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.		C72003	1	36

(4) FARMINGTON DOUBLE SPRINGS RD. IMPROVEMENTS (S)

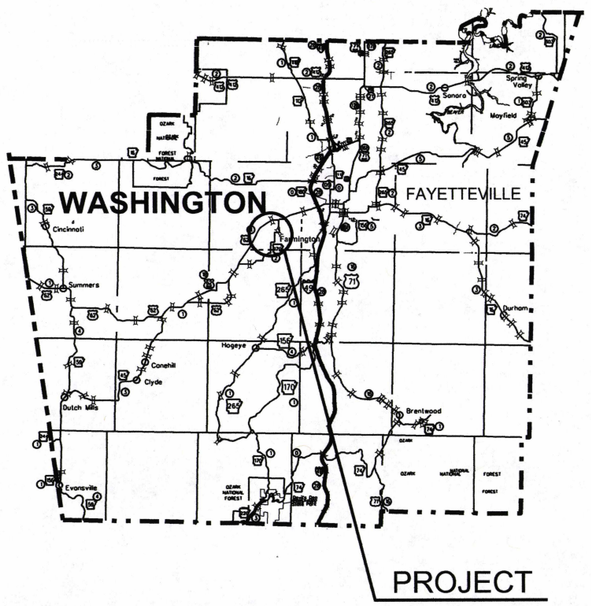
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR PROPOSED CITY STREET

FARMINGTON DOUBLE SPRINGS RD. IMPROVEMENTS (S)

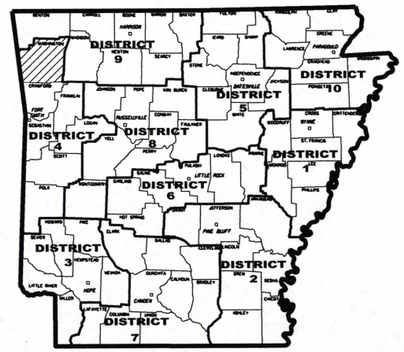
WASHINGTON COUNTY

JOB C72003

NOT TO SCALE

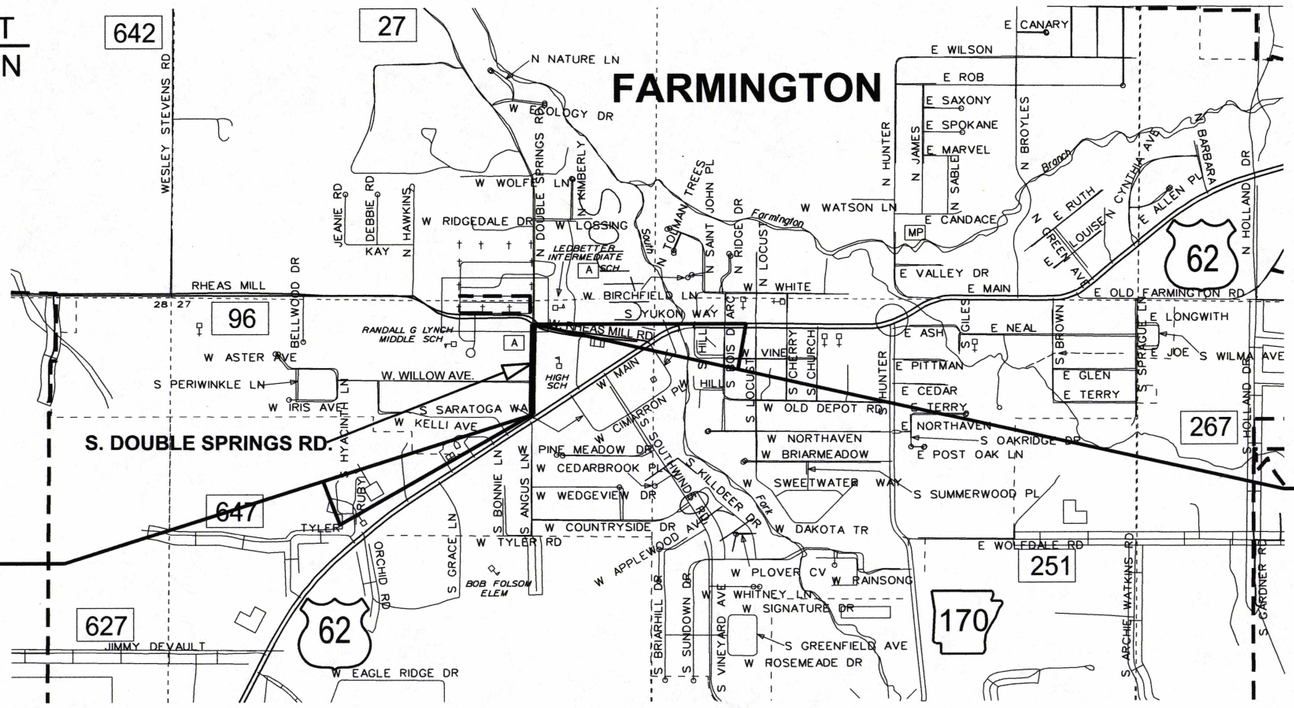


VICINITY MAP



ARKANSAS HWY. DISTRICT NO. 4

R31W



R31W

STA. 99+95.00
BEGIN JOB C72003

STA. 109+61.35
END JOB C72003

N

DESIGN TRAFFIC DATA

DESIGN YEAR	2040
2020 ADT	3600
2040 ADT	4500
2040 DHV	675
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	4.0%
DESIGN SPEED	20 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LAT.	N36°02'21"	N36°02'26"	N36°02'32"
LONG.	W94°15'15"	W94°15'15"	W94°15'15"

LENGTH OF PROJECT CALCULATED ALONG CL CONSTRUCTION						
GROSS LENGTH OF PROJECT		966.35	FEET OR		0.183	MILES
NET " " ROADWAY		966.35	" "		0.183	"
NET " " BRIDGES		000.00	" "		0.000	"
NET " " PROJECT		966.35	" "		0.183	"

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 7836
M.E. BANKS

2-27-2020

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
03-05-2020				6	ARK.			
				JOB NO.		C72003	2	36

4 INDEX OF SHEETS AND STANDARD DRAWINGS

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 9	TYPICAL SECTIONS OF IMPROVEMENT
10 - 11	SPECIAL DETAILS
12	TEMPORARY EROSION CONTROL DETAILS
13 - 14	PAVEMENT MARKINGS
15 - 16	QUANTITIES
17	SUMMARY OF QUANTITIES AND REVISIONS
18 - 19	SURVEY CONTROL DETAILS
20 - 24	PLAN AND PROFILE SHEETS
25 - 36	CROSS SECTIONS

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

ROADWAY STANDARD DRAWINGS

DRWG. NO.	TITLE	DATE
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	11-07-19
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9M	DETAILS OF DROP INLETS (TYPE MO)	08-22-02
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	02-27-20
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	07-25-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
3/5/2020
BRYANT FREELIN

INDEX OF SHEETS AND STANDARD DRAWINGS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C72003		3	36

4 GOVERNING SPECIFICATIONS & GENERAL NOTES

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
306-1	QUALITY CONTROL AND ACCEPTANCE
400-1	TACK COATS
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
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
505-1	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2	INCIDENTAL CONSTRUCTION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
620-1	MULCH COVER
621-1	FILTER SOCKS
633-1	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1	CURBING
723-1	GENERAL REQUIREMENTS FOR SIGNS
729-1	CHANNEL POST SIGN SUPPORT
JOB C72003	BIDDING REQUIREMENTS AND CONDITIONS
JOB C72003	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB C72003	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB C72003	DENSITIES FOR ACHM SURFACE COURSE
JOB C72003	MANDATORY ELECTRONIC CONTRACT
JOB C72003	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB C72003	RECYCLED ASPHALT SHINGLES
JOB C72003	SEQUENCE OF CONSTRUCTION
JOB C72003	SHORING FOR CULVERTS
JOB C72003	STORM WATER POLLUTION PREVENTION PLAN
JOB C72003	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB C72003	UTILITY ADJUSTMENTS
JOB C72003	WARM MIX ASPHALT

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN IN PLANS

2. 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.

3. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 26 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR PERMIT REQUIREMENTS.

4. PAVEMENT TO BE REMOVED SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. PAVEMENT SHALL BE REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT RETAINED. ANY DAMAGE TO RETAINED PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

5. TEMPORARY EASEMENTS ARE PROVIDED FOR CONTRACTOR ACCESS. AREAS OUTSIDE THE CONSTRUCTION LIMITS SHALL NOT BE CLEARED OR GRUBBED UNLESS DIRECTED BY THE ENGINEER.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITIES COMPANIES LOCATED WITHIN THE RIGHT OF WAY FOR ADJUSTMENTS OF THE EXISTING MANHOLES TO FINAL GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUISITION AND INSTALLATION OF THE RISERS TO BRING THE MANHOLES TO FINAL GRADE. THIS WILL NOT BE PAID FOR SEPARATELY, BUT FULL COMPENSATION THEREFOR WILL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THE VARIOUS ITEMS OF THE CONTRACT.

7. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.

8. INSTALLATION OF DRAINAGE STRUCTURES, PREPARATION OF SUBGRADE, REPAIRS TO EXISTING SURFACE, AND INSTALLATION OF PERMANENT TRAFFIC SAFETY SIGNS NOT SHOWN IN THE PLANS ARE THE RESPONSIBILITIES OF THE CITY OF FARMINGTON.

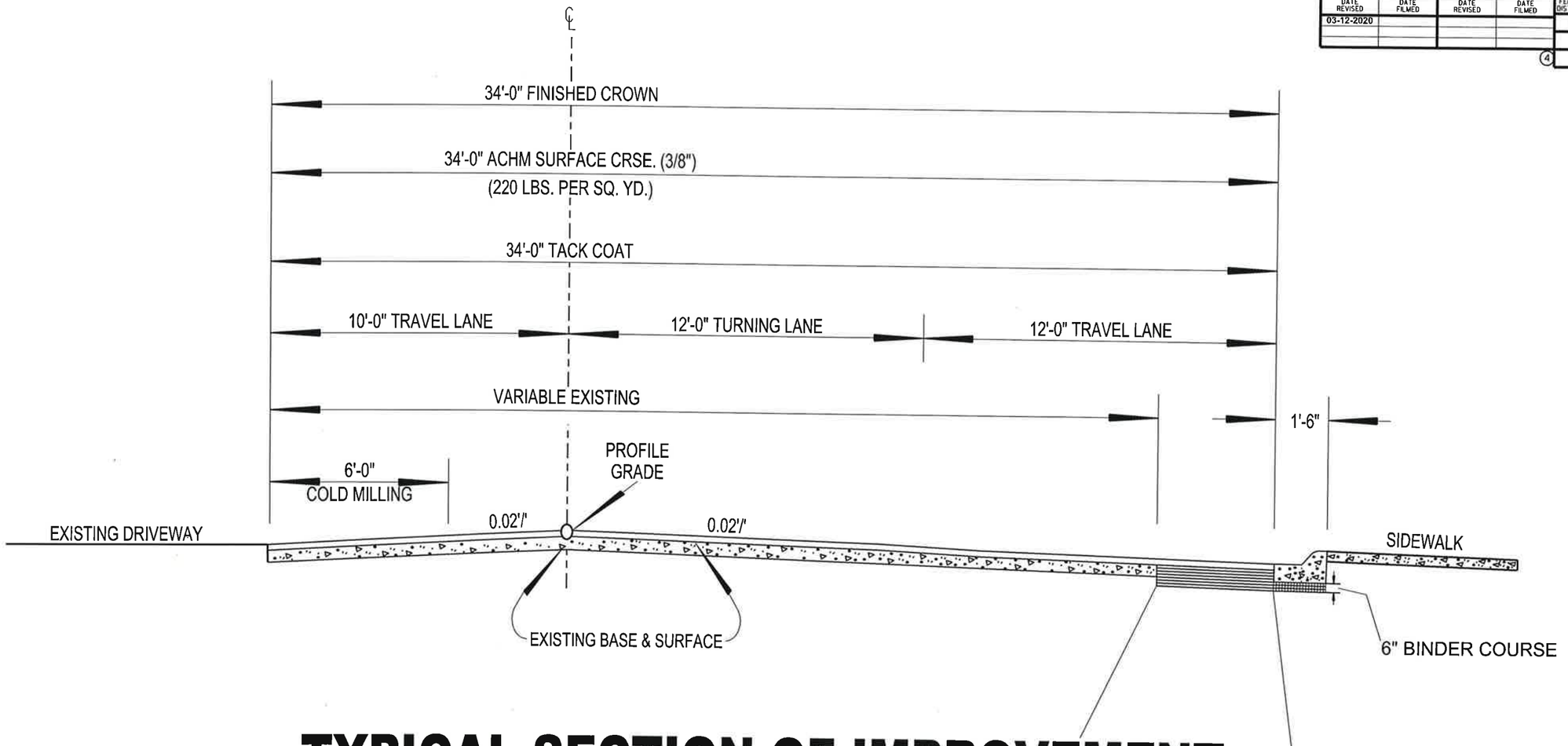
9. REFER TO SPECIAL PROVISION JOB C72003 "SEQUENCE OF CONSTRUCTION" FOR INFORMATION REGARDING TIME CONSTRAINTS FOR ROAD CLOSURE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

GOVERNING SPECIFICATIONS AND GENERAL NOTES

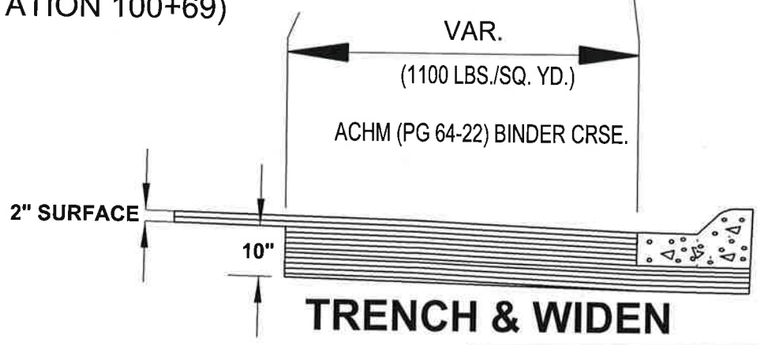
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03-12-2020				6	ARK.			
				JOB NO.		C72003	4	36

④ TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT

(STATION 99+95 - STATION 100+69)



TRENCH & WIDEN

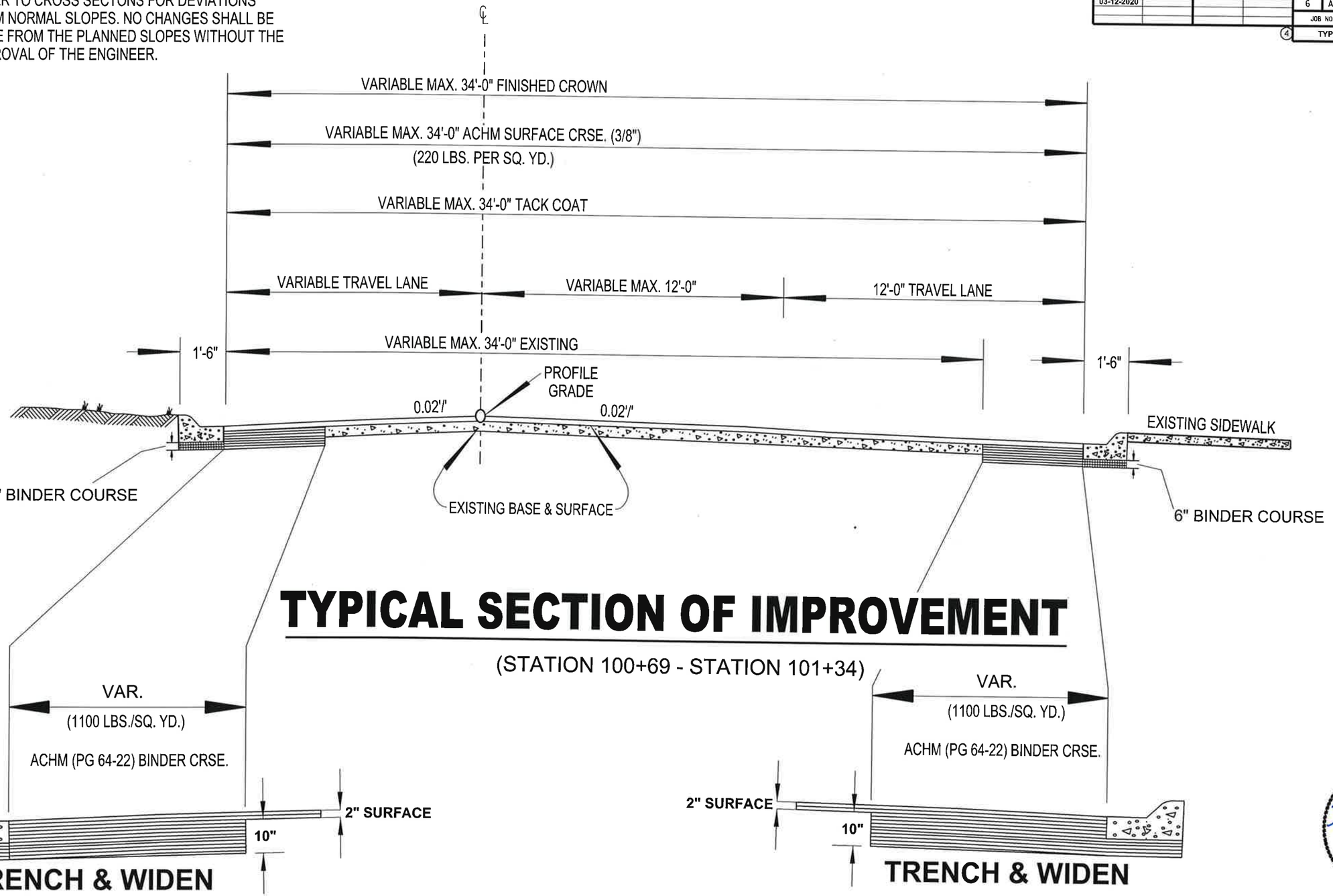
NOTES: REFER TO CROSS SECTONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
3/12/2020

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
03-12-2020				6	ARK.			
				JOB NO.		C72003	5	36
				(4)	TYPICAL SECTIONS OF IMPROVEMENT			

NOTES: REFER TO CROSS SECTONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



TYPICAL SECTION OF IMPROVEMENT

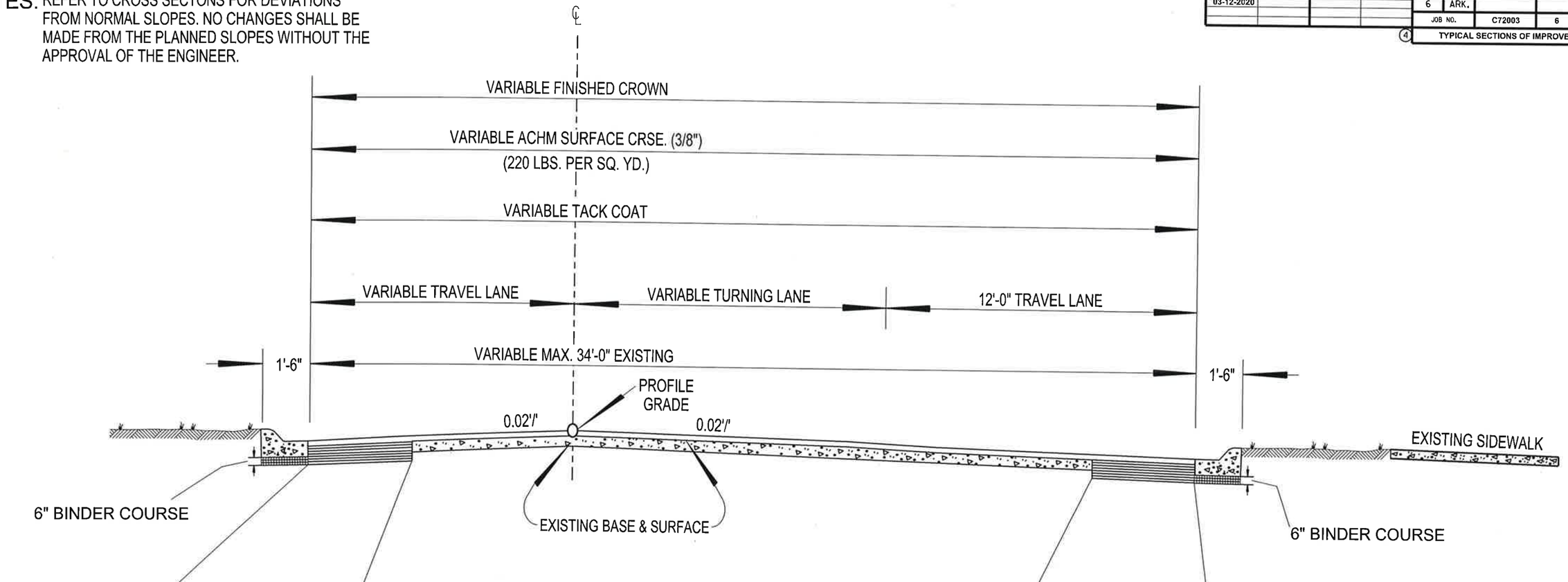
(STATION 100+69 - STATION 101+34)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
3/12/2020

TYPICAL SECTIONS OF IMPROVEMENT

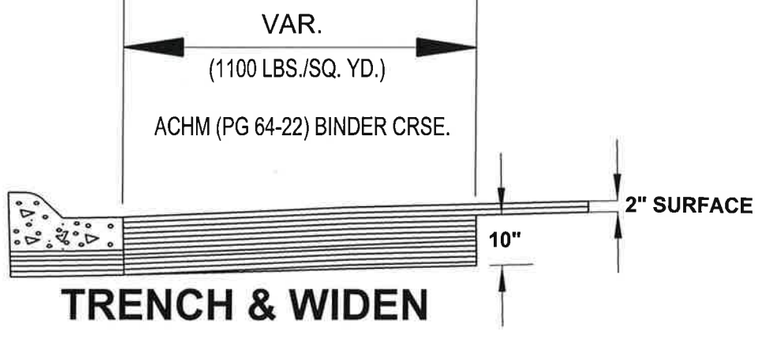
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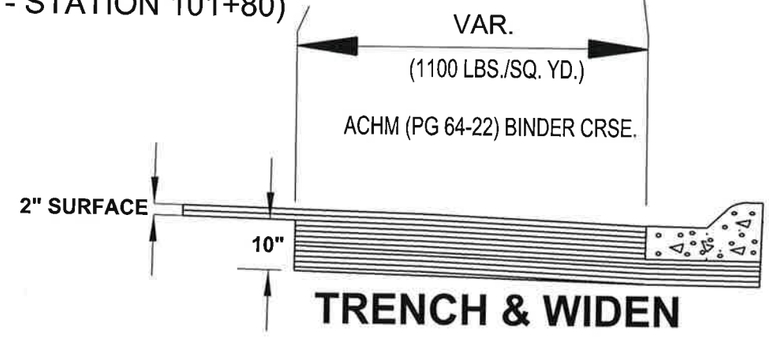
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03-12-2020				6	ARK.			
				JOB NO.		C72003	6	36
				(4)	TYPICAL SECTIONS OF IMPROVEMENT			



TYPICAL SECTION OF IMPROVEMENT

(STATION 101+34 - STATION 101+80)



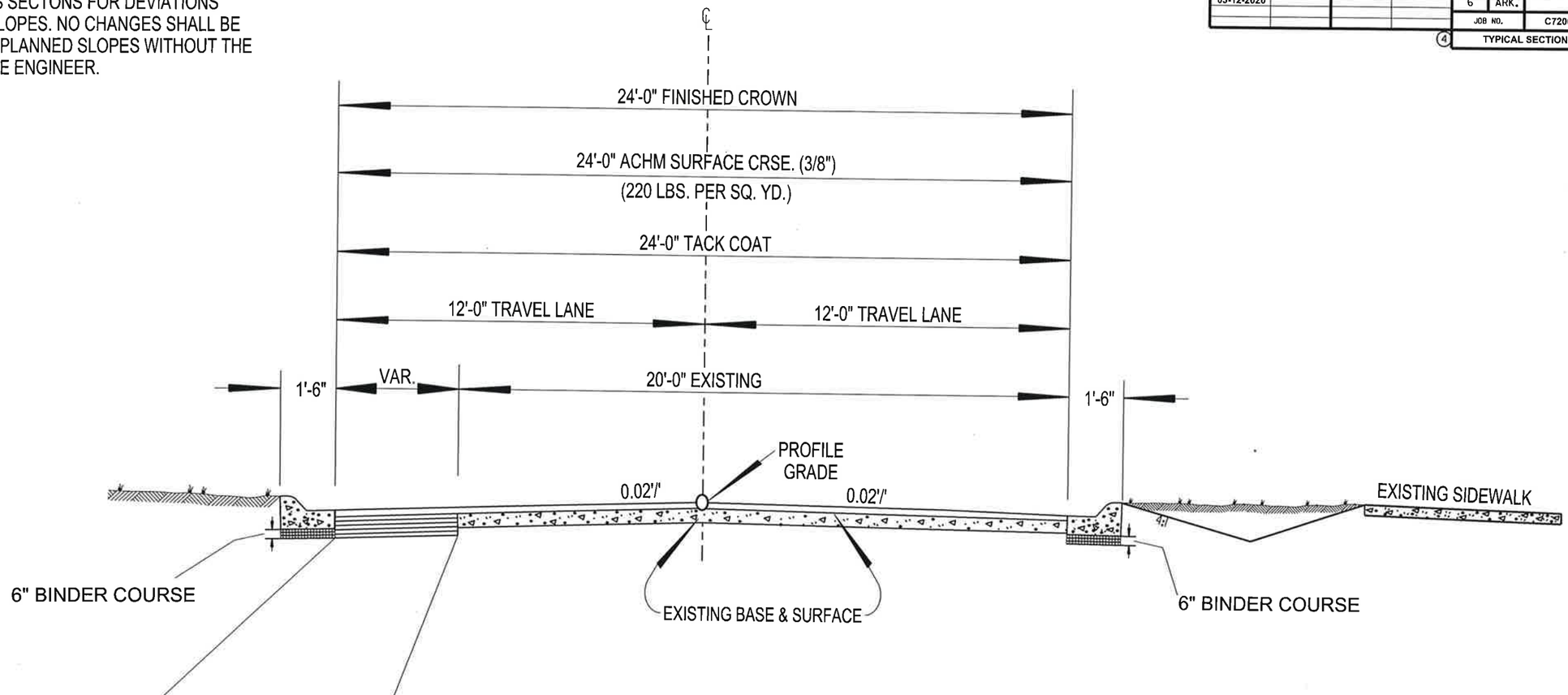


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
3/12/2020
BRYAN FREELING

TYPICAL SECTIONS OF IMPROVEMENT

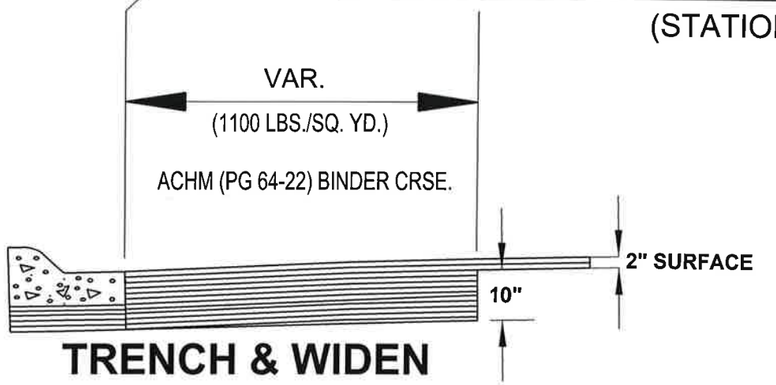
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03-12-2020				6	ARK.			
				JOB NO.		C72003	7	36
				(4) TYPICAL SECTIONS OF IMPROVEMENT				

NOTES: REFER TO CROSS SECTONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



TYPICAL SECTION OF IMPROVEMENT

(STATION 101+80- STATION 102+43)



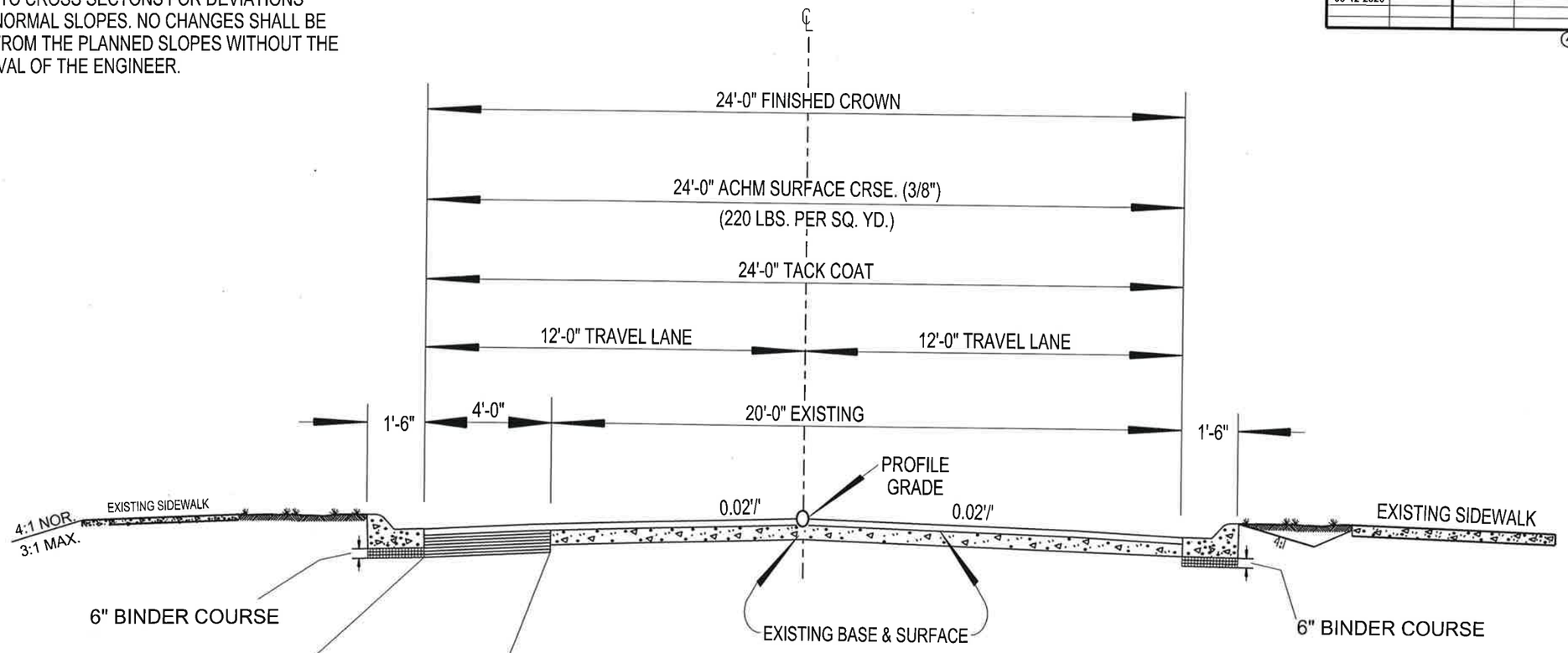
TRENCH & WIDEN

STATE OF ARKANSAS
5729
REGISTERED PROFESSIONAL ENGINEER
No. 11240
3/12/2020
BRYAN FREELING

TYPICAL SECTIONS OF IMPROVEMENT

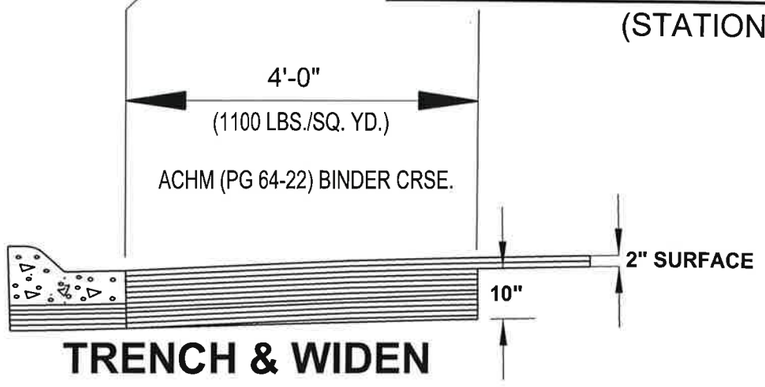
NOTES: REFER TO CROSS SECTONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
03-12-2020				6	ARK.			
				JOB NO.		C72003	8	36
				(4)	TYPICAL SECTIONS OF IMPROVEMENT			



TYPICAL SECTION OF IMPROVEMENT

(STATION 102+43 - STATION 108+32)



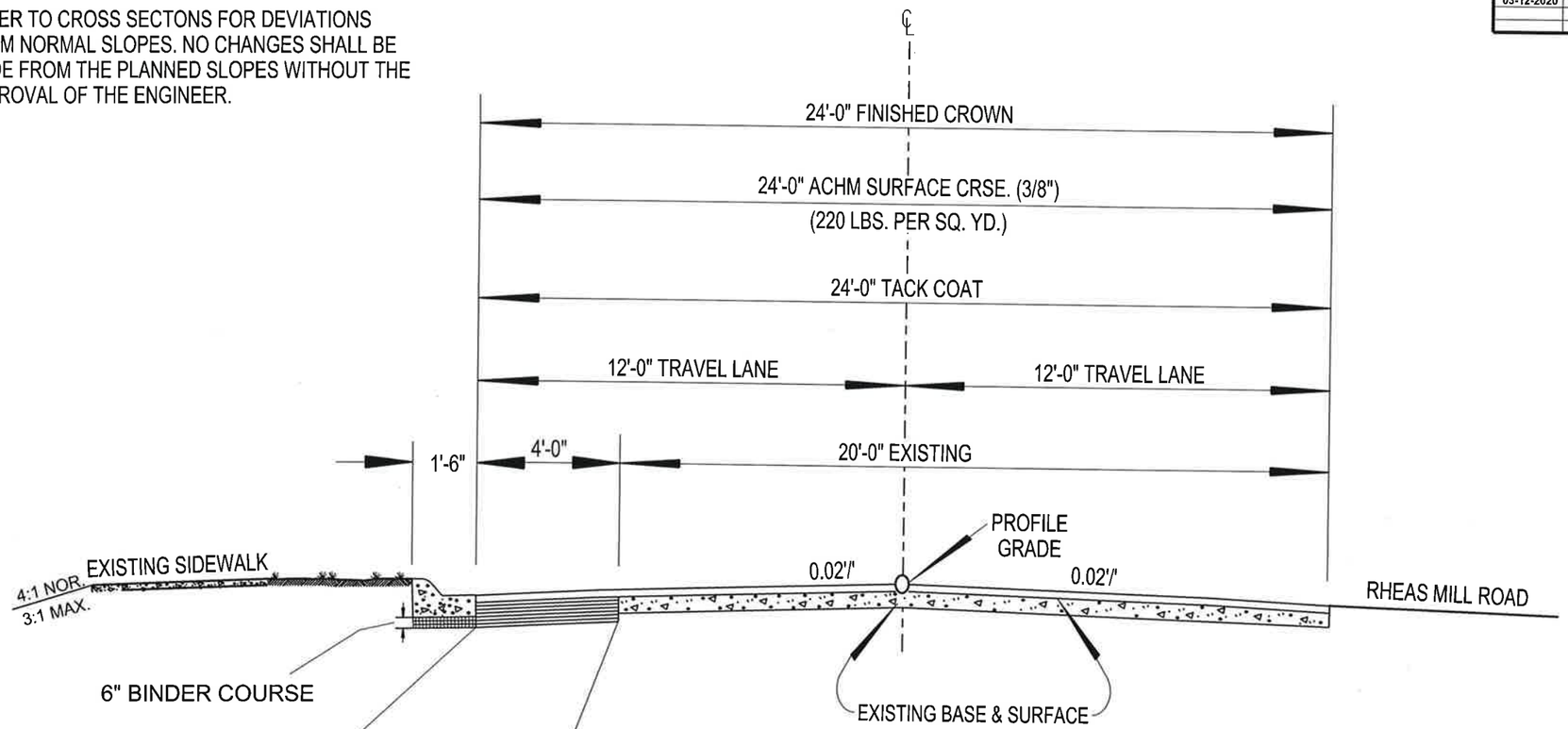
TRENCH & WIDEN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
3/12/2020

TYPICAL SECTIONS OF IMPROVEMENT

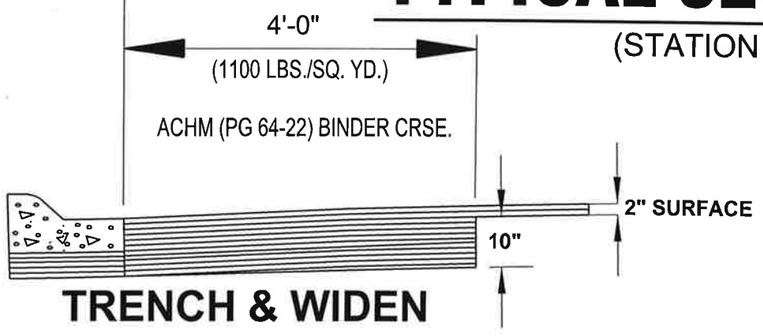
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03-12-2020				6	ARK.			
				JOB NO.		C72003	9	36
				(4)	TYPICAL SECTIONS OF IMPROVEMENT			

NOTES: REFER TO CROSS SECTONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



TYPICAL SECTION OF IMPROVEMENT

(STATION 108+32- STATION 109+20)

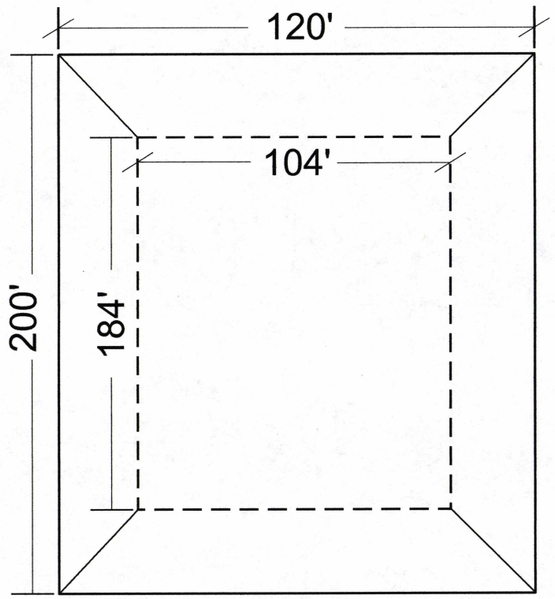


TRENCH & WIDEN

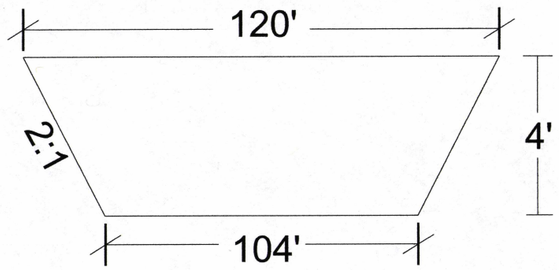
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
3/12/2020

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.		C72003	10	36
				4	SPECIAL DETAILS			

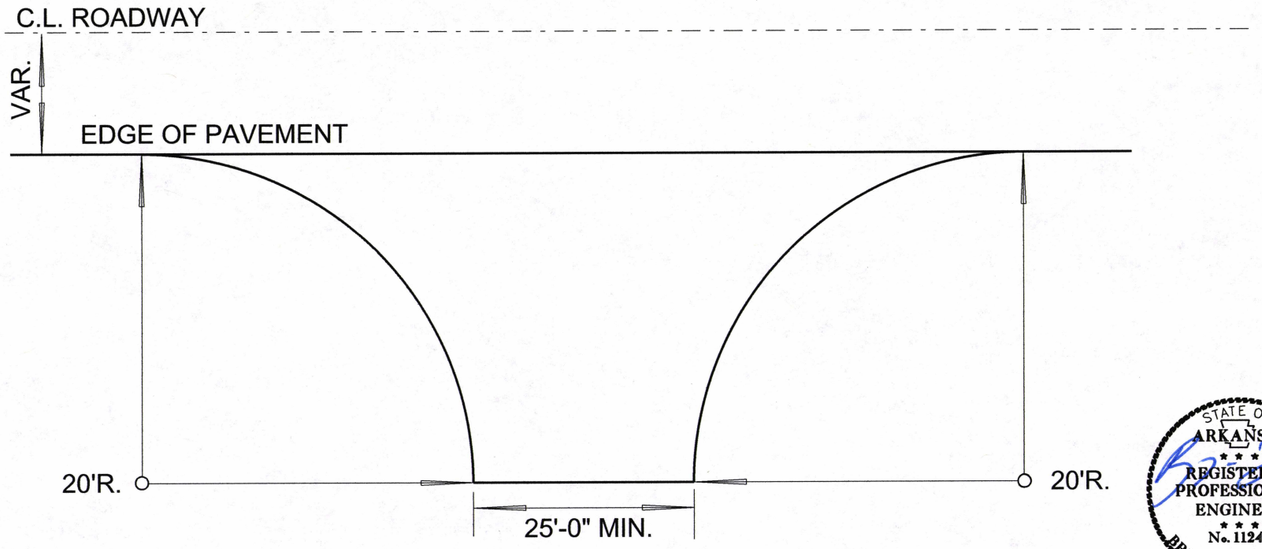


PLAN VIEW



PROFILE VIEW

RETENTION POND



TYPICAL CITY ST. TURNOUT 20' RADIUS

ADD'L. SURFACING AREA = 74.6 SQ. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

NOTE: DIMENSIONS MAY BE MODIFIED IF AND WHERE DIRECTED BY THE ENGINEER

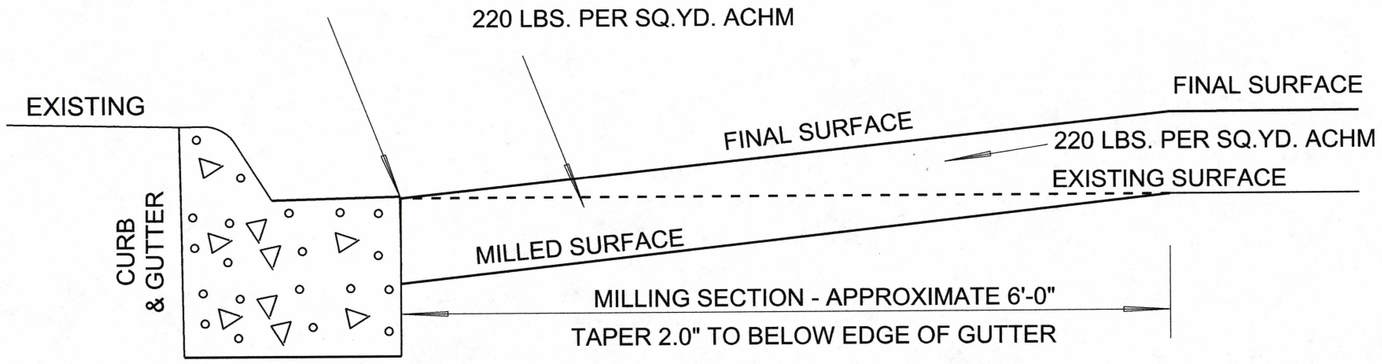
SKETCHES ARE NOT DRAWN TO SCALE

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.		C72003	11	36

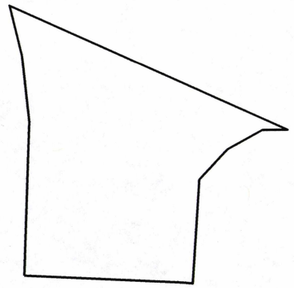
④ SPECIAL DETAILS

EDGE OF FINAL SURFACE SHALL
BE FLUSHED TO GUTTER EDGE



COLD MILLING DETAIL

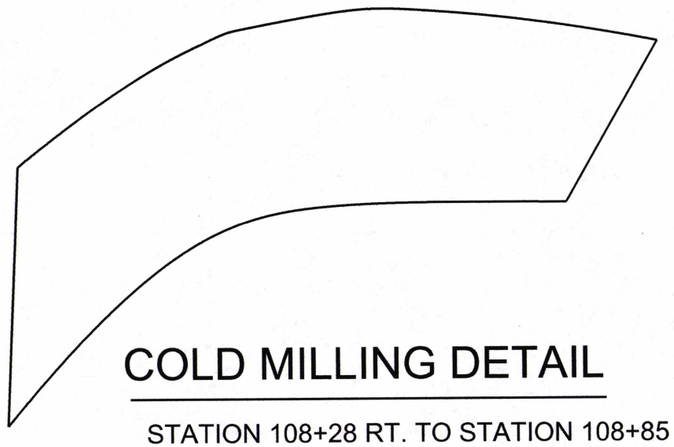
ALONG GUTTER LINES FROM
STATION 99+95 LT. TO STATION 100+69 LT.



COLD MILLING DETAIL

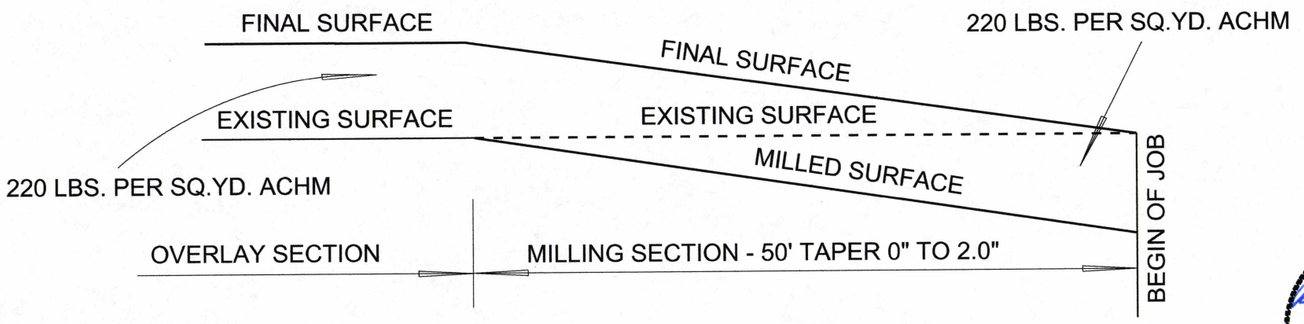
STATION 109+20 TO STATION 109+61.35
FULL DEPTH MILLING 82 SQ. YDS.

NOTE: MATERIAL PRODUCED FROM COLD MILLING ASPHALT PAVEMENT SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.



COLD MILLING DETAIL

STATION 108+28 RT. TO STATION 108+85 RT.
FULL DEPTH MILLING 213 SQ. YDS.



COLD MILLING DETAIL

BEGIN OF JOB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

NOTE: DIMENSIONS MAY BE MODIFIED IF AND WHERE DIRECTED BY THE ENGINEER

SKETCHES ARE NOT DRAWN TO SCALE

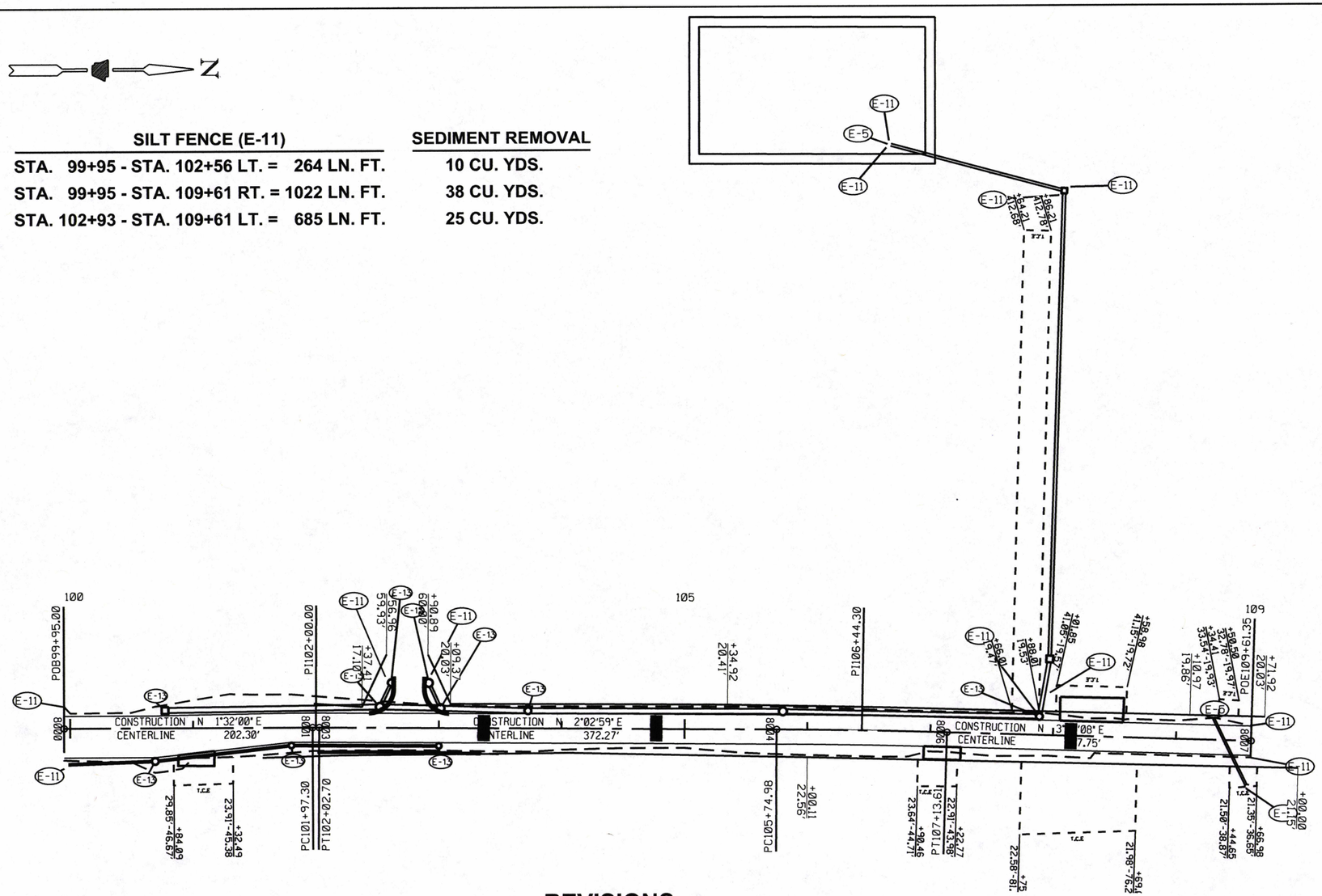
SPECIAL DETAILS

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.		C72003	12	36

④ TEMPORARY EROSION CONTROL DETAILS

Z

SILT FENCE (E-11)	SEDIMENT REMOVAL
STA. 99+95 - STA. 102+56 LT. = 264 LN. FT.	10 CU. YDS.
STA. 99+95 - STA. 109+61 RT. = 1022 LN. FT.	38 CU. YDS.
STA. 102+93 - STA. 109+61 LT. = 685 LN. FT.	25 CU. YDS.



SAND BAG DITCH CHECK (E-5)			SEDIMENT REMOVAL
STA. 102+37	LT. =	22 BAGS	1 CU. YDS.
STA. 103+79	LT. =	22 BAGS	1 CU. YDS.
STA. 106+56	LT. =	22 BAGS	1 CU. YDS.
STA. 109+31	LT. =	22 BAGS	1 CU. YDS.
STA. 109+58	RT. =	22 BAGS	1 CU. YDS.

FILTER SOCK (E-13)			SEDIMENT REMOVAL
STA. 100+69	RT. =	32 FT.	4 CU. YDS.
STA. 100+77	LT. =	32 FT.	4 CU. YDS.
STA. 101+80	RT. =	28 FT.	3 CU. YDS.
STA. 102+51	LT. =	22 FT.	3 CU. YDS.
STA. 102+61	LT. =	22 FT.	3 CU. YDS.
STA. 102+91	LT. =	22 FT.	3 CU. YDS.
STA. 103+00	LT. =	22 FT.	3 CU. YDS.
STA. 103+00	RT. =	22 FT.	3 CU. YDS.
STA. 103+72	LT. =	22 FT.	3 CU. YDS.
STA. 107+88	LT. =	24 FT.	3 CU. YDS.

REVISIONS

DATE	REVISION

50 25 0 50 100

SCALE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C72003	13	36
				④	PAVEMENT MARKINGS			

FROM STATION 99+95
TO STATION 100+69
SOLID WHITE LINE

100

POB99+95.00

0008

CONSTRUCTION CENTERLINE N 1°32'00" E 202.30'

PI102+00.00

0001

0003

PC101+97.30

PT102+02.70

STATION 103+37 AND
STATION 104+77
CROSSWALK

105

CONSTRUCTION CENTERLINE N 2°02'59" E 372.27'

0004

PC105+74.98

PI106+44.30

0008

CON
CE

PT107+13.61

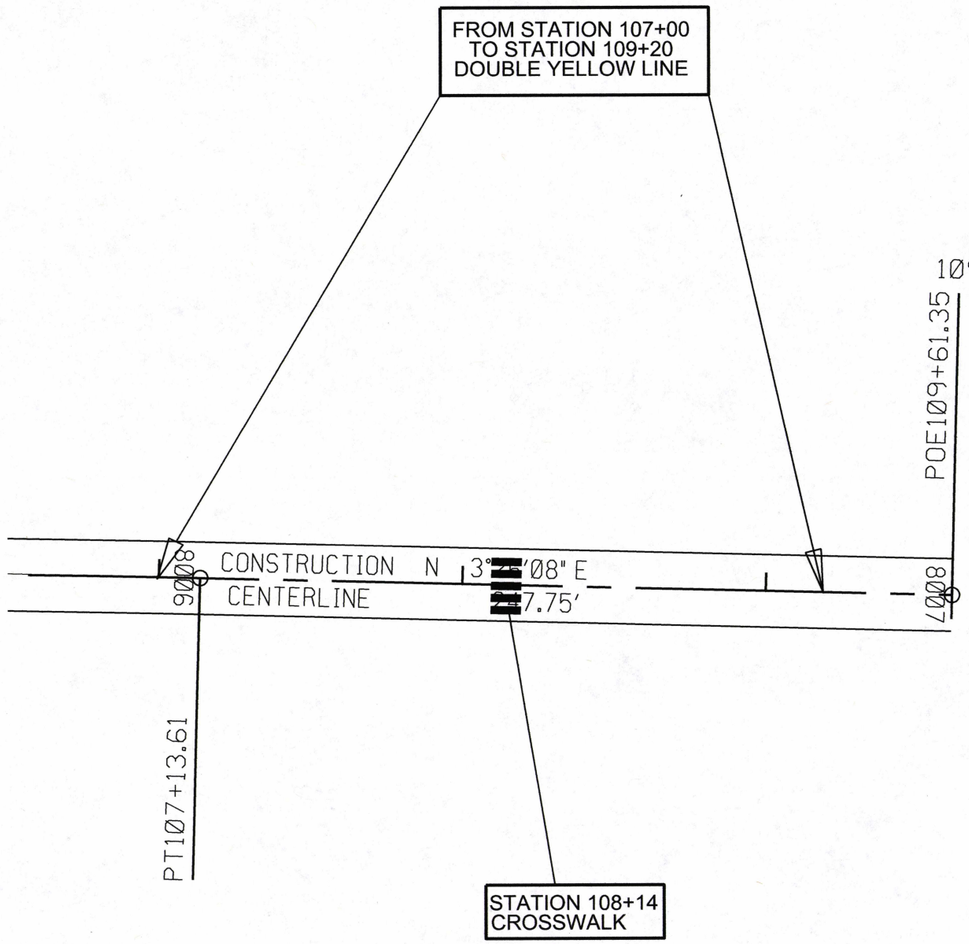
FROM STATION 99+95
TO STATION 107+00
DOUBLE YELLOW LINE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

2/25/2020

PAVEMENT MARKINGS

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.		C72003	14	36
				4	PAVEMENT MARKINGS			



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

PAVEMENT MARKINGS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
03-12-2020				6	ARK.			
				JOB NO.		C72003	15	36
				QUANTITIES				

SURFACING

STATION	STATION	LOCATION	LENGTH	TACK COAT (0.08 GAL PER SQ.YD.)			*ACHM SURFACE COURSE (3/8") (220 LBS. PER SQ.YD.)			TRENCHING & SHOULDER PREPARATION	*ACHM BINDER COURSE (1") 660 LBS. PER SQ.YD		*ACHM BINDER COURSE (1") 1100 LBS. PER SQ.YD	
				WIDTH	SQ. YD.	GAL.	WIDTH	SQ. YDS.	TON	STATION	SQ. YD.	TON	SQ. YD.	TON
99+95	109+61	MAIN LANES								10				
99+95	100+69	MAIN LANES	74	34	279.6	22.4	34	279.6	30.8		11.5	3.8	33.5	18.4
100+69	101+80	MAIN LANES	111	24-34	357.7	28.6	24-34	357.7	39.3		37	12.2	89.6	49.3
101+80	109+20	MAIN LANES	740	24	1973.3	157.9	24	1973.3	217.1		232.0	76.6	284.4	156.4
102+76		CITY STREET TURNOUT ON LT.	30	VAR.	102.5	8.2	VAR.	102.5	11.3					
109+20		CITY STREET TURNOUT	30	VAR.	83.3	6.7	VAR.	83.3	9.2					
TOTALS:						**223.8**			**307.7**	**10**		**92.6**		**224.1**
USE:						224			308	10		93		224

VOLUME CONTROL:
MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")_____94.1%
ASPHALT BINDER (PG64-22) IN ACHM SURFACE COURSE (3/8")____5.9%
MINERAL AGGREGATE IN ACHM BINDER COURSE (1")_____95.6%
ASPHALT BINDER (PG64-22) IN ACHM BINDER COURSE (1")_____4.4%
*N max = 115

NOTE: RATES MAY BE MODIFIED IF AND WHERE DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

LOCATION	R11-3A		R11-2		R11-4		BARRICADES (TYPE III)
	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	LIN. FT.
BEGINNING OF JOB			1	10.00	1	12.50	16
CORNER OF WILLOW AVE. AND KELLI ST.	1	12.50					
END OF JOB			1	10.00	1	12.50	16
TOTALS:	**1**	**12.50**	**2**	**20.00**	**2**	**25.00**	**32.00**
USE:						58	32

NOTE: REFER TO STANDARD DRAWINGS TC-1, TC-2, AND TC-3.

PERMANENT PAVEMENT MARKINGS

LOCATION	REFLECTORIZED PAINT PAVEMENT MARKINGS		
	WHITE MARKINGS		YELLOW MARKINGS
	12"	4" CONTINUOUS	4" CONTINUOUS
	LIN. FT.		
FROM STA. 99+95 TO STA. 109+20			1850
FROM STA. 99+95 RT. TO STA. 100+88 RT.		93	
FROM STA. 100+69 LT. TO STA. 102+43 LT.		174	
FROM STA. 101+17 RT. TO STA. 106+95 RT.		578	
FROM STA. 103+08 LT. TO STA. 108+02 LT.		494	
STATION 103+37 - CROSSWALK	50		
STATION 104+77 - CROSSWALK	50		
FROM STA. 107+25 RT. TO STA. 108+32 RT.		107	
STATION 108+14 - CROSSWALK	50		
FROM STA. 108+64 RT. TO STA. 109+29 RT.		65	
FROM STA. 108+58 LT. TO STA. 109+61 LT.		103	
TOTALS:	**150**	**1614**	**1850**

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LENGTH	WIDTH	*SQ. YDS.
99+95	109+61.35	966	VAR.	17.3
99+95	100+45	50	34	188.9
108+50		50	36	200.0
109+11.35	109+61.35	50	50	277.8
TOTAL:				**684.0**
USE:				684

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

REMOVAL AND DISPOSAL OF DRAINAGE STRUCTURES

STATION	DESCRIPTION	JUNCTION BOX	PIPE CULVERTS	DROP INLETS
		EACH	EACH	EACH
100+41	18" X 85' RCP STORM DRAIN ON RT.		1	
100+84	JUNCTION BOX ON RT.	1		
101+04	18" X 37' RCP STORM DRAIN ON RT.		1	
102+45	24" X 12' C.M. PIPE CULVERT ON LT.		1	
102+51	DROP INLET ON LT.			1
102+79	24" X 53' C.M. PIPE CULVERT ON LT.		1	
103+40	18" X 15' C.M. PIPE CULVERT ON LT.		1	
103+37	18" X 5' R.C. PIPE CULVERT ON RT.		1	
104+78	12" X 20' C.M. PIPE CULVERT ON LT.		1	
107+10	16" X 32' C.M. PIPE CULVERT ON RT.		1	
107+68	12" X 24' R.C. PIPE CULVERT ON LT.		1	
108+30	14" X 60' C.M. PIPE CULVERT ON LT.		1	
TOTAL:		**1**	**10**	**1**

REMOVAL & DISPOSAL OF CONCRETE ITEMS

STATION	STATION	DESCRIPTION	AREA		HEADWALL	CURB & GUTTER	CONCRETE POSTS
			DRIVEWAY	WALKWAY			
			SQ. YD.	SQ. YD.	EACH	FT.	EACH
100+00	100+88	CONCRETE WALK ON RT.		59			
100+88	101+22	DRIVEWAY ON RT.	68				
101+18	101+24	CONCRETE WALK ON RT.		4			
102+40	102+63	CURB & GUTTER ON LT.				45	
102+88	102+98	CURB & GUTTER ON LT.				36	
103+34	103+44	CONCRETE WALK ON LT.		12			
103+34	103+39	CONCRETE WALK ON RT.		3			
103+34	-	CONCRETE POST ON RT.					1
103+39	-	CONCRETE POST ON RT.					1
103+70	103+74	CONCRETE HEADWALL ON LT.			1		
104+75	104+80	CONCRETE WALK ON LT.		6			
106+94	107+26	DRIVEWAY ON RT.	38				
106+95	107+02	CONCRETE WALK ON RT.		9			
107+21	107+25	CONCRETE WALK ON RT.		5			
107+44	107+54	FIELD WALKWAY		9			
107+87	107+95	CONCRETE WALK ON LT.		5			
108+05	108+57	DRIVEWAY ON LT.	135				
108+13	108+18	CONCRETE WALK ON RT.		2			
TOTALS:			**241**	**114**	**1**	**81**	**2**

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER			SUPPORT ASSEMBLY	STANDARD DRAWING NO.
		R1-1	S1-1	W3-1	TYPE A	
		SQ. FT.			EACH	
102+60 (WILLOW AVE.)	LT.	6.25			1	SHS-1, SHS-2
103+32	RT.		9.00		1	SHS-1, SHS-2
104+81	LT.		9.00		1	SHS-1, SHS-2
105+80	RT.			9.00	1	SHS-1, SHS-2
108+11	RT.		9.00		1	SHS-1, SHS-2
108+60	LT.		9.00		1	SHS-1, SHS-2
TOTALS:		**6.25**	**36.00**	**9.00**	**6**	

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
3/12/2020

QUANTITIES

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.		C72003	16	36
				④		QUANTITIES		

TEMPORARY EROSION CONTROL

LOCATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	FILTER SOCKS (E-13)	SILT FENCE (E-11)	SEDIMENT REMOVAL & DISPOSAL
	ACRE	ACRE	M. GAL.	BAG	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE PROJECT AS SHOWN ON THE TEMPORARY EROSION CONTROL DETAILS				110	248	1971	110
ENTIRE PROJECT	1.38	1.38	28.2				
TOTALS:	**1.38**	**1.38**	**28.2**	**110**	**248**	**1971**	**110**

BASIS OF ESTIMATE:
WATER FOR TEMPORARY SEEDING_____20.4 M. GALLON PER ACRE TEMPORARY SEEDING
NOTE: TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION OF U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.
NOTE: QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

CONCRETE WALKS & DRIVEWAYS

STATION	STATION	DESCRIPTION	AREA	
			DRIVEWAY	WALKWAY
			SQ. YD.	SQ. YD.
100+00	100+66	CONCRETE WALK ON RT.		44
100+72	100+81	CONCRETE WALK ON RT.		6
100+88	101+22	DRIVEWAY ON RT.	34.67	
103+34	103+44	CONCRETE WALK ON LT.		12
103+34	103+39	CONCRETE WALK ON RT.		6
104+75	104+80	CONCRETE WALK ON LT.		6
104+75	104+80	CONCRETE WALK ON RT.		6
106+94	107+26	DRIVEWAY ON RT.	35.11	
107+44	107+54	CONCRETE WALK ON LT.		9
107+87	107+95	CONCRETE WALK ON LT.		5
108+05	108+57	DRIVEWAY ON LT.	113.33	
108+13	108+18	CONCRETE WALK ON RT.		2
TOTALS:			**183.11**	**96**

PAVEMENT REPAIR OVER CULVERTS

STATION	DESCRIPTION	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)
		TON
109+40	RHEAS MILLS DR. CROSS DRAIN	1.7
TOTAL:		**1.7**
USE		2

STRUCTURES

STATION	DESCRIPTION	F.E.S		PIPE CULVERTS						DROP INLETS		JUNCT. BOXES	SOLID SODDING	WATER	STD. DWG. NOS.
										TYPE	EXTENSIONS				
		18"	24"	18"	24"	30"	36"X 23" ARCH PIPE	44"X 27" ARCH PIPE	51"X 31" ARCH PIPE	MO	8'	(TYPE E)	SQ. YDS.	M. GALLON	
		EACH	EACH									EACH			
	FARMINGTON ROAD														
100+69	CONSTRUCT DROP INLET ON RT. W/ R.C. PIPE OUTLET			68						1					FPC-9E, FPC-9M, PCC-1
100+77	CONSTRUCT JUNCTION BOX ON LT. W/ R.C. PIPE OUTLET											1			FPC-9E, FPC-9M, PCC-1
101+80	CONSTRUCT DROP INLET ON RT. W/ R.C. PIPE OUTLET			107						1					FPC-9E, FPC-9M, PCC-1
102+51	CONSTRUCT DROP INLET ON LT. W/ ARCH R.C. PIPE OUTLET								169	1	1				FPC-9M, PCC-1, PCM-1
102+61	CONSTRUCT DROP INLET ON LT. W/ R.C. PIPE OUTLET - WILLOW AVE.				17					1	1				FPC-9M, PCC-1, PCM-1
102+91	CONSTRUCT DROP INLET ON LT. W/ R.C. PIPE OUTLET - WILLOW AVE.				17					1	1				FPC-9M, PCC-1, PCM-1
103+00	CONSTRUCT DROP INLET ON RT. W/ R.C. PIPE OUTLET			116						1					FPC-9M, PCC-1, PCM-1
103+00	CONSTRUCT DROP INLET ON LT. W/ R.C.PIPE OUTLET								43	1	1				FPC-9M, PCC-1, PCM-1
103+72	CONSTRUCT DROP INLET ON LT. W/ R.C. PIPE OUTLET								66	1	1				FPC-9M, PCC-1, PCM-1
105+82	CONSTRUCT DROP INLET ON LT. W/ R.C. PIPE OUTLET								202	1	1				FPC-9M, PCC-1, PCM-1
107+88	CONSTRUCT DROP INLET ON LT. W/ R.C.PIPE OUTLET							203		1					FPC-9M, PCC-1, PCM-1
107+95	CONSTRUCT JUNCTION BOX ON LT. W/ R.C.PIPE OUTLET						43					1			FPC-9M, PCC-1, PCM-1
107+96	CONSTRUCT JUNCTION BOX ON LT. W/ R.C.PIPE OUTLET W/FES		2		144	379						1	16	0.2	FPC-9M, PCC-1, PCM-1, FES-1, FES-2
109+40	CONSTRUCT R.C. PIPE CULVERT W/FES	2		58									10	0.1	FES-1, FES-2, PCC-1
TOTALS:		**2**	**2**	**349**	**178**	**379**	**43**	**203**	**480**	**10**	**6**	**3**	**26**	**0.3**	

BASIS OF ESTIMATE:
WATER_____12.6 M. GALLON PER SQ. YD. OF SOLID SODDING

NOTE: FOR CLASS III R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE NOTED.
FOR C.M. OR PLASTIC PIPE CULVERT INSTALLATION USE TYPE 2 BEDDING UNLESS OTHERWISE NOTED.

PERMANENT EROSION CONTROL

STATION	STATION	LOCATION	LIME	SEEDING	MULCH COVER	WATER
			TON	ACRE		M. GALLON
99+95	110+00	MAIN LANES	2.76	1.38	1.38	140.8
TOTALS:			**2.76**	**1.38**	**1.38**	**140.8**
USE:			3	1.38	1.38	140.8

BASIS OF ESTIMATE:
LIME_____2 TONS PER ACRE SEEDING
WATER_____102.0 M. GALLON PER ACRE SEEDING

EARTHWORK

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
99+95	109+98	MAIN LANES	56	433
106+03		DETENTION BASIN 523' LEFT OF CONSTRUCTION C.L.	4256	
TOTALS:			**4312**	**433**

NOTE: EARTHWORK TO BE PAID FOR AS PLAN QUANTITY.

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	TYPE A (1' 6")
		LIN. FT.
DBL. SPRING RD.		
99+95 RT.	108+32 RT.	837
102+57 LT.-corner w/Willow Ave.	-	36
102+94 LT.-corner w/Willow Ave.	-	36
103+08 LT.	109+20 LT.	612
TOTAL:		**1521**

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/27/2020

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
03-05-2020				6	ARK.			
03-12-2020				JOB NO.		C72003	17	36
				④	SUMMARY OF QUANTITIES AND REVISIONS			

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	81	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE POSTS	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	241	SQ. YD.
202	REMOVAL AND DISPOSAL OF JUNCTION BOXES	1	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS	1	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	10	EACH
202	REMOVAL AND DISPOSAL OF HEADWALLS	1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE WALKS	114	SQ. YD.
SS & 210	UNCLASSIFIED EXCAVATION	4312	CU. YD.
210	COMPACTED EMBANKMENT	433	CU.YD.
215	TRENCHING AND SHOULDER PREPARATION	10	STATION
SS & 401	TACK COAT	224	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	303	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	14	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")	290	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")	18	TON
412	COLD MILLING ASPHALT PAVEMENT	684	SQ. YD.
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY	183.11	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	58	SQ. FT.
SS & 604	BARRICADES	32	LIN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	349	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	178	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	379	LIN. FT.
606	36" X 23" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	43	LIN. FT.
606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	203	LIN. FT.
606	51" X 31" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	480	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
SS & 609	DROP INLETS (TYPE MO)	10	EACH
SS & 609	JUNCTION BOXES (TYPE E)	3	EACH
SS & 609	DROP INLET EXTENSIONS (8')	6	EACH
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	2	TON
620	LIME	3	TON
620	SEEDING	1.38	ACRE
SS & 620	MULCH COVER	2.76	ACRE
620	WATER	169.3	MGAL.
621	TEMPORARY SEEDING	1.38	ACRE
621	SILT FENCE	1971	LIN. FT.
621	SAND BAG DITCH CHECKS	110	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	110.0	CU.YD.
SS & 621	FILTER SOCK (18")	248	LIN. FT.
624	SOLID SODDING	26	SQ. YD.
SS & 633	CONCRETE WALKS	96	SQ. YD.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	1521	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")	1614	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")	150	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")	1850	LIN. FT.
SS & 726	STANDARD SIGN	51.25	SQ. FT.
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE A)	6	EACH

REVISIONS

DATE	REVISION	SHEET NUMBER
3/5/2020	REVISED STANDARD DRAWINGS PM-1 AND TC-3	2 & 17
3/5/2020	REVISED SPECIAL PROVISION SWPPP	17
3/12/2020	REVISED UTILITY ADJUSTMENTS SP; REVISED TYPICAL SECTIONS; REVISED ACHM BINDER QUANTITIES	4-9, 15, 17

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
3/12/2020

SUMMARY OF QUANTITIES AND REVISIONS

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.		C72003	18	36

④ SURVEY CONTROL DETAIL

SURVEY CONTROL COORDINATES
Project Name: C72003
Date: 9/15/2014
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *720062 & 720062A*
Projected to Ground Coordinates
Units: U.S. Survey Foot

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

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	628653.3549	0.0138	645992.9367	0.0129	1219.34	0.002	CTL	PD:AHTD STD. MON. STAMPED PN:1
2	629558.7863	0.0154	646071.4347	0.0140	1221.25	0.003	CTL	PD:AHTD STD. MON. STAMPED PN:2
3	629626.8644	0.0152	646018.9378	0.0137	1224.14	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:3
4	629700.7505	0.0158	646081.6659	0.0141	1223.20	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:4
5	630340.9566	0.0174	646103.3755	0.0154	1221.03	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:5
6	629517.7283	0.0146	646696.8304	0.0131	1206.56	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:6
7	629397.2894	0.0169	647208.4137	0.0153	1200.81	0.003	CTL	PD:AHTD STD. MON. STAMPED PN:7
8	629740.9475	0.0152	645224.5196	0.0145	1237.08	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:8
9	629864.8002	0.0166	644884.6528	0.0157	1231.08	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:9
100	628166.2839	0.0001	645213.7609	0.0001	1232.93	0.000	GPS	PD:AHTD GPS #720062
101	628770.3842	0.0001	646420.8580	0.0001	1210.17	0.000	GPS	PD:AHTD GPS #720062A
999	628880.5325	0.0132	667770.5339	0.0129	1241.41	0.000	BM	PD:NGS 1ST ORDER BM Q 310

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job#######", & "PS#####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.

**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".

SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.

Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.

All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

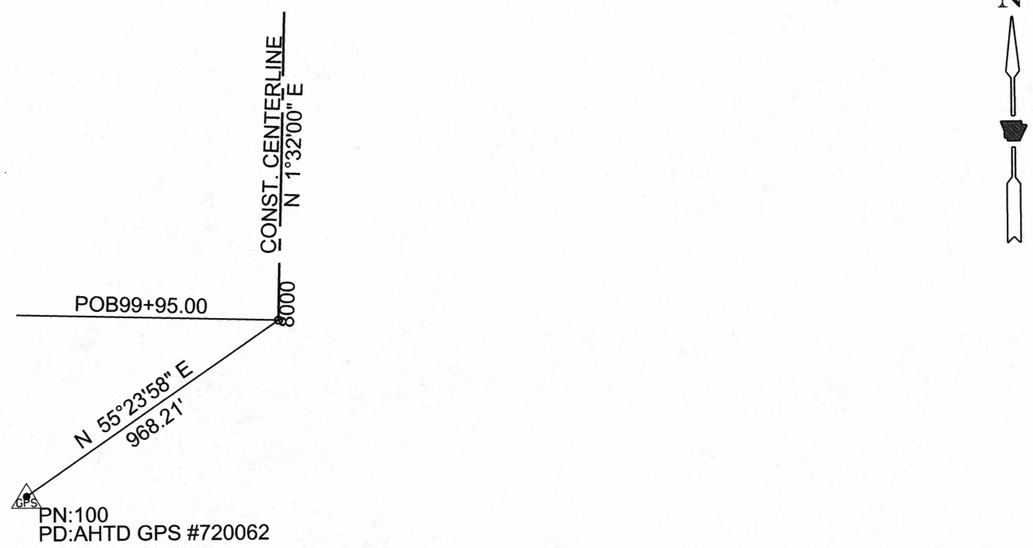
Positional Accuracy:
Horizontal - GPS (1.0 cm± 1PPM) *PN: 100-101*
Horizontal - Primary (2.0cm± 20PPM): *PN:1-9*
Horizontal - Secondary (3 cm ± 50PPM): *PN:N/A*
Vertical - NGS 1st Order (±4mm x √dist in km) *PN:999*
Vertical - NGS 2nd Order (±6mm x √dist in km) *PN:N/A*
Vertical - NGS 3rd Order (±8mm x √dist in km) *PN:N/A*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0301 - North Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.9999139184 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM: Q 310
A project Elevation Factor of: 0.9999415314 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 1222.42 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-9, 100 & 101 From NGS BM: Q 310

Basis of Bearing: Grid Bearings based on AHTD GPS points: *720062 & 720062A*
Convergence Angle is: 01 18 42.07 LEFT at PN: 3
LT: 36 02 31.31 N LG: 094 15 14.93 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

LAND TIE



COORDINATE CONSTRUCTION CENTERLINE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	99+95.00	628716.09	646010.72
8001	PC	101+97.30	628918.31	646016.14
8003	PT	102+02.70	628923.71	646016.31
8004	PC	105+74.98	629295.75	646029.62
8006	PT	107+13.61	629434.22	646036.25
8007	POE	109+61.35	629681.52	646051.10

STATE OF ARKANSAS
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No. 11240
BRYAN FREELING
2/25/2020

SURVEY CONTROL DETAIL

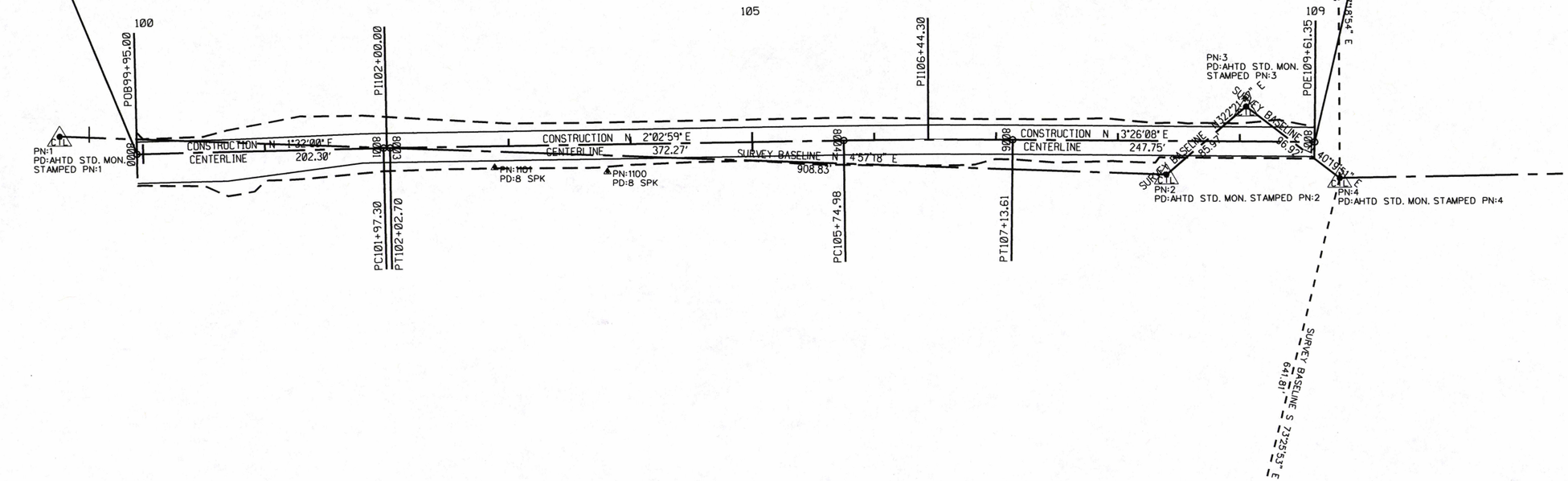
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C72003	19	36

4 SURVEY CONTROL DETAIL

Z

STA. 99+95.00
BEGIN JOB C72203

STA. 109+61.35
END JOB C72203



50 25 0 50 100
SCALE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

SURVEY CONTROL DETAIL

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.		C72003	20	36

4 PLAN AND PROFILE

STATION 99+95.00
BEGIN JOB C72003

STA. 102+61 - CONSTRUCT
DI ON LT. - WILLOW AVE.-
24" X 17' RCP OUTLET
CONNECT TO DI @ STA. 102+51 LT.
TYPE MO= 5' DIA., H= 4.31'
WITH 8' EXTENSION

STA. 102+51 - CONSTRUCT
DI ON LT.
51" X 31" X 169' ARCH RCP OUTLET
TYPE MO= 6' DIA., H=4.52'
WITH 8' EXTENSION

EARTHWORK
UNCLASSIFIED EXCAVATION - MAIN LANES = 56 CU. YDS.
UNCLASSIFIED EXCAVATION - POND = 4256 CU. YDS.
COMPACTED EMBANKMENT - MAIN LANES = 433 CU. YDS.

STA. 103+72
HEADWALL ON LT.
REMOVE

STA. 102+91 - CONSTRUCT
DI ON LT. -WILLOW AVE.-
24" X 17' RCP OUTLET
CONNECT TO DI @ STA. 103+00 LT.
TYPE MO= 6' DIA., H= 3.82'
WITH 8' EXTENSION

STA. 103+00 - CONSTRUCT
DI ON LT.
51" X 31" X 43' ARCH RCP OUTLET
CONNECT TO DI. @ STA. 102+51 LT.
TYPE MO= 6' DIA., H= 4.26'
WITH 8' EXTENSION

STA. 103+34 - 103+44
ON LT. - 12 SQ. YD.
REMOVE & CONSTRUCT
CONCRETE WALK

STA. 104+75 - 104+80 IN PLACE
CONCRETE WALK ON LT.
REMOVE & REPLACE 6 SQ. YD.

STA. 102+40 - 102+63 - IN PLACE
CURB & GUTTER ON LT. -
REMOVE

STA. 102+88 - 102+98 - IN PLACE
CURB & GUTTER ON LT. -
REMOVE

STA. 102+76
CITY ST. TURNOUT
ON LT.
OVERLAY

STA. 103+72 - CONSTRUCT
DI ON LT.
18" X 50' RCP INLET - EXISTING
51" X 31" X 66' ARCH RCP OUTLET
CONNECT TO DI @ STA. 103+00 LT.
TYPE MO= 5' DIA., H= 4.02
WITH 8' EXTENSION

STA. 105+82 - CONSTRUCT
DI ON LT.
51" X 31"X 202' ARCH RCP OUTLET
CONNECT TO DI @ STA. 103+72 LT.
TYPE MO= 6' DIA., H= 4.07
WITH 8' EXTENSION

STA. 104+81
S1-1 ON LT
9.00 SQ. FT.

STA. 102+51 - IN PLACE
DI ON LT. WITH
24" X 12' C.M. PIPE CULVERT
24" X 53' C.M. PIPE CULVERT
REMOVE

STA. 104+78 IN PLACE
12" X 20' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 100+77 - CONSTRUCT
JUNCTION BOX ON LT.
TYPE "E" 4' X 4', H= 4.30'

STA. 102+60
R1-1 ON LT.
6.25 SQ. FT.

STA. 103+40 IN PLACE
18" X 15' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 104+75 - 104+80
CONSTRUCT CONCRETE WALK
ON RT. 6 SQ. YD.

STA. 103+00 - CONSTRUCT
DI ON RT.
18" X 116' RCP OUTLET
CONNECT TO DI. @ STA. 101+80 RT.
TYPE MO= 4' DIA., H= 4.87'

STA. 101+80 - CONSTRUCT
DI ON RT.
18" X 107' RCP OUTLET
CONNECT TO DI. @ STA. 100+69 RT.
TYPE MO=4' DIA., H= 5.44'

STA. 105+80
W3-1 ON RT
9.00 SQ. FT.

LIMITS OF CONSTRUCTION

STA. 100+69 - CONSTRUCT
D.I. ON RT. WITH
18" X 68' R.C. PIPE OUTLET
CONNECT TO DROP INLET
@STATION 99+97 RT. - EXISTING
TYPE MO= 5' DIA., H= 4.96'

STA. 100+88 - 101+22 IN PLACE
PRIVATE DRIVE ON RT.
REMOVE 68 SQ. YDS.
& CONSTRUCT
34.67 SQ. YDS

STAS. 101+56 & 101+57 IN PLACE
TWO 12" X 8' CM PIPE CULVERT
RT. SIDE DRAIN UNDER WALK
RETAIN

STA. 103+32
S1-1 ON RT
9.00 SQ. FT.

STA. 103+34 - 103+39 IN PLACE
ON RT. - 3 SQ. YD.
REMOVE & CONSTRUCT
CONCRETE WALK .

STA. 103+34
CONCRETE POST ON RT.
REMOVE

STA. 103+39
CONCRETE POST ON RT.
REMOVE

STA. 100+00 - 100+66
CONSTRUCT CONCRETE WALK
ON RT. - 44 SQ. YD.

STA. 100+84 - IN PLACE
JUNCTION BOX ON RT. WITH
18" X 85' R.C. PIPE OUTLET
18" X 37' R.C. PIPE INTLET
REMOVE

STA. 100+72 - 100+81
CONSTRUCT CONCRETE WALK
ON RT. - 6 SQ. YD.

STA. 100+00 - 100+88 - IN PLACE
CONCRETE WALK ON RT.
REMOVE

STA. 101+18 - 101+24 - IN PLACE
CONCRETE WALK ON RT.
REMOVE

STA. 103+37 - IN PLACE
18" X 5' R.C. PIPE CILVERT
ON RT. - REMOVE

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

50 25 0 50 100
SCALE

CONCRETE COMBINATION CURB & GUTTER

STA. 99+95 - 108+32 ON RT.	837 LIN. FT.
STA. 102+57 ON LT.	36 LIN. FT.
STA. 102+94 ON LT.	36 LIN. FT.
STA. 103+08 - 109+20 ON LT.	612 LIN. FT.

TRAFFIC CONTROL DEVICES

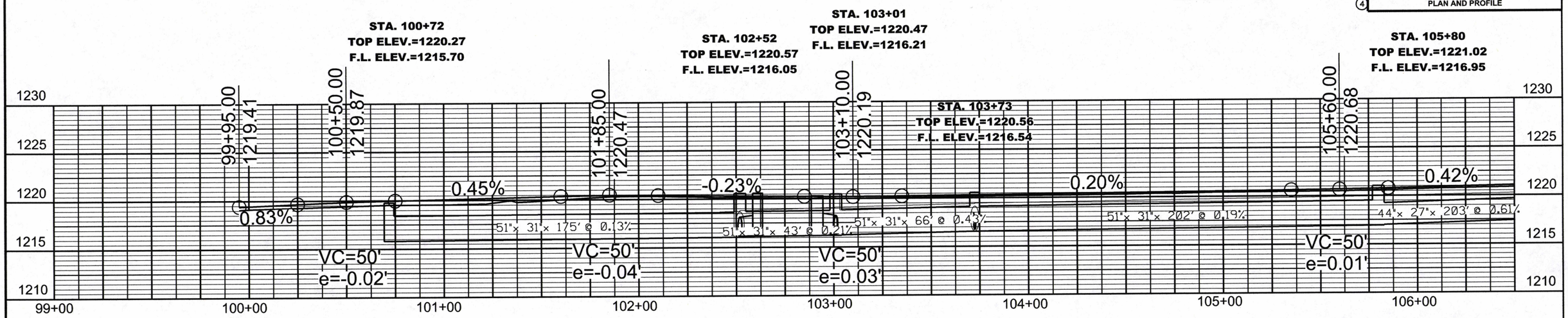
R11-2	
BEGINNING OF JOB	1 SIGN - 10.00 SQ. FT.
END OF JOB	1 SIGN - 10.00 SQ. FT.
R11-3A	
CORNER OF WILLOW AVE. & KELLY ST.	1 SIGN - 12.50 SQ. FT.
R11-4	
BEGINNING OF JOB	1 SIGN - 12.50 SQ. FT.
END OF JOB	1 SIGN - 12.5 SQ. FT.
BARRICADES	
BEGINNING OF JOB	16.00 LIN FT.
END OF JOB	16.00 LIN. FT.

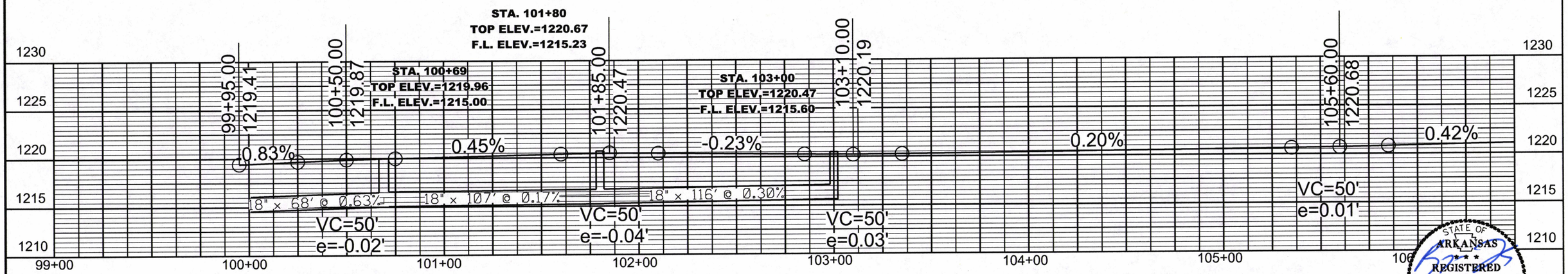
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

PLAN AND PROFILE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C72003	21	36

④ PLAN AND PROFILE





STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

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

PLAN AND PROFILE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C72003	22	36
				4	PLAN AND PROFILE			

STA. 107+96 - CONSTRUCT
JUNCTION BOX 446' OFF C.L ON LT.
24" X 144' R.C. PIPE INLET W/ F.E.S.
30" X 379' R.C. PIPE OUTLET
CONNECT TO DI @ STA. 107+95 LT.
TYPE "E" 4' X 4', H= 4.50'

STA. 107+95 - CONSTRUCT
JUNCTION BOX 64' OFF C.L ON LT.
36" X 23" X 43' ARCH RCP OUTLET
CONNECT TO DI @ STA. 107+88 LT.
TYPE "E" 5' X 5', H= 4.50'

STA. 107+88 - CONSTRUCT
DI ON LT.
44" X 27" X 203' ARCH RCP OUTLET
CONNECT TO DI. @ STA. 105+82 LT.
TYPE MO= 5' DIA., H= 3.69'

STA. 108+60
S1-1 ON LT
9.00 SQ. FT.

STA. 108+30 IN PLACE
14" X 60' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 108+05 - 108+57 IN PLACE
PRIVATE DRIVE ON LT.
REMOVE 135 SQ. YDS.
& CONSTRUCT
113.33 SQ. YDS.

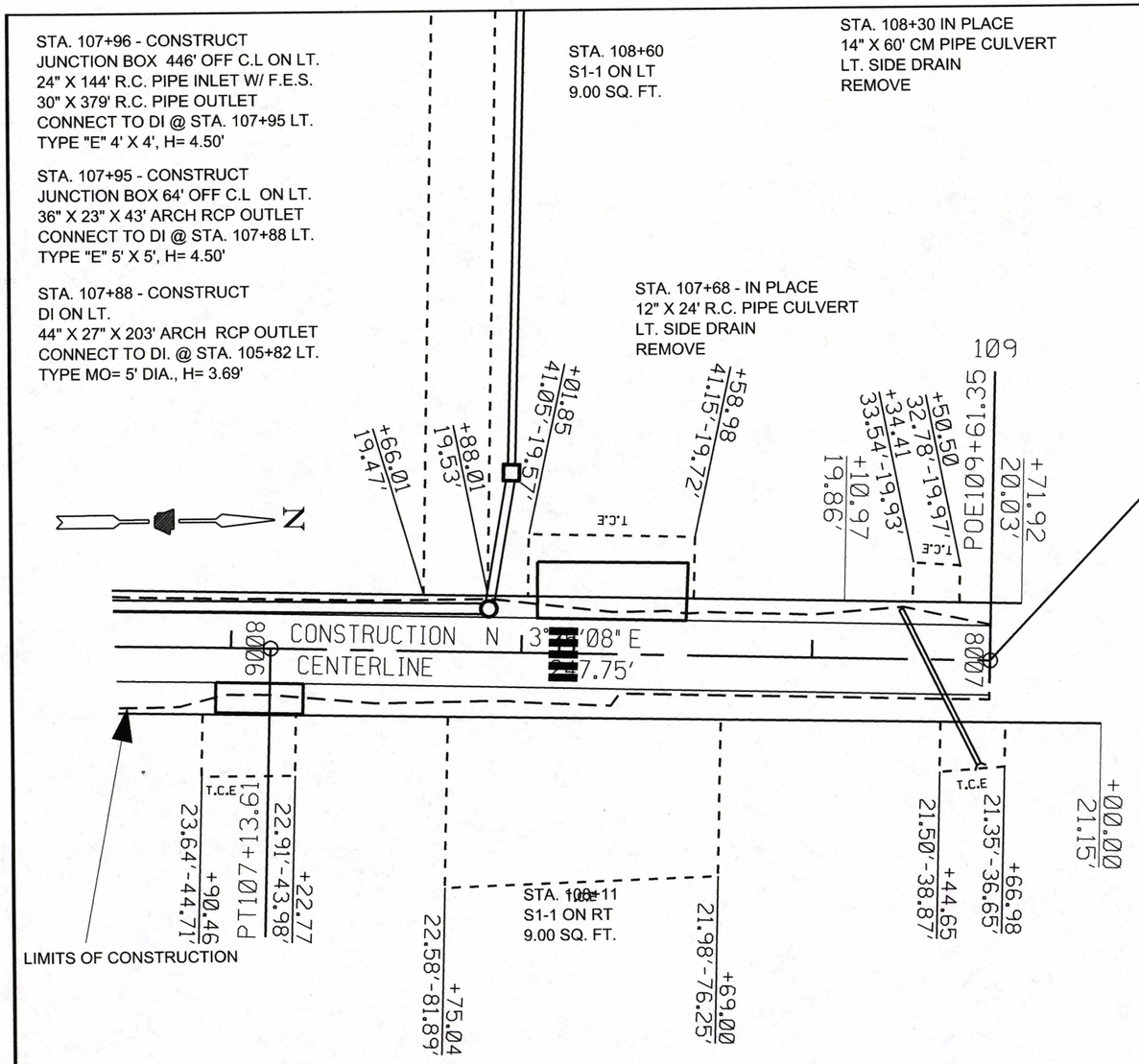
STATION 109+61.35
BEGIN JOB C72003

STA. 107+87 - 107+95
ON LT. - 5 SQ. YD.
CONCRETE WALK
REMOVE & CONSTRUCT

STA. 107+68 - IN PLACE
12" X 24' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 107+44 - 107+54
ON LT. - 9 SQ. YD.
FIELD CONCRETE WALK
REMOVE & CONSTRUCT

STA. 109+40 CONST.
18" X 58' R.C. PIPE CULVERT
(30 RT. FWD. SKEW)
D.A. 1.0 ACRES
Q25 2.83 CFS
IN. F.L. 1219.90'
OUT F.L. 1219.00'



STA. 106+95 - 107+02
ON RT. - 9 SQ. YD.
CONCRETE WALK
REMOVE

STA. 108+13 - 108+18 IN PLACE
CONCRETE WALK ON RT.
REMOVE & REPLACE 2 SQ. YD.

STA. 107+10 IN PLACE
16" X 32' CMP PIPE CULVERT
RT. SIDE DRAIN
REMOVE

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

STA. 107+21 - 107+25
ON RT. - 5 SQ. YD.
CONCRETE WALK
REMOVE

STA. 106+94 - 107+26 IN PLACE
PRIVATE DRIVE ON RT.
REMOVE 38 SQ. YDS.
& REPLACE
35.11 SQ. YDS.

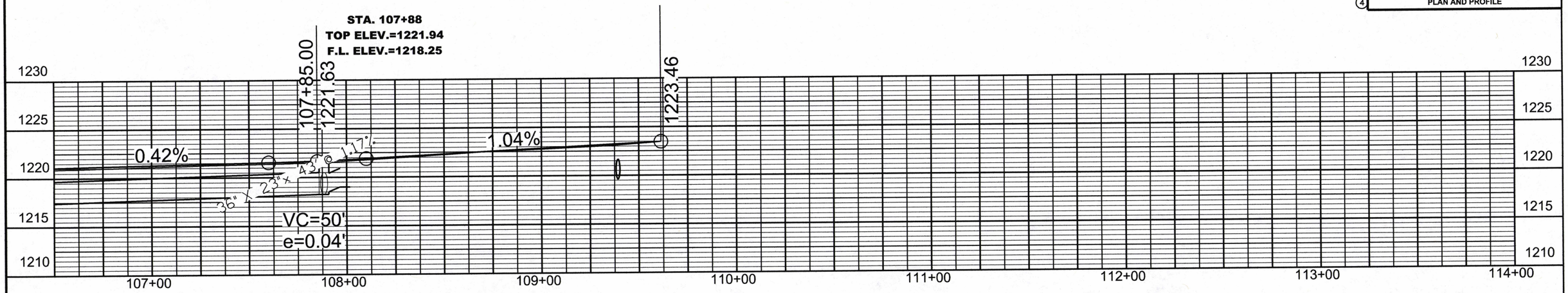
50 25 0 50 100
SCALE

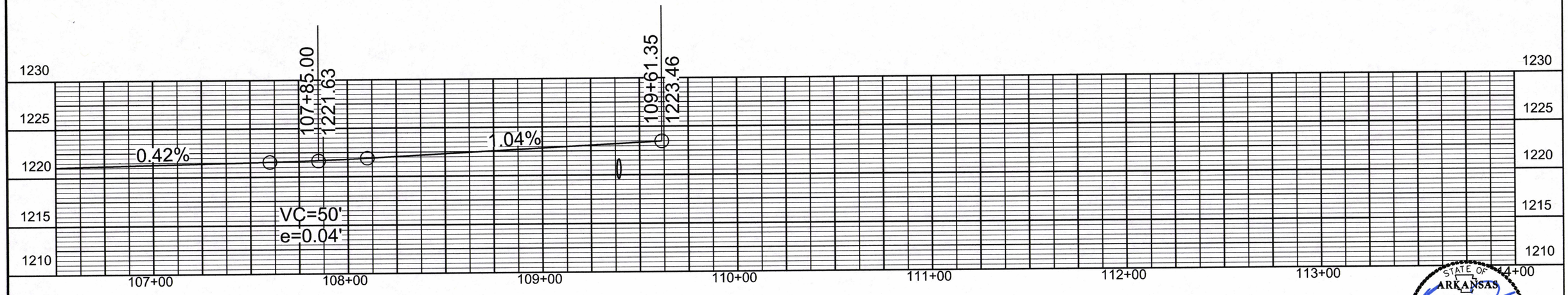
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2020

PLAN AND PROFILE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C72003	23	36

④ PLAN AND PROFILE





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

STATE OF ARKANSAS
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BRYAN FREELING
2/25/2020

PLAN AND PROFILE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C72003	24	36

4 PLAN AND PROFILE

PI106+44.30

STA. 107+95 - CONSTRUCT
JUNCTION BOX 64' OFF C.L ON LT.
36" X 23" X 43' ARCH RCP OUTLET
CONNECT TO DI @ STA. 107+88 LT.
TYPE "E" 5' X 5', H= 4.50'

STA. 107+96 - CONSTRUCT
JUNCTION BOX 446' OFF C.L ON LT.
24" X 144' R.C. PIPE INLET W/ F.E.S.
30" X 379' R.C. PIPE OUTLET
CONNECT TO DI @ STA. 107+95 LT.
TYPE "E" 4' X 4', H= 4.50'

N

50 25 0 50 100
SCALE

PT107+13.61

CONSTRUCTION N 3°08" E
CENTERLINE

LIMITS OF CONSTRUCTION

T.C.E

T.C.E

T.C.E

T.C.E

+90.46 23.64',-44.71'
+22.77 22.91',-43.98'
+75.04 22.58',-81.89'
+69.00 21.98',-76.25'
+66.01 19.47'
+88.01 19.53'
+01.85 41.05',-19.57'
+64.21 412.68'
+86.21 412.78'
41.15',-19.72'

STA. 107+88
TOP ELEV.=1221.94
F.L. ELEV.=1218.25

STA. 107+95
TOP ELEV.=1223.50
F.L. ELEV.=1219.00

STA. 107+96
TOP ELEV.=1228.00
F.L. ELEV.=1223.50

0+00.00	0+18.87	0+89.98	1+29.67	1+95.53	2+41.47	2+96.45	4+04.31	4+64.82	5+34.46	6+94.12			
1219.08	1220.95	1222.01	1222.43	1224.36	1224.23	1223.86	1226.12	1226.93	1228.58	1225.95			
	9.88%	1.50%	1.06%	2.93%	-0.27%	-0.69%	2.10%	1.33%	2.37%	-1.65%			

36" x 23" x 43' @ 1.17%
30" x 379' @ 1.06%
24" x 144' @ 0.69%

1240 1230 1220 1210 1200

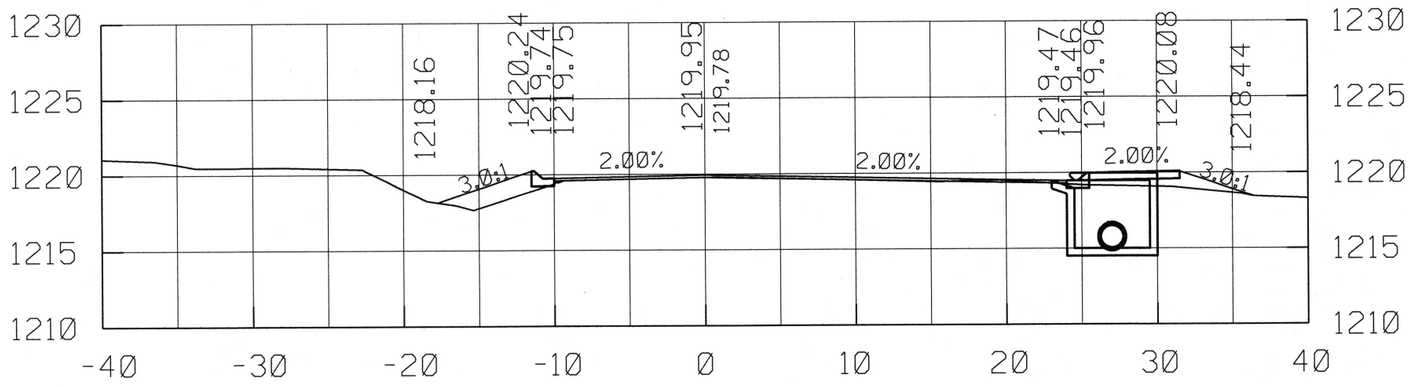
-0+50 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
2/25/2026

PLAN AND PROFILE

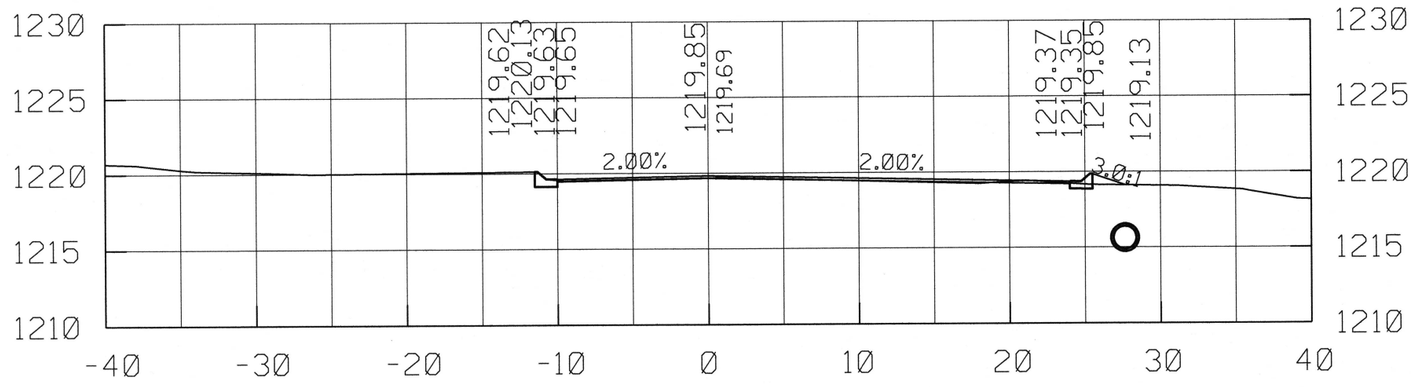
STA. 100+69 - CONSTRUCT
D.I. ON RT. WITH
18" X 68' R.C. PIPE OUTLET
CONNECT TO EXISTING DROP INLET
@STATION 99+97 RT.
TYPE MO= 5' DIA., H= 4.96'



AREA CUT 0.94
AREA FILL 11.86

100+69.00

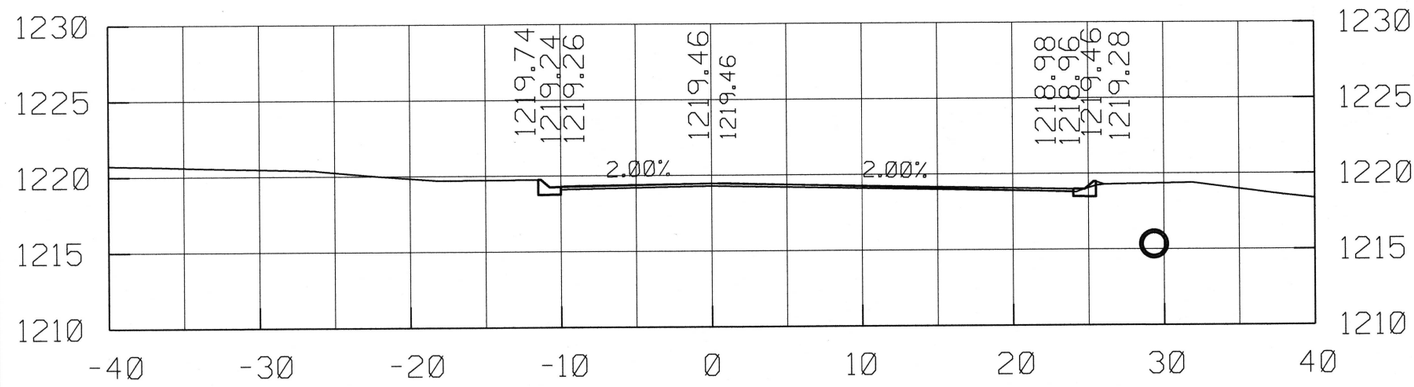
CUT VOLUME 1.21
FILL VOLUME 4.55



AREA CUT 2.49
AREA FILL 1.08

100+50.00

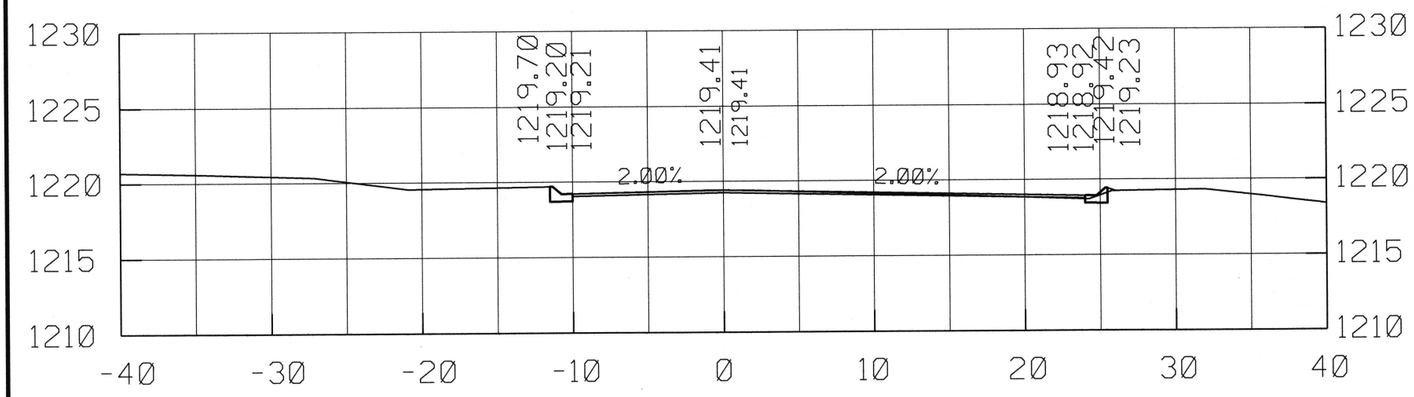
CUT VOLUME 8.07
FILL VOLUME 1.08



AREA CUT 6.22
AREA FILL 0.09

100+00.00

CUT VOLUME 1.08
FILL VOLUME 0.03

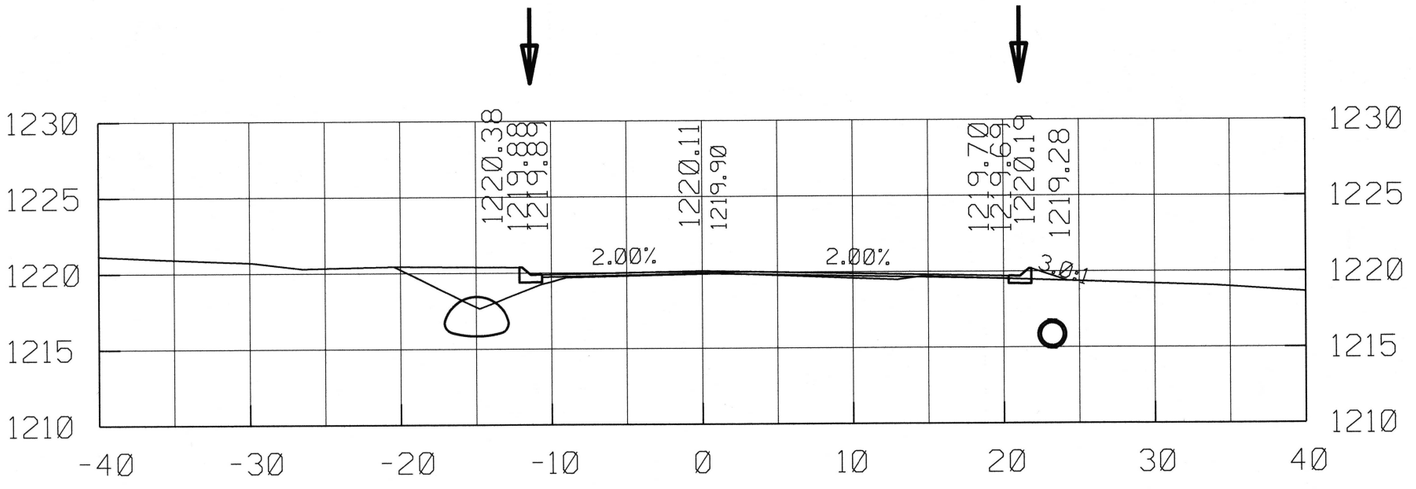


AREA CUT 5.48
AREA FILL 0.19

99+95.00

CUT VOLUME 0.00
FILL VOLUME 0.00

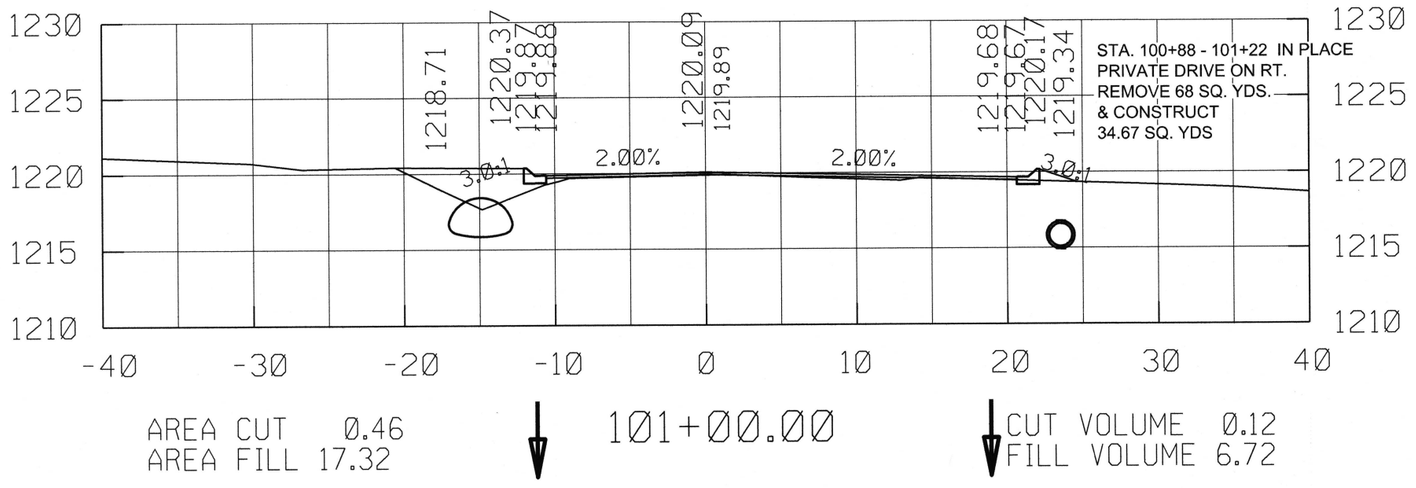
DATE REVISED	
DATE FILMED	
DATE REVISED	
DATE FILMED	
4	CROSS SECTIONS STA 99+95.00 TO 100+69.00
FED'D DIST. NO.	6
STATE	ARK.
FED.AID PROJ.NO.	C72003
SHEET NO.	25
TOTAL SHEETS	36
JOB NO.	



AREA CUT 0.64
AREA FILL 17.10

101+03.00

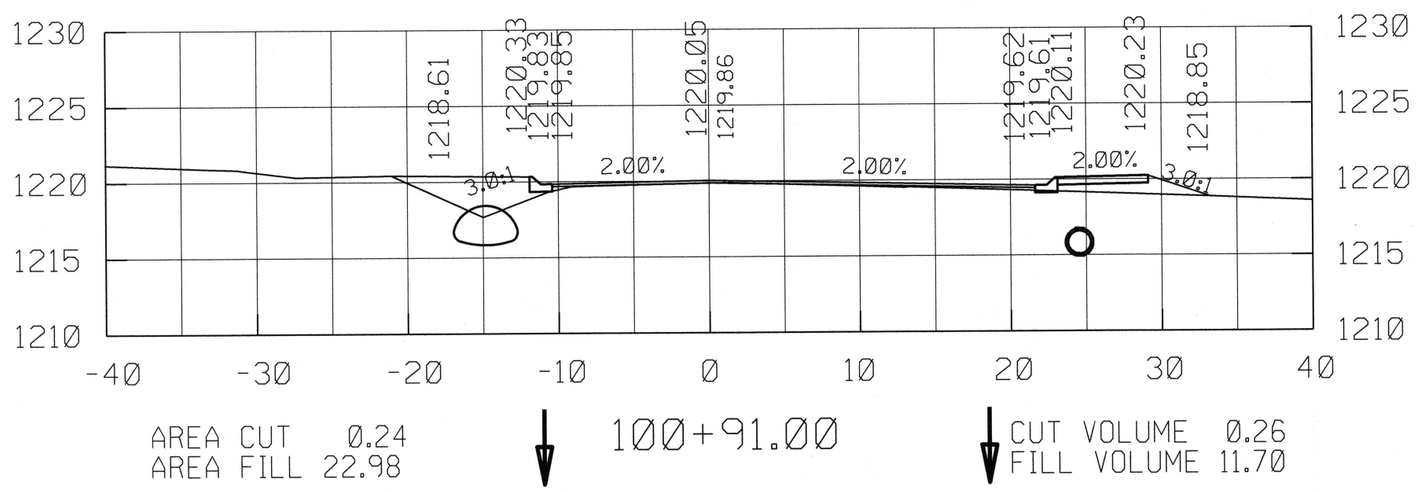
CUT VOLUME 0.06
FILL VOLUME 1.91



AREA CUT 0.46
AREA FILL 17.32

101+00.00

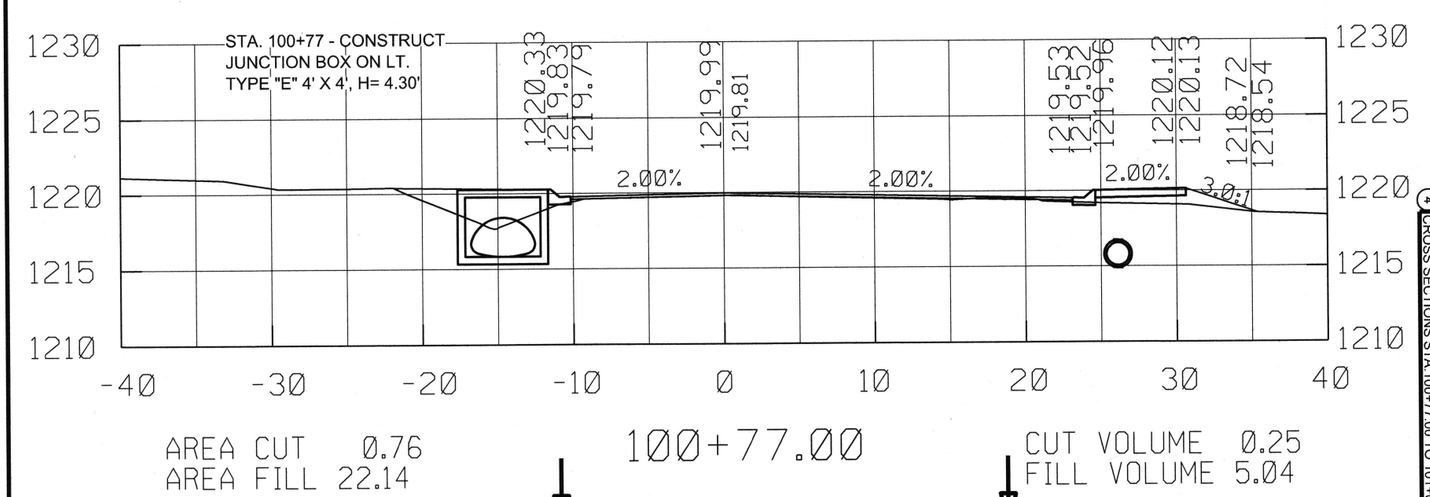
CUT VOLUME 0.12
FILL VOLUME 6.72



AREA CUT 0.24
AREA FILL 22.98

100+91.00

CUT VOLUME 0.26
FILL VOLUME 11.70



AREA CUT 0.76
AREA FILL 22.14

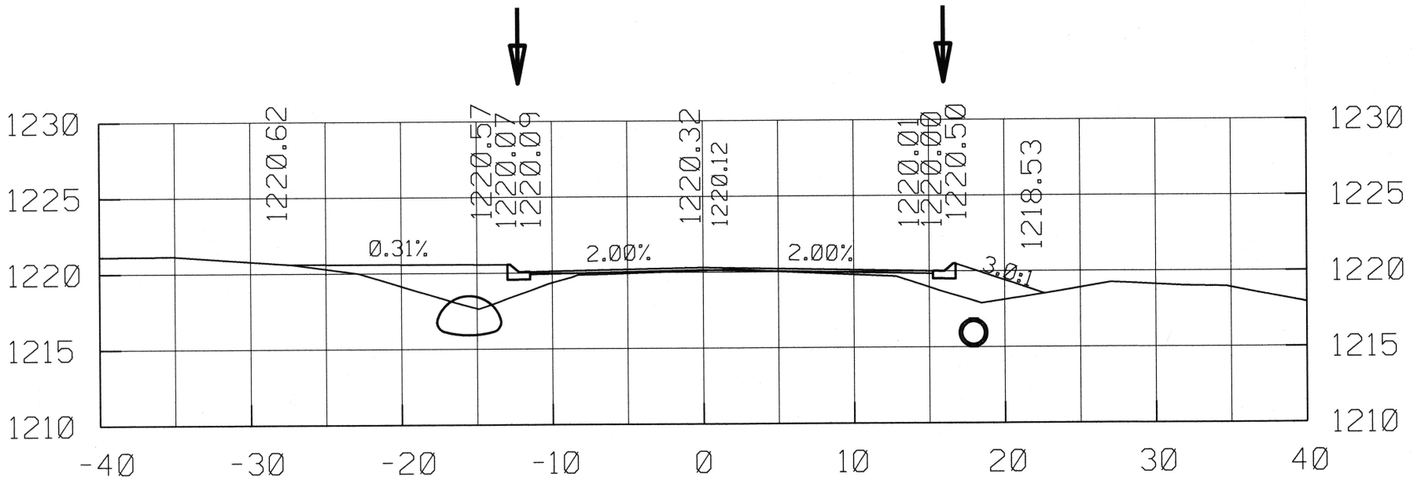
100+77.00

CUT VOLUME 0.25
FILL VOLUME 5.04

	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

CROSS SECTIONS STA.100+77.00 TO 101+03.00

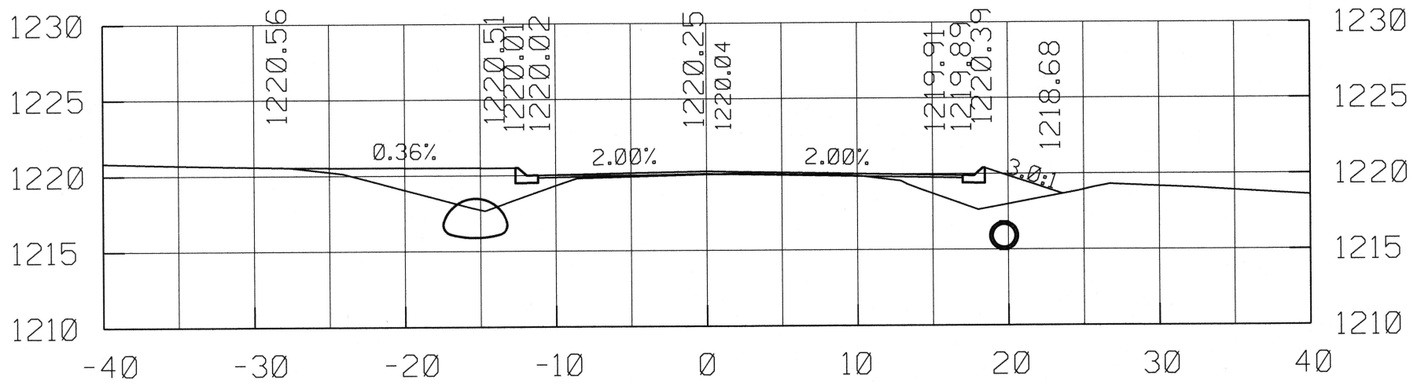
JOB NO.	FED RD DIST NO.	STATE	FED AID PROJ NO.	SHEET NO.	TOTAL SHEETS
C72003	6	ARK.		26	36



AREA CUT 0.14
AREA FILL 35.83

101+50.00

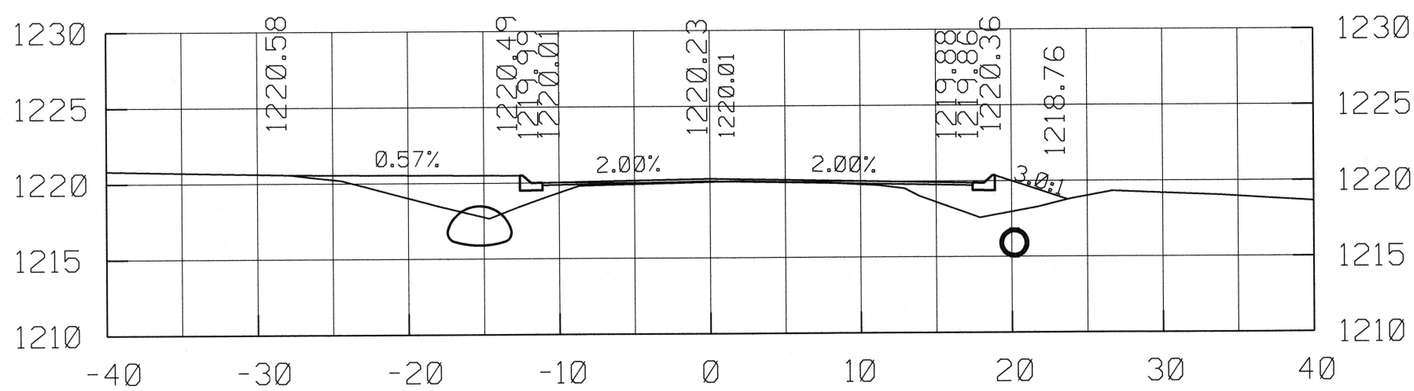
CUT VOLUME 0.13
FILL VOLUME 21.90



AREA CUT 0.31
AREA FILL 38.10

101+34.00

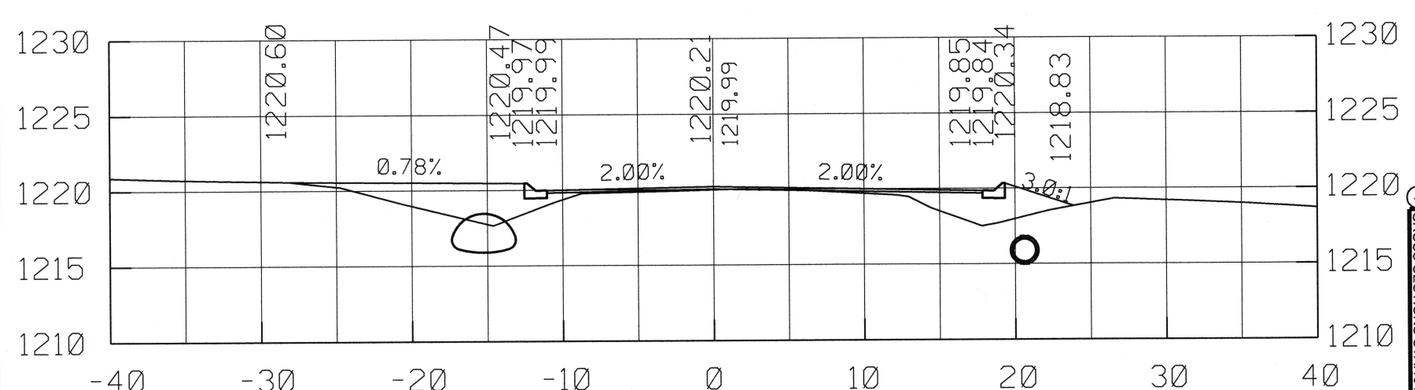
CUT VOLUME 0.04
FILL VOLUME 5.73



AREA CUT 0.22
AREA FILL 39.28

101+30.00

CUT VOLUME 0.03
FILL VOLUME 5.88



AREA CUT 0.14
AREA FILL 40.06

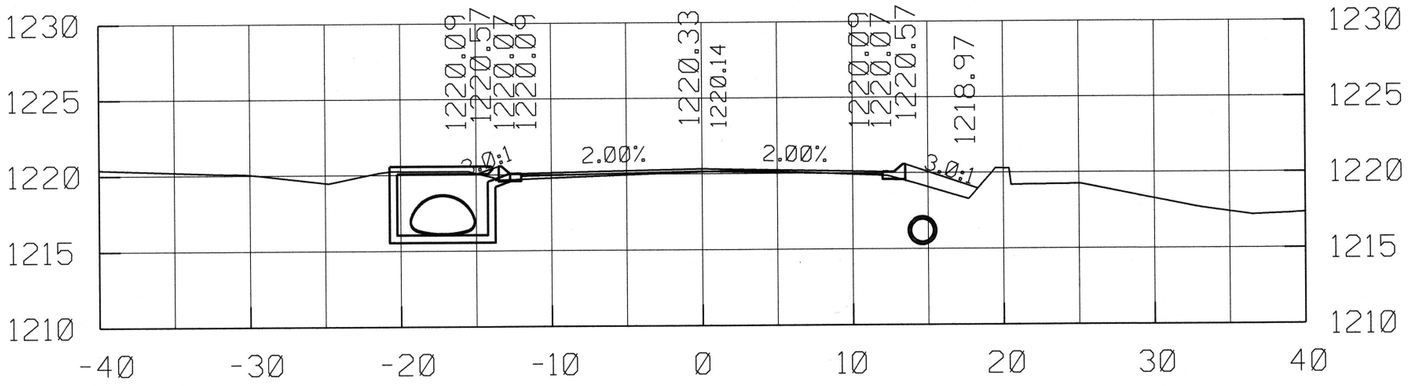
101+26.00

CUT VOLUME 0.33
FILL VOLUME 24.35

CROSS SECTIONS STA.101+26.00 TO 101+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	C72003	27	36

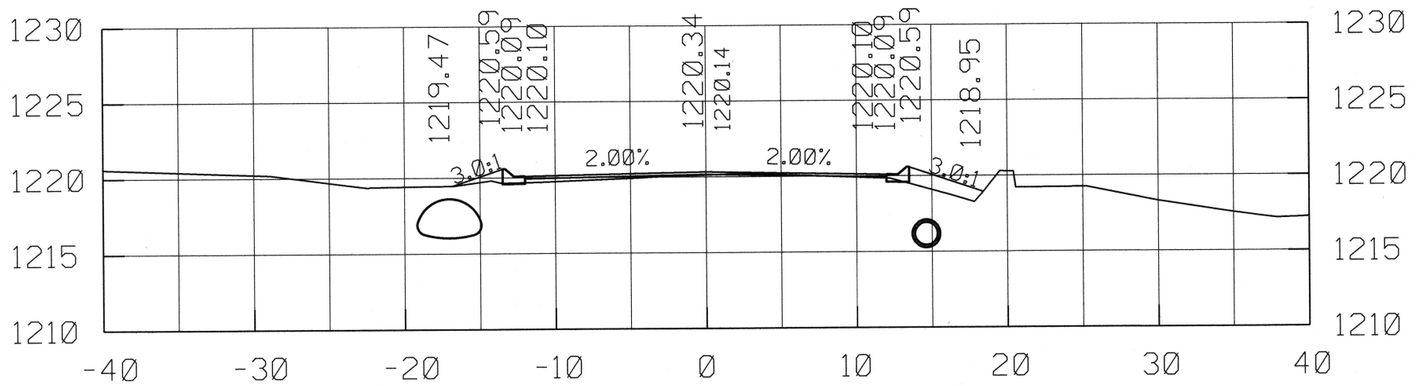
JOB NO.



AREA CUT 0.78
AREA FILL 6.54

102+50.00

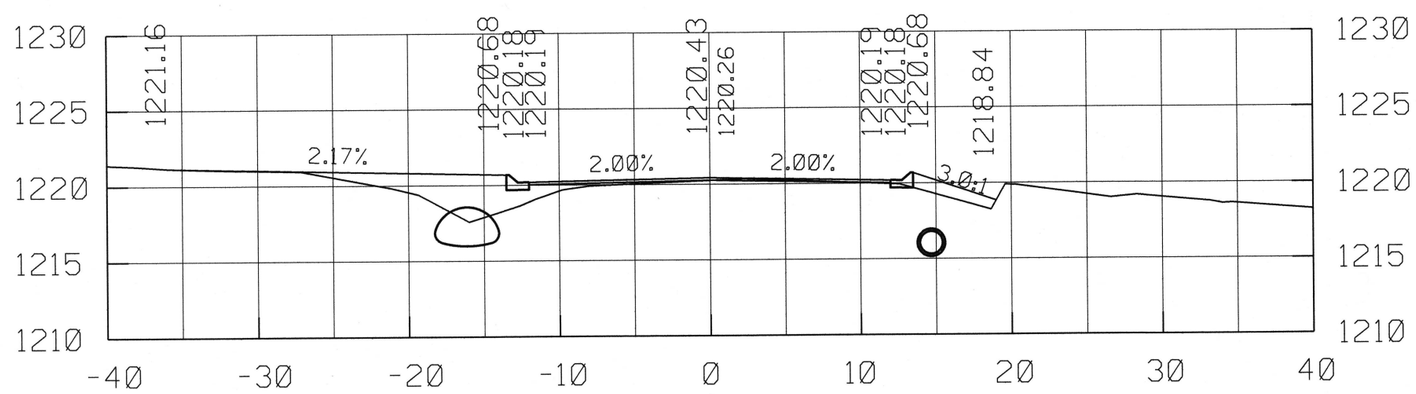
CUT VOLUME 0.19
FILL VOLUME 1.83



AREA CUT 0.69
AREA FILL 7.60

102+43.00

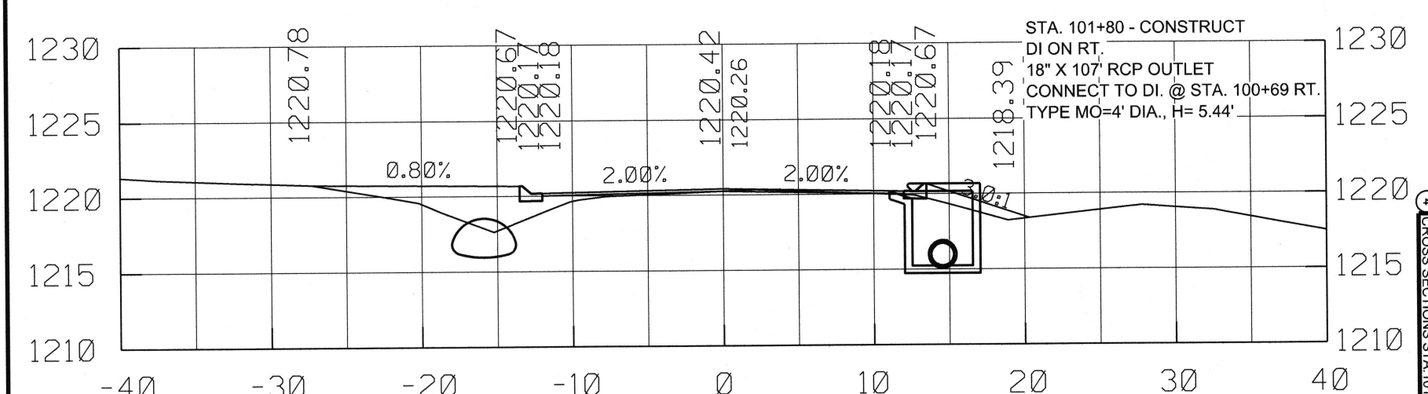
CUT VOLUME 1.24
FILL VOLUME 29.21



AREA CUT 0.87
AREA FILL 29.08

102+00.00

CUT VOLUME 0.65
FILL VOLUME 21.22



STA. 101+80 - CONSTRUCT
DI ON RT.
18" X 107' RCP OUTLET
CONNECT TO DI. @ STA. 100+69 RT.
TYPE MO=4' DIA., H= 5.44'

AREA CUT 0.88
AREA FILL 28.22

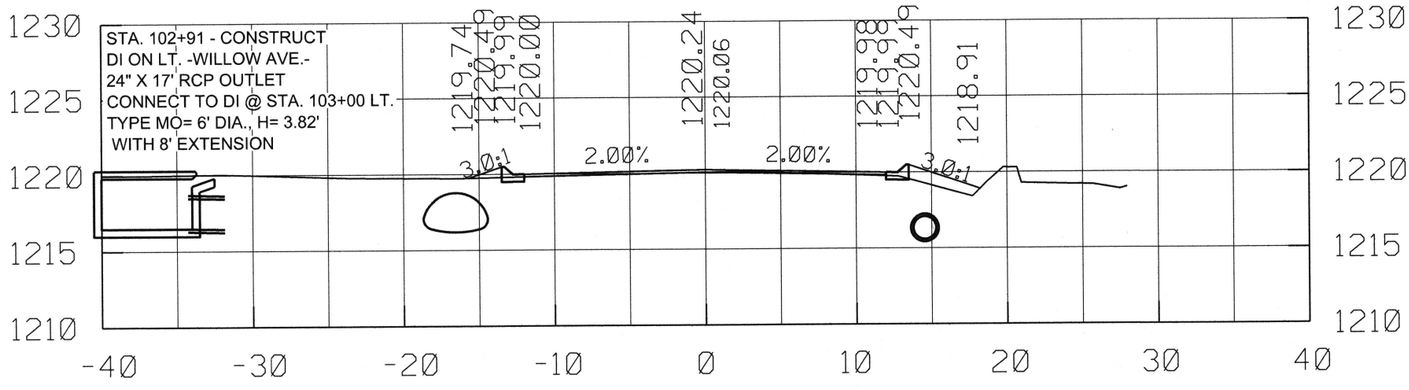
101+80.00

CUT VOLUME 0.57
FILL VOLUME 35.58

CROSS SECTIONS STA. 101+80.00 TO 102+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE
				6	ARK.

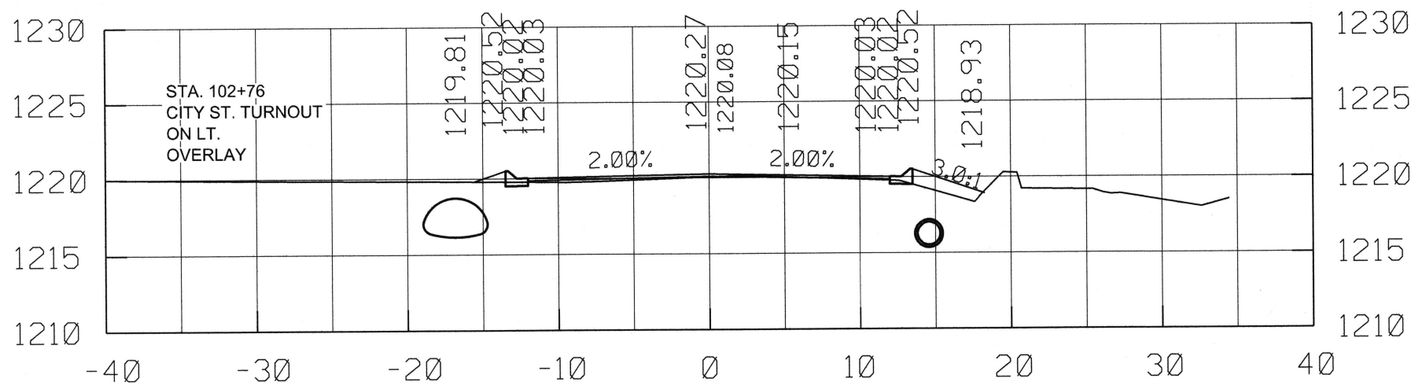
JOB NO.	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
C72003		28	36



AREA CUT 1.11
AREA FILL 4.65

102+91.00

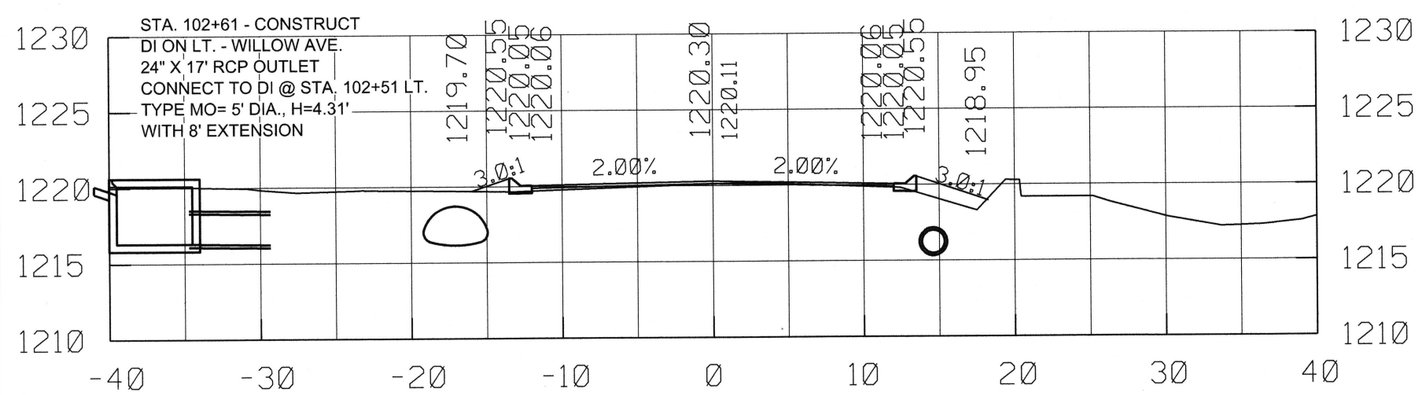
CUT VOLUME 0.61
FILL VOLUME 3.06



AREA CUT 1.04
AREA FILL 6.07

102+75.57

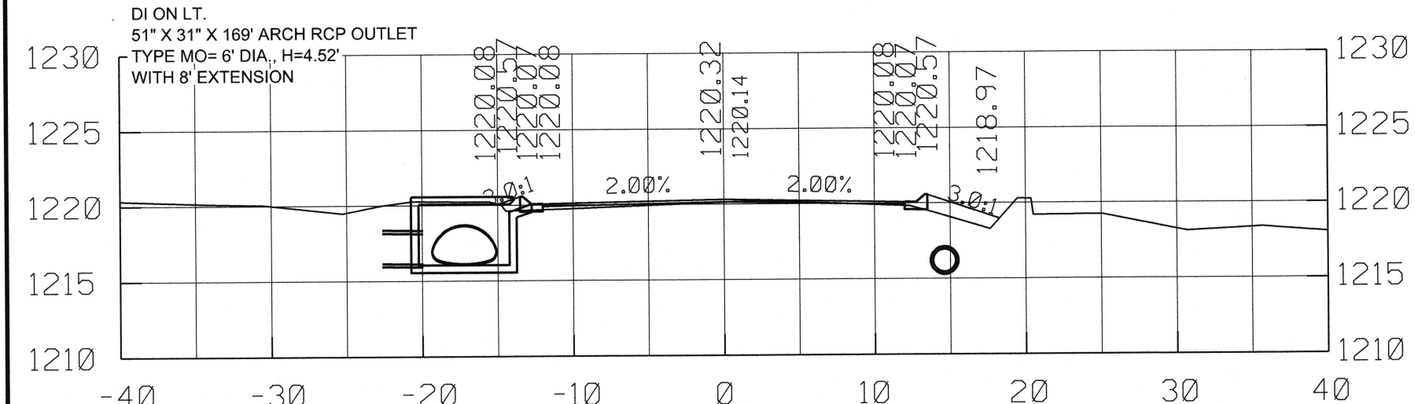
CUT VOLUME 0.52
FILL VOLUME 3.58



AREA CUT 0.81
AREA FILL 6.78

102+60.51

CUT VOLUME 0.27
FILL VOLUME 2.27



AREA CUT 0.79
AREA FILL 6.74

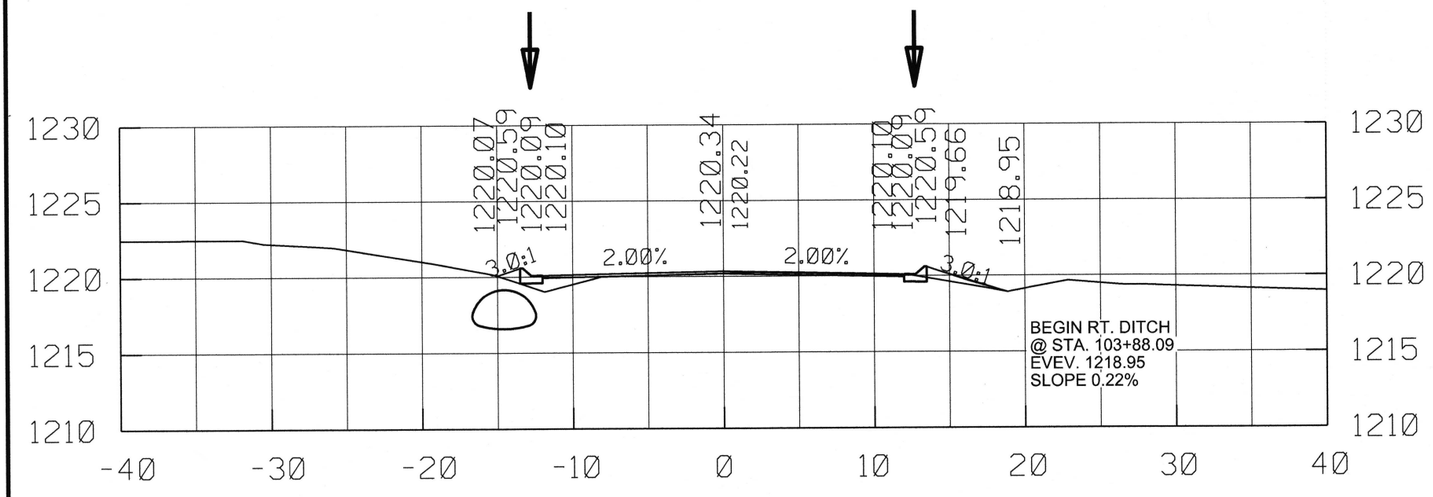
102+51.45

CUT VOLUME 0.04
FILL VOLUME 0.36

	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
4				

CROSS SECTIONS STA 102+51.45 TO 102+91.00

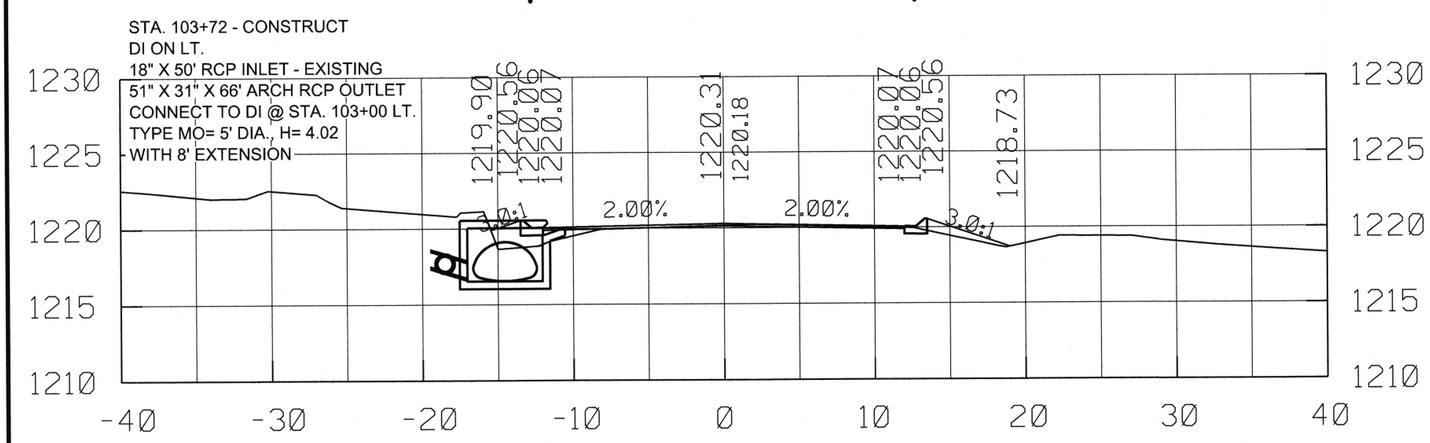
JOB NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
C72003	ARK.	6	29	36



AREA CUT 2.03
AREA FILL 4.81

103+88.00

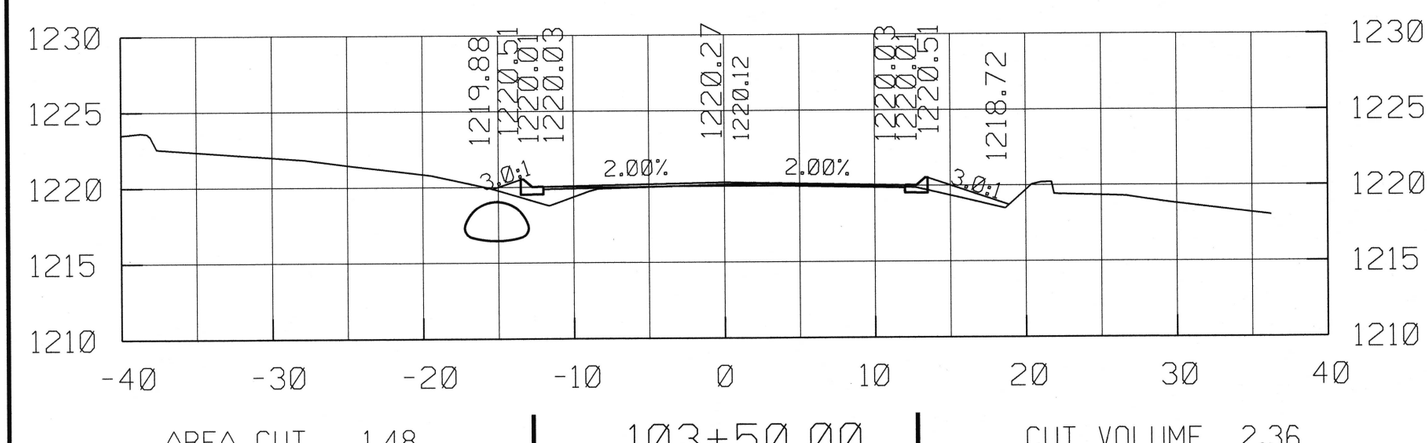
CUT VOLUME 1.16
FILL VOLUME 3.78



AREA CUT 1.90
AREA FILL 7.95

103+72.00

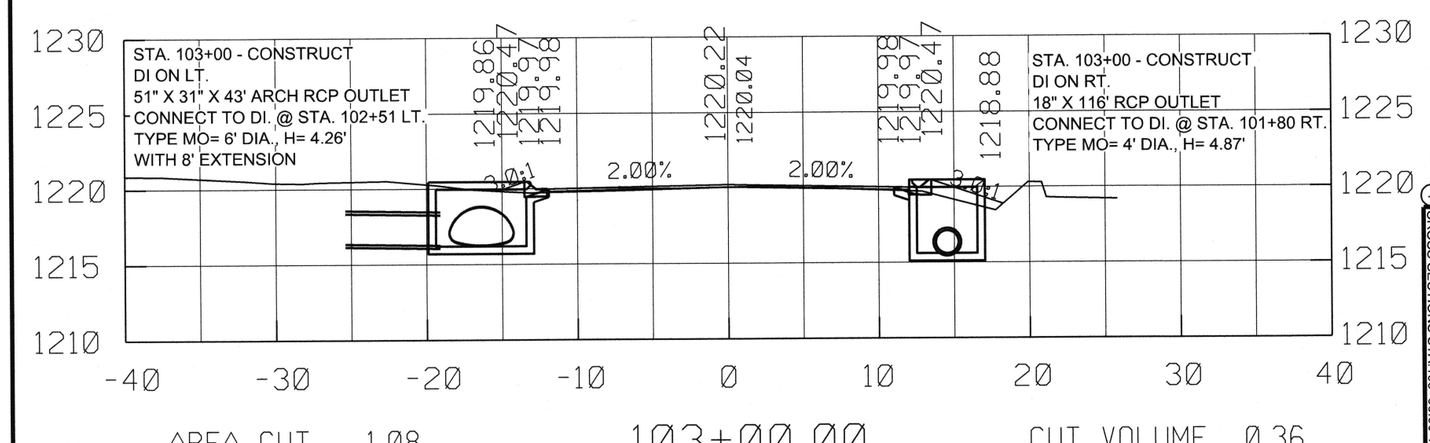
CUT VOLUME 1.37
FILL VOLUME 6.08



AREA CUT 1.48
AREA FILL 6.97

103+50.00

CUT VOLUME 2.36
FILL VOLUME 10.78



AREA CUT 1.08
AREA FILL 4.67

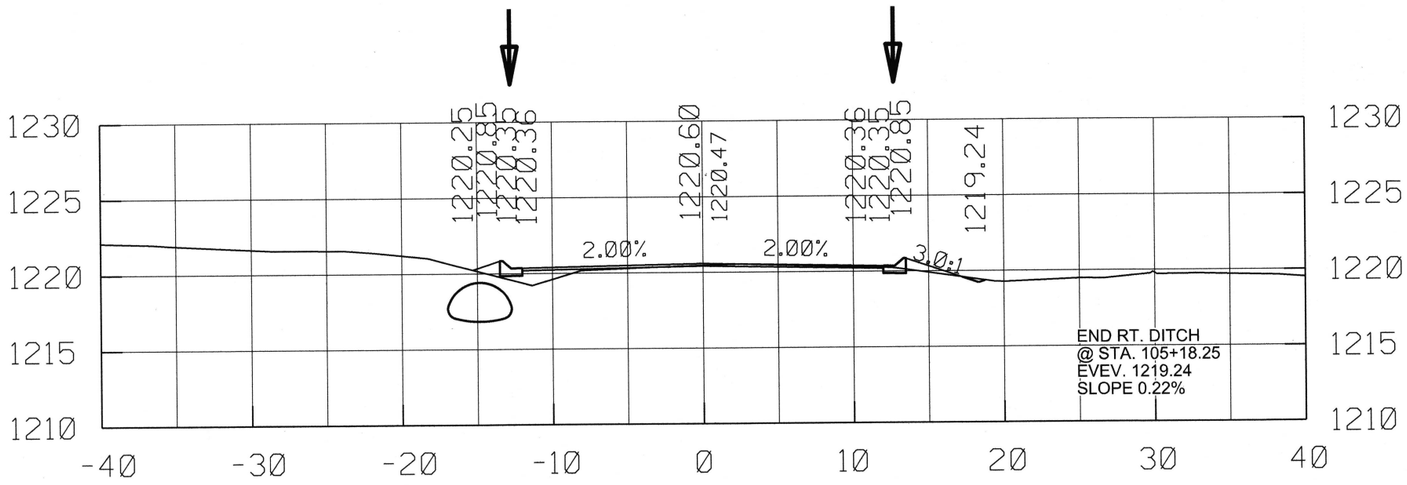
103+00.00

CUT VOLUME 0.36
FILL VOLUME 1.55

CROSS SECTIONS STA. 103+00.00 TO 103+88.00

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	C72003	30	36

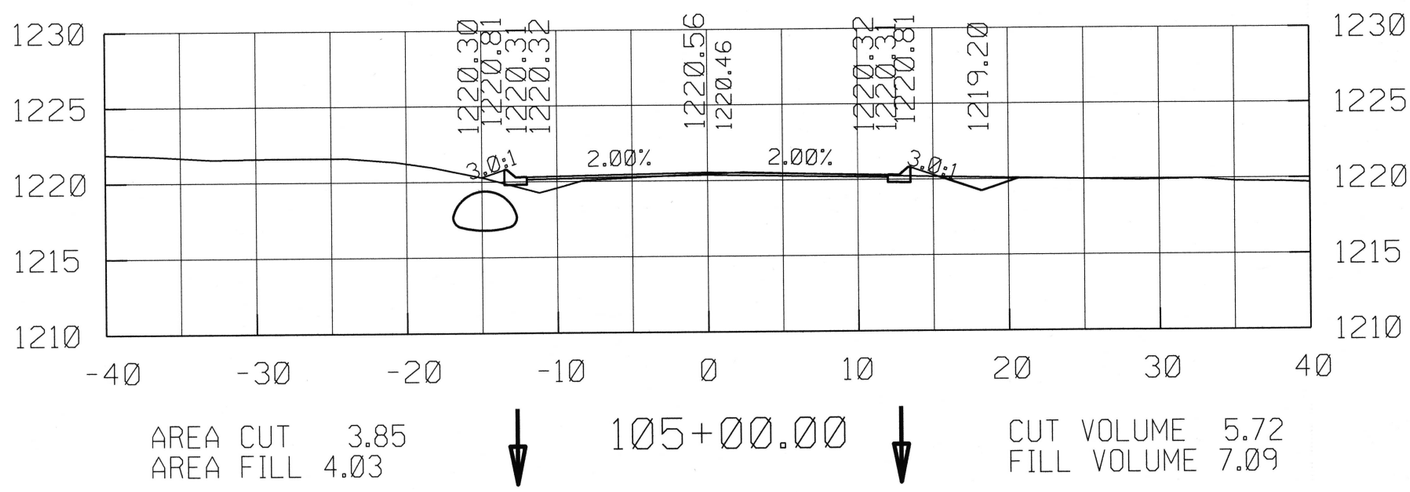
JOB NO.



AREA CUT 2.12
AREA FILL 5.27

105+18.00

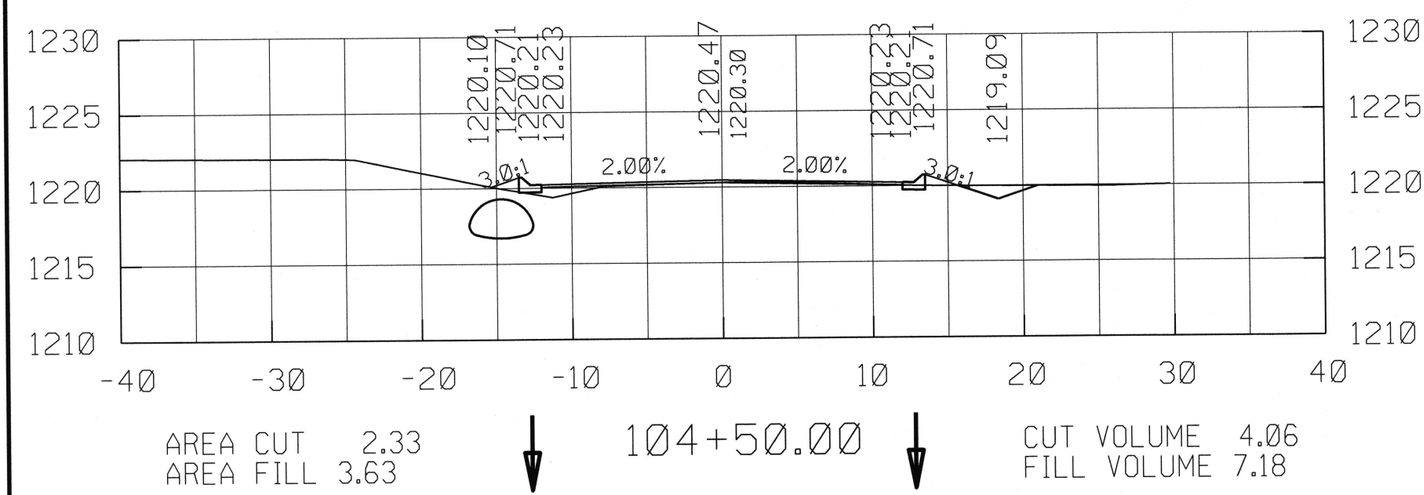
CUT VOLUME 1.99
FILL VOLUME 3.10



AREA CUT 3.85
AREA FILL 4.03

105+00.00

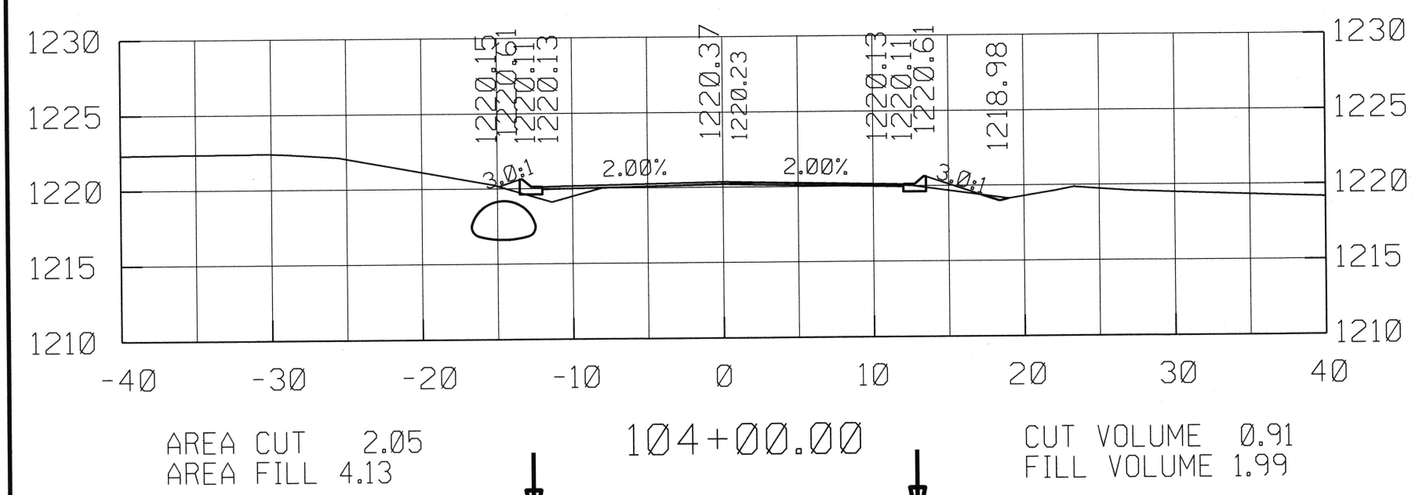
CUT VOLUME 5.72
FILL VOLUME 7.09



AREA CUT 2.33
AREA FILL 3.63

104+50.00

CUT VOLUME 4.06
FILL VOLUME 7.18



AREA CUT 2.05
AREA FILL 4.13

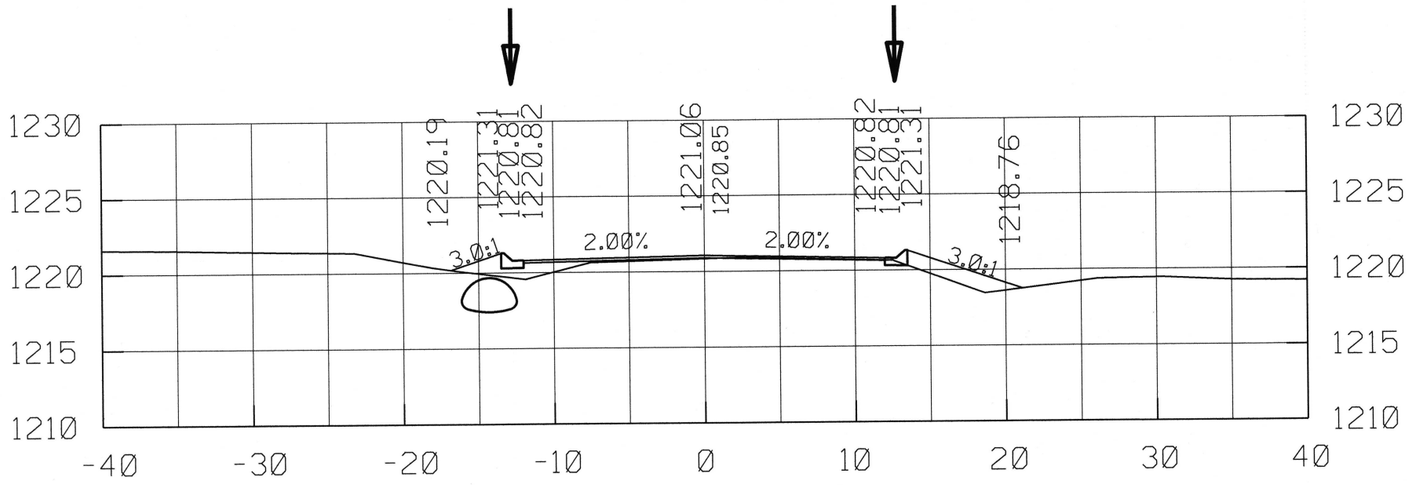
104+00.00

CUT VOLUME 0.91
FILL VOLUME 1.99

4 CROSS SECTIONS STA 104+00.00 TO 105+18.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	ROAD DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		31	36

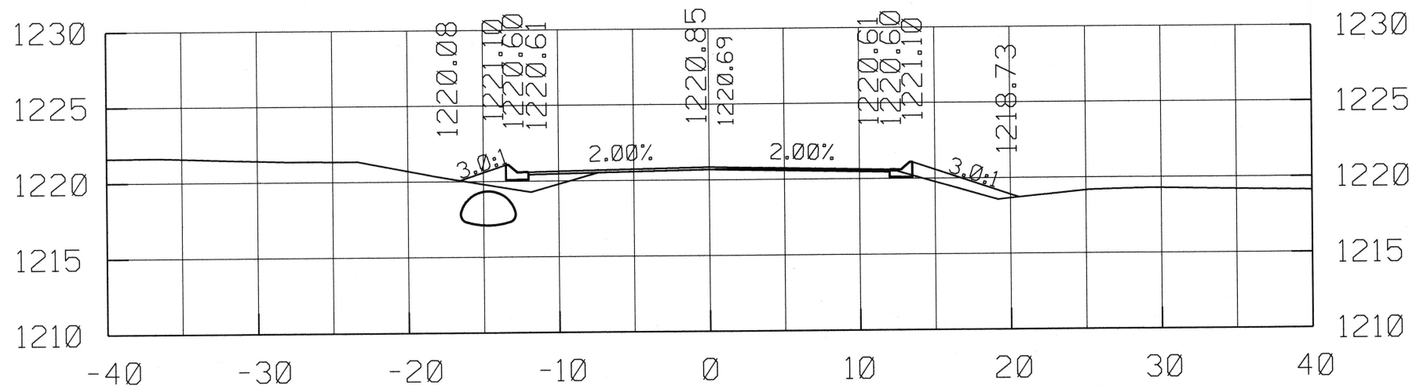
JOB NO. C72003



AREA CUT 0.84
AREA FILL 13.71

106+50.00

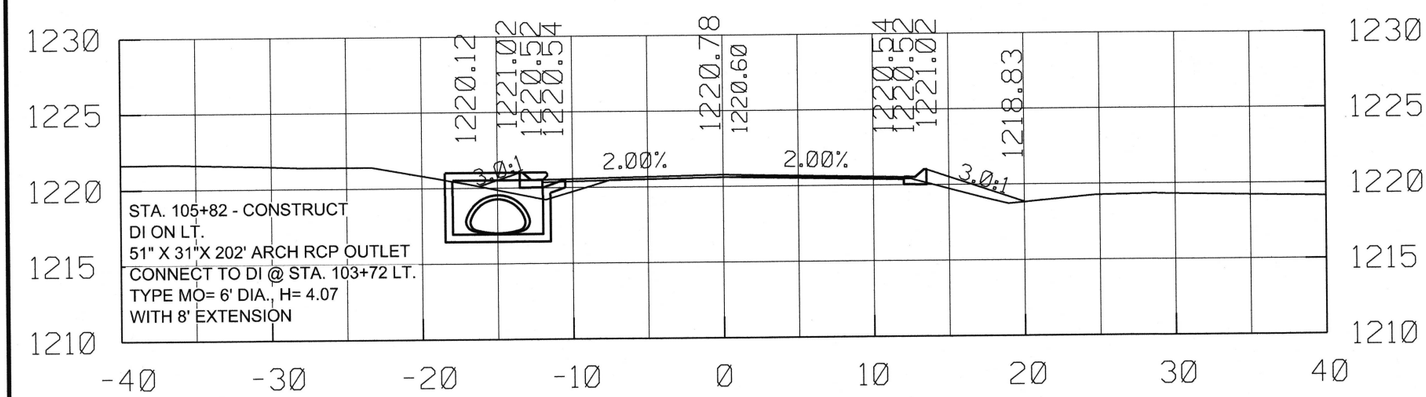
CUT VOLUME 2.09
FILL VOLUME 22.67



AREA CUT 1.42
AREA FILL 10.78

106+00.00

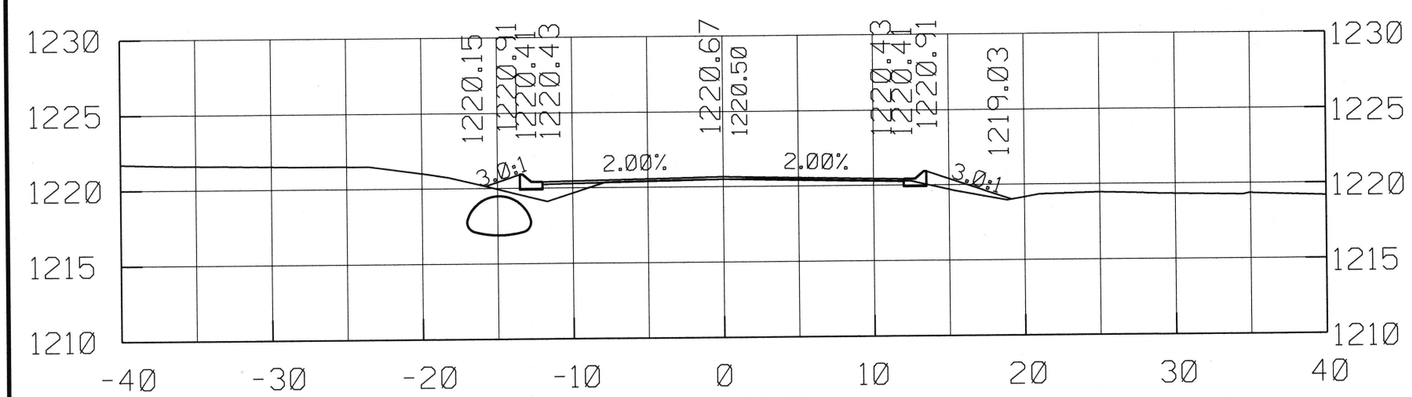
CUT VOLUME 0.88
FILL VOLUME 6.82



AREA CUT 1.22
AREA FILL 9.68

105+82.00

CUT VOLUME 1.40
FILL VOLUME 10.35



AREA CUT 1.14
AREA FILL 7.79

105+50.00

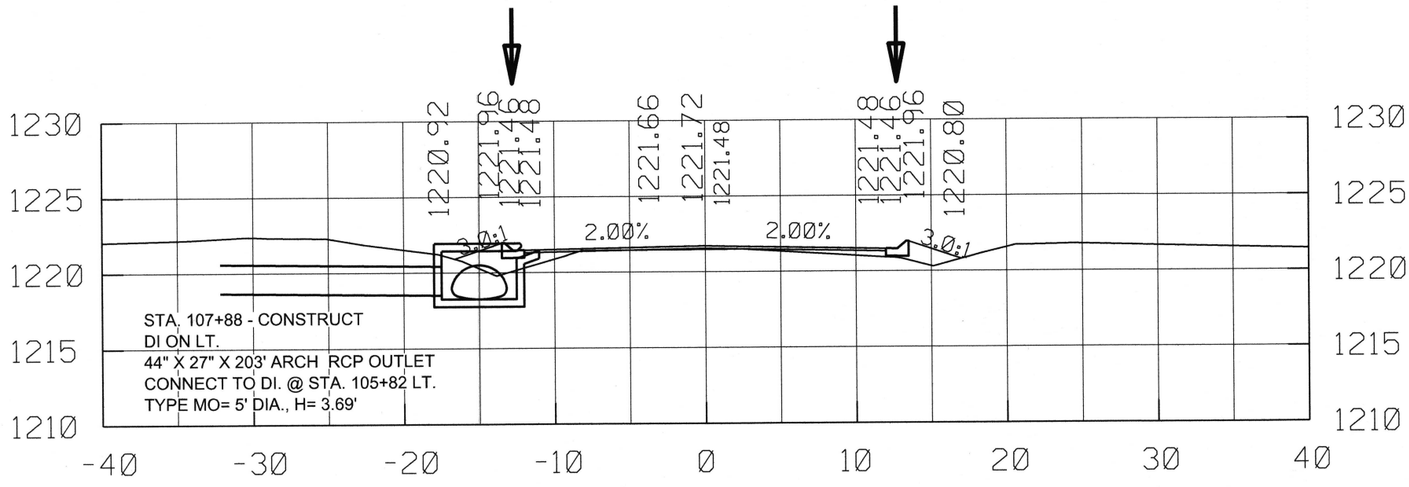
CUT VOLUME 1.93
FILL VOLUME 7.74

4 CROSS SECTIONS STA 105+50.00 TO 106+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	C72003	32	36

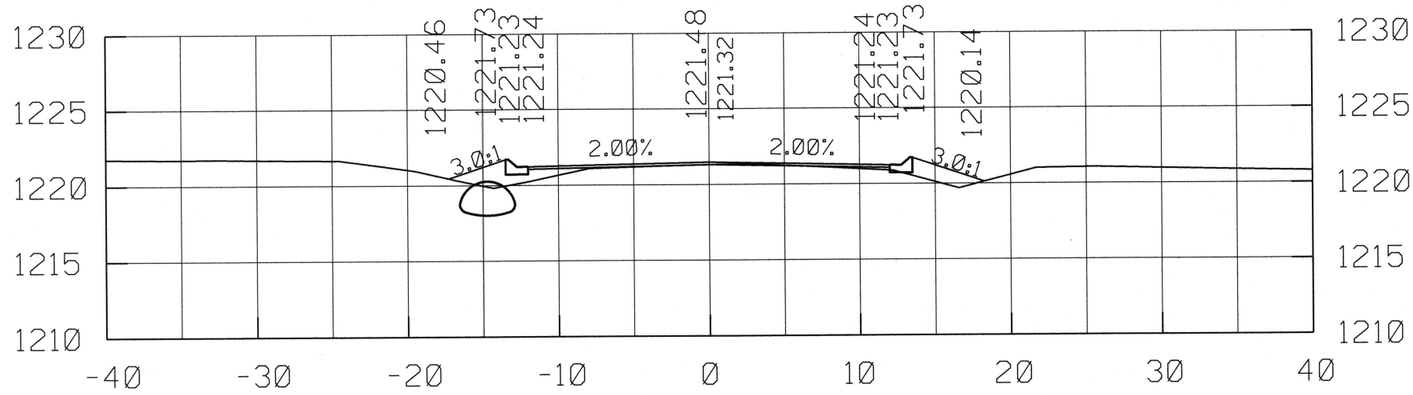
JOB NO.



AREA CUT 0.06
AREA FILL 11.93

107+88.00

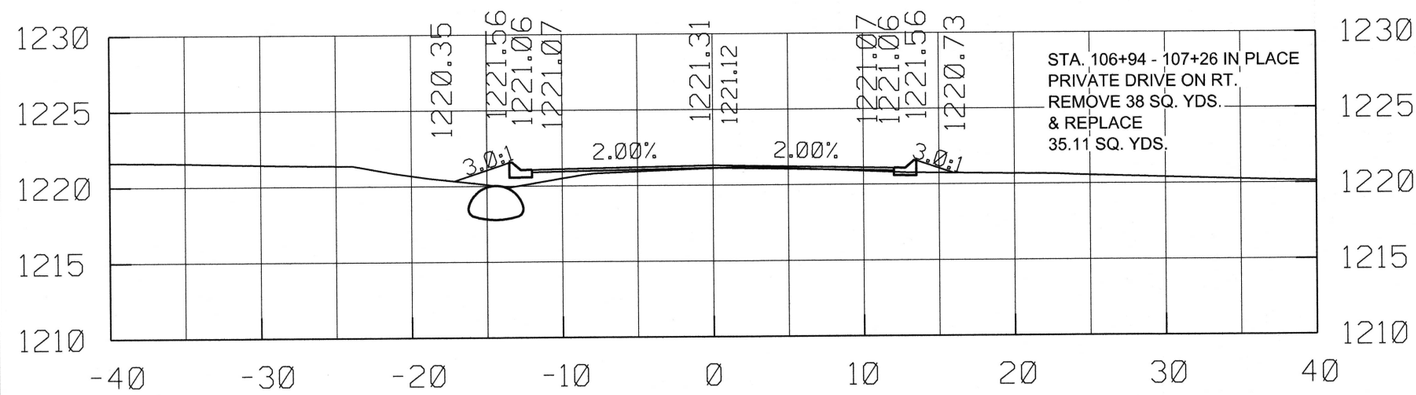
CUT VOLUME 0.33
FILL VOLUME 16.41



AREA CUT 0.41
AREA FILL 11.39

107+50.00

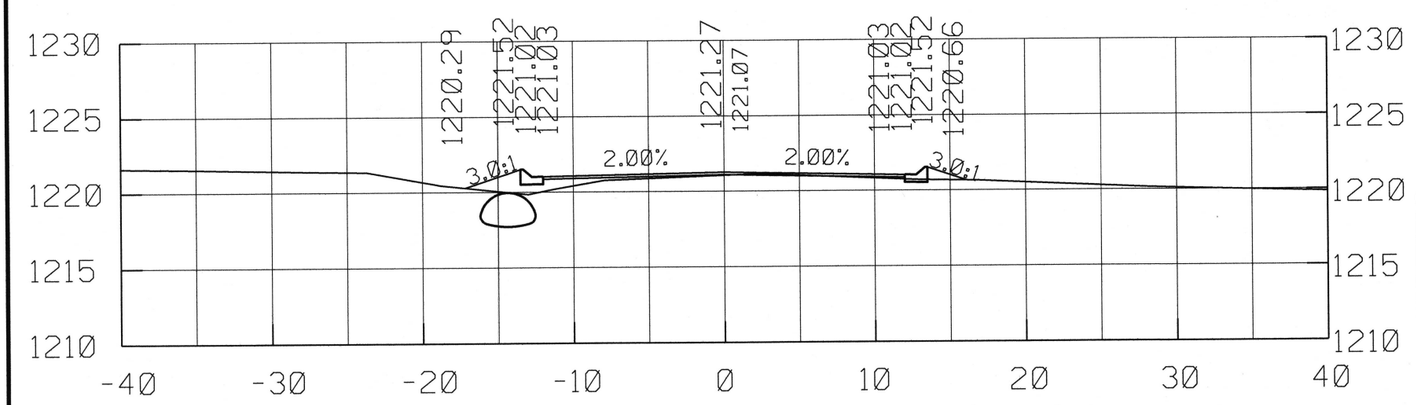
CUT VOLUME 0.83
FILL VOLUME 14.09



AREA CUT 0.71
AREA FILL 7.63

107+10.00

CUT VOLUME 0.25
FILL VOLUME 2.90



AREA CUT 0.62
AREA FILL 8.05

107+00.00

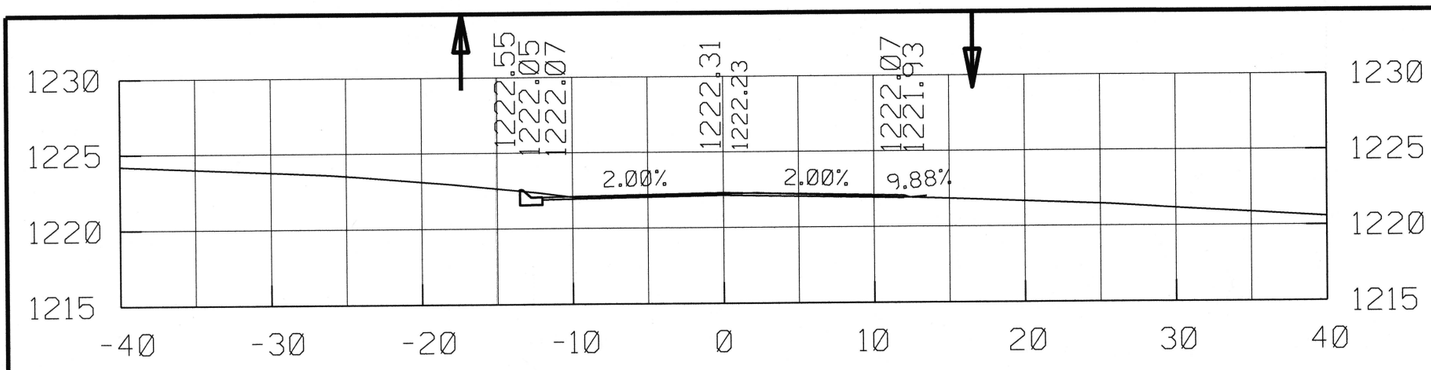
CUT VOLUME 1.35
FILL VOLUME 20.14

4 CROSS SECTIONS STA 107+00.00 TO 107+88.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	C72003	33	36

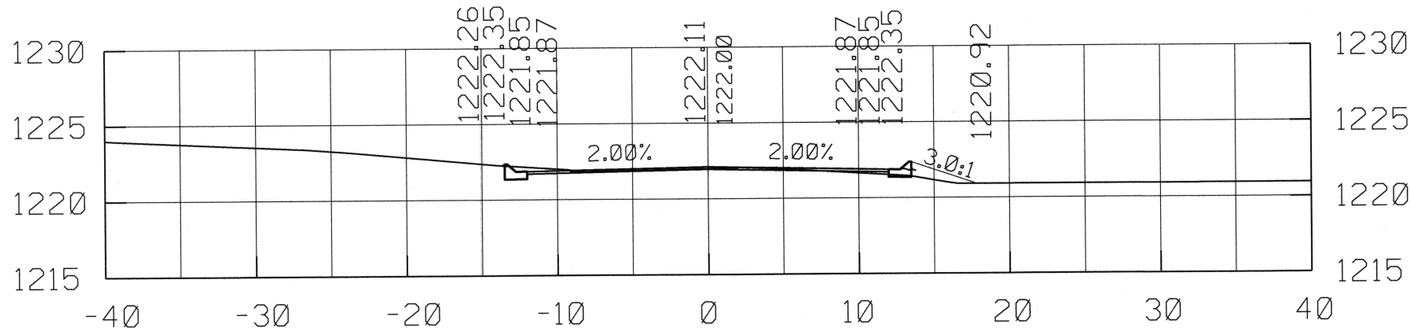
JOB NO.



AREA CUT 12.76
AREA FILL 0.11

108+50.00

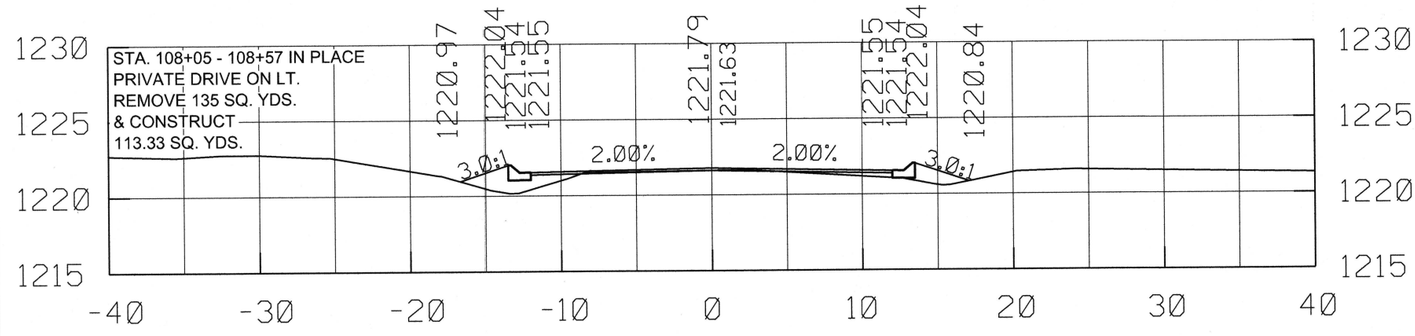
CUT VOLUME 5.68
FILL VOLUME 0.42



AREA CUT 3.37
AREA FILL 1.10

108+31.00

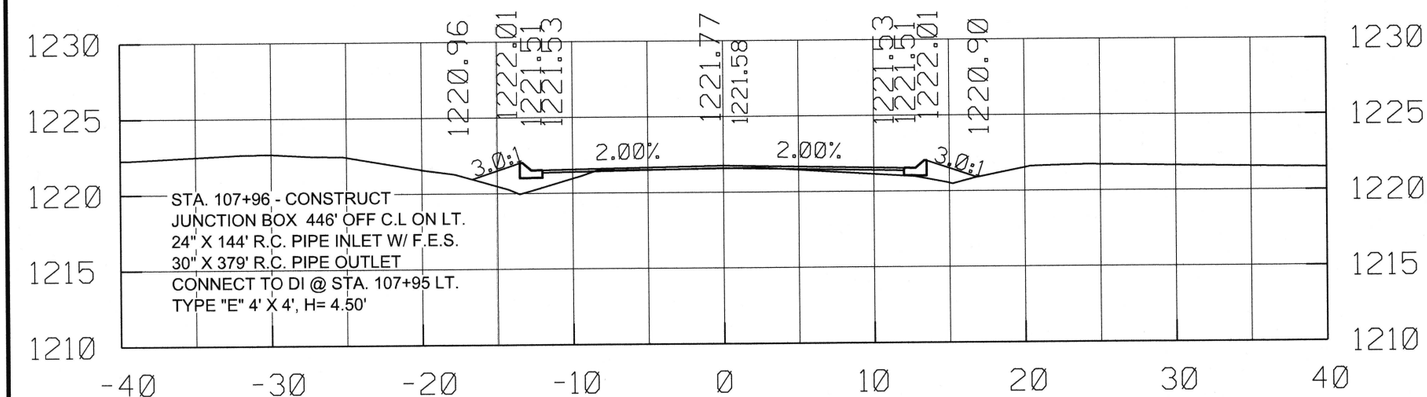
CUT VOLUME 2.21
FILL VOLUME 82.57



AREA CUT 0.48
AREA FILL 142.73

108+00.00

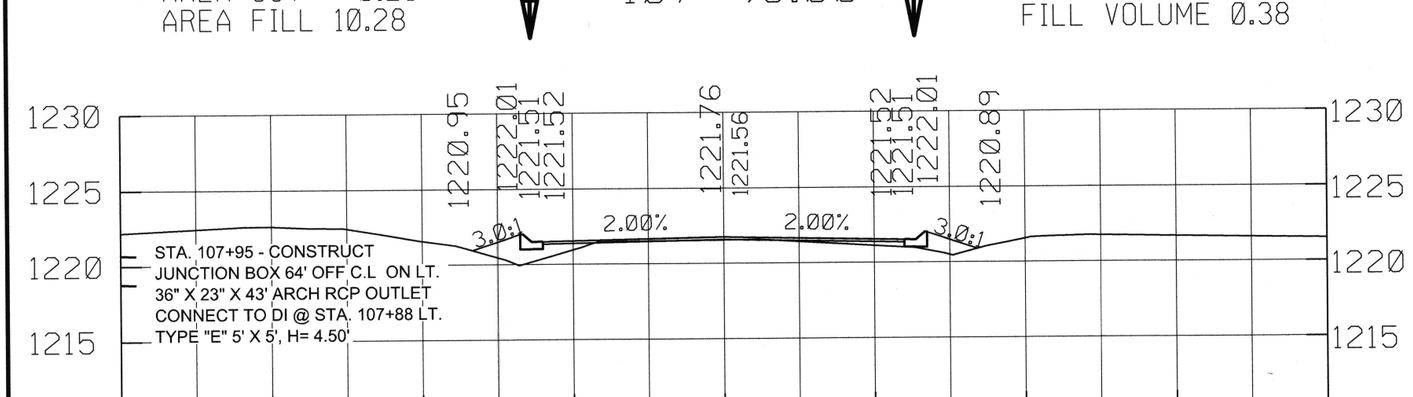
CUT VOLUME 0.05
FILL VOLUME 11.33



AREA CUT 0.23
AREA FILL 10.28

107+96.00

CUT VOLUME 0.01
FILL VOLUME 0.38



AREA CUT 0.20
AREA FILL 10.45

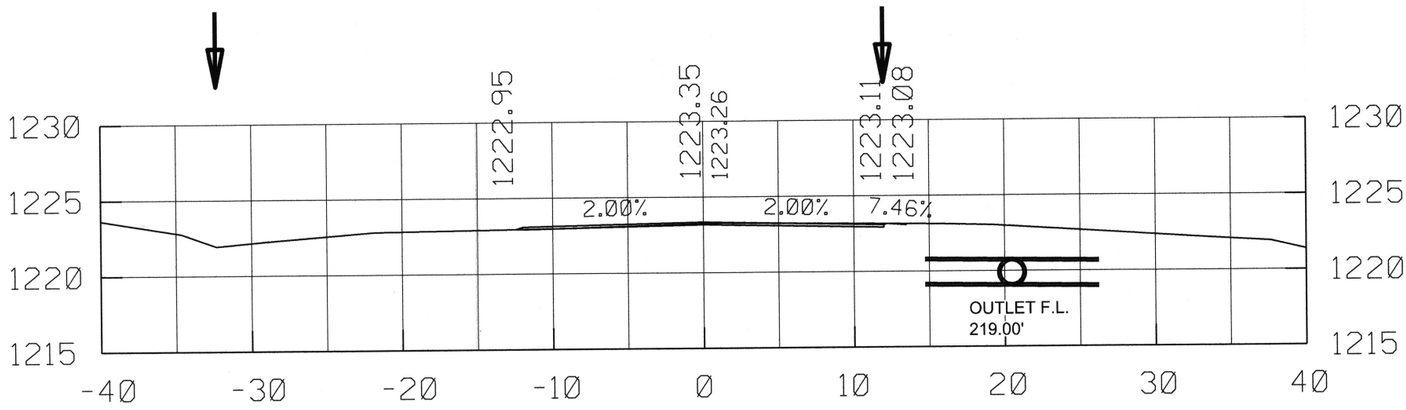
107+95.00

CUT VOLUME 0.03
FILL VOLUME 2.90

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DES.NO.
				6

JOB NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
C72003	ARK.		34	36

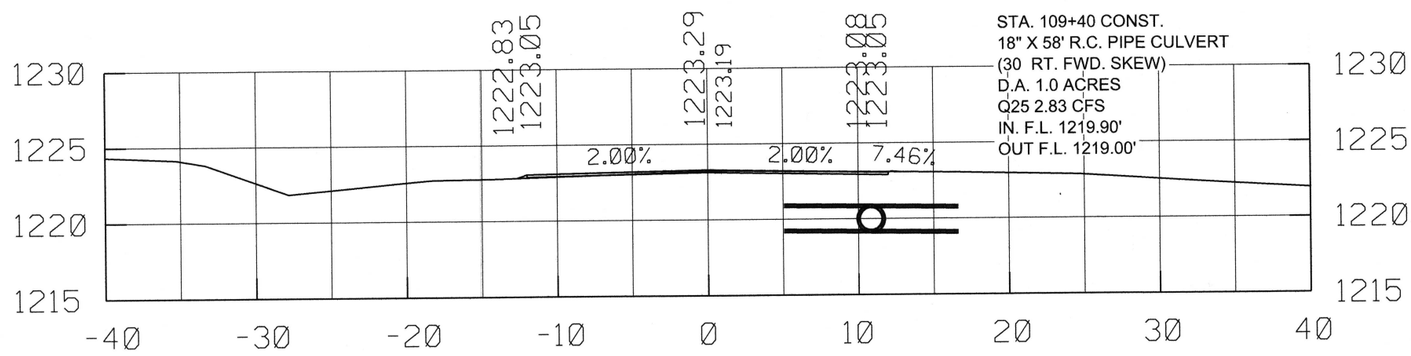
4 CROSS SECTIONS STA 107+95.00 TO 108+50.00



AREA CUT 2.61
AREA FILL 0.03

109+50.00

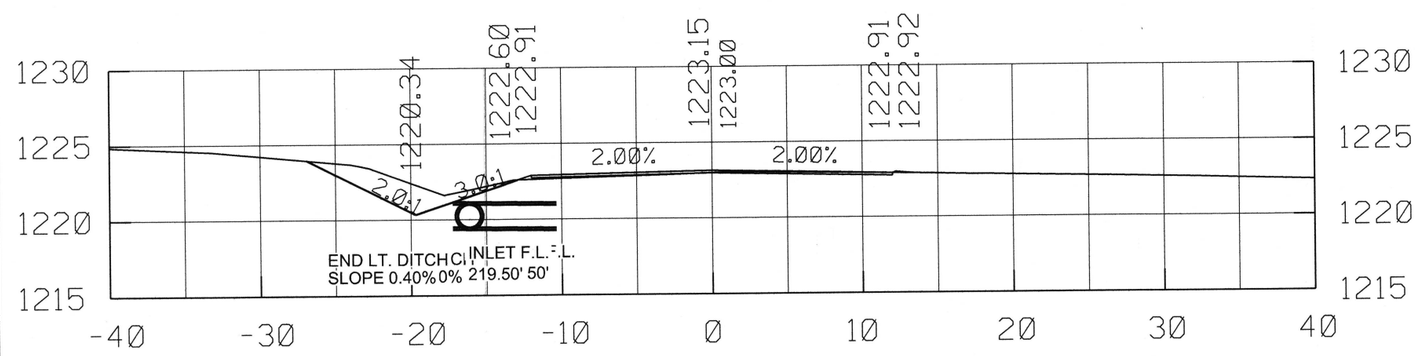
CUT VOLUME 0.43
FILL VOLUME 0.02



AREA CUT 2.06
AREA FILL 0.18

109+45.00

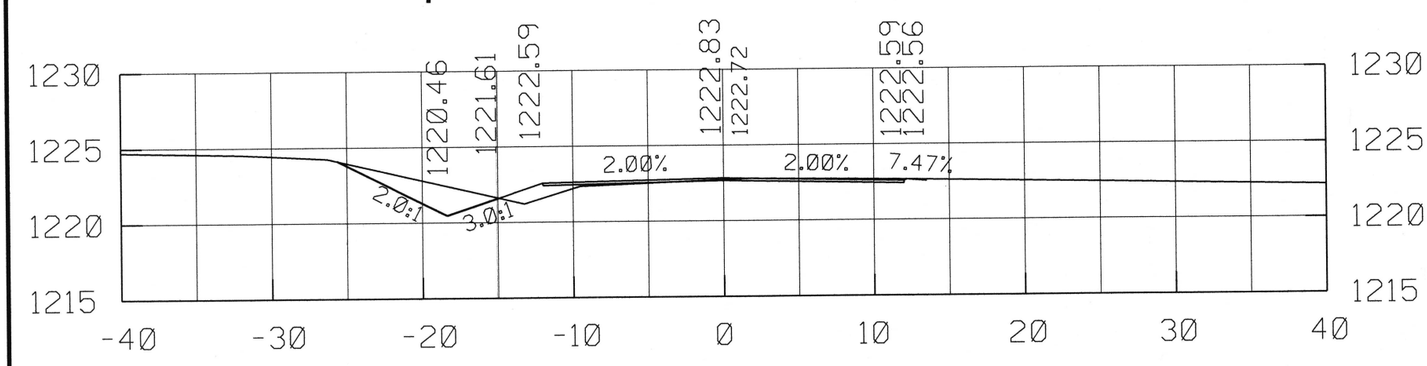
CUT VOLUME 0.92
FILL VOLUME 0.27



AREA CUT 1.48
AREA FILL 0.84

109+31.00

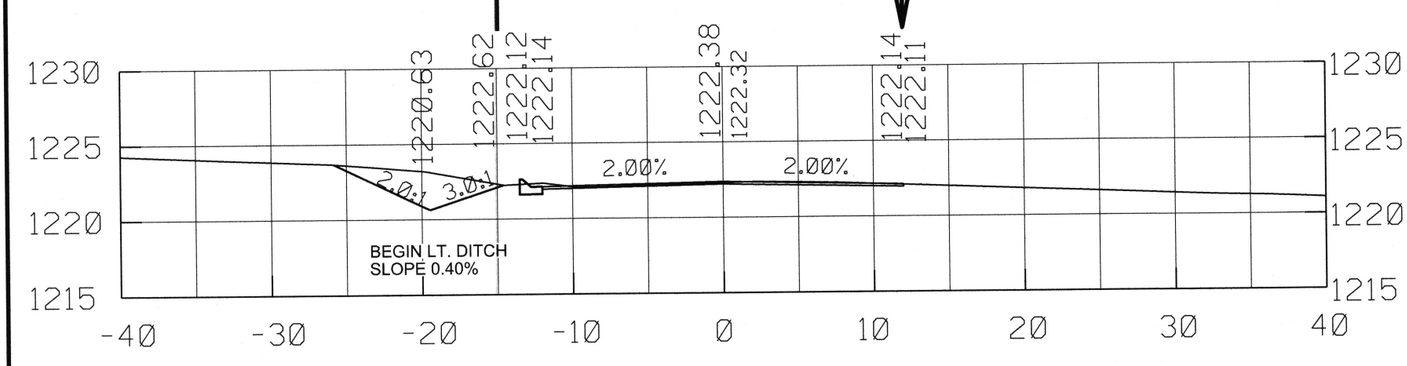
CUT VOLUME 2.26
FILL VOLUME 2.54



AREA CUT 2.45
AREA FILL 3.58

109+00.00

CUT VOLUME 1.95
FILL VOLUME 2.85



AREA CUT 0.00
AREA FILL 0.00

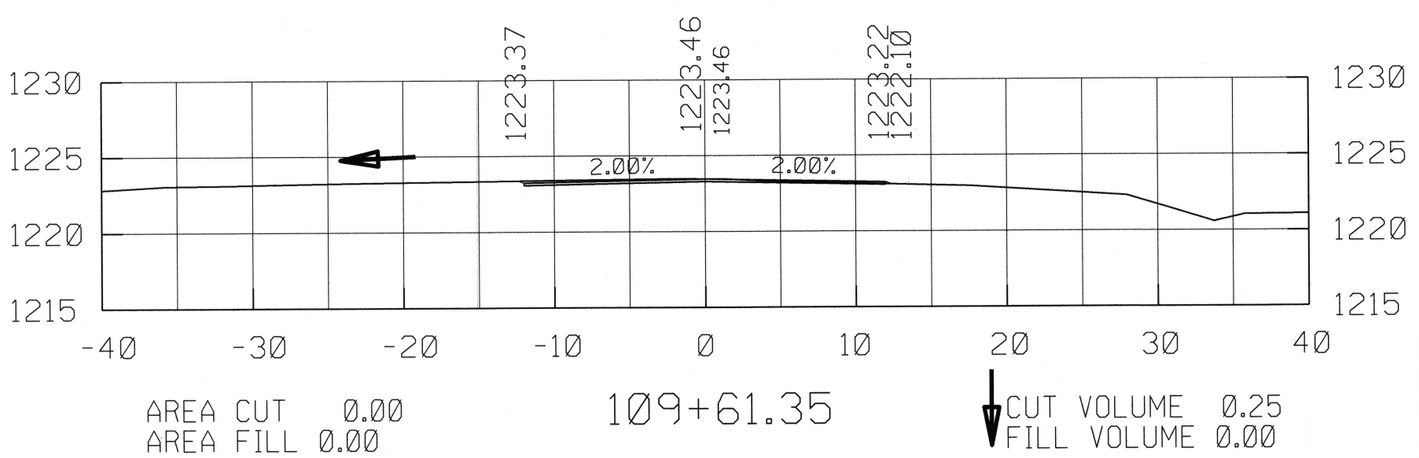
108+57.00

CUT VOLUME 1.65
FILL VOLUME 0.01

4 CROSS SECTIONS STA 108+57.00 TO 109+50.00

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

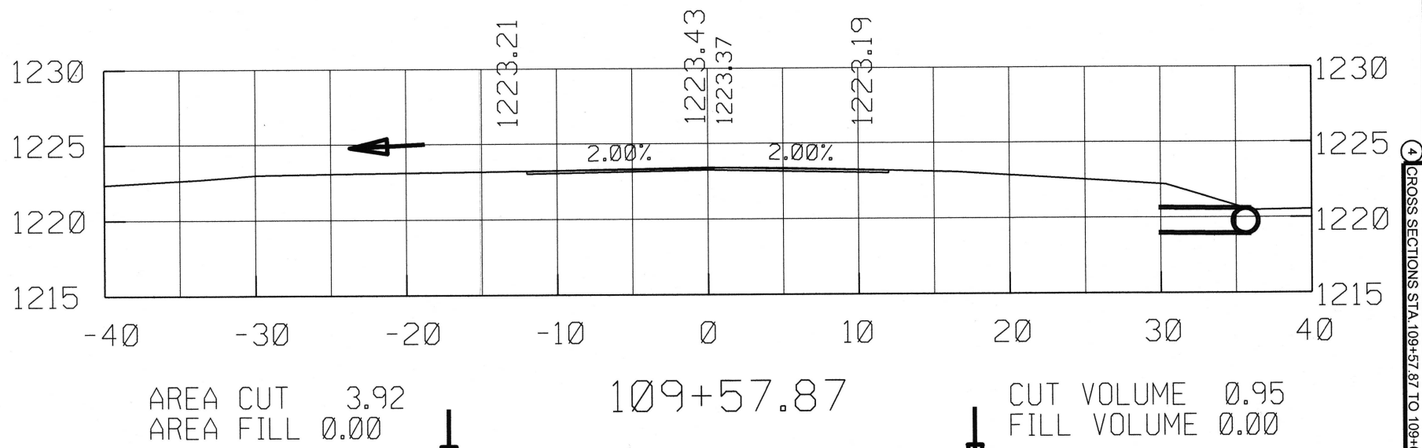
JOB NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
C72003	ARK.		35	36



AREA CUT 0.00
AREA FILL 0.00

109+61.35

CUT VOLUME 0.25
FILL VOLUME 0.00



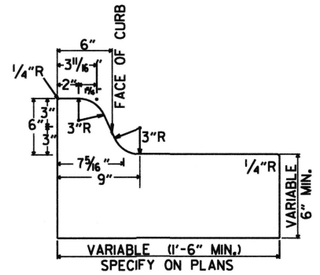
AREA CUT 3.92
AREA FILL 0.00

109+57.87

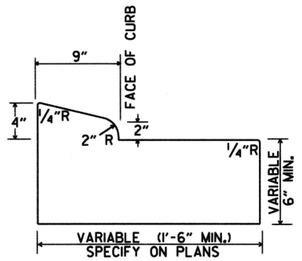
CUT VOLUME 0.95
FILL VOLUME 0.00

CROSS SECTIONS STA. 109+57.87 TO 109+61.35

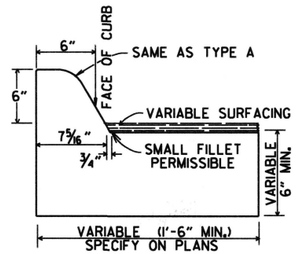
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		36	36
				JOB NO.		C72003		



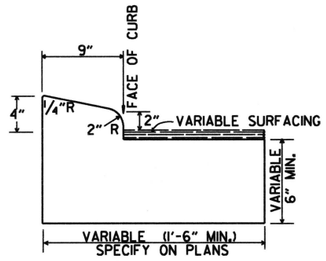
TYPE A



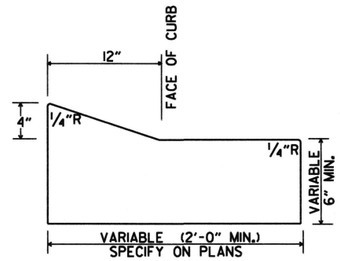
TYPE B-1



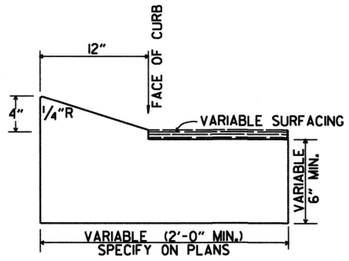
TYPE C



TYPE B-2

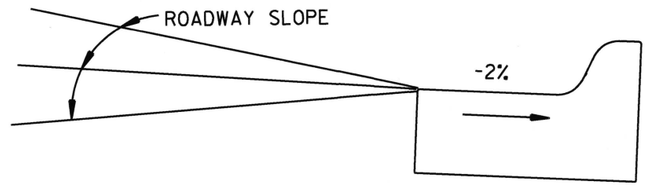


TYPE E-1



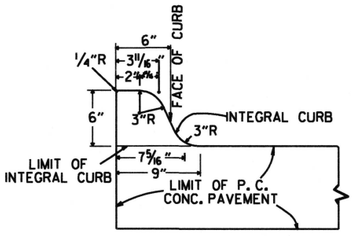
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

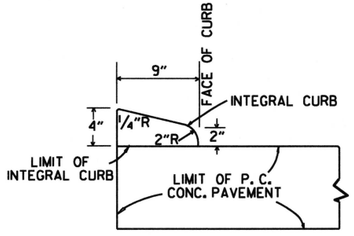


DETAIL OF GUTTER SLOPE

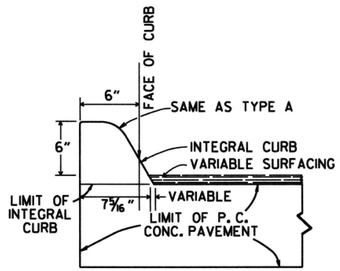
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

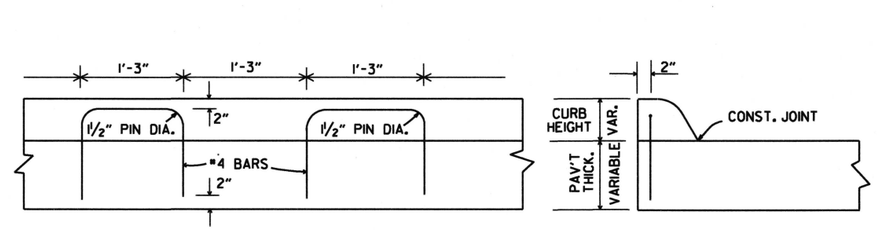


TYPE B



TYPE C

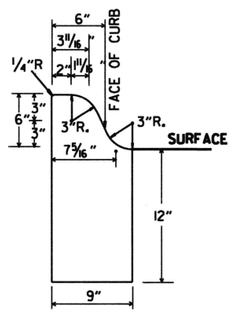
INTEGRAL CURB



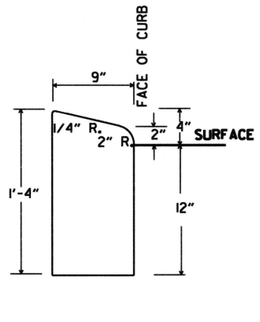
LONGITUDINAL SECTION

ELEVATION

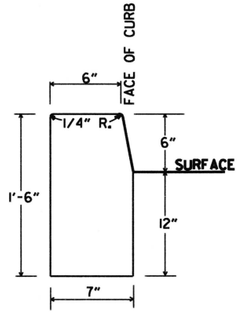
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



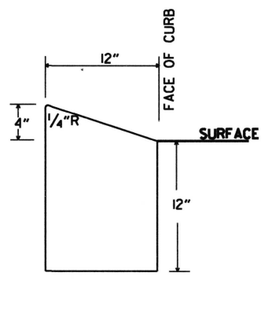
TYPE A



TYPE B

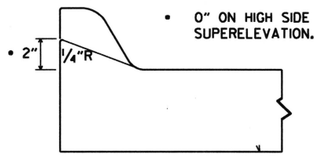


TYPE D



TYPE E

CONCRETE CURB



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

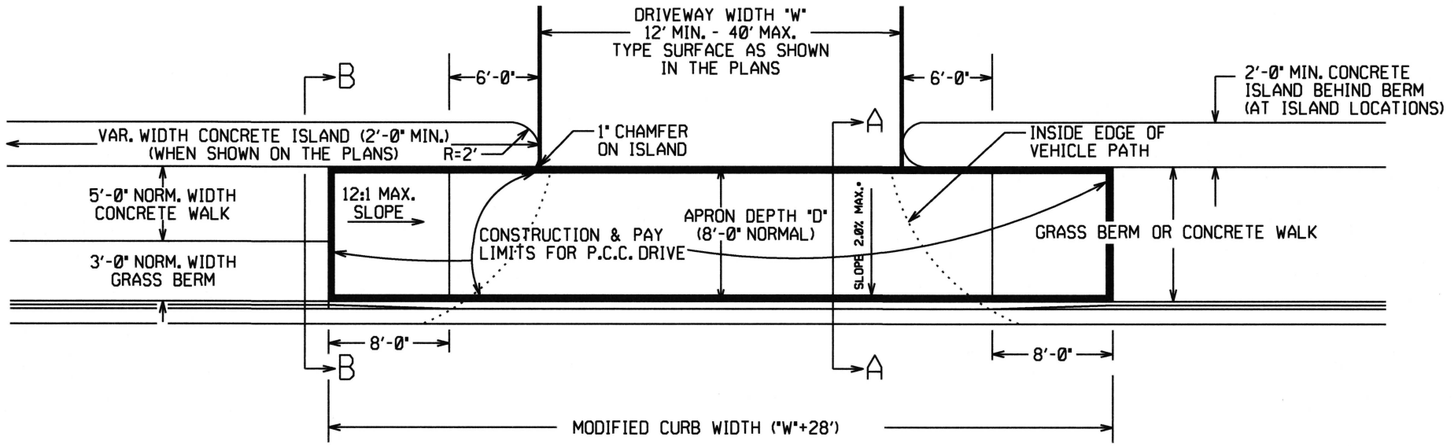
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

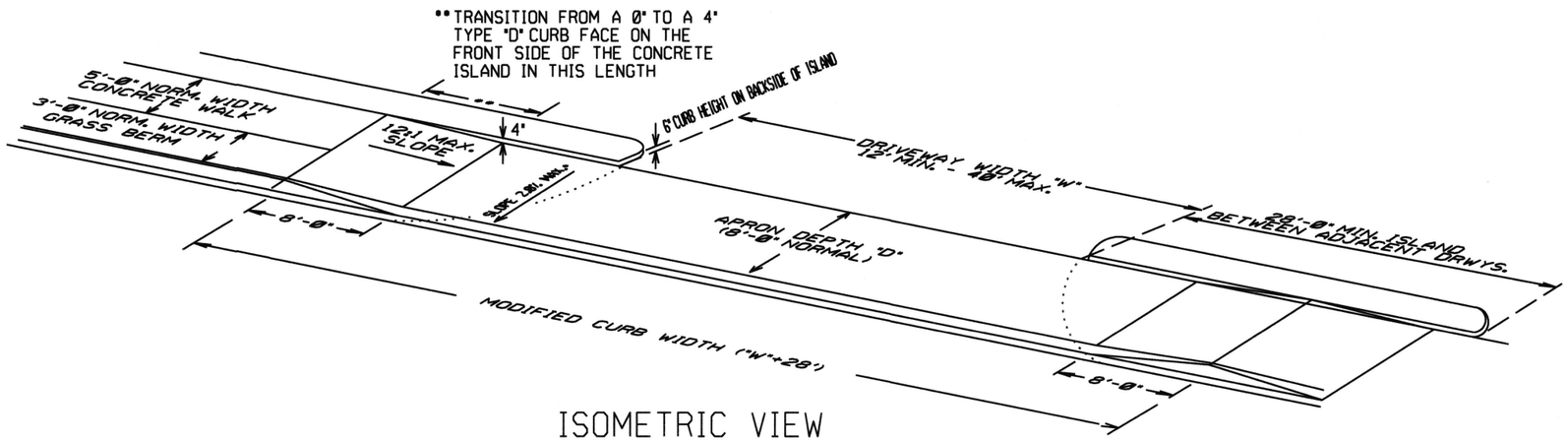
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

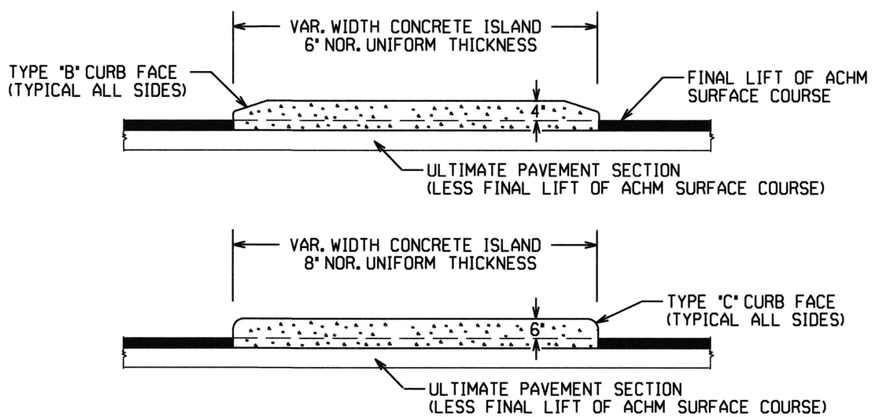
STANDARD DRAWING CG-1



PLAN VIEW

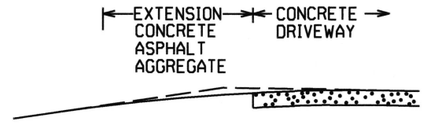


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

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

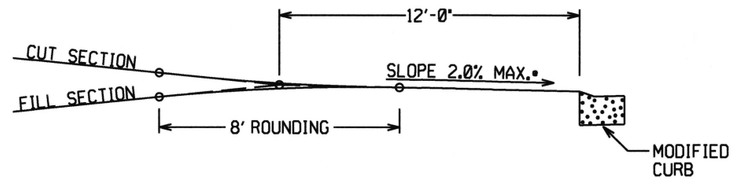
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

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

4: AGGREGATE - 6" AGGREGATE BASE COURSE

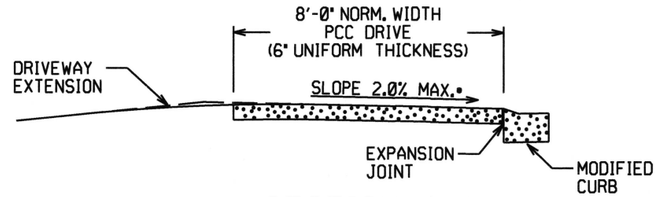
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

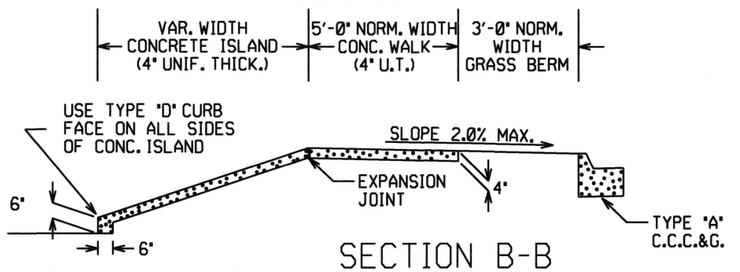


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



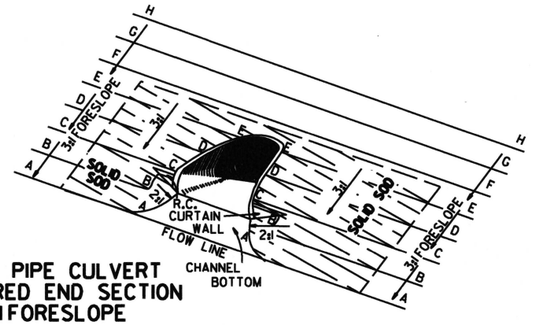
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-07-19		REVISED WALK DETAILS
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

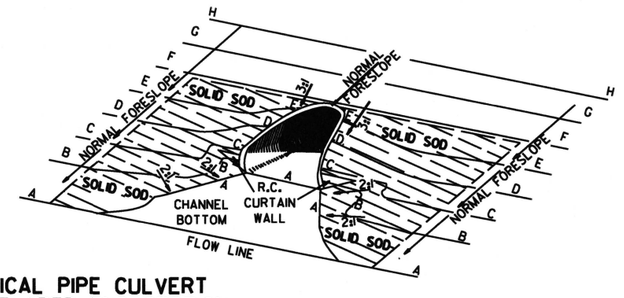
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

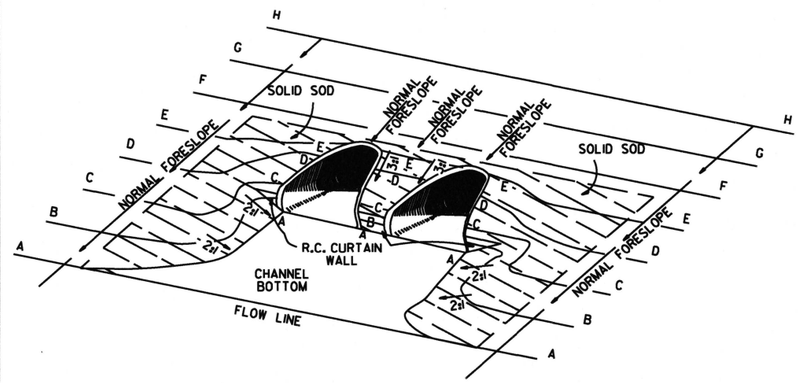
STANDARD DRAWING DR-1



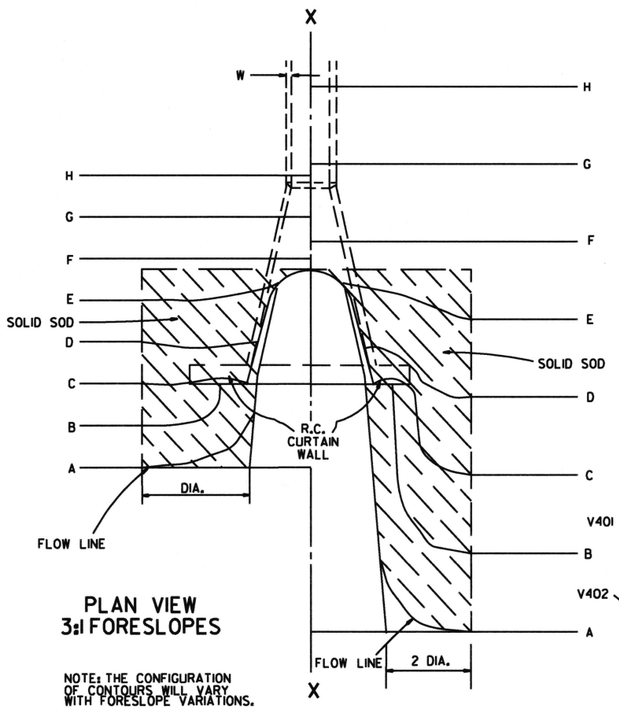
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

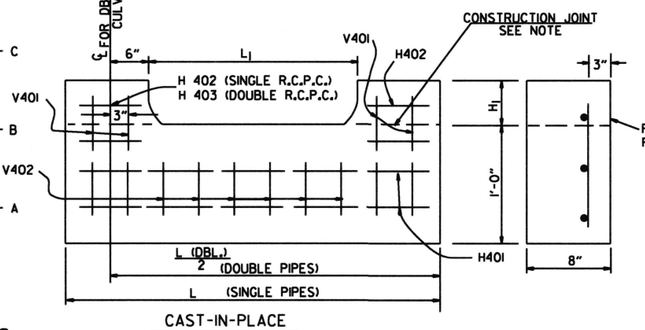
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

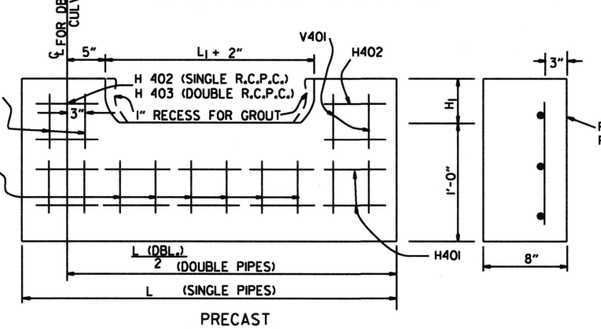
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

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



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

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

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

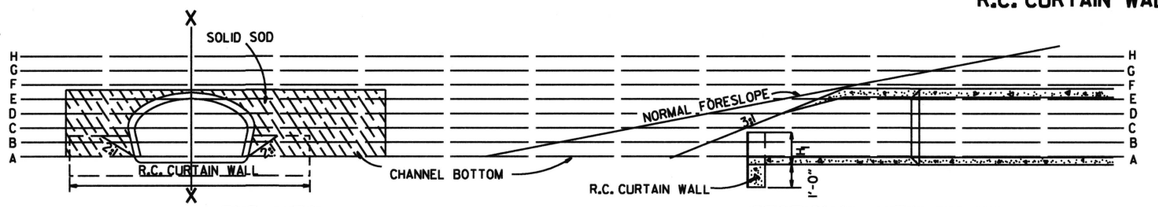
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	SINGLE R.C.P.C. 4:1	SINGLE R.C.P.C. 6:1	DOUBLE R.C.P.C. 3:1	DOUBLE R.C.P.C. 4:1	DOUBLE R.C.P.C. 6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	36	57	85	37	59	87
60"	45	69	104	48	65	107
72"	64	92	156	67	95	159

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

GENERAL NOTES

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



END VIEW

SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

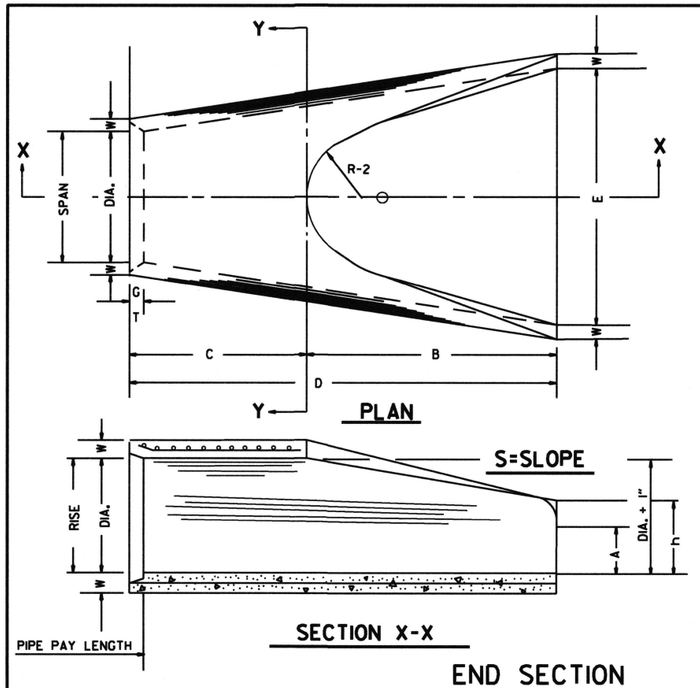
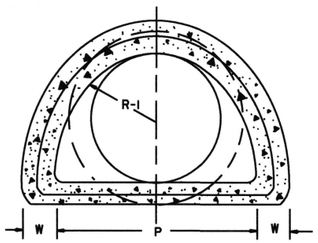
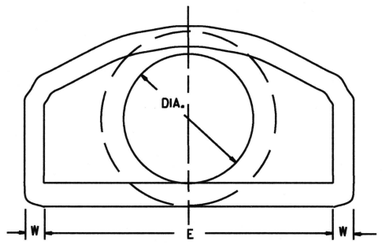


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 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"	33⅜"	16⅛"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77⅛"	38⅛"	24"	5"	13250	4'-6"



SECTION Y-Y



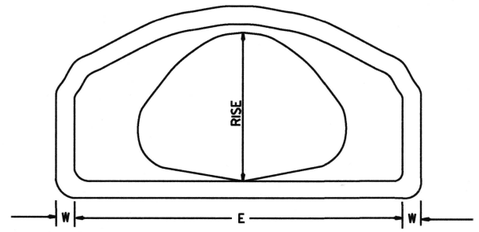
END VIEW

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

ARCH PIPE

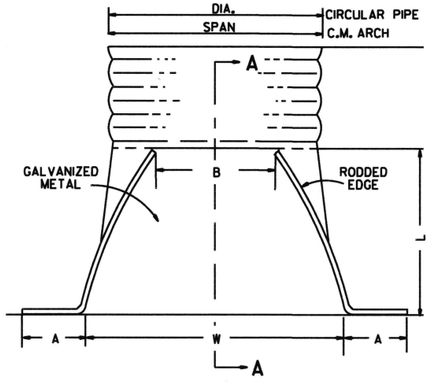
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅛"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅛"	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.

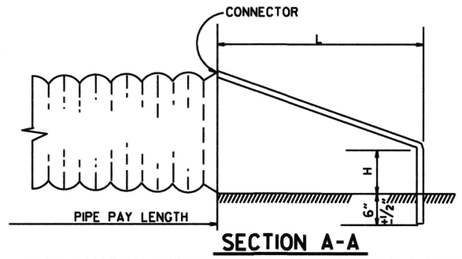


END VIEW
CONCRETE ARCH PIPE

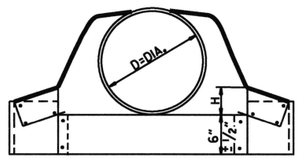
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS



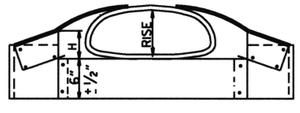
PLAN



SECTION A-A



CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

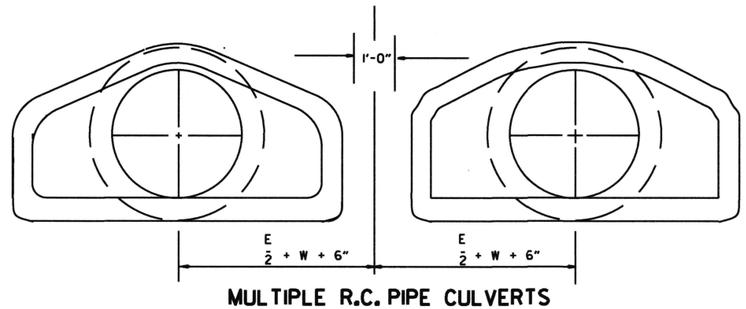
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
INCHES							
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

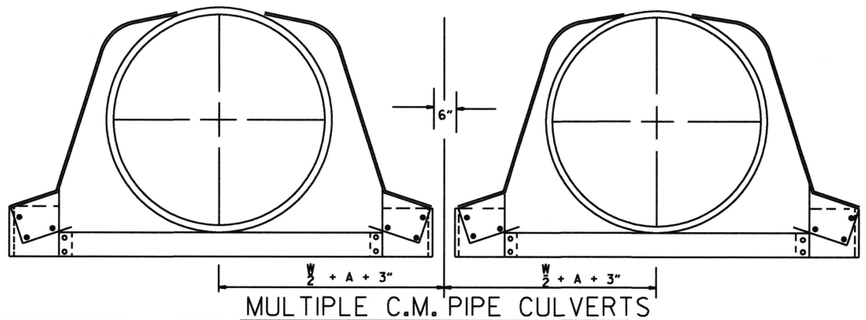
EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	L 1½" ±	W 2" ±	S	GAUGE
INCHES									
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
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

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



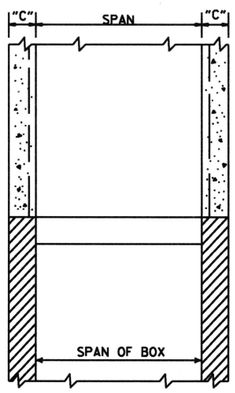
MULTIPLE C.M. PIPE CULVERTS

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

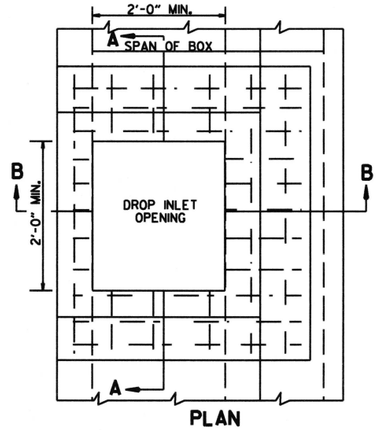
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

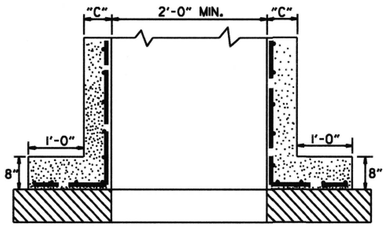
STANDARD DRAWING FES-2



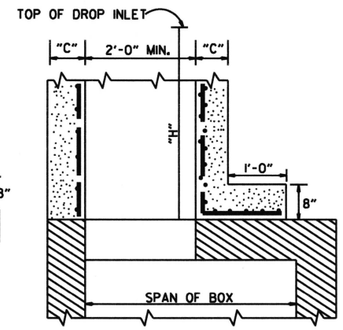
SECTION B-B



PLAN

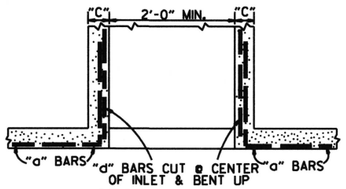


SECTION A-A

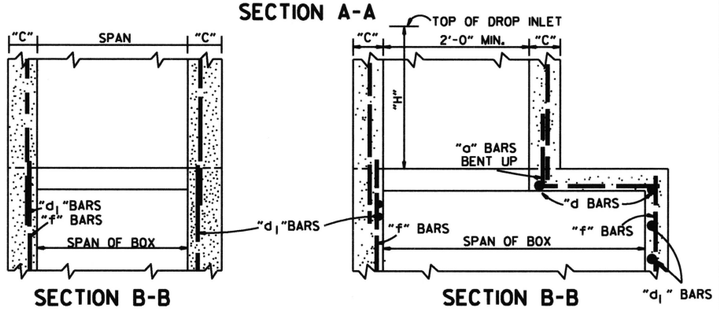


SECTION B-B

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



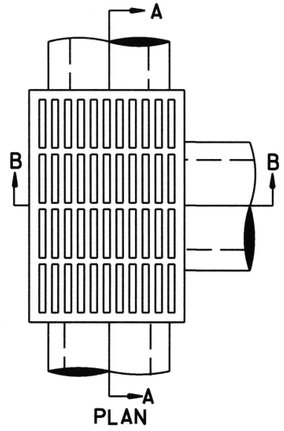
SECTION A-A



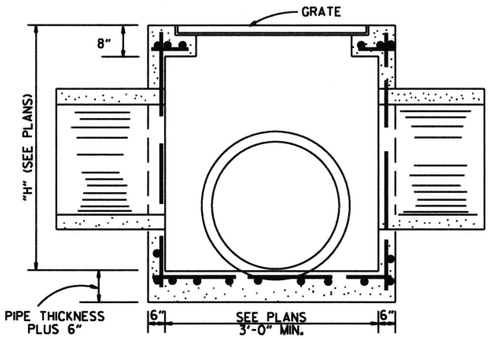
SECTION B-B SECTION B-B

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

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

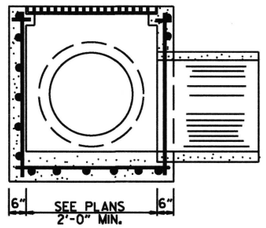


PLAN



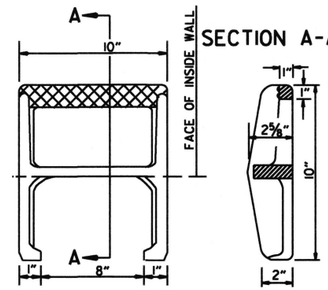
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)

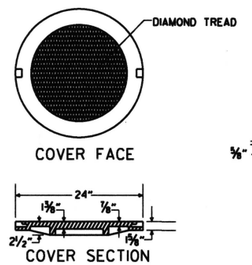


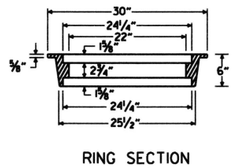
APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

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

DETAIL OF STEP FOR DROP INLET

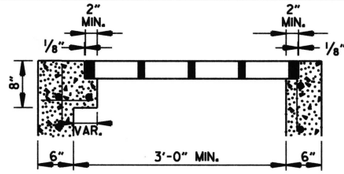




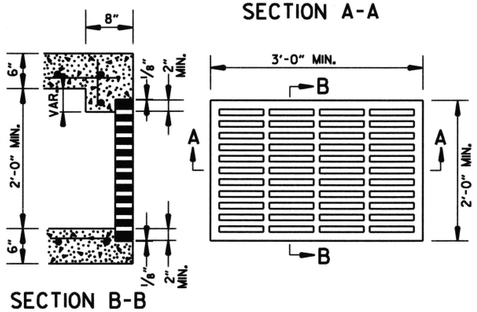
RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



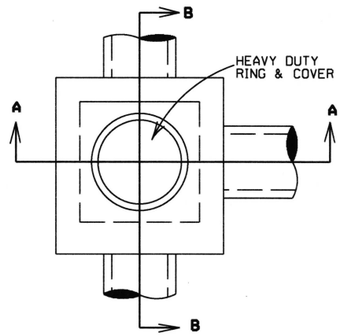
SECTION A-A



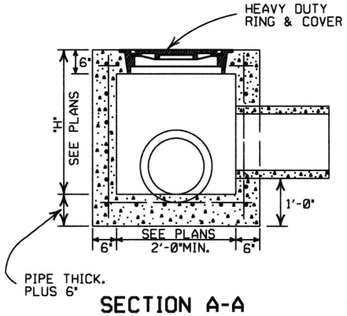
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

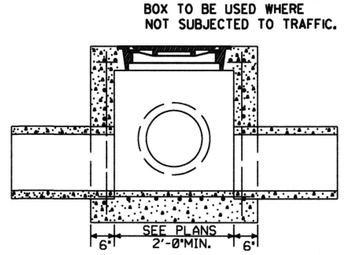


PLAN



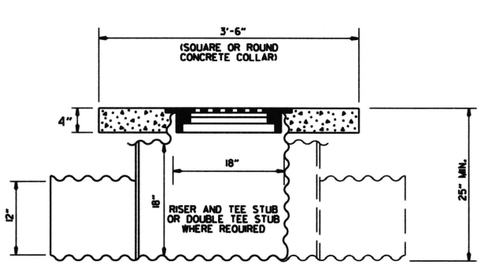
SECTION A-A

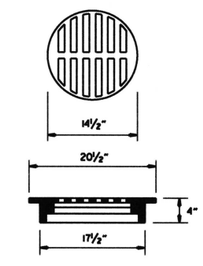
NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

JUNCTION BOX (TYPE E)





DETAIL OF YARD DRAIN

GENERAL NOTES:

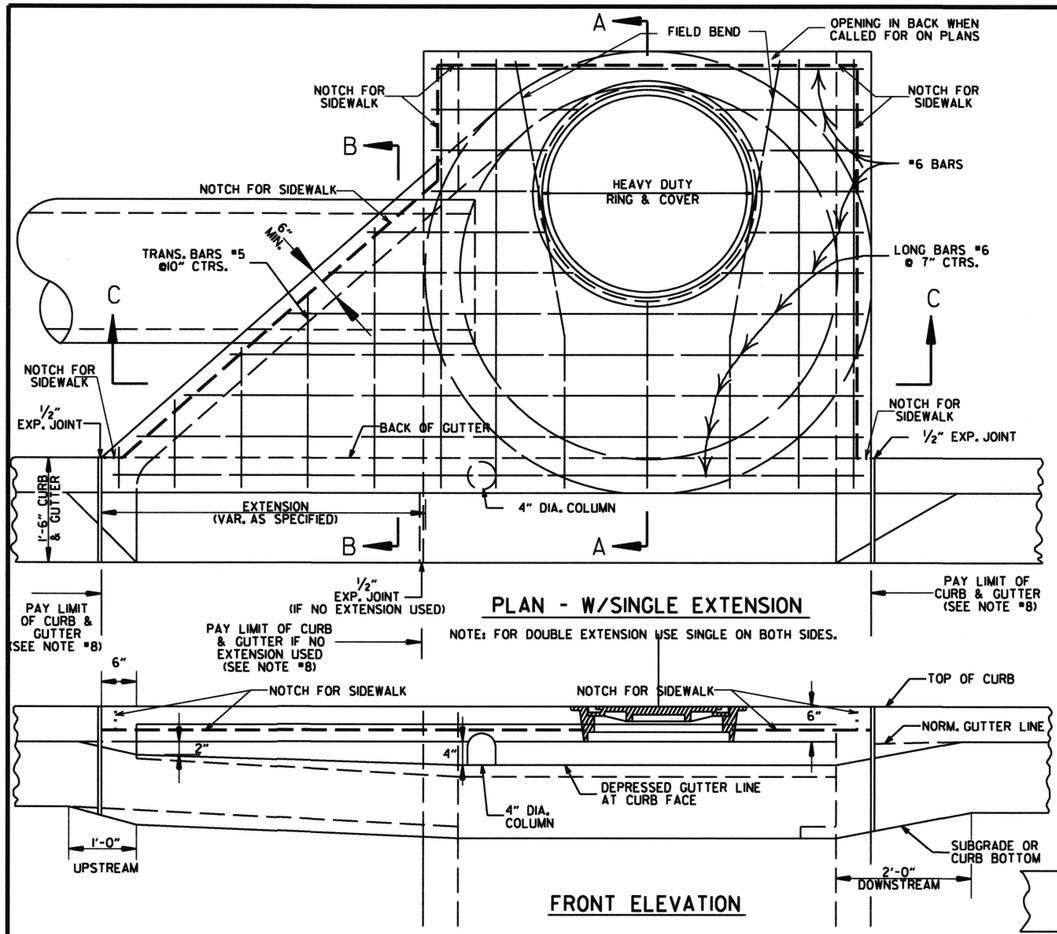
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS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

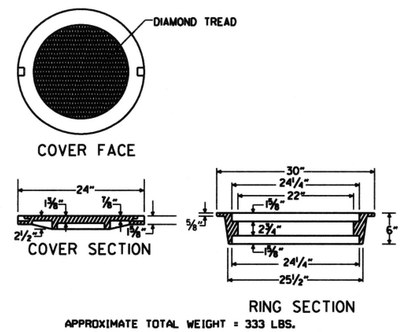
DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI (TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

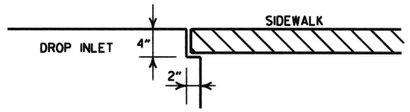
STANDARD DRAWING FPC-9



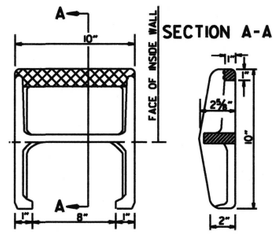


HEAVY DUTY RING & COVER

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



DETAIL OF NOTCH FOR SIDEWALKS

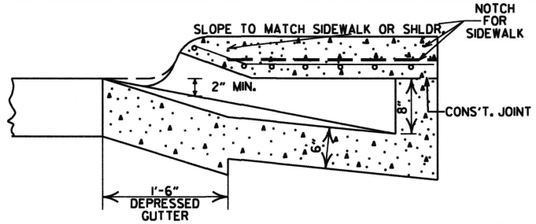


APPROX. WEIGHT = 11 LBS. (CAST IRON)

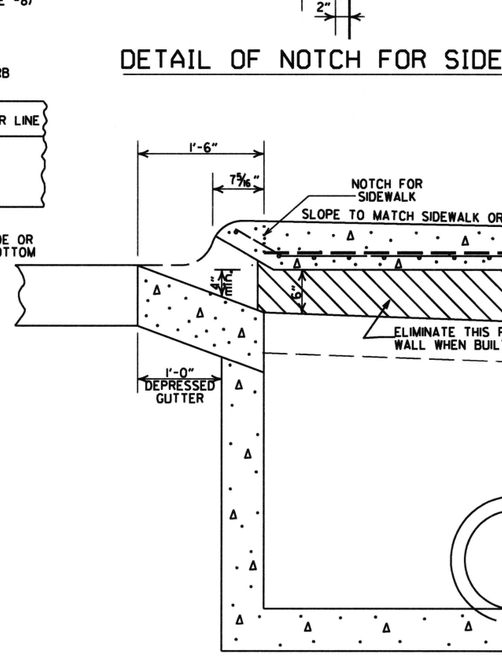
PLAN

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

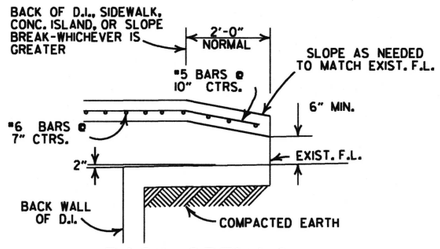
DETAIL OF STEP FOR DROP INLET



SECTION B-B



SECTION A-A



BACK OPENING

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

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

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

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 8, ALL OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO.12	11-30-89
5-23-89	ADDED NOTE 8 MINIMUM WALL THICKNESS	5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	6,39-7-15-88
1-14-87	MODIFIED WALL THICKNESS	7,8,1-14-87
6-12-87	ISSUED	4-6-9-2-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

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)(1).

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

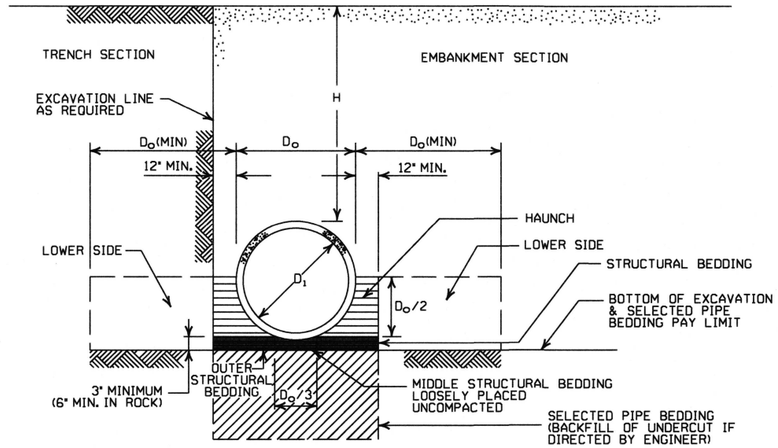
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS 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.

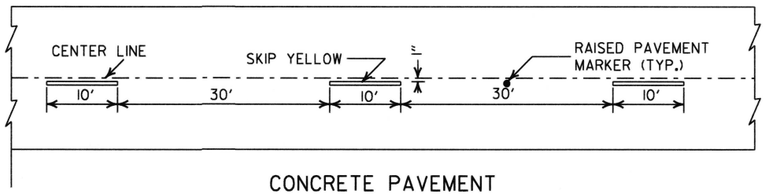
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

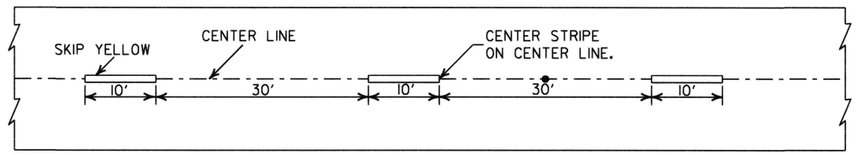
CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

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.

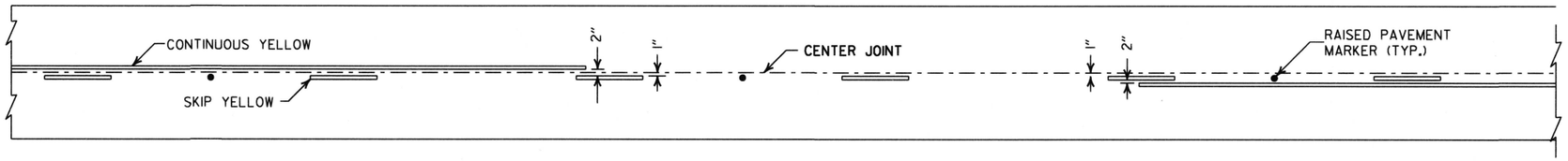


CONCRETE PAVEMENT

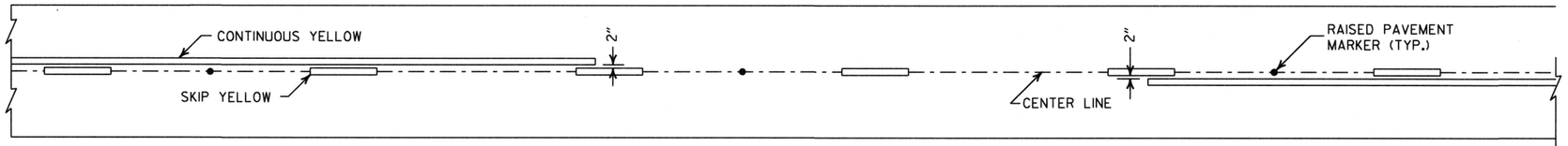


ASPHALT PAVEMENT

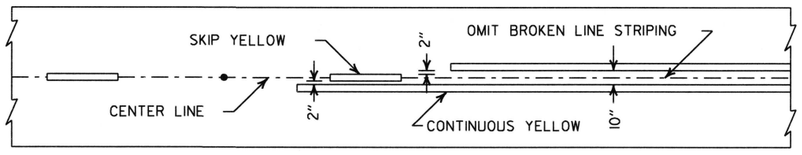
BROKEN LINE STRIPING



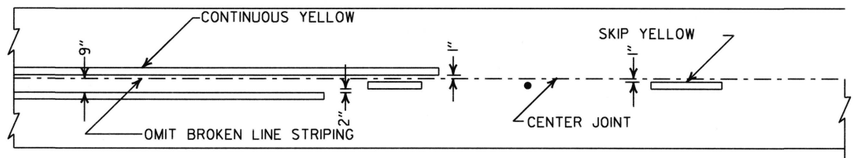
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

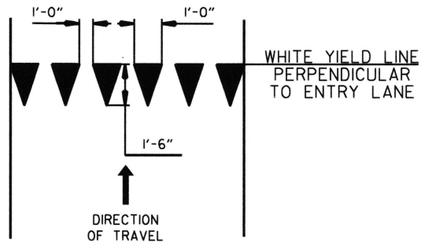


ASPHALT PAVEMENT

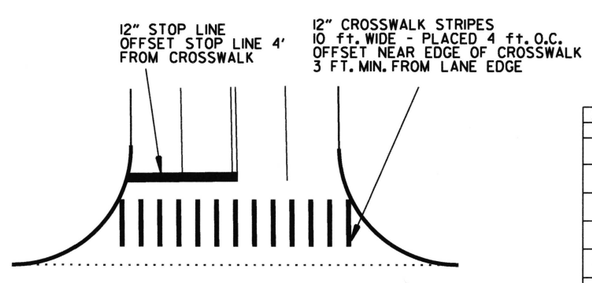


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

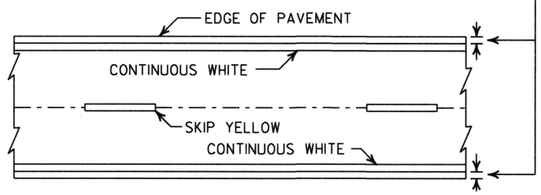


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

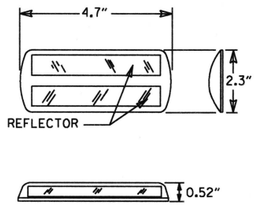
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



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

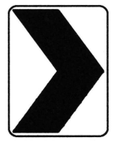
STANDARD DRAWING PM-1



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"

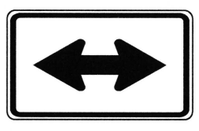


W3-2
36"X36"



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"



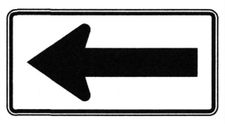
R1-3P
18"X6"



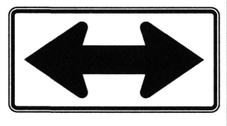
M6-5
21"X15"



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



W1-6
48"X24"



W1-7
48"X24"



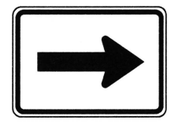
W2-3
30"X30"
(LT. or RT.)



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"



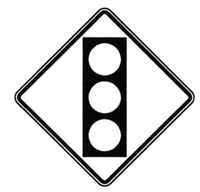
W1-2
30"X30"
(LT. or RT.)



W2-4
30"X30"



W10-1
36" DIAMETER



W3-3
36"X36"



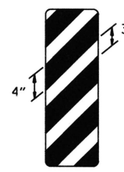
M6-2
21"X15"



S4-3P
24"X8"



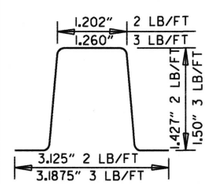
S4-2P
24"X10"



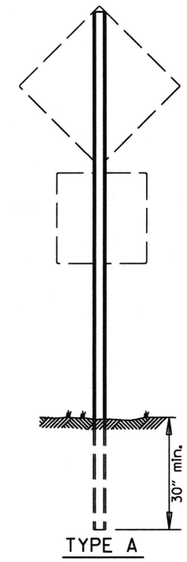
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

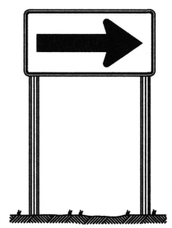


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

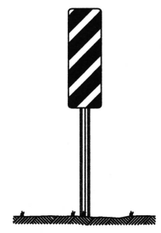


TYPE A

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



TYPE B



TYPE C

MINIMUM WEIGHT

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

STANDARD HIGHWAY SIGNS

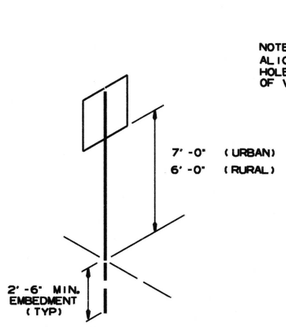
SUPPORT ASSEMBLIES

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

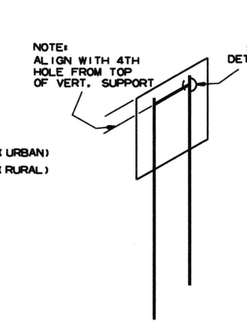
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

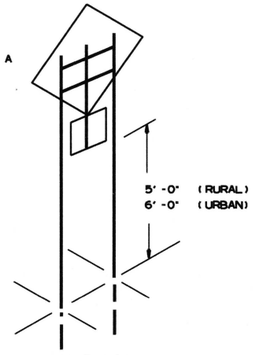
STANDARD DRAWING SHS-1



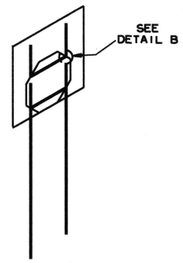
U-1



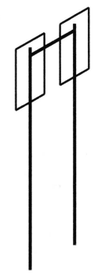
U-2



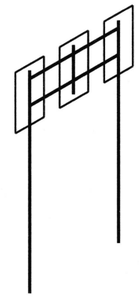
U-2 (A)



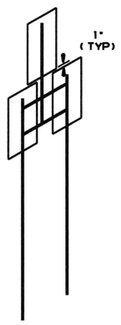
U-2 (B)



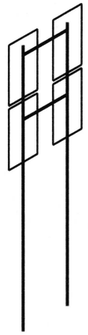
U-2 (1)



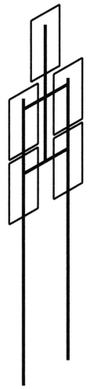
U-2 (2)



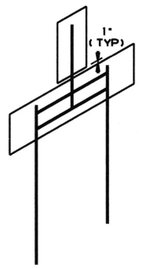
U-2 (3)



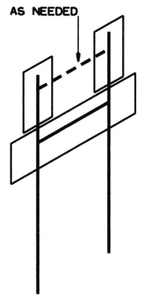
U-2 (4)



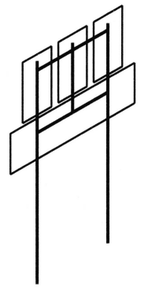
U-2 (5)



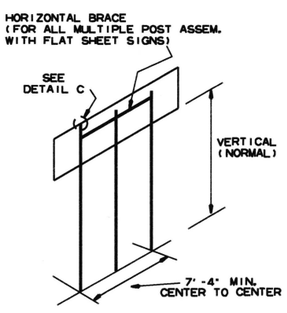
U-2 (6)



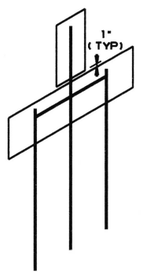
U-2 (7)



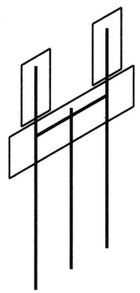
U-2 (8)



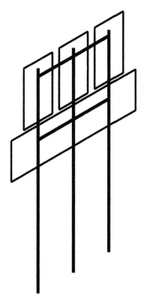
U-3



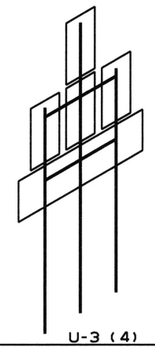
U-3 (1)



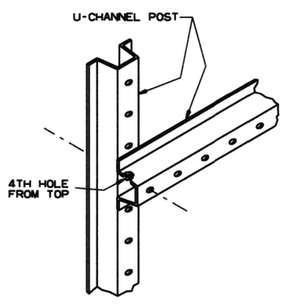
U-3 (2)



U-3 (3)

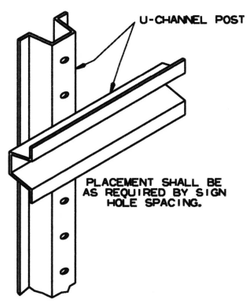


U-3 (4)



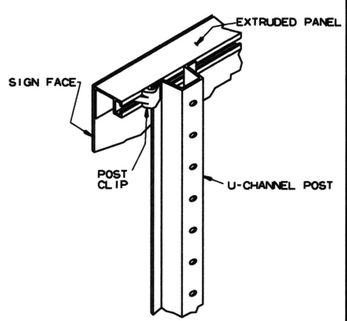
DETAIL A

SHOWING HORIZONTAL BRACE



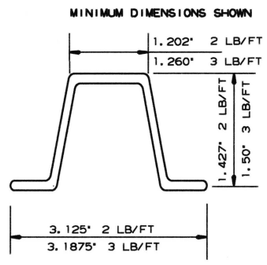
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



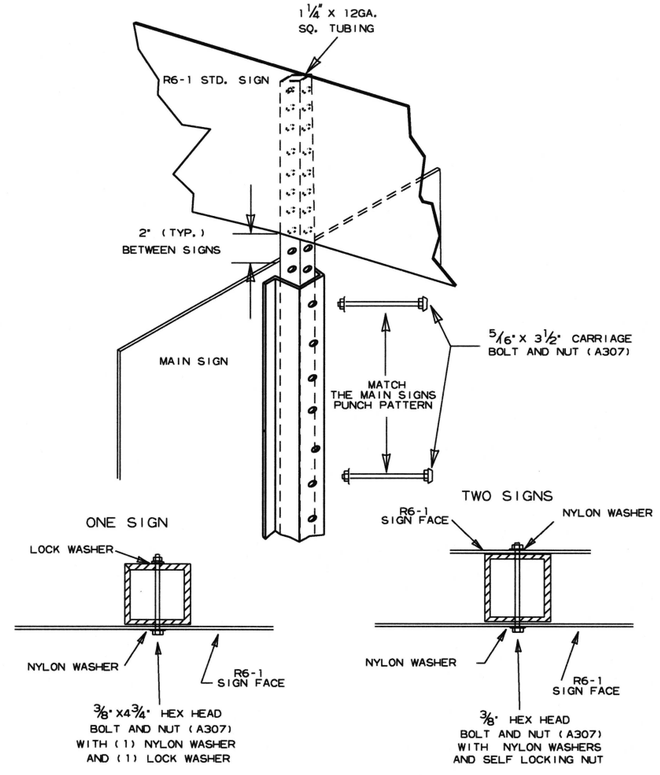
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



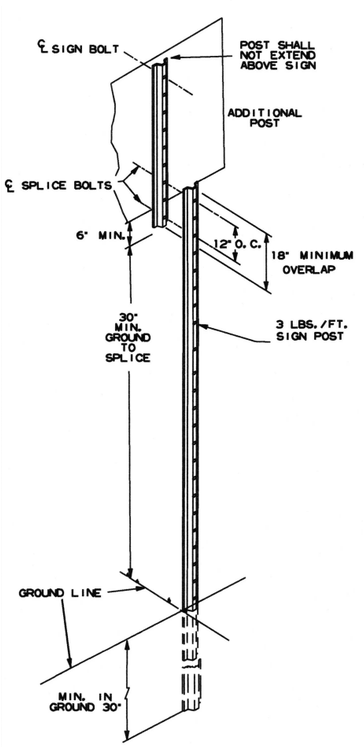
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

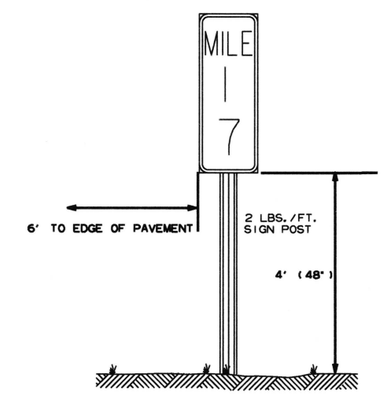
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

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

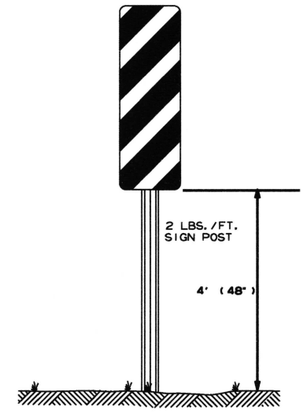
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

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



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
7-25-19	REVISED CARRIAGE BOLT WITH MATERIAL REQUIREMENT	
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

R1-1



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

R1-2



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

R2-1



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

W3-5



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

W3-5a



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

R4-1



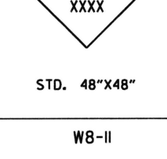
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



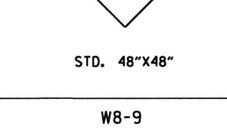
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



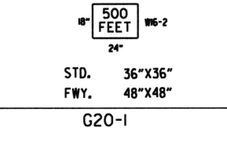
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



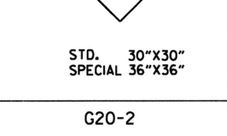
48"X30"

RII-3A



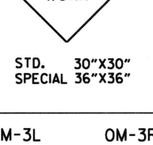
60"X30"

RII-4



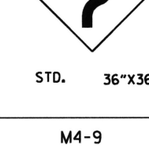
60"X30"

W21-5a



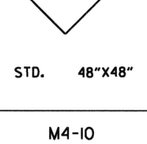
STD. 36"X36"
FWY. 48"X48"

WI-1



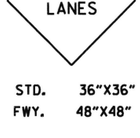
STD. 36"X36"
FWY. 48"X48"

WI-2



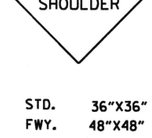
STD. 36"X36"
FWY. 48"X48"

WI-3



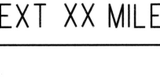
STD. 48"X48"

WI-4



STD. 48"X48"

WI-6



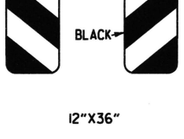
STD. 48"X24"
SPECIAL 60"X30"

WI-8



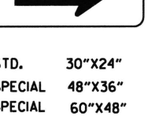
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

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

W8-9

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

G20-1

60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

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

M4-10

48"X18"

R55-1

36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

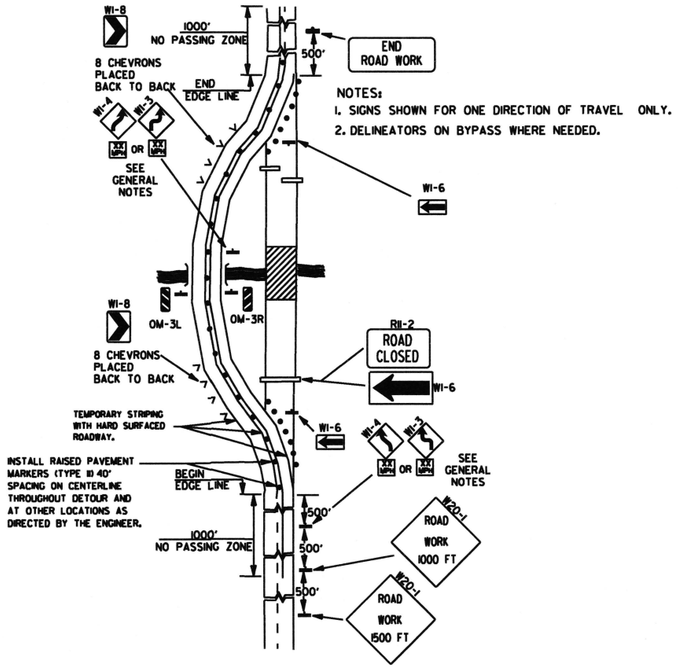
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

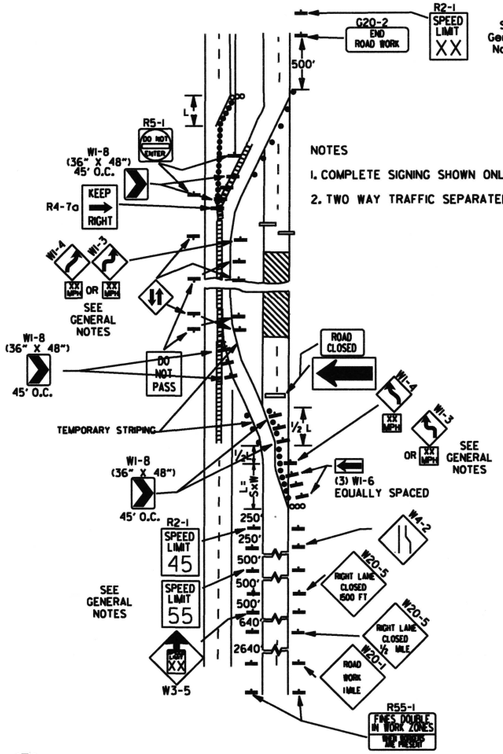
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



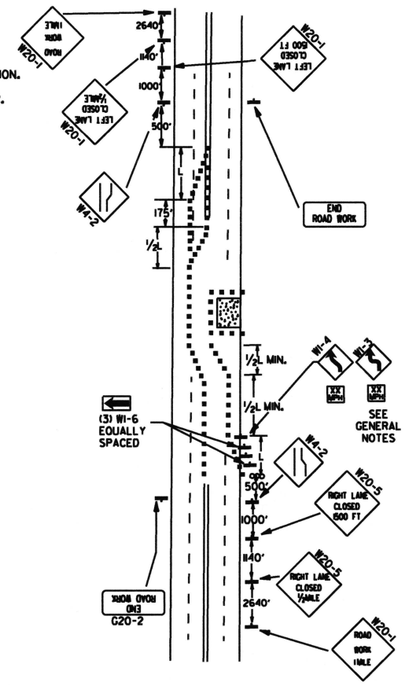
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

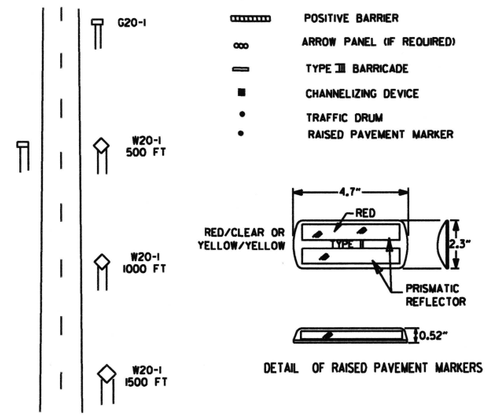


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

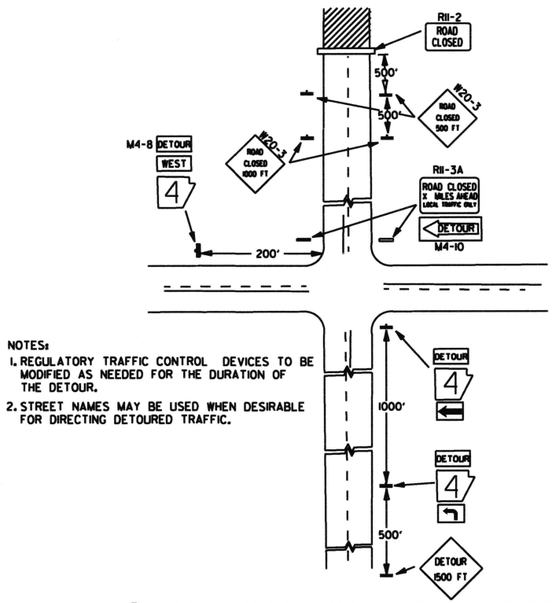
L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

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

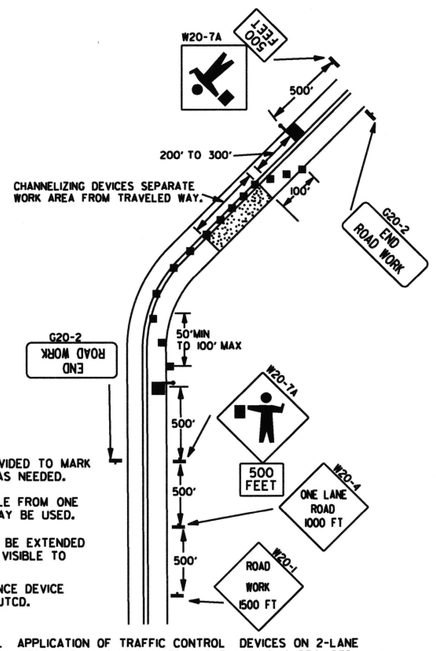
GENERAL NOTES:

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



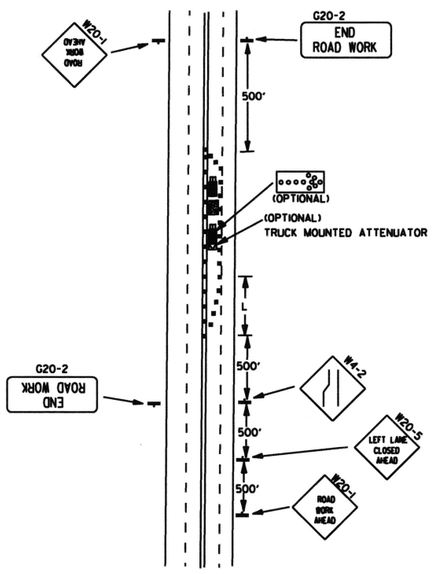
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



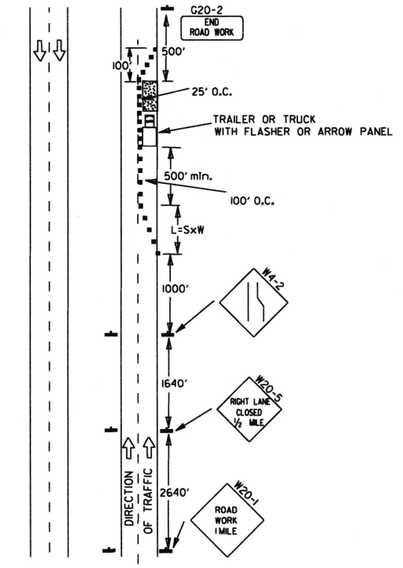
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
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	

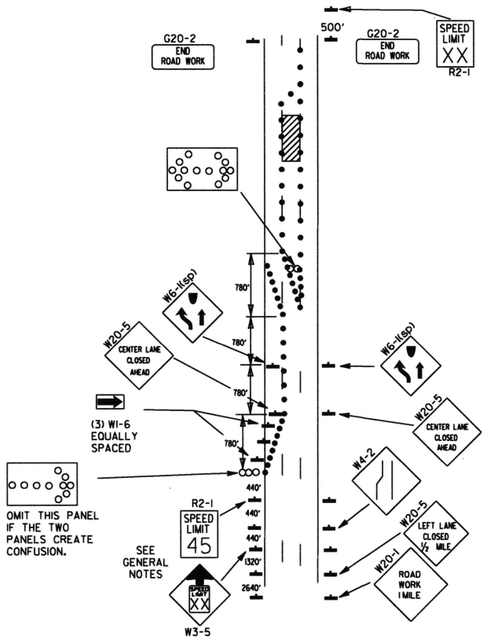
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

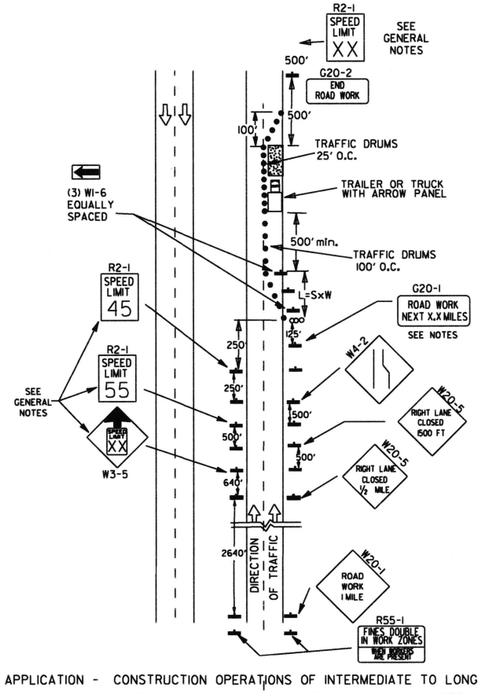
STANDARD DRAWING TC-2



(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:

ooo ARROW PANEL (IF REQUIRED)

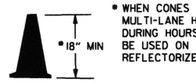
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

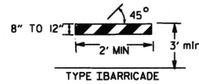
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL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

CHANNELIZING DEVICES



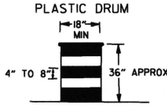
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

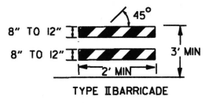
CONES



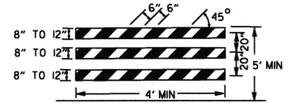
TYPE I BARRICADE

PLASTIC DRUM



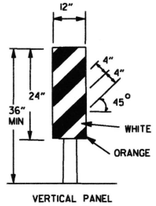


TYPE II BARRICADE



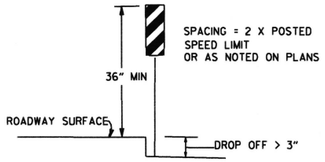
TYPE III BARRICADE

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

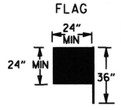


VERTICAL PANEL
VP-1R

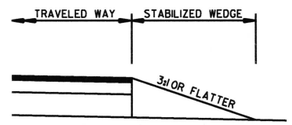
VERTICAL PANEL PLACEMENT



FLAG



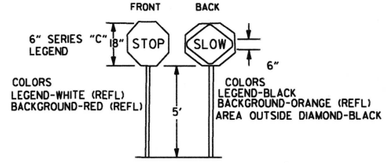
FLAG SHALL BE OF GOOD GRADE RED MATERIAL



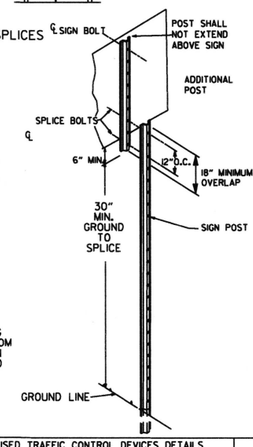
STABILIZED WEDGE

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

STOP SLOW PADDLE



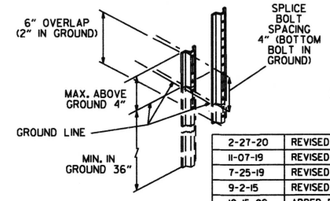
DETAIL OF SPLICES

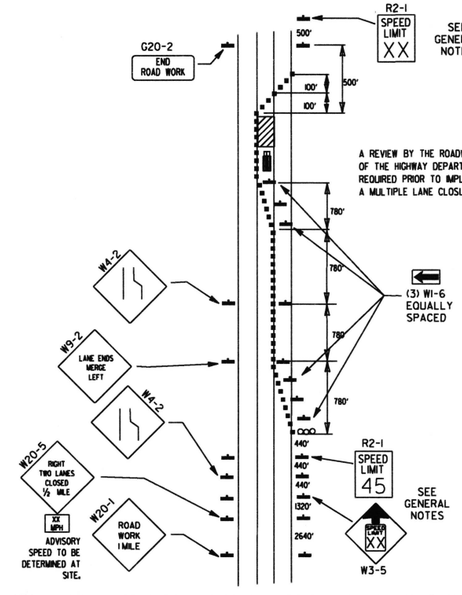


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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

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





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.

TRAFFIC CONTROL DEVICES

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

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

GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. 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.

DATE	REVISION	FILMED
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	

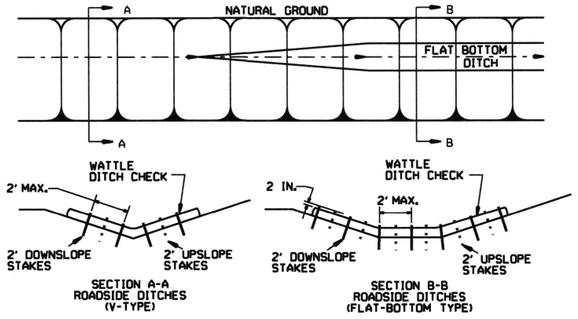
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

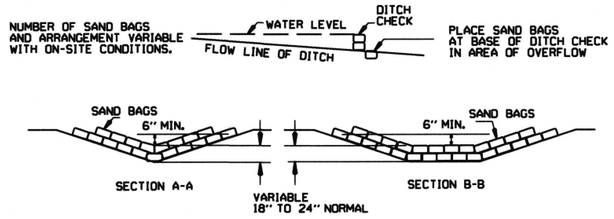
STANDARD DRAWING TC-3

GENERAL NOTES

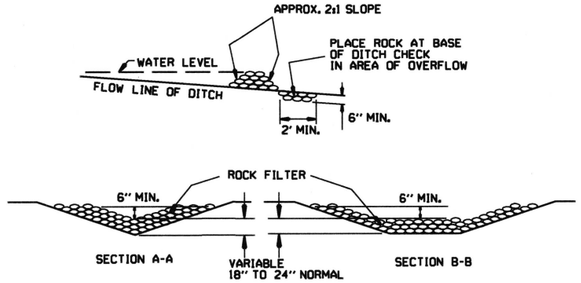
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

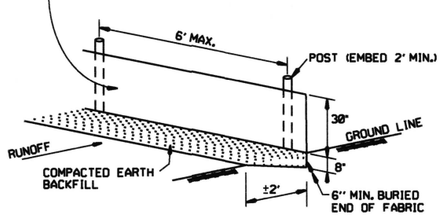


ROCK DITCH CHECK (E-6)

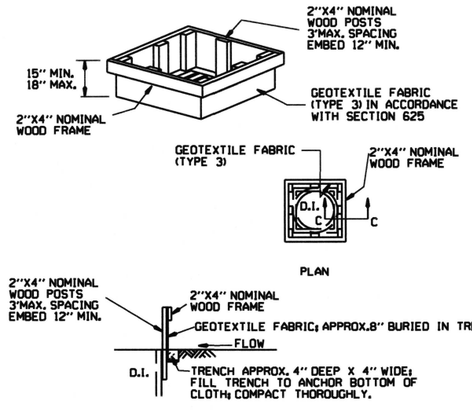
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

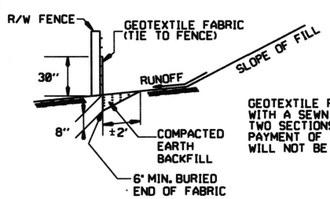
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

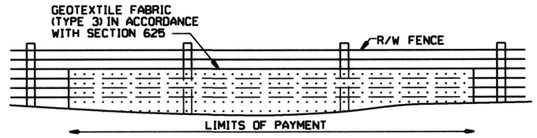


DROP INLET SILT FENCE (E-7)



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.



ELEVATION

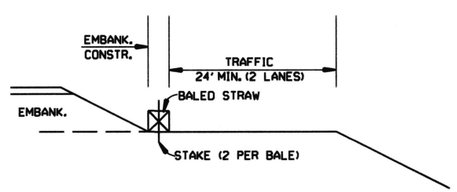
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

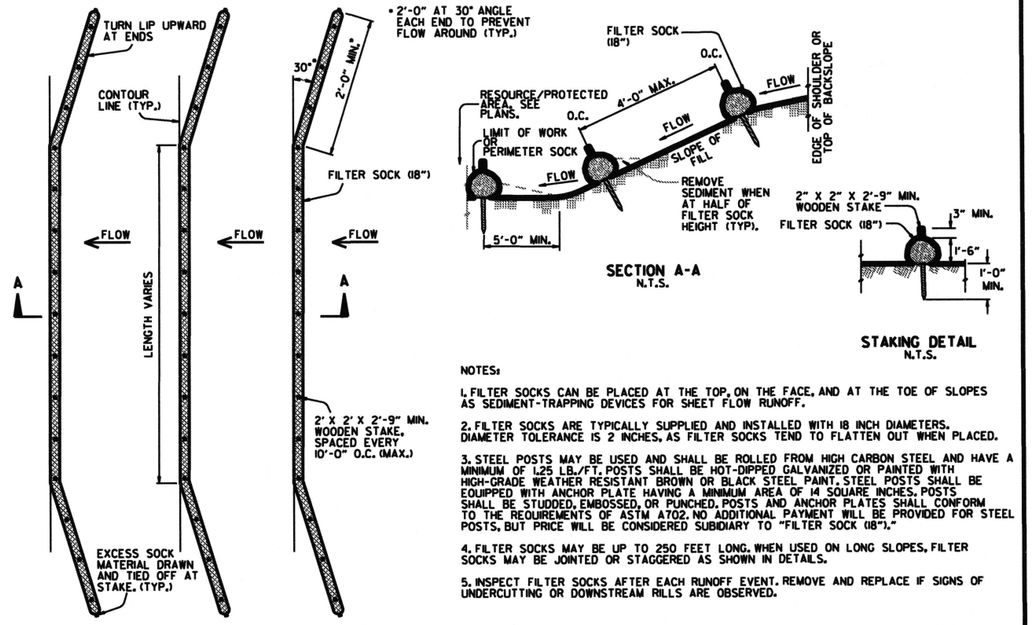
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

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



BALED STRAW FILTER BARRIER (E-2)



NOTES:

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

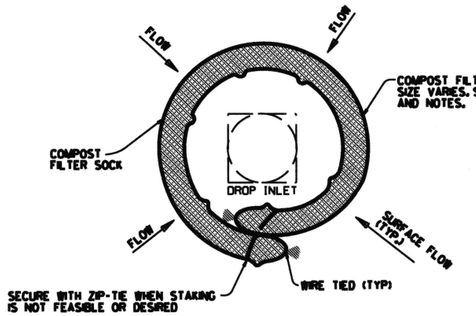
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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

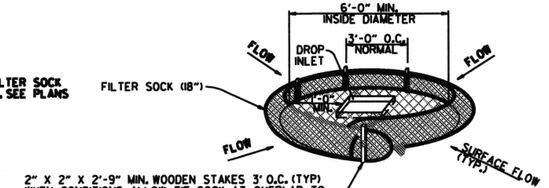
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

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.

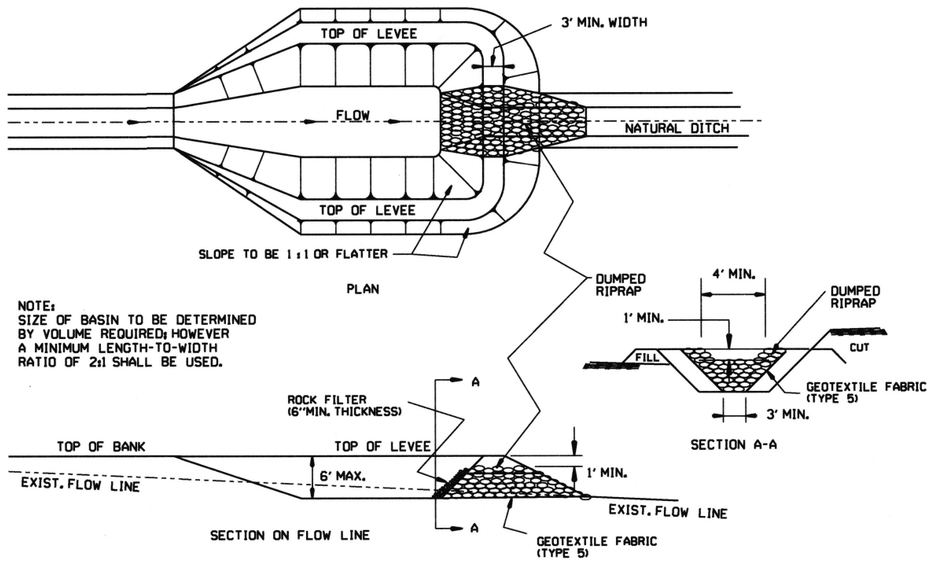
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

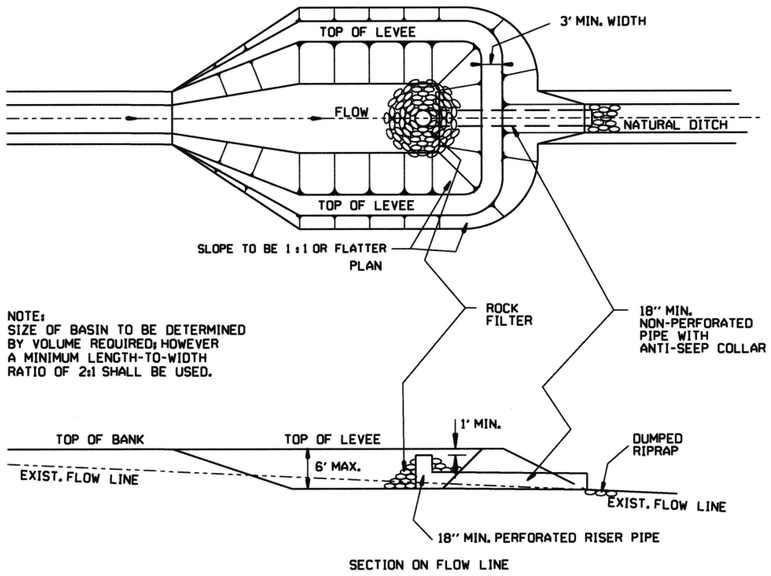
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

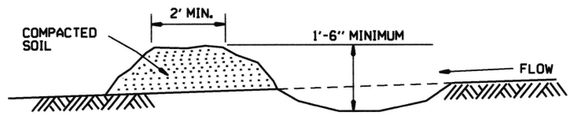
STANDARD DRAWING TEC-1



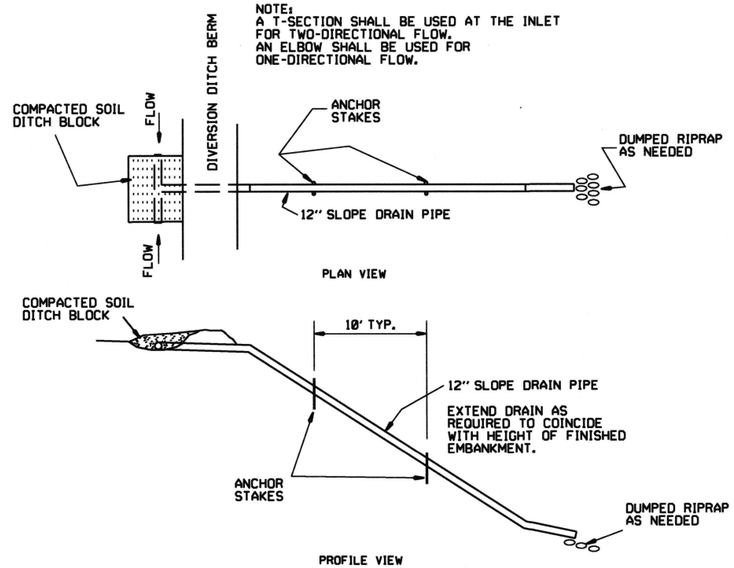
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



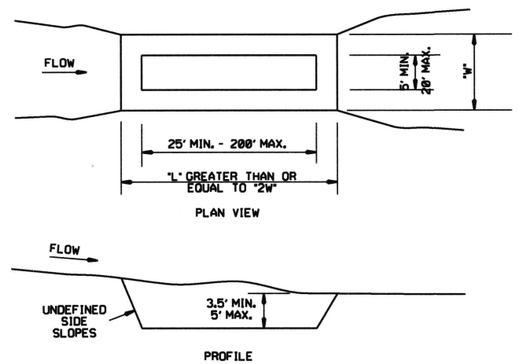
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

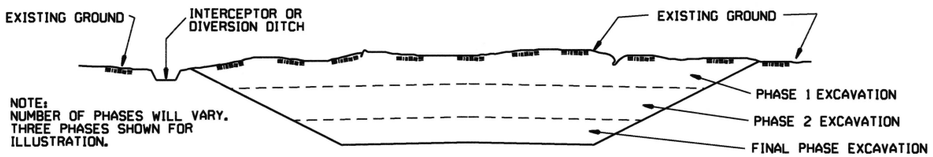
STANDARD DRAWING TEC-2

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



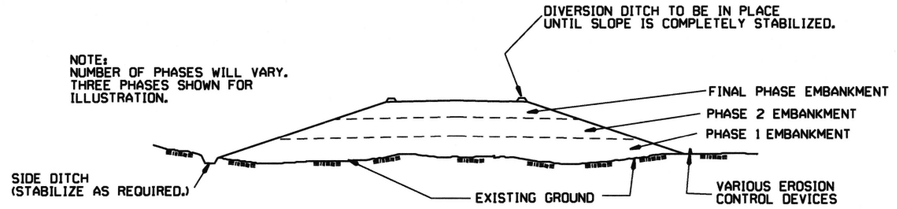
GENERAL NOTE

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