS
400-2	ASPHALT SURFACE TREATMENT
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
400-7	TRACKLESS TACK
404-3	DESIGN OF ASPHALT MIXTURES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
723-1	GENERAL REQUIREMENTS FOR SIGNS
729-1	CHANNEL POST SIGN SUPPORT
802-4	CEMENT
JOB FA1913	BIDDING REQUIREMENTS AND CONDITIONS
JOB FA1913	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB FA1913	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB FA1913	BUY AMERICA - CONSTRUCTION MATERIALS
JOB FA1913	CARGO PREFERENCE ACT REQUIREMENTS
JOB FA1913	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB FA1913	DISAVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB FA1913	ESTABLISHING CONTRACT TIME WORKING DAY CONTRACT
JOB FA1913	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB FA1913	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB FA1913	MANDATORY ELECTRONIC CONTRACT
JOB FA1913	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB FA1913	PARTNERING REQUIREMENTS
JOB FA1913	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB FA1913	PRICE ADJUSTMENT FOR FUEL
JOB FA1913	PLASTIC PIPE
JOB FA1913	RECYCLED ASPHALT SHINGLES
JOB FA1913	SHORING FOR CULVERTS
JOB FA1913	SOIL STABILIZATION
JOB FA1913	STORM WATER POLLUTION PREVENTION PLAN
JOB FA1913	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB FA1913	UTILITY ADJUSTMENTS
JOB FA1913	VALUE ENGINEERING
JOB FA1913	WARM MIX ASPHALT

GENERAL NOTES

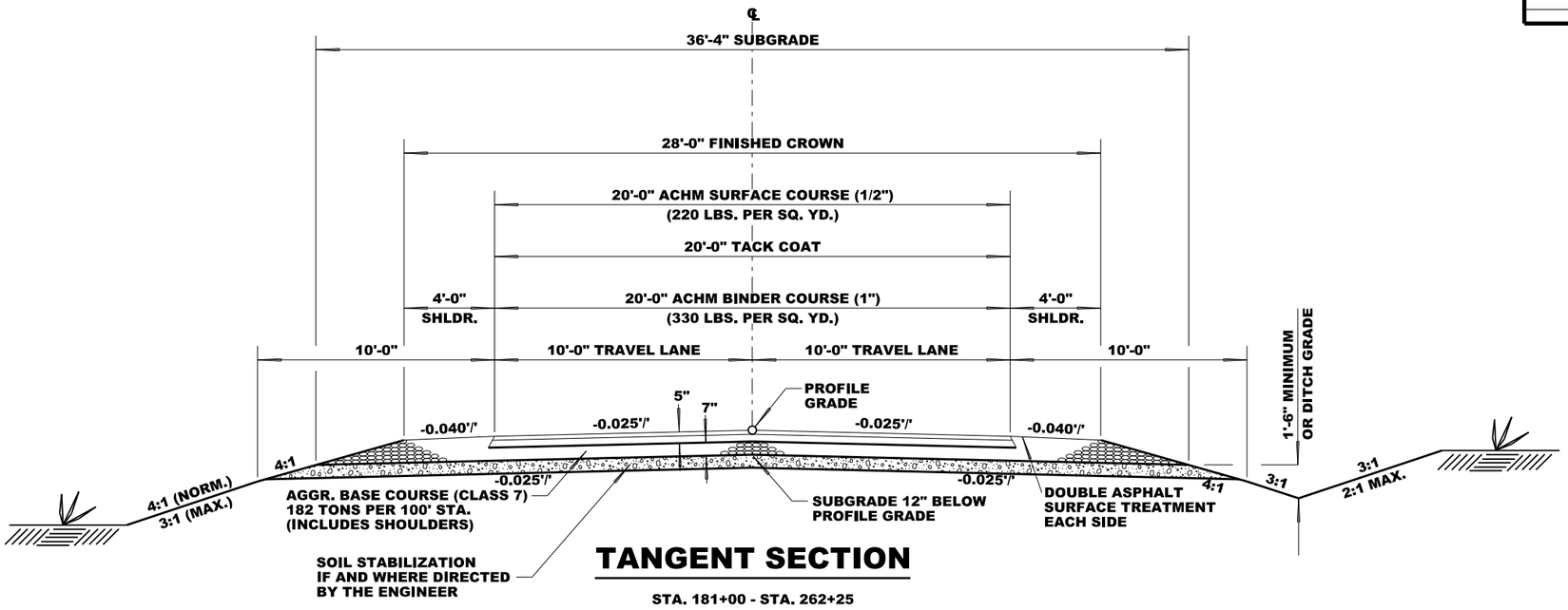
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF THE UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. 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.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR, AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND 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.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. THIS PROJECT IS COVERED UNDER A NATIONWIDE 14 SECTION 404 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
12. SUPERELEVATION SHALL BE COMPUTED IN ACCORDANCE WITH STANDARD DRAWING SE-2 USING 30 M.P.H. DESIGN VALUES AND REVOLVE ABOUT THE INNER EDGE OF TRAVEL LANE UNLESS OTHERWISE SHOWN.
13. ALL SALVAGEABLE PIPE CULVERTS SHALL BE STORED ON THE RIGHT-OF-WAY AND REMAIN THE PROPERTY OF THE COUNTY.
14. ROAD IS TO REMAIN OPEN THROUGHOUT THE COMPLETION OF THE PROJECT.
15. TEMPORARY EASEMENTS ARE PROVIDED FOR CONTRACTOR ACCESS. AREA OUTSIDE THE CONSTRUCTION LIMITS SHALL NOT BE CLEARED OR GRUBBED UNLESS DIRECTED BY THE ENGINEER.

Jan 5 2023 12:44 PM

DocuSign

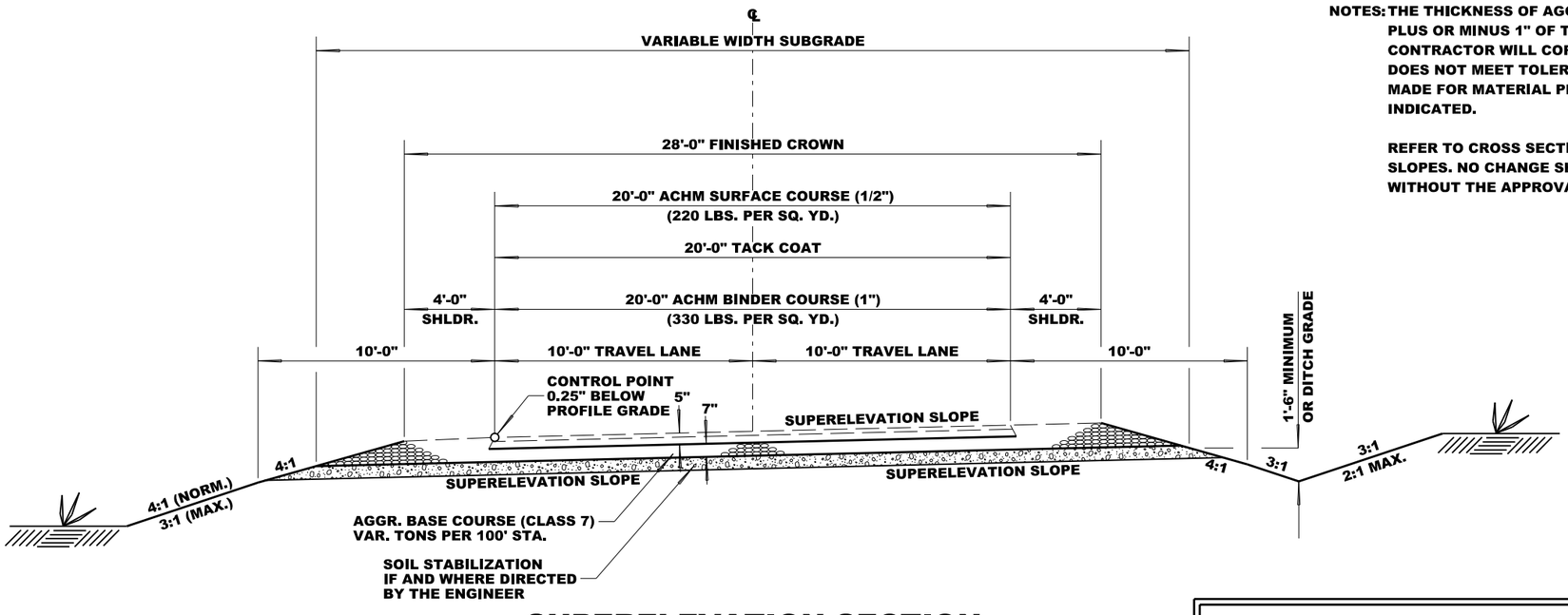
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-30-22				6	ARK.			
				JOB NO.		FA1913	4	46
				4	TYPICAL SECTIONS OF IMPROVEMENT			



TANGENT SECTION

STA. 181+00 - STA. 262+25



SUPERELEVATION SECTION

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

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.

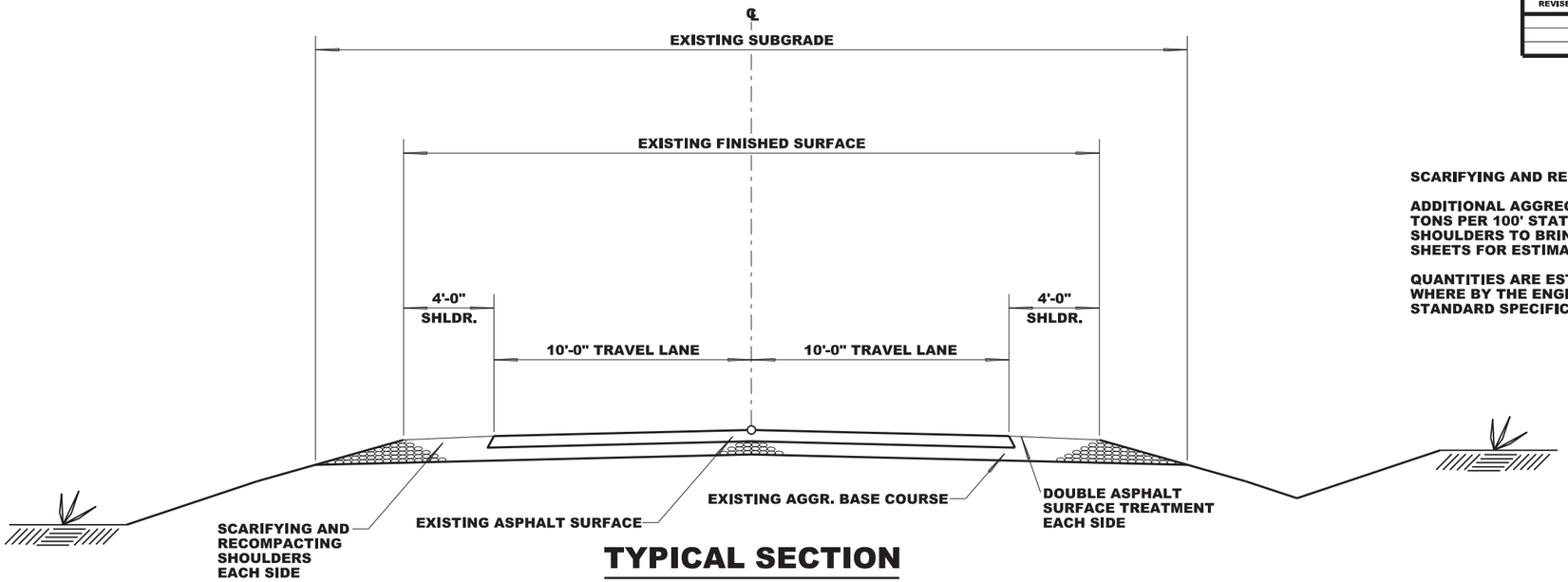
Jan 5 2023 12:44 PM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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.		FA1913	5	46
				4	SPECIAL DETAILS			



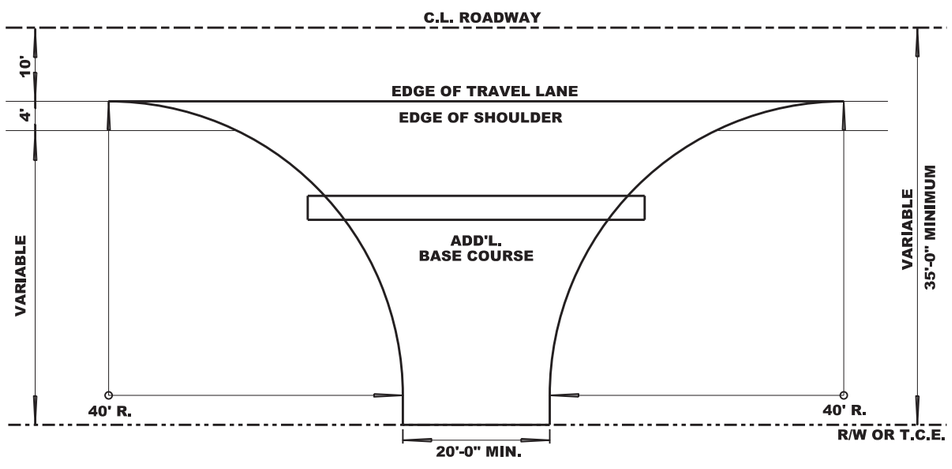
TYPICAL SECTION

STA. 108+21 - STA. 181+00

SCARIFYING AND RECOMPACTING SHOULDERS

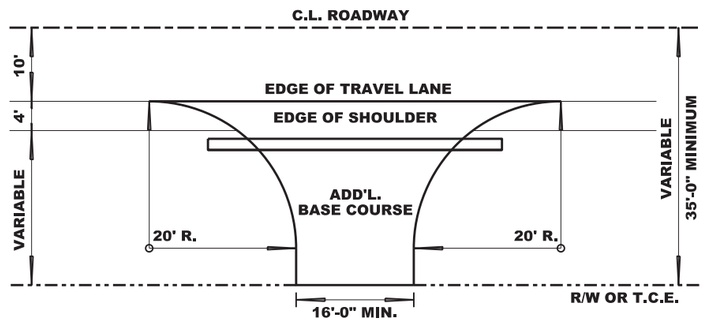
ADDITIONAL AGGREGATE BASE COURSE (CLASS 7) VARIABLE TONS PER 100' STATION FOR SCARIFYING AND RECOMPACTING SHOULDERS TO BRING BASE COURSE TO GRADE. SEE QUANTITY SHEETS FOR ESTIMATED AMOUNT.

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



DETAIL OF COUNTY ROAD TURNOUT

ADD'L. BASE COURSE AND SURFACING SEE QUANTITY BOX



DETAIL OF PRIVATE ENTRANCES

ADD'L. BASE COURSE AND SURFACING SEE QUANTITY BOX

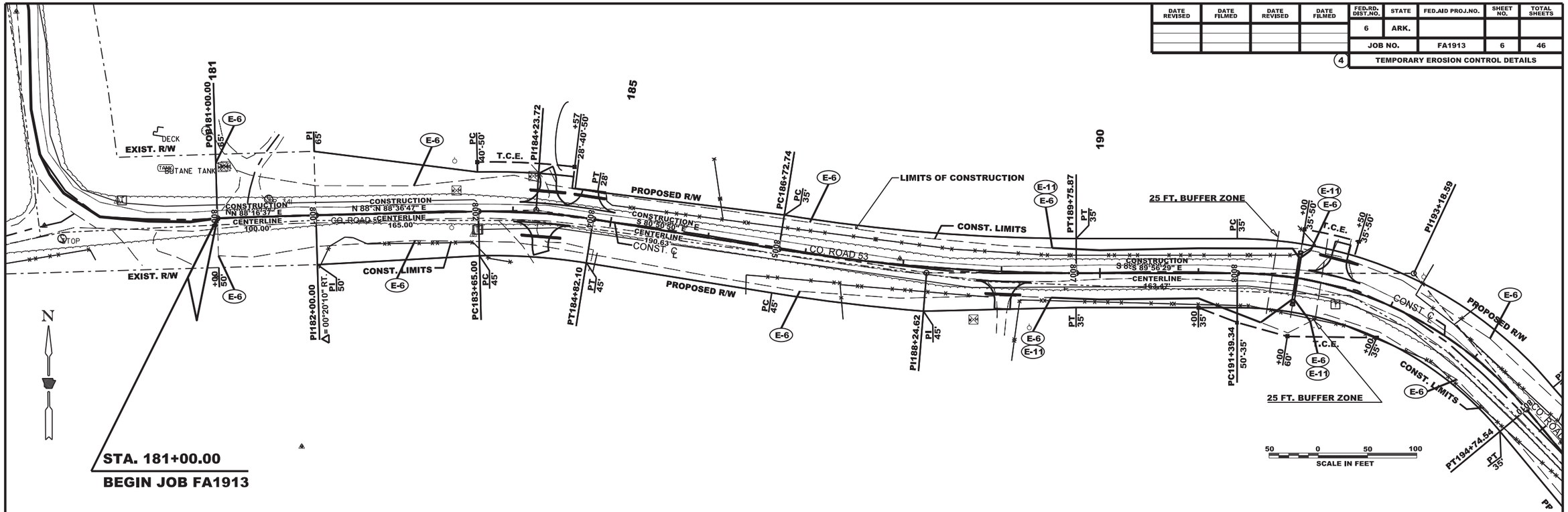
Dec 1 2022 6:57 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	6	46
				4	TEMPORARY EROSION CONTROL DETAILS			



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)				SEDIMENT REMOVAL AND DISPOSAL	
STA. 181+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 183+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 187+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 189+50	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 192+09	LT.	= 3	CU. YD.	1	CU. YD.
STA. 192+23	RT.	= 3	CU. YD.	1	CU. YD.
STA 194+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.

SILT FENCE (E-11)			SEDIMENT REMOVAL AND DISPOSAL	
STA. 189+50 - STA. 192+09	LT. = 269	LIN. FT.	10	CU. YD.
STA. 189+50 - STA. 192+23	RT. = 286	LIN. FT.	11	CU. YD.

REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

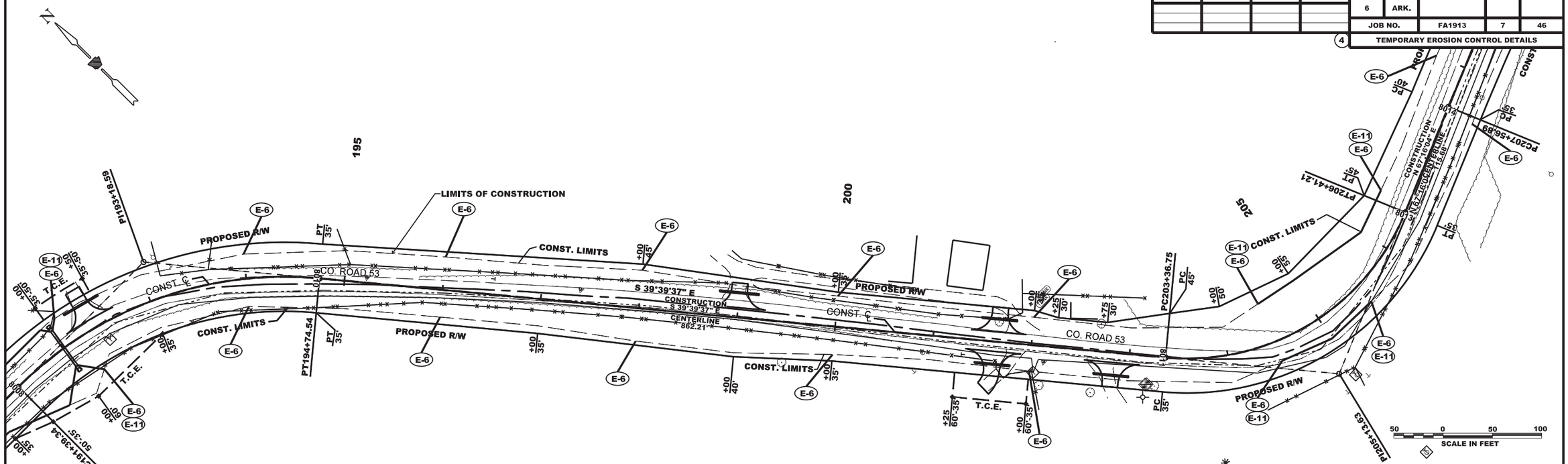
Dec 1 2022 6:57 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	7	46

4 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)				SEDIMENT REMOVAL AND DISPOSAL	
STA. 196+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 198+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 200+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 202+00	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 204+50	LT. & RT.	= 6	CU. YD.	2	CU. YD.
STA. 205+50	RT.	= 3	CU. YD.	1	CU. YD.
STA. 206+50	LT.	= 3	CU. YD.	1	CU. YD.

SILT FENCE (E-11)			SEDIMENT REMOVAL AND DISPOSAL	
STA. 204+50 - STA. 206+50	LT. = 175	LIN. FT.	7	CU. YD.
STA. 204+50 - STA. 205+50	RT. = 110	LIN. FT.	5	CU. YD.

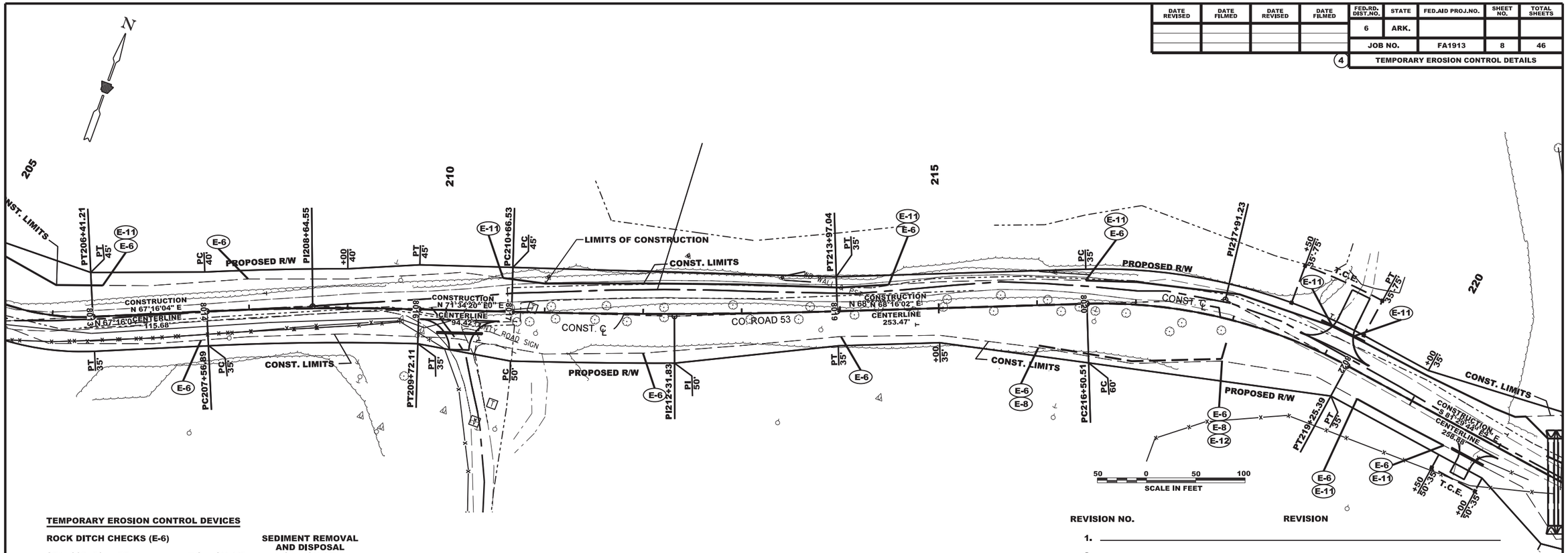
REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Dec 1 2022 6:57 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	8	46
				4	TEMPORARY EROSION CONTROL DETAILS			



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)

				SEDIMENT REMOVAL AND DISPOSAL	
STA. 207+50	RT.	= 3	CU. YD.	1	CU. YD.
STA. 208+00	LT.	= 3	CU. YD.	1	CU. YD.
STA. 212+00	RT.	= 3	CU. YD.	1	CU. YD.
STA. 214+00	RT.	= 3	CU. YD.	1	CU. YD.
STA. 214+50	LT.	= 3	CU. YD.	1	CU. YD.
STA. 216+00	RT.	= 3	CU. YD.	1	CU. YD.
STA. 216+50	LT.	= 3	CU. YD.	1	CU. YD.
STA. 218+00	RT.	= 3	CU. YD.	1	CU. YD.
STA. 219+50	RT.	= 3	CU. YD.	1	CU. YD.

SILT FENCE (E-11)

		SEDIMENT REMOVAL AND DISPOSAL	
STA. 210+50 - STA. 214+50 LT.	= 392 LIN. FT.	15	CU. YD.
STA. 216+50 - STA. 218+95 LT.	= 257 LIN. FT.	10	CU. YD.
STA. 219+50 - STA. 220+50 RT.	= 100 LIN. FT.	4	CU. YD.
STA. 219+17 - STA. 224+00 LT.	= 494 LIN. FT.	19	CU. YD.

DIVERSION DITCH (E-8)

STA. 216+00 - STA. 218+00 RT. = 200 LIN. FT.

PIPE FOR SLOPE DRAINS (E-12)

STA. 218+00 RT. = 20 LIN. FT.

REVISION NO. REVISION

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

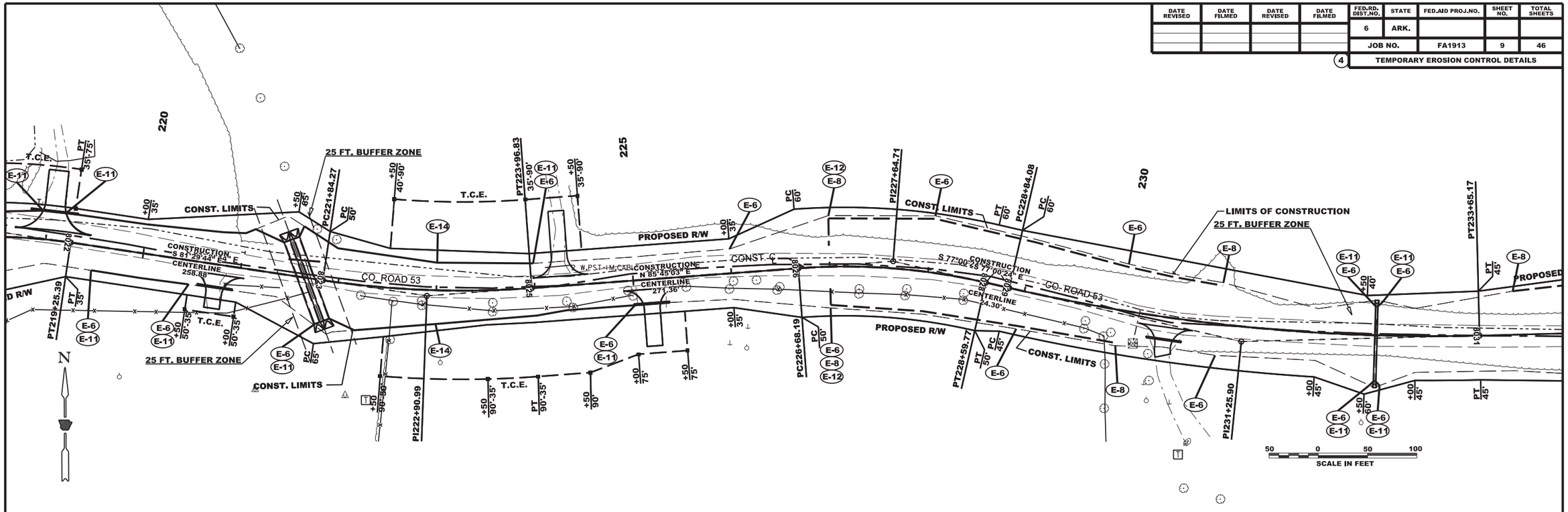
Dec 1 2022 6:58 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	9	46

4 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)

				SEDIMENT REMOVAL AND DISPOSAL
STA. 220+50	RT.	= 3	CU. YD.	1 CU. YD.
STA. 221+82	RT.	= 3	CU. YD.	1 CU. YD.
STA. 224+00	LT.	= 3	CU. YD.	1 CU. YD.
STA. 225+00	RT.	= 3	CU. YD.	1 CU. YD.
STA. 226+00	LT.	= 3	CU. YD.	1 CU. YD.
STA. 227+00	RT.	= 3	CU. YD.	1 CU. YD.
STA. 228+00	LT.	= 3	CU. YD.	1 CU. YD.
STA. 229+00	RT.	= 3	CU. YD.	1 CU. YD.
STA. 230+00	LT.	= 3	CU. YD.	1 CU. YD.
STA. 231+00	RT.	= 3	CU. YD.	1 CU. YD.
STA. 232+54	LT.	= 3	CU. YD.	1 CU. YD.
STA. 232+55	RT.	= 3	CU. YD.	1 CU. YD.
STA. 232+65	RT.	= 3	CU. YD.	1 CU. YD.
STA. 232+66	LT.	= 3	CU. YD.	1 CU. YD.

SILT FENCE (E-11)

			SEDIMENT REMOVAL AND DISPOSAL
STA. 221+82 - STA. 225+00	RT.	= 331 LIN. FT.	13 CU. YD.
STA. 232+54 - STA. 232+66	LT.	= 17 LIN. FT.	1 CU. YD.
STA. 232+55 - STA. 232+65	RT.	= 14 LIN. FT.	1 CU. YD.

SEDIMENT BASIN (E-14)

				SEDIMENT REMOVAL AND DISPOSAL
STA. 223+00	LT.	= 264	CU. YD.	264 CU. YD.
STA. 223+00	RT.	= 264	CU. YD.	264 CU. YD.
OBLIT. OF SED. BASIN		= 528	CU. YD.	

DIVERSION DITCH (E-8)

STA. 227+00 - STA. 231+00	LT.	= 400	LIN. FT.
STA. 227+00 - STA. 230+00	RT.	= 300	LIN. FT.

PIPE FOR SLOPE DRAINS (E-12)

STA. 227+00	LT.	= 32	LIN. FT.
STA. 227+00	RT.	= 21	LIN. FT.

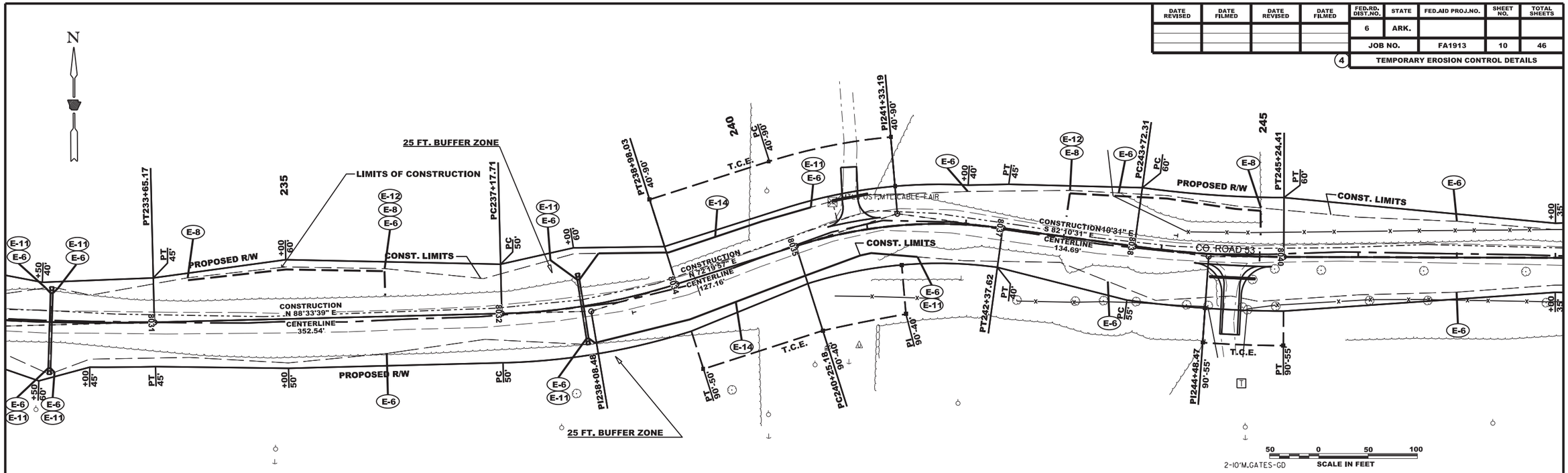
REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Dec 1 2022 6:58 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	10	46
				4	TEMPORARY EROSION CONTROL DETAILS			



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)

				SEDIMENT REMOVAL AND DISPOSAL
STA. 236+00	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 237+73	LT.	= 3	CU. YD.	1 CU. YD.
STA. 237+94	RT.	= 3	CU. YD.	1 CU. YD.
STA. 240+50	LT.	= 3	CU. YD.	1 CU. YD.
STA. 241+50	RT.	= 3	CU. YD.	1 CU. YD.
STA. 242+00	LT.	= 3	CU. YD.	1 CU. YD.
STA. 243+50	LT. & RT.	= 6	CU. YD.	2 CU. YD.

SILT FENCE (E-11)

		SEDIMENT REMOVAL AND DISPOSAL
STA. 237+73 - STA. 240+50 LT.	= 291 LIN. FT.	11 CU. YD.
STA. 237+94 - STA. 241+50 RT.	= 359 LIN. FT.	14 CU. YD.

SEDIMENT BASIN (E-14)

				SEDIMENT REMOVAL AND DISPOSAL
STA. 239+50	LT.	= 131	CU. YD.	131 CU. YD.
STA. 239+50	RT.	= 131	CU. YD.	131 CU. YD.

OBLIT. OF SED. BASIN = 262 CU. YD.

DIVERSION DITCH (E-8)

STA. 234+00 - STA. 236+00 LT. = 200 LIN. FT.
STA. 243+00 - STA. 245+00 LT. = 200 LIN. FT.

PIPE FOR SLOPE DRAINS (E-12)

STA. 236+00	LT.	= 28	LIN. FT.
STA. 243+00	LT.	= 27	LIN. FT.

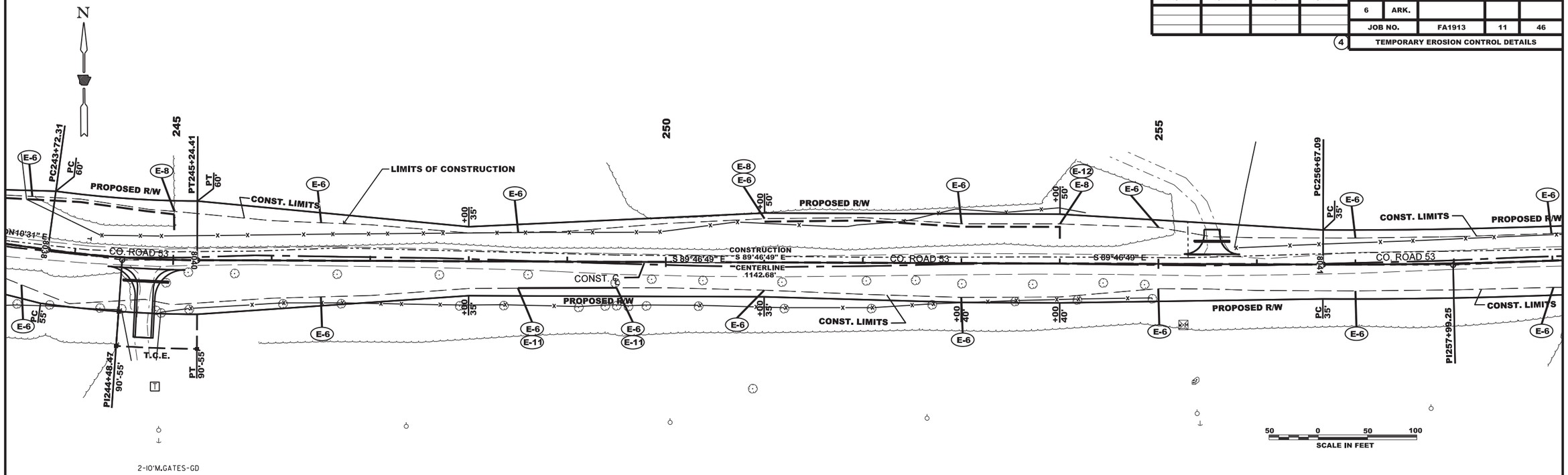
REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Dec 1 2022 6:58 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	11	46

4 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)				SEDIMENT REMOVAL AND DISPOSAL
STA. 246+50	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 248+50	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 249+50	RT.	= 3	CU. YD.	1 CU. YD.
STA. 251+00	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 253+00	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 255+00	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 257+00	LT. & RT.	= 6	CU. YD.	2 CU. YD.

SILT FENCE (E-11)				SEDIMENT REMOVAL AND DISPOSAL
STA. 248+50 - STA. 249+50	RT.	= 100	LIN. FT.	4 CU. YD.

DIVERSION DITCH (E-8)

STA. 251+00 - STA. 254+00 LT. = 300 LIN. FT.

PIPE FOR SLOPE DRAINS (E-12)

STA. 254+00 LT. = 21 LIN. FT.

REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

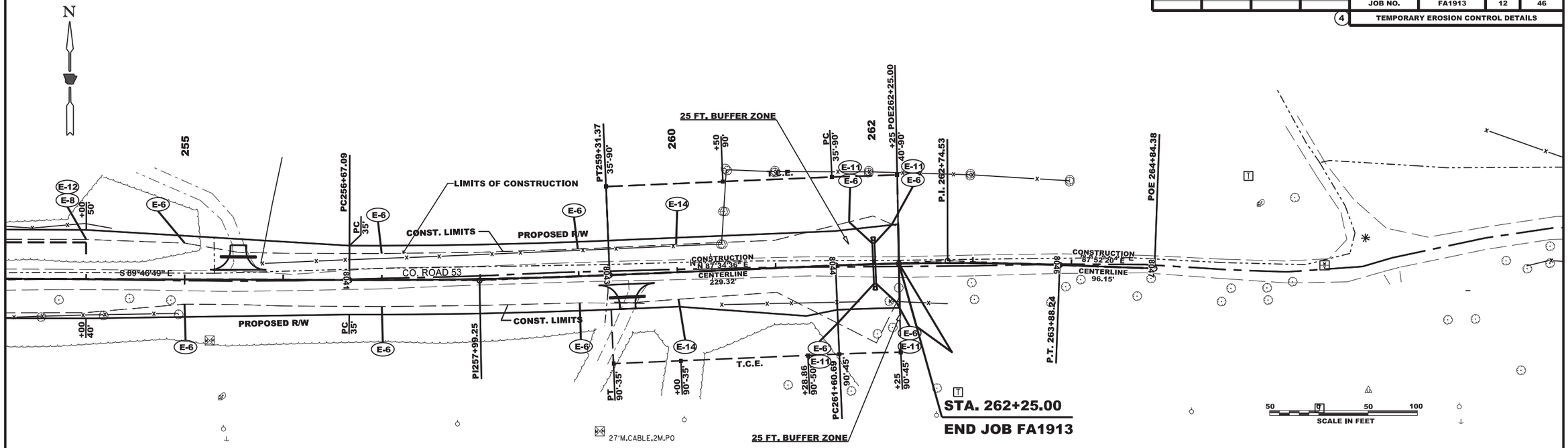
Dec 1 2022 6:58 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	12	46

4 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DEVICES

ROCK DITCH CHECKS (E-6)				SEDIMENT REMOVAL AND DISPOSAL
STA. 259+00	LT. & RT.	= 6	CU. YD.	2 CU. YD.
STA. 261+60	RT.	= 3	CU. YD.	1 CU. YD.
STA. 261+76	LT.	= 3	CU. YD.	1 CU. YD.
STA. 262+19	LT.	= 3	CU. YD.	1 CU. YD.
STA. 262+22	RT.	= 3	CU. YD.	1 CU. YD.

SILT FENCE (E-11)				SEDIMENT REMOVAL AND DISPOSAL
STA. 261+60 - STA. 262+22 RT.		= 85	LIN. FT.	4 CU. YD.
STA. 261+76 - STA. 262+19 LT.		= 60	LIN. FT.	3 CU. YD.

SEDIMENT BASIN (E-14)				SEDIMENT REMOVAL AND DISPOSAL
STA. 260+00	LT.	= 212	CU. YD.	212 CU. YD.
STA. 260+00	RT.	= 212	CU. YD.	212 CU. YD.
OBLIT. OF SED. BASIN		= 424	CU. YD.	

REVISION NO.	REVISION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Dec 1 2022 6:58 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-30-22				6	ARK.			
				JOB NO.		FA1913	13	46
				4	QUANTITIES			

EARTHWORK

STATION	STATION	UNCLASSIFIED EXCAVATION				COMPACTED EMBANKMENT			*SOIL STABILIZATION
		MAIN LANES	ADDITIONAL	OBLIT. OF ROADWAY	TOTAL	MAIN LANES	ADDITIONAL	TOTAL	
		CU. YD.				CU. YD.			TON
181+00	262+25	35987			35987	18195		18195	
184+30			5		5		30	30	
184+34			5		5		20	20	
184+75							20	20	
189+02							30	30	
192+37							45	45	
199+00							35	35	
201+62							40	40	
201+66							25	25	
202+83							20	20	
204+38	205+66			28	28				
210+14			5		5		35	35	
210+97	217+00			100	100				
219+06							135	135	
220+77							35	35	
224+31							95	95	
225+17							70	70	
230+47			5		5		25	25	
240+88							110	110	
244+73			100		100		35	35	
255+54							20	20	
259+48							20	20	
ENTIRE SECTION									300
TOTALS:		35987	120	128	36235	18195	845	19040	300

*QUANTITY 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.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	DESCRIPTION	FENCE	WALLS	HEADWALLS	PIPE CULVERTS	GUARDRAIL
				LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.
182+04	183+72	RT.	WEB WIRE	188				
184+91	184+92	RT.	4' WOOD FENCE	12				
184+91	192+11	LT.	WEB WIRE	744				
186+44	187+39	RT.	WEB WIRE	110				
189+19	189+20	RT.	4' WHITE PVC FENCE	9				
189+20	202+05	RT.	WEB WIRE	1288				
193+17	198+88	LT.	3B - 3 STRAND BARBED WIRE	633				
199+13	201+87	LT.	7B - 7 STRAND BARBED WIRE	281				
201+75	202+05	RT.	WEB WIRE	39				
201+88	201+88	LT.	7B - 7 STRAND BARBED WIRE	4				
205+59	209+99	RT.	4B - 4 STRAND BARBED WIRE	455				
213+44	213+71	LT.	27' GUARDRAIL					27
213+48	213+66	LT.	18' WOOD WALL		18			
216+03	216+54	LT.	51' GUARDRAIL					51
220+87	221+42	RT.	2B - 2 STRAND BARBED WIRE	56				
221+12	221+72	RT.	2B - 2 STRAND BARBED WIRE	65				
221+46	221+79	LT.	32' CONCRETE HEADWALL			1		
221+72		CROSS DRAIN	84" X 29' R.R. TANKER				1	
222+24	224+99	RT.	5B - 5 STRAND BARBED WIRE	342				
224+11	224+39	LT.	CABLE	28				
225+36	229+91	RT.	5B - 5 STRAND BARBED WIRE	464				
232+60		CROSS DRAIN	12" X 30' C.M. PIPE CULVERT				1	
239+18		CROSS DRAIN	18" X 29' C.M. PIPE CULVERT				1	
244+06	244+52	RT.	5B - 5 STRAND BARBED WIRE	49				
243+42	252+74	LT.	3B - 3 STRAND BARBED WIRE	942				
244+89	246+89	RT.	5B - 5 STRAND BARBED WIRE	204				
253+05	254+94	RT.	5B - 5 STRAND BARBED WIRE	189				
255+77	260+47	LT.	4B - 4 STRAND BARBED WIRE	500				
259+50		RT.	12" X 30' C.M. PIPE CULVERT				1	
260+35		CROSS DRAIN	18" X 30' C.M. PIPE CULVERT				1	
260+44	261+84	RT.	4B - 4 STRAND BARBED WIRE	140				
262+15	262+25	RT.	4B - 4 STRAND BARBED WIRE	10				
TOTALS:				6752	18	1	5	78

TRAFFIC CONTROL DEVICES

LOCATION	W20-1								G20-1 (BEGIN ROAD WORK)		G20-2 (END ROAD WORK)		*TRAFFIC DRUMS
	1500 FT.		1000 FT.		500 FT.		AHEAD						
	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	EACH
BEGINNING OF JOB	1	16	1	16	1	16			1	10	1	8	
STA. 210+14							1	16					
STA. 219+06							1	16					
END OF JOB	1	16	1	16	1	16			1	10	1	8	
*ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.													50
TOTALS:	2	32	2	32	2	32	2	32	2	20	2	16	50
TOTALS:												164	50

*QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
NOTE: REFER TO STANDARD DRAWINGS TC-1, TC-2, AND TC-3.
NOTE: LOCATION OF THE TRAFFIC CONTROL DEVICES TO BE AS DIRECTED BY THE ENGINEER.

REFLECTORIZED PAINT PAVEMENT MARKING

STATION	STATION	4" YELLOW	4" WHITE
		LIN. FT.	LIN. FT.
181+00	262+25	16250	16250
TOTALS:		16250	16250

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

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	STATION
181+00	262+25	82	82
TOTALS:		82	82

Jan 5 2023 12:44 PM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	14	46
				4	QUANTITIES			

STRUCTURES

STATION	DESCRIPTION	SIDE DRAIN 18"	CROSS DRAIN ALTERNATES: 24" R.C.P. (CLASS IV)	CROSS DRAIN ALTERNATES: 24" COATED CSP (16 GAUGE), H.D.P.E. & PVC	CROSS DRAIN ALTERNATES: 84" R.C.P. (CLASS IV)	CROSS DRAIN ALTERNATES: 84" COATED CSP (14 GAUGE)	FLARED END SECTIONS ALTERNATES: 24" R.C.P.	FLARED END SECTIONS ALTERNATES: 24" C.M.P.	FLARED END SECTIONS ALTERNATES: 84" R.C.P.	FLARED END SECTIONS ALTERNATES: 84" C.M.P.	SOLID SODDING	WATER	*SELECTED PIPE BEDDING	STANDARD DRAWING
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	SQ. YD.	M. GAL.	CU. YD.	
184+30	18" X 40' PIPE CULVERT ON RT.	40												PCC-1, PCM-1
184+34	18" X 32' PIPE CULVERT ON LT.	32												PCC-1, PCM-1
184+75	18" X 32' PIPE CULVERT ON LT.	32												PCC-1, PCM-1
189+02	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
192+00	24" PIPE CULVERT CROSS DRAIN		44	50			2	2			16	0.2	5	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
192+37	18" X 40' PIPE CULVERT ON LT.	40												PCC-1, PCM-1
199+00	18" X 40' PIPE CULVERT ON LT.	40												PCC-1, PCM-1
201+62	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
201+66	18" X 36' PIPE CULVERT ON LT.	36												PCC-1, PCM-1
202+83	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
210+14	18" X 46' PIPE CULVERT ON RT.	46												PCC-1, PCM-1
219+06	18" X 48' PIPE CULVERT ON LT.	48												PCC-1, PCM-1
220+77	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
221+72	DBL. 84" PIPE CULVERT CROSS DRAIN				180	188			4	4	176	2.2	39	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
225+17	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
230+47	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
232+60	24" PIPE CULVERT CROSS DRAIN		76	82			2	2			16	0.2	6	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
238+00	24" PIPE CULVERT CROSS DRAIN		62	66			2	2			16	0.2	6	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
240+88	18" X 50' PIPE CULVERT O LT.	50												PCC-1, PCM-1
244+73	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
255+54	18" X 36' PIPE CULVERT ON LT.	36												PCC-1, PCM-1
259+48	18" X 36' PIPE CULVERT ON RT.	36												PCC-1, PCM-1
262+00	24" PIPE CULVERT CROSS DRAIN		42	48			2	2			16	0.2	5	PCC-1, PCM-1, FES-1, FES-2, PCP-1, PCP-2
TOTALS:		688	224	246	180	188	8	8	4	4	240	3.0	61	

BASIS OF ESTIMATE:

WATER = 12.6 GAL. PER SQ. YD. SOLID SODDING.
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS, USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR C.M. OR PLASTIC PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

*** QUANTITY 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.**

TEMPORARY EROSION CONTROL

STATION	STATION	LOCATION	SAND BAG DITCH CKS. (E-5)	ROCK DITCH CKS. (E-6)	SILT FENCE (E-11)	*SEDIMENT BASIN (E-14)	OBLIT. OF SEDIMENT BASIN	DIVERSION DITCH (E-8)	PIPE FOR SLOPE DRAINS (E-12)	SEDIMENT REMOVAL & DISPOSAL	STANDARD DRAWING NUMBER
			BAG	CU. YD.	LIN. FT.	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	CU. YD.	
181+00	262+25	MAIN LANES		225	3340	1214	1214	1600	149	1421	TEC-1, 2, & 3
* ENTIRE SECTION AS DIRECTED BY ENGINEER			60		300					33	TEC-1, 2, & 3
TOTALS:			60	225	3640	1214	1214	1600	149	1454	

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

*** QUANTITY 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.**

SCARIFYING AND RECOMPACTING SHOULDERS

STATION	STATION	LENGTH	WIDTH	*SCARIFYING AND RECOMPACTING SHOULDERS	*AGGREGATE BASE CRS. (CLASS 7)
		LIN. FT.		SQ. YD.	TON
108+21	181+00	7279	8	6470.2	220
TOTALS:				6470.2	220
USE:				6470	220

*** QUANTITY 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.**

TEMPORARY & PERMANENT SEEDING

STATION	TEMPORARY SEEDING	LIME	SEEDING	MULCH COVER	WATER	STANDARD DRAWING NO.
	ACRE	TON	ACRE	ACRE	M. GAL.	
ENTIRE SECTION	7.25	15	7.25	14.50	887.4	TEC-3
TOTALS:	7.25	15	7.25	14.50	887.4	

BASIS OF ESTIMATE:

LIME 2 TONS PER ACRE
WATER 102 M. GALS. PER ACRE PERMANENT SEEDING
WATER 20.4 M. GALS. PER ACRE TEMPORARY SEEDING

ITEMS REMOVED AND RECONSTRUCTED

STATION	STATION	SIDE	DESCRIPTION	FENCE REMOVED AND RECONSTRUCTED
				LIN. FT.
187+39	188+88	RT.	4' WHITE PVC FENCE	170
TOTAL:				170

Dec 8 2022 10:35 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	15	46
				4	QUANTITIES			

AGGREGATE BASE COURSE AND SURFACING

	STATION	STATION	DESCRIPTION	LENGTH	AGGREGATE BASE CRS. (CLASS 7)	WIDTH	TACK COAT		WIDTH	*ACHM BINDER COURSE (1")		WIDTH	*ACHM SURFACE COURSE (½")		WIDTH	DOUBLE ASPHALT SURFACE TREATMENT		
																SQ. YD.	MIN. AGGR. (CLASS 2)	ASPHALT (CRS-2P)
				LIN. FT.	TON	LIN. FT.	SQ. YD.	GAL.	LIN. FT.	SQ. YD.	TON	LIN. FT.	SQ. YD.	TON	LIN. FT.		TON	GAL.
	108+21	120+40	COUNTY ROAD 53 - SHOULDERS	1219											8	1083.5	35.2	812.6
	120+40	181+00	COUNTY ROAD 140 - SHOULDERS	6060											8	5386.7	175.1	4040.0
	181+00	262+25	COUNTY ROAD 53 - SHOULDERS	8125											8	7222.2	234.7	5416.7
	181+00	262+25	COUNTY ROAD 53 - MAIN LANES	8125	14787.5	20	18055.6	1444.4	20	18055.6	2979.2	20	18055.6	1986.1				
	184+30		PRIVATE DRIVE ON RT.		30.5								74.7	8.2				
	184+34		PRIVATE DRIVE ON LT.		32.3								79.0	8.7				
	184+75		PRIVATE DRIVE ON LT.		20.9								51.1	5.6				
	189+02		PRIVATE DRIVE ON RT.		27.8								68.2	7.5				
	192+37		PRIVATE DRIVE ON LT.		31.8								77.9	8.6				
	199+00		PRIVATE DRIVE ON LT.		25.9								63.5	7.0				
	201+62		PRIVATE DRIVE ON RT.		36.8								90.0	9.9				
	201+66		PRIVATE DRIVE ON LT.		25.9								63.5	7.0				
	202+83		PRIVATE DRIVE ON RT.		25.9								63.5	7.0				
	210+14		COUNTY ROAD TURNOUT ON RT.		44.8								109.6	12.1				
	219+06		COUNTY ROAD TURNOUT ON LT.		71.1								174.2	19.2				
	220+77		PRIVATE DRIVE ON RT.		33.1								80.9	8.9				
	224+31		PRIVATE DRIVE ON LT.		55.6								136.2	15.0				
	225+17		PRIVATE DRIVE ON RT.		49.7								121.8	13.4				
	230+47		PRIVATE DRIVE ON RT.		28.8								70.6	7.8				
	240+88		PRIVATE DRIVE ON LT.		47.3								115.8	12.7				
	244+73		PRIVATE DRIVE ON RT.		58.3								142.7	15.7				
	255+54		PRIVATE DRIVE ON LT.		25.9								63.5	7.0				
	259+49		PRIVATE DRIVE ON RT.		25.9								63.5	7.0				
**	ENTIRE SECTION		MAINTENANCE OF TRAFFIC		500.0													
	TOTALS:				15985.8			1444.4			2979.2			2174.4			445.0	10269.3
	USE:				15986			1444			2979			2174			445	10269

BASIS OF ESTIMATE:

AGGREGATE BASE COURSE (CLASS 7)	182 TONS PER 100' STA. (MAINLANES)
TACK COAT	0.08 GAL./SQ. YD.
ACHM BINDER COURSE (1")	330 LBS./SQ. YD.
ACHM SURFACE COURSE (1/2")	220 LBS./SQ. YD.

**QUANTITY 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.

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

* Nmax = 115

PROPORTION BY WEIGHT:

MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	95.7%
ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	4.3%
MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	94.7%
ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	5.3%

MINERAL AGGREGATE IN DBL. ASPHALT SURFACE TREATMENT (CL. 2) (1ST. APPLICATION)	35 LBS. PER SQ. YD.
MINERAL AGGREGATE IN DBL. ASPHALT SURFACE TREATMENT (CL. 2) (2ND. APPLICATION)	30 LBS. PER SQ. YD.
POLYMER MODIFIED CATIONIC EMULSIFIED ASPHALT (1ST. APPLICATION)	0.40 GAL. PER SQ. YD.
POLYMER MODIFIED CATIONIC EMULSIFIED ASPHALT (2ND. APPLICATION)	0.35 GAL. PER SQ. YD.

WIRE FENCE

STATION	STATION	SIDE	WIRE FENCE (TYPE C) LIN. FT.	(TYPE D) LIN. FT.	(TYPE D-1) LIN. FT.	(TYPE D-2) LIN. FT.
182+04	183+72	RT.	168			
184+91	192+11	LT.	721			
186+44	187+39	RT.	110			
189+20	201+51	RT.	1200			
193+17	198+88	LT.		584		
199+13	201+56	LT.				243
201+71	202+05	RT.	34			
201+76	201+88	LT.				12
205+59	209+99	RT.		448		
221+12	221+72	RT.		61		
222+24	224+99	RT.			284	
225+36	229+91	RT.			445	
243+42	252+74	LT.		926		
244+06	244+52	RT.			47	
244+89	246+89	RT.			202	
253+05	254+94	RT.			189	
255+77	260+47	LT.		464		
260+44	261+84	RT.		140		
262+15	262+25	RT.		10		
TOTALS:			2233	2633	1167	255

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER R1-1 NO.	R1-1 SQ. FT.	W1-2 LT. NO.	W1-2 LT. SQ. FT.	W1-2 RT. NO.	W1-2 RT. SQ. FT.	SUPPORT ASSEMBLIES (TYPE A) EACH	STANDARD DRAWING NUMBER
189+66	RT.					1	6.25	1	SHS - 1 & 2
196+50	LT.			1	6.25			1	SHS - 1 & 2
201+32	RT.			1	6.25			1	SHS - 1 & 2
208+16	LT.					1	6.25	1	SHS - 1 & 2
210+34	RT.	1	6.25					1	SHS - 1 & 2
214+76	RT.					1	6.25	1	SHS - 1 & 2
218+90	LT.	1	6.25					1	SHS - 1 & 2
221+00	LT.			1	6.25			1	SHS - 1 & 2
238+50	RT.					1	6.25	1	SHS - 1 & 2
244+13	LT.			1	6.25			1	SHS - 1 & 2
TOTALS:		2	12.50	4	25.00	4	25.00	10	

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

METAL GATES

STATION	SIDE	16' GATE EACH
201+61	RT.	1
201+66	LT.	1
224+31	LT.	1
TOTAL:		3

Dec 1 2022 6:58 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-30-22				6	ARK.			
				JOB NO.		FA1913	16	46
				4	SUMMARY OF QUANTITIES AND REVISIONS			

SUMMARY OF QUANTITIES

	ITEM NUMBER	ITEM		PARTICIPATING	NON-PARTICIPATING	TOTAL	UNIT
	201	CLEARING		82	0	82	STA.
	201	GRUBBING		82	0	82	STA.
	202	REMOVAL AND DISPOSAL OF FENCE		6752	0	6752	LIN. FT.
	202	REMOVAL AND DISPOSAL OF WALLS		18	0	18	LIN. FT.
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		5	0	5	EACH
	202	REMOVAL AND DISPOSAL OF HEADWALLS		1	0	1	EACH
	202	REMOVAL AND DISPOSAL OF GUARDRAIL		78	0	78	LIN. FT.
	208	FENCE REMOVED AND RECONSTRUCTED		170	0	170	LIN. FT.
	SP, SS & 210	UNCLASSIFIED EXCAVATION		36235	0	36235	CU. YD.
	SP & 210	COMPACTED EMBANKMENT		19040	0	19040	CU. YD.
	SP & 210	SOIL STABILIZATION		300	0	300	TON
	216	SCARIFYING AND RECOMPACTING SHOULDERS		1083	5387	6470	SQ. YD.
	SP, SS & 303	AGGREGATE BASE COURSE (CLASS 7)		16023	183	16206	TON
	SS & 401	TACK COAT		1444	0	1444	GAL.
	SP, SS & 402	MINERAL AGGREGATE IN ASPHALT SURFACE TREATMENT (CLASS 2)		270	175	445	TON
	SP, SS & 402	POLYMER MODIFIED CATIONIC EMULSIFIED ASPHALT (CRS-2P) (SOLID POLYMER)		6229	4040	10269	GAL.
	SP, SS & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		2851	0	2851	TON
	SP, SS & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		128	0	128	TON
	SP, SS & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (½")		2059	0	2059	TON
	SP, SS & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (½")		115	0	115	TON
	601	MOBILIZATION		0.98	0.02	1.00	LUMP SUM
	SP & 602	FURNISHING FIELD OFFICE		1	0	1	EACH
	603	MAINTENANCE OF TRAFFIC		0.98	0.02	1.00	LUMP SUM
	SS & 604	SIGNS		164	0	164	SQ. FT.
	SS & 604	TRAFFIC DRUMS		50	0	50	EACH
*	SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	ALT. NO. 1	224	0	224	LIN. FT.
*	SS & 606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	ALT. NO. 2	246	0	246	LIN. FT.
*	SS & 606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	ALT. NO. 3	246	0	246	LIN. FT.
*	SS & 606	24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (16 GAUGE)	ALT. NO. 4	246	0	246	LIN. FT.
*	SP, SS & 606	24" HIGH DENSITY POLYETHYLENE PIPE	ALT. NO. 5	246	0	246	LIN. FT.
*	SP, SS & 606	24" PVC PIPE	ALT. NO. 6	246	0	246	LIN. FT.
*	SS & 606	84" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	ALT. NO. 1	180	0	180	LIN. FT.
*	SS & 606	84" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	ALT. NO. 2	188	0	188	LIN. FT.
*	SS & 606	84" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	ALT. NO. 3	188	0	188	LIN. FT.
*	SS & 606	84" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE)	ALT. NO. 4	188	0	188	LIN. FT.
	SP, SS & 606	18" SIDE DRAIN		688	0	688	LIN. FT.
*	SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	ALT. NO. 1	8	0	8	EACH
*	SS & 606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	ALT. NO. 2	8	0	8	EACH
*	SS & 606	84" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	ALT. NO. 1	4	0	4	EACH
*	SS & 606	84" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	ALT. NO. 2	4	0	4	EACH
	SS & 606	SELECTED PIPE BEDDING		61	0	61	CU. YD.
	SS & 619	WIRE FENCE (TYPE C)		2233	0	2233	LIN. FT.
	SS & 619	WIRE FENCE (TYPE D)		2633	0	2633	LIN. FT.
	SS & 619	WIRE FENCE (TYPE D-1)		1167	0	1167	LIN. FT.
	SS & 619	WIRE FENCE (TYPE D-2)		255	0	255	LIN. FT.
*	SS & 619	16' STEEL GATES	ALT. NO. 1	3	0	3	EACH
*	SS & 619	16' ALUMINUM GATES	ALT. NO. 2	3	0	3	EACH
	620	LIME		15	0	15	TON
	620	SEEDING		7.25	0	7.25	ACRE
	SS & 620	MULCH COVER		14.50	0	14.50	ACRE
	620	WATER		890.4	0	890.4	M. GAL.
	621	TEMPORARY SEEDING		7.25	0	7.25	ACRE
	621	SILT FENCE		3640	0	3640	LIN. FT.
	621	SAND BAG DITCH CHECKS		60	0	60	BAG
	621	DIVERSION DITCH		1600	0	1600	LIN. FT.
	621	SEDIMENT BASIN		1214	0	1214	CU. YD.
	621	OBLITERATION OF SEDIMENT BASIN		1214	0	1214	CU. YD.
	621	SEDIMENT REMOVAL AND DISPOSAL		1454	0	1454	CU. YD.
	621	PIPE FOR SLOPE DRAINS		149	0	149	LIN. FT.
	621	ROCK DITCH CHECKS		225	0	225	CU. YD.
	624	SOLID SODDING		240	0	240	SQ. YD.
	635	ROADWAY CONSTRUCTION CONTROL		1.00	0	1.00	LUMP SUM
	718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")		16250	0	16250	LIN. FT.
	718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		16250	0	16250	LIN. FT.
	SS & 726	STANDARD SIGN		62.50	0	62.50	SQ. FT.
	SS & 729	CHANNEL POST SIGN SUPPORT (TYPE A)		10	0	10	EACH

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
12-30-22	ADDED SOIL STABILIZATION ITEM, SOIL STABILIZATION NOTES, AND SOIL STABILIZATION SPECIAL PROVISION.	3, 4, 13 & 16

Jan 5 2023 12:45 PM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	17	46
				4	SURVEY CONTROL DETAILS			

SURVEY CONTROL COORDINATES

Project Name: sfa1911 W
Date: 9/12/2016
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, 190001 & 190002A PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
10_A	353151.3037	1694484.7077	402.872	CTL	AHTD STD. MON STAMPED T-10 TRS
11_A	352834.2341	1694889.3892	410.025	CTL	AHTD STD. MON STAMPED T-11 TRS
12_A	352332.9809	1695204.5012	412.142	CTL	AHTD STD. MON STAMPED T-12 TRS
13_A	352032.2412	1695757.8420	415.701	CTL	AHTD STD. MON STAMPED T-13 TRS
14_A	351179.3402	1695965.0690	411.703	CTL	AHTD STD. MON STAMPED T-14 TRS
15_A	350770.5226	1696721.1809	372.074	CTL	AHTD STD. MON STAMPED T-15 TRS
16_A	350979.7434	1697273.6166	373.415	CTL	AHTD STD. MON STAMPED T-16 TRS
17_A	350609.3572	1697566.4902	374.577	CTL	AHTD STD. MON STAMPED T-17 TRS
18_A	350617.2414	1698019.7268	335.881	CTL	AHTD STD. MON STAMPED T-18 TRS
19_A	349923.6550	1698127.6563	273.077	CTL	AHTD STD. MON STAMPED T-19 TRS
20_A	350009.5359	1698546.9988	255.164	CTL	AHTD STD. MON STAMPED T-20 TRS
1	359819.4132	1678450.3612	271.618	CTL	AHTD STD. MON STAMPED T-1
2	359065.3477	1677954.9438	272.983	CTL	AHTD STD. MON STAMPED T-2
3	359059.3406	1678401.3265	274.630	CTL	AHTD STD. MON STAMPED T-3
4	358477.7029	1678442.2638	278.260	CTL	AHTD STD. MON STAMPED T-4
5	358354.5181	1678843.1820	278.732	CTL	AHTD STD. MON STAMPED T-5
6	357587.6739	1678725.7395	277.431	CTL	AHTD STD. MON STAMPED T-6
7	357117.6767	1678876.5058	276.851	CTL	AHTD STD. MON STAMPED T-7
8	356677.5601	1679382.6719	282.339	CTL	AHTD STD. MON STAMPED T-8
9	356674.6310	1680167.8184	318.952	CTL	AHTD STD. MON STAMPED T-9
10	356617.4076	1680510.0863	342.503	CTL	AHTD STD. MON STAMPED T-10
11	356623.9624	1680750.8337	339.202	CTL	AHTD STD. MON STAMPED T-11
12	356770.3696	1681077.2928	342.162	CTL	AHTD STD. MON STAMPED T-12
13	356652.9031	1681304.8454	350.551	CTL	AHTD STD. MON STAMPED T-13
14	356442.8939	1681449.9944	359.928	CTL	AHTD STD. MON STAMPED T-14
15	356391.9980	1681701.4514	362.671	CTL	AHTD STD. MON STAMPED T-15
16	356405.8501	1682029.9476	368.703	CTL	AHTD STD. MON STAMPED T-16
17	356198.9728	1682254.1560	373.511	CTL	AHTD STD. MON STAMPED T-17
18	355869.5565	1682362.9680	370.477	CTL	AHTD STD. MON STAMPED T-18
19	355669.5648	1682650.3209	368.603	CTL	AHTD STD. MON STAMPED T-19
20	355535.6576	1682943.9262	370.150	CTL	AHTD STD. MON STAMPED T-20
21	355154.9951	1683201.6965	377.036	CTL	AHTD STD. MON STAMPED T-21
22	354728.3163	1683573.7841	367.105	CTL	AHTD STD. MON STAMPED T-22
23	354283.4186	1683653.2255	371.650	CTL	AHTD STD. MON STAMPED T-23
24	354276.3320	1684124.8606	383.603	CTL	AHTD STD. MON STAMPED T-24
25	354209.6173	1684687.7688	378.653	CTL	AHTD STD. MON STAMPED T-25
26	354226.8702	1684997.1820	378.949	CTL	AHTD STD. MON STAMPED T-26
27	353763.3375	1685433.6091	384.016	CTL	AHTD STD. MON STAMPED T-27
28	353466.1182	1686260.8470	394.184	CTL	AHTD STD. MON STAMPED T-28
31	353701.6637	1691183.0028	364.122	CTL	AHTD STD. MON STAMPED T-31
32	353708.2647	1689719.0574	396.911	CTL	AHTD STD. MON STAMPED T-32
33	353759.3215	1689334.6057	368.022	CTL	AHTD STD. MON STAMPED T-33
34	353672.4961	1689074.4322	367.290	CTL	AHTD STD. MON STAMPED T-34
35	353638.8874	1688727.0669	383.288	CTL	AHTD STD. MON STAMPED T-35
36	353666.2932	1688315.7249	378.605	CTL	AHTD STD. MON STAMPED T-36
37	353741.2744	1687853.0483	343.146	CTL	AHTD STD. MON STAMPED T-37
38	353748.8000	1686958.1486	364.797	CTL	AHTD STD. MON STAMPED T-38
39	353662.9982	1686711.0239	384.247	CTL	AHTD STD. MON STAMPED T-39
41	353292.3427	1685804.3887	389.643	CTL	AHTD STD. MON STAMPED T-41
100	341337.7903	1672637.5182	257.771	GPS	AHTD GPS MON 190001
101	358665.3495	1674372.2593	261.859	GPS	AHTD GPS MON 190002A
900	359706.8960	1678410.8560	272.266	TBM	CHIS SQ CUT IN CTR HW
901	359096.5232	1678441.0507	274.861	TBM	CHIS SQ CUT IN CONC
902	357865.0740	1678771.7630	278.124	TBM	AHTD DISK SE CNR BR WR
903	356646.5153	1679527.5129	284.490	TBM	CHIS SQ CUT IN CTR W DW
904	356741.9485	1680957.5431	341.779	TBM	5/8" RBR 2" ALUM CAP
905	356006.9196	1682286.1317	376.153	TBM	5/8" RBR 2" ALUM CAP
906	354918.2101	1683423.6458	373.083	TBM	5/8" RBR 2" ALUM CAP
907	354210.2536	1684575.7026	380.237	TBM	5/8" RBR 2" ALUM CAP
908	353542.6072	1685577.4371	383.714	TBM	5/8" RBR 2" ALUM CAP
909	353462.7657	1686339.4533	394.774	TBM	5/8" RBR 2" ALUM CAP
914	353800.6893	1685410.4175	388.192	TBM	8 SPIKE IN 36" OAK TBM FROM OLD JOB
915	353511.5521	1686290.3315	398.177	TBM	8 SPIKE IN 30" OAK
990	362039.1054	1679170.6062	271.520	BM	NGS RV863
1000	349888.6262	1698507.7537	255.535	CTL	5/8"REBAR 2"ALUM.CAP
1001	350492.0067	1697982.2968	342.625	CTL	5/8"REBAR 2"ALUM.CAP
1002	350684.1911	1697538.9975	374.694	CTL	5/"REBAR 2"ALUM.CAP
1003	351111.2028	1696090.2818	404.203	CTL	5/8"REBAR 2"ALUM.CAP
1004	351851.7192	1695849.7394	415.468	CTL	5/8"REBAR 2"ALUM.CAP
1005	352150.3411	1695599.2939	411.443	CTL	5/8"REBAR 2"ALUM.CAP
1006	352430.0972	1695097.2523	414.390	CTL	5/8"REBAR 2"ALUM.CAP
1007	353485.5874	1686397.9804	399.846	CTL	5/8"REBAR 2"ALUM.CAP
1008	353680.1486	1686922.1497	384.307	CTL	5/8"REBAR 2"ALUM.CAP
1009	353547.8399	1689683.1316	403.087	CTL	5/8"REBAR 2"ALUM.CAP
1010	353655.5410	1690603.9064	375.174	CTL	5/8"REBAR 2"ALUM.CAP
1011	353686.5673	1691885.3638	390.323	CTL	5/8"REBAR 2"ALUM.CAP
1501	353704.2110	1693854.0270	346.635	CTL	NBC JOB BR1905
1502	353691.9481	1693843.3107	349.997	CTL	NBC JOB BR1905
1503	353709.4383	1693753.1718	347.027	CTL	NBC JOB BR1905
1504	353804.7085	1692795.2946	348.387	CTL	NBC JOB BR1905
1505	353805.1919	1692686.2283	349.963	CTL	NBC JOB BR1905
1506	353702.5286	1693009.3210	349.752	CTL	NBC JOB BR1905
1507	353645.7434	1693002.3106	350.933	CTL	NBC JOB BR1905
1510	350013.5843	1698587.4440	252.727	CTL	8"SPK 6'S 14"PINE,18'S CL DW
1511	349908.4373	1698622.6821	251.820	CTL	8"SPK 4'S 14"PINE,15'S CL DW
1512	349866.5591	1698618.2101	252.073	CTL	8"SPK 6'W 14"POPLAR,BM-928
1513	349802.5760	1698591.0495	252.867	CTL	8"SPK 7'S WATER METER
1514	350665.0609	1696861.9215	370.228	CTL	8"SPK 56'E NE.COR HOUSE

SURVEY CONTROL COORDINATES

Project Name: sfa1911 W
Date: 9/12/2016
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, 190001 & 190002A PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1515	350658.3371	1696806.5734	372.274	CTL	8"SPK 5'N NE.COR HOUSE
1516	350642.9824	1696736.3257	372.384	CTL	8"SPK 8'W NW.COR HOUSE
1517	350750.7161	1696700.2928	371.547	CTL	8"SPK 5'SE POWER POLE
1518	351958.9567	1695918.5816	413.891	CTL	8"SPK 7'S. 24"OAK
1519	351921.6359	1695844.1453	415.208	CTL	8"SPK 2'NW WATER METER/9'W PP
1520	352000.8464	1695832.2463	412.460	CTL	8"SPK 6'S 18"OAK
1521	351999.2966	1695787.1569	411.917	CTL	8"SPK 20'NW 24"OAK
1522	353848.5171	1691940.7496	392.375	CTL	8"SPK 9'SE 14"MAGNOLIA
1523	353800.6679	1691936.1617	394.169	CTL	8"SPK 15'S SE.COR BRICK RES.
1524	353785.5005	1691862.2888	394.003	CTL	8"SPK 36'S SW.COR BRICK CARPORT
1525	353817.2778	1691865.7779	391.018	CTL	8"SPK 5'NE 9"APPLE
1526	353477.0172	1688354.9951	380.869	CTL	8"SPK 15'SE 6"OAK
1527	353438.0179	1688346.3864	379.001	CTL	8"SPK 28'N NE.COR BU/CARPORT
1528	353419.9192	1688299.3776	376.355	CTL	8"SPK 11'W NW.COR BU CARPORT
1529	353483.3039	1688312.7883	379.956	CTL	8"SPK 7'S 4"REDBUD
1530	353209.3246	1685725.9846	390.869	CTL	8"SPK 6'N FENCE COR
1531	353303.7802	1685666.6214	386.841	CTL	8"SPK 6'E 24"CEDAR
1532	353382.6633	1685675.3254	383.886	CTL	8"SPK 11'SE SW.COR WHITE BLDG
1533	353407.8662	1685647.3013	384.269	CTL	8"SPK 4'SW NW.COR WHITE BLDG

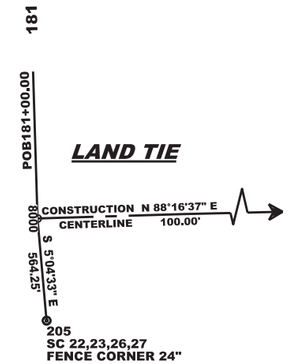
*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999445940 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME.XXXCTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 190001 & 190002A
CONVERGENCE ANGLE: 00 43 18.06 RIGHT AT LT:35-18-22 LG:090-45-40
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

CONSTRUCTION CENTERLINE

POINT NAME	STATION	NORTHING	EASTING
8000	POB 181+00.00	354277.31461	1683815.80601
8001	PI 182+00.00	354280.32126	1683915.76075
8002	PC 183+65.00	354284.31525	1684080.70785
8003	CC	353647.88203	1684096.11829
8004	PT 184+82.10	354276.39628	1684197.38312
8005	PC 186+72.74	354246.07326	1684385.58716
8006	CC	356131.61603	1684689.38165
8007	PT 189+75.87	354221.75771	1684687.42516
8008	PC 191+39.34	354221.59025	1684850.89095
8009	CC	353839.61859	1684850.49965
8010	PT 194+74.54	354083.40640	1685144.55748
8011	PC 203+36.75	353419.64466	1685694.84727
8012	CC	353572.01204	1685878.63342
8013	PT 206+41.21	353351.82398	1685970.88516
8014	PC 207+56.89	353396.52405	1686077.57607
8015	CC	350754.26735	1687184.59702
8016	PT 209+72.11	353472.15953	1686279.01546
8017	PC 210+66.53	353502.00631	1686368.59361
8018	CC	358937.79067	1684557.43048
8019	PT 213+97.04	353615.46724	1686678.97163
8020	PC 216+50.51	353709.31996	1686914.42051
8021	CC	353225.47237	1687107.28789
8022	PT 219+25.39	353740.61577	1687184.31765
8023	PC 221+84.27	353702.33158	1687440.34657
8024	CC	354646.76115	1687581.56781
8025	PT 223+96.83	353694.45634	1687652.32228
8026	PC 226+68.19	353714.56262	1687922.93851
8027	CC	353079.69274	1687970.10815
8028	PT 228+59.77	353700.01231	1688113.24572
8029	PC 228+84.08	353694.54790	1688136.92704
8030	CC	355555.50661	1688566.33975
8031	PT 233+65.17	353646.24980	1688614.30900
8032	PC 237+17.71	353655.10455	1688966.74277
8033	CC	354291.52348	1688950.75302
8034	PT 238+98.03	353684.93081	1689143.96291
8035	PC 240+25.18	353723.52155	1689265.12058
8036	CC	353268.57704	1689410.02800
8037	PT 242+37.62	353741.59639	1689475.03079
8038	PC 243+72.31	353723.25911	1689608.46945
8039	CC	354858.50554	1689764.47615
8040	PT 245+24.41	353712.59837	1689760.08330
8041	PC 256+67.09	353708.21793	1690902.75173
8042	CC	359437.75379	1690924.71599
8043	PT 259+31.37	353713.29933	1691166.96522
8044	PC 261+60.69	353722.99511	1691396.08080
8045	CC	350860.76789	1691517.20541
8046	PT 263+88.24	353723.58187	1691623.56312
8047	POE 264+84.38	353720.01236	1691719.64312



Dec 1 2022 6:59 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	18	46
				4	SURVEY CONTROL DETAILS			

PN:II24
PD:SET 8" NAIL

N

181

185

190

PN:II40
PD:8" SPK

PN:23
PD:AHTD STD. MON
STAMPED T-23

8000

CONSTRUCTION
N 88°16'37" E
CENTERLINE
100.00'

8001

PN:II25
PD:SET 8" NAIL

PN:II37
PD:SET 8"NAIL

CONSTRUCTION
N 88°36'47" E
CENTERLINE
165.00'

8002

PN:II26
PD:SET 8" NAIL

8004

PT184+82.10

PN:24
PD:AHTD STD. MON
STAMPED T-24

CONSTRUCTION
S 80°50'50" E
CENTERLINE
190.63'

PC186+72.74

8005

LIMITS OF CONSTRUCTION

PT189+75.87

8007

PN:II27
PD:SET 8" NAIL

CONSTRUCTION
S 89°56'29" E
CENTERLINE
163.47'

8008

PI193+18.59

PN:26
PD:AHTD STD. MON
STAMPED T-26

PI188+24.62

PN:907
PD:5/8" RBR
2" ALUM CAP

PN:25
PD:AHTD STD. MON
STAMPED T-25

PC191+39.34

℄ CONSTRUCTION
PI = 184+23.72
Δ = 10°32'23.23" RT.
D = 9°00'00.00"
T = 58.72'
L = 117.11'
e = 0.058
PC = 183+65.00
PT = 184+82.10
Ls = 185'
BEGIN SUPER TRANSITION = 182+37.20
BEGIN MAX. SUPER = 184+22.20
END MAX. SUPER = 184+24.90
END SUPER TRANSITION = 186+09.90

℄ CONSTRUCTION
PI = 188+24.62
Δ = 9°05'38.46" LT.
D = 3°00'00.00"
T = 151.89'
L = 303.13'
e = 0.025
PC = 186+72.74
PT = 189+75.87
Ls = 200'
BEGIN SUPER TRANSITION = 186+09.94
BEGIN MAX. SUPER = 188+09.94
END MAX. SUPER = 188+38.67
END SUPER TRANSITION = 190+38.67

℄ CONSTRUCTION
PI = 193+18.59
Δ = 50°16'51.50" RT.
D = 15°00'00.00"
T = 179.26'
L = 335.21'
e = 0.086
PC = 191+39.34
PT = 194+74.54
Ls = 250'
BEGIN SUPER TRANSITION = 190+39.04
BEGIN MAX. SUPER = 192+89.04
END MAX. SUPER = 193+24.84
END SUPER TRANSITION = 195+74.84

PN:II39
PD:SET 8" NAIL

STA. 181+00.00

BEGIN JOB FA1913

195

200

205

PI193+18.59

LIMITS OF CONSTRUCTION

PN:26
PD:AHTD STD. MON
STAMPED T-26

8010

PT194+74.54

PN:II28
PD:SET 8" NAIL

PN:II29
PD:SET 8" NAIL

PN:914
PD:8 SPIKE IN 36" OAK
TBM FROM OLD JOB

TBM

CONSTRUCTION
S 39°39'37" E
CENTERLINE
862.21'

CL

PN:27
PD:AHTD STD. MON
STAMPED T-27

PC203+36.75

8011

TBM

PN:908
PD:5/8" RBR
2" ALUM CAP

PN:II30
PD:SET 8" NAIL

PN:41
PD:AHTD STD. MON
STAMPED T-41

PN:41
PD:5/8"REBAR 2"ALUM.CAP

SURVEY BASELINE N 87°09'19" E
388.36'

PT206+41.21

8013

CONSTRUCTION
N 87°19'04" E
CENTERLINE
115.68'

PN:II31
PD:SET 8" NAIL

8014

PC207+56.89

PI205+13.63

PC191+39.34

℄ CONSTRUCTION
PI = 193+18.59
Δ = 50°16'51.50" RT.
D = 15°00'00.00"
T = 179.26'
L = 335.21'
e = 0.086
PC = 191+39.34
PT = 194+74.54
Ls = 250'
BEGIN SUPER TRANSITION = 190+39.04
BEGIN MAX. SUPER = 192+89.04
END MAX. SUPER = 193+24.84
END SUPER TRANSITION = 195+74.84

℄ CONSTRUCTION
PI = 205+13.63
Δ = 73°04'18.45" LT.
D = 24°00'00.00"
T = 176.88'
L = 304.47'
e = 0.088
PC = 203+36.75
PT = 206+41.21
Ls = 220.00'
BEGIN SUPER TRANSITION = 202+60.17
BEGIN MAX. SUPER = 204+80.17
END MAX. SUPER = 204+97.79
END SUPER TRANSITION = 207+17.79

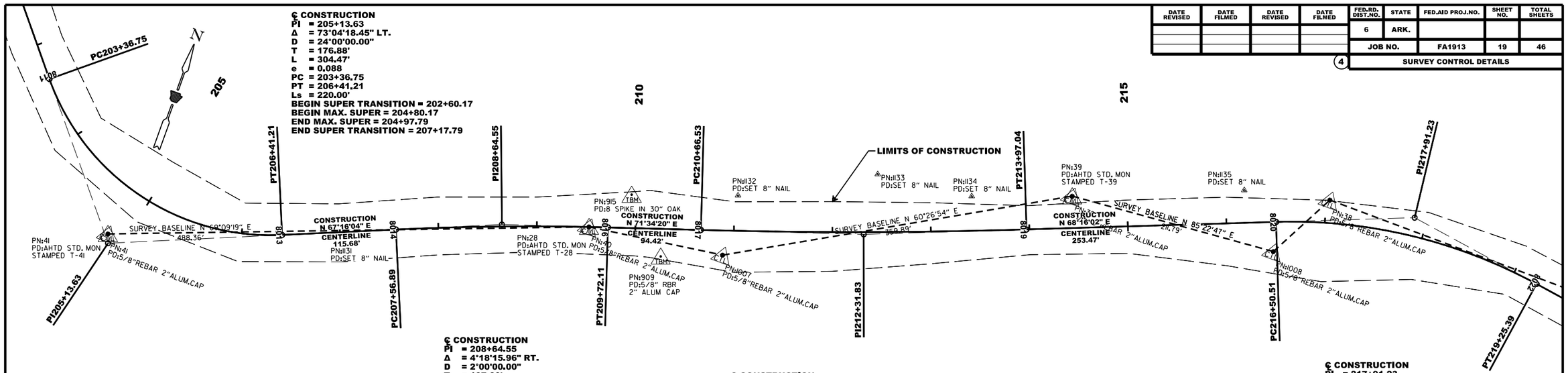
50 0 50 100
SCALE IN FEET

Dec 8 2022 10:36 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	19	46
				4	SURVEY CONTROL DETAILS			

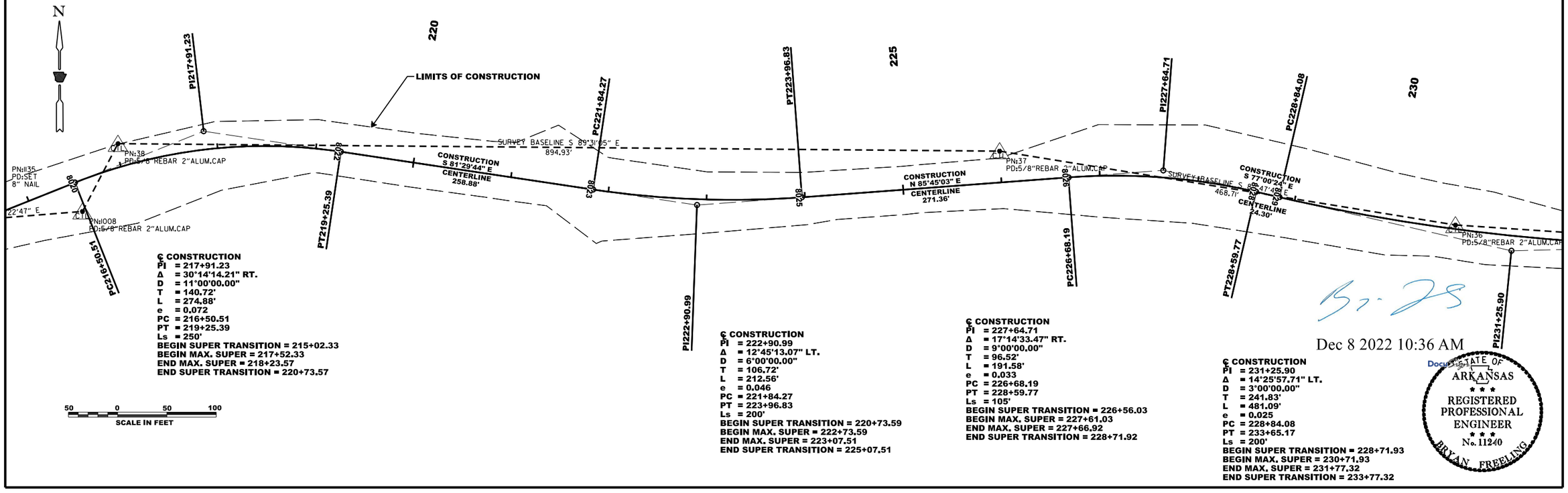


℄ CONSTRUCTION
PI = 205+13.63
Δ = 73°04'18.45" LT.
D = 24°00'00.00"
T = 176.88'
L = 304.47'
e = 0.088
PC = 203+36.75
PT = 206+41.21
Ls = 220.00'
BEGIN SUPER TRANSITION = 202+60.17
BEGIN MAX. SUPER = 204+80.17
END MAX. SUPER = 204+97.79
END SUPER TRANSITION = 207+17.79

℄ CONSTRUCTION
PI = 208+64.55
Δ = 4°18'15.96" RT.
D = 2°00'00.00"
T = 107.66'
L = 215.22'
e = 0.025
PC = 207+56.89
PT = 209+72.11
Ls = 145.00'
BEGIN SUPER TRANSITION = 207+17.81
BEGIN MAX. SUPER = 208+62.81
END MAX. SUPER = 208+66.19
END SUPER TRANSITION = 210+11.19

℄ CONSTRUCTION
PI = 212+31.83
Δ = 3°18'18.43" LT.
D = 1°00'00.00"
T = 165.30'
L = 330.51'
PC = 210+66.53
PT = 213+97.04
NO SUPER ELEVATION

℄ CONSTRUCTION
PI = 217+91.23
Δ = 30°14'14.21" RT.
D = 11°00'00.00"
T = 140.72'
L = 274.88'
e = 0.072
PC = 216+50.51
PT = 219+25.39
Ls = 250'
BEGIN SUPER TRANSITION = 215+02.33
BEGIN MAX. SUPER = 217+52.33
END MAX. SUPER = 218+23.57
END SUPER TRANSITION = 220+73.57



℄ CONSTRUCTION
PI = 217+91.23
Δ = 30°14'14.21" RT.
D = 11°00'00.00"
T = 140.72'
L = 274.88'
e = 0.072
PC = 216+50.51
PT = 219+25.39
Ls = 250'
BEGIN SUPER TRANSITION = 215+02.33
BEGIN MAX. SUPER = 217+52.33
END MAX. SUPER = 218+23.57
END SUPER TRANSITION = 220+73.57

50 0 50 100
SCALE IN FEET

℄ CONSTRUCTION
PI = 222+90.99
Δ = 12°45'13.07" LT.
D = 6°00'00.00"
T = 106.72'
L = 212.56'
e = 0.046
PC = 221+84.27
PT = 223+96.83
Ls = 200'
BEGIN SUPER TRANSITION = 220+73.59
BEGIN MAX. SUPER = 222+73.59
END MAX. SUPER = 223+07.51
END SUPER TRANSITION = 225+07.51

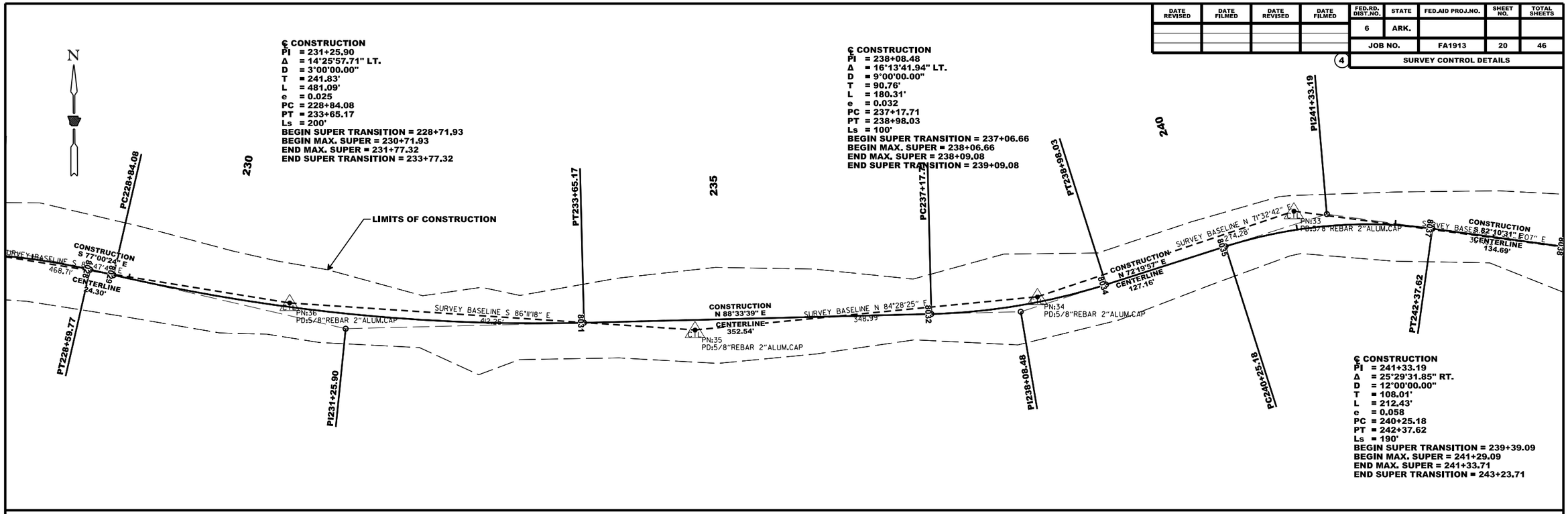
℄ CONSTRUCTION
PI = 227+64.71
Δ = 17°14'33.47" RT.
D = 9°00'00.00"
T = 96.52'
L = 191.58'
e = 0.033
PC = 226+68.19
PT = 228+59.77
Ls = 105'
BEGIN SUPER TRANSITION = 226+56.03
BEGIN MAX. SUPER = 227+61.03
END MAX. SUPER = 227+66.92
END SUPER TRANSITION = 228+71.92

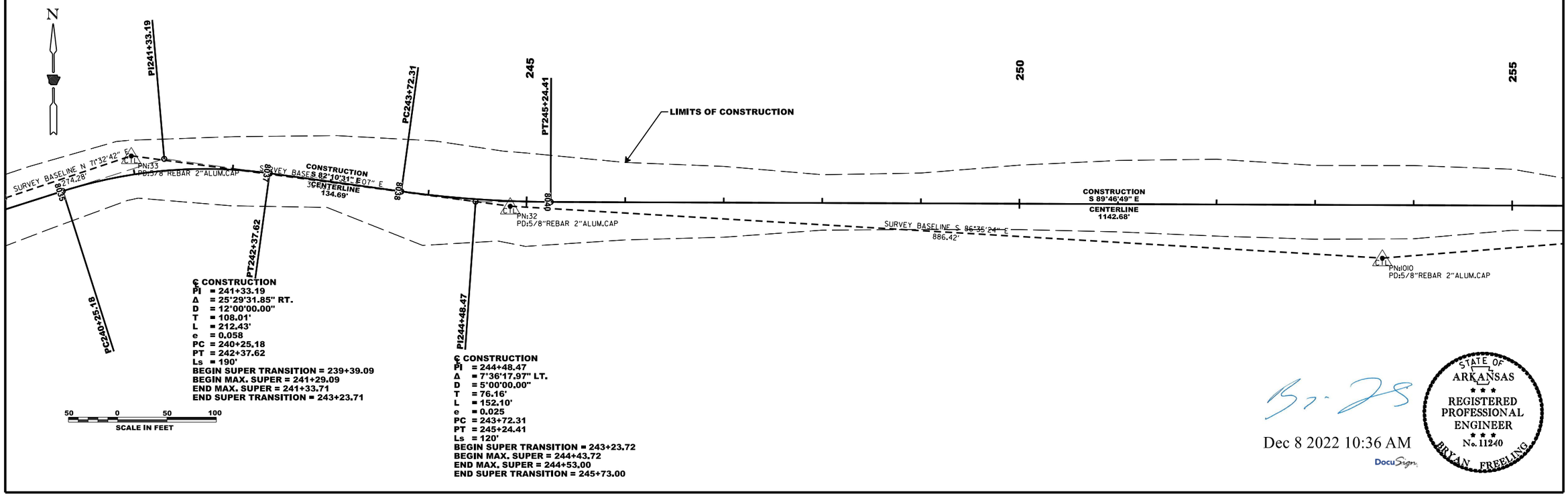
Dec 8 2022 10:36 AM

℄ CONSTRUCTION
PI = 231+25.90
Δ = 14°25'57.71" LT.
D = 3°00'00.00"
T = 241.83'
L = 481.09'
e = 0.025
PC = 228+84.08
PT = 233+65.17
Ls = 200'
BEGIN SUPER TRANSITION = 228+71.93
BEGIN MAX. SUPER = 230+71.93
END MAX. SUPER = 231+77.32
END SUPER TRANSITION = 233+77.32

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	20	46
				4	SURVEY CONTROL DETAILS			



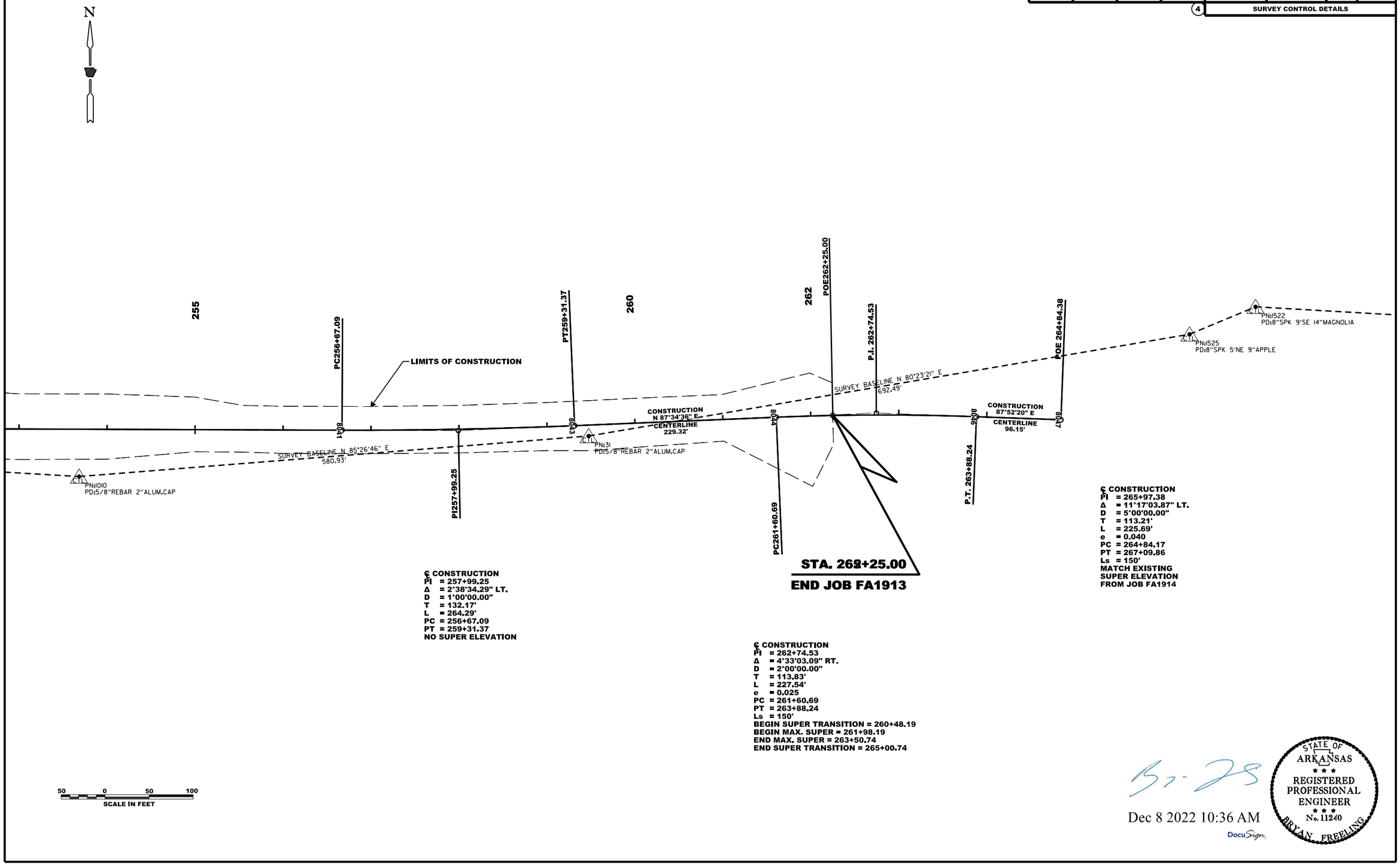


Dec 8 2022 10:36 AM

DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	21	46
				4	SURVEY CONTROL DETAILS			



℄ CONSTRUCTION
PI = 257+99.25
Δ = 2°38'34.29" LT.
D = 1°00'00.00"
T = 132.17'
L = 264.29'
PC = 256+67.09
PT = 259+31.37
NO SUPER ELEVATION

℄ CONSTRUCTION
PI = 262+74.53
Δ = 4°33'03.09" RT.
D = 2°00'00.00"
T = 113.83'
L = 227.54'
e = 0.025
PC = 261+60.69
PT = 263+88.24
Ls = 150'
BEGIN SUPER TRANSITION = 260+48.19
BEGIN MAX. SUPER = 261+98.19
END MAX. SUPER = 263+50.74
END SUPER TRANSITION = 265+00.74

℄ CONSTRUCTION
PI = 265+97.38
Δ = 11°17'03.87" LT.
D = 5°00'00.00"
T = 113.21'
L = 225.69'
e = 0.040
PC = 264+84.17
PT = 267+09.86
Ls = 150'
MATCH EXISTING
SUPER ELEVATION
FROM JOB FA1914

Dec 8 2022 10:36 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	22	46
				4	PLAN AND PROFILE SHEET			

STA. 184+34 INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMB. = 20 CU. YDS.
UNCL. EXCA. = 5 CU. YDS.

STA. 184+75 INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMB. = 20 CU. YDS.

EARTHWORK

UNCLASSIFIED EXCAVATION (MAIN LANES)	35995	CU. YDS.
UNCLASSIFIED EXCAVATION (ADDITIONAL)	120	CU. YDS.
UNCLASSIFIED EXCAVATION (OBLIT. OF RDWY.)	80	CU. YDS.
COMPACTED EMBANKMENT (MAIN LANES)	18188	CU. YDS.
COMPACTED EMBANKMENT (ADDITIONAL)	855	CU. YDS.

EARTHWORK TO BE PAID FOR AS A PLAN QUANTITY.

CLEARING AND GRUBBING
STA. 182+00 - STA. 262+25 = 82 STATIONS

℄ CONSTRUCTION
PI = 188+24.62
Δ = 9°05'38.46" LT.
D = 3°00'00.00"
T = 151.89'
L = 303.13'
e = 0.025
PC = 186+72.74
PT = 189+75.87
Ls = 200'
BEGIN SUPER TRANSITION = 186+09.94
BEGIN MAX. SUPER = 188+09.94
END MAX. SUPER = 188+38.67
END SUPER TRANSITION = 190+38.67

STA. 192+00 CONSTRUCT
24" PIPE CULVERT
CROSS DRAIN
D.A. = N/A Q25 = N/A
24" RCP (CL. IV) (TYPE 3 BEDDING) = 44 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 50 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

STA. 192+37 INSTALL
18" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 45 CU. YDS.

℄ CONSTRUCTION
PI = 193+18.59
Δ = 50°16'51.50" RT.
D = 15°00'00.00"
T = 179.26'
L = 335.21'
e = 0.086
PC = 191+39.34
PT = 194+74.54
Ls = 250'
BEGIN SUPER TRANSITION = 190+39.04
BEGIN MAX. SUPER = 192+89.04
END MAX. SUPER = 193+24.84
END SUPER TRANSITION = 195+74.84

STA. 184+30 INSTALL
18" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMB. = 30 CU. YDS.
UNCL. EXCA. = 5 CU. YDS.

℄ CONSTRUCTION
PI = 184+23.72
Δ = 10°32'23.23" RT.
D = 9°00'00.00"
T = 58.72'
L = 117.11'
e = 0.058
PC = 183+65.00
PT = 184+82.10
Ls = 185'
BEGIN SUPER TRANSITION = 182+37.20
BEGIN MAX. SUPER = 184+22.20
END MAX. SUPER = 184+24.90
END SUPER TRANSITION = 186+09.90

STA. 189+02 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 30 CU. YDS.

STA. 189+66
W1-2R
ON RT.

FENCE REMOVED AND RECONSTRUCTED
STA. 187+39 - STA. 188+88 RT. = 170 FT.

WIRE FENCE (TYPE C)
STA. 182+04 - STA. 183+72 RT. = 168 FT.
STA. 184+91 - STA. 192+11 LT. = 721 FT.
STA. 186+44 - STA. 187+39 RT. = 110 FT.
STA. 189+19 - STA. 201+51 RT. = 1200 FT.
WIRE FENCE (TYPE D)
STA. 193+17 - STA. 198+88 LT. = 584 FT.

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

SCALE IN FEET: 50 0 50 100

STA. 181+00.00
BEGIN JOB FA1913

TRAFFIC CONTROL DEVICES

G20-1
STA. 108+21 - RT. (1 SIGN) = 10 SQ.FT.
STA. 262+25 - LT. (1 SIGN) = 10 SQ.FT.

G20-2
STA. 103+21 - LT. (1 SIGN) = 8 SQ.FT.
STA. 267+25 - RT. (1 SIGN) = 8 SQ.FT.

W20-1
STA. 93+21 (1500) - RT. (1 SIGN) = 16 SQ.FT.
STA. 98+21 (1000) - RT. (1 SIGN) = 16 SQ.FT.
STA. 103+21 (500) - RT. (1 SIGN) = 16 SQ.FT.
STA. 210+14 (AHEAD) - RT. (1 SIGN) = 16 SQ.FT.
STA. 219+06 (AHEAD) - LT. (1 SIGN) = 16 SQ.FT.
STA. 267+25 (500) - LT. (1 SIGN) = 16 SQ.FT.
STA. 272+25 (1000) - LT. (1 SIGN) = 16 SQ.FT.
STA. 277+25 (1500) - LT. (1 SIGN) = 16 SQ.FT.

TRAFFIC DRUMS
ENTIRE JOB - 50 DRUMS

WIRE FENCE REMOVED
STA. 182+04 - STA. 183+72 RT. = 188 FT.
STA. 184+91 - STA. 184+92 RT. = 12 FT.
STA. 184+91 - STA. 192+11 LT. = 744 FT.
STA. 186+44 - STA. 187+39 RT. = 110 FT.
STA. 189+19 - STA. 189+20 RT. = 9 FT.
STA. 189+20 - STA. 202+05 RT. = 1288 FT.
STA. 193+17 - STA. 198+88 LT. = 633 FT.

VC=200' STA. 182+95.00 ELEV. 379.85 ELEV. 380.56
4.03%
VC=100' STA. 184+60.00 ELEV. 386.50 ELEV. 385.86
-1.11%
VC=400' STA. 187+30.00 ELEV. 383.50 ELEV. 383.75
190+00.00 378.92
-0.60%
LT. DITCH GRADE -0.59%
FL IN = 377.55
FL OUT = 376.09
192+00.00 377.75
LT. DITCH GRADE 0.41%
RT. DITCH GRADE 0.55%
192+00.00 375.88
VC=300' STA. 193+90.76 ELEV. 379.52 ELEV. 380.24
194+00.00 376.97

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

181+00 185+00 190+00 194+00

Dec 1 2022 7:00 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	23	46

4 PLAN AND PROFILE SHEET

N

STA. 196+50
W1-2L
ON LT.

STA. 199+00 INSTALL
18" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 35 CU. YDS.

OBLITERATION OF EXISTING ROADWAY
STA. 204+38 TO STA. 205+66 ON RT. = 28 CU. YDS.

16'-0" VEHICULAR GATE
STA. 201+66 ON LT. = 1 EACH

℄ CONSTRUCTION
PI = 205+13.63
Δ = 73°04'18.45" LT.
D = 24°00'00.00"
T = 176.88'
L = 304.47'
e = 0.100
PC = 203+36.75
PT = 206+41.21
Ls = 220.00'
BEGIN SUPER TRANSITION = 202+60.17
BEGIN MAX. SUPER = 204+80.17
END MAX. SUPER = 204+97.79
END SUPER TRANSITION = 207+17.79

STA. 201+66 INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 25 CU. YDS.

195 200 205

PI193+18.59
LIMITS OF CONSTRUCTION
PROPOSED R/W
CONST. LIMITS
PT 35'
+00 45'
T.C.E.
35'-50'
PT194+74.54
PROPOSED R/W
CONSTRUCTION
S 39°39'37" E
CENTERLINE
862.21'
+00 35'
+00 40' 40'
+00 35'
+00 35'
+25 30'
+75 30'
PC203+36.75
PC 45'
+00 50'
+00 55'
PT206+41.21
45° LT.
CONSTRUCTION
N 07°16'04" E
CENTERLINE
115.68'
80'
PC207+56.89
PROPOSED R/W
CONST. LIMITS
PROPOSED R/W
PC 35'
+25 60'-35'
+00 60'-35'
T.C.E.
PC194+39.34
PI205+13.63

STA. 201+32
W1-2L
ON RT.

WIRE FENCE (TYPE C)
STA. 201+71 - STA. 202+05 RT. = 34 FT.
WIRE FENCE (TYPE D)
STA. 205+59 - STA. 209+99 RT. = 448 FT.
WIRE FENCE (TYPE D-2)
STA. 199+13 - STA. 201+56 LT.= 243 FT.
STA. 201+76 - STA. 201+88 LT.= 12 FT.

16'-0" VEHICULAR GATE
STA. 201+61 ON RT. = 1 EACH

STA. 201+62 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 40 CU. YDS.

STA. 202+83 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 20 CU. YDS.

50 0 50 100
SCALE IN FEET

WIRE FENCE REMOVED
STA. 199+13 - STA. 201+87 LT. = 281 FT.
STA. 201+75 - STA. 202+05 RT. = 39 FT.
STA. 201+88 - STA. 201+88 LT. = 4 FT.
STA. 205+59 - STA. 209+99 RT. = 455 FT.

460 455 450 445 440 435 430 425 420 415 410 405 400 395 390 385 380 375 370 365

VC=150'
STA. 198+25.91
ELEV. 385.27
ELEV. 384.92
VC=500'
STA. 201+57.47
ELEV. 383.43
ELEV. 384.72
195+00.00
378.98
LT. DITCH GRADE 0.41%
1.32%
-0.56%
1.51%
LT. DITCH GRADE 0.29%
RT. DITCH GRADE 0.29%
197+00.00
380.65
200+00.00
381.52

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

194+00 195+00 200+00 205+00 207+00

Dec 1 2022 7:01 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	24	46
				4	PLAN AND PROFILE SHEET			

N

℄ CONSTRUCTION
PI = 208+64.55
Δ = 4°18'15.96" RT.
D = 2°00'00.00"
T = 107.66'
L = 215.22'
e = 0.025
PC = 207+56.89
PT = 209+72.11
Ls = 145.00'
BEGIN SUPER TRANSITION = 207+17.81
BEGIN MAX. SUPER = 208+62.81
END MAX. SUPER = 208+66.19
END SUPER TRANSITION = 210+11.19

STA. 208+16
W1-2R
ON LT.

OBLITERATION OF EXISTING ROADWAY
STA. 210+97 TO STA. 217+00 ON LT. = 100 CU. YDS.

STA. 213+44 - STA. 213+71
27' GUARDRAIL
ON LT.
REMOVE

STA. 213+48 - STA. 213+66
18' WOOD WALL
ON LT.
REMOVE

℄ CONSTRUCTION
PI = 217+91.23
Δ = 30°14'14.21" RT.
D = 11°00'00.00"
T = 140.72'
L = 274.88'
e = 0.072
PC = 216+50.51
PT = 219+25.39
Ls = 250'
BEGIN SUPER TRANSITION = 215+02.33
BEGIN MAX. SUPER = 217+52.33
END MAX. SUPER = 218+23.57
END SUPER TRANSITION = 220+73.57

STA. 216+03 - STA. 216+54
51' GUARDRAIL
ON LT.
REMOVE

STA. 219+06 INSTALL
18" X 48" PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 135 CU. YDS.

STA. 218+90
R1-1
ON LT.

205 210 215 220

LIMITS OF CONSTRUCTION

CONST. LIMITS

PROPOSED R/W

CONSTRUCTION
N 67°16'04" E
CENTERLINE
115.68'

CONSTRUCTION
N 71°34'20" E
CENTERLINE
94.42'

CONSTRUCTION
N 68°16'02" E
CENTERLINE
253.47'

CONSTRUCTION
S 81°29'44" E
CENTERLINE
256.88'

PT206+41.21
PC207+56.89
PI208+64.55
PT209+72.11
PC210+66.53
PI212+31.83
PT213+97.04
PC216+50.51
PI217+91.23
PT219+25.39

T.C.E.

STA. 210+14 INSTALL
18" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMB. = 35 CU. YDS.
UNCL. EXCA. = 5 CU. YDS.

STA. 210+34
R1-1
ON RT.

℄ CONSTRUCTION
PI = 212+31.83
Δ = 3°18'18.43" LT.
D = 1°00'00.00"
T = 165.30'
L = 330.51'
PC = 210+66.53
PT = 213+97.04
NO SUPER ELEVATION

STA. 214+76
W1-2R
ON RT.

50 0 50 100
SCALE IN FEET

VC=300'
STA. 209+77.31
ELEV. 395.83
ELEV. 394.59

VC=300'
STA. 214+69.24
ELEV. 387.00
ELEV. 384.28

VC=400'
STA. 219+78.31
ELEV. 340.93
ELEV. 345.46

1.51%
-1.80%
-9.05%

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

207+00 210+00 215+00 220+00

Dec 1 2022 7:01 AM
DocuSign

STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 11240
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.		FA1913	25	46
				4	PLAN AND PROFILE SHEET			

STA. 221+46 - STA. 221+79
32' CONCRETE HEADWALL
ON LT.
REMOVE

STA. 221+00
W1-2L
ON LT.

STA. 221+72 CONSTRUCT
DOUBLE 84" PIPE CULVERT
CROSS DRAIN
D.A. = 307 ACRES Q25 = 500 CFS
84" RCP (CL. IV) (TYPE 3 BEDDING) = 180 LIN. FT.
84" CMP (TYPE 2 BEDDING) = 188 LIN. FT.
84" FES ON LT. AND RT. = 4 EACH

STA. 224+31
CONST. APPR. ON LT.
COMP. EMBK. = 95 CU. YDS.

STA. 221+72
84" X 29' R.R. TANKER
CROSS DRAIN
REMOVE

℄ CONSTRUCTION
PI = 222+90.99
Δ = 12°45'13.07" LT.
D = 6°00'00.00"
T = 106.72'
L = 212.56'
e = 0.046
PC = 221+84.27
PT = 223+96.83
Ls = 200'
BEGIN SUPER TRANSITION = 220+73.59
BEGIN MAX. SUPER = 222+73.59
END MAX. SUPER = 223+07.51
END SUPER TRANSITION = 225+07.51

16'-0" VEHICULAR GATE
STA. 224+31 ON LT. = 1 EACH

℄ CONSTRUCTION
PI = 227+64.71
Δ = 17°14'33.47" RT.
D = 9°00'00.00"
T = 96.52'
L = 191.58'
e = 0.033
PC = 226+68.19
PT = 228+59.77
Ls = 105'
BEGIN SUPER TRANSITION = 226+56.03
BEGIN MAX. SUPER = 227+61.03
END MAX. SUPER = 227+66.92
END SUPER TRANSITION = 228+71.92

LIMITS OF CONSTRUCTION

℄ CONSTRUCTION
PI = 231+25.90
Δ = 14°25'57.71" LT.
D = 3°00'00.00"
T = 241.83'
L = 481.09'
e = 0.025
PC = 228+84.08
PT = 233+65.17
Ls = 200'
BEGIN SUPER TRANSITION = 228+71.93
BEGIN MAX. SUPER = 230+71.93
END MAX. SUPER = 231+77.32
END SUPER TRANSITION = 233+77.32

STA. 232+60
12" X 30' C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 232+60 CONSTRUCT
24" PIPE CULVERT
CROSS DRAIN
D.A. = N/A Q25 = N/A
24" RCP (CL. IV) (TYPE 3 BEDDING) = 76 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 82 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

CONSTRUCTION S 81°29'44" E
CENTERLINE 258.88
CONSTRUCTION N 85°45'03" E
CENTERLINE 271.36'
CONSTRUCTION S 77°00'24" E
CENTERLINE 24.30'
CONST. LIMITS
PROPOSED R/W
T.C.E.

STA. 220+77 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 35 CU. YDS.

WIRE FENCE (TYPE D)
STA. 221+12 - STA. 221+72 RT. = 61 FT.
WIRE FENCE (TYPE D-1)
STA. 222+24 - STA. 224+99 RT. = 284 FT.
STA. 225+36 - STA. 229+91 RT. = 445 FT.

STA. 225+17 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 70 CU. YDS.

STA. 230+47 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMB. = 25 CU. YDS.
UNCL. EXCA. = 5 CU. YDS.

50 0 50 100
SCALE IN FEET

WIRE FENCE REMOVED
STA. 224+11 - STA. 224+39 LT. = 28 FT.
STA. 220+87 - STA. 221+42 RT. = 56 FT.
STA. 221+12 - STA. 221+42 RT. = 65 FT.
STA. 222+24 - STA. 224+99 RT. = 342 FT.
STA. 225+36 - STA. 229+91 RT. = 464 FT.

VC=300'
STA. 230+50.07
ELEV. 381.85
ELEV. 378.08
0.46%
FL IN = 378.34
FL OUT = 370.73

VC=400'
STA. 226+61.37
ELEV. 341.00
ELEV. 346.25
10.51%
0.01%
FL IN = 328.30
FL OUT = 324.79

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

220+00 225+00 230+00 233+00

Dec 1 2022 7:01 AM
DocuSign
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	26	46

4 PLAN AND PROFILE SHEET

N

℄ CONSTRUCTION
PI = 238+08.48
Δ = 16°13'41.94" LT.
D = 9°00'00.00"
T = 90.76'
L = 180.31'
e = 0.032
PC = 237+17.71
PT = 238+98.03
Ls = 100'
BEGIN SUPER TRANSITION = 237+06.66
BEGIN MAX. SUPER = 238+06.66
END MAX. SUPER = 238+09.08
END SUPER TRANSITION = 239+09.08

STA. 238+00 CONSTRUCT
24" PIPE CULVERT
CROSS DRAIN
D.A. = N/A Q25 = N/A
24" RCP (CL. IV) (TYPE 3 BEDDING) = 62 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 66 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

STA. 239+18
18" X 29' C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 240+88 INSTALL
18" X 50' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 110 CU. YDS.

STA. 244+13
W1-2L
ON LT.

℄ CONSTRUCTION
PI = 244+48.47
Δ = 7°36'17.97" LT.
D = 5°00'00.00"
T = 76.16'
L = 152.10'
e = 0.025
PC = 243+72.31
PT = 245+24.41
Ls = 120'
BEGIN SUPER TRANSITION = 243+23.72
BEGIN MAX. SUPER = 244+43.72
END MAX. SUPER = 244+53.00
END SUPER TRANSITION = 245+73.00

PT233+65.17 | 235 | PC237+17.71 | 240 | PI241+33.19 | 245 | PT245+24.41

LIMITS OF CONSTRUCTION

PROPOSED R/W | CONST. LIMITS | T.C.E.

CONSTRUCTION N 88°33'39" E
CENTERLINE 352.54'

CONSTRUCTION N 72°19'57" E
CENTERLINE 127.16'

CONSTRUCTION S 82°10'31" E
CENTERLINE 134.69'

PI238+08.48 | PT 90°-50' | PC240+25.18 | 90°-40' | PI 90°-40' | PT242+37.62 | PC243+72.31 | PI244+48.47 90°-55' | PT 90°-55'

STA. 238+50
W1-2R
ON RT.

℄ CONSTRUCTION
PI = 241+33.19
Δ = 25°29'31.85" RT.
D = 12°00'00.00"
T = 108.01'
L = 212.43'
e = 0.058
PC = 240+25.18
PT = 242+37.62
Ls = 190'
BEGIN SUPER TRANSITION = 239+39.09
BEGIN MAX. SUPER = 241+29.09
END MAX. SUPER = 241+33.71
END SUPER TRANSITION = 243+23.71

STA. 244+73 INSTALL
18" X 36' PIPE CULVERT
RT, CO, RD, TURNOUT
CONST. APPR.
COMP. EMB. = 35 CU. YDS.
UNCL. EXCA. = 100 CU. YDS.

50 0 50 100
SCALE IN FEET

WIRE FENCE (TYPE D)
STA. 243+42 - STA. 252+74 LT. = 926 FT.
WIRE FENCE (TYPE D-1)
STA. 244+06 - STA. 244+52 RT.= 47 FT.
STA. 244+89 - STA. 246+89 RT.= 202 FT.

WIRE FENCE REMOVED
STA. 243+42 - STA. 252+74 LT. = 942 FT.
STA. 244+06 - STA. 244+52 RT. = 49 FT.
STA. 244+89 - STA. 246+89 RT. = 202 FT.

445 440 435 430 425 420 415 410 405 400 395 390 385 380 375 370 365 360 355 350

VC=300'
STA. 235+17.00
ELEV. 384.00
ELEV. 382.07

0.46%

-4.67%

VC=200'
STA. 237+73.79
ELEV. 372.00
ELEV. 373.33

FL IN = 366.41
FL OUT = 365.52

0.66%

LT. DITCH GRADE 1.26%

240+00.00
367.38

241+00.00
366.64

VC=300'
STA. 242+29.21
ELEV. 375.00
ELEV. 377.85

8.26%

VC=250'
STA. 245+07.81
ELEV. 398.00
ELEV. 394.08

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

233+00 235+00 240+00 245+00 246+00

Dec 1 2022 7:01 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	27	46
				4	PLAN AND PROFILE SHEET			

N

PC243+72.31
60' PC 60'
PT245+24.41
60' PT 60'
245
250
255
PROPOSED R/W
LIMITS OF CONSTRUCTION
CONST. LIMITS
+00 35'
+00 50'
+00 50'0
CONSTRUCTION
S 89°46'49" E
CENTERLINE
1142.68'
+00 35'
+00 35'
+00 40'
+00 40'
PC 55'
T.C.E.
PT 90°-55'
PI244+48.47
90°-55'
T
STA. 255+54 INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 20 CU. YDS.
PC256+67.09
35'C 35'
PC 35'
PI257+99.25
CONST. LIMITS
PROPOSED R/W

℄ CONSTRUCTION
PI = 257+99.25
Δ = 2°38'34.29" LT.
D = 1°00'00.00"
T = 132.17'
L = 264.29'
PC = 256+67.09
PT = 259+31.37
NO SUPER ELEVATION

WIRE FENCE (TYPE D)
STA. 255+77 - STA. 260+47 LT. = 464 FT.
WIRE FENCE (TYPE D-1)
STA. 253+05 - STA. 254+94 RT.= 189 FT.

50 0 50 100
SCALE IN FEET

WIRE FENCE REMOVED
STA. 253+05 - STA. 254+94 RT. = 189 FT.
STA. 255+77 - STA. 260+47 LT. = 500 FT.

VC=200'
STA. 247+64.50
ELEV. 387.00
ELEV. 387.99
-4.29%
-0.32%
VC=300'
STA. 250+77.31
ELEV. 386.00
ELEV. 384.53
-4.24%
VC=300'
STA. 255+27.31
ELEV. 366.93
ELEV. 368.35
-0.46%

445 440 435 430 425 420 415 410 405 400 395 390 385 380 375 370 365 360 355 350

246+00 250+00 255+00 258+00

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

Dec 1 2022 7:01 AM
DocuSign

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
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.		FA1913	28	46
				4	PLAN AND PROFILE SHEET			

N

STA. 262+00 CONSTRUCT
24" PIPE CULVERT
CROSS DRAIN
D.A. = N/A Q25 = N/A
24" RCP (CL. IV) (TYPE 3 BEDDING) = 42 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 48 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

℄ CONSTRUCTION
PI = 262+74.53
Δ = 4°33'03.09" RT.
D = 2°00'00.00"
T = 113.83'
L = 227.54'
e = 0.025
PC = 261+60.69
PT = 263+88.24
Ls = 150'
BEGIN SUPER TRANSITION = 260+48.19
BEGIN MAX. SUPER = 261+98.19
END MAX. SUPER = 263+50.74
END SUPER TRANSITION = 265+00.74

STA. 260+35
18" X 30' C.M. PIPE CULVERT
CROSS DRAIN
REMOVE

℄ CONSTRUCTION
PI = 265+97.38
Δ = 11°17'03.87" LT.
D = 5°00'00.00"
T = 113.21'
L = 225.69'
e = 0.040
PC = 264+84.17
PT = 267+09.86
Ls = 150'
MATCH EXISTING
SUPER ELEVATION

255 | 260 | 262

+00 50'0

PC256+67.09 35'C 35'

PT259+31.37 35'-90'

+50 90'

PC 35'-90'

+25 POE262+25.00 40'-90'

P.I. 262+74.53

POE 264+84.38

LIMITS OF CONSTRUCTION

CONST. LIMITS

PROPOSED R/W

CONSTRUCTION N 87°34'36" E CENTERLINE 229.32'

CONSTRUCTION N 87°52'20" E CENTERLINE 96.15'

+00 40'

PROPOSED R/W

PC 35'

PI257+99.25

CONST. LIMITS

T.C.E.

PT 90'-35'

+00 90'-35'

+28.86 90'-50'

PC261+60.69 90'-45'

+25 90'-45'

P.T. 263+88.24

50 0 50 100
SCALE IN EEET

WIRE FENCE (TYPE D)
STA. 260+44 - STA. 261+84 RT. = 140 FT.
STA. 262+15 - STA. 262+25 RT. = 10 FT.

STA. 259+48 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
℄CONST. APPR.
COMP. EMBK. = 20 CU. YDS.

STA. 259+50
12" X 30' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 262+25.00
END JOB FA1913

445 | 440 | 435 | 430 | 425 | 420 | 415 | 410 | 405 | 400 | 395 | 390 | 385 | 380 | 375 | 370 | 365 | 360 | 355 | 350

WIRE FENCE REMOVED
STA. 260+44 - STA. 261+84 RT. = 140 FT.
STA. 262+15 - STA. 262+25 RT. = 10 FT.

STA. 260+74.86
ELEV. 364.43

STA. 261+24.86
ELEV. 364.43

VC=300'

STA. 262+99.86
ELEV. 365.33
ELEV. 367.14

-0.46%

0.00%

0.51%

5.33%

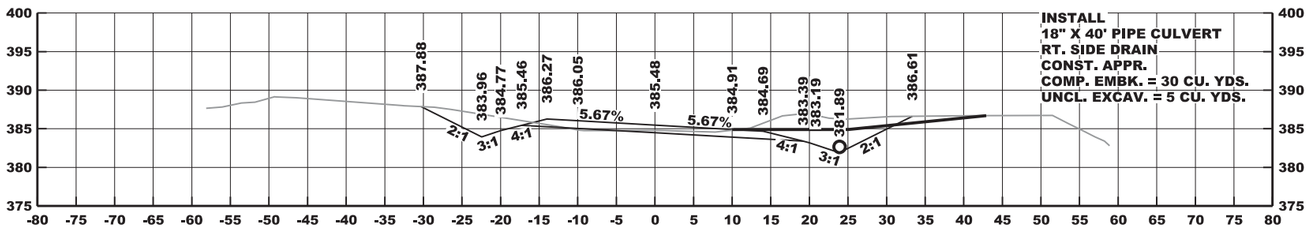
FL IN = 361.34
FL OUT = 361.11

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

258+00 | 260+00 | 262+25 | 264+84

Dec 1 2022 7:01 AM
DocuSign

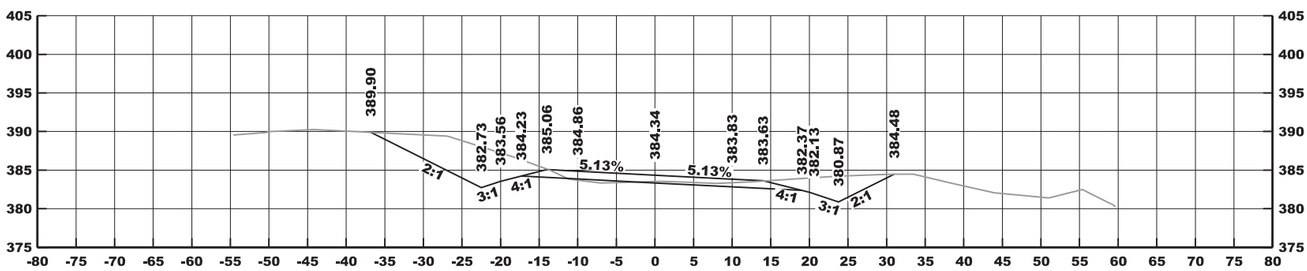
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING



AREA CUT 88.12
AREA FILL 0.81

184+30

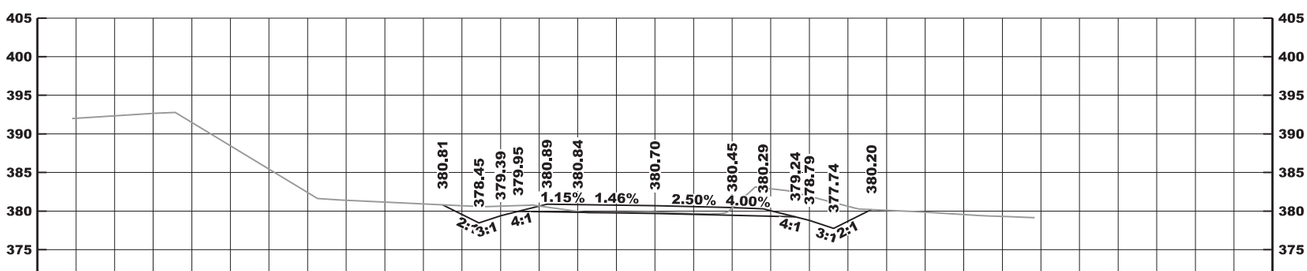
CUT VOLUME 107.78
FILL VOLUME 1.50



AREA CUT 105.88
AREA FILL 1.89

184+00

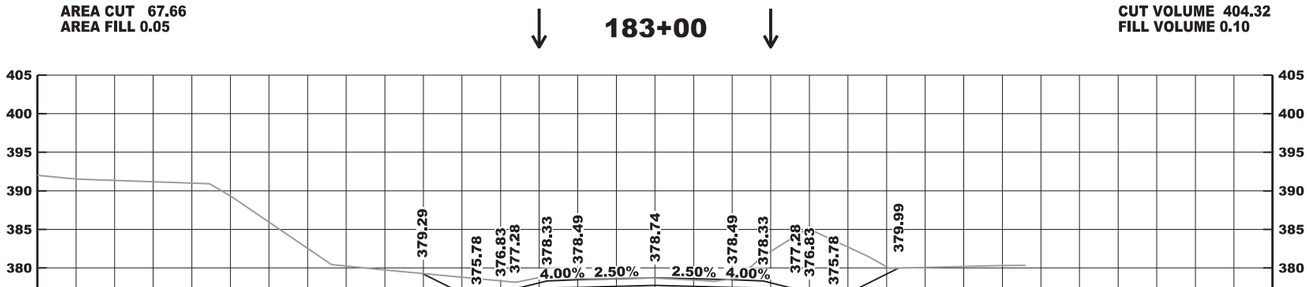
CUT VOLUME 321.38
FILL VOLUME 3.59



AREA CUT 67.66
AREA FILL 0.05

183+00

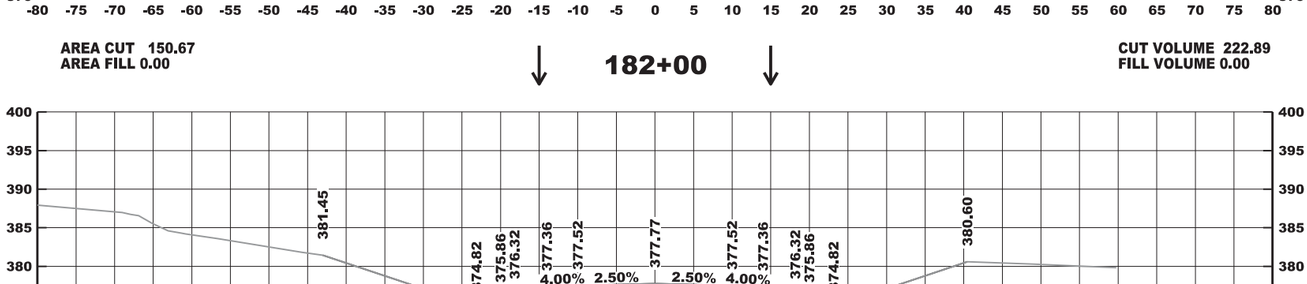
CUT VOLUME 404.32
FILL VOLUME 0.10



AREA CUT 150.67
AREA FILL 0.00

182+00

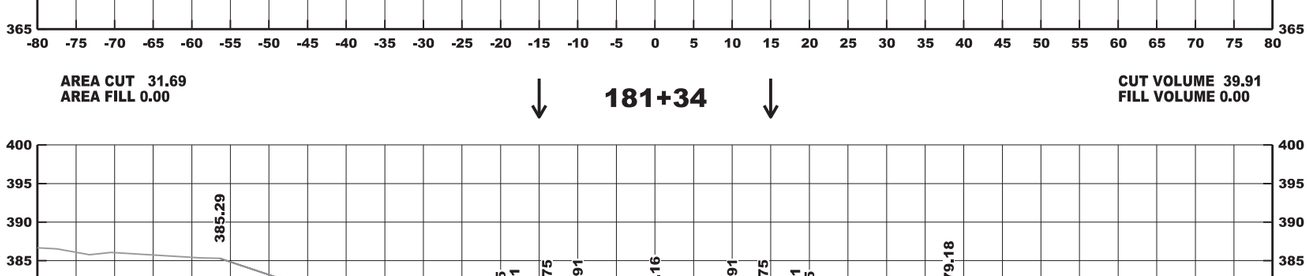
CUT VOLUME 222.89
FILL VOLUME 0.00



AREA CUT 31.69
AREA FILL 0.00

181+34

CUT VOLUME 39.91
FILL VOLUME 0.00



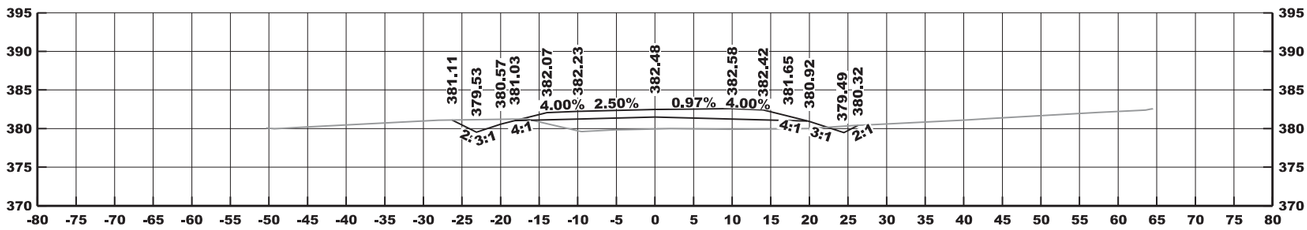
AREA CUT 31.69
AREA FILL 0.00

181+00

CUT VOLUME 0.00
FILL VOLUME 0.00

BEGIN JOB FA1913

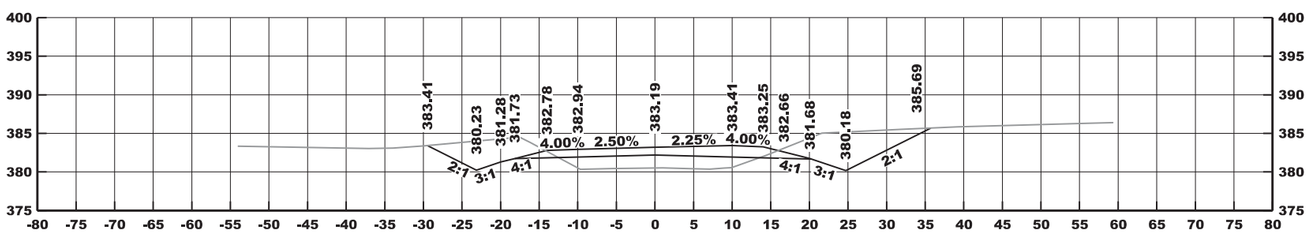
					PART REVISED
					PART PLANED
					DATE REVISED
					DATE PLANED
4					
CROSS SECTIONS	JOB NO.	FA1913	STATE	ARK.	FED.RD. DIST.NO. 6
			FED.AID PROJ.NO.		
		29	SHEET NO.		
		46	TOTAL SHEETS		



AREA CUT 8.59
AREA FILL 46.75

189+00

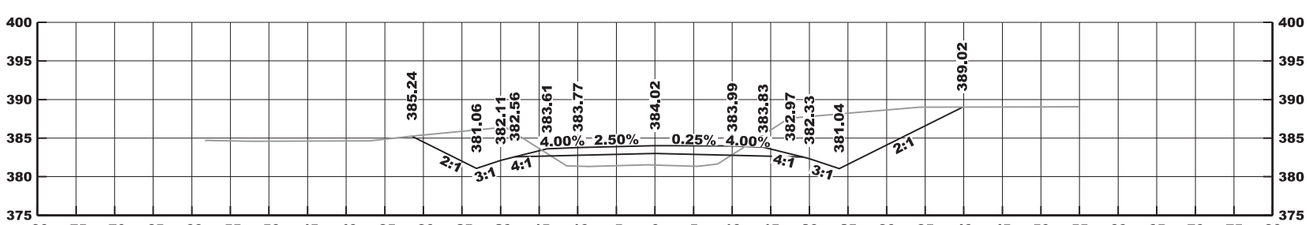
CUT VOLUME 174.84
FILL VOLUME 154.15



AREA CUT 85.84
AREA FILL 36.49

188+00

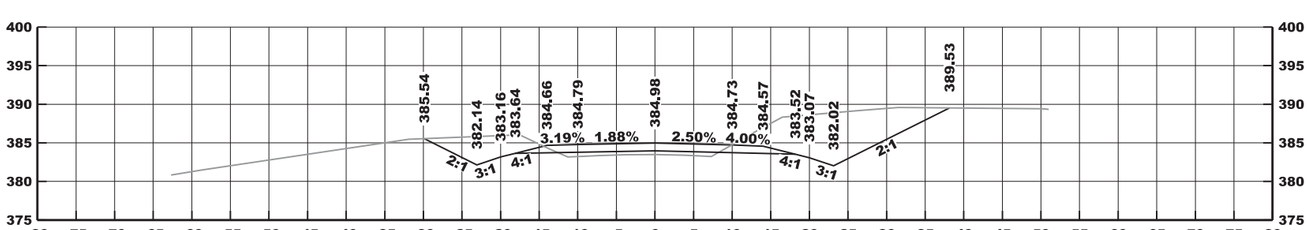
CUT VOLUME 448.72
FILL VOLUME 124.91



AREA CUT 156.47
AREA FILL 30.96

187+00

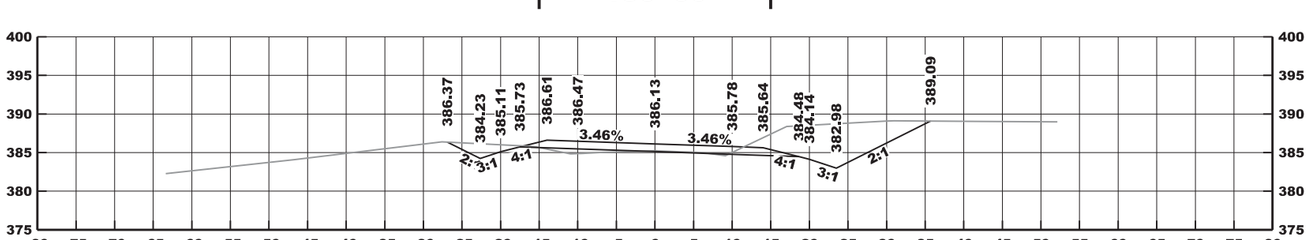
CUT VOLUME 560.22
FILL VOLUME 75.78



AREA CUT 146.05
AREA FILL 9.96

186+00

CUT VOLUME 437.83
FILL VOLUME 27.04

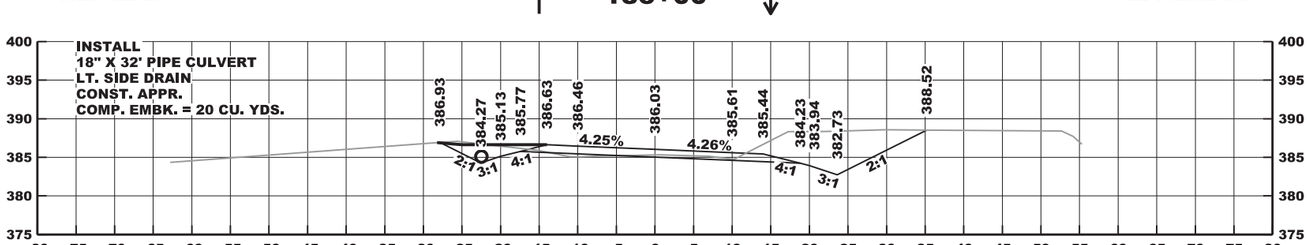


AREA CUT 90.38
AREA FILL 4.64

185+00

CUT VOLUME 86.66
FILL VOLUME 3.08

INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 20 CU. YDS.

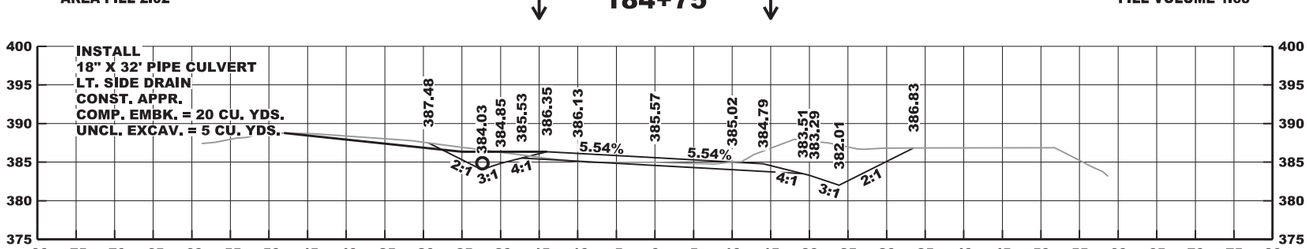


AREA CUT 96.80
AREA FILL 2.02

184+75

CUT VOLUME 145.98
FILL VOLUME 1.68

INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 20 CU. YDS.
UNCL. EXCAV. = 5 CU. YDS.

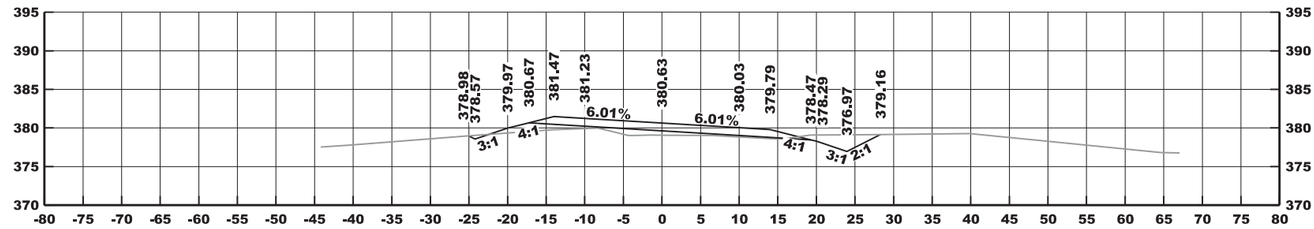


AREA CUT 95.46
AREA FILL 0.19

184+34

CUT VOLUME 13.60
FILL VOLUME 0.07

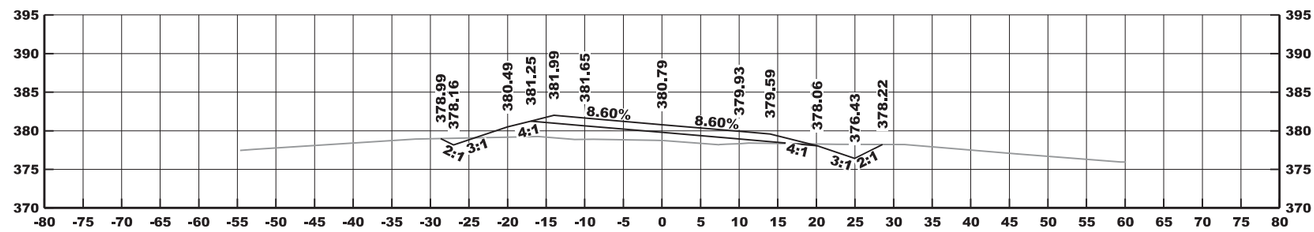
						PLAN REVISED	
						PLAN PLACED	
						PLAT REVISED	
						PLAT PLACED	
4							
CROSS SECTIONS	JOB NO.	FA1913	STATE	ARK.	FED.REG. DIST.NO.	6	
			FED.AID PROJ.NO.		SHEET NO.	30	
					TOTAL SHEETS	46	



AREA CUT 12.71
AREA FILL 17.55

194+00

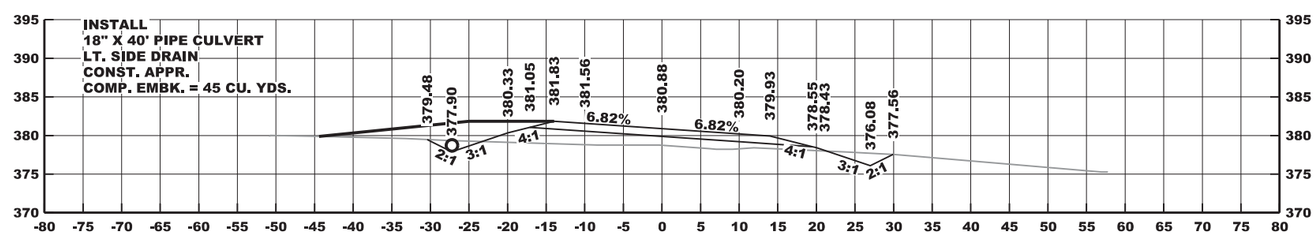
CUT VOLUME 42.60
FILL VOLUME 118.56



AREA CUT 10.29
AREA FILL 46.47

193+00

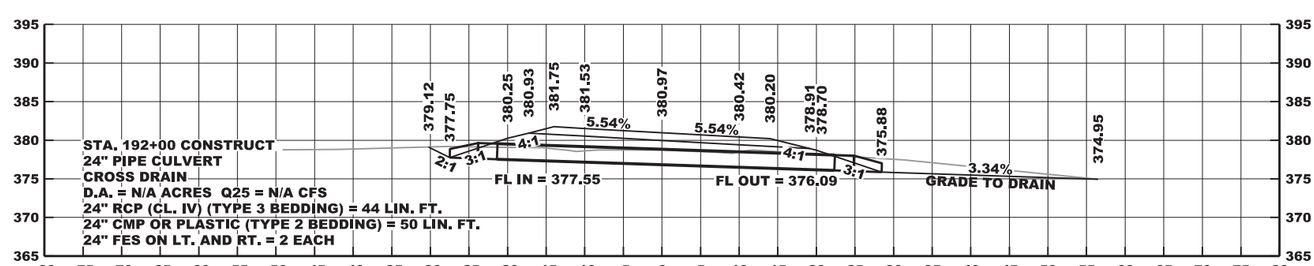
CUT VOLUME 26.19
FILL VOLUME 115.01



AREA CUT 12.15
AREA FILL 52.11

192+37

CUT VOLUME 33.31
FILL VOLUME 72.68

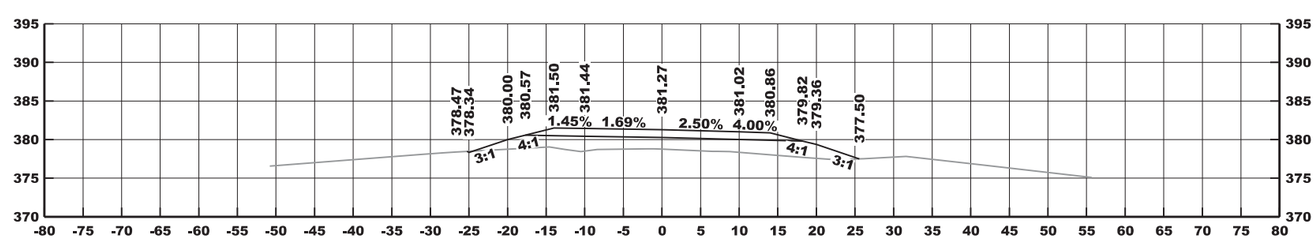


STA. 192+00 CONSTRUCT
24" PIPE CULVERT
CROSS DRAIN
D.A. = N/A ACRES Q25 = N/A CFS
24" RCP (CL. IV) (TYPE 3 BEDDING) = 44 LIN. FT.
24" CMP OR PLASTIC (TYPE 2 BEDDING) = 50 LIN. FT.
24" FES ON LT. AND RT. = 2 EACH

AREA CUT 36.46
AREA FILL 53.96

192+00

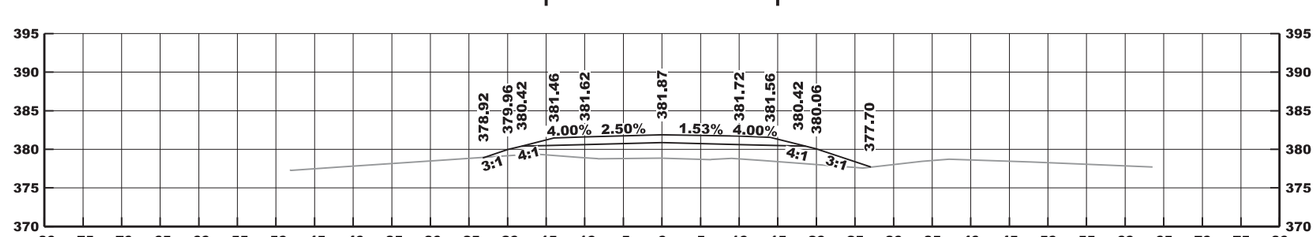
CUT VOLUME 67.63
FILL VOLUME 240.22



AREA CUT 0.06
AREA FILL 75.76

191+00

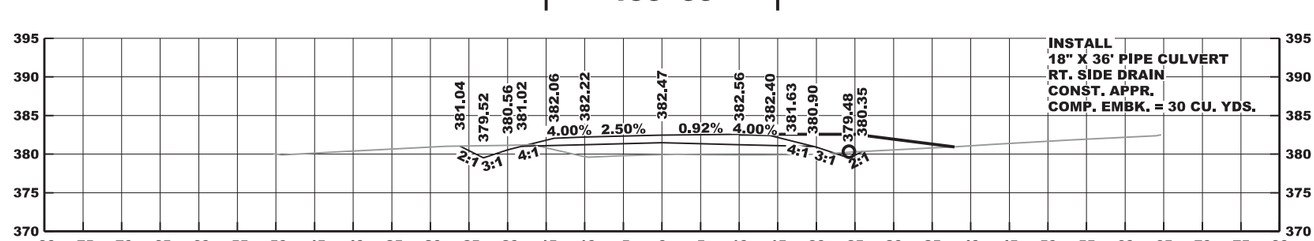
CUT VOLUME 0.11
FILL VOLUME 291.13



AREA CUT 0.00
AREA FILL 81.45

190+00

CUT VOLUME 14.30
FILL VOLUME 234.00



INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 30 CU. YDS.

AREA CUT 7.88
AREA FILL 47.49

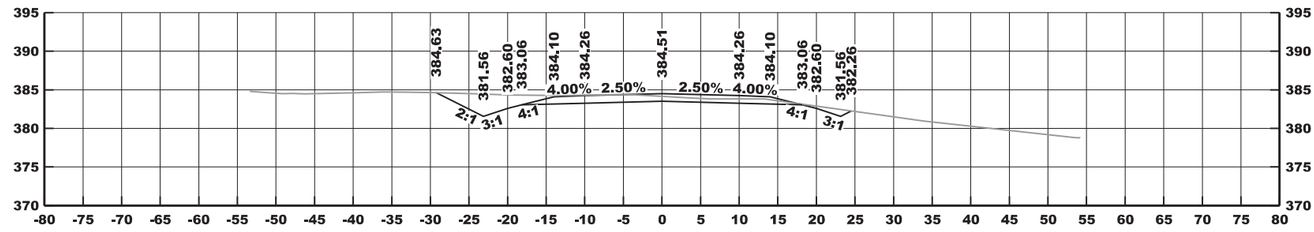
189+02

CUT VOLUME 0.61
FILL VOLUME 3.49

PART REVISED	
PART PLANED	
DATE REVISED	
DATE PLANED	
FEDERAL DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	31
TOTAL SHEETS	46

CROSS SECTIONS

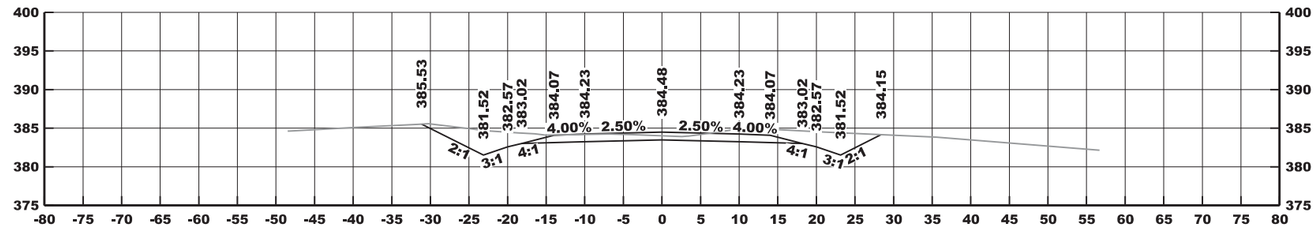
4



AREA CUT 49.35
AREA FILL 0.00

CUT VOLUME 244.13
FILL VOLUME 0.00

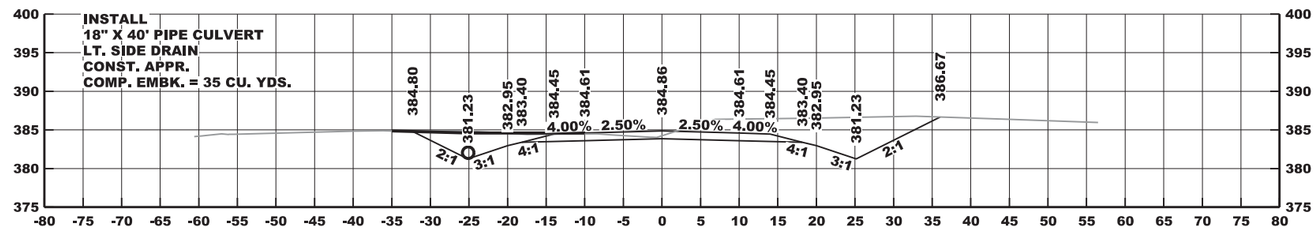
201+00



AREA CUT 82.48
AREA FILL 0.00

CUT VOLUME 420.44
FILL VOLUME 0.00

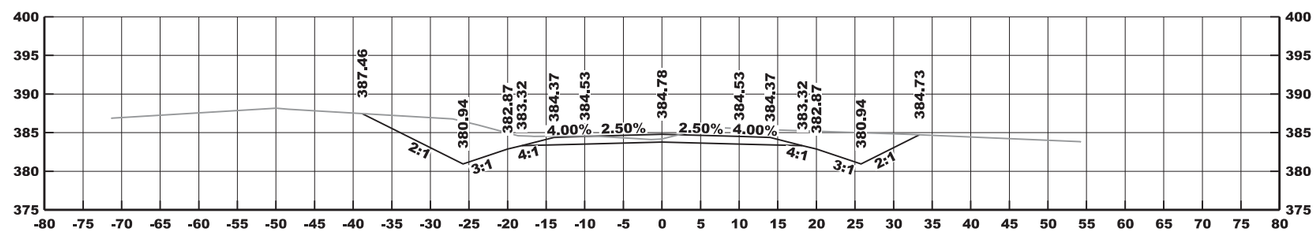
200+00



AREA CUT 144.55
AREA FILL 0.00

CUT VOLUME 540.96
FILL VOLUME 0.00

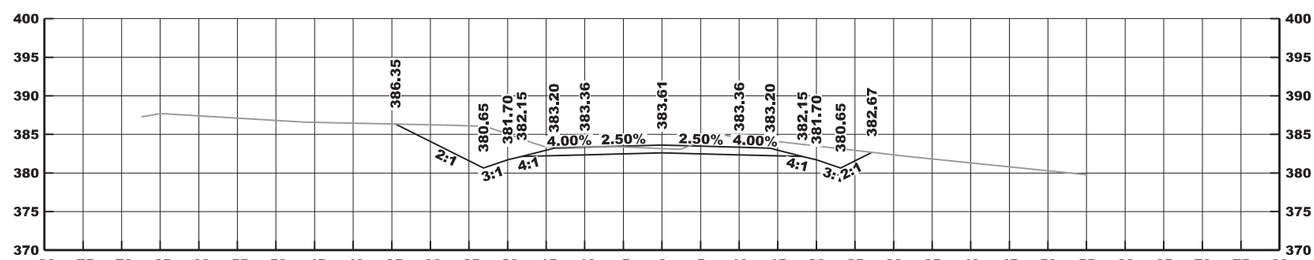
199+00



AREA CUT 147.57
AREA FILL 0.00

CUT VOLUME 485.65
FILL VOLUME 0.00

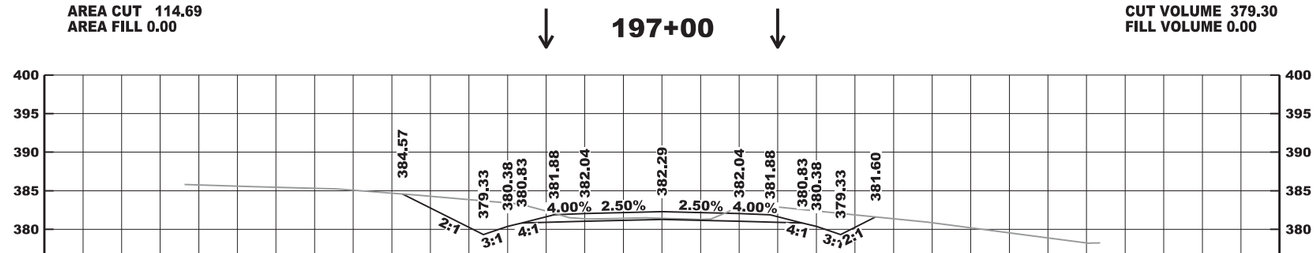
198+00



AREA CUT 114.69
AREA FILL 0.00

CUT VOLUME 379.30
FILL VOLUME 0.00

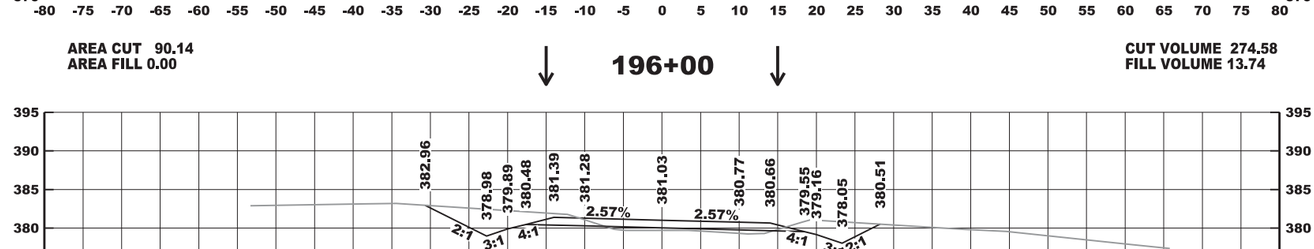
197+00



AREA CUT 90.14
AREA FILL 0.00

CUT VOLUME 274.58
FILL VOLUME 13.74

196+00



AREA CUT 58.14
AREA FILL 7.42

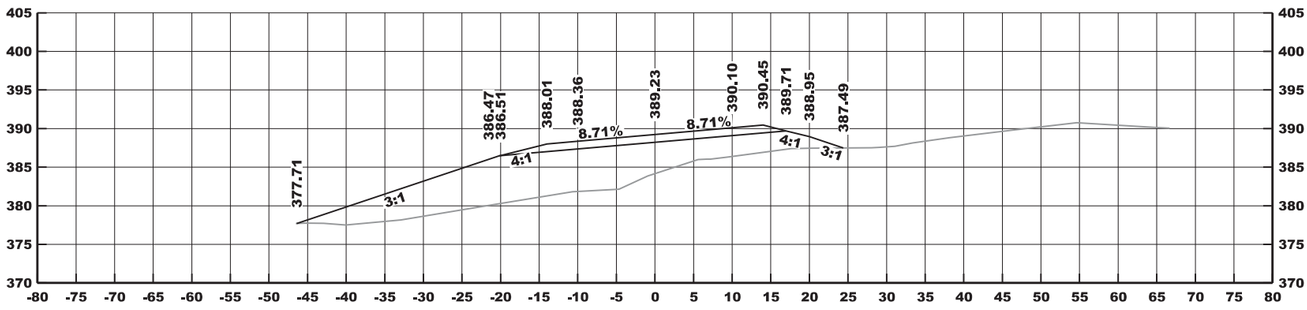
CUT VOLUME 131.20
FILL VOLUME 46.25

195+00

CROSS SECTIONS

JOB NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	32
TOTAL SHEETS	46
FED.RDS. DIST.NO.	
PLAT PLANED	
DATE REVISED	
PLAT PLANED	
DATE REVISED	

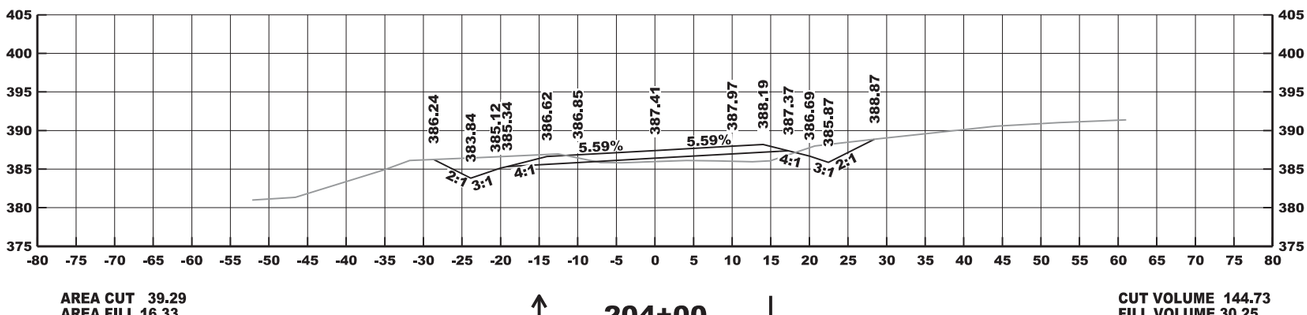
4



AREA CUT 0.00
AREA FILL 264.80

← **205+00** ↓

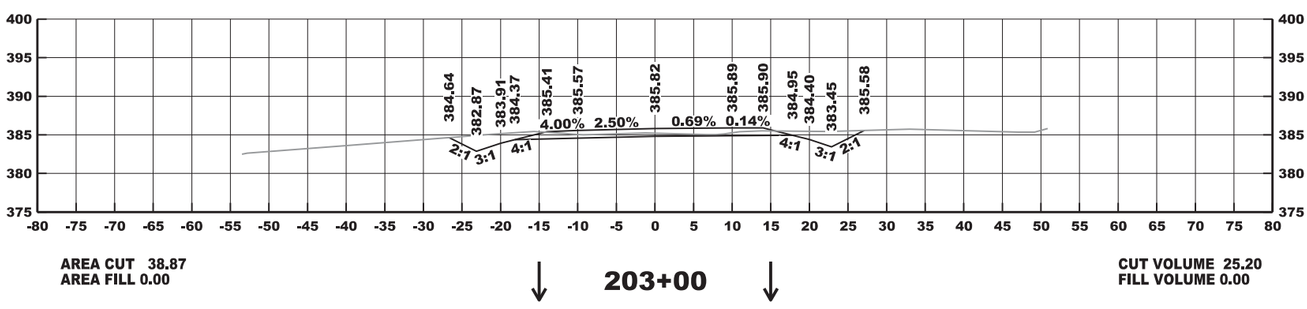
CUT VOLUME 72.75
FILL VOLUME 520.63



AREA CUT 39.29
AREA FILL 16.33

↕ **204+00** ↓

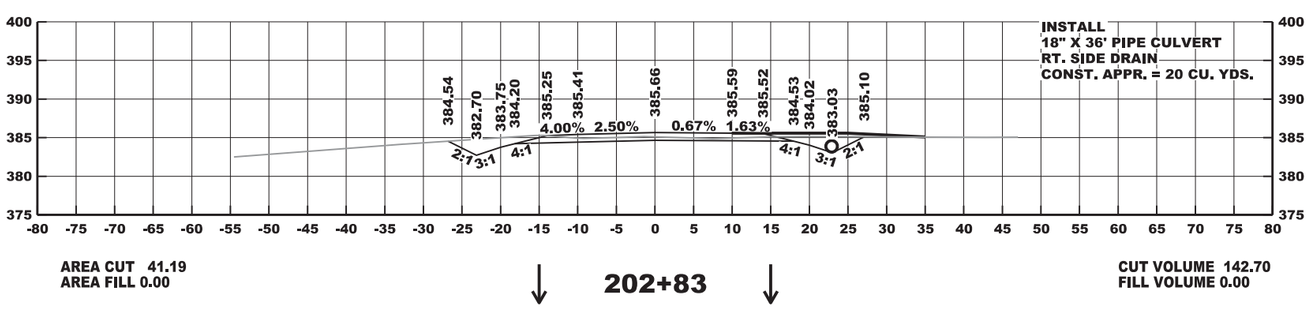
CUT VOLUME 144.73
FILL VOLUME 30.25



AREA CUT 38.87
AREA FILL 0.00

↓ **203+00** ↓

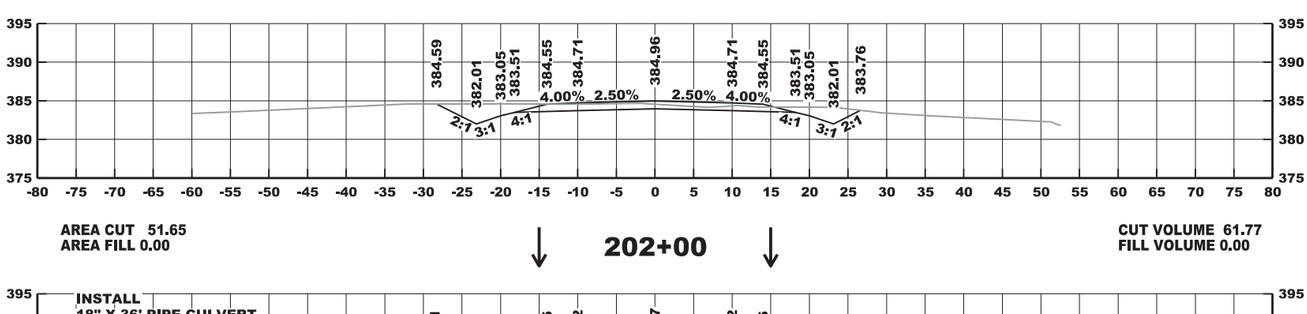
CUT VOLUME 25.20
FILL VOLUME 0.00



AREA CUT 41.19
AREA FILL 0.00

↓ **202+83** ↓

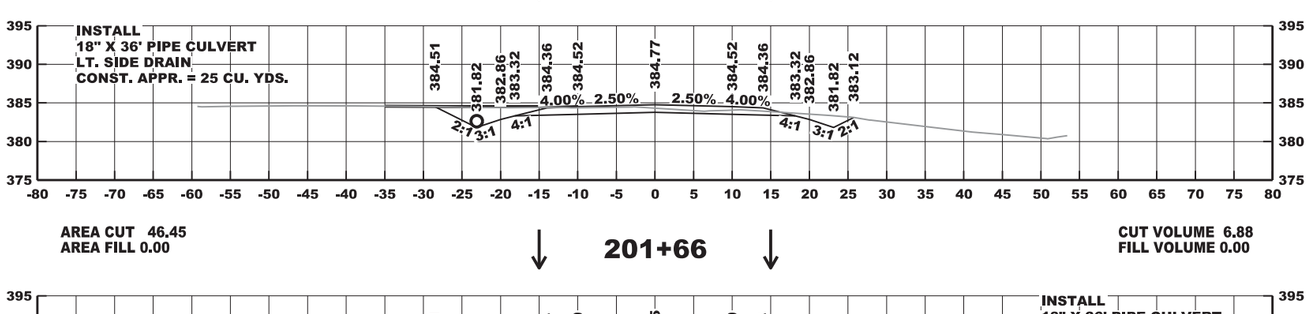
CUT VOLUME 142.70
FILL VOLUME 0.00



AREA CUT 51.65
AREA FILL 0.00

↓ **202+00** ↓

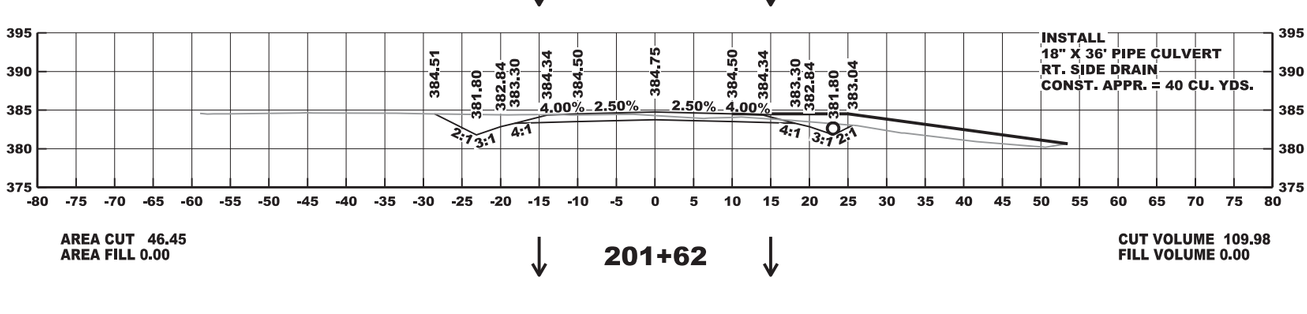
CUT VOLUME 61.77
FILL VOLUME 0.00



AREA CUT 46.45
AREA FILL 0.00

↓ **201+66** ↓

CUT VOLUME 6.88
FILL VOLUME 0.00

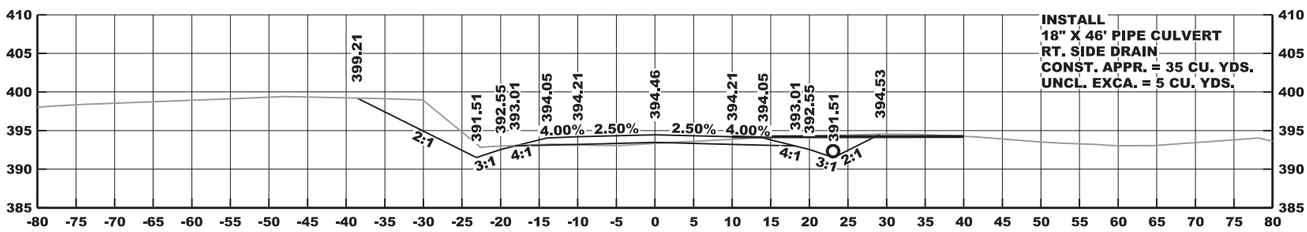


AREA CUT 46.45
AREA FILL 0.00

↓ **201+62** ↓

CUT VOLUME 109.98
FILL VOLUME 0.00

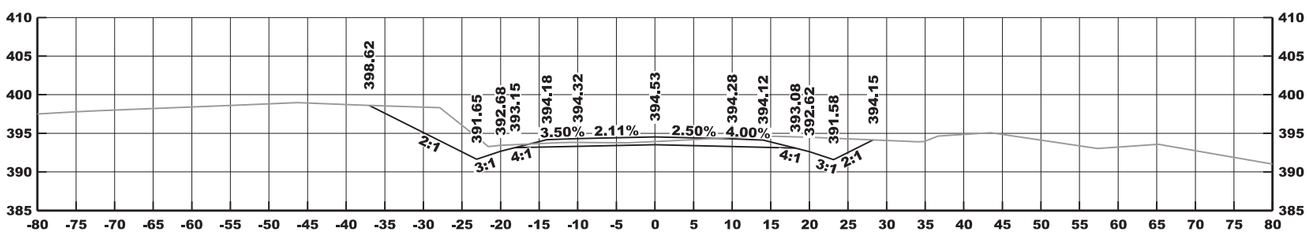
PART REVISED
PART FILMED
DATE REVISED
DATE FILMED
FEDERAL DIST.NO. 6
STATE ARK.
FED.AID PROJ.NO. FA1913
SHEET NO. 33
TOTAL SHEETS 46
4
CROSS SECTIONS



AREA CUT 70.68
AREA FILL 2.28

CUT VOLUME 40.73
FILL VOLUME 0.59

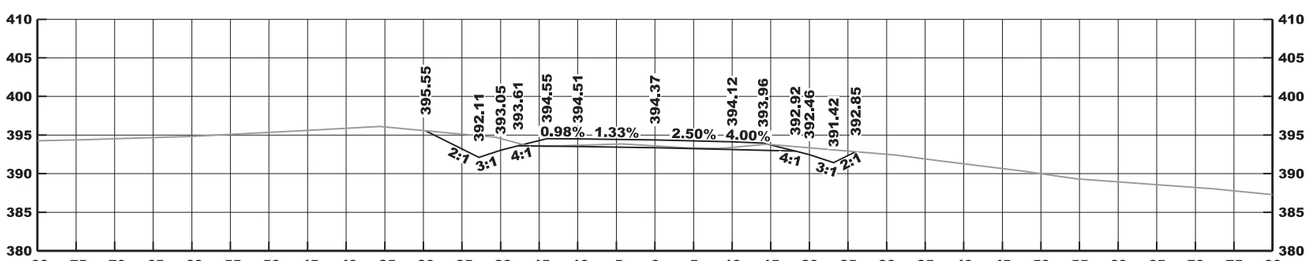
210+14



AREA CUT 86.42
AREA FILL 0.00

CUT VOLUME 226.22
FILL VOLUME 0.04

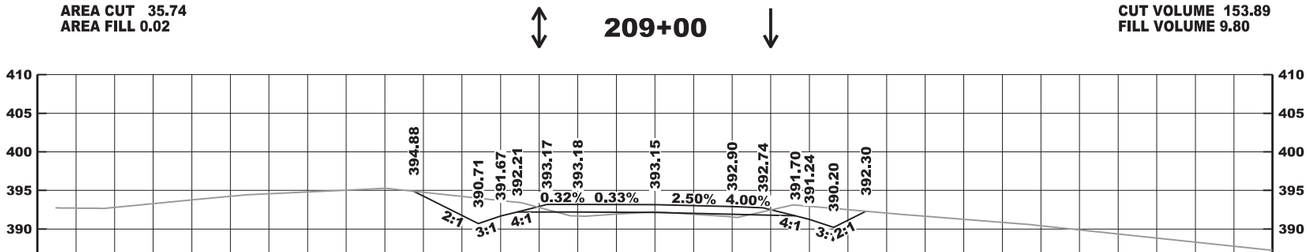
210+00



AREA CUT 35.74
AREA FILL 0.02

CUT VOLUME 153.89
FILL VOLUME 9.80

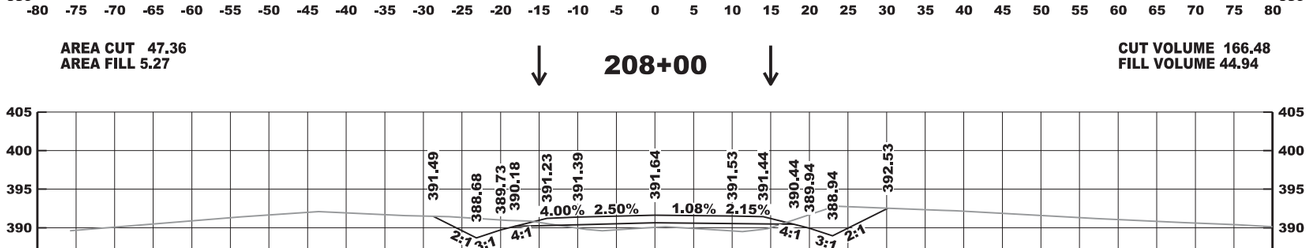
209+00



AREA CUT 47.36
AREA FILL 5.27

CUT VOLUME 166.48
FILL VOLUME 44.94

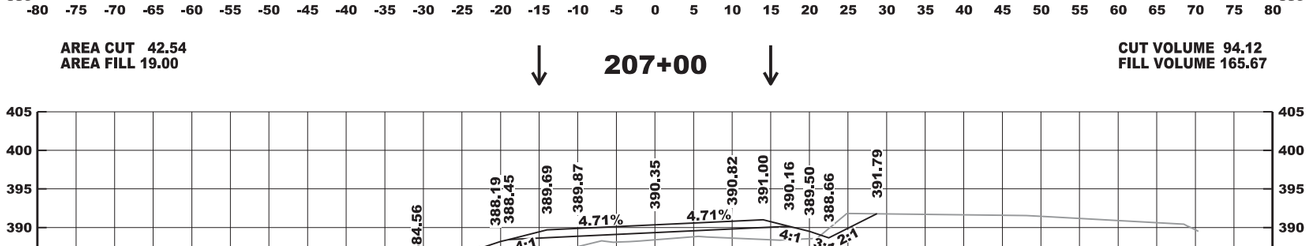
208+00



AREA CUT 42.54
AREA FILL 19.00

CUT VOLUME 94.12
FILL VOLUME 165.67

207+00

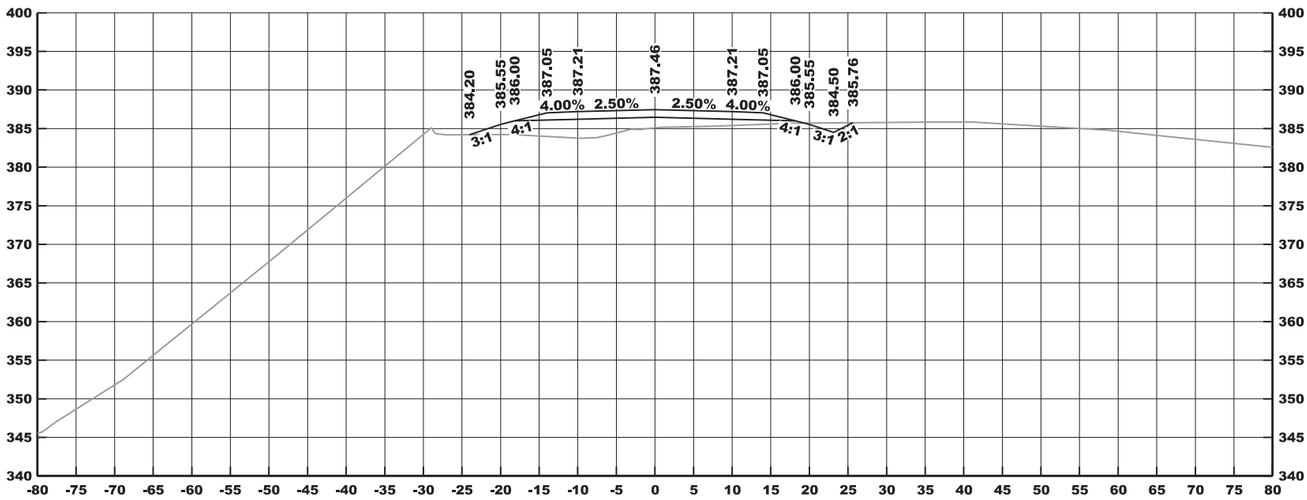


AREA CUT 8.29
AREA FILL 70.46

CUT VOLUME 15.35
FILL VOLUME 620.86

206+00

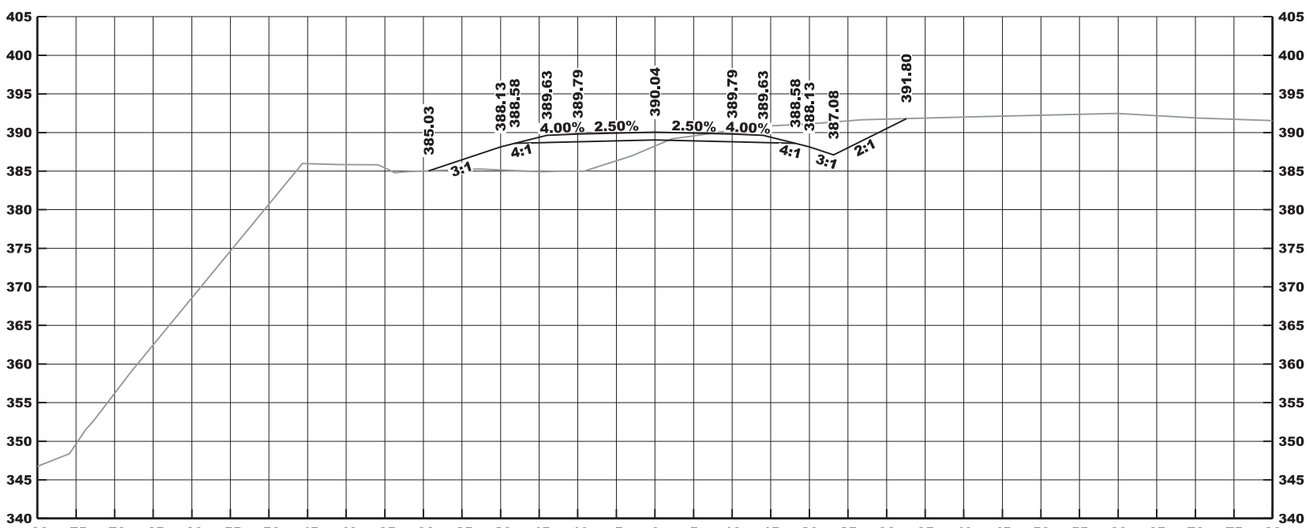
				PART REVISED	
				DATE PLANED	
				DATE REVISED	
				PART PLANED	
4					
CROSS SECTIONS	JOB NO.	FA1913	STATE ARK.	FED.AID PROJ.NO.	FEDERAL SYS.NO. 6
		34		SHEET NO.	
		46		TOTAL SHEETS	



AREA CUT 3.82
AREA FILL 57.52

214+00

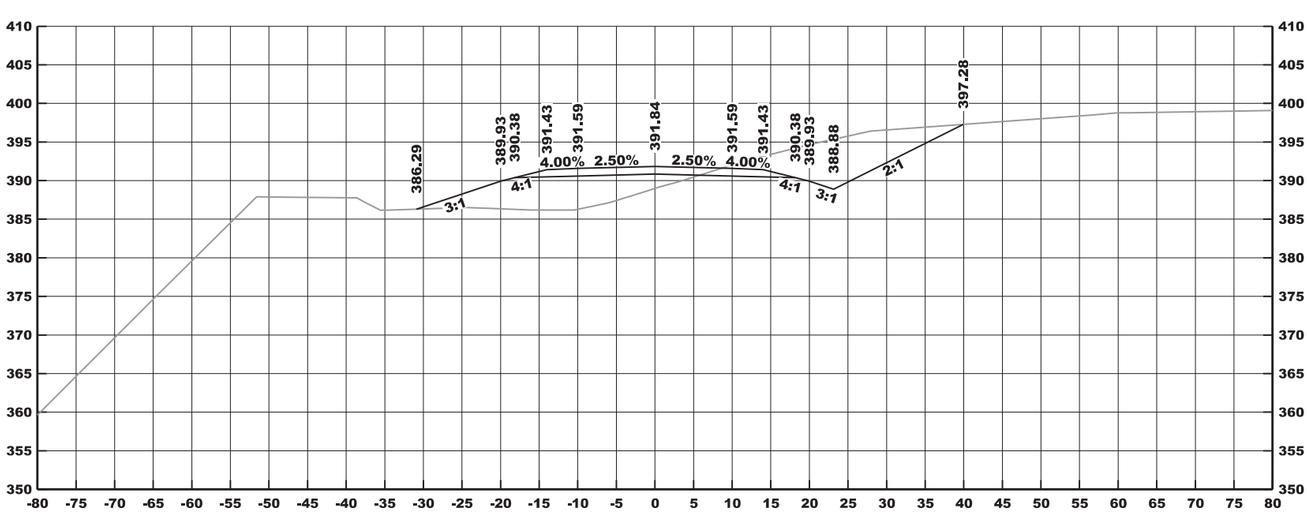
CUT VOLUME 119.18
FILL VOLUME 245.83



AREA CUT 60.53
AREA FILL 75.23

213+00

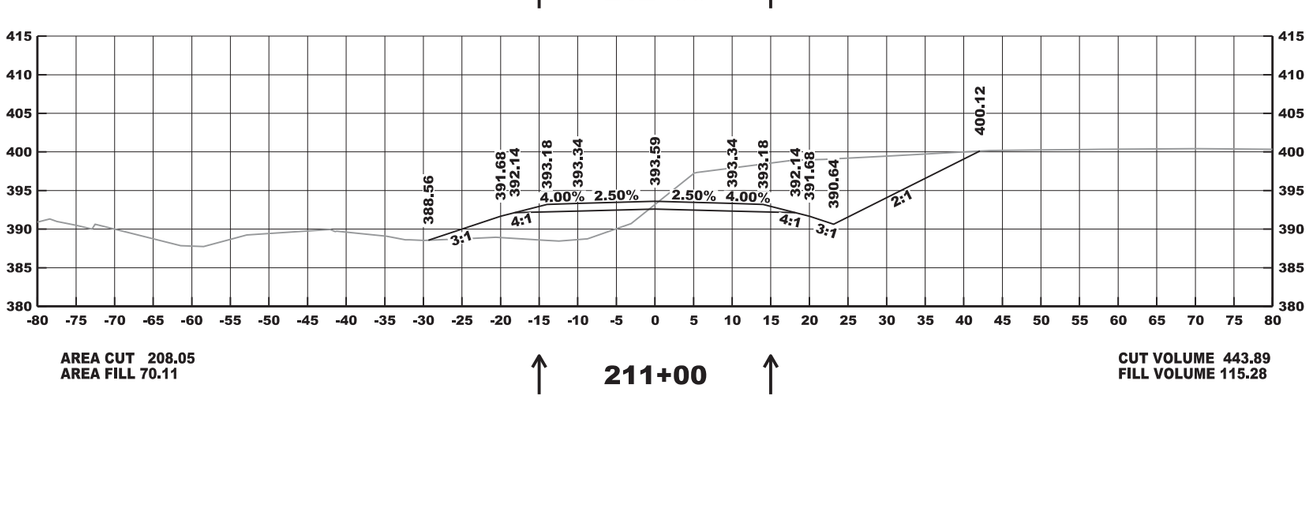
CUT VOLUME 313.48
FILL VOLUME 320.87



AREA CUT 108.75
AREA FILL 98.05

212+00

CUT VOLUME 586.66
FILL VOLUME 311.40



AREA CUT 208.05
AREA FILL 70.11

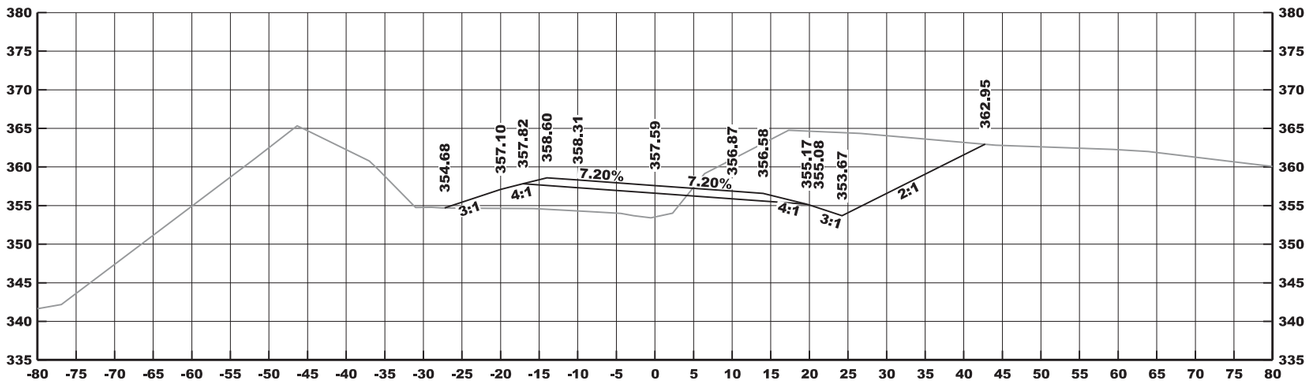
211+00

CUT VOLUME 443.89
FILL VOLUME 115.28

CROSS SECTIONS

JOB NO.	FA1913
STATE	ARK.
FED.AID PROJ.NO.	
SHEET NO.	35
TOTAL SHEETS	46
FED.ROAD DIST.NO.	6
PLAT PLANED	
DATE REVISED	
DATE PLANED	
PLAT REVISED	

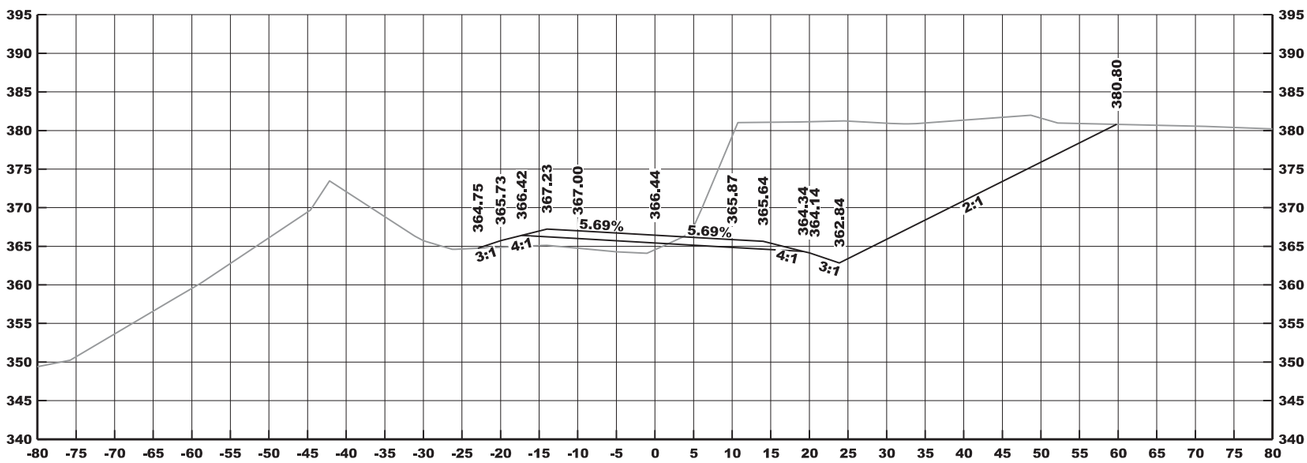
4



AREA CUT 240.41
AREA FILL 77.73

218+00

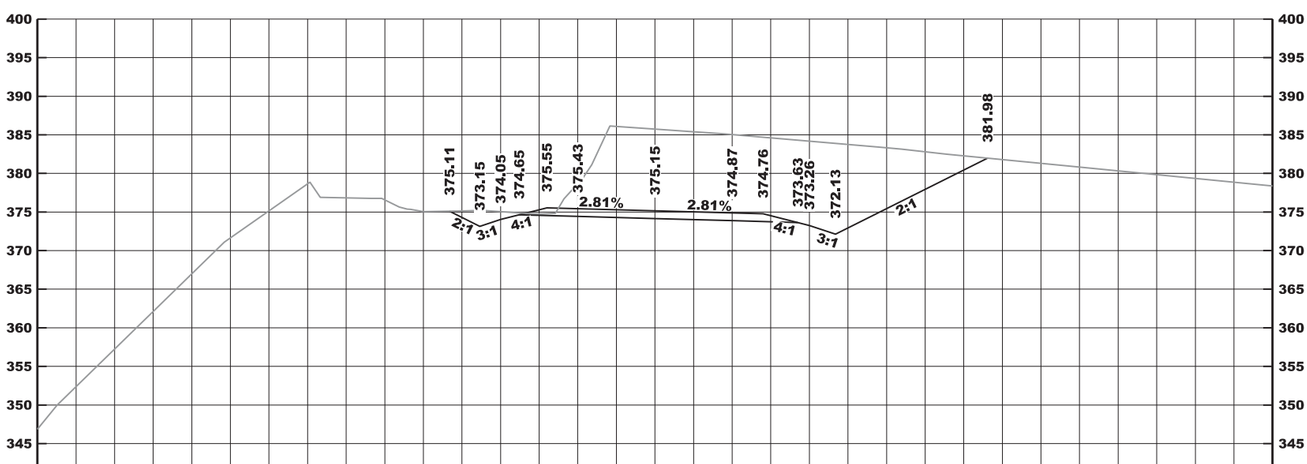
CUT VOLUME 1584.81
FILL VOLUME 194.79



AREA CUT 615.39
AREA FILL 27.46

217+00

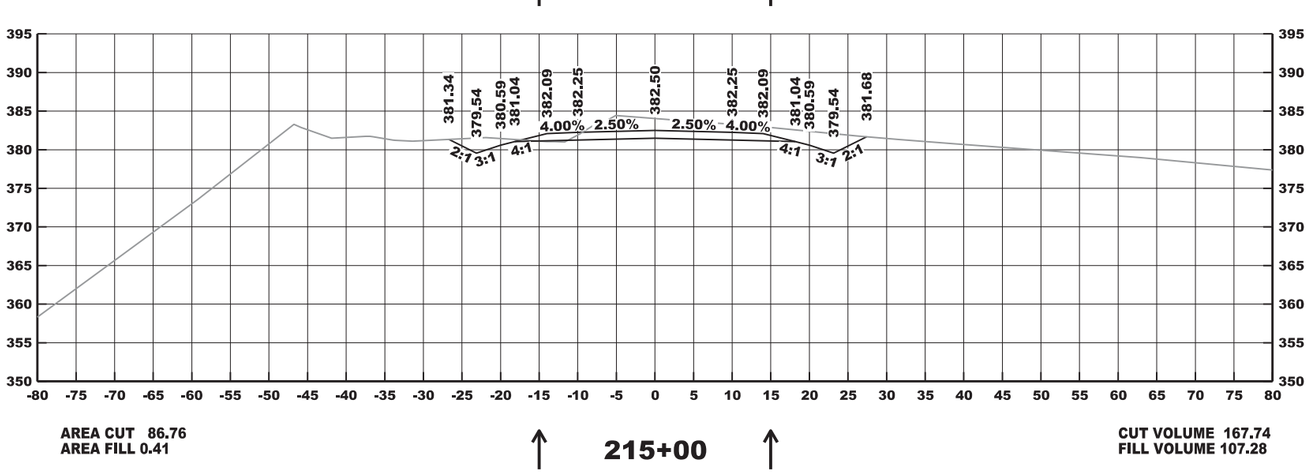
CUT VOLUME 2056.51
FILL VOLUME 50.85



AREA CUT 495.13
AREA FILL 0.00

216+00

CUT VOLUME 1077.56
FILL VOLUME 0.75



AREA CUT 86.76
AREA FILL 0.41

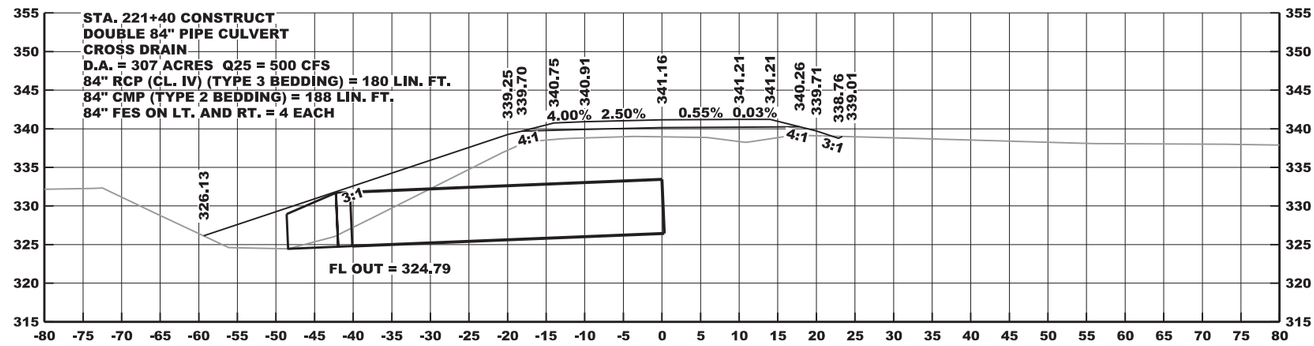
215+00

CUT VOLUME 167.74
FILL VOLUME 107.28

PLAT REVISED	
DATE PLATTED	
DATE REVISED	
DATE PLATTED	
FEDERAL DES.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	36
TOTAL SHEETS	46

4

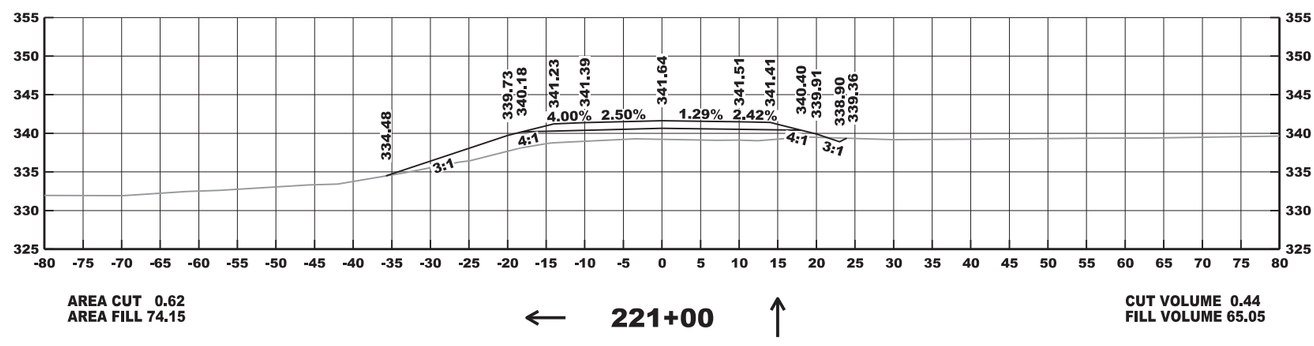
CROSS SECTIONS



AREA CUT 0.18
AREA FILL 207.76

← 221+40 ↑

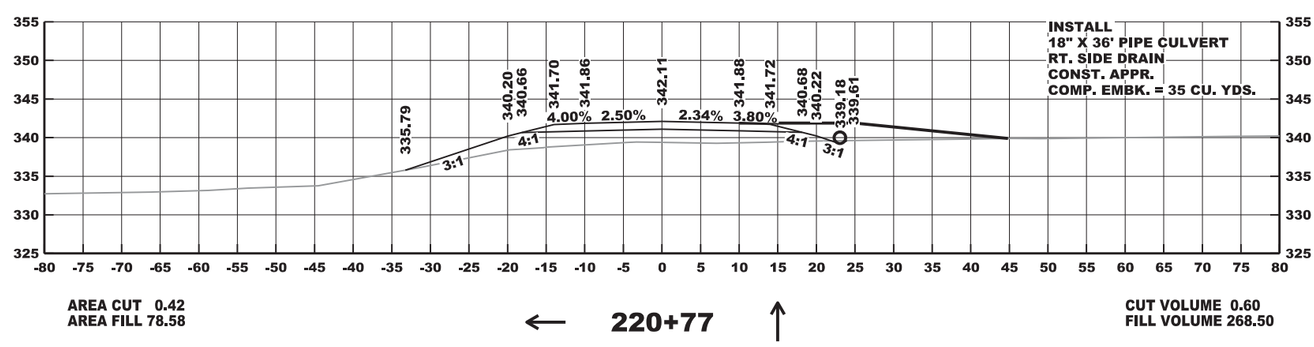
CUT VOLUME 0.59
FILL VOLUME 208.82



AREA CUT 0.62
AREA FILL 74.15

← 221+00 ↑

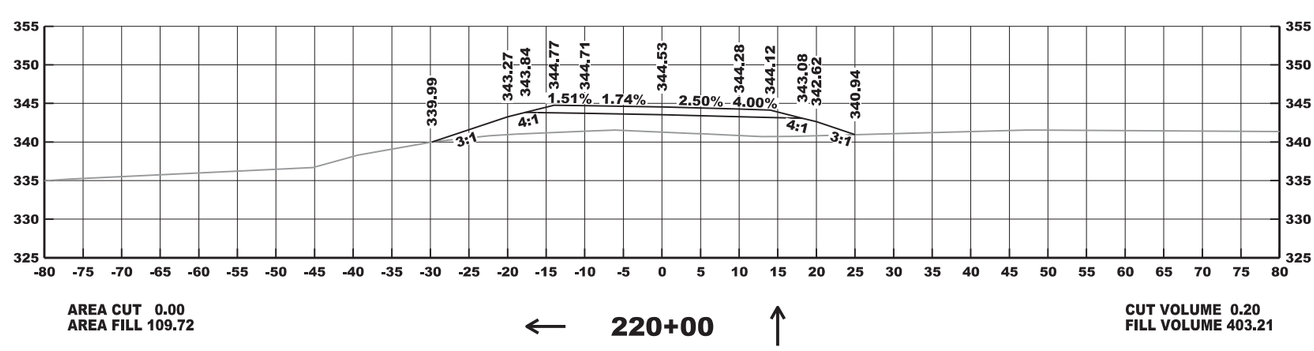
CUT VOLUME 0.44
FILL VOLUME 65.05



AREA CUT 0.42
AREA FILL 78.58

← 220+77 ↑

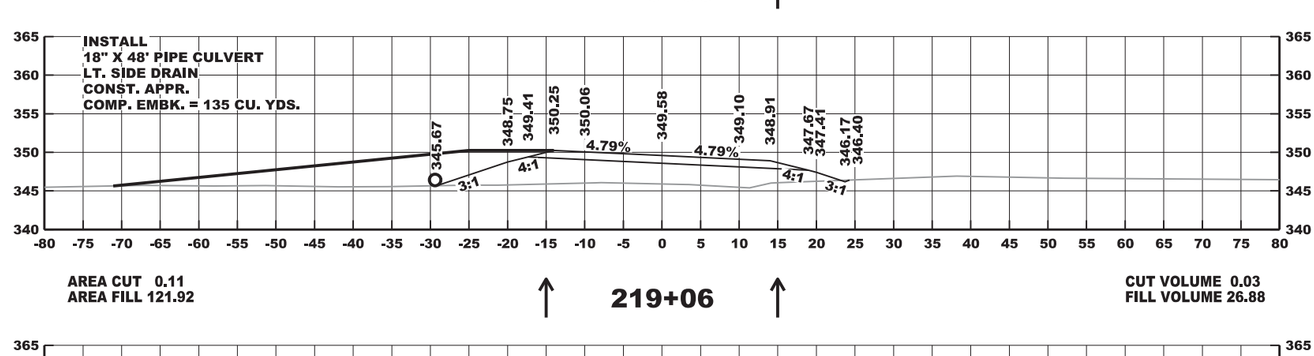
CUT VOLUME 0.60
FILL VOLUME 268.50



AREA CUT 0.00
AREA FILL 109.72

← 220+00 ↑

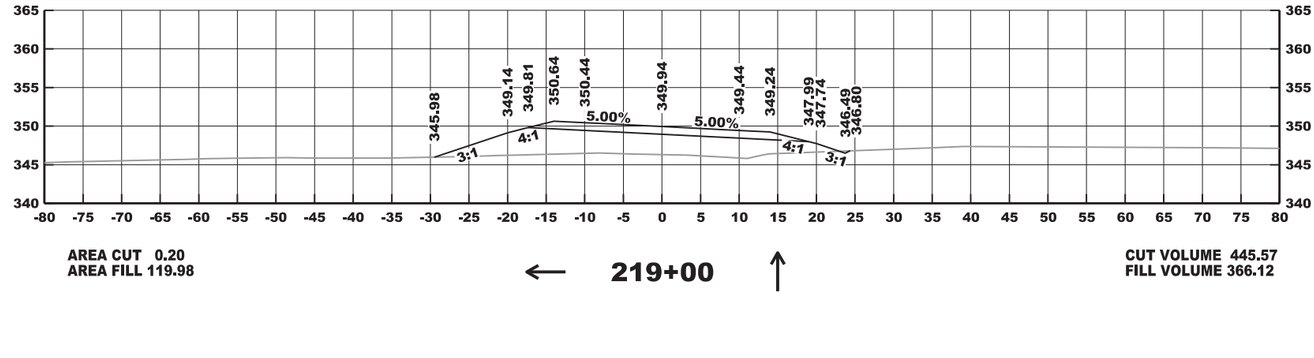
CUT VOLUME 0.20
FILL VOLUME 403.21



AREA CUT 0.11
AREA FILL 121.92

↑ 219+06 ↑

CUT VOLUME 0.03
FILL VOLUME 26.88

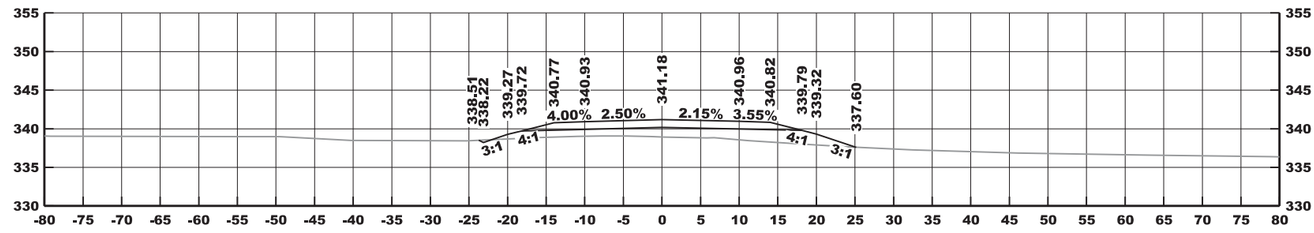


AREA CUT 0.20
AREA FILL 119.98

← 219+00 ↑

CUT VOLUME 445.57
FILL VOLUME 366.12

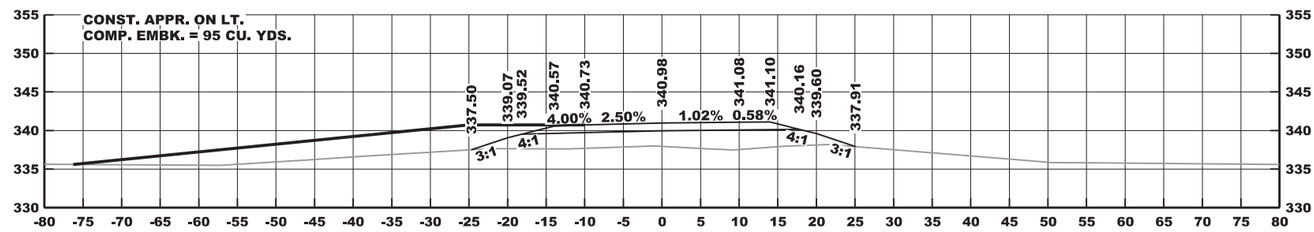
PART REVISED
DATE PLANED
DATE REVISED
DATE PLANED
FED.RD. DIST.NO. 6
STATE ARK.
FED.AID PROJ.NO. FA1913
SHEET NO. 37
TOTAL SHEETS 46
JOB NO.
4
CROSS SECTIONS



AREA CUT 0.27
AREA FILL 52.16

225+00

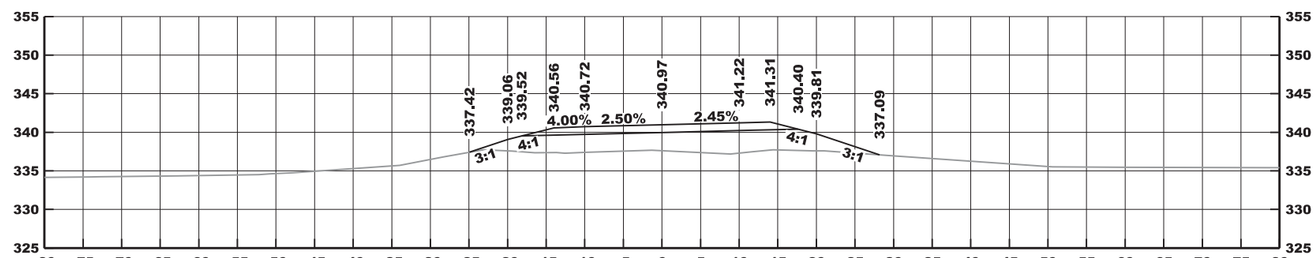
CUT VOLUME 0.34
FILL VOLUME 182.78



AREA CUT 0.00
AREA FILL 90.89

224+31

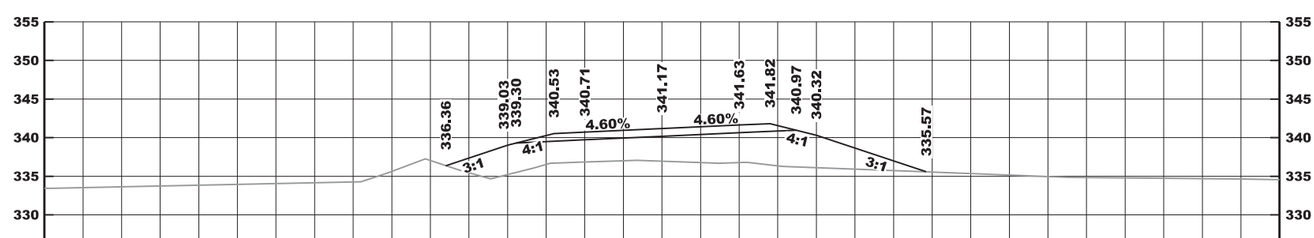
CUT VOLUME 0.00
FILL VOLUME 115.38



AREA CUT 0.00
AREA FILL 110.10

224+00

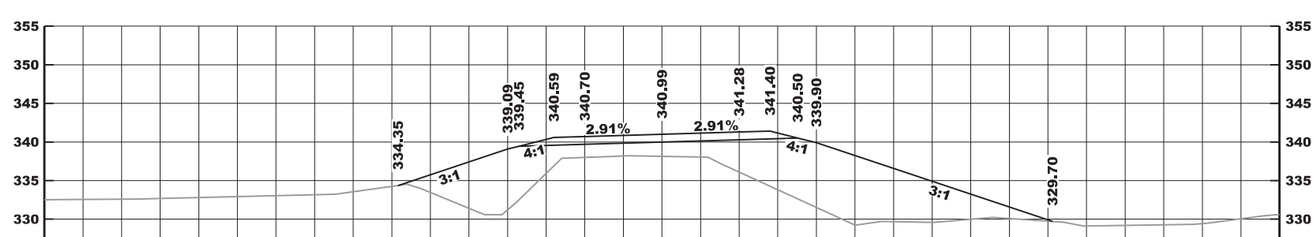
CUT VOLUME 0.00
FILL VOLUME 555.29



AREA CUT 0.00
AREA FILL 189.75

223+00

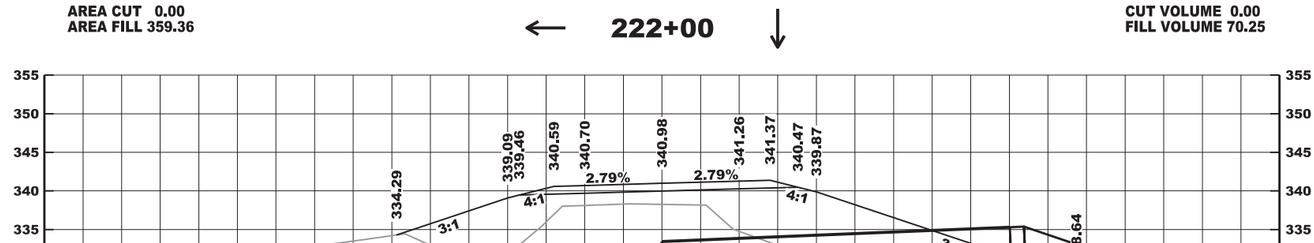
CUT VOLUME 0.00
FILL VOLUME 1016.87



AREA CUT 0.00
AREA FILL 359.36

222+00

CUT VOLUME 0.00
FILL VOLUME 70.25



AREA CUT 0.00
AREA FILL 399.33

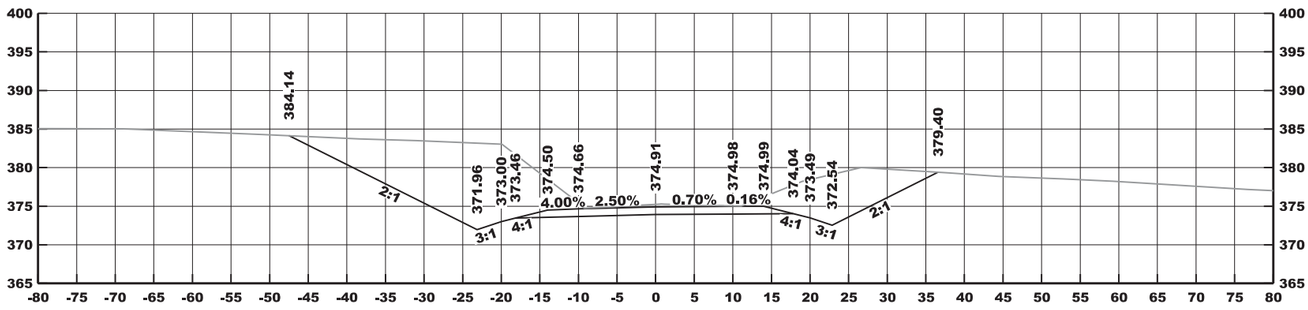
221+95

CUT VOLUME 0.18
FILL VOLUME 618.33

PART REVISED	
PART PLANED	
DATE REVISED	
DATE PLANED	
FED.RDS. DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	38
TOTAL SHEETS	46

CROSS SECTIONS

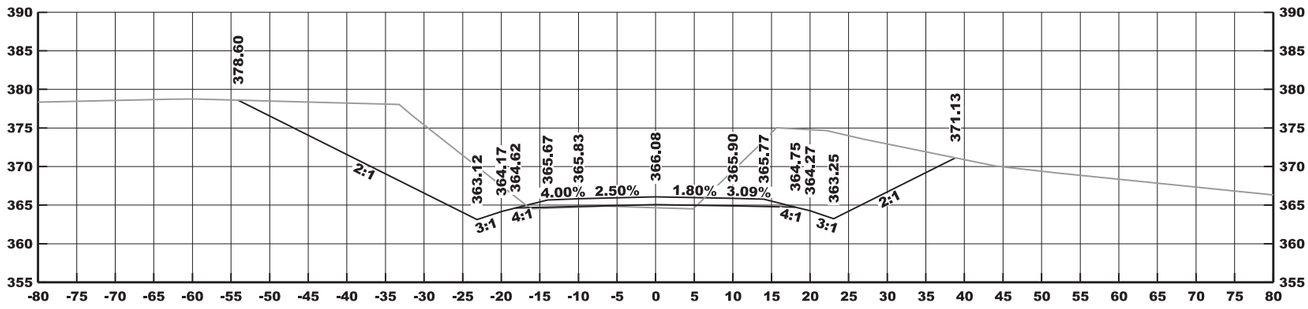
4



AREA CUT 345.06
AREA FILL 0.00

CUT VOLUME 1428.71
FILL VOLUME 8.45

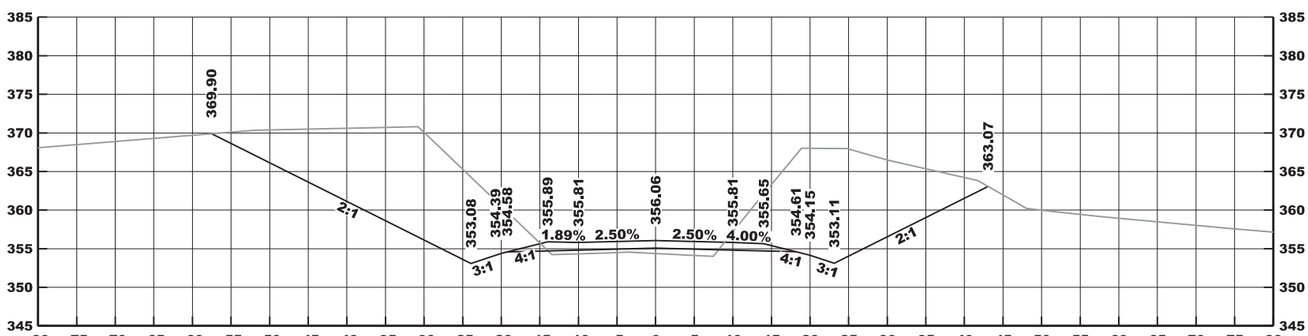
230+00



AREA CUT 426.44
AREA FILL 4.56

CUT VOLUME 1940.00
FILL VOLUME 32.14

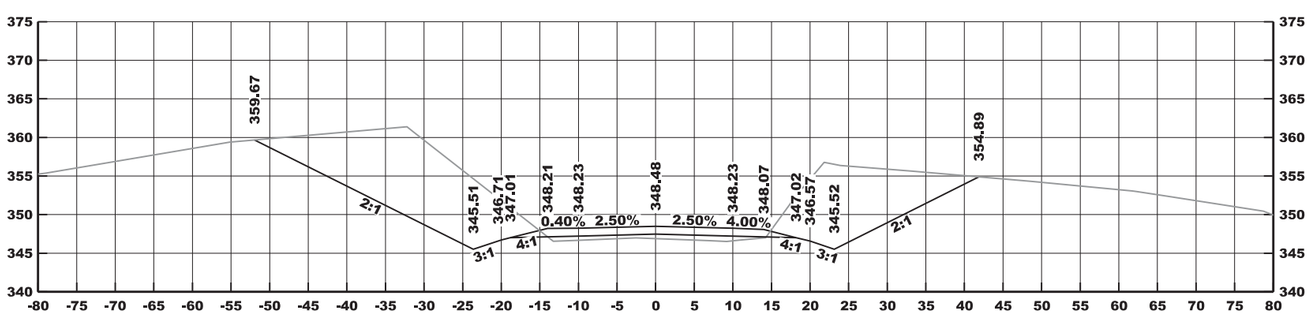
229+00



AREA CUT 621.16
AREA FILL 12.80

CUT VOLUME 1891.93
FILL VOLUME 51.39

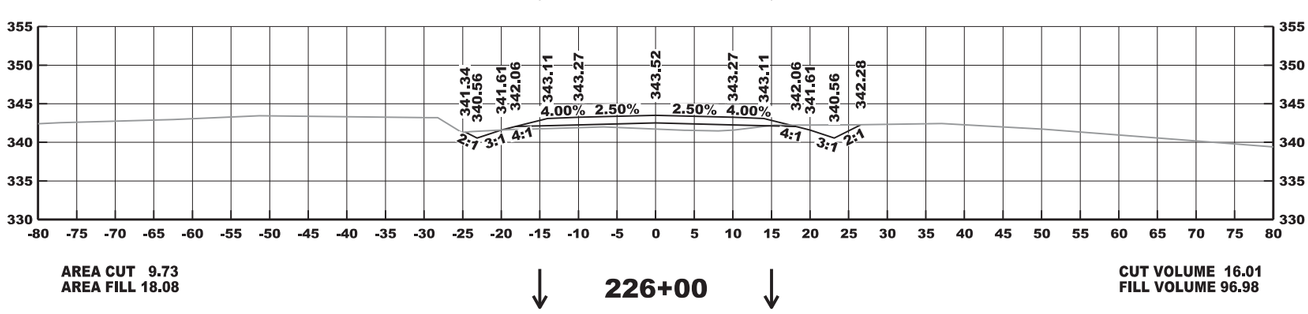
228+00



AREA CUT 400.48
AREA FILL 14.95

CUT VOLUME 759.65
FILL VOLUME 61.17

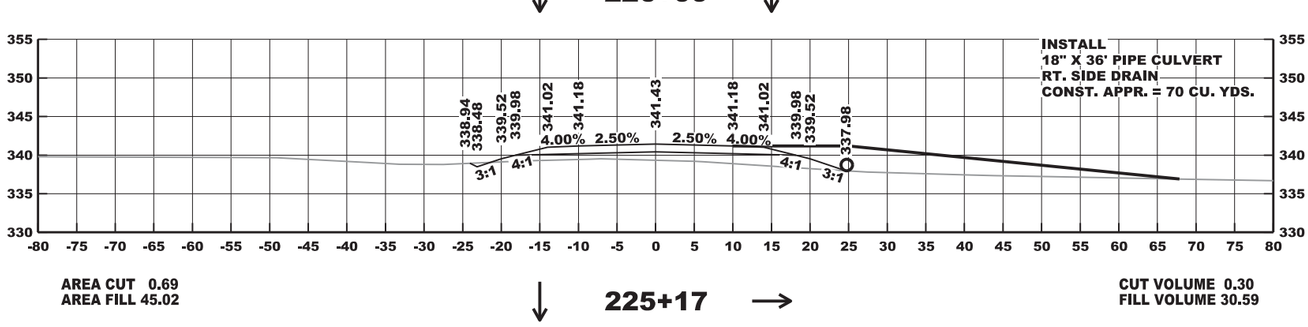
227+00



AREA CUT 9.73
AREA FILL 18.08

CUT VOLUME 16.01
FILL VOLUME 96.98

226+00



INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR. = 70 CU. YDS.

AREA CUT 0.69
AREA FILL 45.02

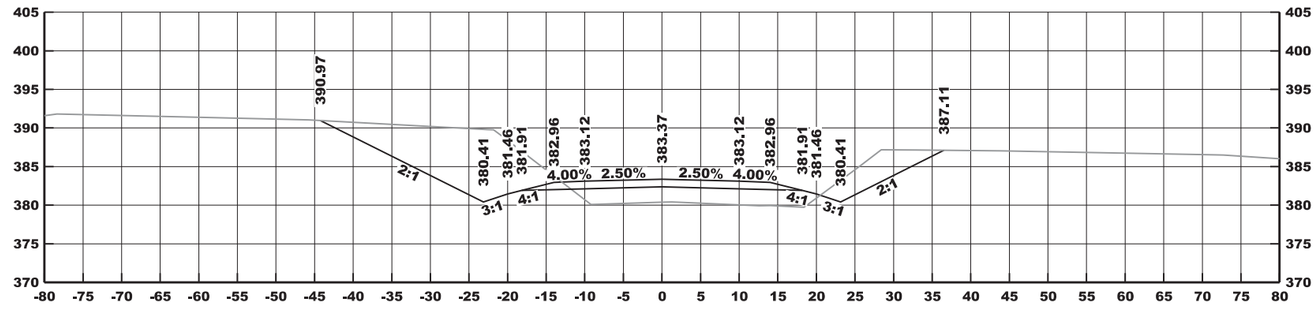
CUT VOLUME 0.30
FILL VOLUME 30.59

225+17 →

PART REVISED	
PART PLANED	
DATE REVISED	
DATE PLANED	
FED.ROAD DIST.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	39
TOTAL SHEETS	46

4

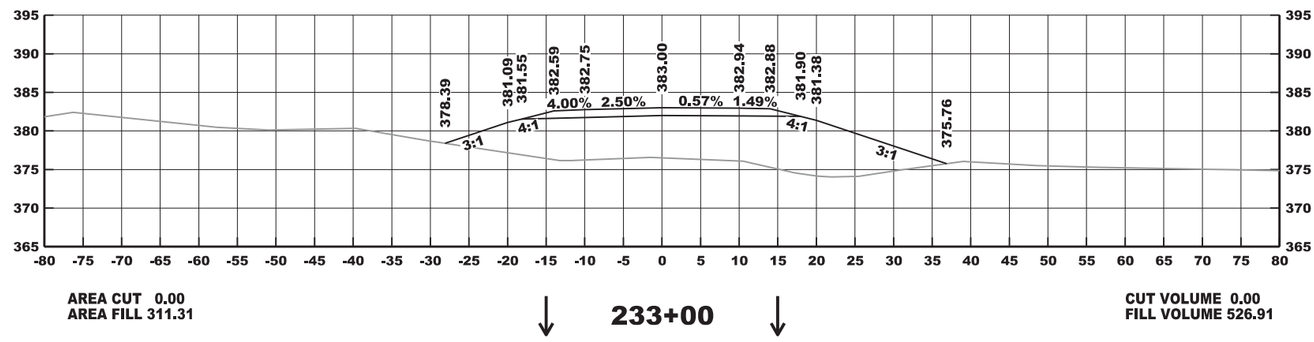
CROSS SECTIONS



AREA CUT 191.73
AREA FILL 61.12

234+00

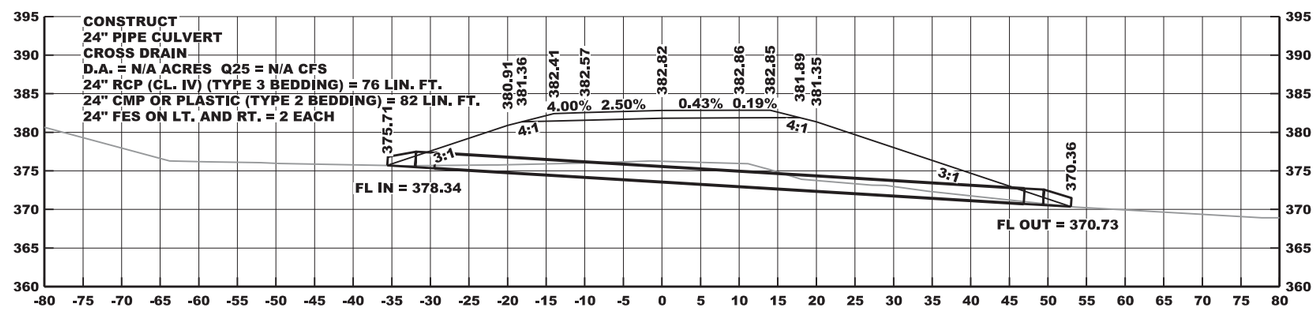
CUT VOLUME 355.05
FILL VOLUME 689.69



AREA CUT 0.00
AREA FILL 311.31

233+00

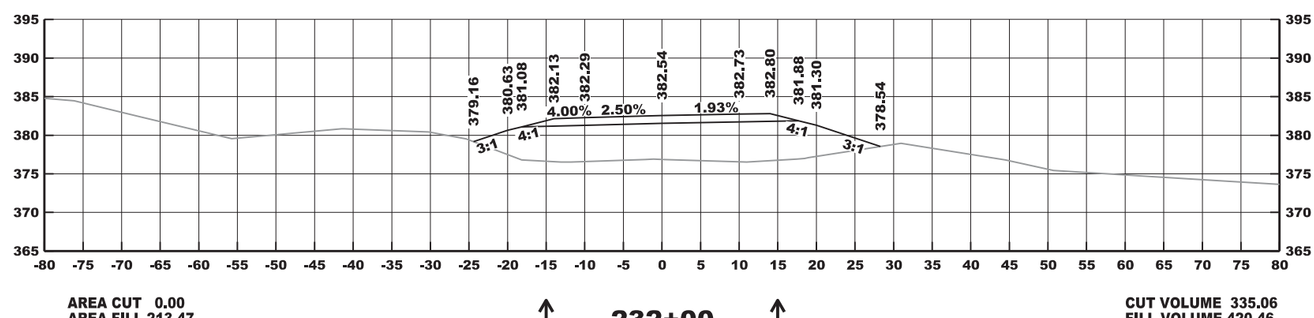
CUT VOLUME 0.00
FILL VOLUME 526.91



AREA CUT 0.00
AREA FILL 400.03

232+60

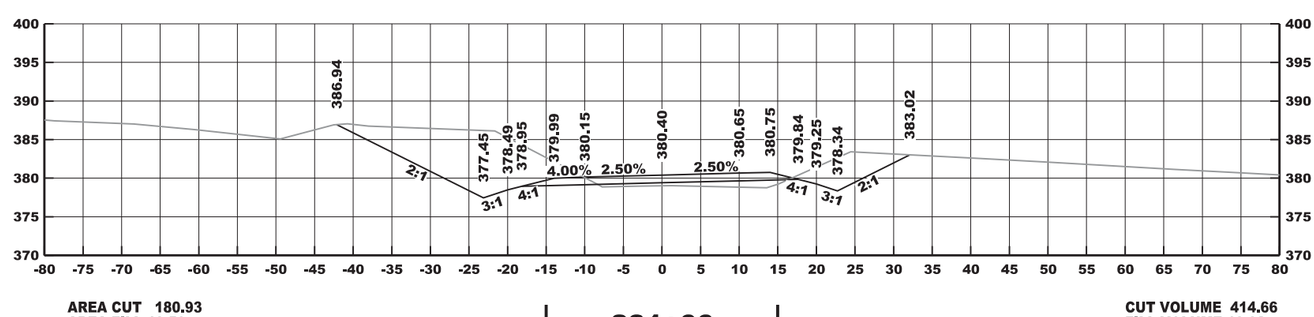
CUT VOLUME 0.00
FILL VOLUME 681.66



AREA CUT 0.00
AREA FILL 213.47

232+00

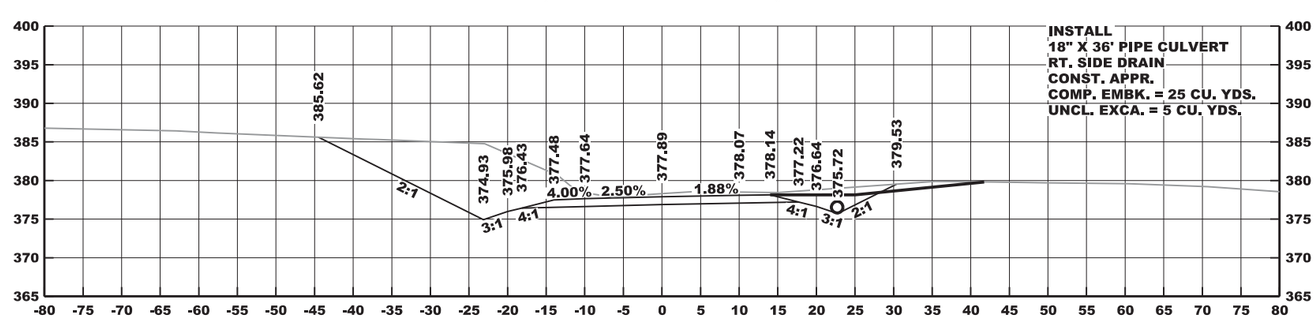
CUT VOLUME 335.06
FILL VOLUME 420.46



AREA CUT 180.93
AREA FILL 13.58

231+00

CUT VOLUME 414.66
FILL VOLUME 13.32



AREA CUT 241.55
AREA FILL 0.00

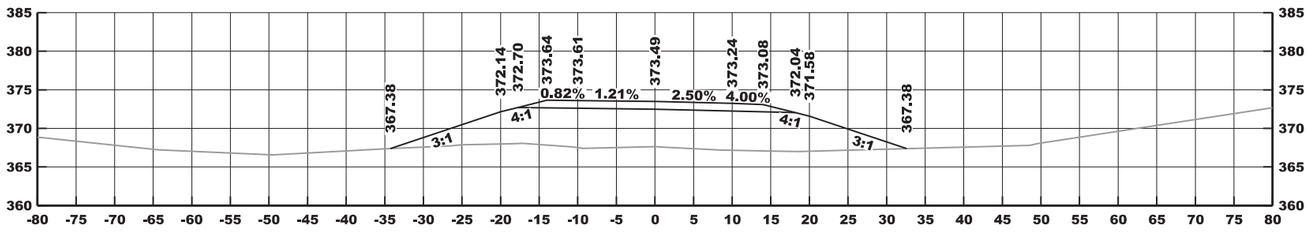
230+47

CUT VOLUME 510.57
FILL VOLUME 0.00

PART REVISED	
DATE PLANED	
DATE REVISED	
PART PLANED	
FEDERAL SYS.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	40
TOTAL SHEETS	46

4

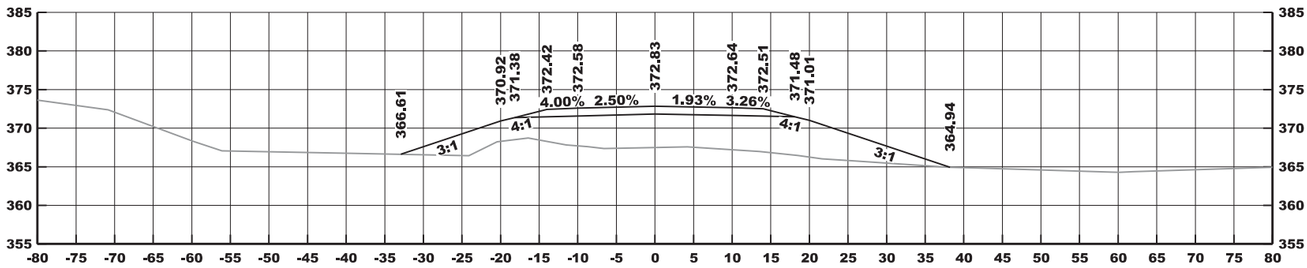
CROSS SECTIONS



AREA CUT 0.00
AREA FILL 255.22

← 240+00 ↓

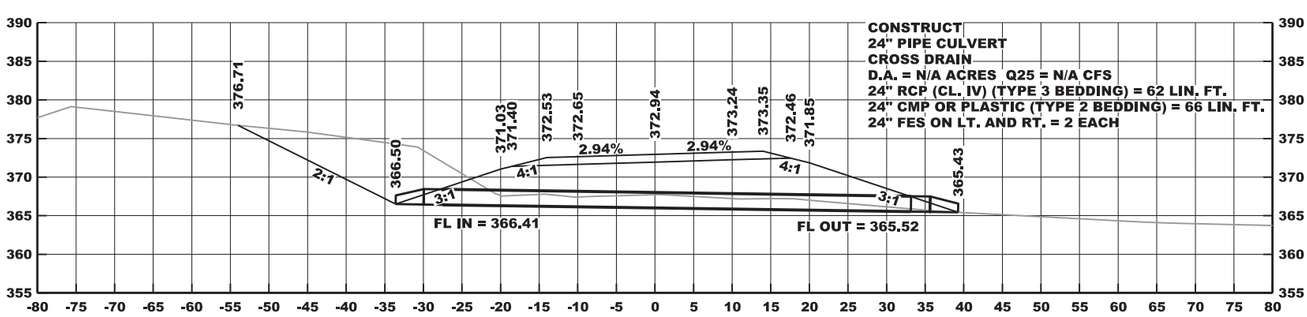
CUT VOLUME 0.00
FILL VOLUME 904.55



AREA CUT 0.00
AREA FILL 233.24

↓ 239+00 →

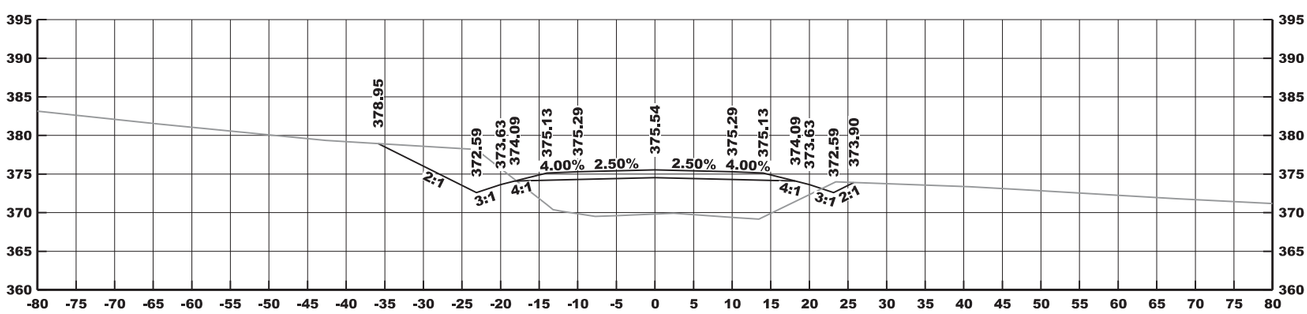
CUT VOLUME 229.50
FILL VOLUME 861.57



AREA CUT 123.93
AREA FILL 232.01

→ 238+00 →

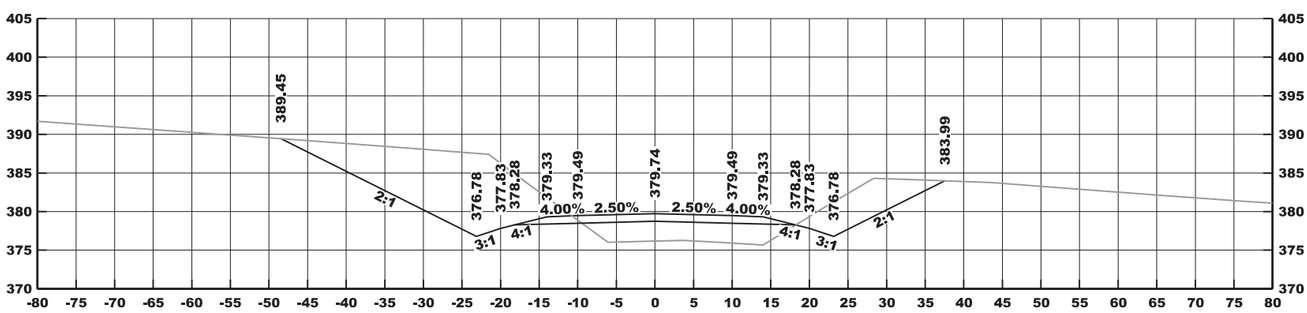
CUT VOLUME 326.83
FILL VOLUME 719.81



AREA CUT 52.56
AREA FILL 156.69

↑ 237+00 ↑

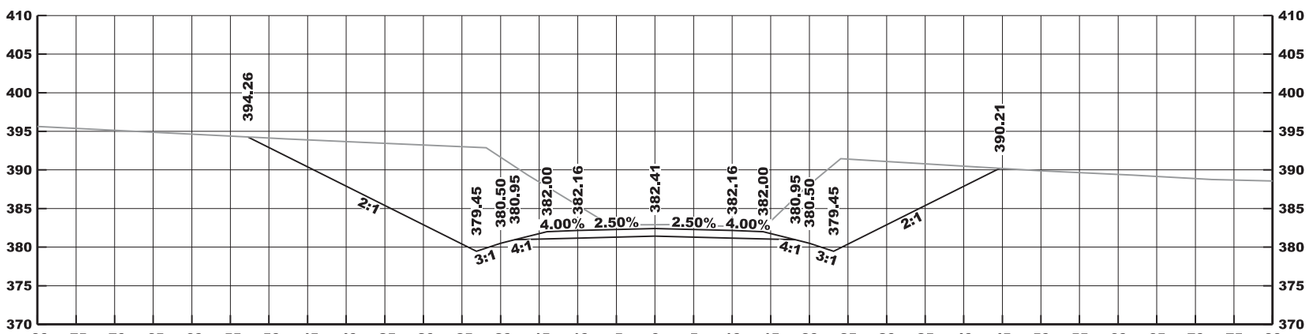
CUT VOLUME 593.23
FILL VOLUME 403.40



AREA CUT 267.79
AREA FILL 61.15

↑ 236+00 ↑

CUT VOLUME 1497.42
FILL VOLUME 113.24



AREA CUT 540.82
AREA FILL 0.00

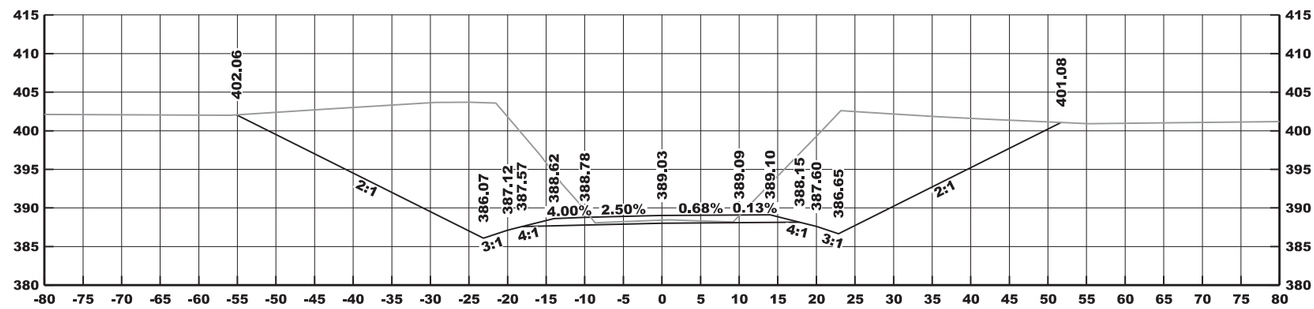
↑ 235+00 ↑

CUT VOLUME 1356.57
FILL VOLUME 113.19

					PART REVISED	
					DATE PLANE	
					DATE REVISED	
					DATE PLANE	
					FEDERAL DIST.NO.	6
					STATE	ARK.
					FED.AID PROJ.NO.	FA1913
					SHEET NO.	41
					TOTAL SHEETS	46

4

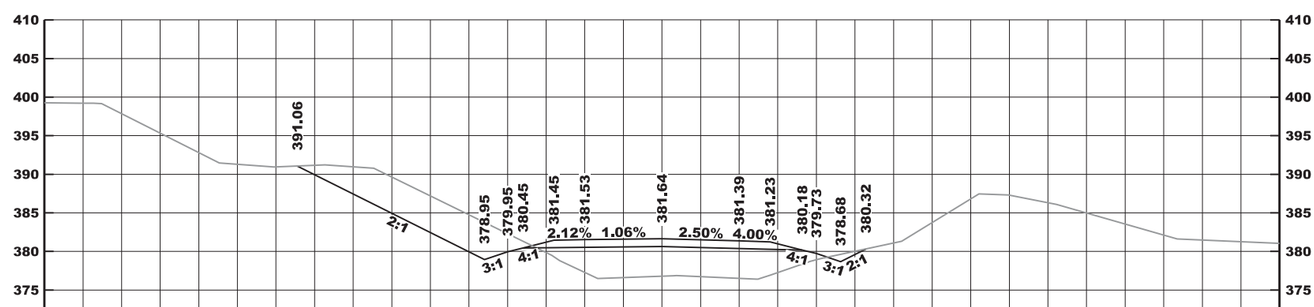
CROSS SECTIONS



AREA CUT 756.01
AREA FILL 0.00

CUT VOLUME 1602.36
FILL VOLUME 215.21

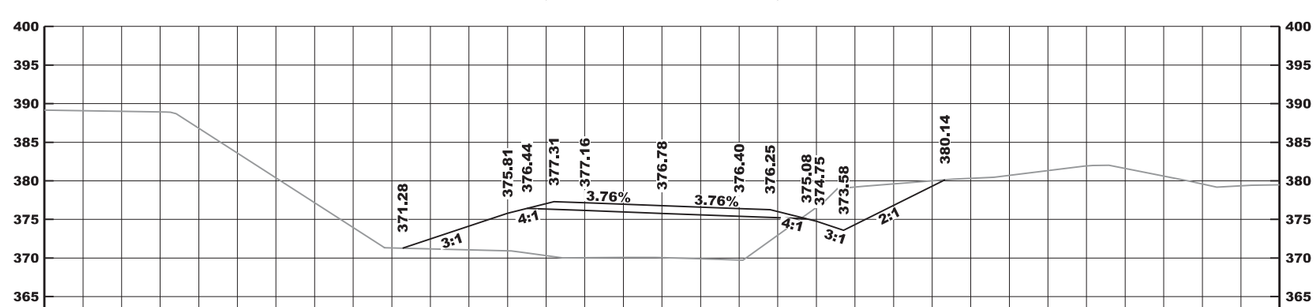
244+00



AREA CUT 109.27
AREA FILL 116.22

CUT VOLUME 297.37
FILL VOLUME 644.94

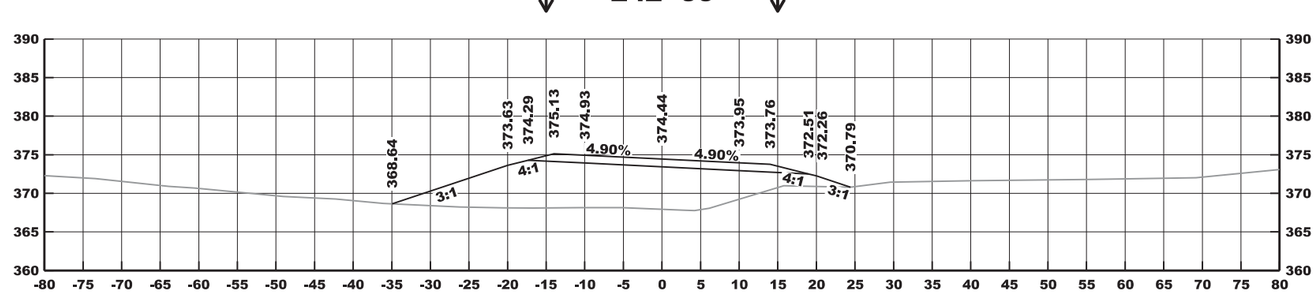
243+00



AREA CUT 51.31
AREA FILL 232.05

CUT VOLUME 95.02
FILL VOLUME 861.35

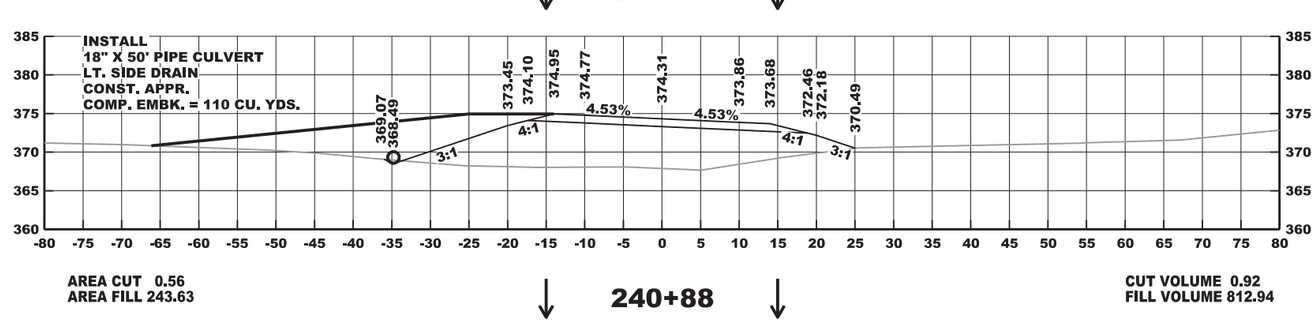
242+00



AREA CUT 0.00
AREA FILL 233.08

CUT VOLUME 0.13
FILL VOLUME 105.94

241+00

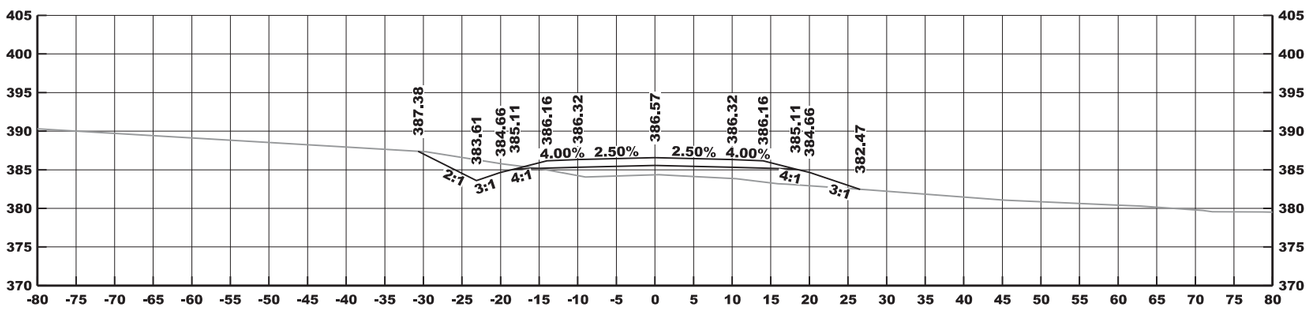


AREA CUT 0.56
AREA FILL 243.63

CUT VOLUME 0.92
FILL VOLUME 812.94

240+88

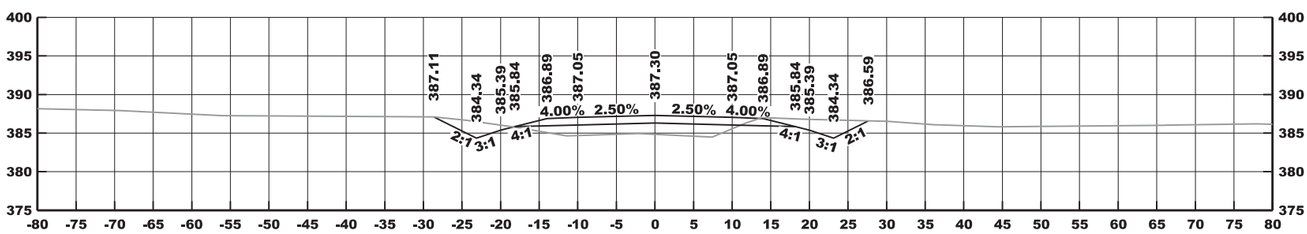
PART REVISED
PART PLANED
DATE REVISED
DATE PLANED
FED.ROAD DIST.NO. 6
STATE ARK.
FED.AID PROJ.NO. FA1913
SHEET NO. 42
TOTAL SHEETS 46
4
CROSS SECTIONS
JOB NO.



AREA CUT 18.57
AREA FILL 51.88

249+00

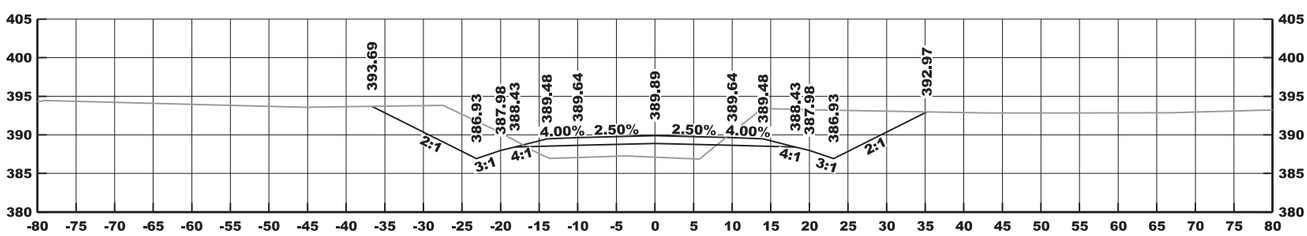
CUT VOLUME 90.72
FILL VOLUME 160.50



AREA CUT 30.41
AREA FILL 34.79

248+00

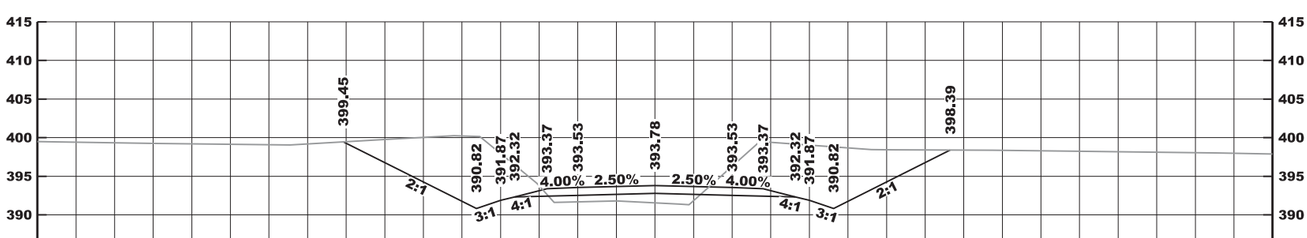
CUT VOLUME 348.03
FILL VOLUME 132.66



AREA CUT 157.52
AREA FILL 36.85

247+00

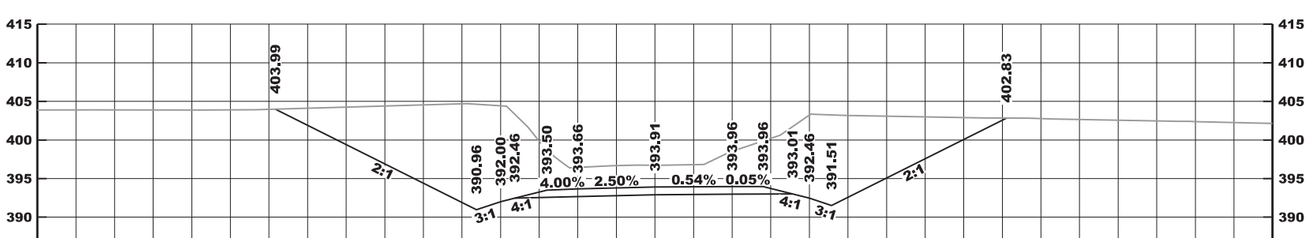
CUT VOLUME 810.38
FILL VOLUME 103.58



AREA CUT 280.08
AREA FILL 19.08

246+00

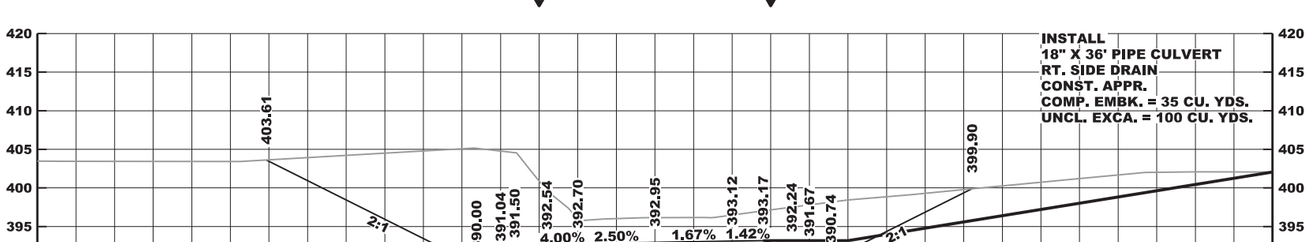
CUT VOLUME 1660.69
FILL VOLUME 35.33



AREA CUT 616.69
AREA FILL 0.00

245+00

CUT VOLUME 591.46
FILL VOLUME 0.00



INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 35 CU. YDS.
UNCL. EXCA. = 100 CU. YDS.

AREA CUT 566.24
AREA FILL 0.00

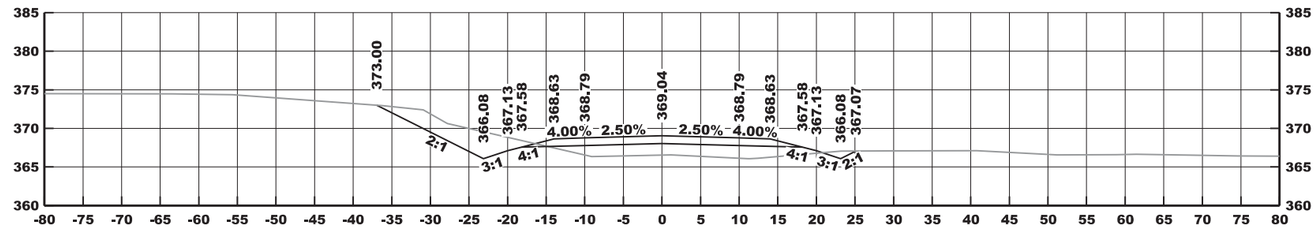
244+73

CUT VOLUME 1787.48
FILL VOLUME 0.00

						PLAT REVISED	
						PLAT FILED	
						DATE REVISED	
						DATE FILED	
						FEDERAL DIST.NO.	6
						STATE	ARK.
						FED.AID PROJ.NO.	FA1913
						SHEET NO.	43
						TOTAL SHEETS	46

CROSS SECTIONS

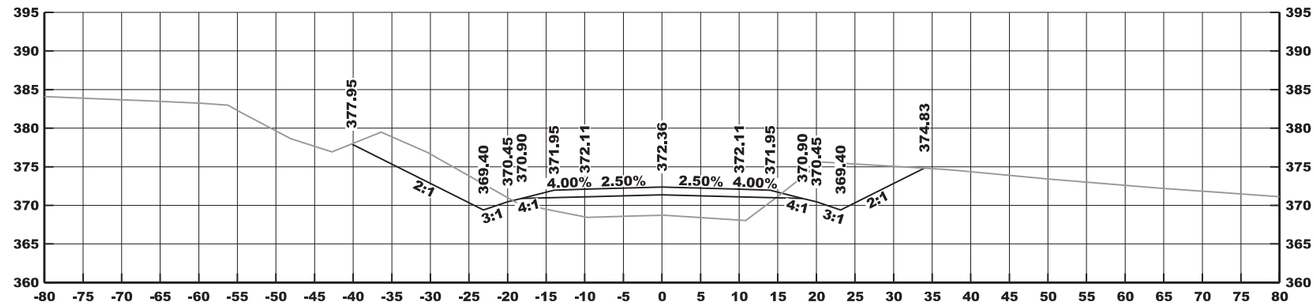
4



AREA CUT 41.96
AREA FILL 45.64

255+00

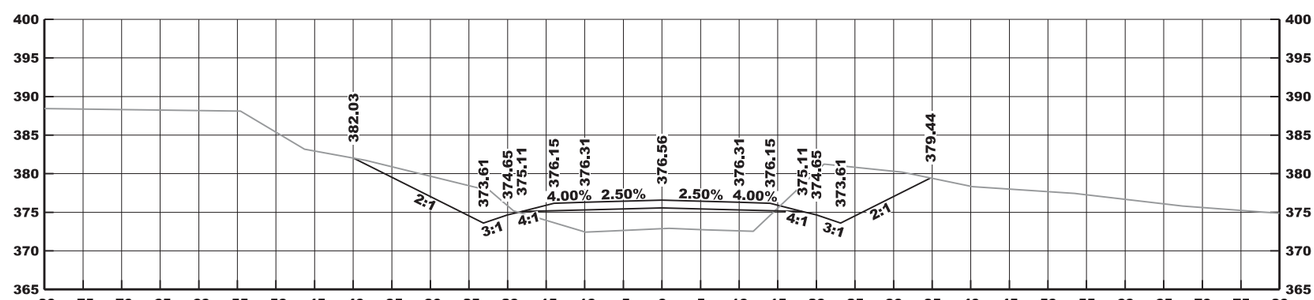
CUT VOLUME 305.33
FILL VOLUME 228.00



AREA CUT 122.92
AREA FILL 77.48

254+00

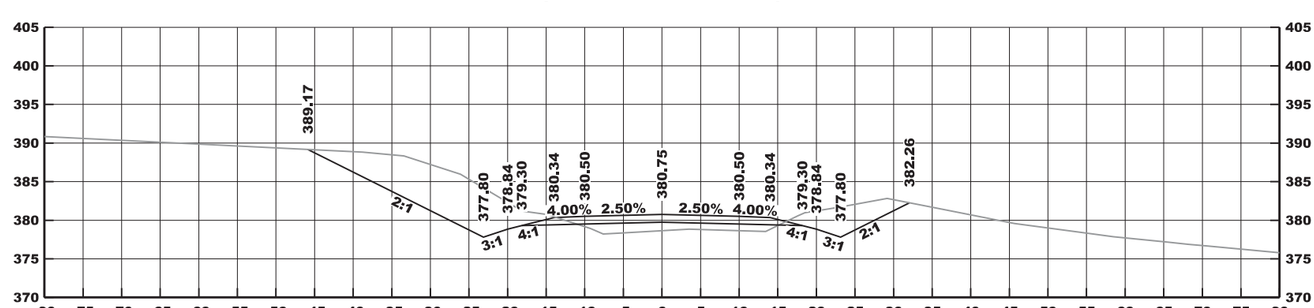
CUT VOLUME 465.26
FILL VOLUME 284.41



AREA CUT 128.32
AREA FILL 76.10

253+00

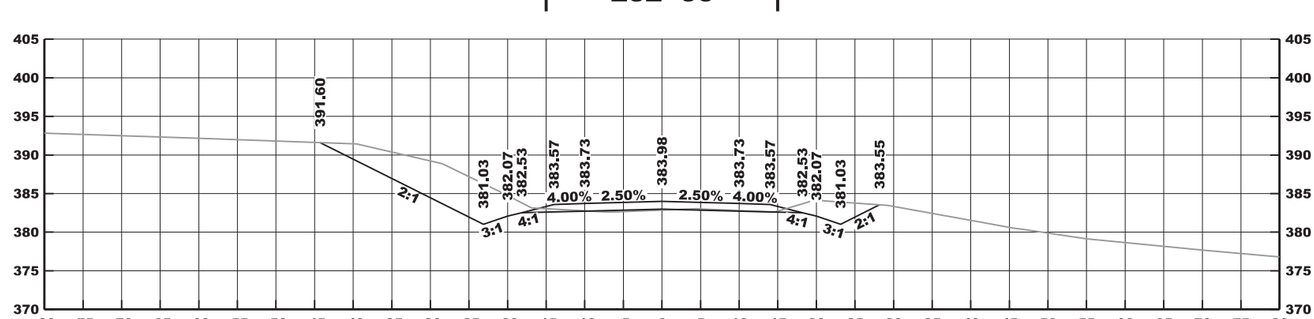
CUT VOLUME 539.41
FILL VOLUME 185.19



AREA CUT 162.96
AREA FILL 23.91

252+00

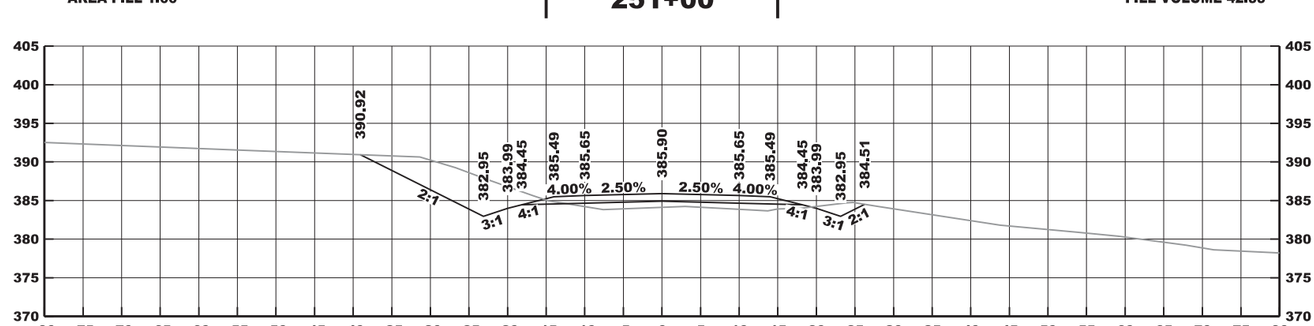
CUT VOLUME 513.80
FILL VOLUME 47.34



AREA CUT 114.49
AREA FILL 1.66

251+00

CUT VOLUME 352.34
FILL VOLUME 42.88



AREA CUT 75.78
AREA FILL 21.50

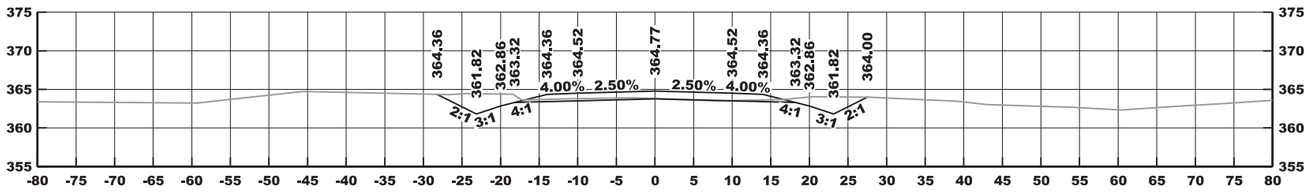
250+00

CUT VOLUME 174.73
FILL VOLUME 135.89

PART REVISED	
DATE PLANED	
DATE REVISED	
DATE PLANED	
FEDERAL OVS.NO.	6
STATE	ARK.
FED.AID PROJ.NO.	FA1913
SHEET NO.	44
TOTAL SHEETS	46

4

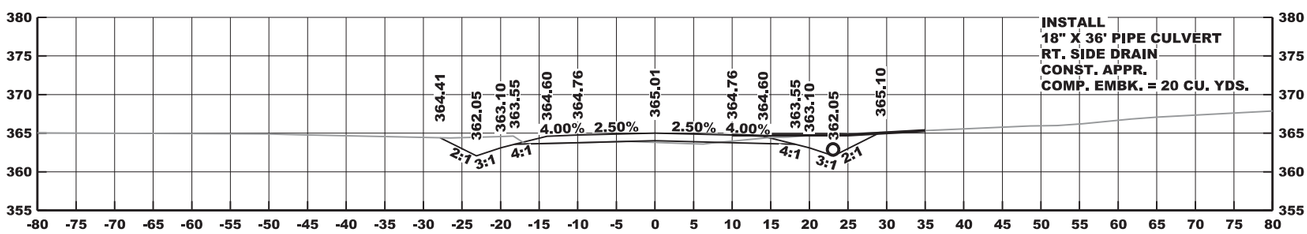
CROSS SECTIONS



AREA CUT 33.99
AREA FILL 0.18

CUT VOLUME 69.36
FILL VOLUME 2.21

260+00

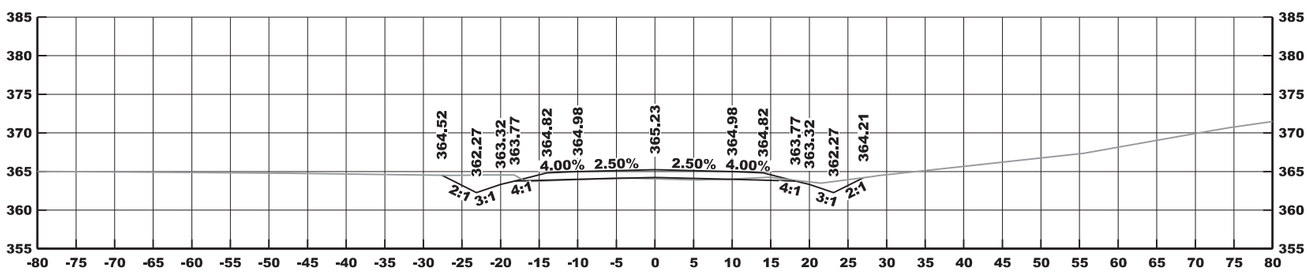


INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONST. APPR.
COMP. EMBK. = 20 CU. YDS.

AREA CUT 38.04
AREA FILL 2.12

CUT VOLUME 52.00
FILL VOLUME 3.99

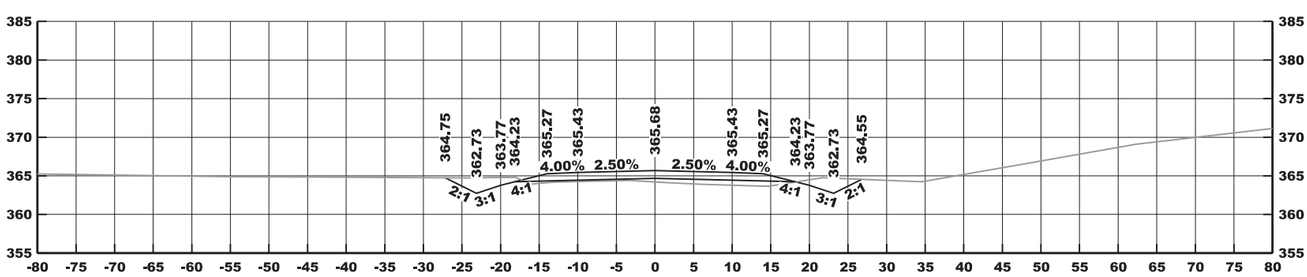
259+48



AREA CUT 20.46
AREA FILL 2.37

CUT VOLUME 73.55
FILL VOLUME 30.19

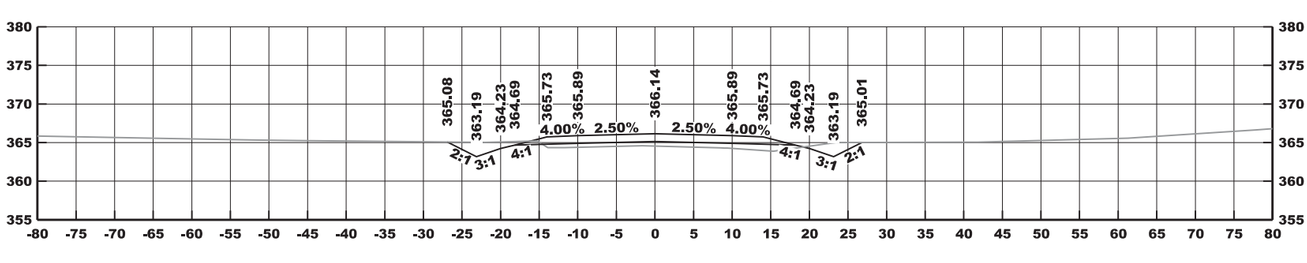
259+00



AREA CUT 19.25
AREA FILL 13.94

CUT VOLUME 67.09
FILL VOLUME 61.37

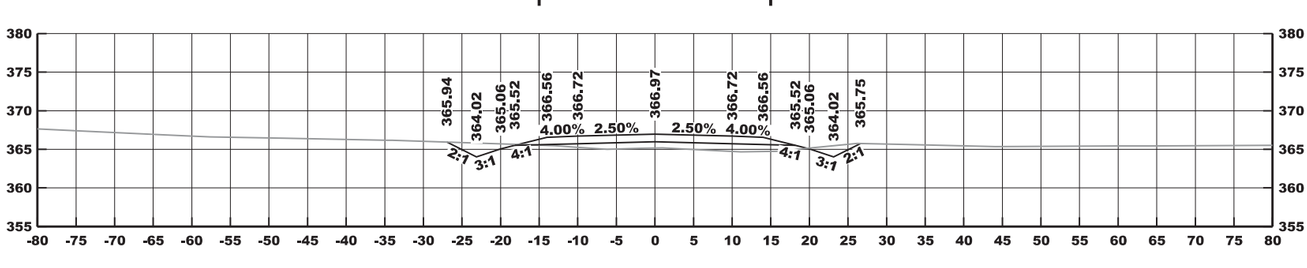
258+00



AREA CUT 16.97
AREA FILL 19.20

CUT VOLUME 55.83
FILL VOLUME 82.11

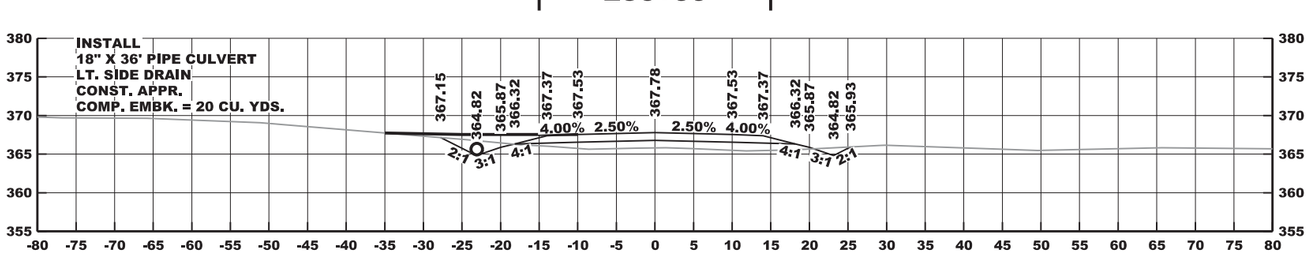
257+00



AREA CUT 13.17
AREA FILL 25.14

CUT VOLUME 20.86
FILL VOLUME 47.98

256+00



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

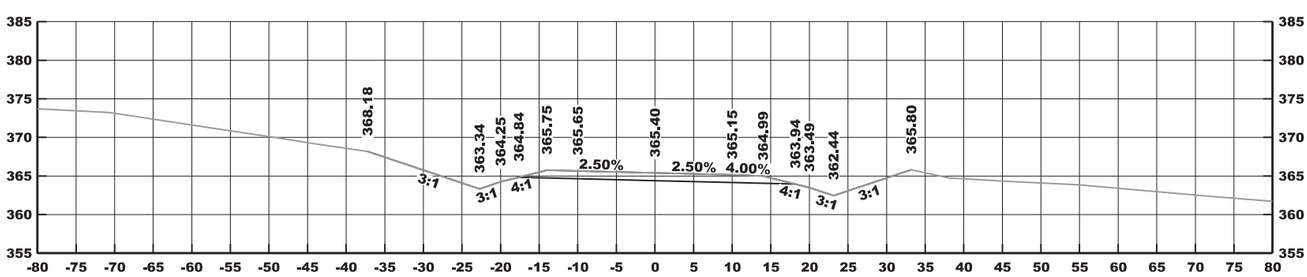
AREA CUT 11.31
AREA FILL 31.19

CUT VOLUME 53.27
FILL VOLUME 76.82

255+54

						PART REVISED	
						DATE PLANED	
						DATE REVISED	
						PART PLANED	
4							
CROSS SECTIONS	JOB NO.	FA1913	STATE ARK.	FED.AID PROJ.NO.	FEDERAL OVERSIGHT NO.	SHEET NO.	TOTAL SHEETS
					6	45	46

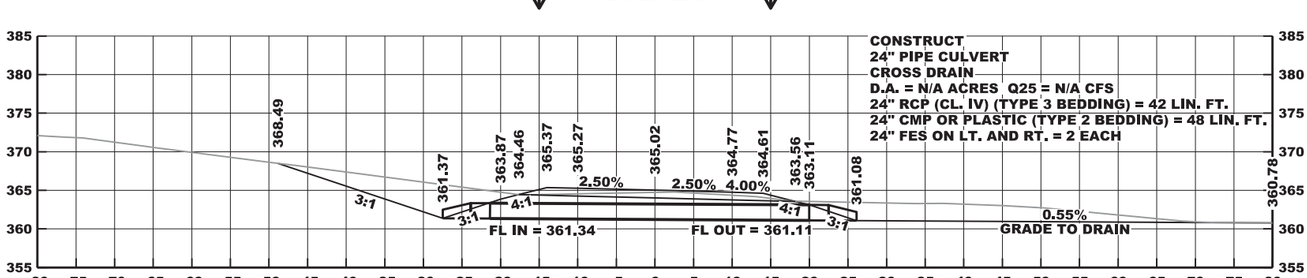
END JOB FA1913



AREA CUT 31.67
AREA FILL 0.00

CUT VOLUME 90.08
FILL VOLUME 0.03

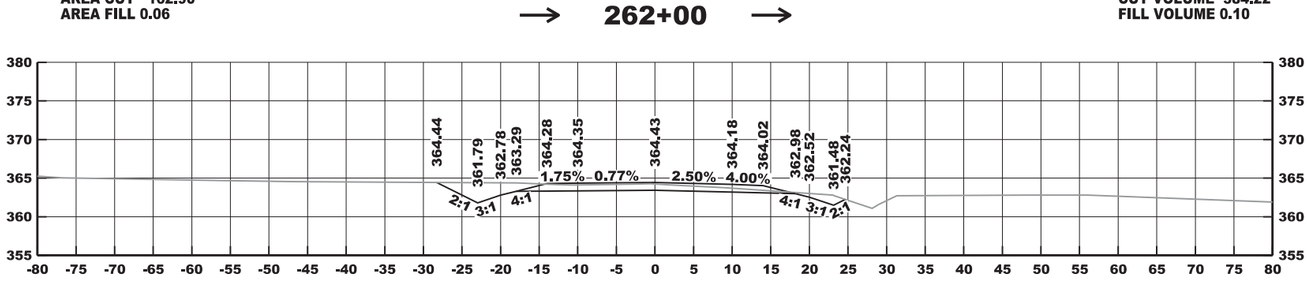
262+25



AREA CUT 162.90
AREA FILL 0.06

CUT VOLUME 384.22
FILL VOLUME 0.10

262+00



AREA CUT 44.58
AREA FILL 0.00

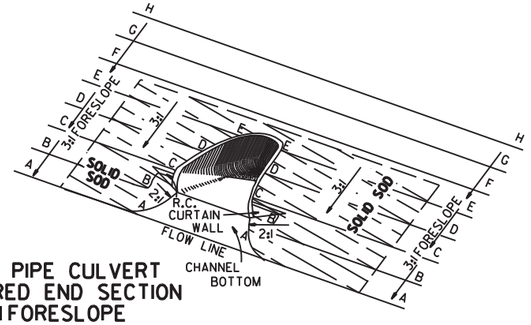
CUT VOLUME 145.50
FILL VOLUME 0.34

261+00

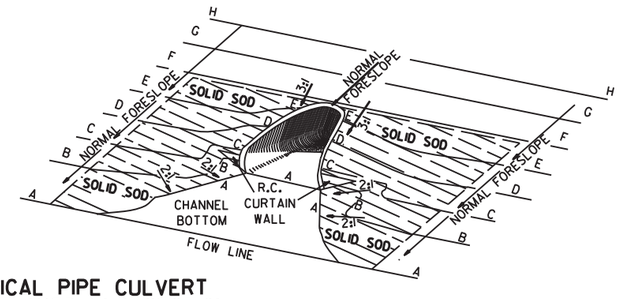
PART REVISED	
PART PLANED	
DATE REVISED	
DATE PLANED	
FED.AID PROJ.NO.	FA1913
STATE	ARK.
JOB NO.	6
SHEET NO.	46
TOTAL SHEETS	46

CROSS SECTIONS

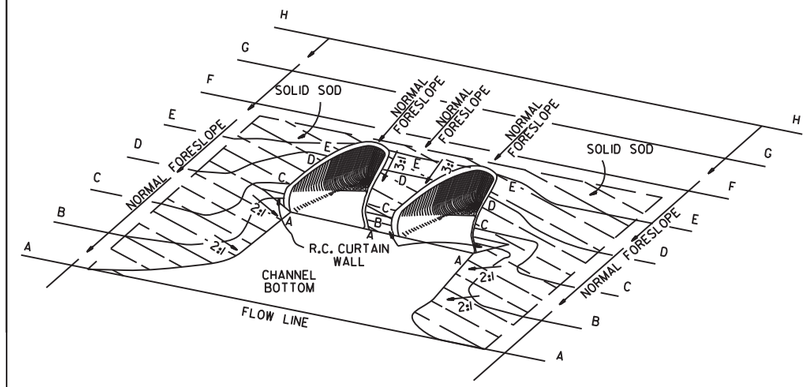
4



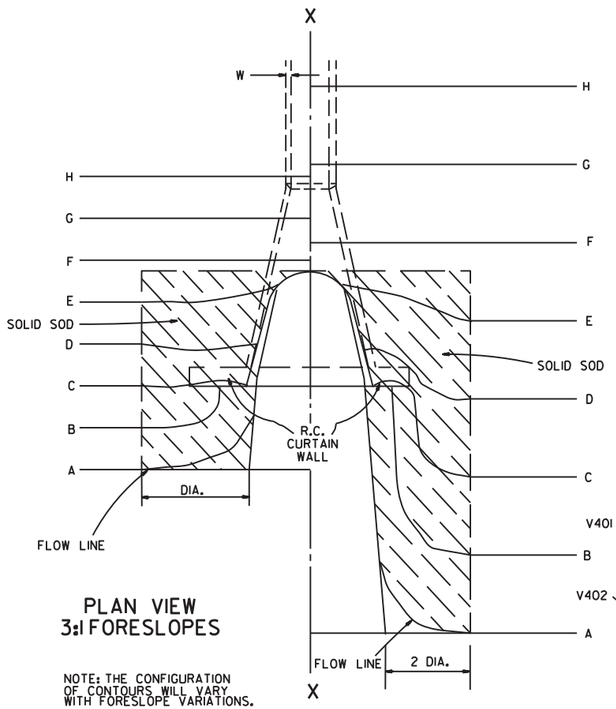
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

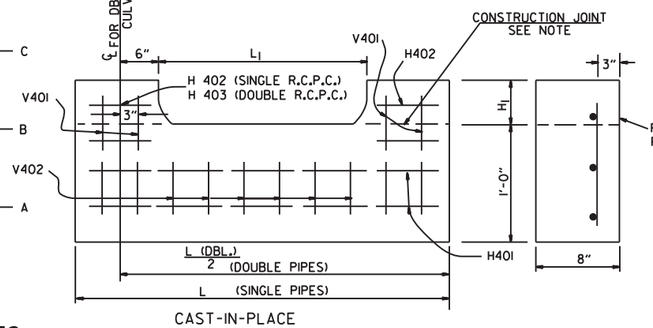
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

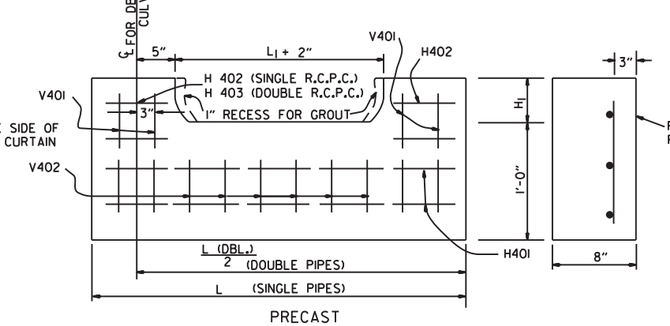
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	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								DOUBLE R.C. PIPE CULVERT											
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

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

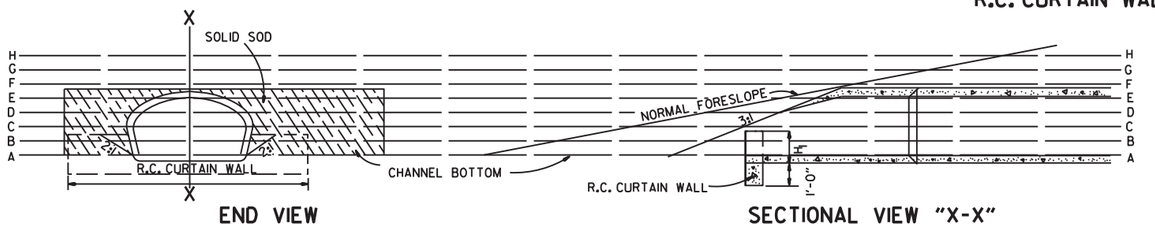
SOLID SODDING

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

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

GENERAL NOTES

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



END VIEW

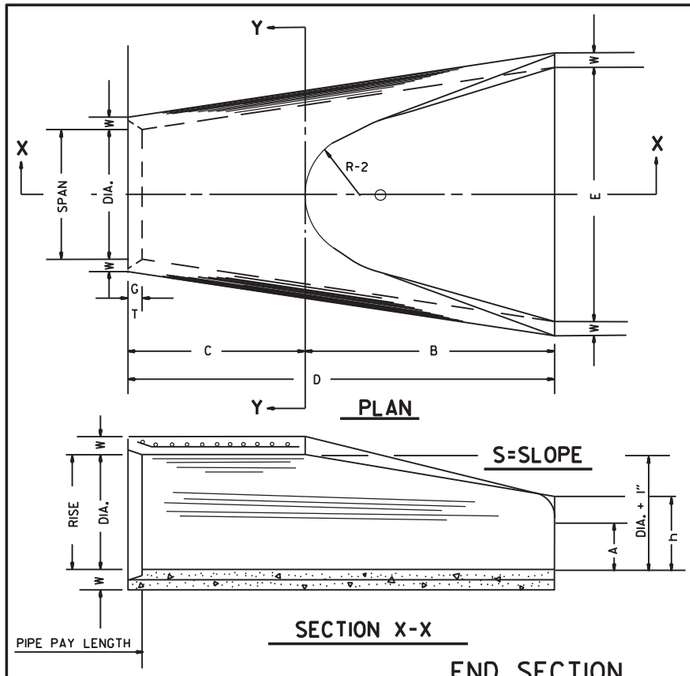
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

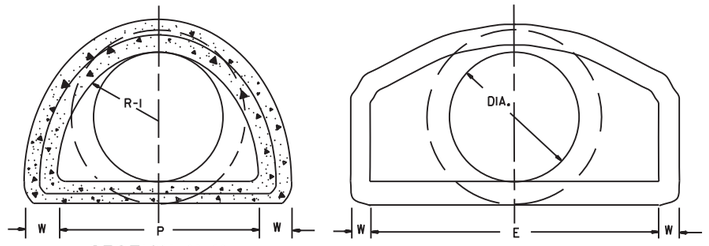
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 11/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¼"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅜"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 5/16"	24"	5"	13250	4'-6"

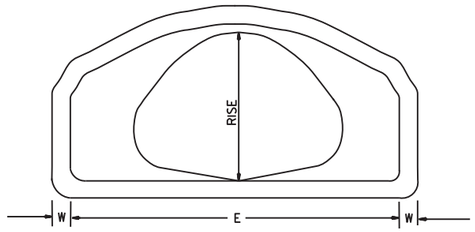


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

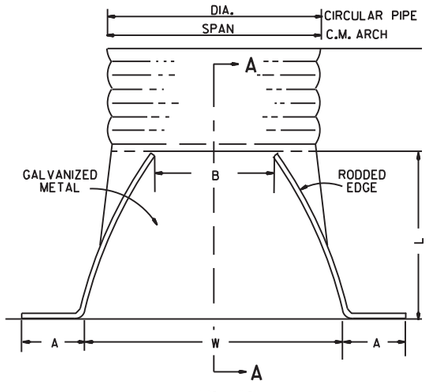
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 5/16"	24"	5"	2¼:1

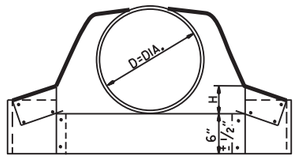
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE



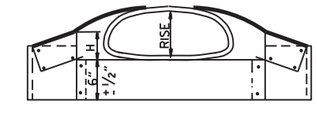
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE

CIRCULAR PIPE

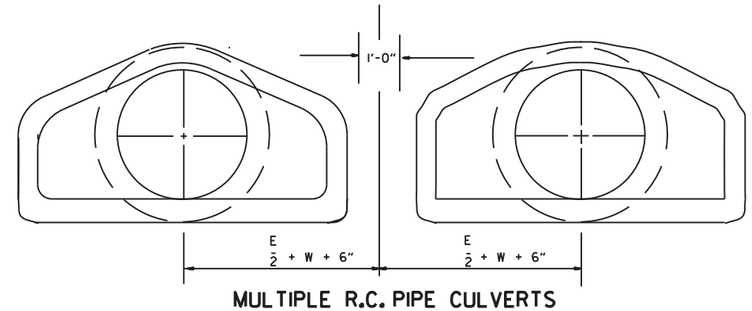
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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



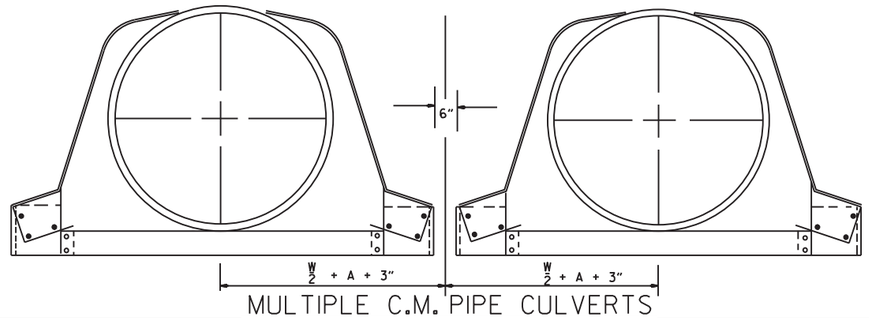
C.M. ARCH PIPE

C.M. ARCH PIPE

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

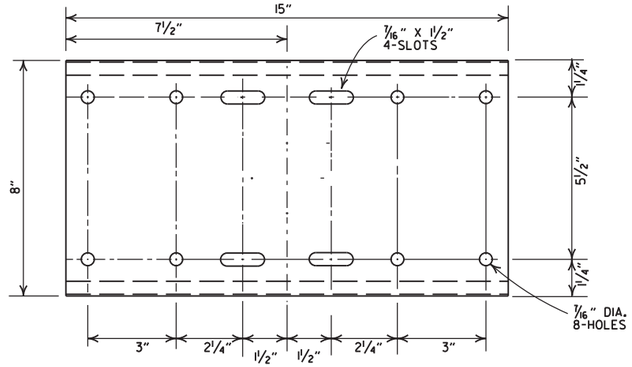
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

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

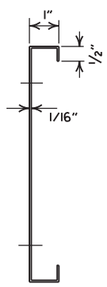
ARKANSAS STATE HIGHWAY COMMISSION

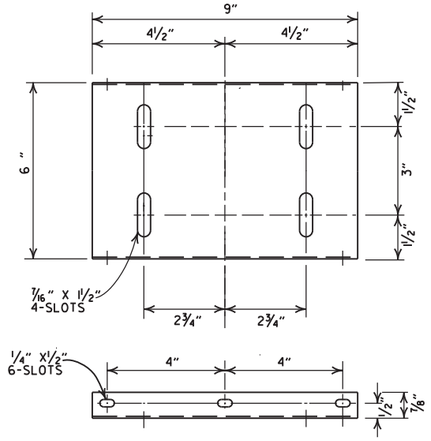
FLARED END SECTION

STANDARD DRAWING FES-2

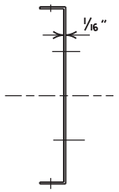


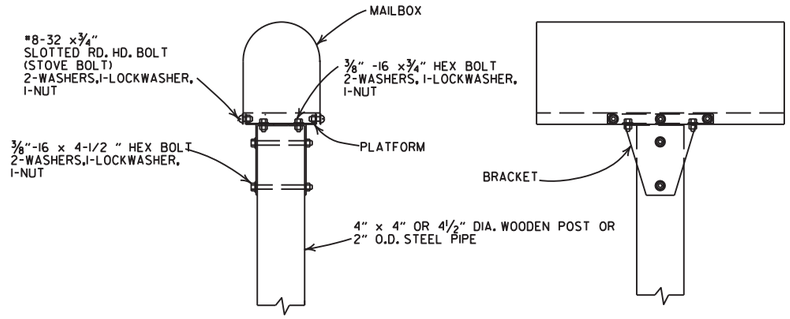
SHELF



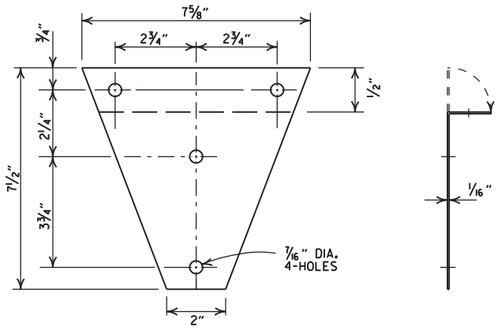


PLATFORM





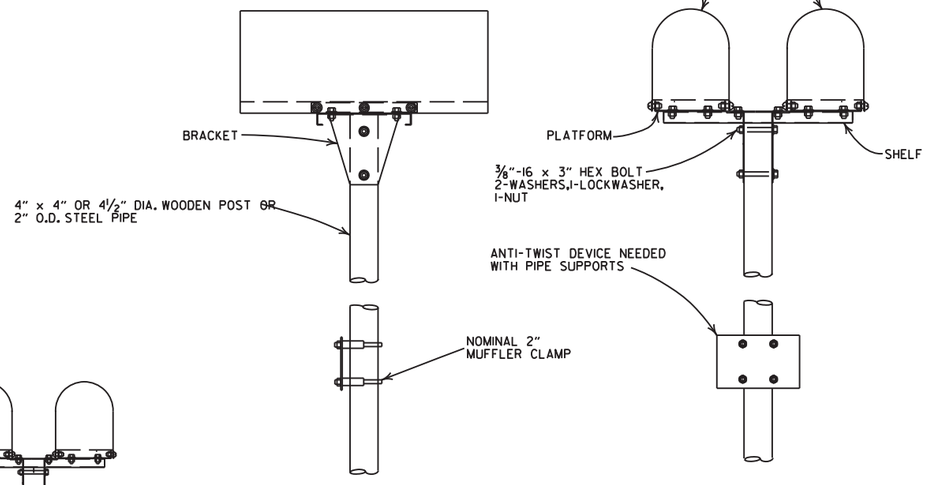
SINGLE INSTALLATION



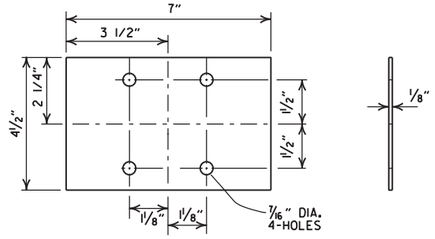
BRACKET

GENERAL NOTES

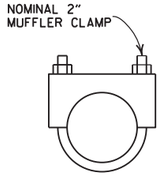
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 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 ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



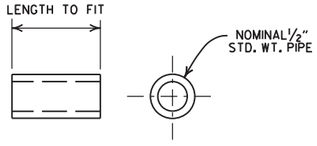
DOUBLE INSTALLATION



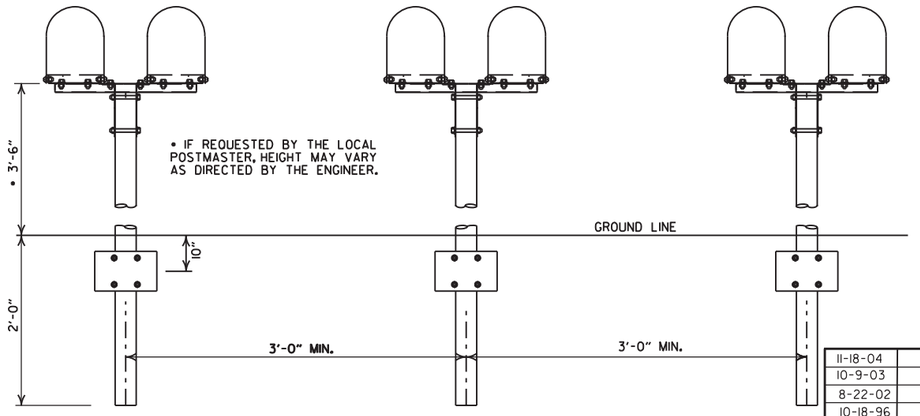
ANTI-TWIST PLATE



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	ARDOT NOMINAL	AASHTO M 206	ARDOT 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)(i).

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

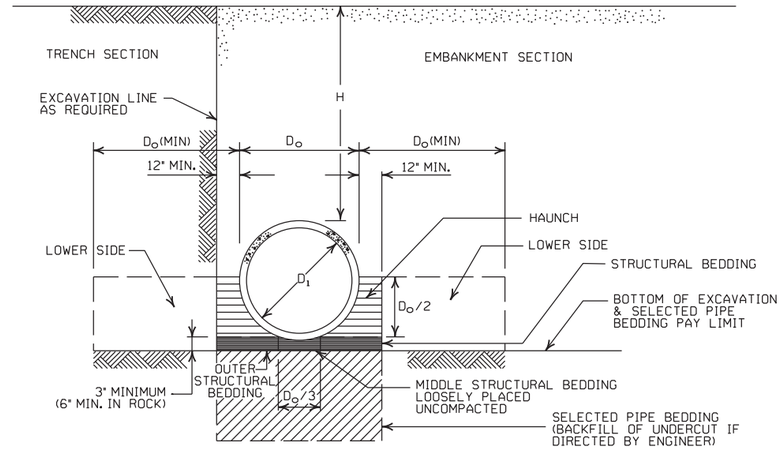
- LEGEND -

D_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.

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

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

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		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

CORRUGATED METAL PIPE ARCHES

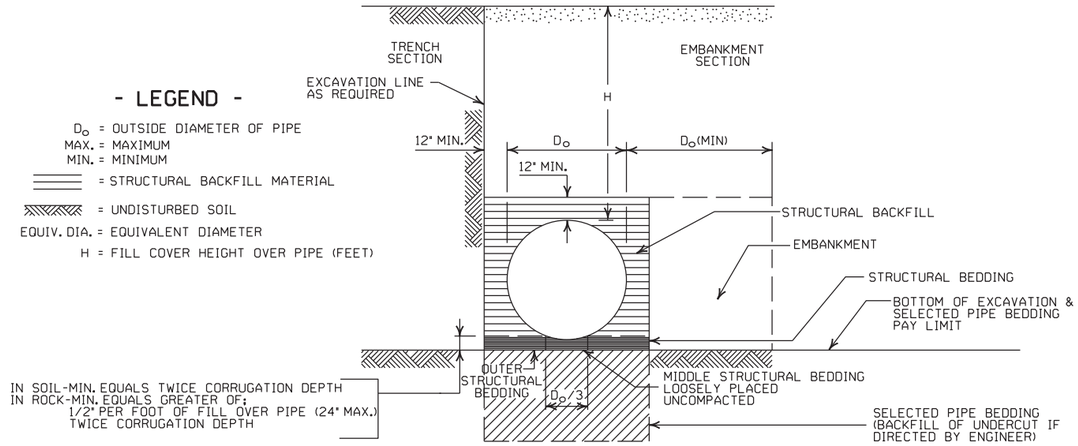
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (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.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

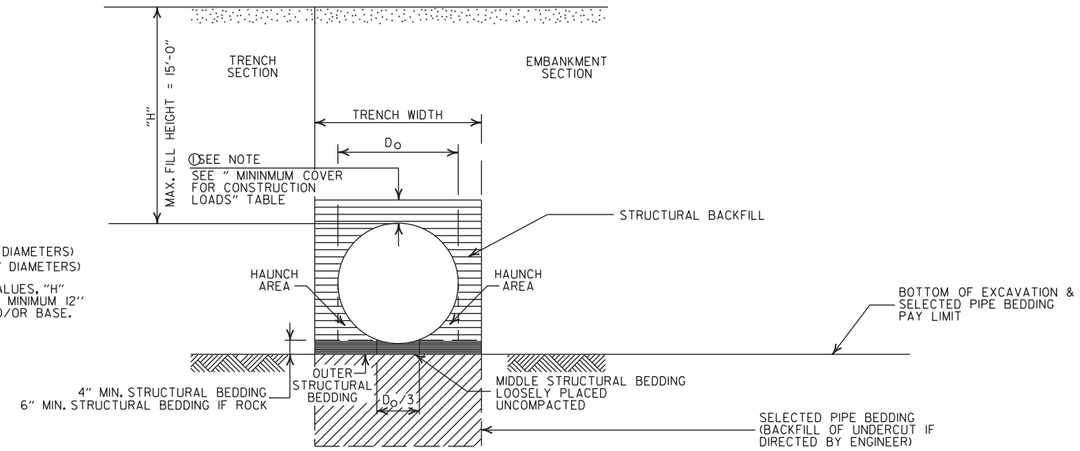
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

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

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



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.

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 AASHTO M294, TYPE S. 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. 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.)
Ø = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

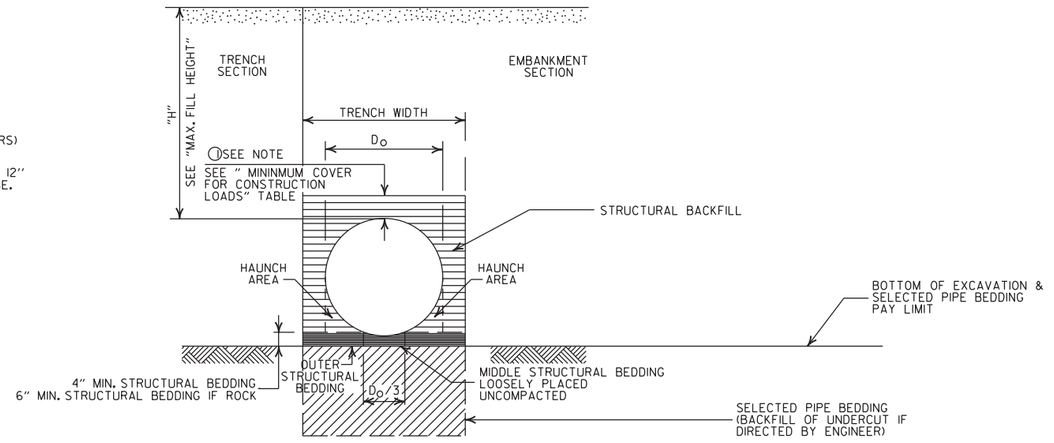
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

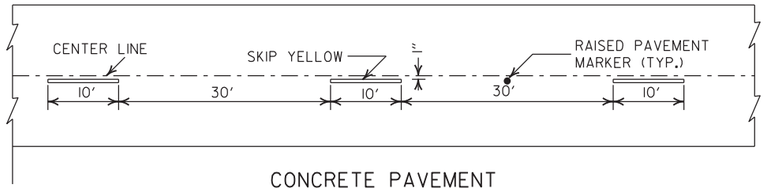
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

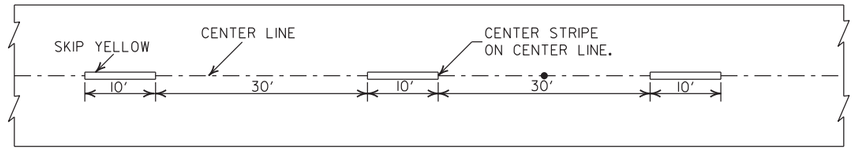
PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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

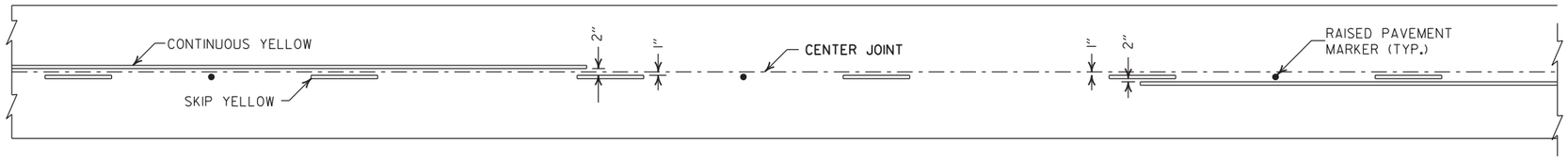


CONCRETE PAVEMENT

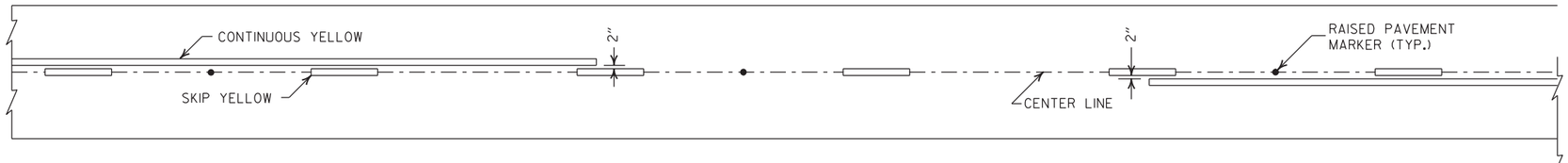


ASPHALT PAVEMENT

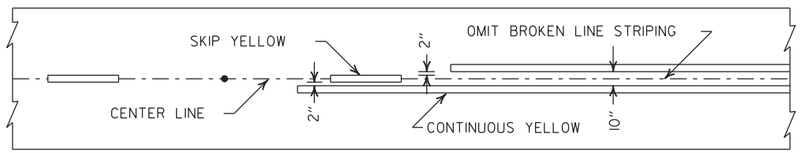
BROKEN LINE STRIPING



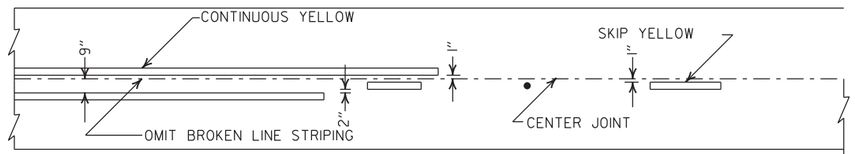
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

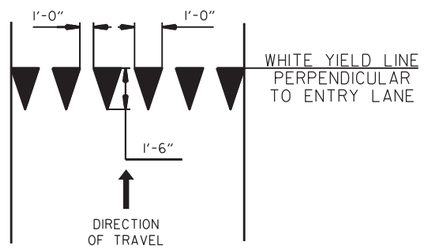


ASPHALT PAVEMENT

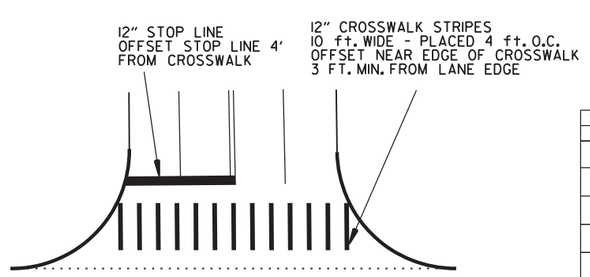


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

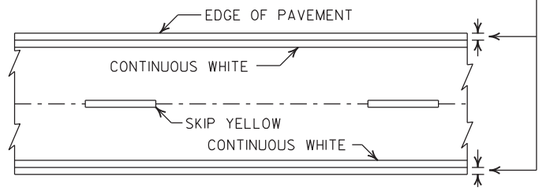


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

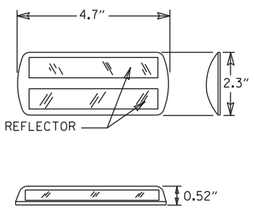
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



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 ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
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

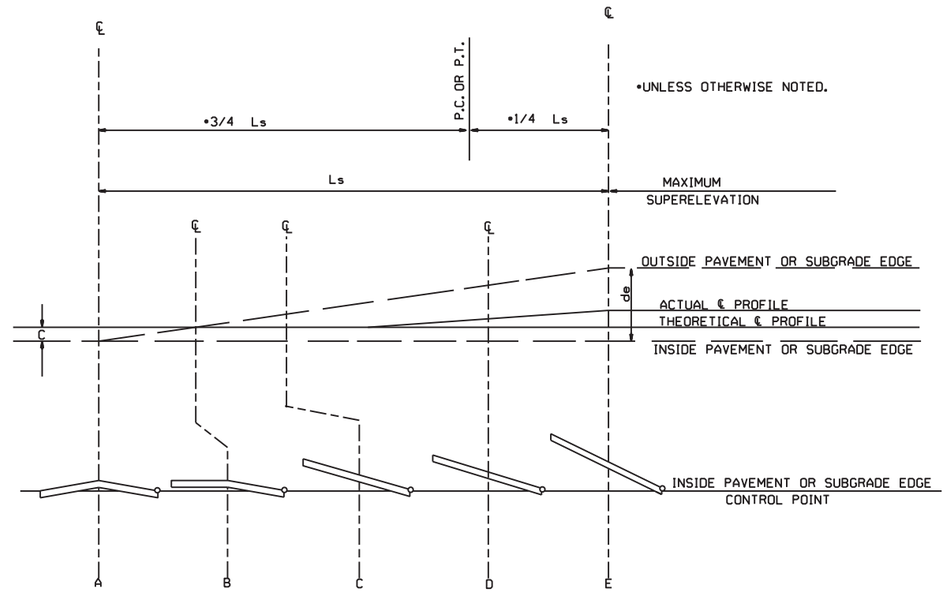
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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

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

ABBREVIATIONS

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



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

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

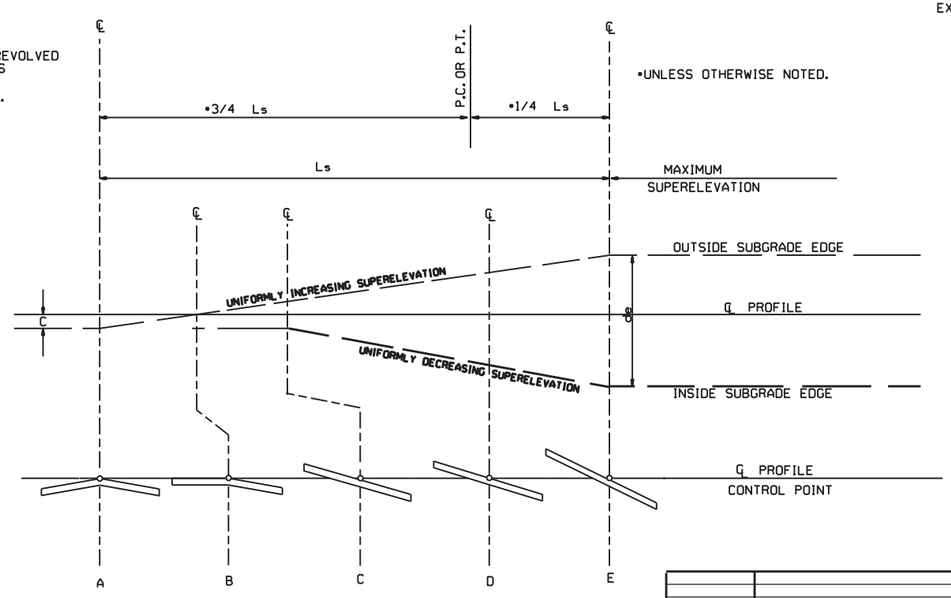
GENERAL NOTES

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

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

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1
30"X30"

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

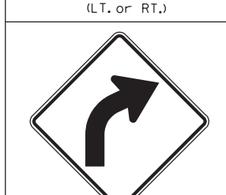
W1-8
18"X24"

W2-5
30"X30"

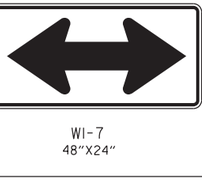
W3-1
36"X36"

W5-1
36"X36"

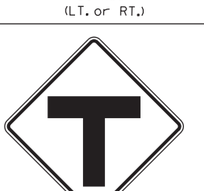
M6-3
21"X15"



R1-2
36"X36"X36"

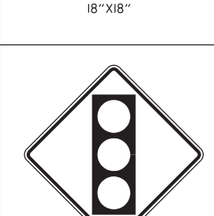


W1-4
30"X30"
(LT. or RT.)

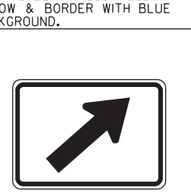


W2-1
30"X30"

S1-1
36"X36"



W3-2
36"X36"

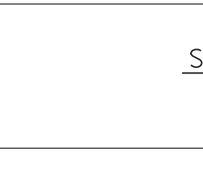


County
Route Marker
M1-6
24"X24"

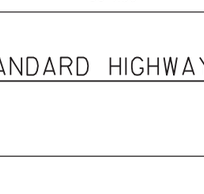
NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.

M6-4
21"X15"

R2-1
24"X30"

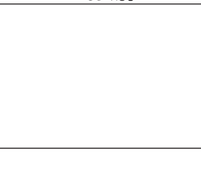


W1-5
30"X30"
(LT. or RT.)



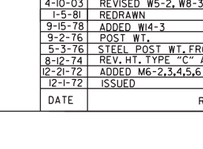
W2-2
30"X30"

W5-2
36"X36"



W8-3
36"X36"

R1-3P
18"X6"



M6-5
21"X15"

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

W1-6
48"X24"

W1-7
48"X24"

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

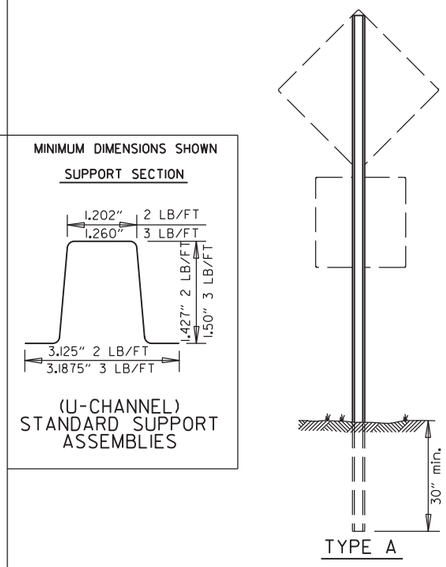
W3-3
36"X36"

M6-2
21"X15"

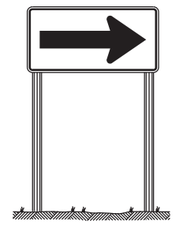
S4-3P
24"X8"

S4-2P
24"X10"

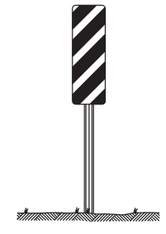
OM-3
12"X36"
(LT. or RT.)



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



TYPE B



TYPE C

MINIMUM WEIGHT

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

STANDARD HIGHWAY SIGNS

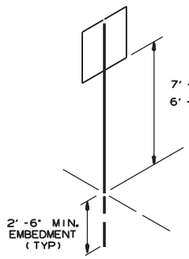
SUPPORT ASSEMBLIES

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

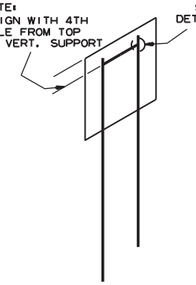
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

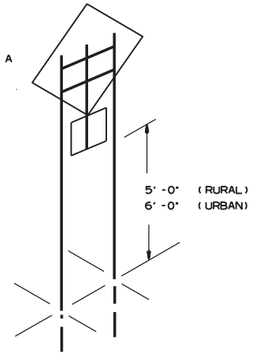
STANDARD DRAWING SHS-1



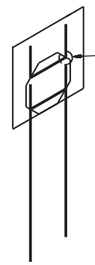
U-1



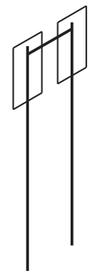
U-2



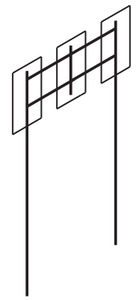
U-2 (A)



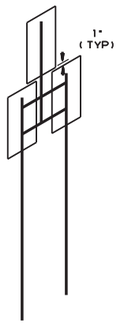
U-2 (B)



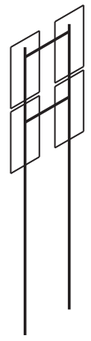
U-2 (1)



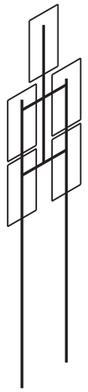
U-2 (2)



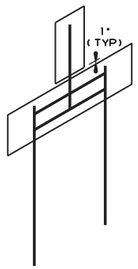
U-2 (3)



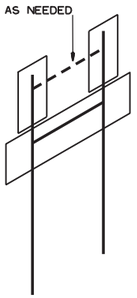
U-2 (4)



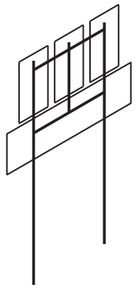
U-2 (5)



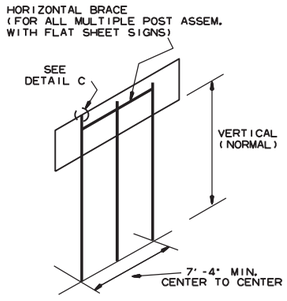
U-2 (6)



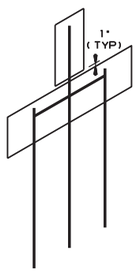
U-2 (7)



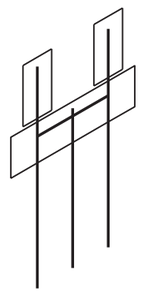
U-2 (8)



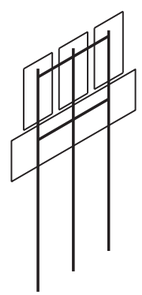
U-3



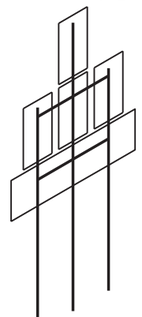
U-3 (1)



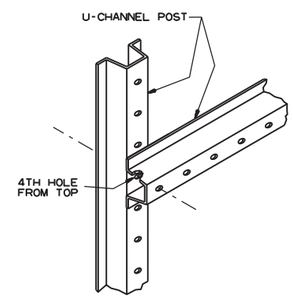
U-3 (2)



U-3 (3)

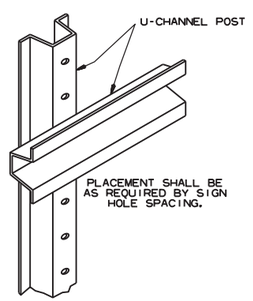


U-3 (4)



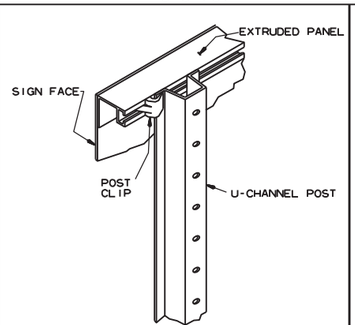
DETAIL A

SHOWING HORIZONTAL BRACE



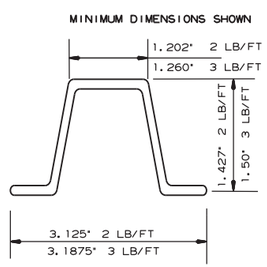
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



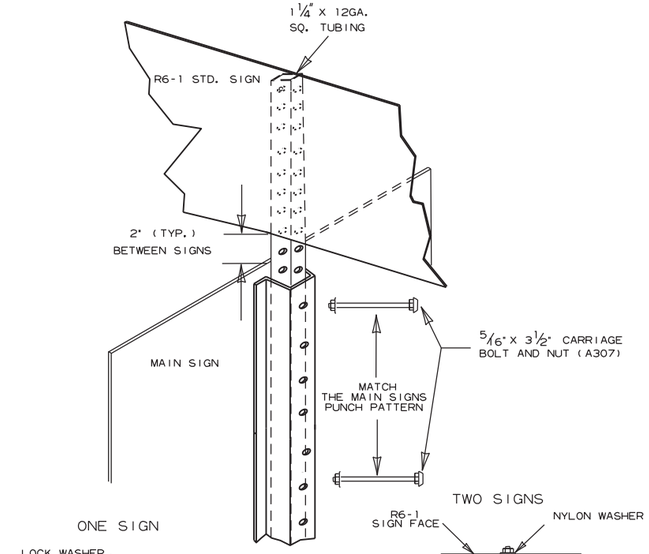
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



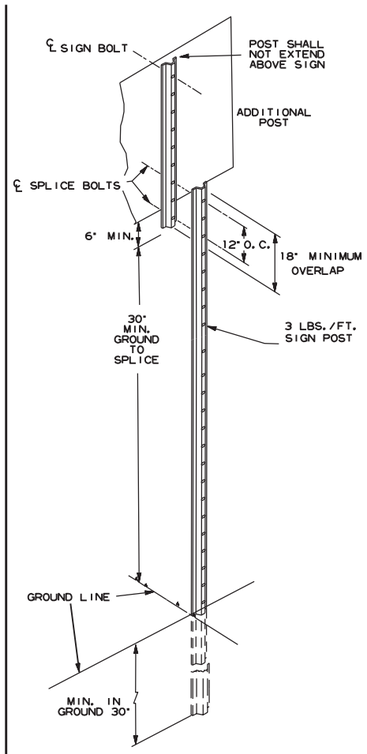
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

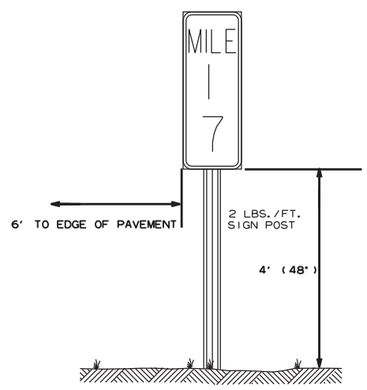
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

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

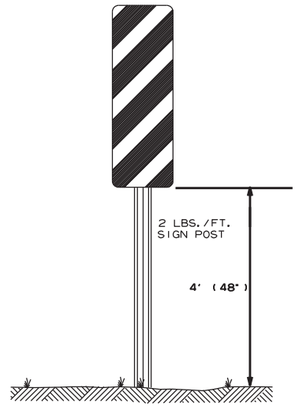
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

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"

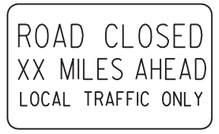
R5-1

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

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

W21-5a

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

W1-1

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

W1-2

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

W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

W1-6

STD. 48"X24"
SPECIAL 60"X30"

W1-8

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

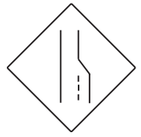
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

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

W8-9

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

G20-1

60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

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

M4-10

48"X18"

R55-1

36"X60"

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

ADVANCE DISTANCES
(XXXX)

500 FT	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.

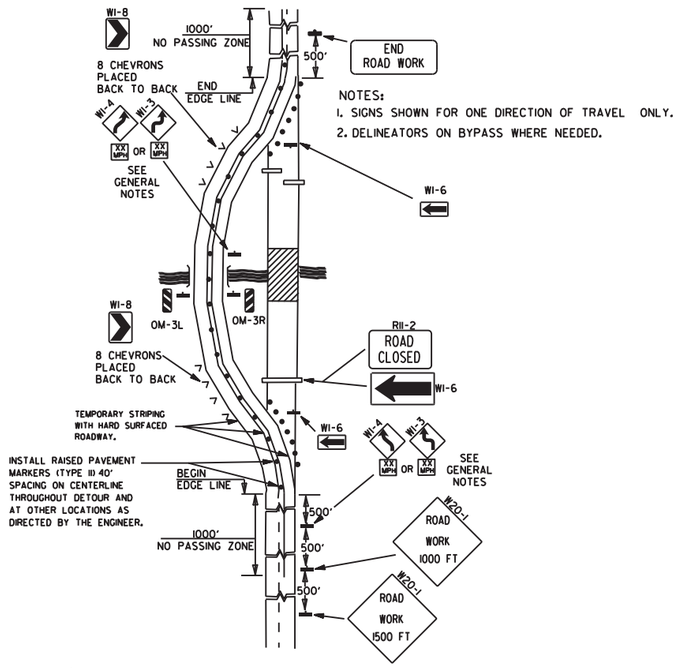
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

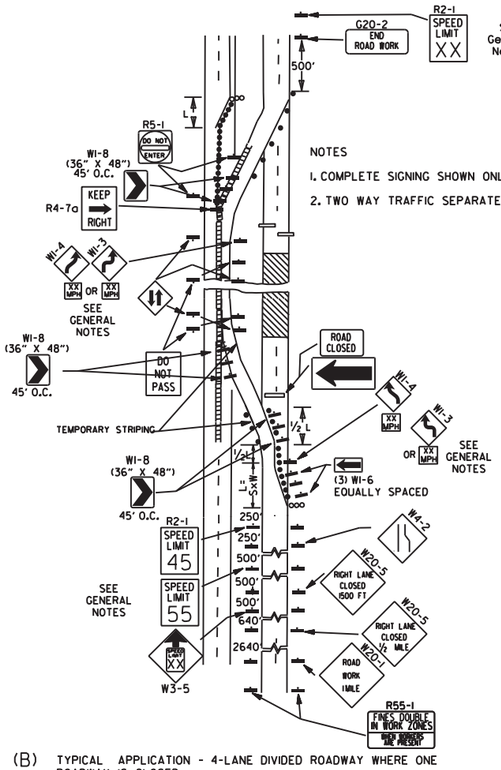
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



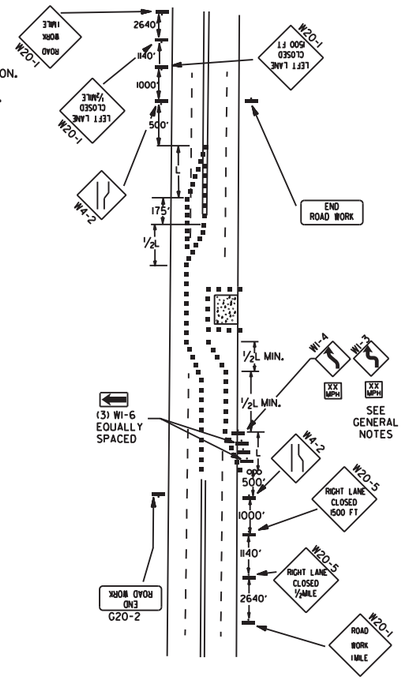
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(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.

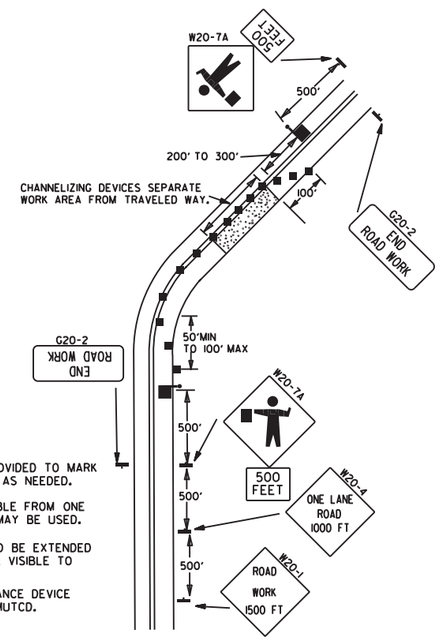
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



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

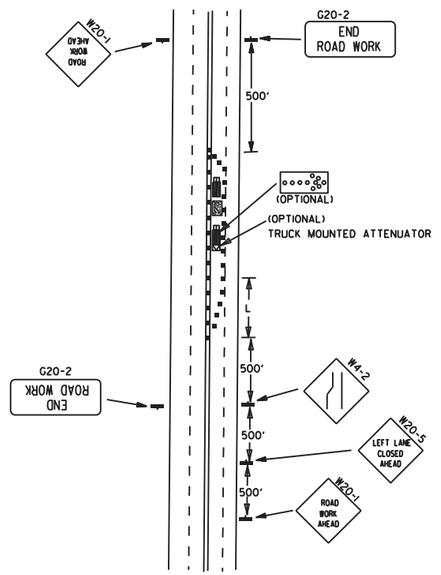
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

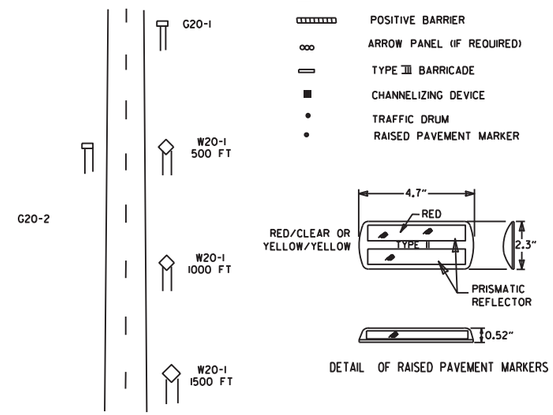


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE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

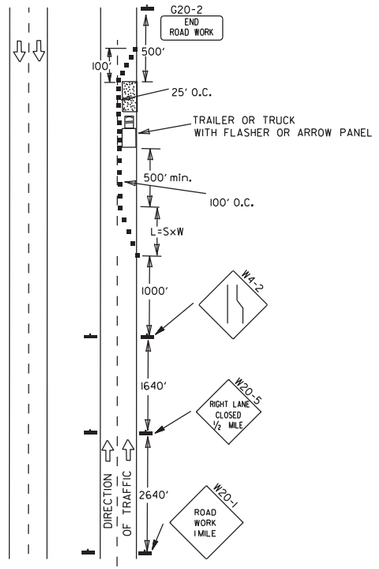
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
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
05-20-21	REVISED NOTE 7	
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	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

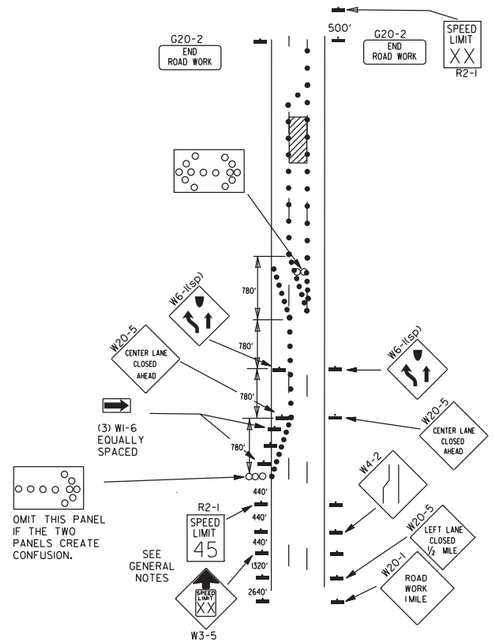
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



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

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

KEY:

○○○ ARROW PANEL (IF REQUIRED)

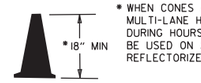
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

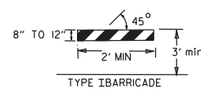
GENERAL NOTES:

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

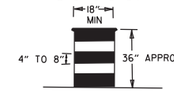
CHANNELIZING DEVICES

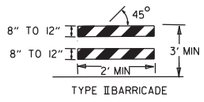


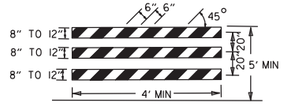
CONES



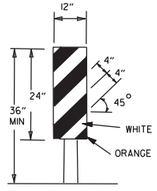
PLASTIC DRUM



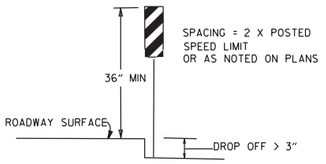




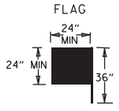
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	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[1]
> 6" ≤ 18"	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]
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS[3]
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[4] & EDGE LINES	PRECAST CONCRETE BARRIER[4] & EDGE LINES

INTERSTATE

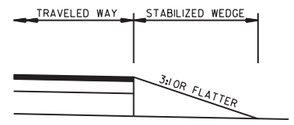
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED 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:

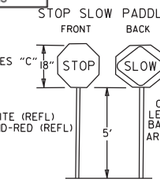
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. 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.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).



STABILIZED WEDGE

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

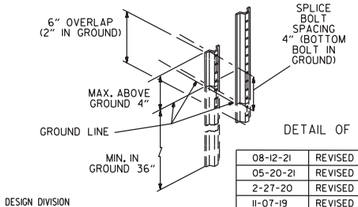
STOP SLOW PADDLE



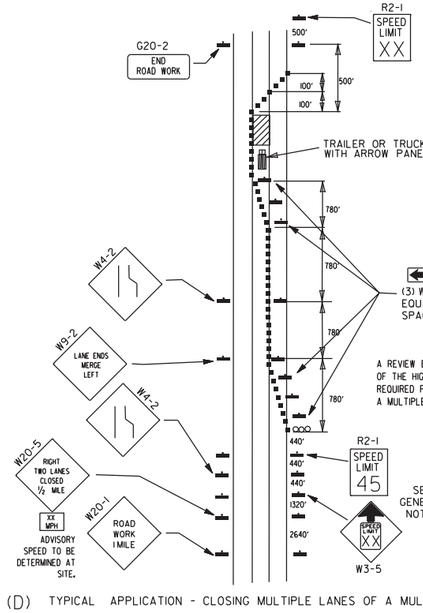
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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.



DETAIL OF SPLICES



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

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

DATE	REVISION	FILMED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	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	

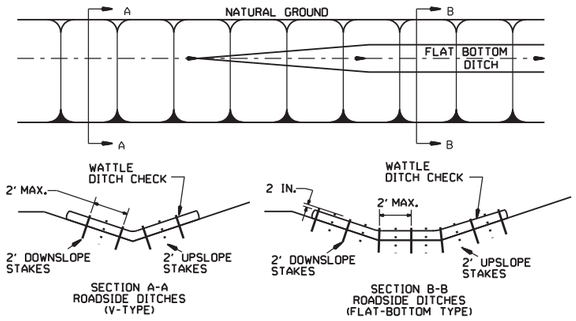
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

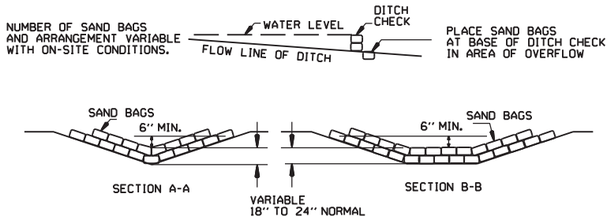
STANDARD DRAWING TC-3

GENERAL NOTES

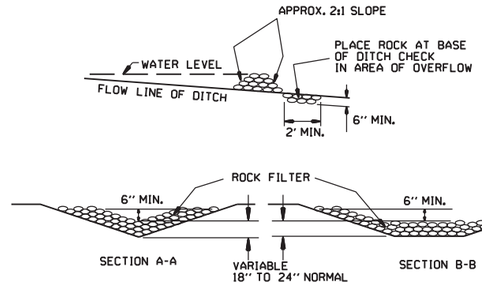
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

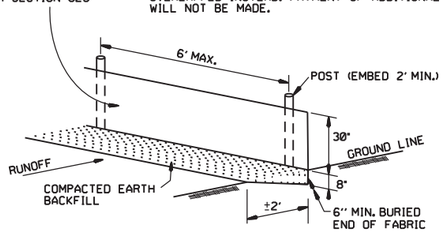


ROCK DITCH CHECK (E-6)

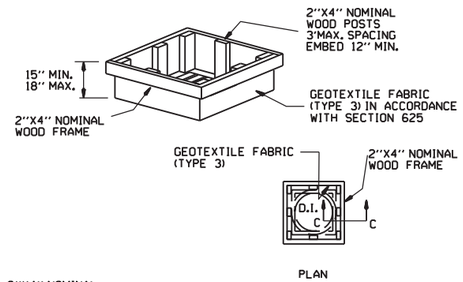
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

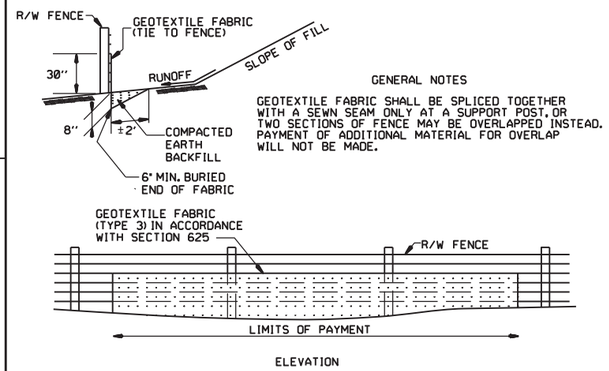
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



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.

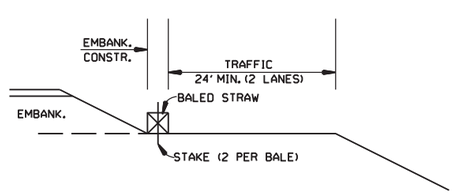
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

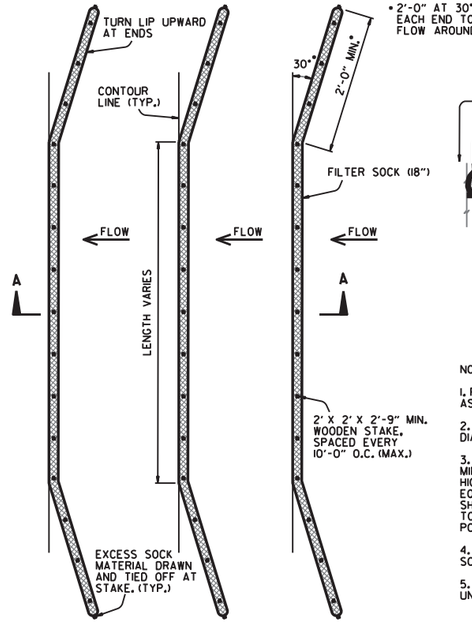
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

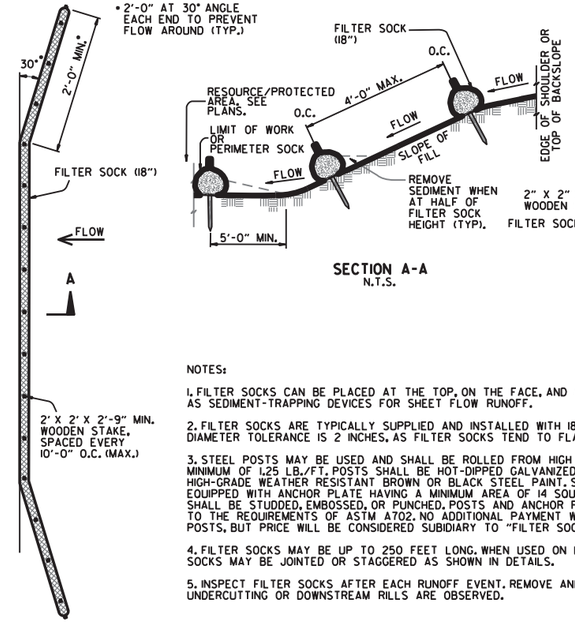
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



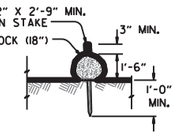
BALED STRAW FILTER BARRIER (E-2)



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.



STAKING DETAIL
N.T.S.

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.

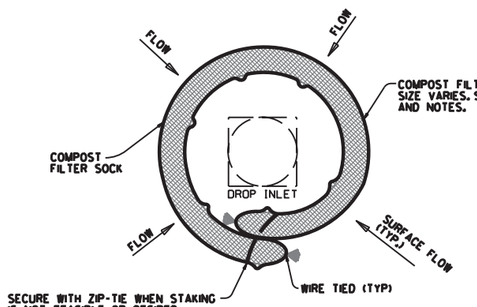
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES. AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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 SUBIDIARY TO "FILTER SOCK (18")."

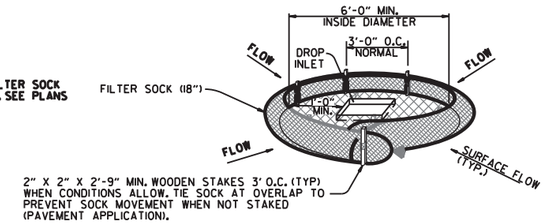
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

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

FILTER SOCK ALONG SLOPE (E-3)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

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.

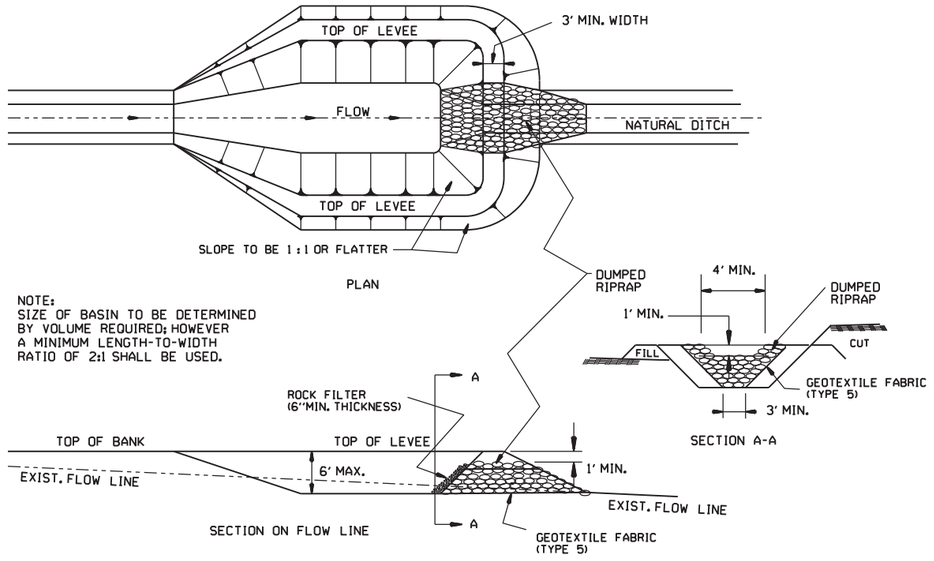
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

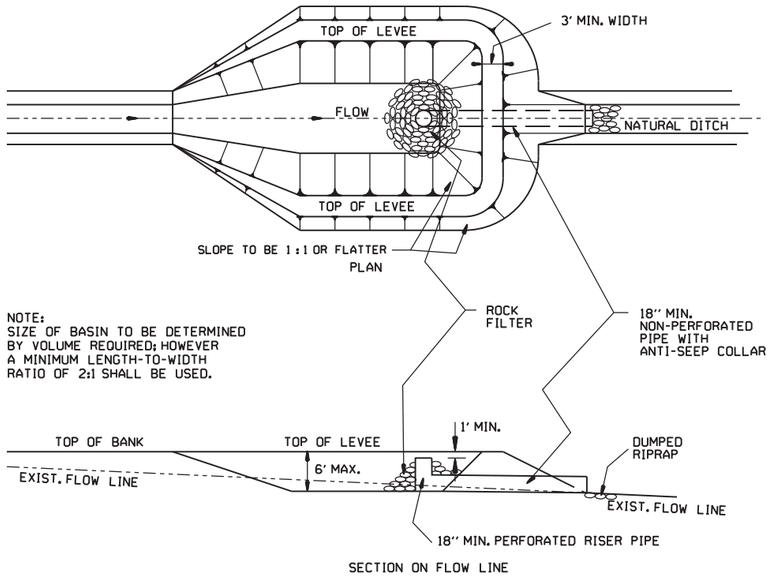
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

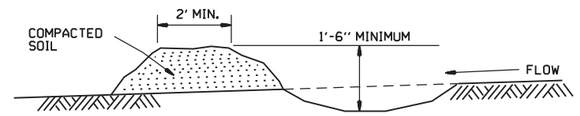
STANDARD DRAWING TEC-1



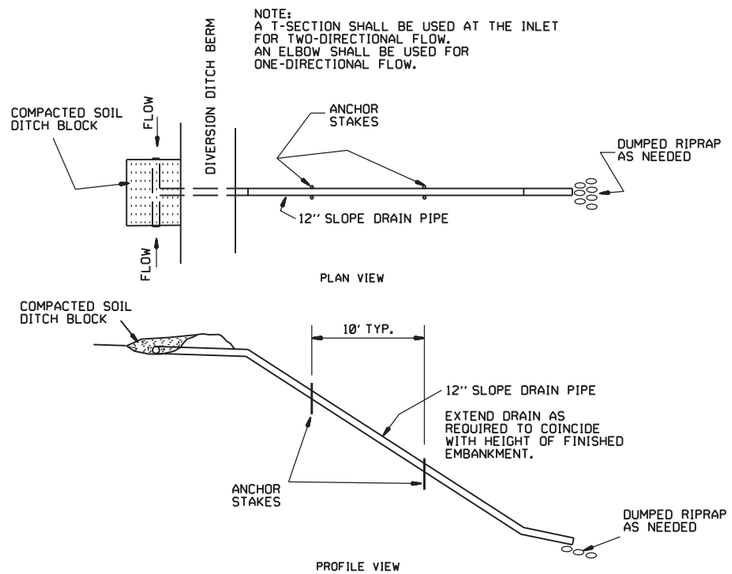
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



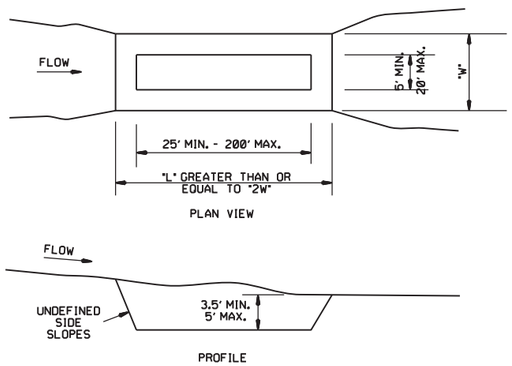
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

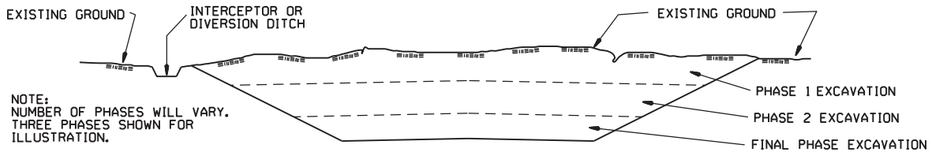
STANDARD DRAWING TEC-2

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



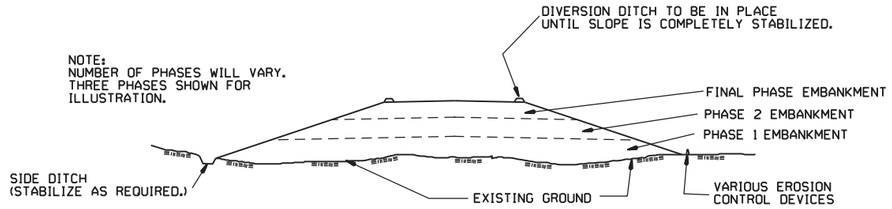
GENERAL NOTE

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

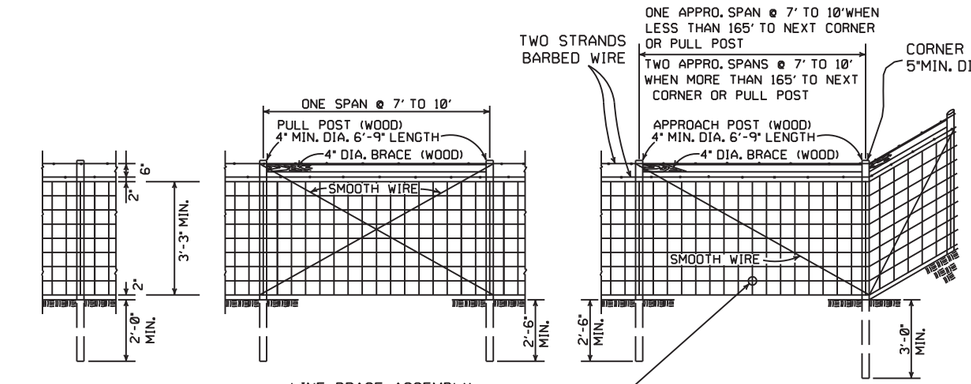
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

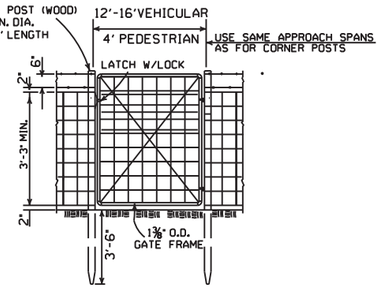
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



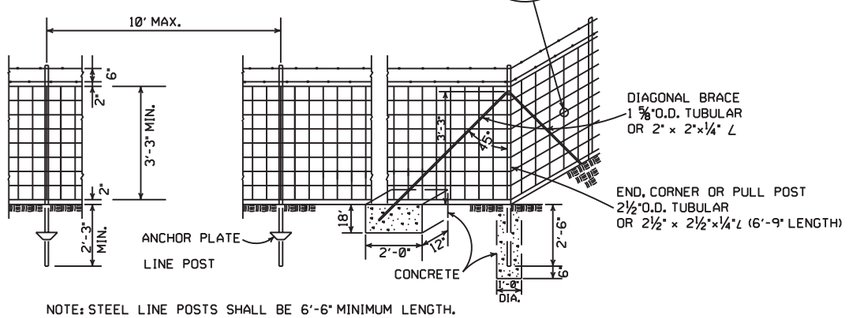
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

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

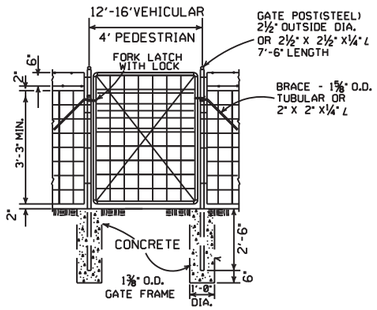


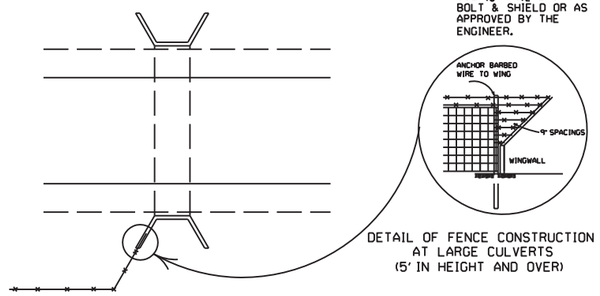
TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES WILL BE PERMITTED



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

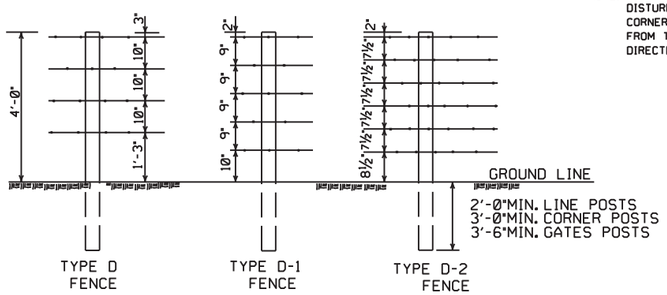




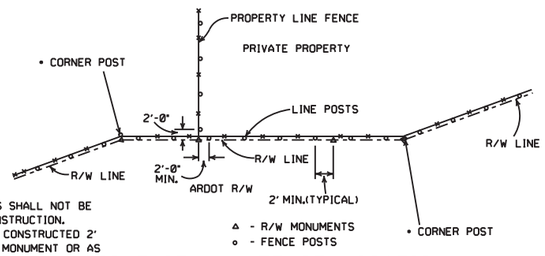
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

TYPE C FENCE (STEEL POSTS)

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

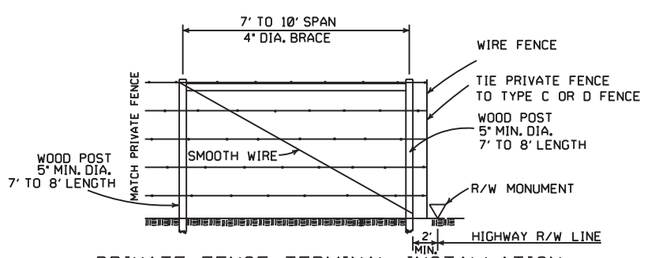


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

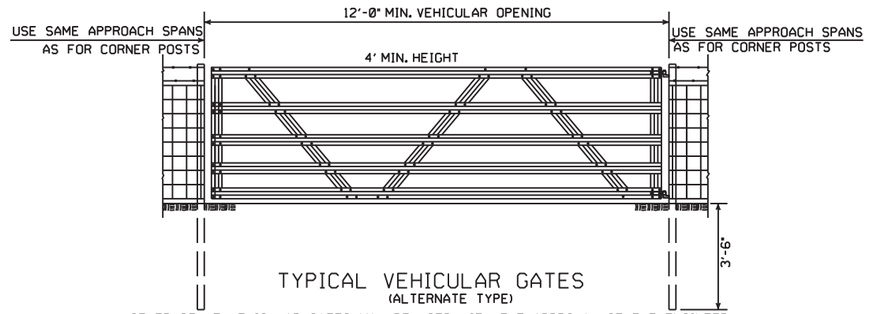


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

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.

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.

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