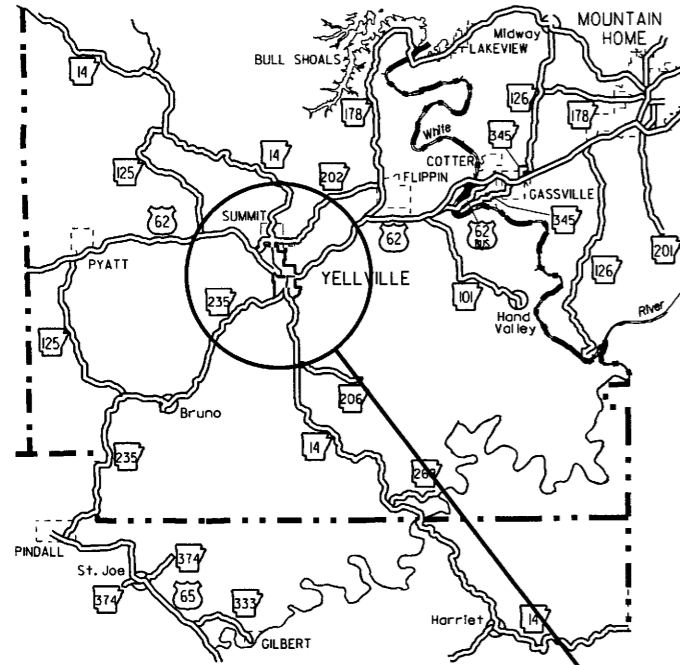


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C45002	1	25
				4 YELLVILLE 4 <sup>TH</sup> ST. IMPROVEMENTS (S)				



VICINITY MAP

PROJECT LOCATION

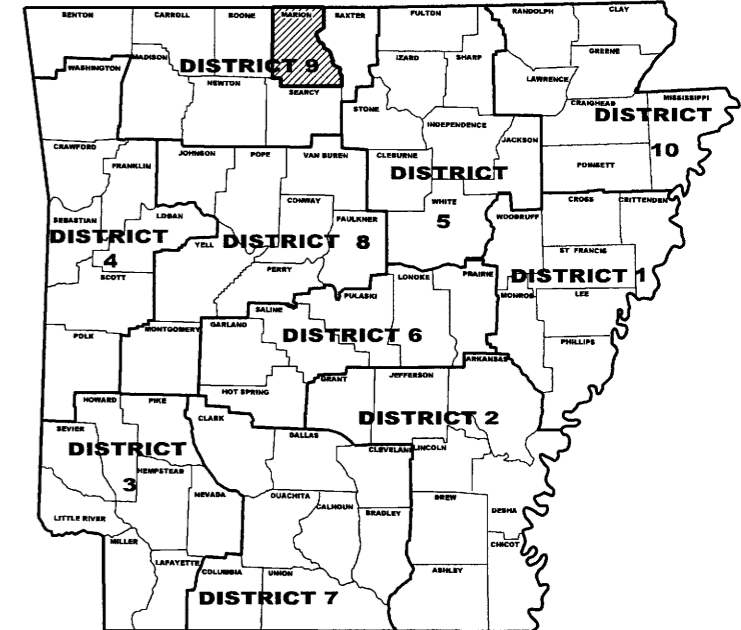
**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD**

**YELLVILLE 4<sup>TH</sup> ST. IMPROVEMENTS (S)**

**4<sup>TH</sup> STREET  
MARION COUNTY**

**JOB C45002**

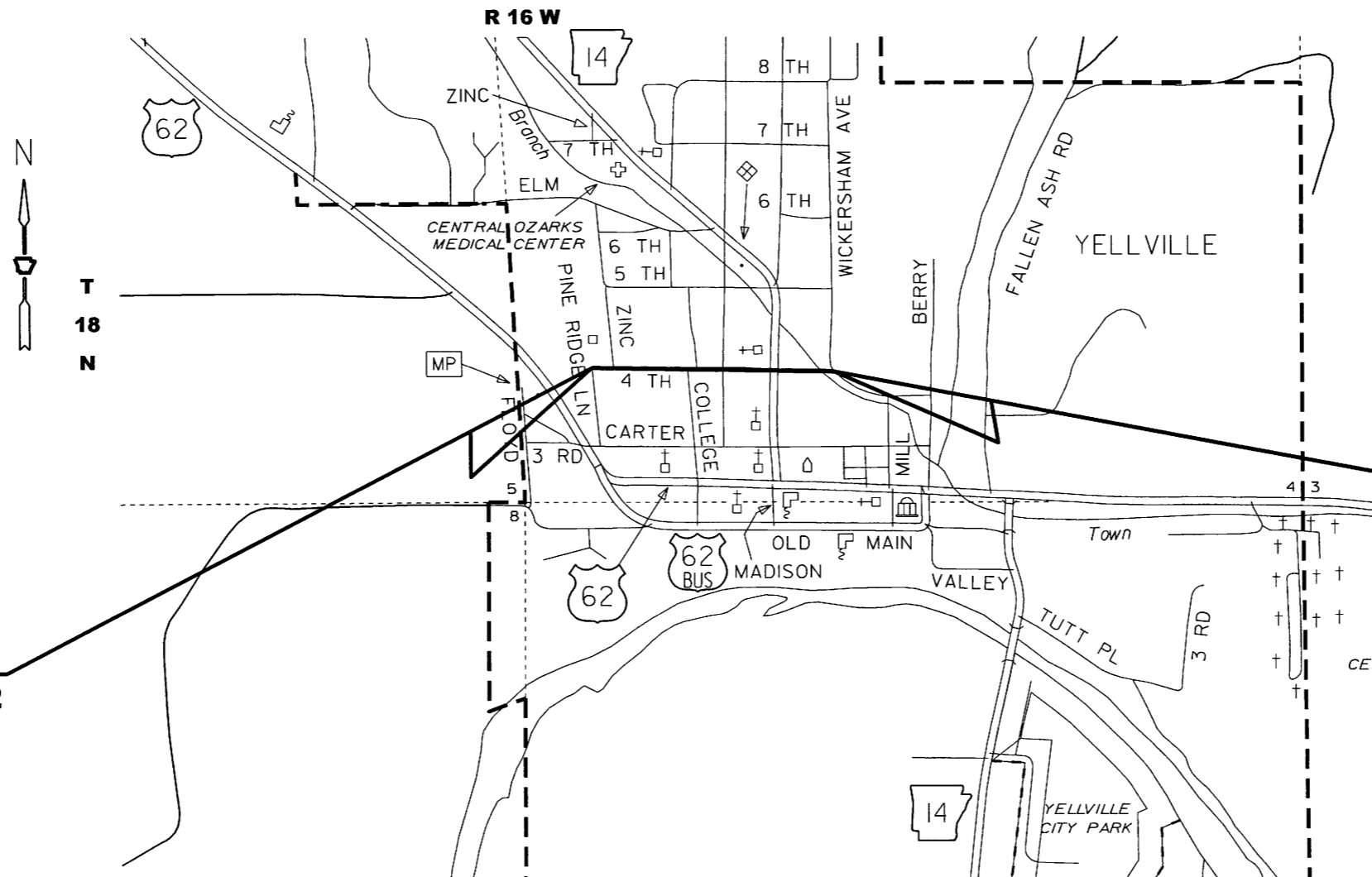
**NOT TO SCALE**



**ARKANSAS HIGHWAY DIST. 9**

**DESIGN TRAFFIC DATA**

<b>DESIGN YEAR</b>	<b>2037</b>
<b>2017 ADT</b>	<b>500</b>
<b>2037 ADT</b>	<b>600</b>
<b>2037 DHV</b>	<b>90</b>
<b>DIRECTIONAL DISTRIBUTION</b>	<b>0.60</b>
<b>TRUCKS</b>	<b>3%</b>
<b>DESIGN SPEED</b>	<b>20 MPH</b>



**STA. 100+00.00  
BEGIN JOB C45002**

**STA. 115+45.00  
END JOB C45002**

	BEGIN	MID-POINT	END
<b>LATITUDE</b>	<b>N36°13'41.5"</b>	<b>N36°13'41.2"</b>	<b>N36°13'40.9"</b>
<b>LONGITUDE</b>	<b>W92°41'19.6"</b>	<b>W92°41'10.0"</b>	<b>W92°41'00.8"</b>

<b>GROSS LENGTH OF PROJECT</b>	<b>1545.00 FEET OR 0.293 MILES</b>
<b>NET " " ROADWAY</b>	<b>1545.00 " " 0.293 "</b>
<b>NET " " BRIDGE</b>	<b>0000.00 " " 0.000 "</b>
<b>NET " " PROJECT</b>	<b>1545.00 " " 0.293 "</b>

APPROVED



**4-18-17**  
DEPUTY DIRECTOR  
AND CHIEF ENGINEER

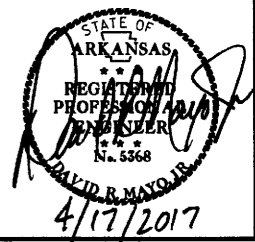
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C45002	2	25
				4 INDEX OF SHEETS AND STANDARD DRAWINGS				

**INDEX OF SHEETS**

SHEET NO.	TITLE
1.	TITLE SHEET
2.	INDEX OF SHEETS AND STANDARD DRAWINGS
3.	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4-10.	TYPICAL SECTION OF IMPROVEMENT AND SPECIAL DETAILS
11.	TEMPORARY EROSION CONTROL DETAILS
12-13.	QUANTITY SHEETS
14.	SUMMARY OF QUANTITIES AND REVISIONS
15-17.	SURVEY CONTROL DETAILS
18-21.	PLAN AND PROFILE SHEETS
22-25.	CROSS SECTIONS

**ROADWAY STANDARD DRAWINGS**

DRWG. NO.	TITLE	DATE
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-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	05-12-16
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	02-27-14
SI-1	DETAILS OF SPECIAL ITEMS	09-12-13
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TEC-1	TEMPORARY EROSION CONTROL DEVICES	12-15-11
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05


  
 STATE OF ARKANSAS  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 5368  
 DAVID R. MAYO, P.E.  
 4/17/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C45002	3	25
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
102-2	ISSUANCE OF PROPOSALS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1	AGGREGATE BASE COURSE
400-1	TACK COATS
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
JOB C45002	BIDDING REQUIREMENTS AND CONDITIONS
JOB C45002	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB C45002	DENSITIES FOR ACHM SURFACE COURSE
JOB C45002	EXTENSION FOR PIPE CULVERTS
JOB C45002	MANDATORY ELECTRONIC CONTRACT
JOB C45002	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB C45002	PLASTIC PIPE
JOB C45002	RECYCLED ASPHALT SHINGLES
JOB C45002	REMOVING AND REINSTALLING SIGNS
JOB C45002	SHORING FOR CULVERTS
JOB C45002	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB C45002	WARM MIX ASPHALT

**GENERAL NOTES**

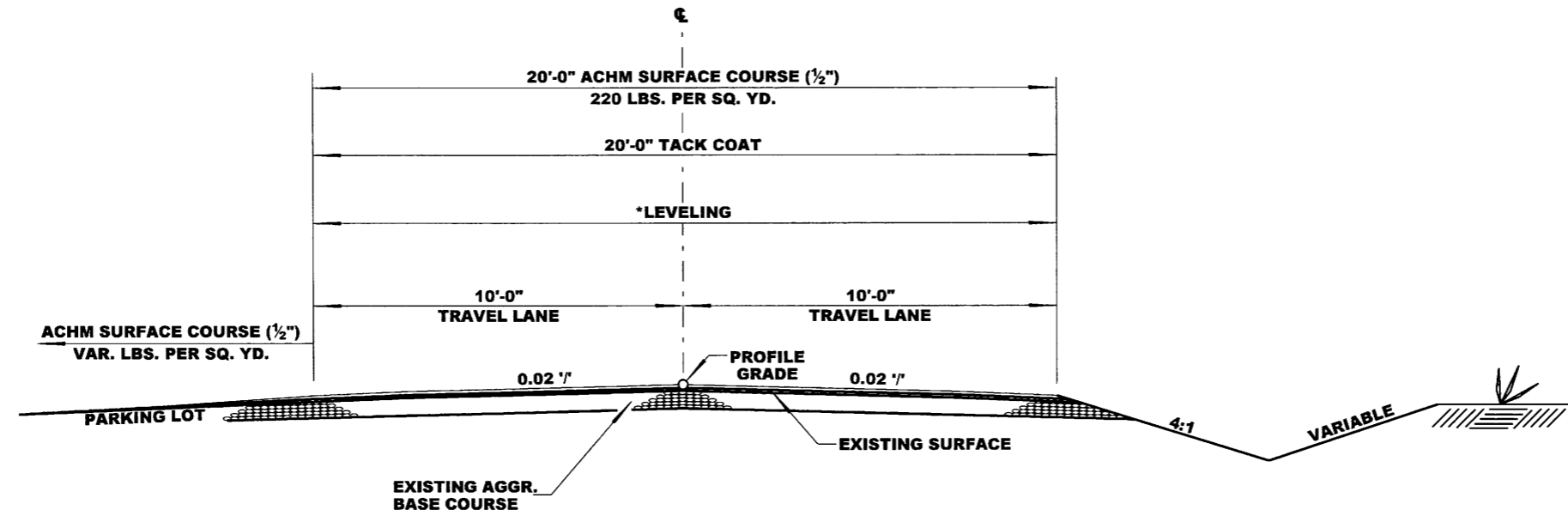
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. UTILITIES INTERFERING WITH CONSTRUCTION SHALL BE MOVED BY THE OWNERS.
3. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014.
4. ALL SALVAGEABLE PIPE CULVERTS SHALL BE STORED ON THE RIGHT-OF-WAY AND REMAIN THE PROPERTY OF THE CITY.
5. EXISTING RIGHT-OF-WAY LINES SHOWN ON THE PLANS ARE APPROXIMATE. LOCATIONS TO BE VERIFIED BY THE CITY OF YELLVILLE.
6. THE ROAD WILL REMAIN OPEN THROUGH THE COMPLETION OF THE PROJECT.
7. 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.
8. LEVELING SHALL BE PLACED AND COMPACTED IN A SEPARATE OPERATION UNLESS DIRECTED BY THE ENGINEER.
9. DRIVEWAY EXCAVATION WILL BE CONSIDERED PART OF THE OTHER ITEMS OF WORK. DISPOSAL OF MATERIAL PRODUCED FROM DRIVEWAY EXCAVATION SHALL BE AS DIRECTED BY THE ENGINEER. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.
10. ASPHALT AND OTHER DEBRIS RESULTING FROM PREPARATORY WORK SHALL BE REMOVED FROM THE PROJECT. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.
11. EDGE LINES SHALL NOT BE PLACED UNTIL AFTER ALL MATERIAL HAS BEEN PLACED OR PULLED UP AGAINST THE EDGE OF PAVEMENT.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002		4	25

4

TYPICAL SECTIONS OF IMPROVEMENT

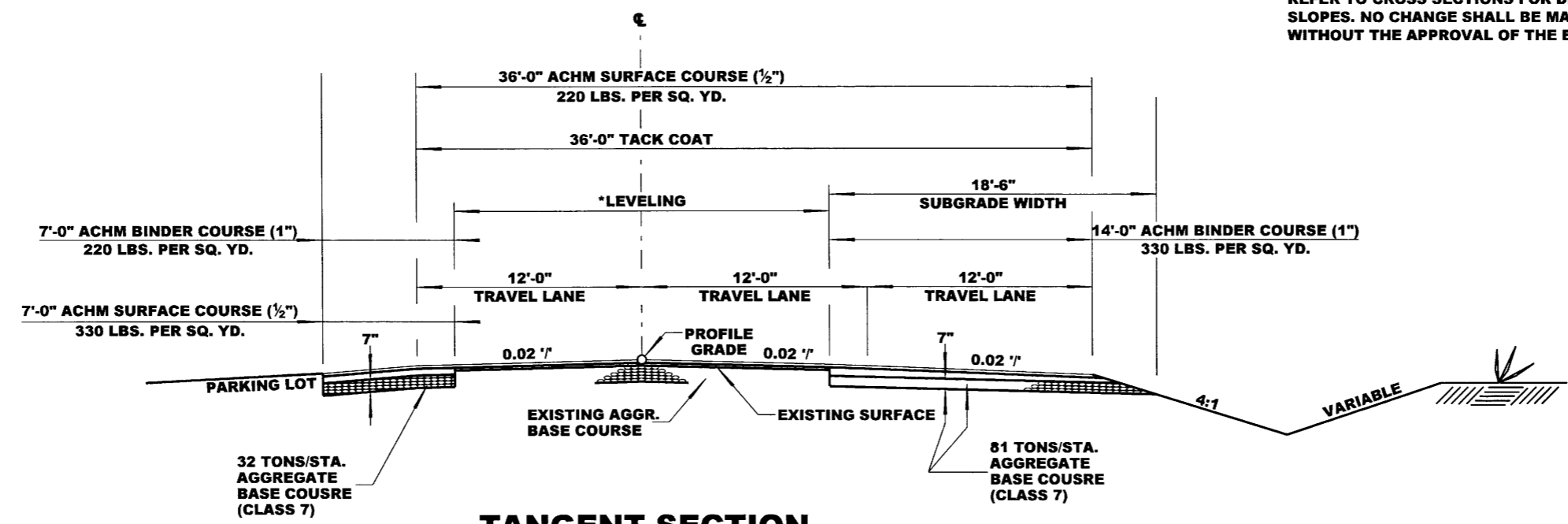


**TANGENT SECTION**

STA. 109+04 - STA. 109+82

NOTE: AGGREGATE BASE TO BE PLACED AND SPREAD TO CONFORM TO TYPICAL SECTION. THE MATERIAL IN THE BASE COURSE SHALL BE UNIFORMLY COMPACTED, STABLE, AND FREE OF SEGREGATED AREAS. DENSITY REQUIREMENTS ARE NOT A PART OF THIS CONTRACT.

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

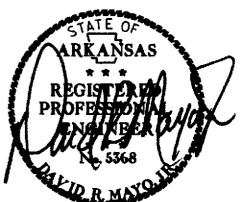


**TANGENT SECTION**

STA. 110+82 - STA. 111+82

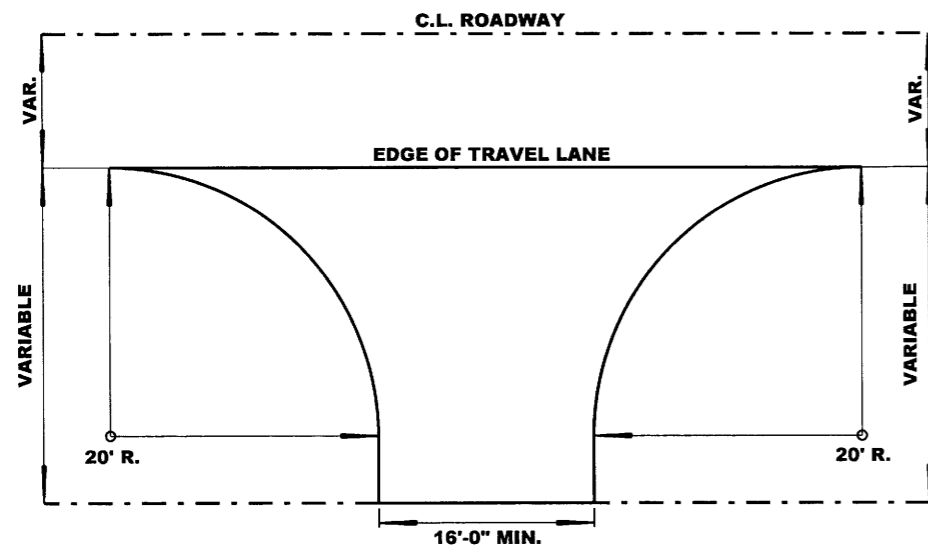
\* LOCATIONS AND APPLICATION RATES ARE AT THE DIRECTION OF THE ENGINEER. SEE QUANTITY SHEET FOR ESTIMATED AMOUNT.

**TYPICAL SECTIONS OF IMPROVEMENT**

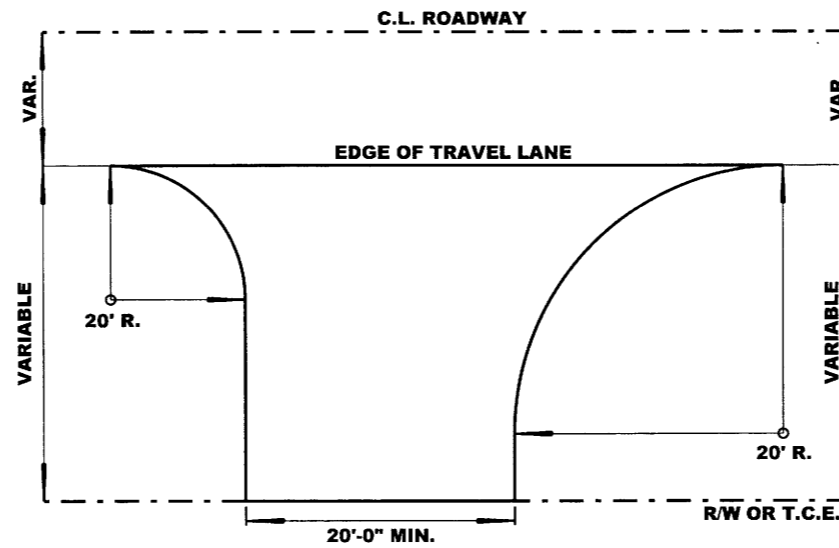


4/17/2017

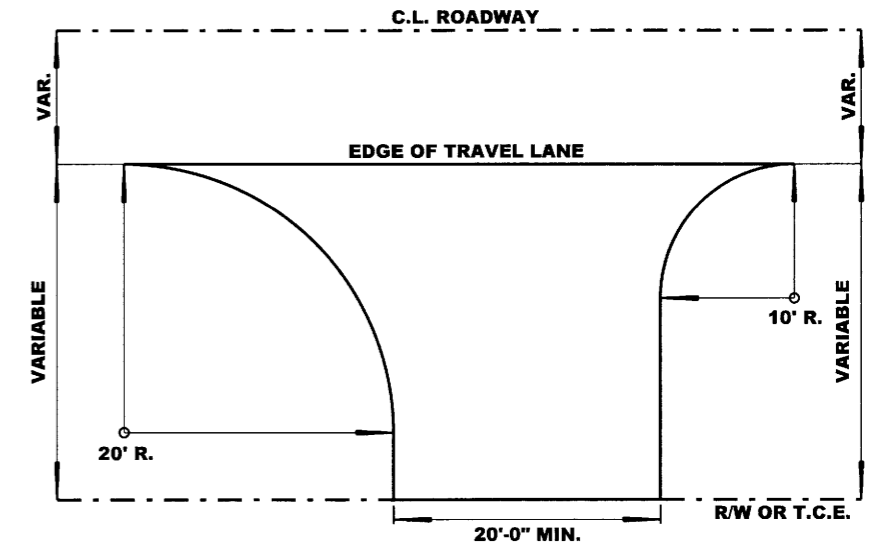
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				6	ARK.			
				JOB NO.	C45002		5	25
4 SPECIAL DETAILS								



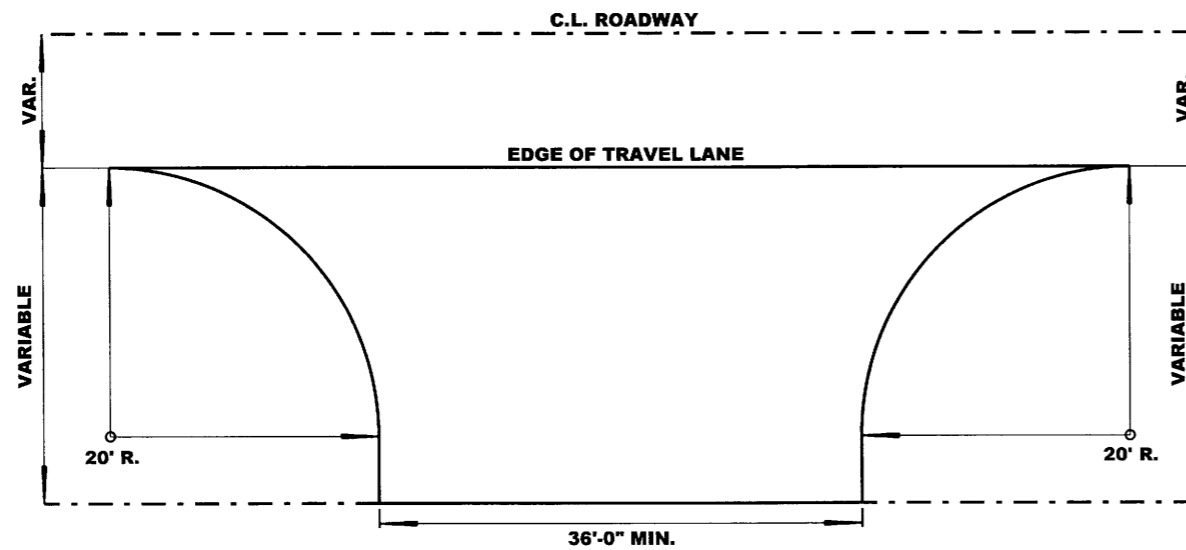
**DETAIL OF PRIVATE DRIVE**  
STA. 109+86 RT.



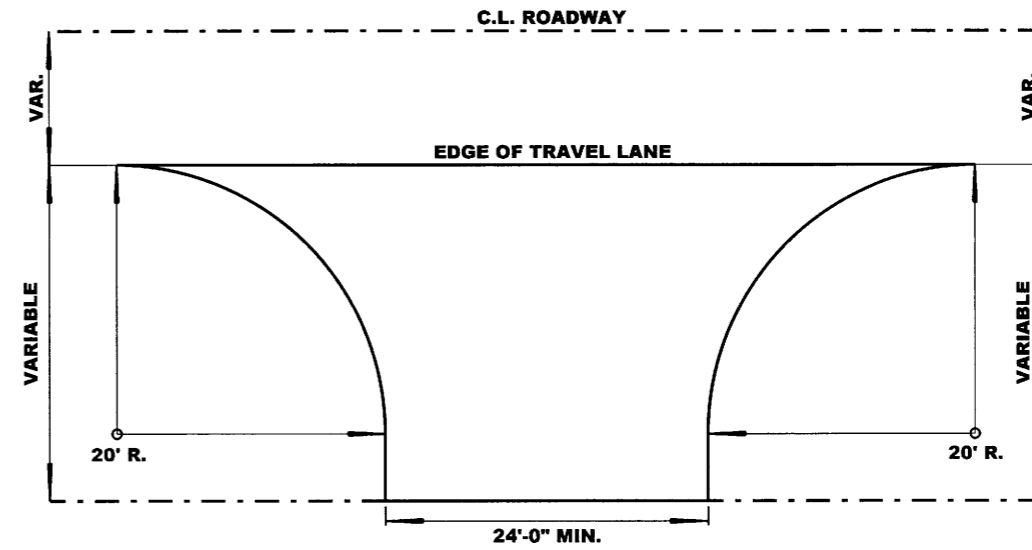
**DETAIL OF CITY STREET TURNOUT**  
STA. 108+74 RT.



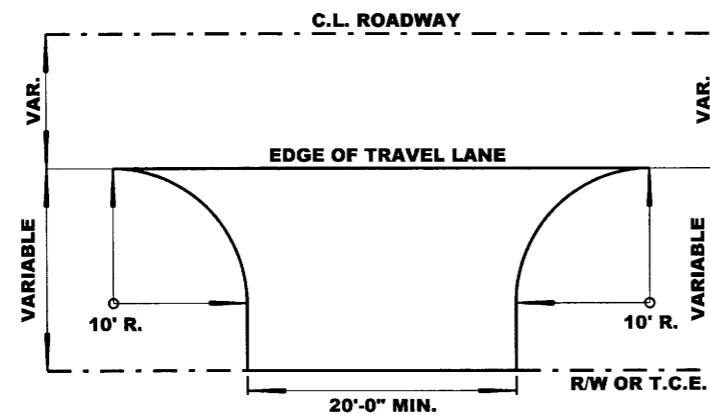
**DETAIL OF CITY STREET TURNOUT**  
STA. 108+80 LT.



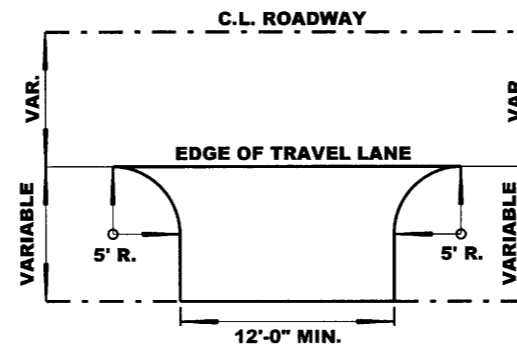
**DETAIL OF CITY STREET TURNOUT**  
STA. 111+82 - STA. 112+02



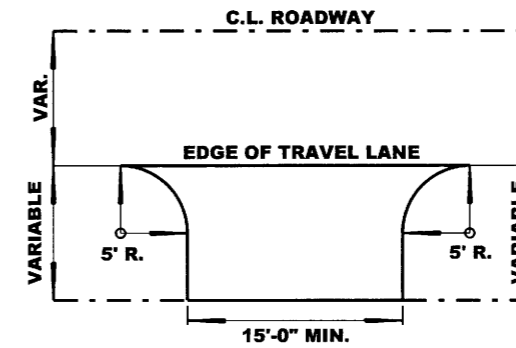
**DETAIL OF CITY STREET TURNOUT**  
STA. 112+23 - STA. 112+43



**DETAIL OF CITY STREET TURNOUT**  
STA. 101+85 LT.  
STA. 106+52 RT.



**DETAIL OF PRIVATE DRIVE**



**DETAIL OF CITY STREET TURNOUT**  
STA. 107+06 LT.

**SPECIAL DETAILS**

STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
DAVID R. MAYO, INC.  
4/17/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002	6	25	

**STA. 111+81  
REMOVAL AND DISPOSAL  
OF CONCRETE WALKS  
= 11 SQ. YD.**

**STA. 111+81  
CONCRETE WALK  
= 8.4 SQ. YD.**

**STA. 111+81  
WHEELCHAIR RAMP  
(TYPE 3) = 2.7 SQ. YD.**

**STA. 112+34  
REMOVAL AND DISPOSAL  
OF CONCRETE WALKS  
= 5 SQ. YD.**

**STA. 112+34  
WHEELCHAIR RAMP (TYPE 3)  
= 8.0 SQ. YD.**

**STA. 111+81  
WHEELCHAIR RAMP  
(TYPE 3) = 2.7 SQ. YD.**

**STA. 111+91  
WHEELCHAIR RAMP  
(TYPE 3) = 8.0 SQ. YD.**

**STA. 111+81  
CONCRETE WALK  
= 6.7 SQ. YD.**

**STA. 111+81  
REMOVAL AND DISPOSAL  
OF CONCRETE WALKS  
= 16 SQ. YD.**

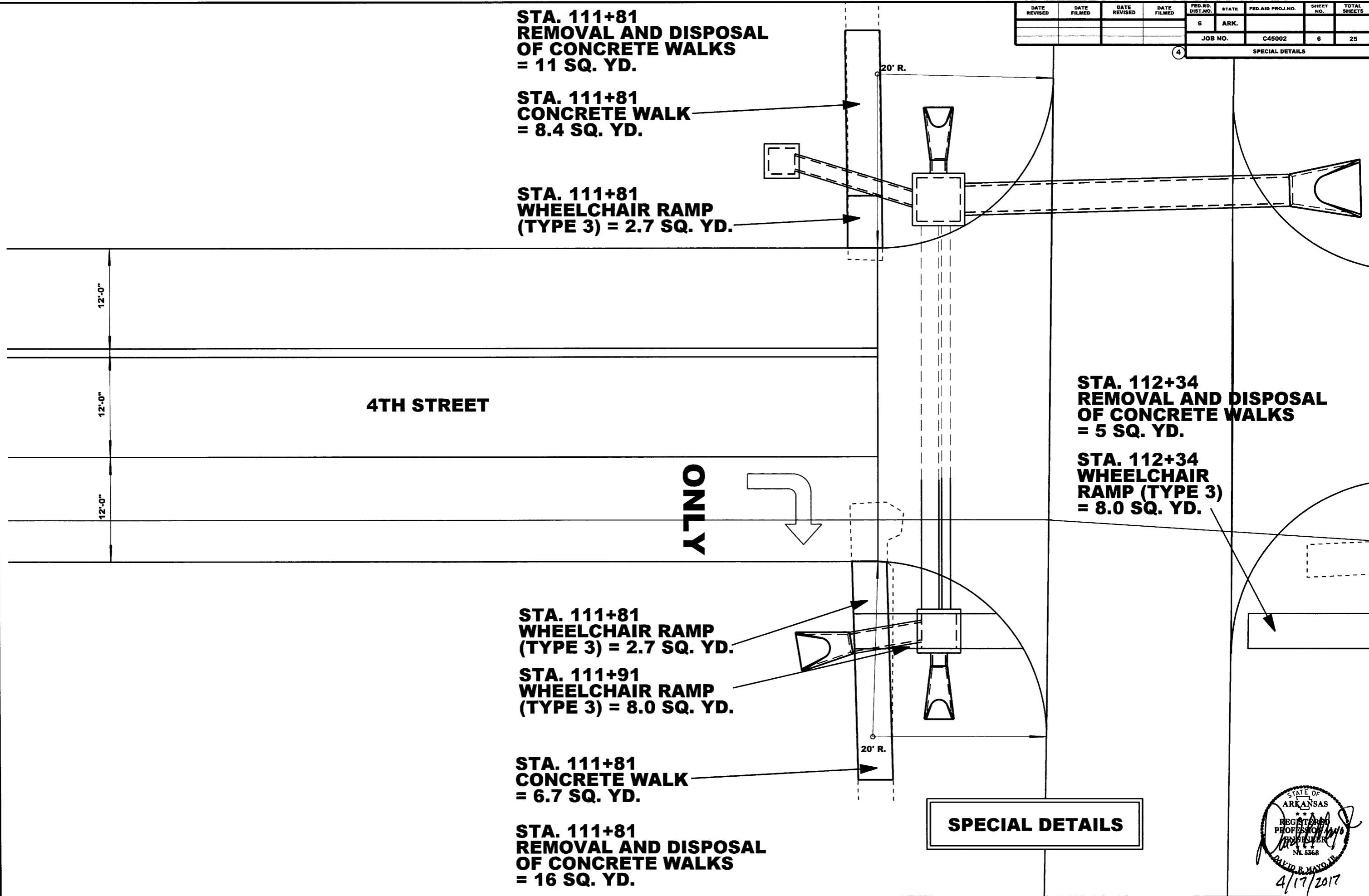
**4TH STREET**

**ONLY**

**SPECIAL DETAILS**



4/17/2017



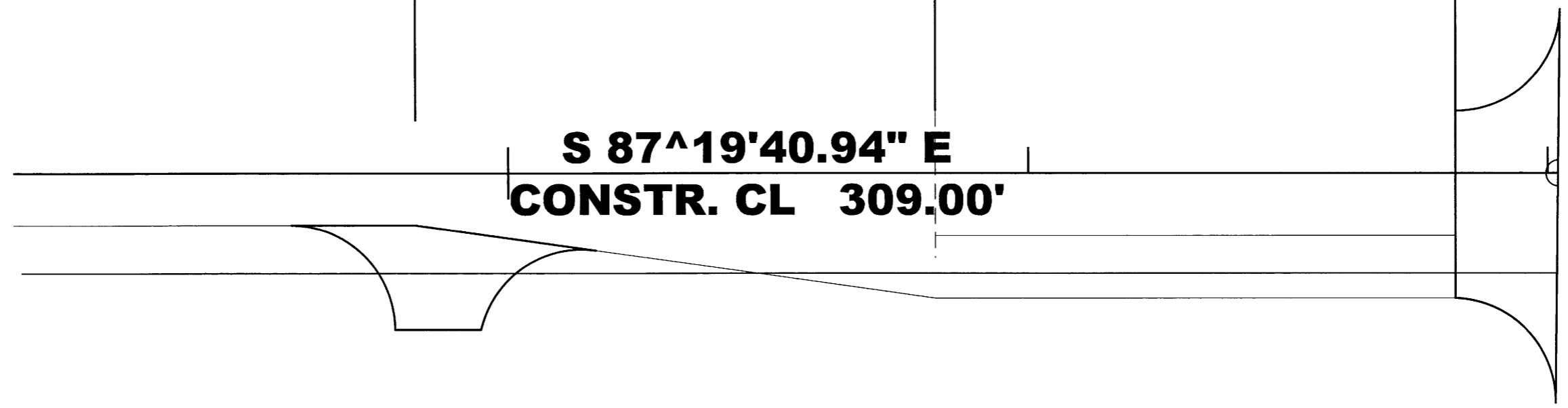
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C45002	7	25
4 SPECIAL DETAILS								

**110**

**109+82.15  
BEGIN TAPER**

**110+82.15  
END TAPER**

**111+82**

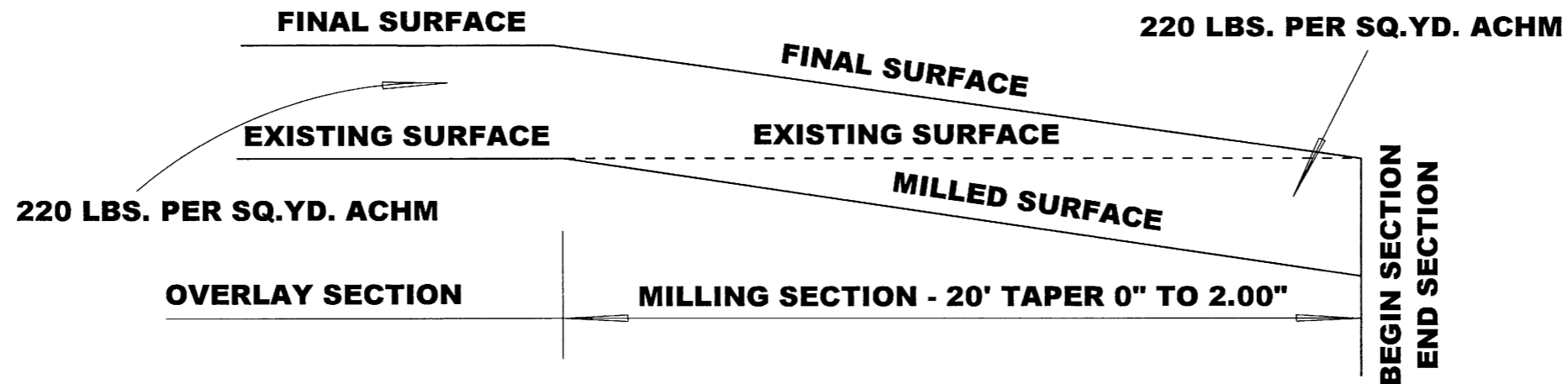


**S 87°19'40.94" E  
CONSTR. CL 309.00'**

**SPECIAL DETAILS**

STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
No. 5368  
*David R. Maxon*  
DAVID R. MAXON, JR.  
4/17/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
				JOB NO.	C45002	8	25		
								4	SPECIAL DETAILS



**PROFILE VIEW**

**NOT TO SCALE**

**PAVEMENT TRANSITION  
DETAILS FOR COLD MILLING**

STA. 100+41 - STA. 100+64 RT.  
 STA. 111+82 - STA. 112+02  
 STA. 112+23 - STA. 112+43  
 STA. 115+25 - STA. 115+45

**NOTE: DIMENSIONS ARE APPROXIMATED AND MAY BE  
MODIFIED AS DIRECTED BY THE ENGINEER**

**NOTE: FOR COLD MILLING ASPHALT PAVEMENT  
TRANSITION, TAPER 20' OF FINAL SURFACE  
TO CREATE A 2.00" PAVING NOTCH, AT  
BEGIN AND END OF VARIOUS SECTIONS,  
AS SHOWN ABOVE. OVERLAY MILLED AREAS  
USING 220 LBS. PER SQ. YD. OF ACHM.**

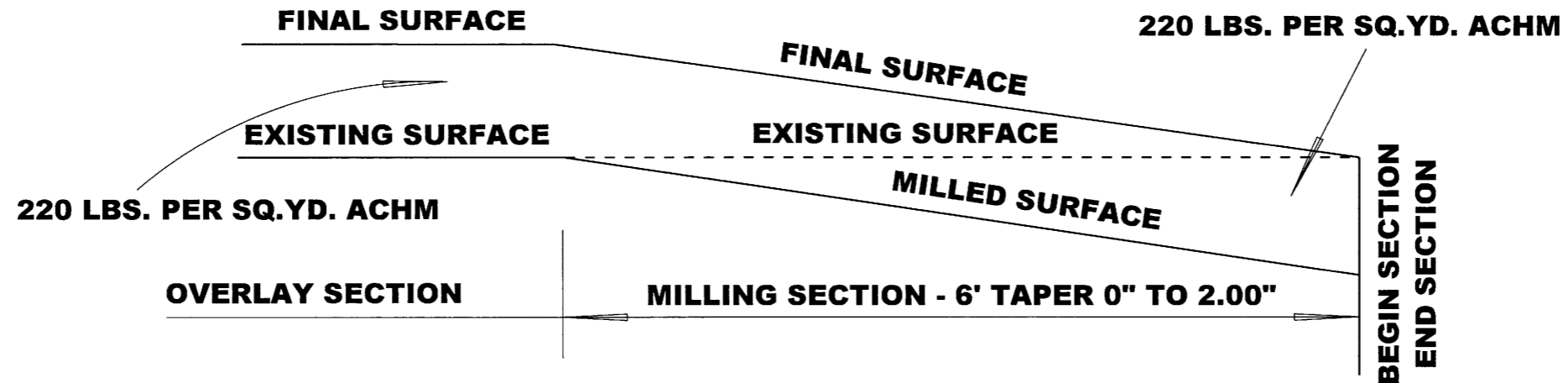
**NOTE: MATERIAL PRODUCED FROM COLD MILLING  
ASPHALT PAVEMENT SHALL REMAIN THE  
PROPERTY OF THE CONTRACTOR.**

**SPECIAL DETAILS**

STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 5368  
DAVID R. MAYO, JR.  
4/17/2017



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002		9	25
				4 SPECIAL DETAILS				



**PAVEMENT TRANSITION  
DETAILS FOR COLD MILLING**

STA. 100+22 - STA. 100+79 LT.

**NOTE: DIMENSIONS ARE APPROXIMATED AND MAY BE MODIFIED AS DIRECTED BY THE ENGINEER**

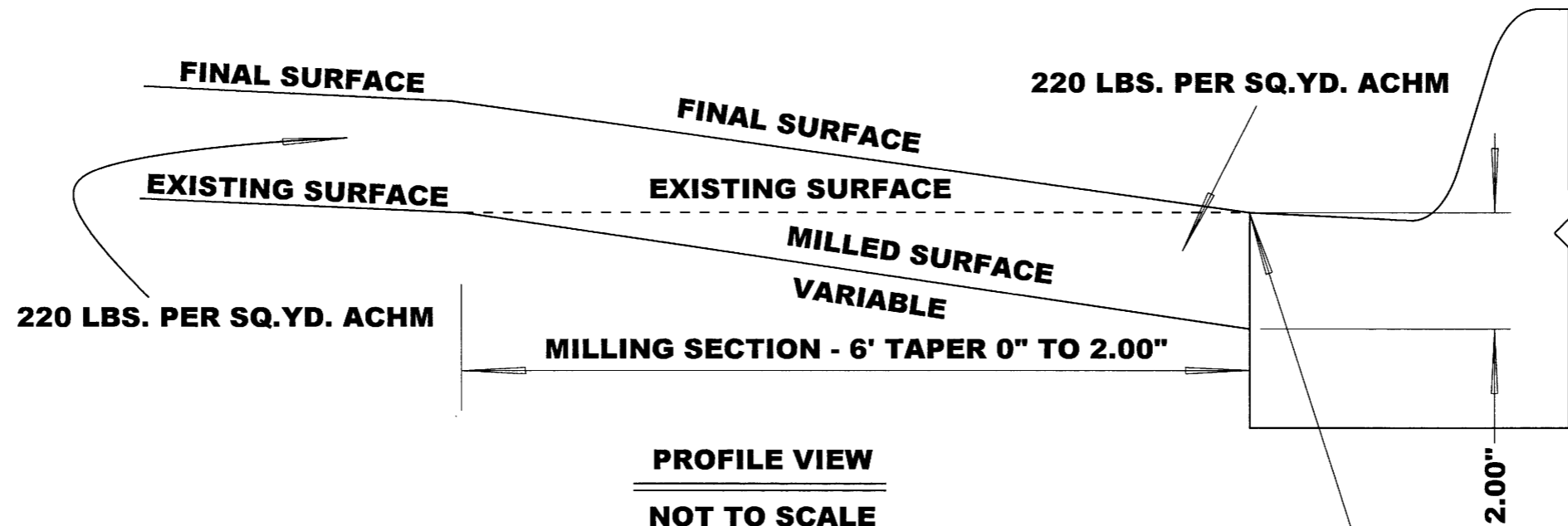
**NOTE: FOR COLD MILLING ASPHALT PAVEMENT TRANSITION, TAPER 6' OF FINAL SURFACE TO CREATE A 2.00" PAVING NOTCH, AT BEGIN AND END OF VARIOUS SECTIONS, AS SHOWN ABOVE. OVERLAY MILLED AREAS USING 220 LBS. PER SQ. YD. OF ACHM.**

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

**SPECIAL DETAILS**

STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 5368  
*David R. Mayo, Jr.*  
DAVID R. MAYO, JR.  
4/17/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002		10	25
				4 SPECIAL DETAILS				



**PAVEMENT TRANSITION  
DETAILS FOR COLD MILLING**

STA. 100+15 - STA. 100+41 RT.  
STA. 100+64 - STA. 100+93 RT.

**NOTE: TAPER 6' OF MILLED SURFACE TO CREATE A 2.00" PAVING NOTCH, AT VARIOUS SECTIONS ADJACENT TO CURB AND GUTTER, AS SHOWN ABOVE. OVERLAY MILLED AREAS USING 220 LBS. PER SQ. YD. OF ACHM.**

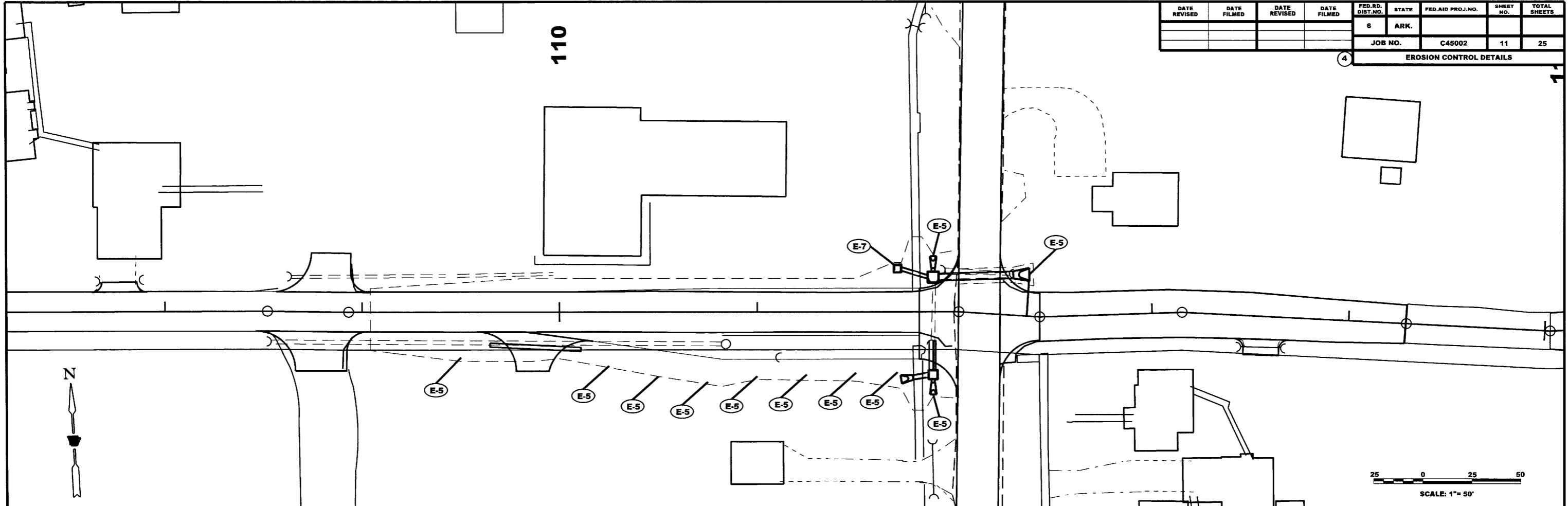
**NOTE: MATERIAL PRODUCED FROM COLD MILLING ASPHALT PAVEMENT SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.**

**SPECIAL DETAILS**

STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 5368  
*David R. Mayo, Jr.*  
4/17/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002		11	25

4 EROSION CONTROL DETAILS



**TEMPORARY EROSION CONTROL DEVICES**

SAND BAG DITCH CHECKS (E-5)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 109+50	RT.	= 6 BAGS	2 CU. YD.
STA. 110+25	RT.	= 6 BAGS	2 CU. YD.
STA. 110+50	RT.	= 6 BAGS	2 CU. YD.
STA. 110+75	RT.	= 6 BAGS	2 CU. YD.
STA. 111+00	RT.	= 6 BAGS	2 CU. YD.
STA. 111+25	RT.	= 6 BAGS	2 CU. YD.
STA. 111+50	RT.	= 6 BAGS	2 CU. YD.
STA. 111+75	RT.	= 6 BAGS	2 CU. YD.
STA. 111+89	RT.	= 6 BAGS	2 CU. YD.
STA. 111+89	LT.	= 6 BAGS	2 CU. YD.
STA. 112+36	LT.	= 6 BAGS	2 CU. YD.

DROP INLET SILT FENCE (E-7)		SEDIMENT REMOVAL AND DISPOSAL	
STA. 111+71	RT.	= 20 LIN. FT.	1 CU. YD.

**LEGEND**

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

STATE OF ARKANSAS  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 5368  
 DAVID R. MAYO, P.E.  
 4/17/2011

# AGGREGATE BASE COURSE AND SURFACING

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.	C45002	12	25		
(4) QUANTITIES									

STATION	STATION	DESCRIPTION	LENGTH		TACK COAT			*ACHM BINDER COURSE (1")			*ACHM SURFACE COURSE (1/2")		
			LIN. FT.	TONS	WIDTH (FT.)	SQ. YDS.	GALS.	WIDTH (FT.)	SQ. YDS.	TONS	WIDTH (FT.)	SQ. YDS.	TONS
100+00	100+93	CITY ST. TURNOUT			VAR.						VAR.		
100+93	109+82	4TH STREET - TWO LANE SECTION	889		20	358.3	28.7				20	358.3	39.4
109+04	109+82	PARKING LOT TRANSITION ON LT.	78			1975.6	158.0					1975.6	217.3
109+82	110+82	4TH STREET - 100' TAPER	100	36.3	VAR.	311.1	24.9	VAR.	88.9	14.7	28	311.1	34.2
109+82	110+82	PARKING LOT TRANSITION ON LT.	100	23.0						10.0			7.0
110+82	111+82	4TH STREET - THREE LANE SECTION	100	113.0	36	400.0	32.0	21	233.3	38.5	36	400.0	44.0
110+82	111+82	PARKING LOT TRANSITION ON LT.	100	23.0						10.0			7.0
111+82	112+02	CITY ST. TURNOUT		13.7	VAR.	98.2	7.9	VAR.	33.5	5.5	VAR.	98.2	10.8
112+02	112+23	HWY. 14 INTERSECTION			VAR.	176.4	14.1				VAR.	176.4	19.4
112+23	112+43	CITY ST. TURNOUT			VAR.	72.4	5.8				VAR.	72.4	8.0
112+43	114+29	4TH STREET - TWO LANE SECTION	186		VAR.	477.1	38.2				VAR.	477.1	52.5
114+29	115+03	BRIDGE EXCEPTION	74										
115+03	115+45	CITY ST. TURNOUT			VAR.	139.0	11.1				VAR.	139.0	15.3
101+85		CITY ST. TURNOUT ON LT.			VAR.	49.2	3.9				VAR.	49.2	5.4
102+36		PRIVATE DRIVE ON RT.			VAR.	52.3	4.2				VAR.	52.3	5.8
102+54		PRIVATE DRIVE ON LT.			VAR.	14.5	1.2				VAR.	14.5	1.6
103+32		PRIVATE DRIVE ON RT.			VAR.	53.3	4.3				VAR.	53.3	5.9
103+59		PRIVATE DRIVE ON LT.			VAR.	14.5	1.2				VAR.	14.5	1.6
104+04		PRIVATE DRIVE ON LT.			VAR.	18.5	1.5				VAR.	18.5	2.0
104+28		PRIVATE DRIVE ON LT.			VAR.	24.8	2.0				VAR.	24.8	2.7
104+64		PRIVATE DRIVE ON RT.			VAR.	14.5	1.2				VAR.	14.5	1.6
105+41		PRIVATE DRIVE ON LT.			VAR.	19.0	1.5				VAR.	19.0	2.1
106+52		CITY ST. TURNOUT ON RT.			VAR.	48.6	3.9				VAR.	48.6	5.3
107+06		CITY ST. TURNOUT ON LT.			VAR.	17.9	1.4				VAR.	17.9	2.0
107+77		PRIVATE DRIVE ON LT.			VAR.	11.2	0.9				VAR.	11.2	1.2
108+74		CITY ST. TURNOUT ON RT.			VAR.	69.7	5.6				VAR.	69.7	7.7
108+80		CITY ST. TURNOUT ON LT.			VAR.	55.7	4.5				VAR.	55.7	6.1
109+86		PRIVATE DRIVE ON RT.			VAR.	57.0	4.6				VAR.	57.0	4.6
113+31		PRIVATE DRIVE ON LT.		7.3	VAR.	17.9	1.4				VAR.	17.9	2.0
113+56		PRIVATE DRIVE ON RT.			VAR.	17.2	1.4				VAR.	17.2	1.9
* ENTIRE JOB		LEVELING											75.0
<b>TOTALS:</b>				216.3			365.4			78.7			592.4

USE: 216 365 79 592

BASIS OF ESTIMATE:

AGGREGATE BASE COURSE (CLASS 7) 36.3 TONS PER 100' STA. (100' TAPER)  
 AGGREGATE BASE COURSE (CLASS 7) 113.0 TONS PER 100' STA. (THREE LANE SECTION)  
 TACK COAT 0.08 GAL./SQ. YD.  
 ACHM SURFACE COURSE (1/2") 220 LBS./SQ. YD.  
 ACHM BINDER COURSE (1") 330 LBS./SQ. YD.

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

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

\* Nmax = 115

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

## REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS	CONCRETE WALKS	HEADWALLS
				EACH	EACH	SQ. YD.	EACH
109+04	110+84	RT.	24" X 180' C.M. PIPE CULVERT SIDE DRAIN ON RT.	1			
111+81		LT.	CONCRETE WALK ON LT.			11	
111+81		RT.	CONCRETE WALK ON RT.			16	
111+88		LT.	CONCRETE HEADWALL ON LT.				1
111+88		RT.	CONCRETE HEADWALL ON RT.				1
111+96	112+29	LT.	2' X 3' X 33' STONE MASONRY BOX CULVERT ON LT.		1		
112+34		RT.	CONCRETE WALK ON RT.			5	
<b>TOTALS:</b>				1	1	32	2

## CONCRETE WALKS

STATION	DESCRIPTION	LENGTH		CONCRETE WALKS
		LIN. FT.	SQ. YD.	
111+81	CONCRETE WALK LT.	19	8.4	
111+81	CONCRETE WALK RT.	15	6.7	
<b>TOTAL:</b>				15.1

USE: 15

## EARTHWORK

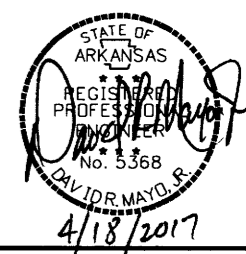
STATION	STATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT		
		MAIN LANES	MAIN LANES	ADDITIONAL	TOTAL
109+04	112+02	238	81		81
109+86				30	30
113+31				30	30
<b>TOTALS:</b>		238	81	60	141

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

## REFLECTORIZED PAINT PAVEMENT MARKING

STATION	STATION	DESCRIPTION	4" YELLOW	4" WHITE	12" WHITE	ARROWS	WORDS
			LIN. FT.	LIN. FT.	LIN. FT.	EACH	"ONLY" EACH
100+93	111+82	4TH ST. MAIN LANES	2178	2178			
110+82	111+82	4TH ST. MAIN LANES		100			
111+82	112+02	4TH ST. INTERSECTION RADII		54			
111+89		4TH ST. RIGHT TURN LANE				1	1
112+13		HWY. 14 MAIN LANES	76	32	70		
112+23	112+43	4TH ST. INTERSECTION RADII		54			
112+43	114+29	4TH ST. MAIN LANES	372	372			
114+29	115+03	4TH ST. MAIN LANES	148				
115+03	115+45	4TH ST. INTERSECTION RADII		115			
<b>TOTALS:</b>			2774	2905	70	1	1

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



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.		C45002		13	25
				QUANTITIES				

### COLD MILLING ASPHALT PAVEMENT

STATION	STATION	DESCRIPTION	LENGTH			COLD MILLING ASPHALT PAVEMENT
			LIN. FT.	WIDTH	SQ. YD.	
100+15	100+41	PINE STREET RADIUS	VAR.	6	33.3	
100+41	100+64	PINE STREET TURNOUT	23	20	51.1	
100+64	100+93	PINE STREET RADIUS	VAR.	6	33.0	
100+22	100+79	POST OFFICE DRIVE	57	6	38.0	
108+93	111+82	MAIN LANES	289	VAR.	354.0	
111+82	112+02	4TH STREET TURNOUT	20	VAR.	65.0	
112+02	112+23	HWY. 14	21	VAR.	176.4	
112+23	112+43	4TH STREET TURNOUT	20	VAR.	67.0	
115+25	115+45	4TH STREET TURNOUT	42	VAR.	92.2	
<b>TOTAL:</b>			<b>910.0</b>			

USE:

910

### TEMPORARY EROSION CONTROL

STATION	STATION	LOCATION	SAND BAG DITCH CKS. (E-5)	DROP INLET SILT FENCE (E-7)	SEDIMENT REMOVAL & DISPOSAL	STANDARD DRAWING NUMBER
			BAG	LIN. FT.	CU. YD.	
109+04	112+36	MAIN LANES	66	20	23	TEC-1, 2 & 3
<b>TOTALS:</b>			<b>66</b>	<b>20</b>	<b>23</b>	

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

### REMOVING AND REINSTALLING SIGNS

STATION	DESCRIPTION	REMOVING AND REINSTALLING SIGNS
		EACH
111+83	STREET SIGN ON LT.	1
<b>TOTAL:</b>		<b>1</b>

### STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER		SUPPORT ASSEMBLIES (TYPE A)	STANDARD DRAWING NUMBER
		R1-1 NO.	W11-8 SQ. FT.		
108+96	RT. (ESTES AVE.)	1	6.25	1	SHS - 1 & 2
111+86	RT.	1	6.25	1	SHS - 1 & 2
112+30	LT. (HWY. 14)	1	6.25	1	SHS - 1 & 2
112+34	LT.	1	6.25	1	SHS - 1 & 2
<b>TOTALS:</b>		<b>3</b>	<b>18.75</b>	<b>4</b>	

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

### WHEELCHAIR RAMPS

STATION	DESCRIPTION	TYPE 3
		SQ. YD.
111+81	4TH STREET LT.	2.7
111+81	4TH STREET RT.	2.7
111+91	PANTHER AVE.	8.0
112+34	PANTHER AVE.	8.0
<b>TOTAL:</b>		<b>21.4</b>

USE:

21

### TRAFFIC CONTROL DEVICES

LOCATION	W20-1		G20-1		G20-2		W21-5A		TRAFFIC DRUMS	BARRICADES	STANDARD DRAWING NUMBER	
	AHEAD		NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.				
	NO.	SQ. FT.										EACH
STA. 100+52	1	16	1	10	1	8					TC-1, 2 & 3	
STA. 101+85	1	16									TC-1, 2 & 3	
STA. 106+52	1	16									TC-1, 2 & 3	
STA. 107+06	1	16									TC-1, 2 & 3	
STA. 108+74	1	16									TC-1, 2 & 3	
STA. 108+80	1	16									TC-1, 2 & 3	
STA. 112+13	2	32			2	18					TC-1, 2 & 3	
STA. 115+45			1	10	1	8					TC-1, 2 & 3	
ENTIRE JOB								50		32	TC-1, 2 & 3	
<b>TOTALS:</b>		<b>8</b>	<b>128</b>	<b>2</b>	<b>20</b>	<b>2</b>	<b>16</b>	<b>2</b>	<b>18</b>	<b>50</b>	<b>32</b>	

### PAVEMENT REPAIR OVER CULVERTS

STATION	LOCATION	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)
		TON
112+13	HWY. 14 CROSS DRAIN	2.4
<b>TOTAL:</b>		<b>2.4</b>

USE:

2

### STRUCTURES

STATION	DESCRIPTION	DROP INLET (TYPE ST)		JUNCTION BOX (TYPE E)	
		EACH	EACH	EACH	EACH
111+71	DROP INLET ON LT.	1			
111+89	JUNCTION BOX ON LT.			1	
111+89	JUNCTION BOX ON RT.				1
<b>TOTALS:</b>		<b>1</b>	<b>2</b>		

### STRUCTURES

STATION	DESCRIPTION	SIDE DRAIN		PIPE CULVERTS						PIPE CULVERT ALTERNATES						F.E.S. ALTERNATES						SOLID SODDING	WATER	*SELECTED PIPE BEDDING	STANDARD DRAWING												
		28"X20"	36"	18" C.M.P.	24" C.M.P.	18" R.C.P. (CLASS III)	18" ALT.	24" R.C.P. (CLASS III)	24" ALT.	44"X27" R.C.A.P. (CLASS IV)	42"X29" ALT.	18" CONCRETE	18" C.M.	24" CONCRETE	24" C.M.	44"X27" CONCRETE	42"X29" C.M.																				
		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH																				
109+86	24" SIDE DRAIN ON RT.	44																																			
111+71	18" PIPE OUTLET ON LT.							16	16																											PCC-1, PCM-1	
111+89	24" PIPE INLET ON RT.											8	12											12	0.2										PCC-1, PCM-1, FES-1, FES-2		
111+89	18" PIPE INLET ON RT.							2	6														7	0.1											PCC-1, PCM-1, FES-1, FES-2		
111+89	24" PIPE OUTLET - CROSS DRAIN																																			PCC-1, PCM-1	
111+89	18" PIPE OUTLET - CROSS DRAIN					# 16	# 16																														PCC-1, PCM-1
111+89	18" PIPE INLET ON LT.							2	6														7	0.1													PCC-1, PCM-1, FES-1, FES-2
111+89	44" X 27" PIPE OUTLET - CROSS DRAIN													38	42								26	0.3		5											PCC-1, PCM-1, FES-1, FES-2
113+31	36" SIDE DRAIN ON LT.		30																																		PCC-1, PCM-1, PCP-1, PCP-2
<b>TOTALS:</b>		<b>44</b>	<b>30</b>	<b>16</b>	<b>16</b>	<b>20</b>	<b>28</b>	<b>8</b>	<b>12</b>	<b>38</b>	<b>42</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>52</b>	<b>0.7</b>	<b>7</b>													

BASIS OF ESTIMATE:

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

\*\*NOTE: USE TYPE 1 BEDDING FOR CROSS DRAINS. FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

# SEE JOB SPECIAL PROVISION "EXTENSION FOR PIPE CULVERTS".

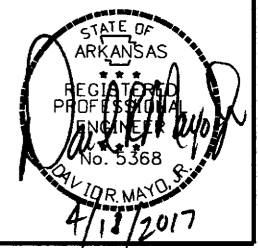
\* QUANTITIES ARE ESTIMATED AND SHALL BE PLACED IN BACKFILL OF UNDERCUT BENEATH PIPE CULVERT IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

### SOLID SODDING

STATION	STATION	LOCATION	LENGTH		SOLID SODDING		WATER
			LIN. FT.	WIDTH	SQ. YD.	M. GAL.	
109+04	112+02	DITCH ON RT.	298	VAR.	300	3.8	
<b>TOTALS:</b>					<b>300</b>	<b>3.8</b>	

BASIS OF ESTIMATE:

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



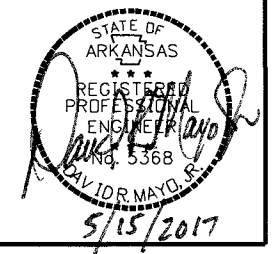
### SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF HEADWALLS	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE WALKS	32	SQ. YD.
210	UNCLASSIFIED EXCAVATION	238	CU. YD.
210	COMPACTED EMBANKMENT	141	CU. YD.
SS&303	AGGREGATE BASE COURSE (CLASS 7)	216	TON
SS&401	TACK COAT	365	GAL.
SPSS&406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	76	TON
SPSS&406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	3	TON
SPSS&407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	561	TON
SPSS&407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	31	TON
412	COLD MILLING ASPHALT PAVEMENT	910	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS&604	SIGNS	182	SQ. FT.
SS&604	BARRICADES	32	LIN. FT.
SS&604	TRAFFIC DRUMS	50	EACH
606	18" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	16	LIN. FT.
606	24" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	16	LIN. FT.
SPSS&606	36" SIDE DRAIN	30	LIN. FT.
SS&606	28" X 20" SIDE DRAIN	44	LIN. FT.
* 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	20	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	28	LIN. FT.
* 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	8	LIN. FT.
* 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	12	LIN. FT.
* 606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS IV)	38	LIN. FT.
* 606	42" X 29" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE	42	LIN. FT.
* 606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
* 606	18" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	2	EACH
* 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
* 606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	1	EACH
* 606	44" X 27" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
* 606	42" X 29" FLARED END SECTIONS FOR CORRUGATED STEEL ARCH PIPE CULVERTS	1	EACH
606	SELECTED PIPE BEDDING	7	CU. YD.
609	DROP INLETS (TYPE ST)	1	EACH
609	JUNCTION BOXES (TYPE E)	2	EACH
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	2	TON
620	WATER	4.5	M. GAL.
621	SAND BAG DITCH CHECKS	66	BAGS
621	DROP INLET SILT FENCE	20	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	23	CU. YD.
624	SOLID SODDING	352	SQ. YD.
633	CONCRETE WALKS	15	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
641	WHEELCHAIR RAMPS (TYPE 3)	21	SQ. YD.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")	2905	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")	70	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")	2774	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING (WORDS)	1	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING (ARROWS)	1	EACH
SP	REMOVING AND REINSTALLING SIGNS	1	EACH
726	STANDARD SIGN	25.00	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE A)	4	EACH

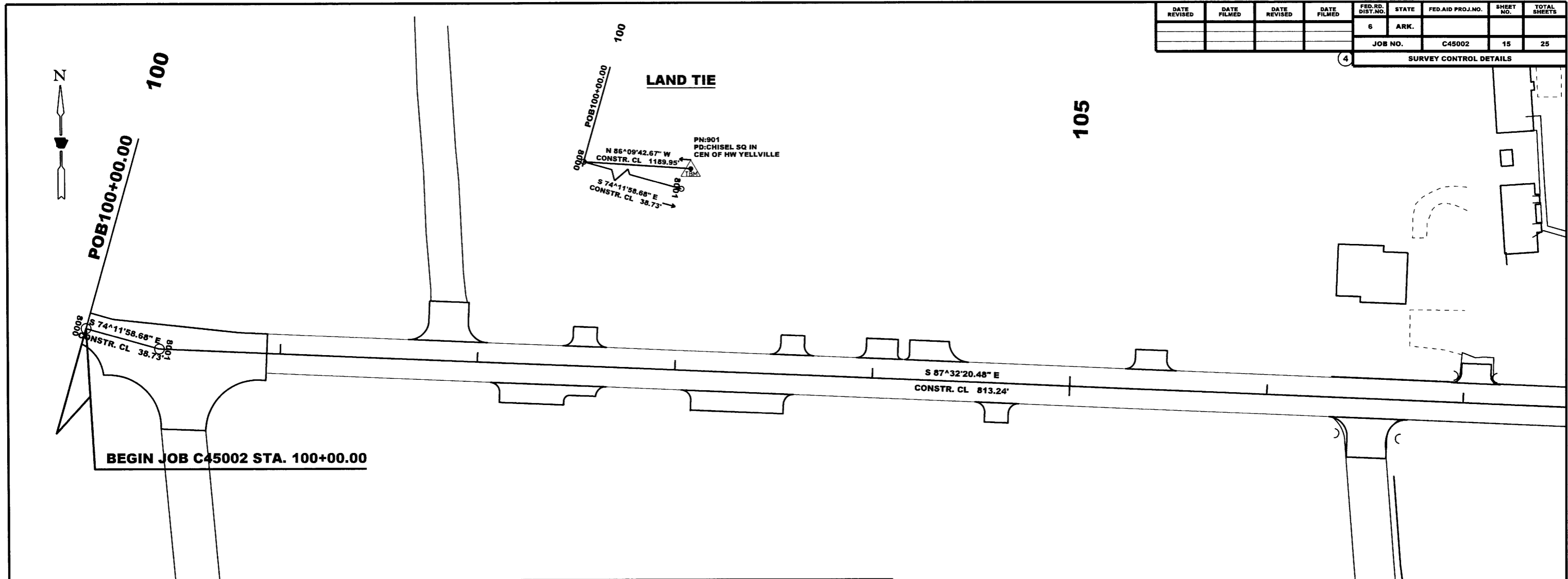
\* DENOTES ALTERNATE BID ITEMS.

### REVISIONS

DATE	REVISION	SHEET NUMBER
05-04-17	REMOVED THE "SP" IN SP&606 FOR ITEMS 18" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) AND 24" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE).	14
05-04-17	CHANGED ITEM NUMBER "SPSS&407" TO "SPSS&406" FOR MINERAL AGGREGATE IN ACHM BINDER COURSE (1") AND ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1").	14
05-04-17	ADDED "ARCH" TO ITEMS 42" X 29" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE AND 42" X 29" FLARED END SECTIONS FOR CORRUGATED STEEL ARCH PIPE CULVERTS.	14



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.		C45002	15	25
4 SURVEY CONTROL DETAILS								



**BEGIN JOB C45002 STA. 100+00.00**

**SURVEY CONTROL COORDINATES**

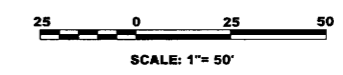
POINT NAME	NORTHING	EASTING	ELEVATION	STYLE	DESCRIPTION
1	689907.29310	1110343.26700	622.36510	CTL	AHTD STD MON STAMPED PN:1 MARION
2	690399.79030	1110367.22400	611.07240	CTL	AHTD STD MON STAMPED PN:2 YELVILLE
3	690786.17340	1110382.94700	613.43910	CTL	AHTD STD MON STAMPED PN:3 YELVILLE
4	690371.31410	1110071.15300	626.11890	CTL	AHTD STD MON STAMPED PN:4 YELVILLE
5	690313.73940	1110725.39200	602.78260	CTL	AHTD STD MON STAMPED PN:5 YELVILLE
9	690363.43500	1110361.66800	611.36200	SS	DIRECTION ONLY UNABLE TO GET DEPTH
10	690365.25000	1110360.72000	611.33600	SS	DIRECTION ONLY UNABLE TO OPEN
11	690362.71400	1110360.08400	611.33700	SS	DIRECTION ONLY
12	690364.23500	1110359.25600	611.30800	SS	DIRECTION ONLY UNABLE TO OPEN
13	690387.25500	1110050.03100	627.94000	SS	DIRECTION ONLY
14	690374.83100	1110055.91600	627.67900	SS	DIRECTION ONLY
100	692616.96120	1106433.84400	774.22700	GPS	AHTD GPS MON 450005
101	680745.49810	1113633.74700	679.95500	GPS	AHTD GPS MON 450006A
901	690352.63360	1110357.06200	611.29960	TBM	CHISEL SQ IN CEN OF HW YELVILLE

**CONSTRUCTION CENTERLINE**

POINT NAME	STATION	NORTHING	EASTING
8000	POB 100+00.00	690432.28700	1109169.77706
8001	PI 100+38.73	690421.74085	1109207.04546
8002	PI 108+51.98	690386.82102	1110019.53872
8003	PI 108+93.15	690384.32565	1110060.63333
8004	PI 112+02.15	690369.92080	1110369.29734
8005	PI 112+43.04	690365.42685	1110409.93931
8006	PI 113+15.21	690364.36726	1110482.10263
8007	PI 114+29.32	690353.29550	1110595.67800
8008	PI 115+02.76	690346.18550	1110668.77050
8009	POE 115+45.00	690345.68141	1110711.01006

**LEGEND**

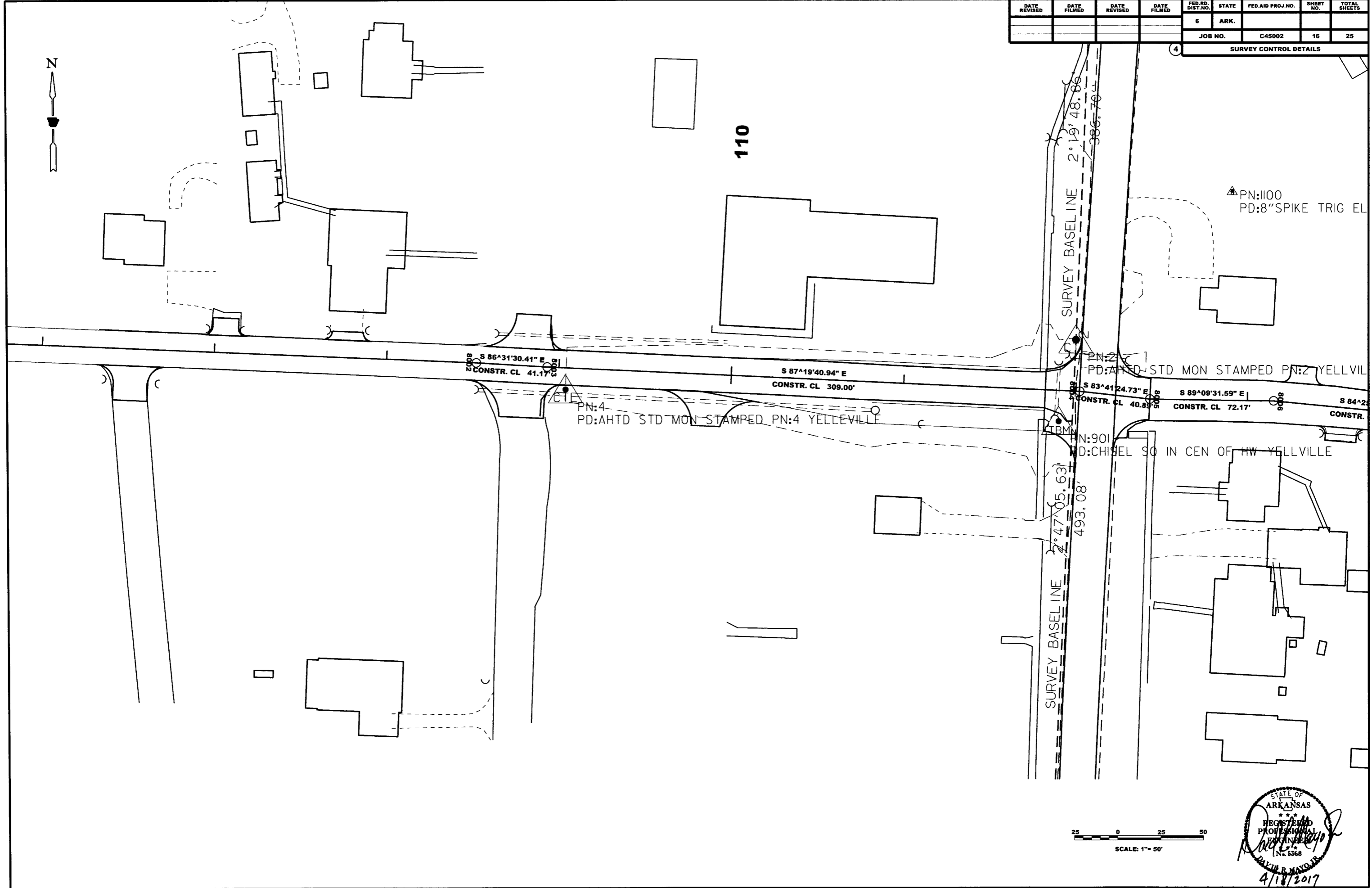
- ◊ — POWER POLE
- ◊ — COMBINATION POLE
- ◊ — POLE W/GUY
- ⊞ — TELEPHONE RISER
- ◊ — TELEPHONE POLE
- U — UNDERGROUND CABLE MKR.
- ⊗ — GAS METER
- ⊞ — WATER VALVE



STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 5568  
*David M. May Jr.*  
4/18/2019

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.	C45002		16	25

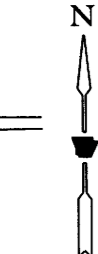
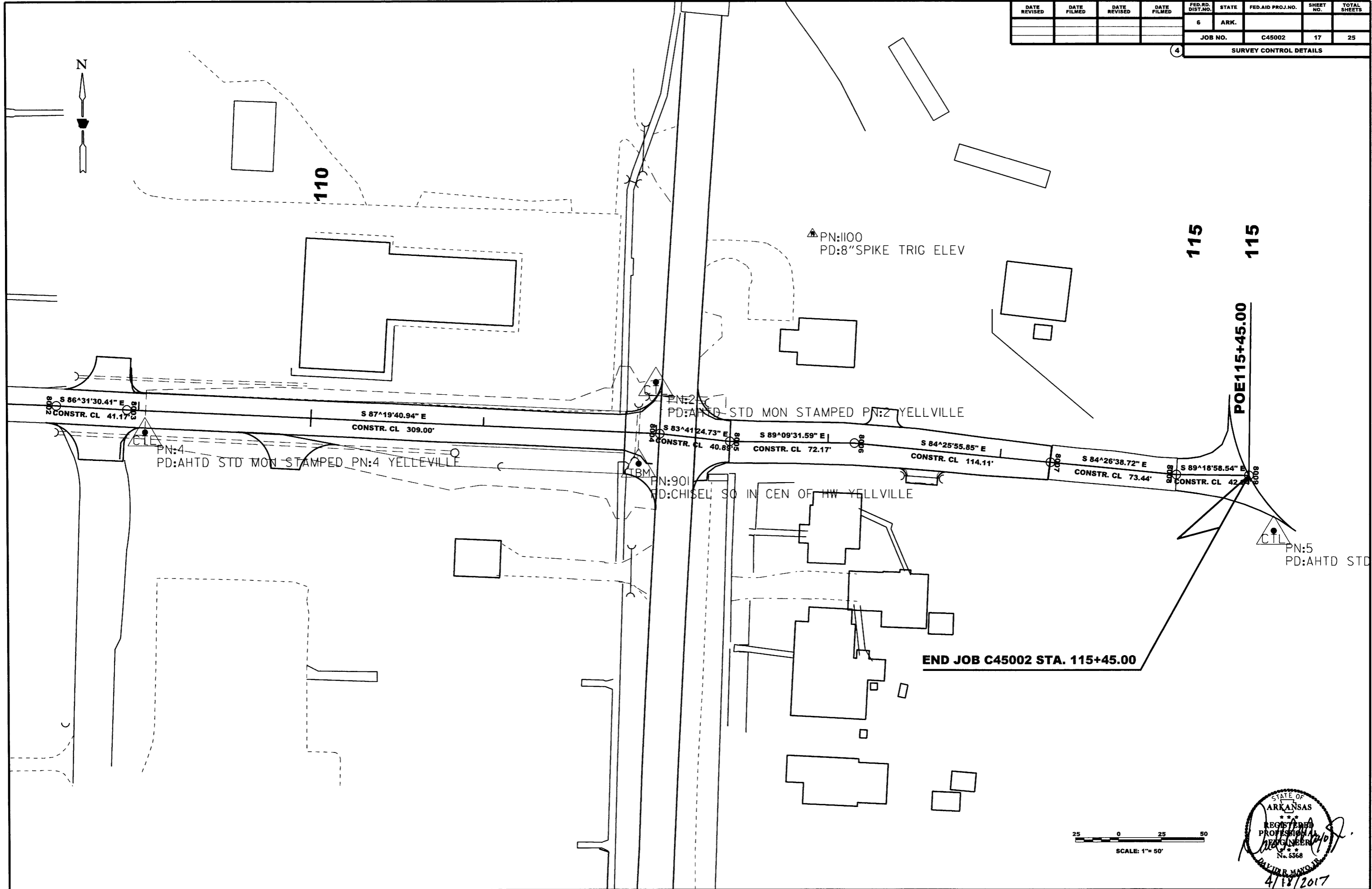
4 SURVEY CONTROL DETAILS



STATE OF  
 ARKANSAS  
 REGISTERED  
 PROFESSIONAL  
 SURVEYOR  
 No. 5368  
 PAUL R. MAYOR JR.  
 4/18/2017



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002	17	25	
4 SURVEY CONTROL DETAILS								



STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 5368  
DAVID MAKO, JR.  
4/18/2017

S 86°31'30.41" E  
CONSTR. CL 41.17'

S 87°19'40.94" E  
CONSTR. CL 309.00'

PN:4  
PD:AHTD STD MON STAMPED PN:4 YELLEVILLE

PN:2  
PD:AHTD STD MON STAMPED PN:2 YELLEVILLE

S 83°41'24.73" E  
CONSTR. CL 40.89'

S 89°09'31.59" E  
CONSTR. CL 72.17'

TBM  
PN:901  
PD:CHISEL SQ IN CEN OF HW YELLEVILLE

S 84°25'55.85" E  
CONSTR. CL 114.11'

S 84°26'38.72" E  
CONSTR. CL 73.44'

S 89°18'58.54" E  
CONSTR. CL 42.11'

POE 115+45.00

END JOB C45002 STA. 115+45.00

PN:5  
PD:AHTD STD

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.	C45002	18	25	

4 PLAN AND PROFILE SHEETS

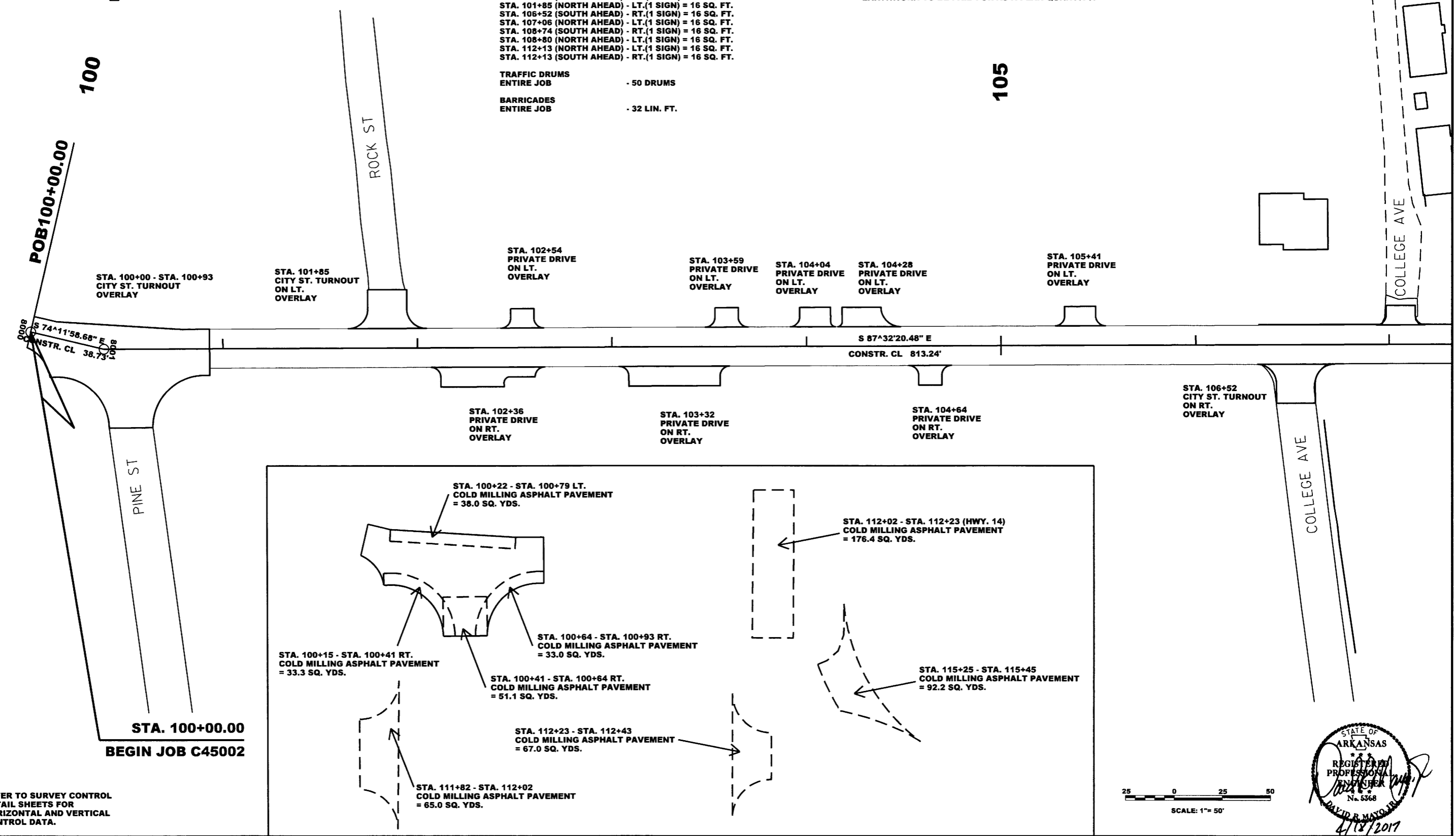


- LEGEND**
- — POWER POLE
  - ◇ — COMBINATION POLE
  - ◊ — POLE W/GUY
  - — TELEPHONE RISER
  - ◇ — TELEPHONE POLE
  - U — UNDERGROUND CABLE MKR.
  - ⊗ — GAS METER
  - ⊕ — WATER VALVE

**TRAFFIC CONTROL DEVICES**

- G20-1  
STA. 100+52 - RT.(1 SIGN) = 10 SQ. FT.  
STA. 115+45 - LT.(1 SIGN) = 10 SQ. FT.
- G20-2  
STA. 100+52 - LT.(1 SIGN) = 8 SQ. FT.  
STA. 115+45 - RT.(1 SIGN) = 8 SQ. FT.
- W21-5A  
STA. 112+13 (NORTH) - LT.(1 SIGN) = 9 SQ. FT.  
STA. 112+13 (SOUTH) - RT.(1 SIGN) = 9 SQ. FT.
- W20-1  
STA. 100+52 (SOUTH AHEAD) - RT.(1 SIGN) = 16 SQ. FT.  
STA. 101+85 (NORTH AHEAD) - LT.(1 SIGN) = 16 SQ. FT.  
STA. 106+52 (SOUTH AHEAD) - RT.(1 SIGN) = 16 SQ. FT.  
STA. 107+06 (NORTH AHEAD) - LT.(1 SIGN) = 16 SQ. FT.  
STA. 108+74 (SOUTH AHEAD) - RT.(1 SIGN) = 16 SQ. FT.  
STA. 108+80 (NORTH AHEAD) - LT.(1 SIGN) = 16 SQ. FT.  
STA. 112+13 (NORTH AHEAD) - LT.(1 SIGN) = 16 SQ. FT.  
STA. 112+13 (SOUTH AHEAD) - RT.(1 SIGN) = 16 SQ. FT.
- TRAFFIC DRUMS  
ENTIRE JOB - 50 DRUMS
- BARRICADES  
ENTIRE JOB - 32 LIN. FT.

- EARTHWORK**
- UNCLASSIFIED EXCAVATION (MAIN LANES) 238 CU. YDS.
  - COMPACTED EMBANKMENT (MAIN LANES) 81 CU. YDS.
  - COMPACTED EMBANKMENT (ADDITIONAL) 60 CU. YDS.
  - EARTHWORK TO BE PAID FOR AS A PLAN QUANTITY.



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

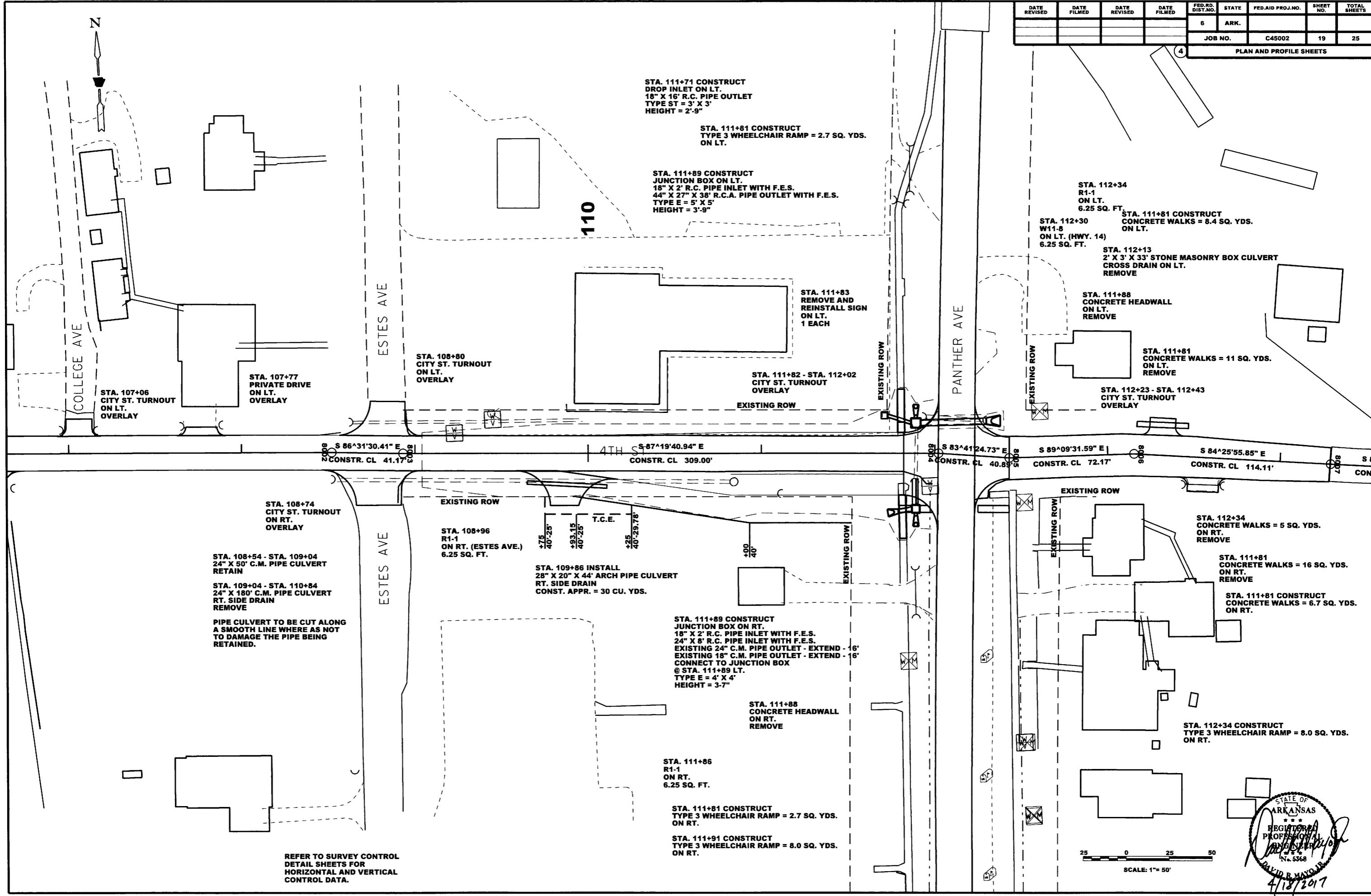
**STA. 100+00.00**  
**BEGIN JOB C45002**

SCALE: 1" = 50'



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002	19	25	

PLAN AND PROFILE SHEETS



STA. 111+71 CONSTRUCT  
DROP INLET ON LT.  
18" X 16" R.C. PIPE OUTLET  
TYPE ST = 3' X 3'  
HEIGHT = 2'-9"

STA. 111+81 CONSTRUCT  
TYPE 3 WHEELCHAIR RAMP = 2.7 SQ. YDS.  
ON LT.

STA. 111+89 CONSTRUCT  
JUNCTION BOX ON LT.  
18" X 2" R.C. PIPE INLET WITH F.E.S.  
44" X 27" X 38" R.C.A. PIPE OUTLET WITH F.E.S.  
TYPE E = 5' X 5'  
HEIGHT = 3'-9"

STA. 112+34  
R1-1  
ON LT.  
6.25 SQ. FT.

STA. 112+30  
W11-8  
ON LT. (HWY. 14)  
6.25 SQ. FT.

STA. 111+81 CONSTRUCT  
CONCRETE WALKS = 8.4 SQ. YDS.  
ON LT.

STA. 112+13  
2' X 3' X 33' STONE MASONRY BOX CULVERT  
CROSS DRAIN ON LT.  
REMOVE

STA. 111+88  
CONCRETE HEADWALL  
ON LT.  
REMOVE

STA. 111+81  
CONCRETE WALKS = 11 SQ. YDS.  
ON LT.  
REMOVE

STA. 112+23 - STA. 112+43  
CITY ST. TURNOUT  
OVERLAY

STA. 108+80  
CITY ST. TURNOUT  
ON LT.  
OVERLAY

STA. 107+77  
PRIVATE DRIVE  
ON LT.  
OVERLAY

STA. 107+06  
CITY ST. TURNOUT  
ON LT.  
OVERLAY

STA. 111+83  
REMOVE AND  
REINSTALL SIGN  
ON LT.  
1 EACH

STA. 111+82 - STA. 112+02  
CITY ST. TURNOUT  
OVERLAY

S 86°31'30.41" E  
CONSTR. CL 41.17'

S 87°19'40.94" E  
CONSTR. CL 309.00'

S 83°41'24.73" E  
CONSTR. CL 40.89'

S 89°09'31.59" E  
CONSTR. CL 72.17'

S 84°25'55.85" E  
CONSTR. CL 114.11'

STA. 108+74  
CITY ST. TURNOUT  
ON RT.  
OVERLAY

STA. 108+54 - STA. 109+04  
24" X 50" C.M. PIPE CULVERT  
RETAIN

STA. 109+04 - STA. 110+84  
24" X 180" C.M. PIPE CULVERT  
RT. SIDE DRAIN  
REMOVE

PIPE CULVERT TO BE CUT ALONG  
A SMOOTH LINE WHERE AS NOT  
TO DAMAGE THE PIPE BEING  
RETAINED.

STA. 108+96  
R1-1  
ON RT. (ESTES AVE.)  
6.25 SQ. FT.

STA. 109+86 INSTALL  
28" X 20" X 44' ARCH PIPE CULVERT  
RT. SIDE DRAIN  
CONST. APPR. = 30 CU. YDS.

STA. 111+89 CONSTRUCT  
JUNCTION BOX ON RT.  
18" X 2" R.C. PIPE INLET WITH F.E.S.  
24" X 8" R.C. PIPE INLET WITH F.E.S.  
EXISTING 24" C.M. PIPE OUTLET - EXTEND - 16'  
EXISTING 18" C.M. PIPE OUTLET - EXTEND - 16'  
CONNECT TO JUNCTION BOX  
@ STA. 111+89 LT.  
TYPE E = 4' X 4'  
HEIGHT = 3-7"

STA. 111+88  
CONCRETE HEADWALL  
ON RT.  
REMOVE

STA. 111+86  
R1-1  
ON RT.  
6.25 SQ. FT.

STA. 111+81 CONSTRUCT  
TYPE 3 WHEELCHAIR RAMP = 2.7 SQ. YDS.  
ON RT.

STA. 111+91 CONSTRUCT  
TYPE 3 WHEELCHAIR RAMP = 8.0 SQ. YDS.  
ON RT.

STA. 112+34  
CONCRETE WALKS = 5 SQ. YDS.  
ON RT.  
REMOVE

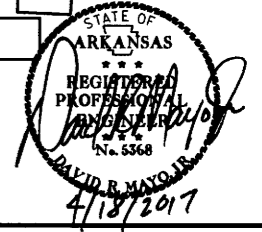
STA. 111+81  
CONCRETE WALKS = 16 SQ. YDS.  
ON RT.  
REMOVE

STA. 111+81 CONSTRUCT  
CONCRETE WALKS = 6.7 SQ. YDS.  
ON RT.

STA. 112+34 CONSTRUCT  
TYPE 3 WHEELCHAIR RAMP = 8.0 SQ. YDS.  
ON RT.

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

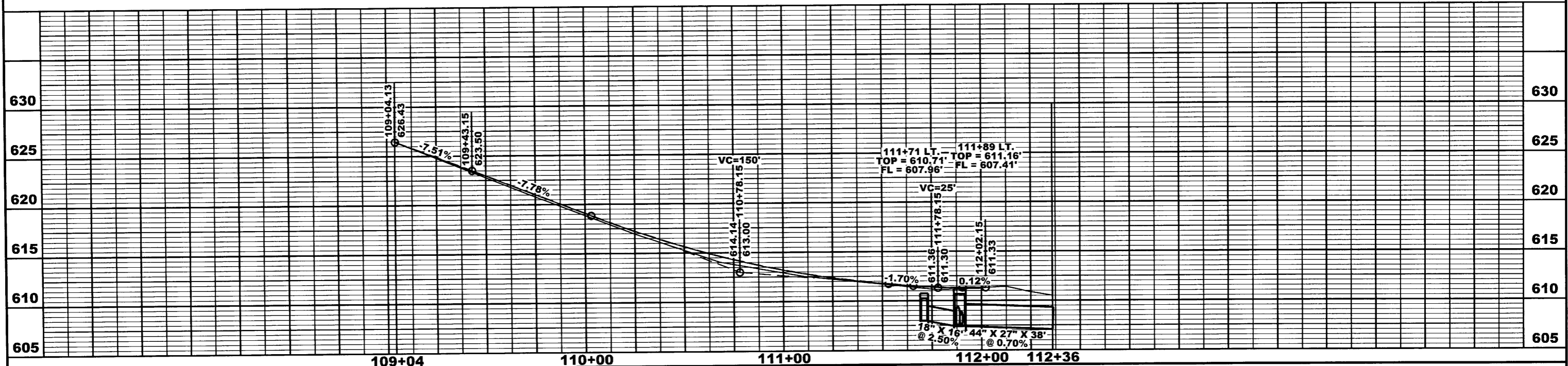
SCALE: 1" = 50'



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002		20	25

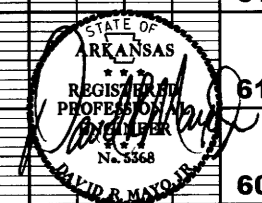
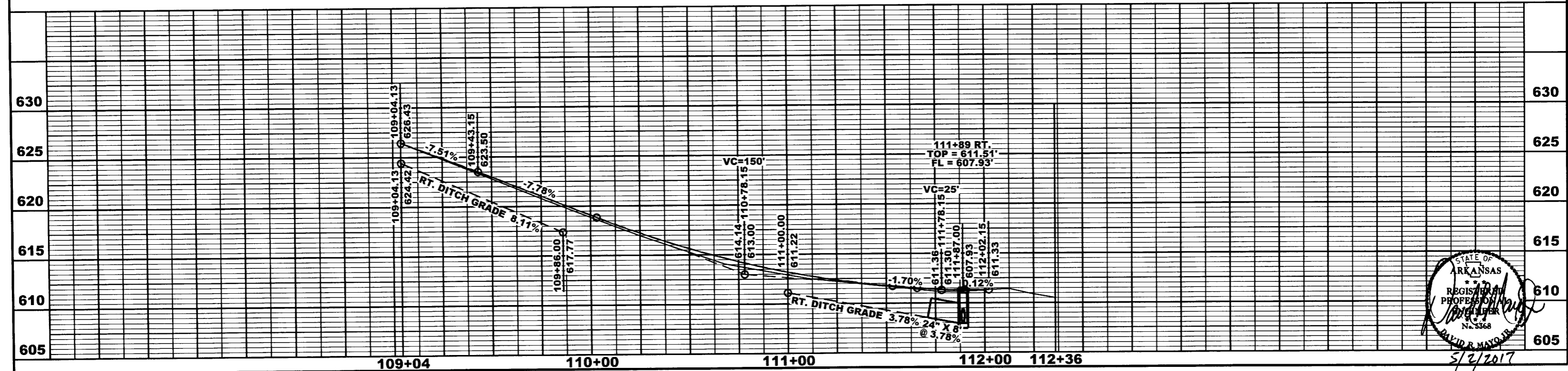
4 PLAN AND PROFILE SHEETS

### LEFT SIDE - 4TH STREET



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

### RIGHT SIDE - 4TH STREET

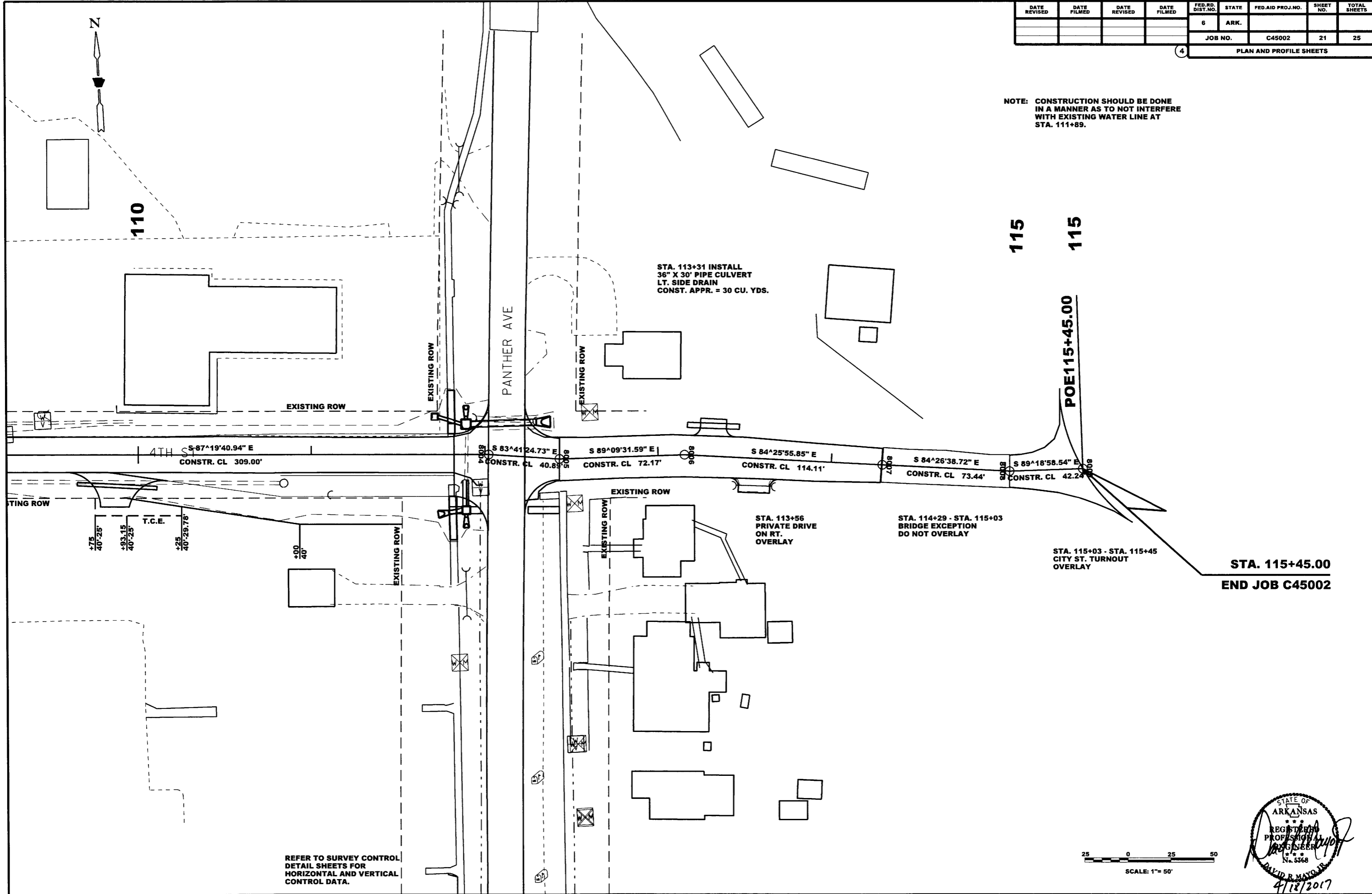


5/2/2017

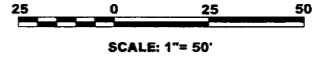
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				6	ARK.			
				JOB NO. C45002		21	25	

4 PLAN AND PROFILE SHEETS

NOTE: CONSTRUCTION SHOULD BE DONE IN A MANNER AS TO NOT INTERFERE WITH EXISTING WATER LINE AT STA. 111+89.



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



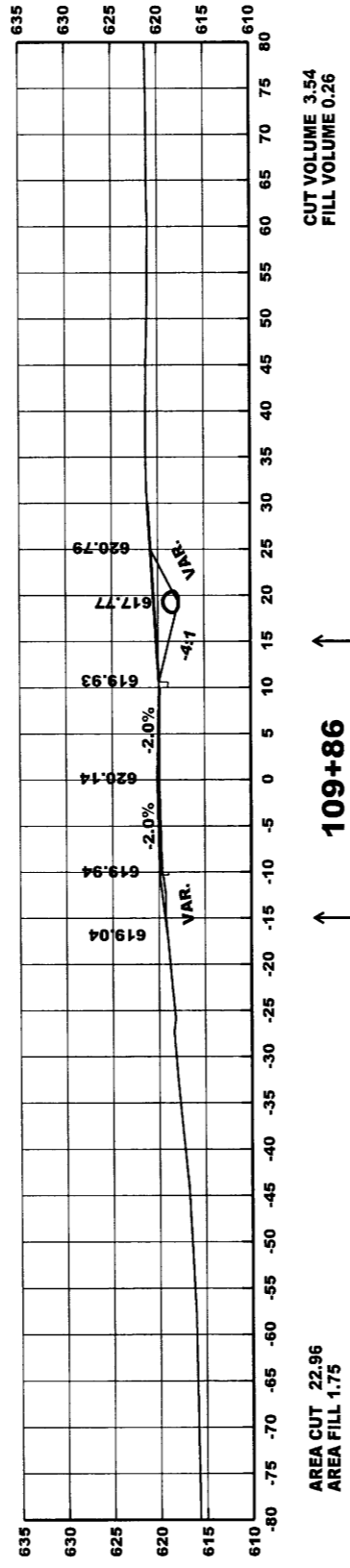
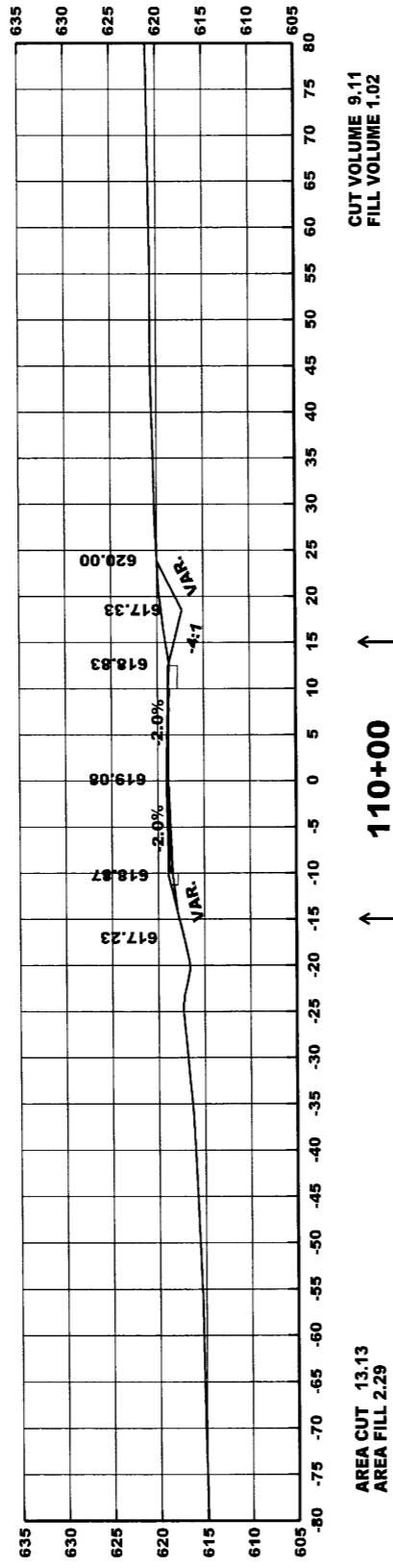
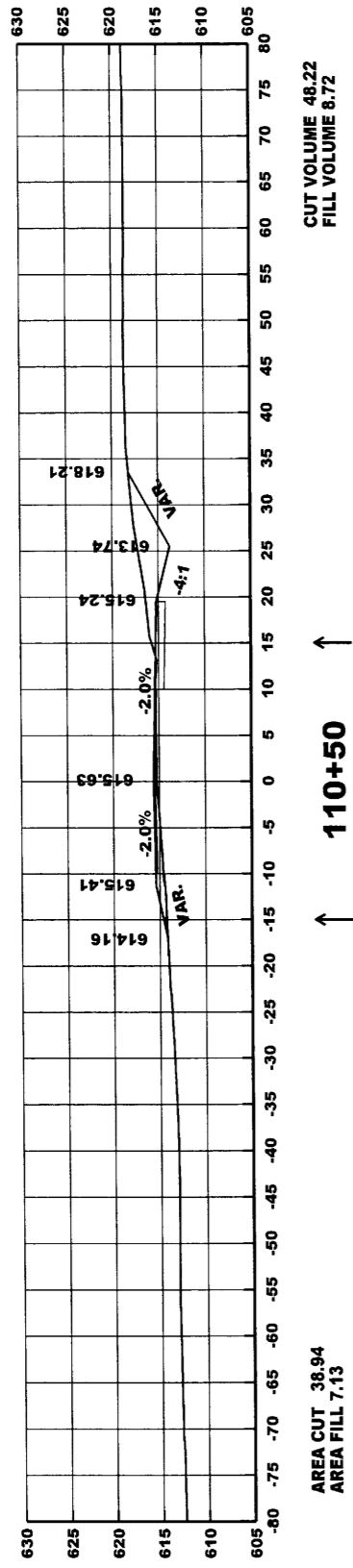
STATE OF ARKANSAS  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 5368  
 DAVID R. MAYO, JR.  
 4/18/2017

STA. 115+45.00  
 END JOB C45002

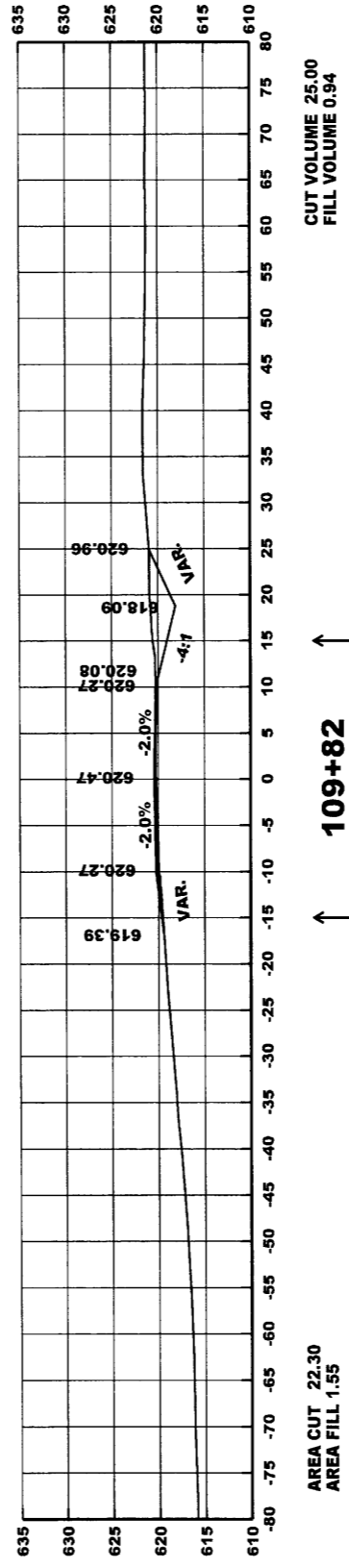
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				6	ARK.			
				JOB NO.	C45002	22	25	

4

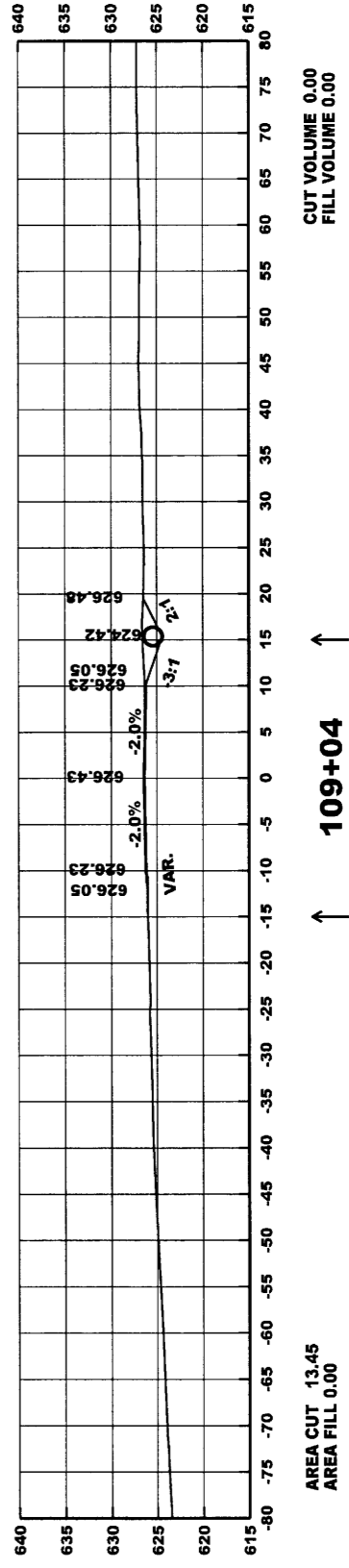
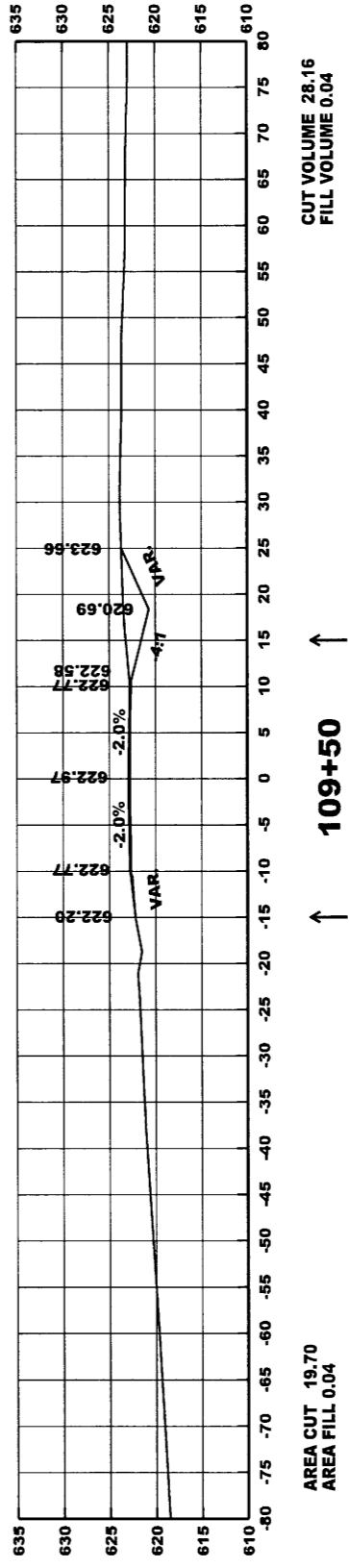
CROSS SECTIONS



↑ 109+86 ↑  
**INSTALL  
 28" X 20" X 44' ARCH PIPE CULVERT  
 RT. SIDE DRAIN  
 CONST. APPR. = 30 CU. YDS.**



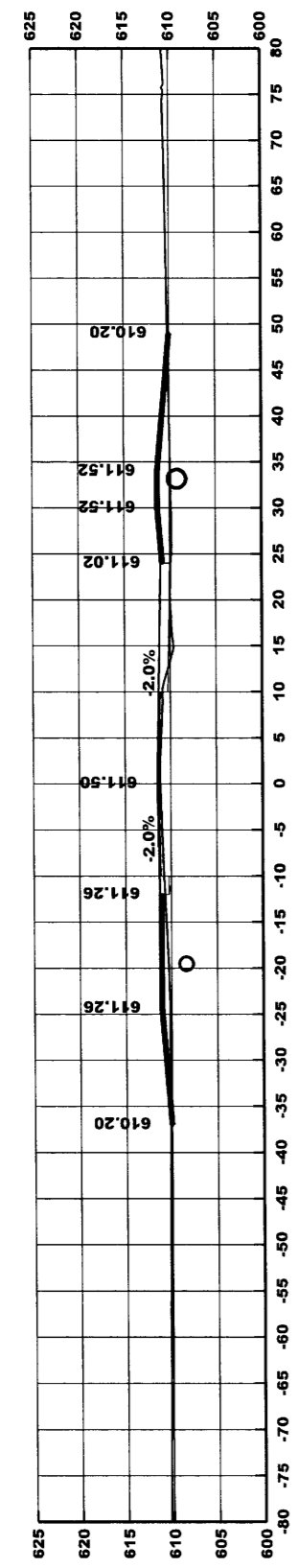
↑ 109+82 ↑  
**START TAPER TO THREE LANES**



↑ 109+04 ↑  
**BEGIN EARTHWORK JOB C45002**

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.	C45002	23	25	

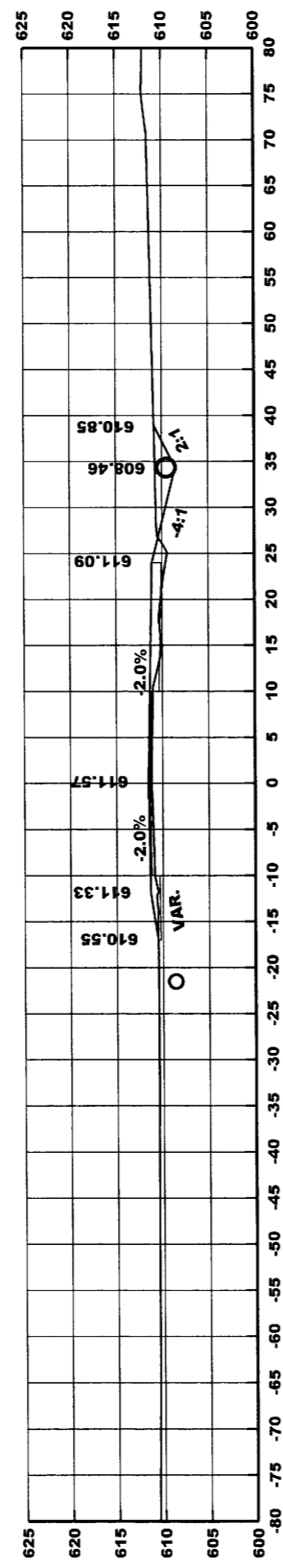
4 CROSS SECTIONS



CUT VOLUME 2.35  
FILL VOLUME 6.97

↑ 111+81 ↑

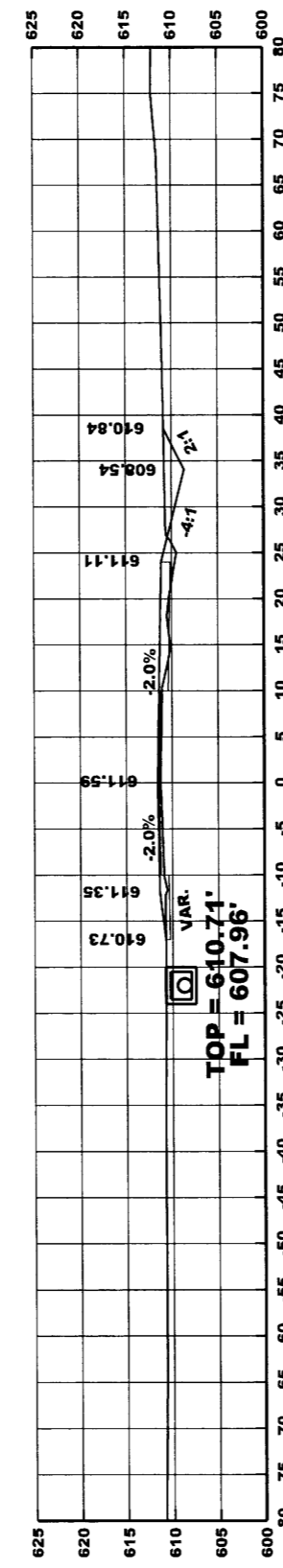
AREA CUT 1.85  
AREA FILL 51.37



CUT VOLUME 1.02  
FILL VOLUME 0.64

↑ 111+73 ↑

AREA CUT 14.01  
AREA FILL 9.18

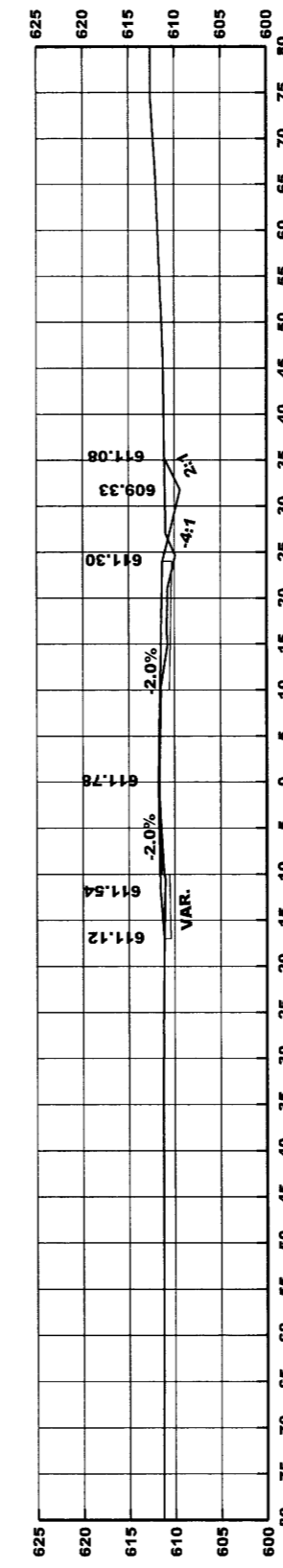


CUT VOLUME 10.91  
FILL VOLUME 4.40

↑ 111+71 ↑

AREA CUT 13.49  
AREA FILL 8.12

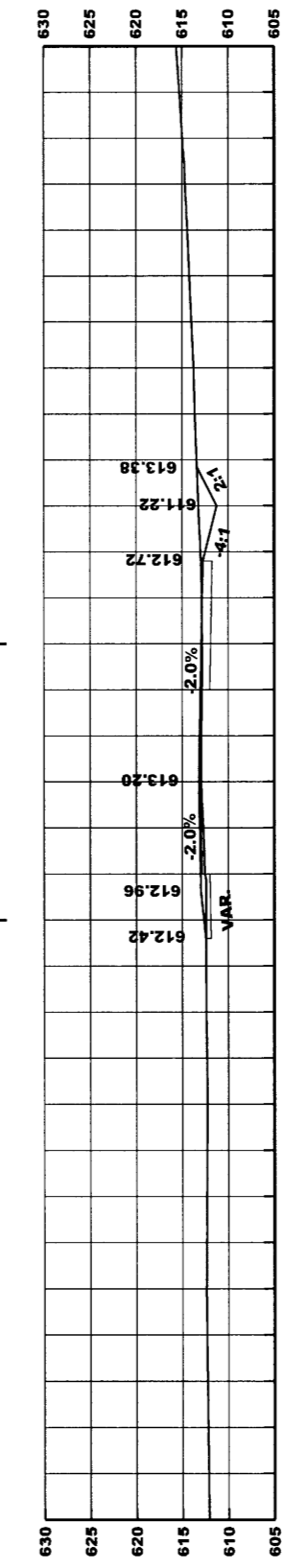
CONSTRUCT  
DROP INLET ON LT.  
18" X 16' R.C. PIPE OUTLET  
CONNECT TO JUNCTION BOX  
@ STA. 111+89 ON LT.  
TYPE ST = 3' X 3'  
HEIGHT = 2'-9"



CUT VOLUME 34.90  
FILL VOLUME 5.75

↑ 111+50 ↑

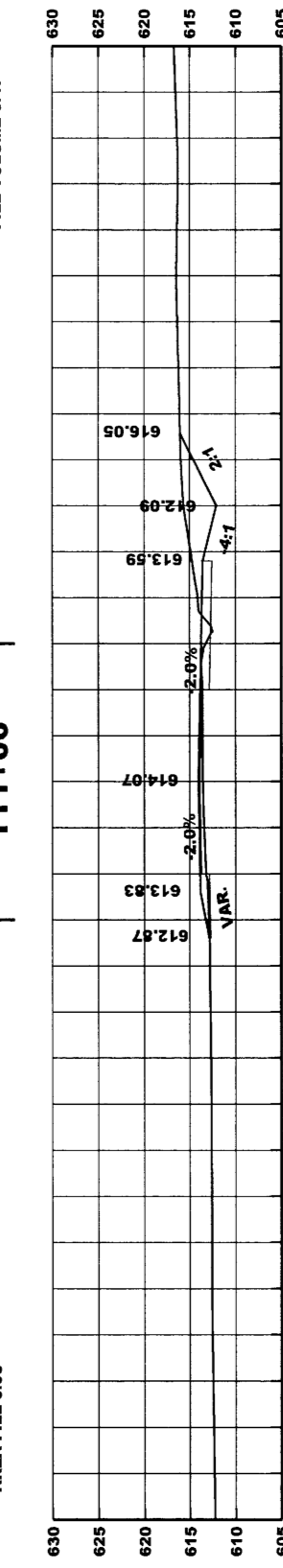
AREA CUT 14.36  
AREA FILL 3.13



CUT VOLUME 20.67  
FILL VOLUME 3.47

↑ 111+00 ↑

AREA CUT 23.34  
AREA FILL 3.06



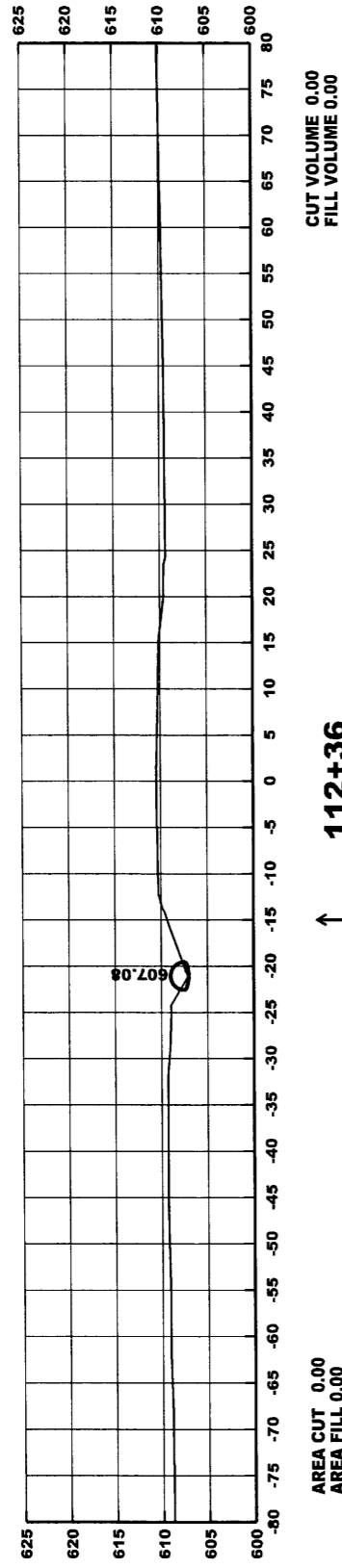
CUT VOLUME 46.51  
FILL VOLUME 8.66

↑ 110+82 ↑

AREA CUT 39.19  
AREA FILL 7.43

END TAPER TO THREE LANES

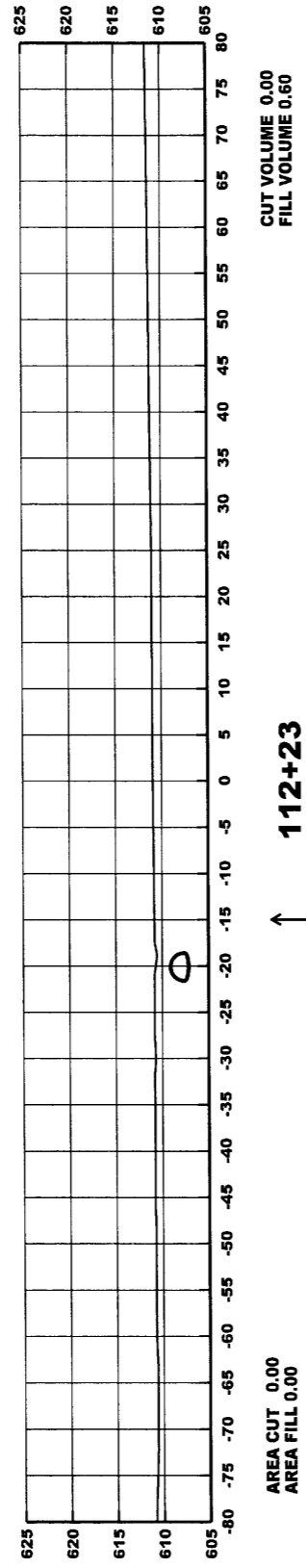
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	C45002	24	25	
4 CROSS SECTIONS								



↑ 112+36

AREA CUT 0.00  
AREA FILL 0.00

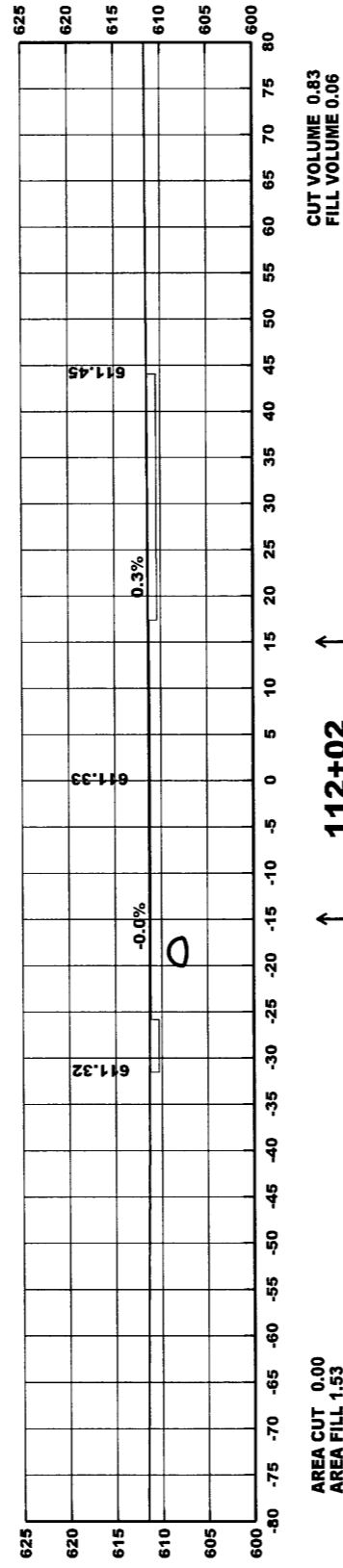
CUT VOLUME 0.00  
FILL VOLUME 0.00



↑ 112+23

AREA CUT 0.00  
AREA FILL 0.00

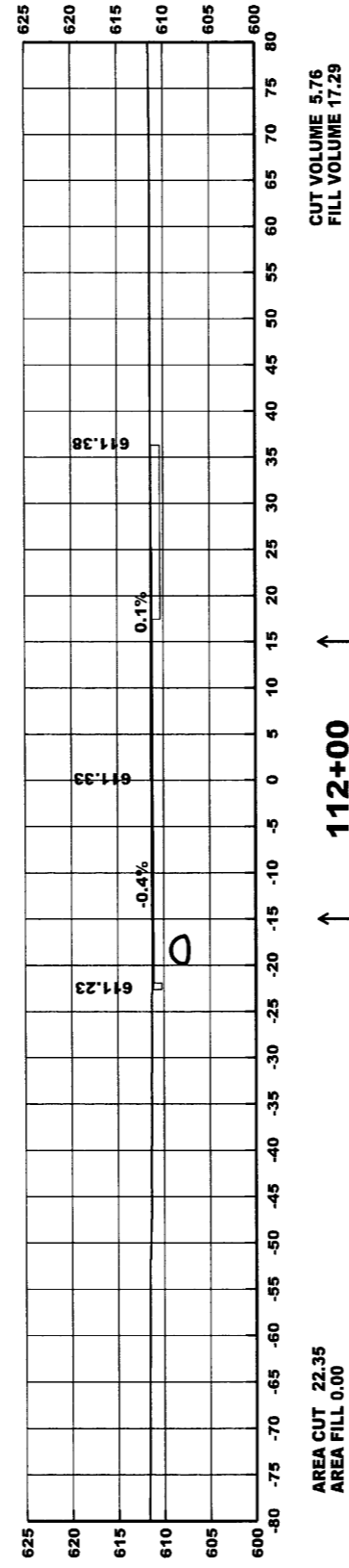
CUT VOLUME 0.00  
FILL VOLUME 0.60



↑ 112+02

AREA CUT 0.00  
AREA FILL 1.53

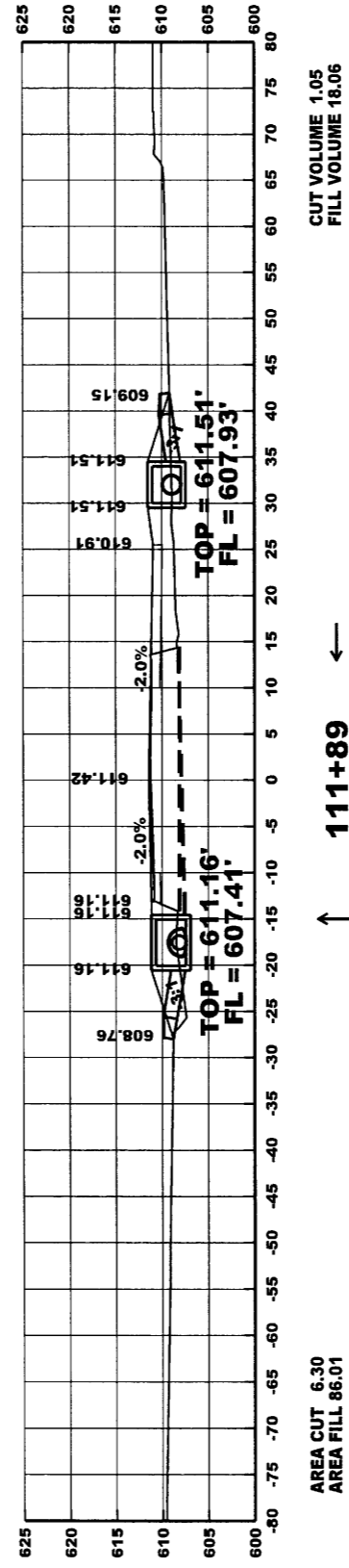
CUT VOLUME 0.83  
FILL VOLUME 0.06



↑ 112+00

AREA CUT 22.35  
AREA FILL 0.00

CUT VOLUME 5.76  
FILL VOLUME 17.29



↑ 111+89

AREA CUT 6.30  
AREA FILL 86.01

CUT VOLUME 1.05  
FILL VOLUME 18.06

**CONSTRUCT**

**JUNCTION BOX ON LT.**

**18" X 27" X 38" R.C.A. PIPE OUTLET WITH F.E.S.**

**TYPE E = 5' X 5'**

**HEIGHT = 3'-9"**

**CONSTRUCT**

**JUNCTION BOX ON RT.**

**18" X 2' R.C. PIPE INLET WITH F.E.S.**

**24" X 8' R.C. PIPE INLET WITH F.E.S.**

**EXISTING 24" C.M. PIPE OUTLET - EXTEND**

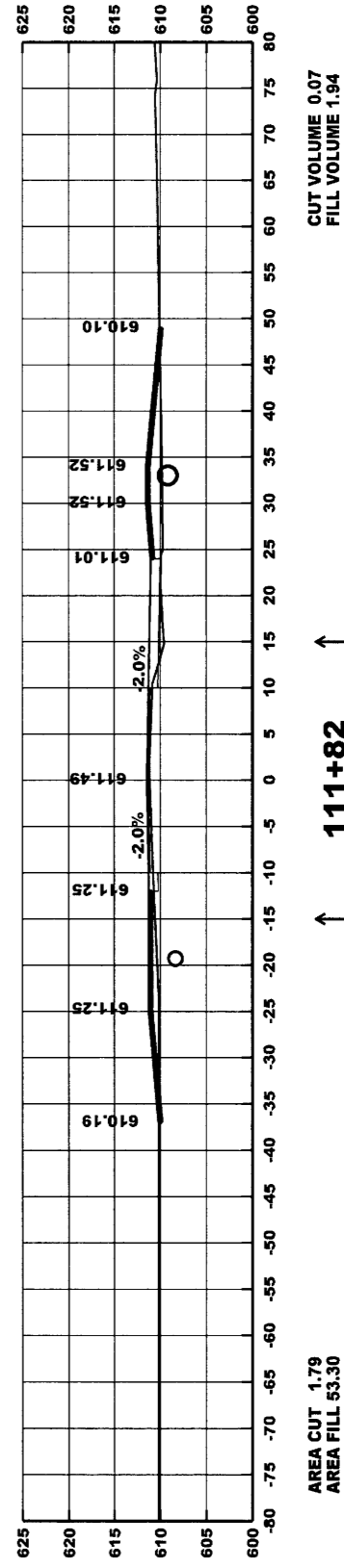
**EXISTING 18" C.M. PIPE OUTLET - EXTEND**

**CONNECT TO JUNCTION BOX**

**@ STA. 111+89 LT.**

**TYPE E = 4' X 4'**

**HEIGHT = 3'-7"**



↑ 111+82

AREA CUT 1.79  
AREA FILL 53.30

CUT VOLUME 0.07  
FILL VOLUME 1.94

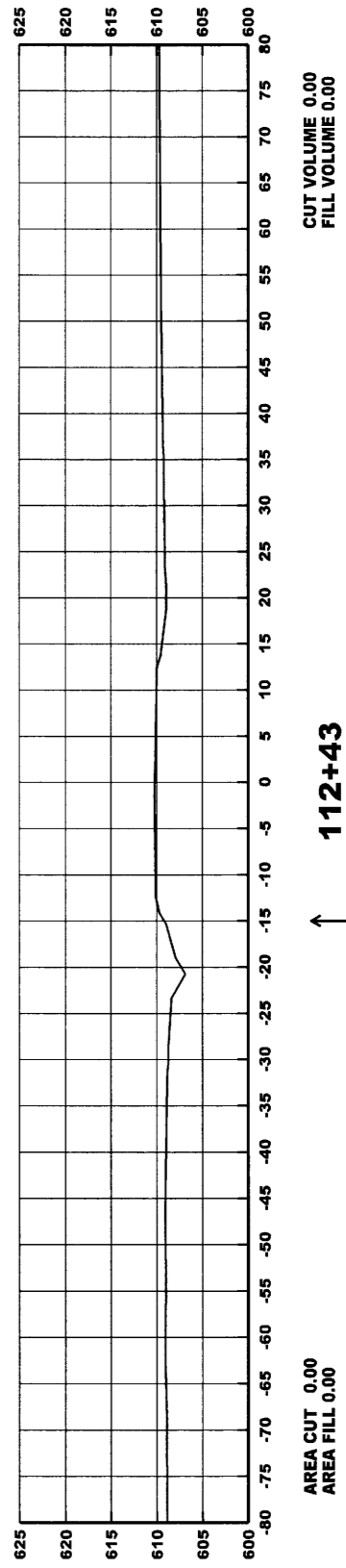


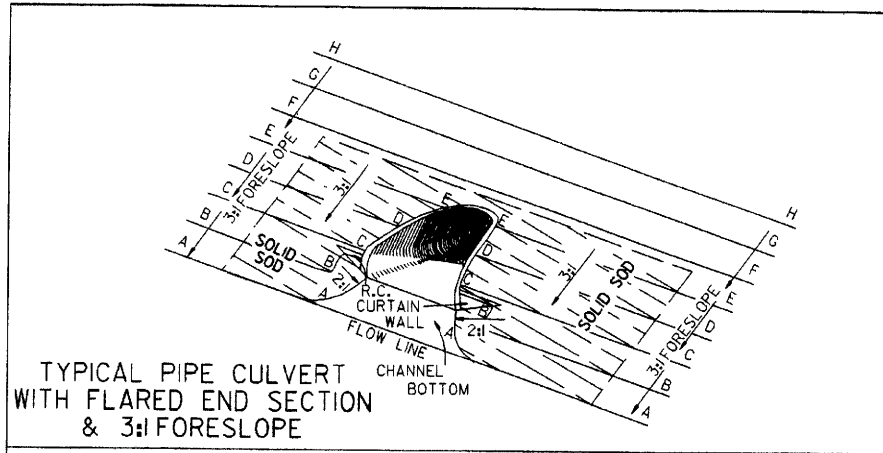
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		C45002	25	25

4

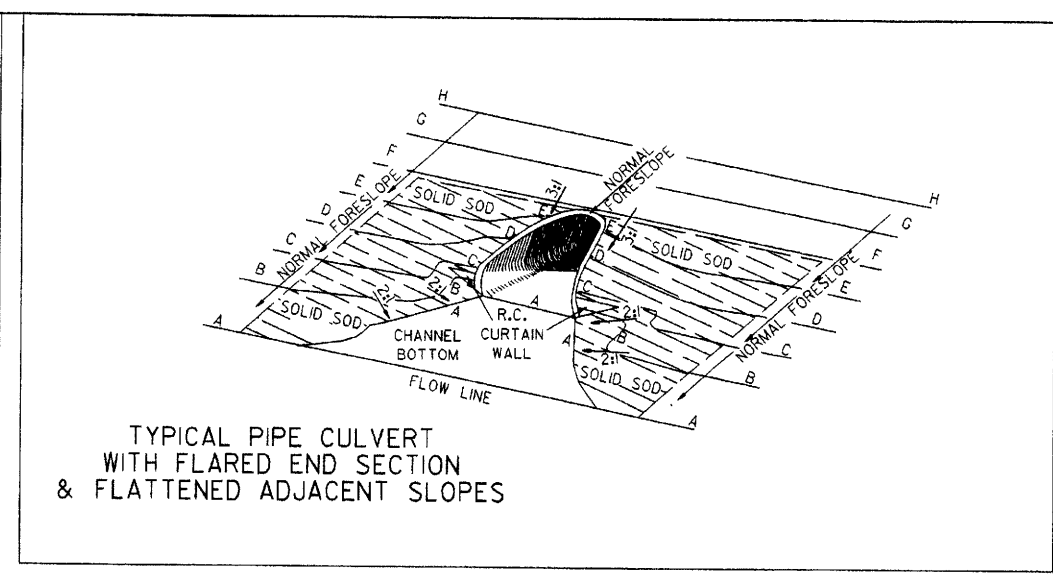
CROSS SECTIONS

**END EARTHWORK JOB C45002**

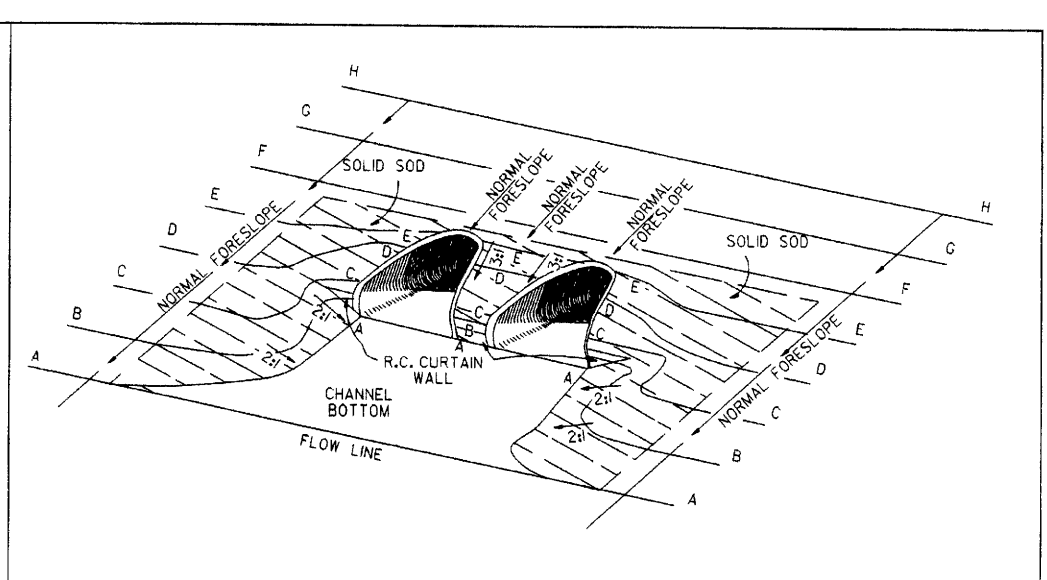




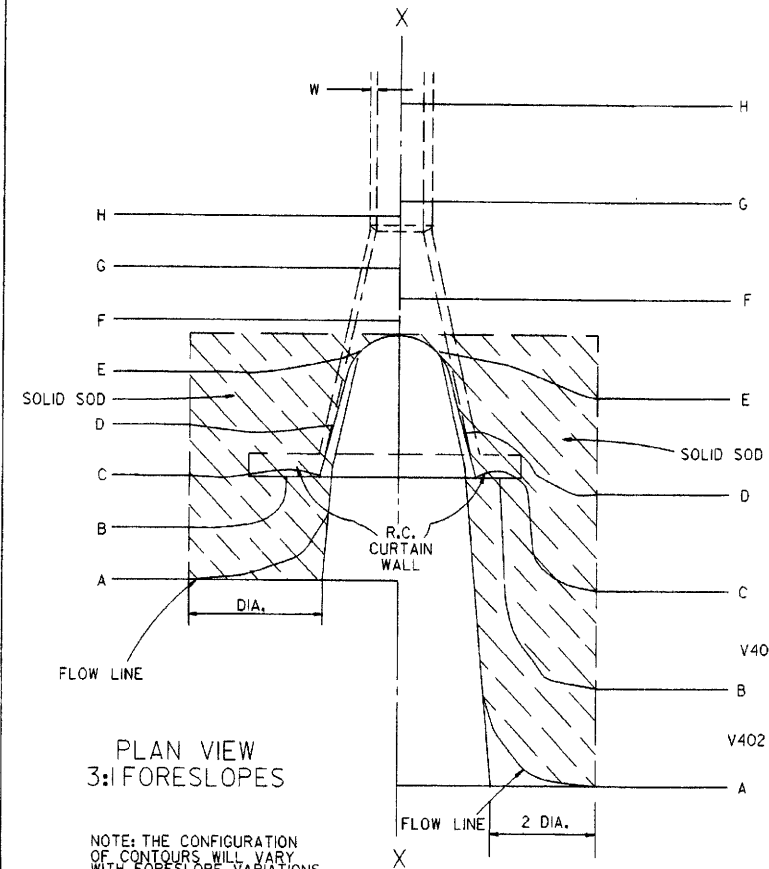
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



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

PLAN VIEW FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

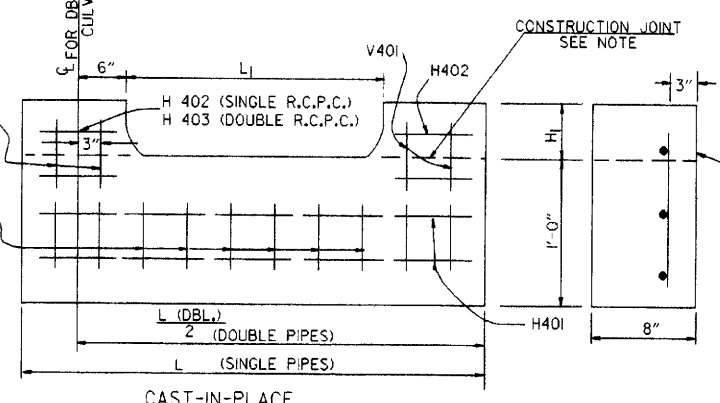
PIPE DIA.	H <sub>1</sub>	L <sub>1</sub>	L	L (DBL.) / 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
18"	11 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"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

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

REINFORCING STEEL SCHEDULE

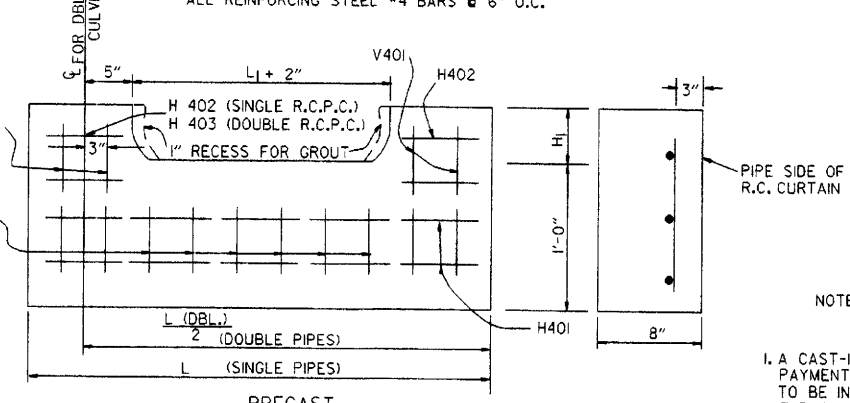
PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"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

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



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

R.C. CURTAIN WALL DETAILS



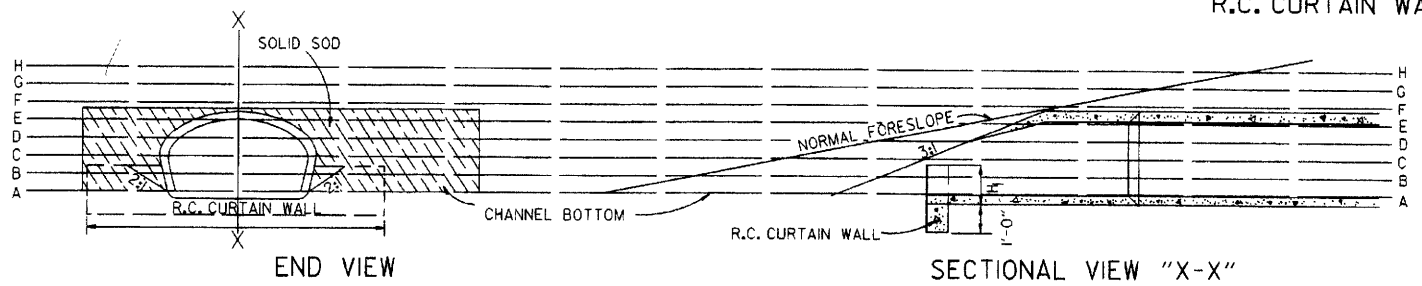
NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION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

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.						DOUBLE R.C.P.C.					
	3:1	4:1	6:1	3:1	4:1	6:1	3:1	4:1	6:1	3:1	4:1	6:1
18"	5	7	12	6	8	13	5	7	12	6	8	13
24"	8	12	19	9	13	20	8	12	19	9	13	20
30"	13	18	29	14	19	30	13	18	29	14	19	30
36"	17	26	41	18	28	43	17	26	41	18	28	43
42"	23	35	55	25	37	57	23	35	55	25	37	57
48"	29	46	68	31	48	70	29	46	68	31	48	70
54"	35	57	85	37	59	87	35	57	85	37	59	87
60"	45	82	104	48	85	107	45	82	104	48	85	107
72"	64	92	156	67	95	159	64	92	156	67	95	159

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

- GENERAL NOTES
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
  2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
  3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
  4. WELDED WIRE MESH 3 x 3 W/10 x W/10 MAY BE USED IN LIEU OF REINFORCING BARS.

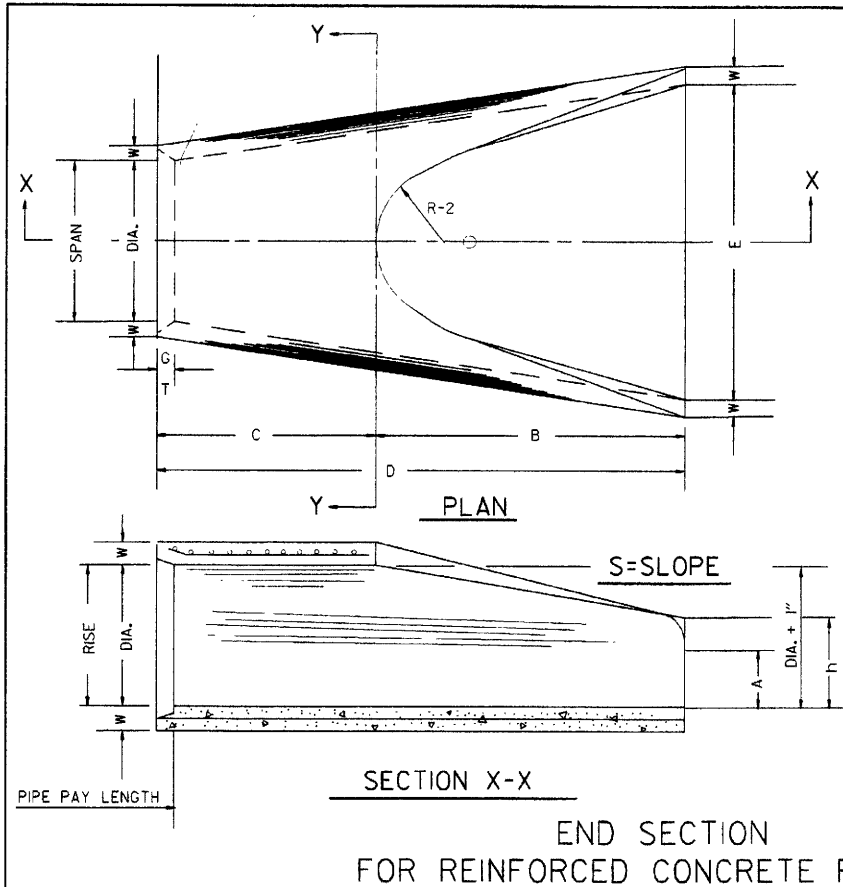


END VIEW

SECTIONAL VIEW "X-X"

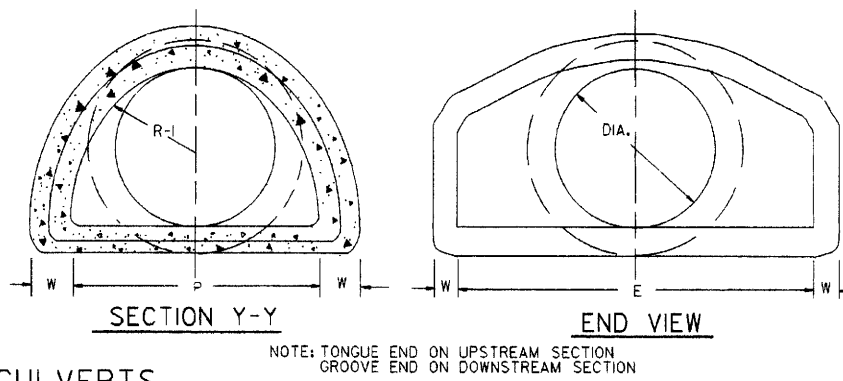
10-18-96	ADDED NOTE TO SOLID SODDING				
10-12-95	CORRECTED SPELLING				
11-3-94	ADDED GENERAL NOTE NO. 4				
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.				
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES				
5-15-80	ADDED PRECAST WALL & GENERAL NOTES				
10-2-72	REVISED AND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

ARKANSAS STATE HIGHWAY COMMISSION  
**FLARED END SECTION**  
 STANDARD DRAWING FES-1



**TABLE OF DIMENSIONS**

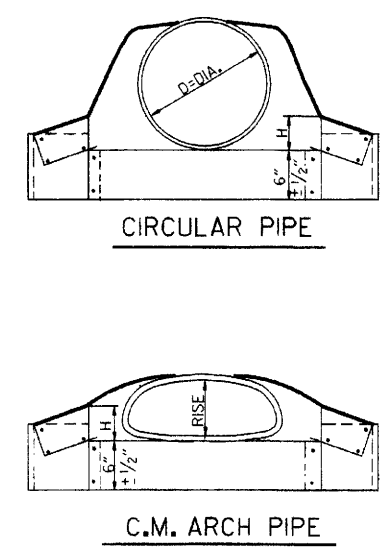
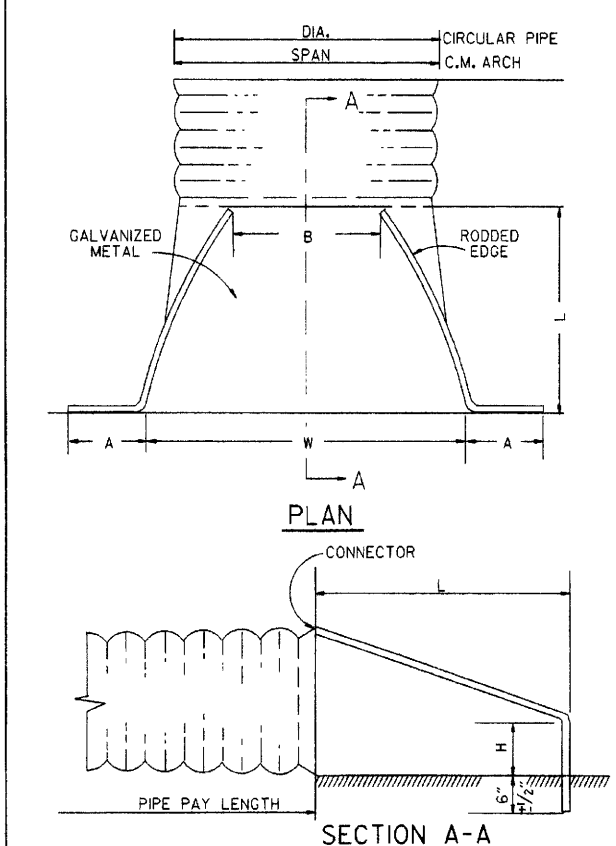
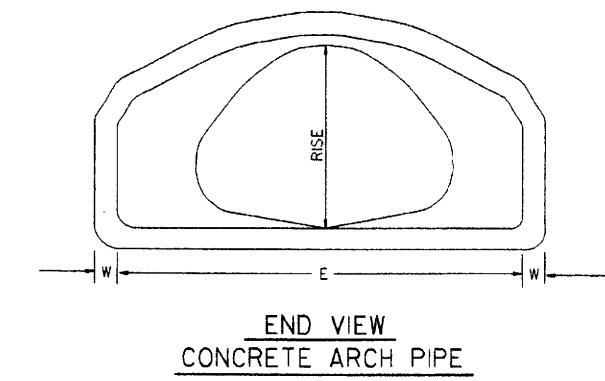
DIA.	WALL	A	B	C	D	E	S	DIA. - 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/8"	16 1/8"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"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



**ARCH PIPE**

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

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

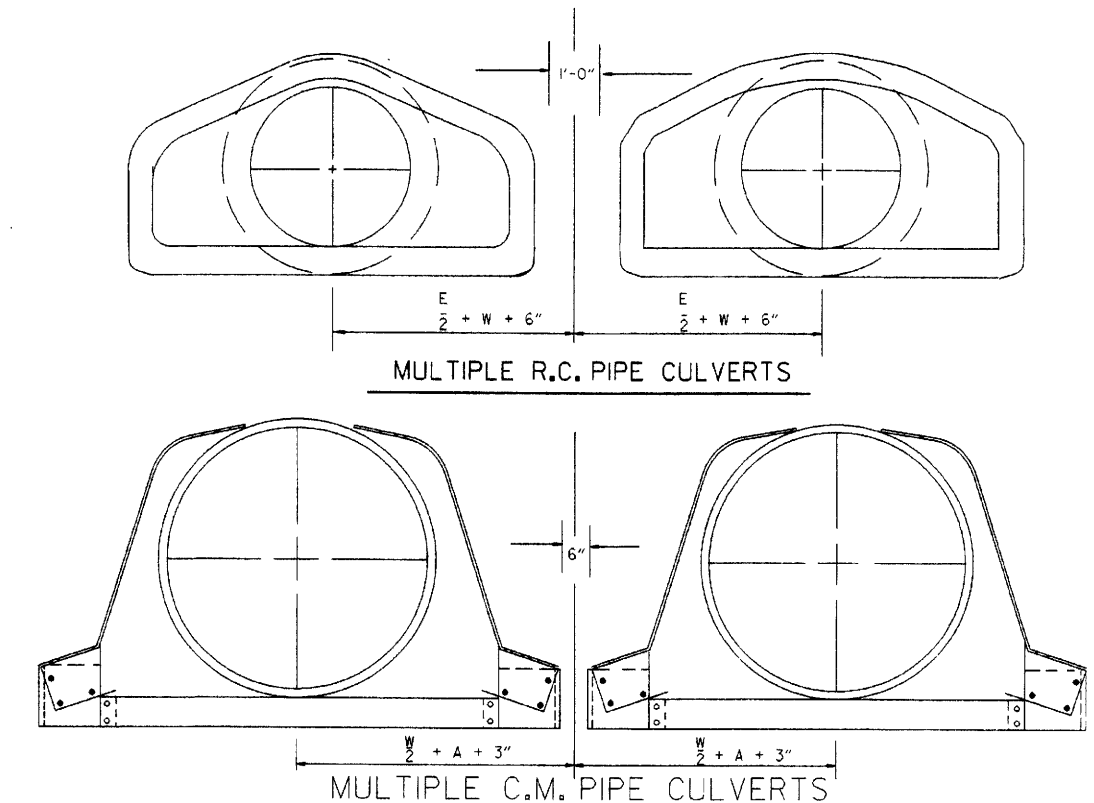


**CIRCULAR PIPE**

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

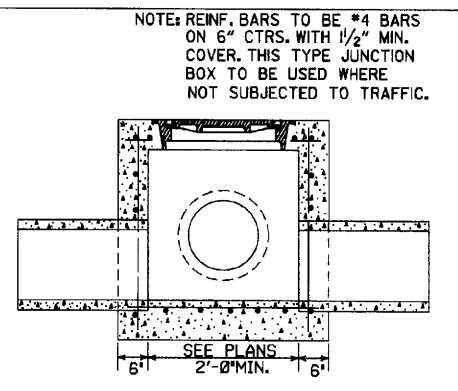
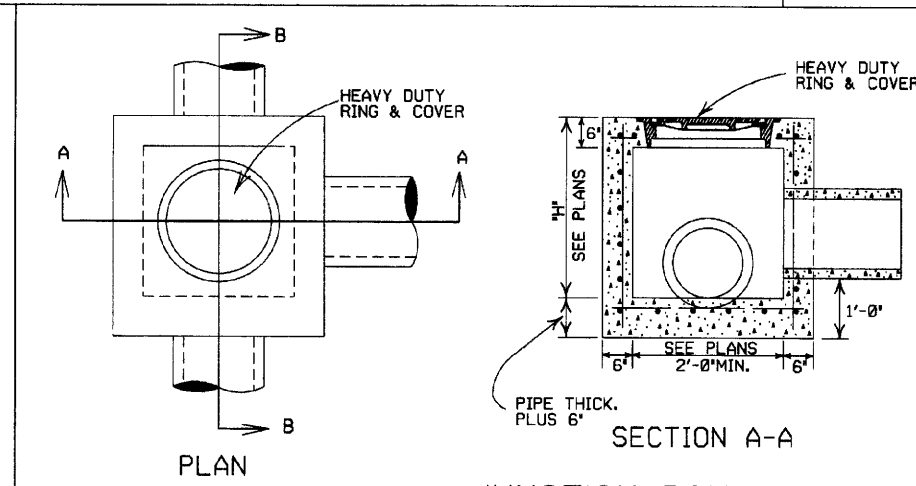
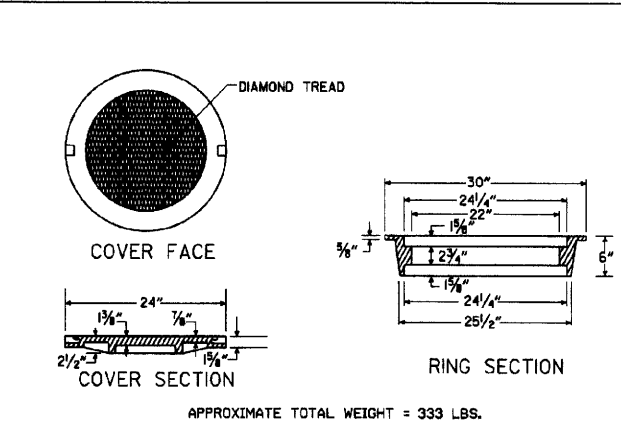
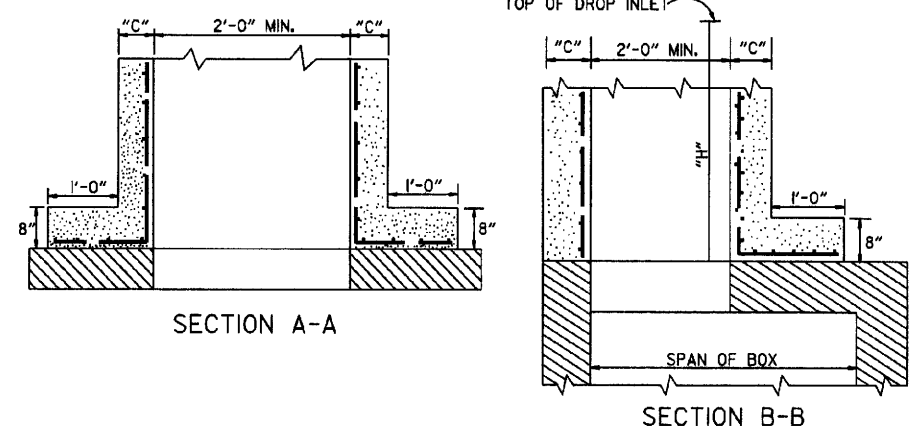
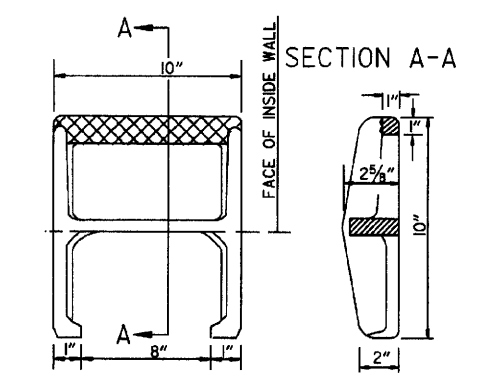
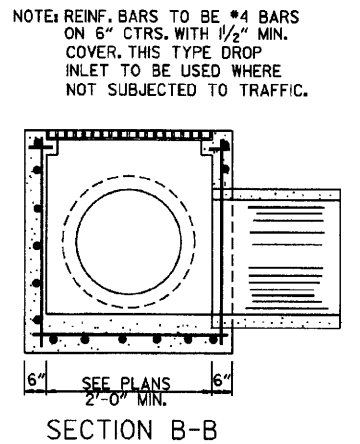
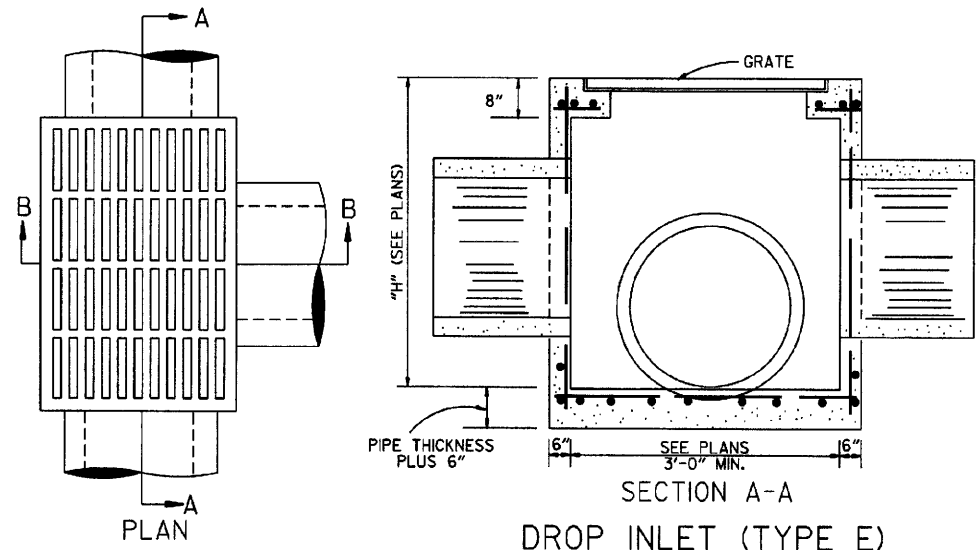
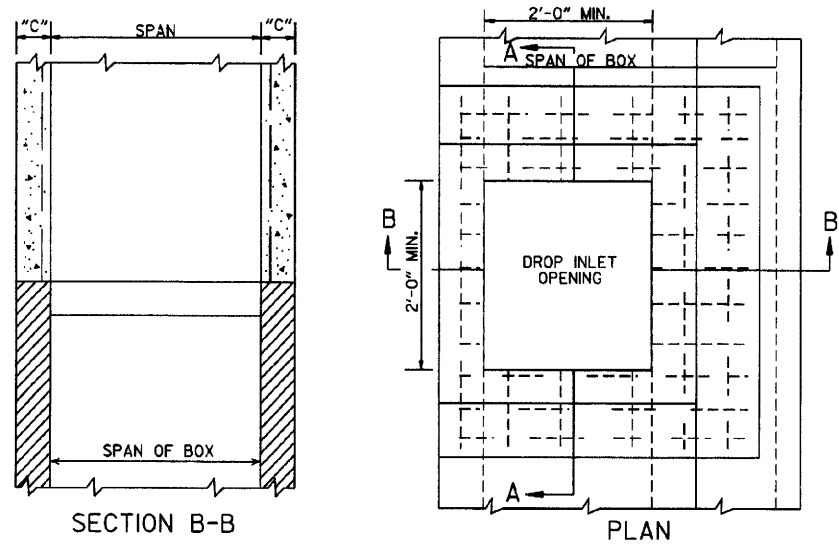
**C.M. ARCH PIPE**

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



10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	FLARED END SECTION
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	STANDARD DRAWING FES-2
DATE	REVISION	FILMED	

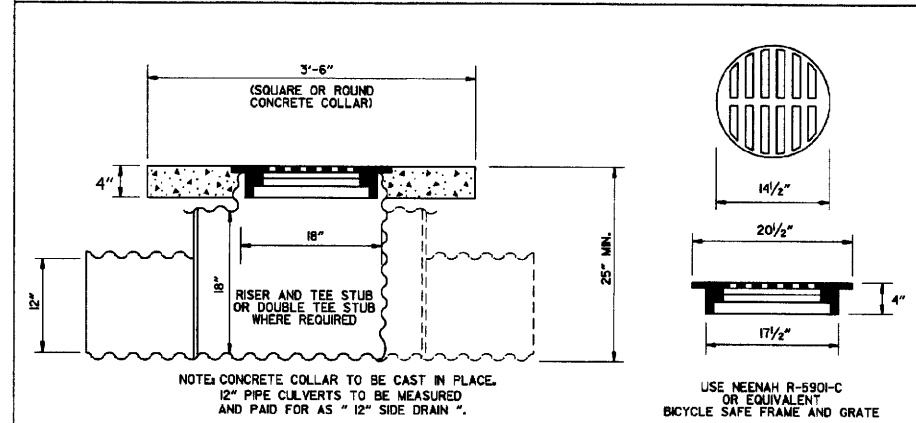
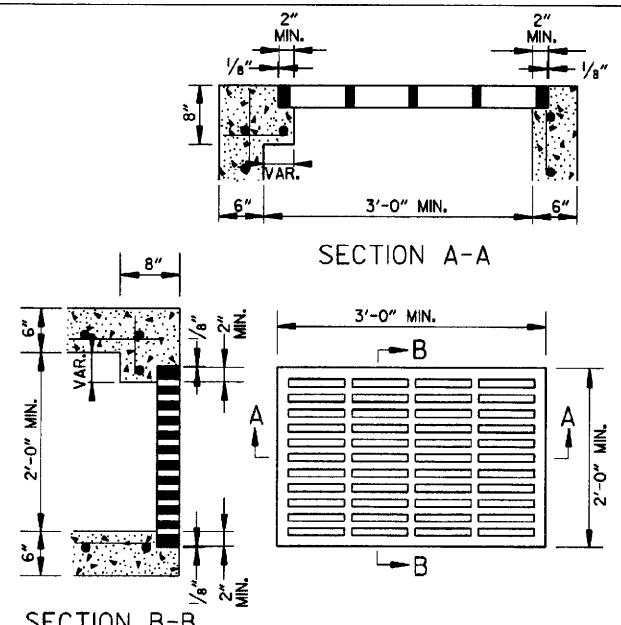
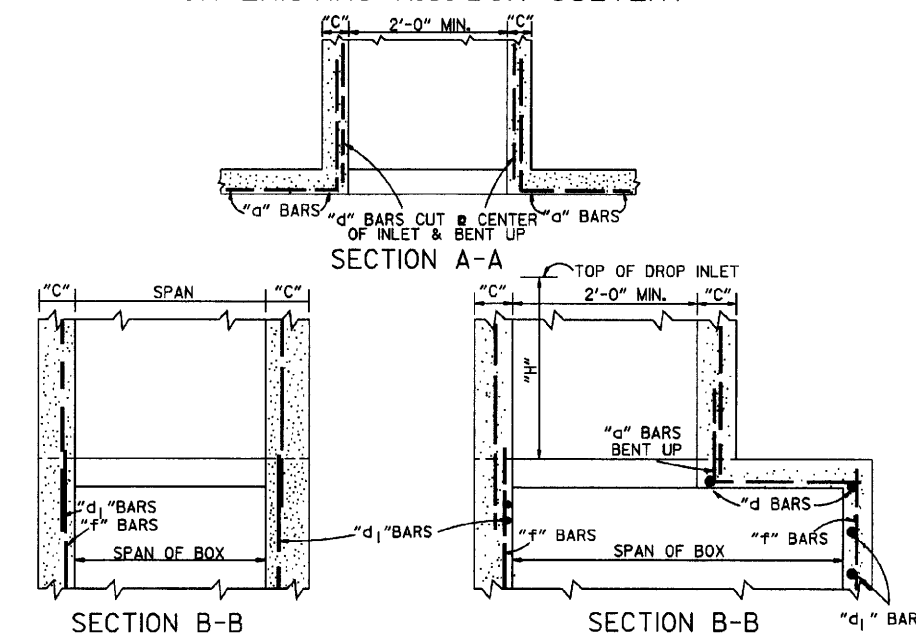
**END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS**



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

HEAVY DUTY RING & COVER

JUNCTION BOX (TYPE E)



- GENERAL NOTES:
1. ALL EXPOSED CORNERS SHALL BE 3/4" 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 3/4" 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.

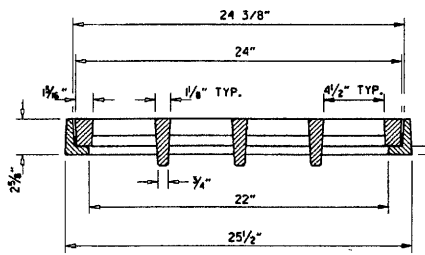
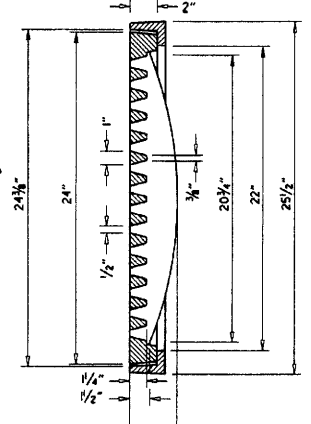
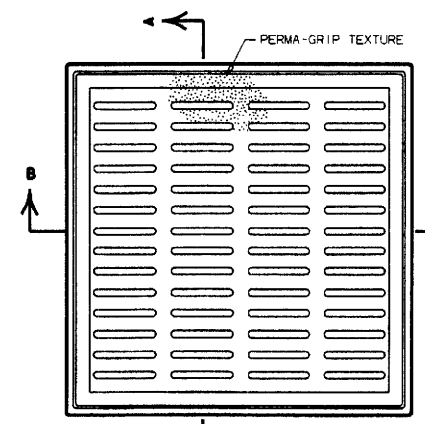
DETAIL OF YARD DRAIN

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

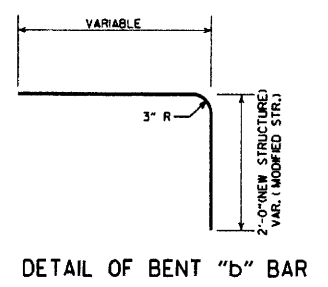
GRATE FOR TYPE E DROP INLET

ARKANSAS STATE HIGHWAY COMMISSION  
 DETAILS OF DROP INLETS  
 & JUNCTION BOXES  
 STANDARD DRAWING FPC-9

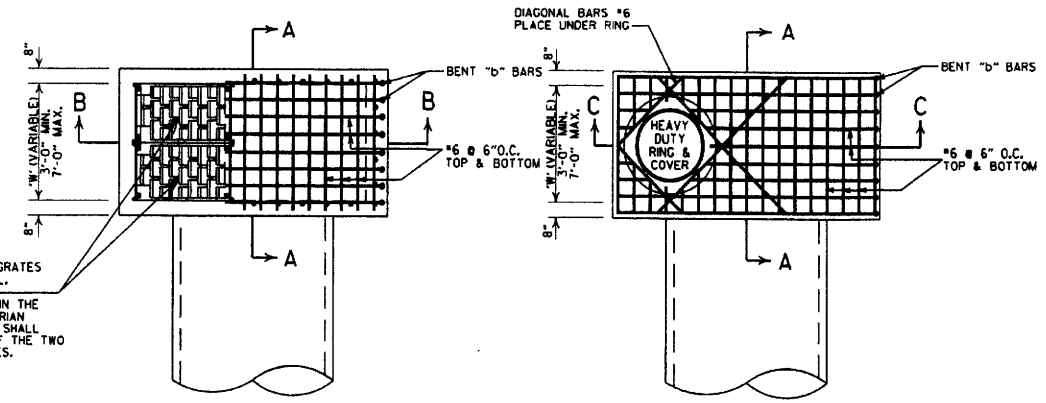
DATE	REV.	REVISION	DATE FILED
11-16-01		ADDED NOTE 10	
1-12-00		REVISED HEAVY DUTY RING & COVER	
7-02-98		CHANGED GRATE DETAIL, DELETED D(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97		ADDED DIMENSION TO TYPE IV-A	
10-18-96		ADDED DETAIL OF YARD DRAIN	
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	



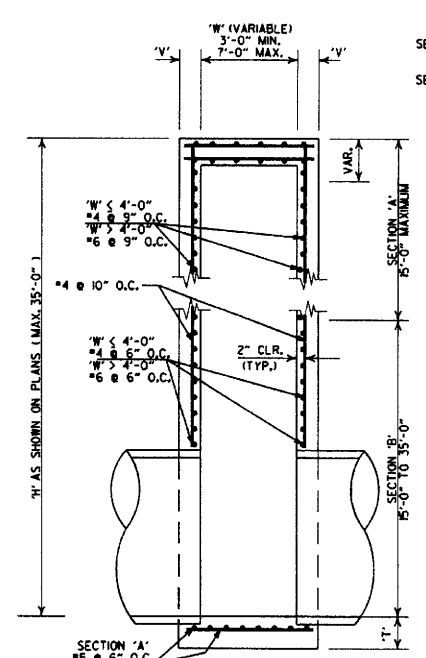
- GENERAL NOTES (PEDESTRIAN GRATE & FRAME)**
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE  $\frac{1}{2}$ " OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
  2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
  3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
  4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
  5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 2VLBS.
  6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.



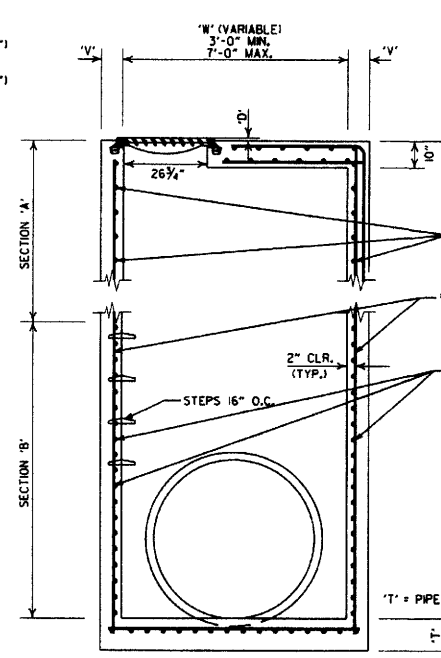
DETAIL OF BENT "b" BAR



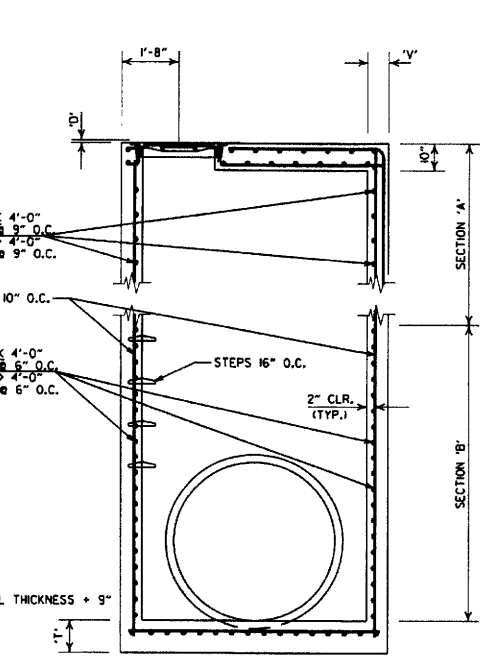
TWO RIBBED VANE GRATES WITH FRAME NORMAL.  
WHEN CALLED FOR IN THE PLANS, ONE PEDESTRIAN GRATE WITH FRAME SHALL BE USED IN LIEU OF THE TWO RIBBED VANE GRATES.



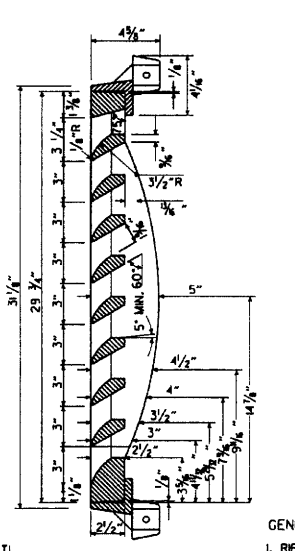
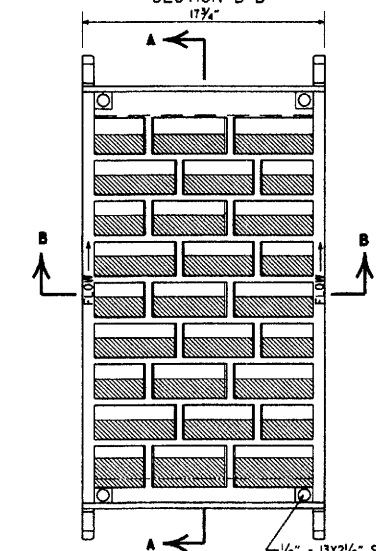
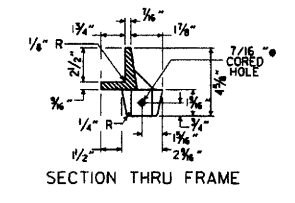
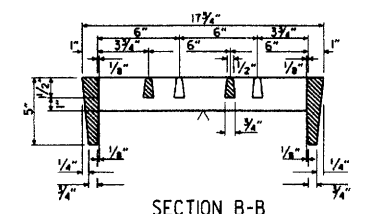
SECTION A-A  
DETAILS OF DROP INLET (TYPE ST)



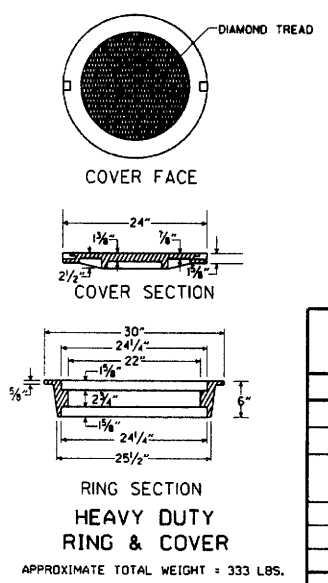
SECTION B-B  
DETAILS OF DROP INLET (TYPE ST)



SECTION C-C  
DETAILS OF DROP INLET (TYPE ST)



- GENERAL NOTES (RIBBED VANE GRATE & FRAME)**
1. RIBBED VANE 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, & AASHTO M 306.
  2. GRATE AND FRAME SHALL NOT BE PAINTED.
  3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
  4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



HEAVY DUTY RING & COVER  
APPROXIMATE TOTAL WEIGHT = 333 LBS.

- GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)**
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
  2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
  3. ALL EXPOSED CORNERS ARE TO HAVE A  $\frac{3}{4}$ " CHAMFER.

- GENERAL NOTES (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 M 105, CLASS 35B, & AASHTO M 306.
  2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
  3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
  4. 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 REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER, ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION  
**DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)**  
STANDARD DRAWING FPC-95

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43¾	44	26¾	27
42	51½	51	31¾	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	87½	87
120	154	154	96¾	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)(ii).

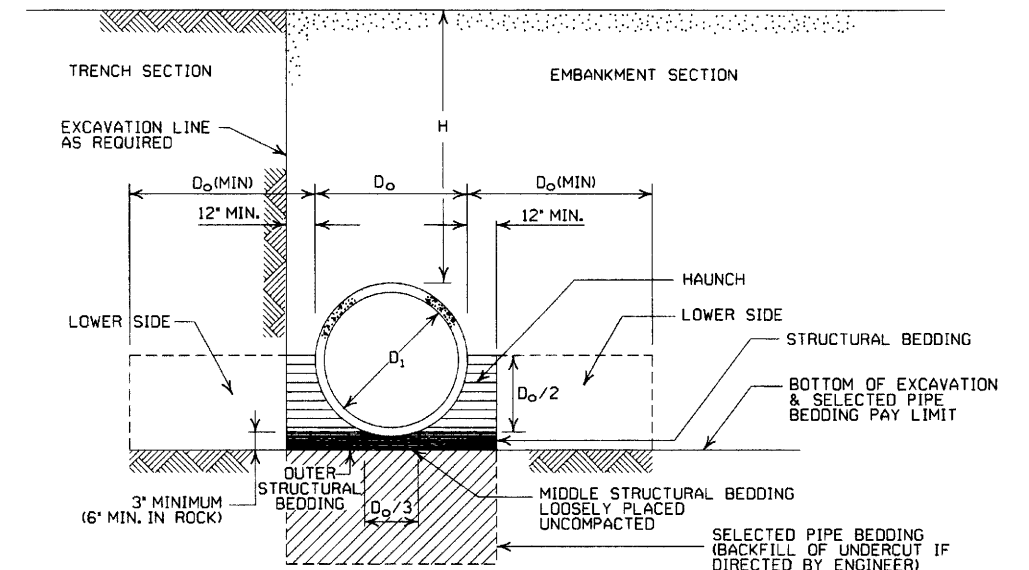
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

- D<sub>1</sub> = NORMAL INSIDE DIAMETER OF PIPE
- D<sub>0</sub> = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- UNDISTURBED SOIL

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

- \* SM-3 WILL NOT BE ALLOWED.
- \*\* MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT  
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

**CORRUGATED STEEL PIPE (ROUND)**

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

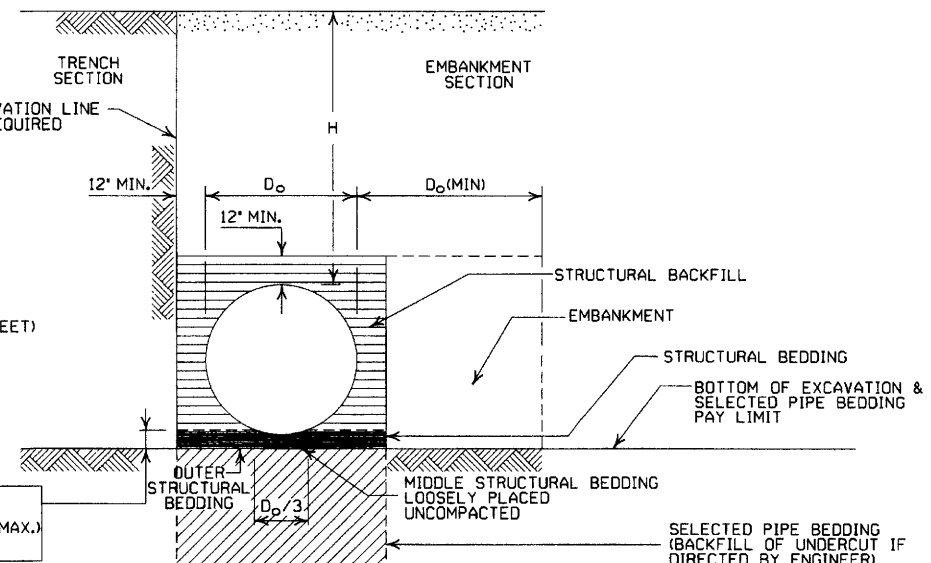
**CONSTRUCTION SEQUENCE**

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

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

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

③ SM-3 WILL NOT BE ALLOWED.



- LEGEND -**
- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
  - MAX. = MAXIMUM
  - MIN. = MINIMUM
  - [Hatched Pattern] = STRUCTURAL BACKFILL MATERIAL
  - [Dotted Pattern] = UNDISTURBED SOIL
  - [Diagonal Lines] = EQUIV. DIA. = EQUIVALENT DIAMETER
  - H = FILL COVER HEIGHT OVER PIPE (FEET)

IN SOIL-MIN. EQUALS TWICE CORRUGATION DEPTH  
IN ROCK-MIN. EQUALS GREATER OF:  
1/2" PER FOOT OF FILL OVER PIPE (24" MAX.)  
TWICE CORRUGATION DEPTH

**EMBANKMENT AND TRENCH INSTALLATIONS**

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

**CORRUGATED ALUMINUM PIPE (ROUND)**

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM						
12	1	45	45			
18	2	30	30	52	41	
24	2	22	22	39	32	34
30	2		18	31		
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

**EQUIVALENT METAL THICKNESSES AND GAUGES**

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

**CORRUGATED METAL PIPE ARCHES**

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

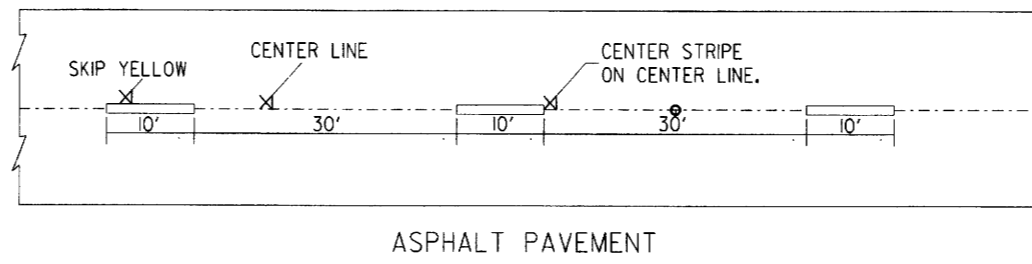
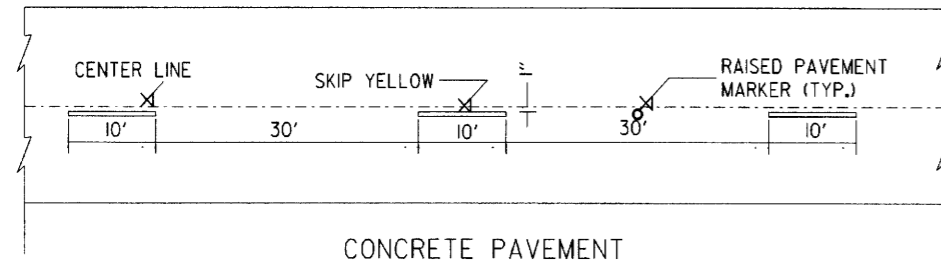
① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

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

**GENERAL NOTES**

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

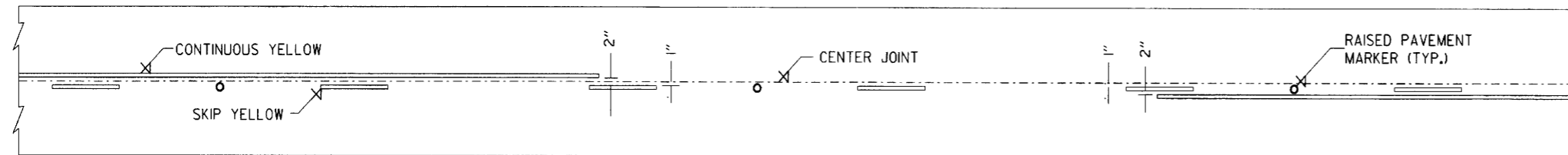
ARKANSAS STATE HIGHWAY COMMISSION		
METAL PIPE CULVERT FILL HEIGHTS & BEDDING		
STANDARD DRAWING PCM-1		
2-27-14	REVISED GENERAL NOTE 1	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	
DATE	REVISION	DATE FILMED



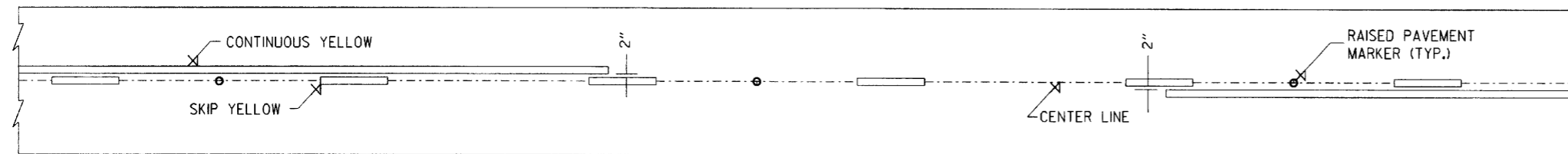
CONCRETE PAVEMENT

ASPHALT PAVEMENT

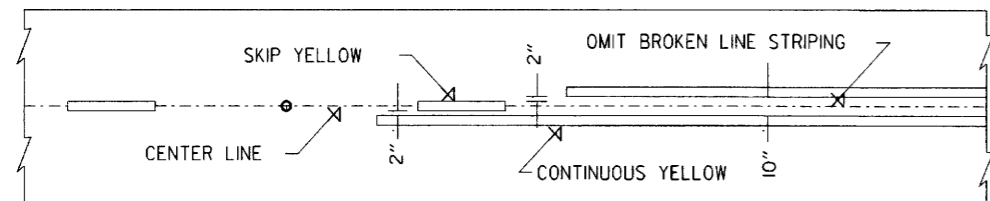
BROKEN LINE STRIPING



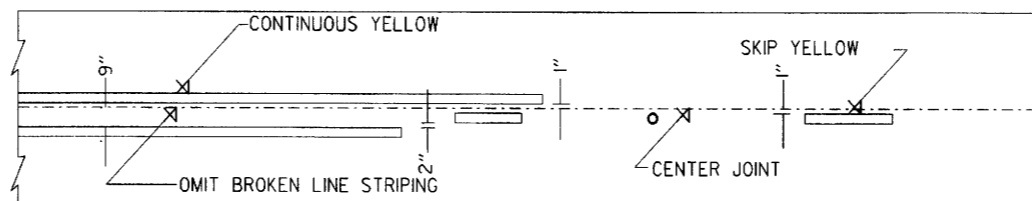
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

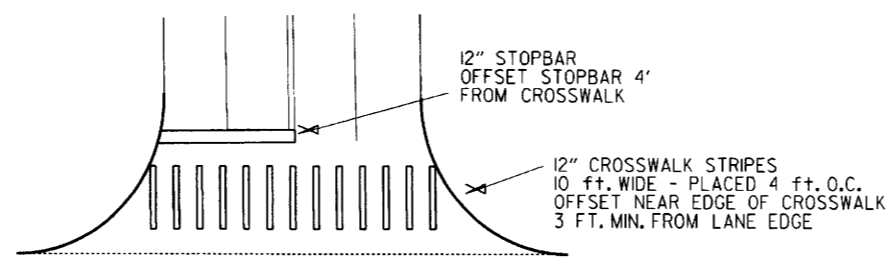


ASPHALT PAVEMENT



CONCRETE PAVEMENT

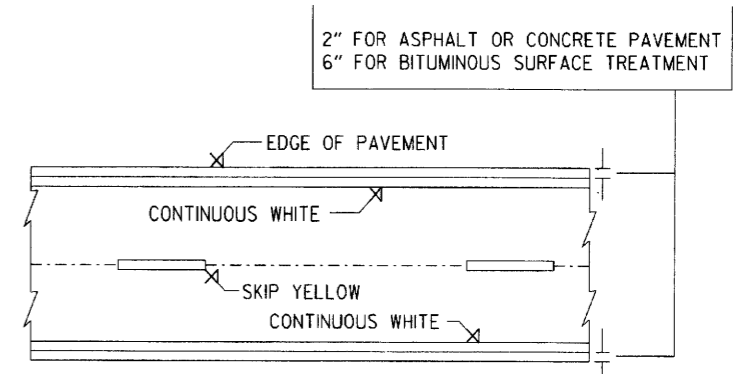
STRIPING AT ADJACENT NO PASSING LANES



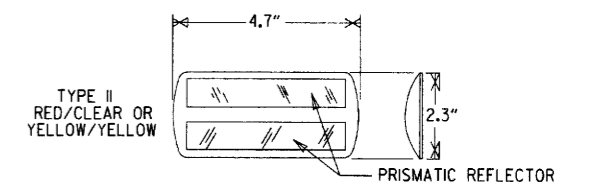
CROSSWALK AND STOPBAR DETAILS

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.



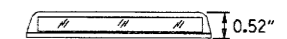
PAVEMENT EDGE LINE MARKING



TYPE II  
RED/CLEAR OR  
YELLOW/YELLOW

PRISMATIC REFLECTOR

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



DETAIL OF  
STANDARD  
RAISED PAVEMENT MARKERS

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



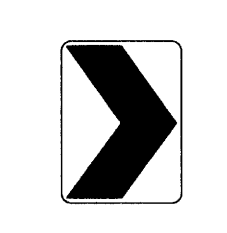



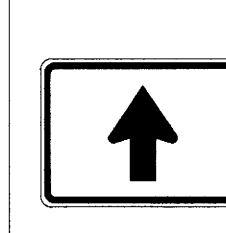
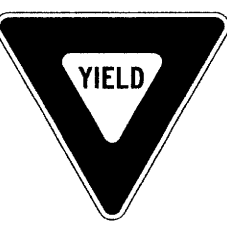

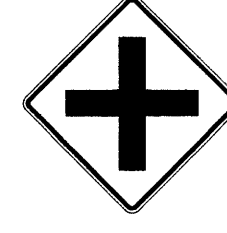


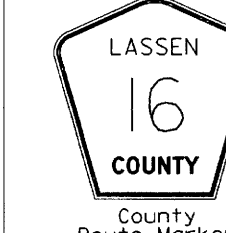
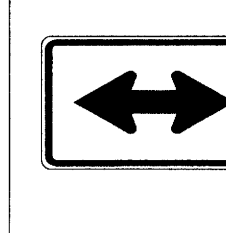
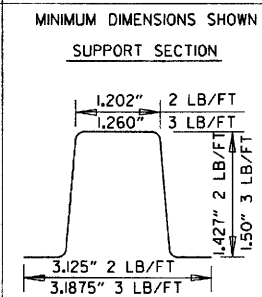
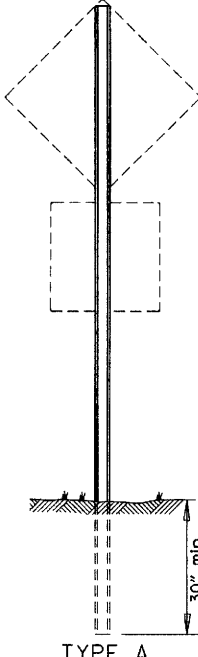
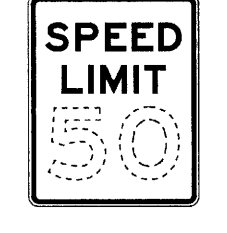

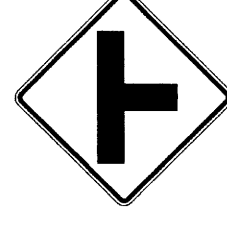


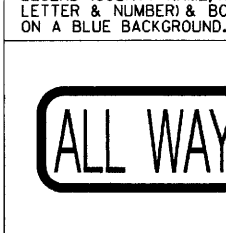
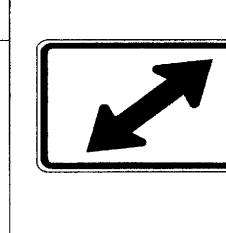

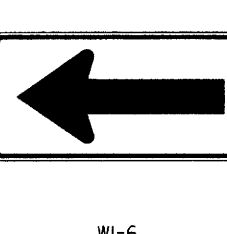
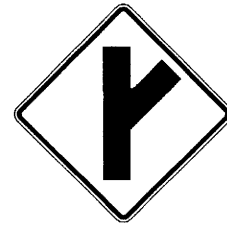

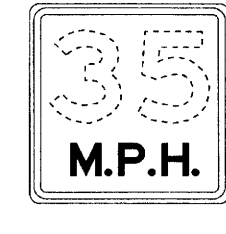
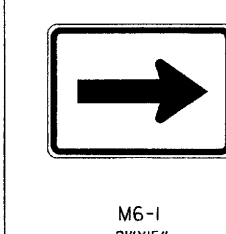
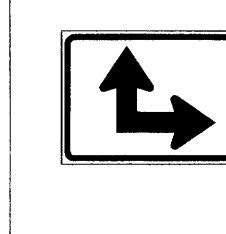
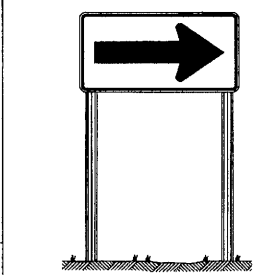
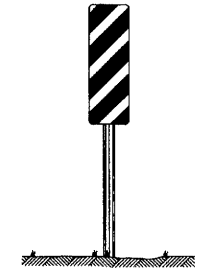

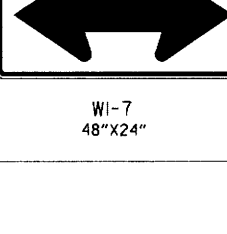
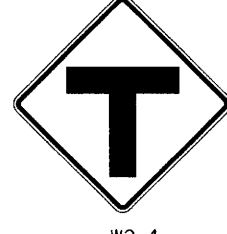

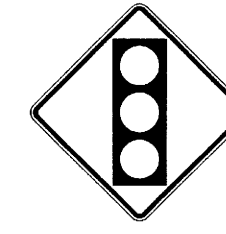
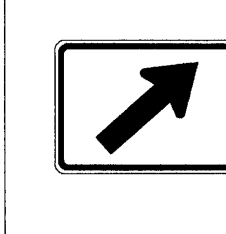
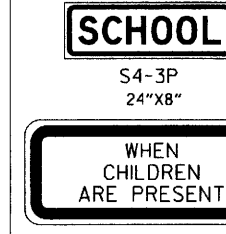
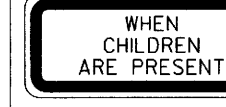
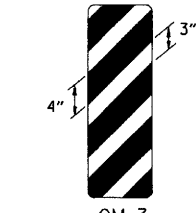
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1



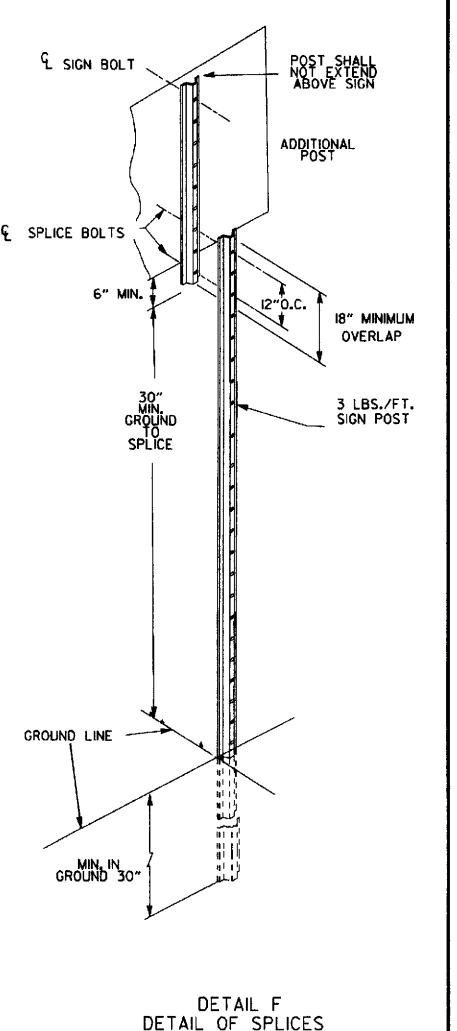
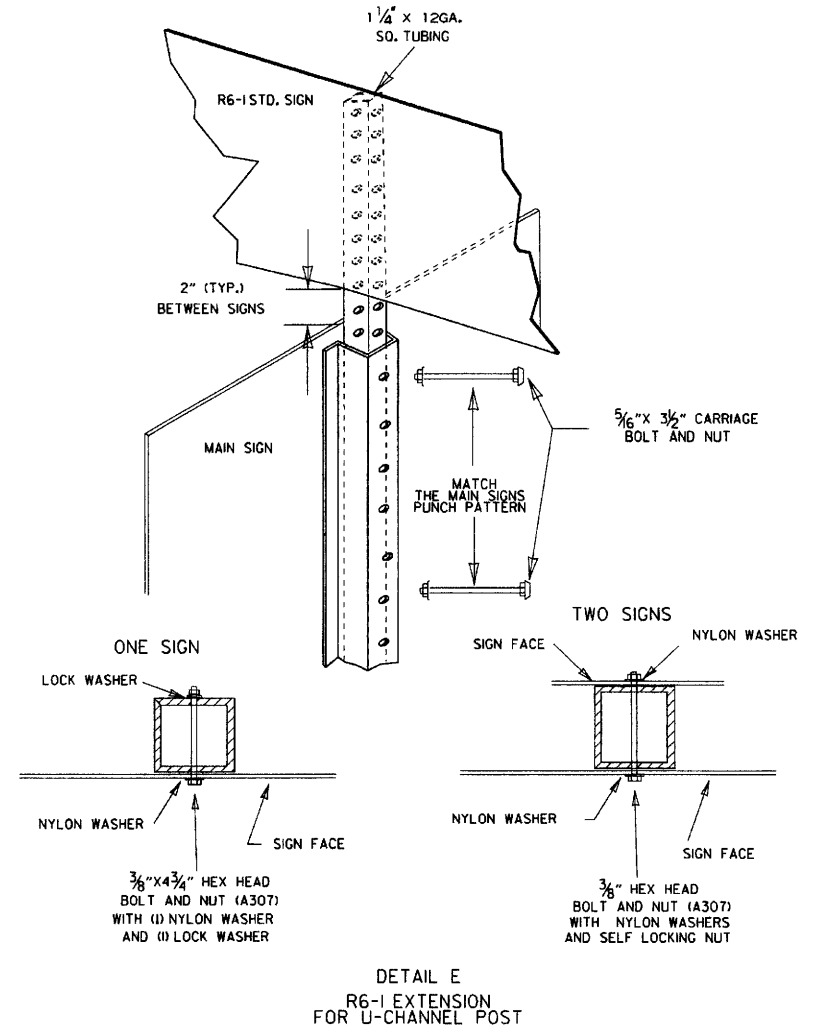
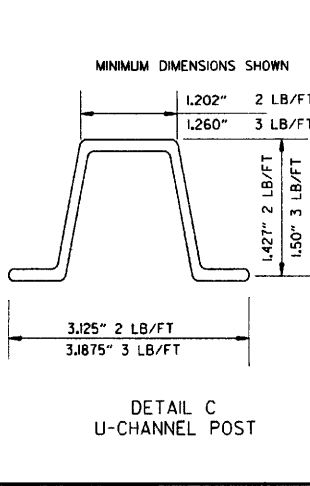
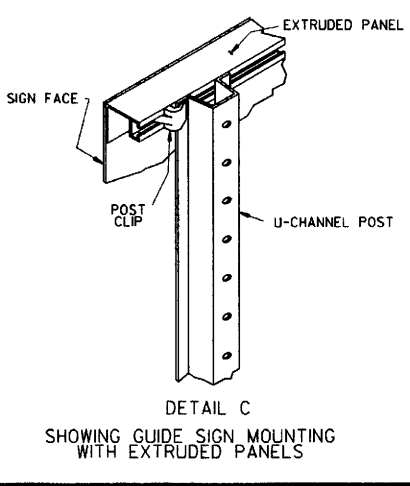
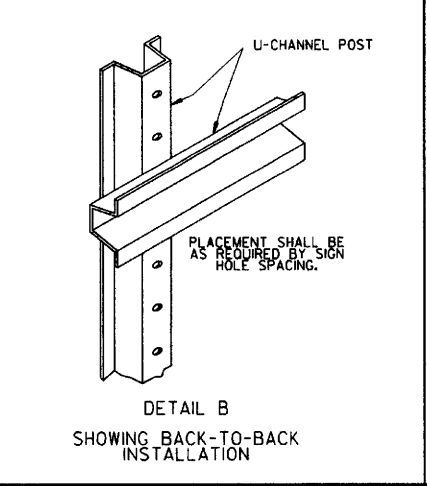
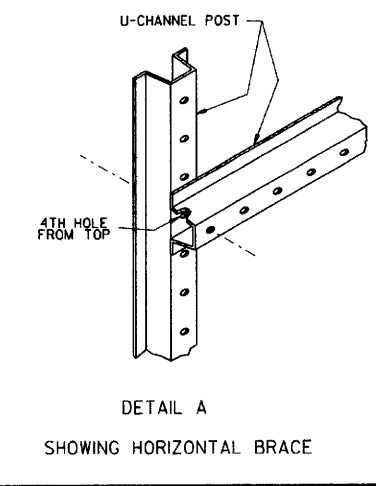
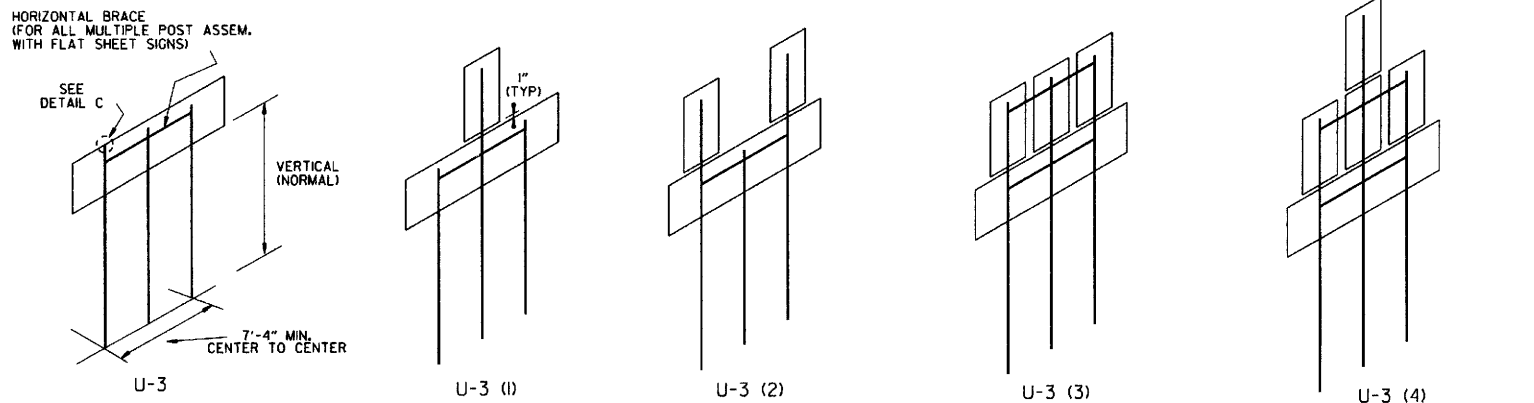
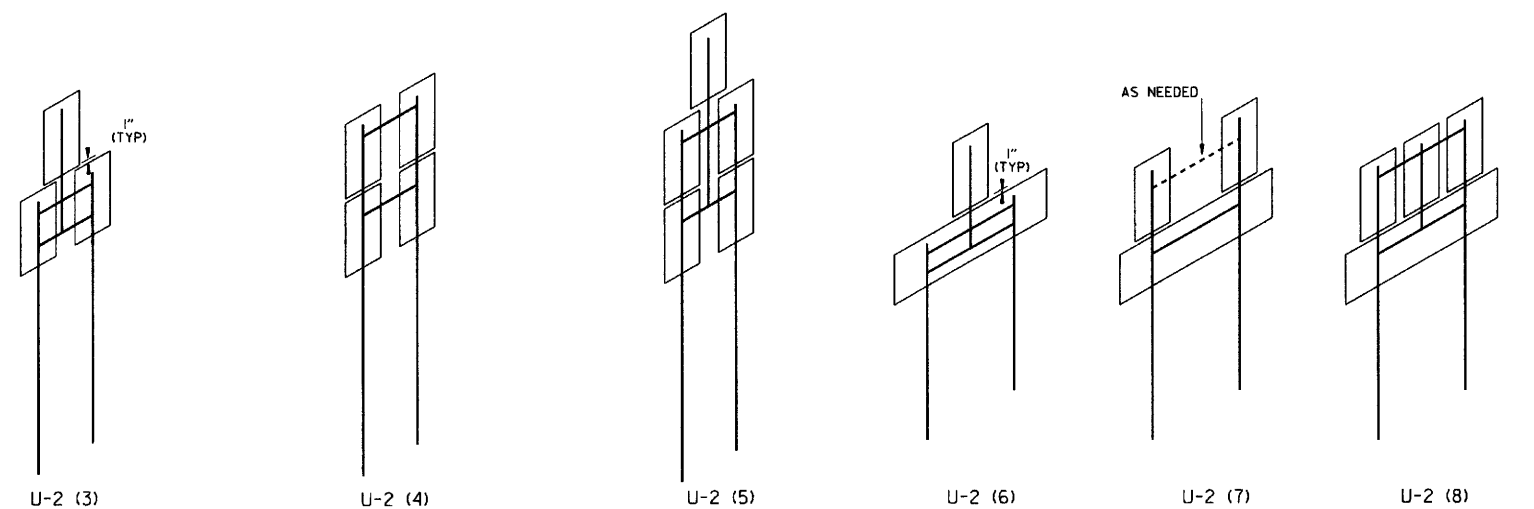
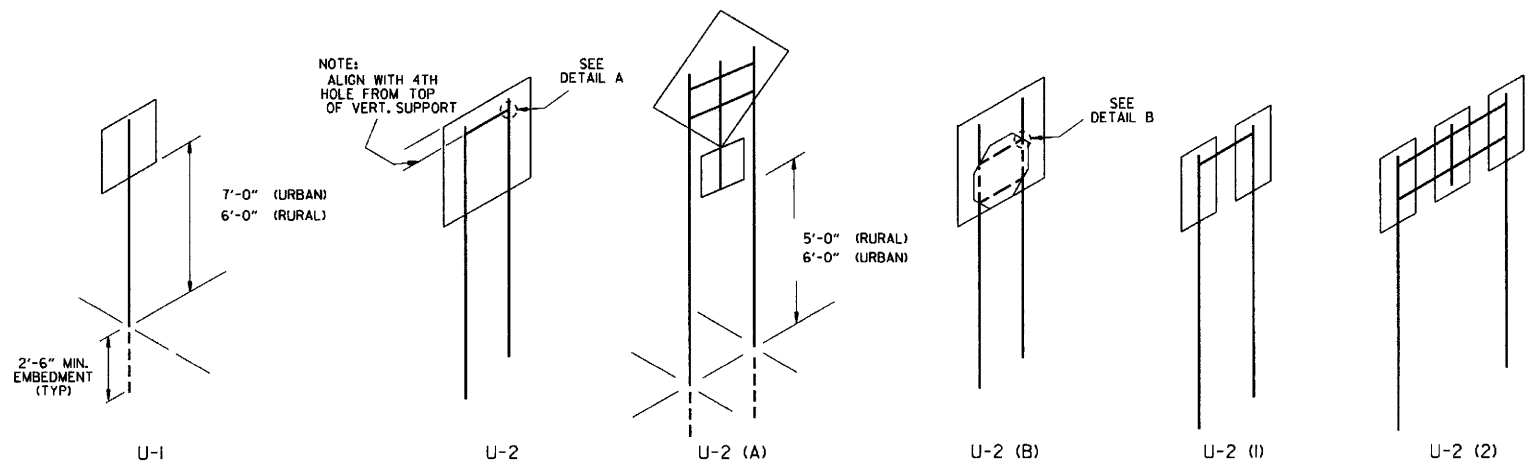
 RI-1 30"x30"	 WI-3 30"x30" (LT. OR RT.)	 WI-8 18"x24"	 W2-5 30"x30"	 W3-1 36"x36"	 W5-1 36"x36"	 M6-3 21"x15"	
 RI-2 36"x36"x36"	 WI-4 30"x30" (LT. OR RT.)	 W2-1 30"x30"	 SI-1 36"x36"	 W3-2 36"x36"	 MI-6 24"x24" County Route Marker	 M6-4 21"x15"	 <p>MINIMUM DIMENSIONS SHOWN SUPPORT SECTION</p> <p>(U-CHANNEL) STANDARD SUPPORT ASSEMBLIES</p>  <p>TYPE A</p> <p>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.</p>
 R2-1 24"x30"	 WI-5 30"x30" (LT. OR RT.)	 W2-2 30"x30"	 W5-2 36"x36"	 W8-3 36"x36"	 RI-3P 18"x6" NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.	 M6-5 21"x15"	
 WI-1 30"x30" (LT. OR RT.)	 WI-6 48"x24"	 W2-3 30"x30" (LT. OR RT.)	 W5-3 36"x36"	 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"	 <p>TYPE B</p>  <p>TYPE C</p> <p>MINIMUM WEIGHT TYPE A &amp; B = 3 LBS./FT. TYPE C = 2 LBS./FT.</p>
 WI-2 30"x30" (LT. OR RT.)	 WI-7 48"x24"	 W2-4 30"x30"	 W10-1 36" DIAMETER	 W3-3 36"x36"	 M6-2 21"x15"	 S4-3P 24"x8" SCHOOL	
						 S4-2P 24"x10" WHEN CHILDREN ARE PRESENT	 OM-3 12"x36" (LT. OR RT.)

STANDARD HIGHWAY SIGNS

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

SUPPORT ASSEMBLIES

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



NOTES:

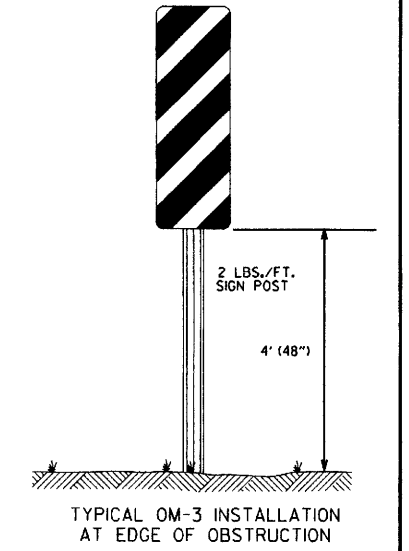
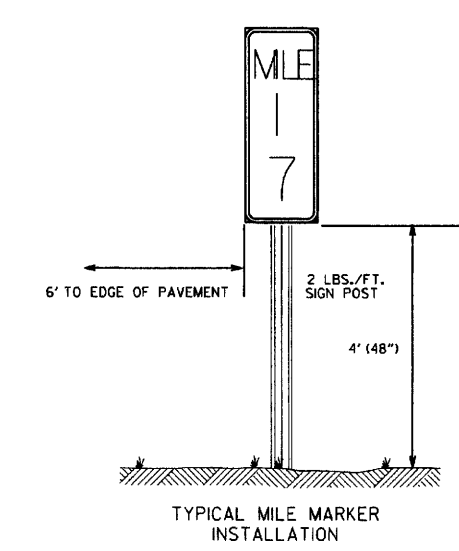
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

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

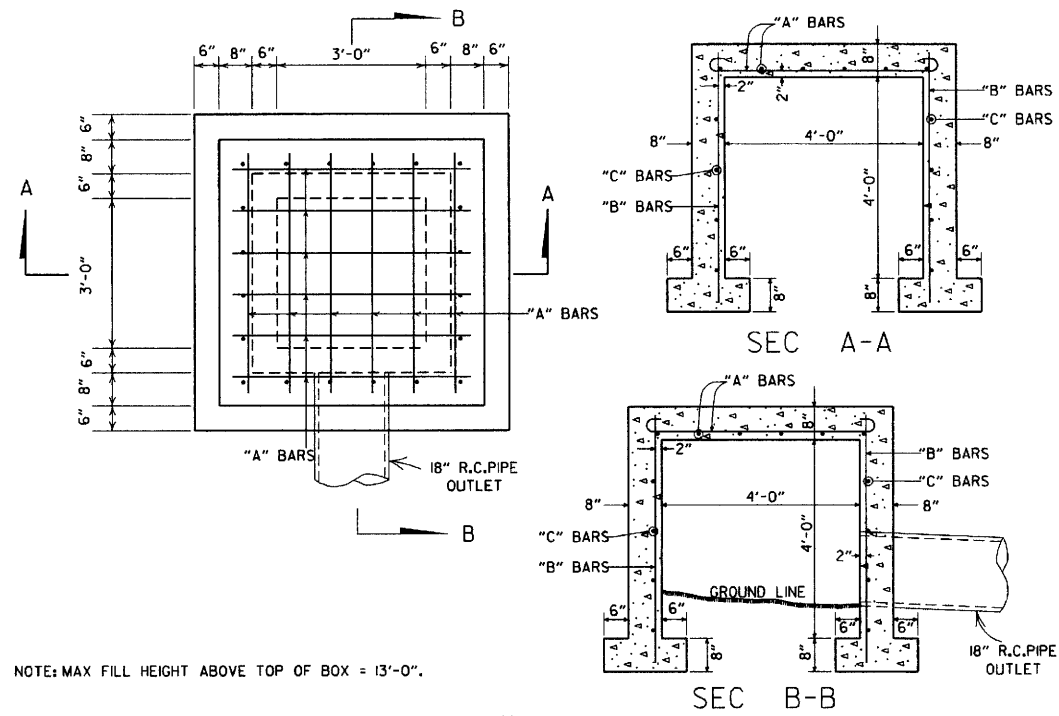
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

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

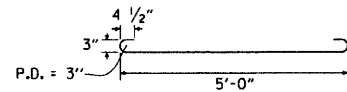


ARKANSAS STATE HIGHWAY COMMISSION		
U-CHANNEL POST ASSEMBLIES		
STANDARD DRAWING SHS-2		
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95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



NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

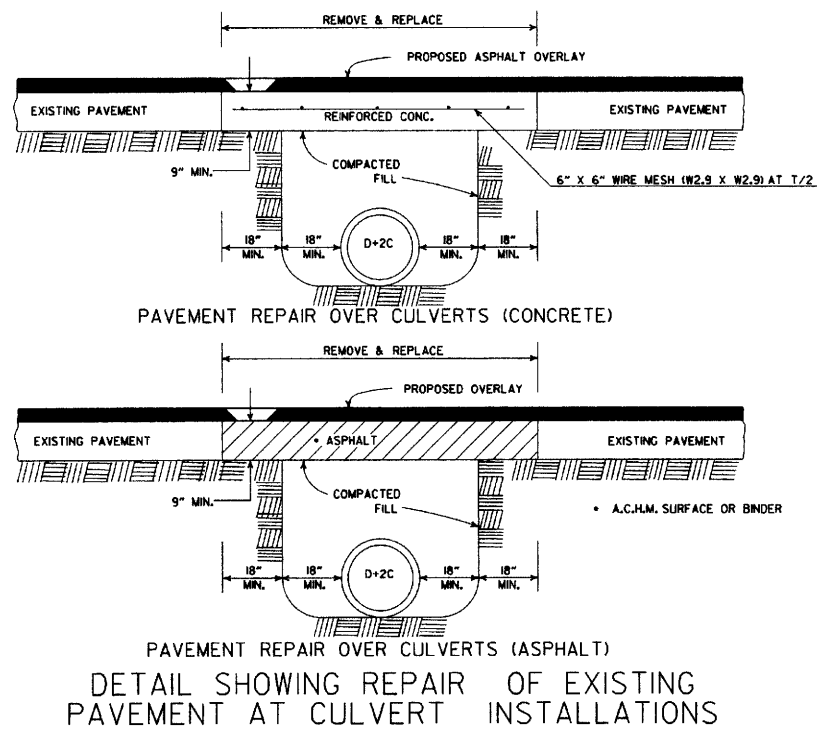
STEEL SCHEDULE			
BAR	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 1/2"
"C"	16	5'-0"	12"



QUANTITIES  
CONCRETE 3.31 CU. YDS.  
REINFORCING STEEL 168 LB.

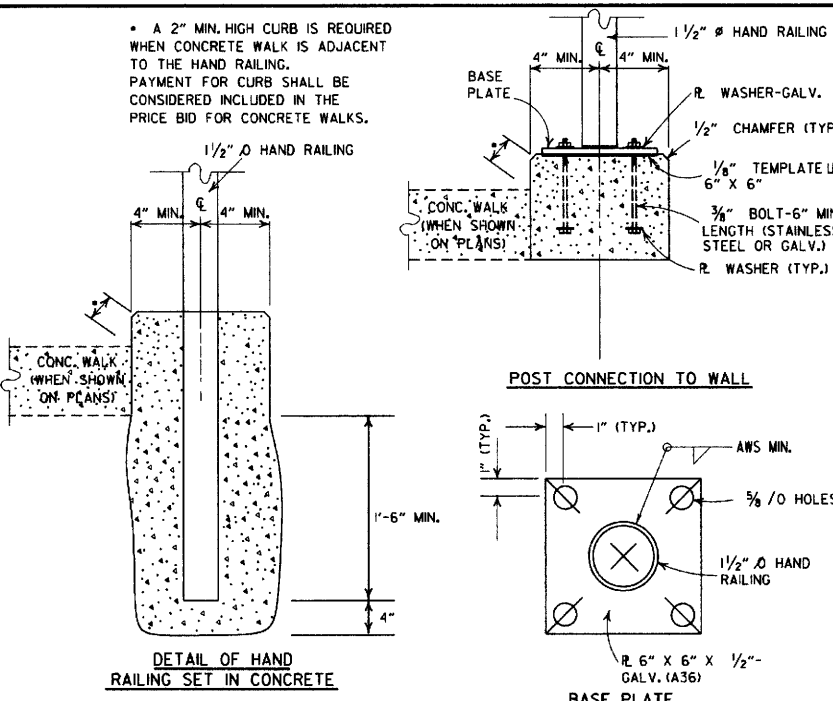
GENERAL NOTE:  
THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX

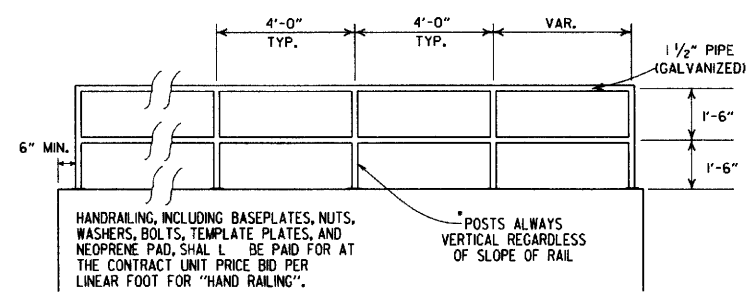


DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

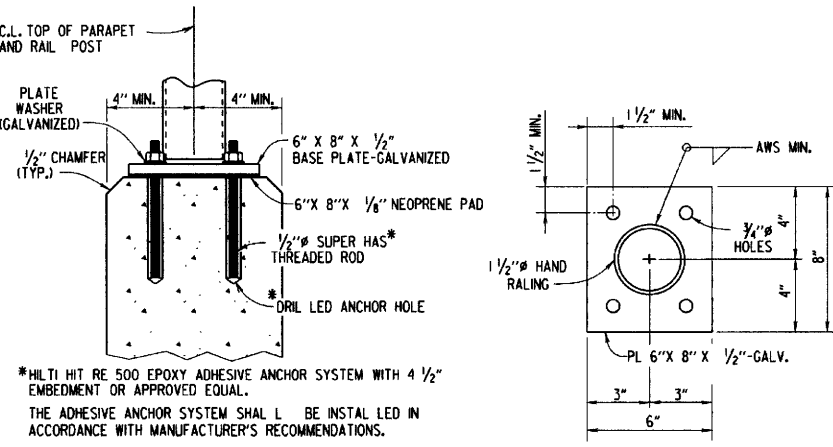
A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



POST CONNECTION DETAILS



HAND RAILING SHALL CONFORM TO SECTION 633.



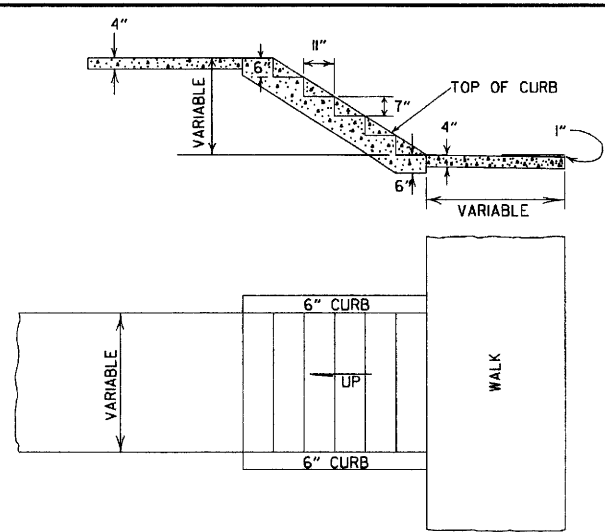
\*MULTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 1/2" EMBEDMENT OR APPROVED EQUAL. THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

POST CONNECTION TO WALL

BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES  
1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER. HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.  
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.


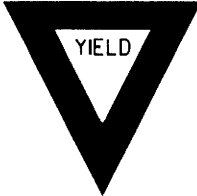



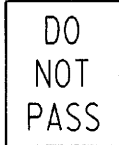



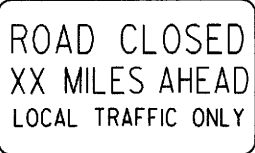
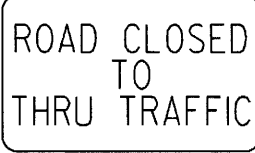

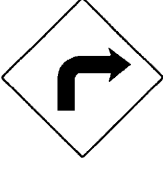




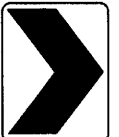
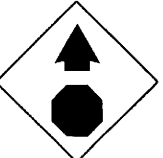

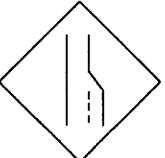



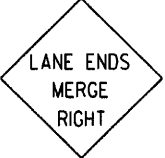









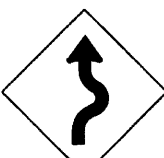



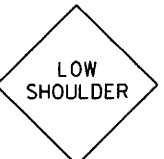
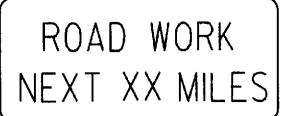
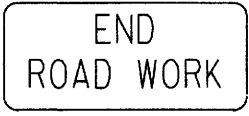
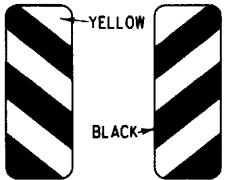


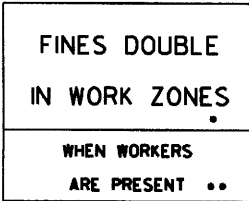
DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE; REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR	649-7-15-88
11-1-84	ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	
1-4-83	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET & PAVEMENT REPAIR	674-4-20-79
2-2-76	12" MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REV. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

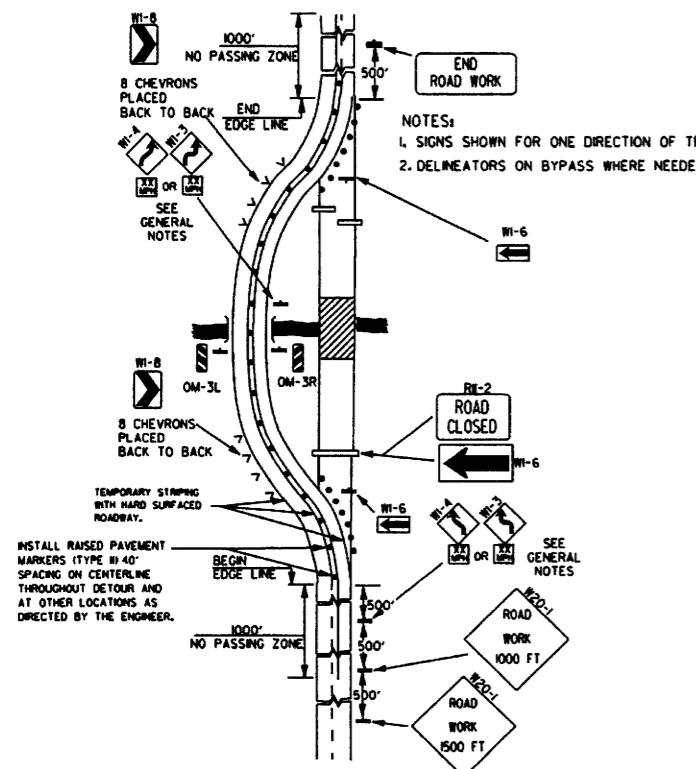
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

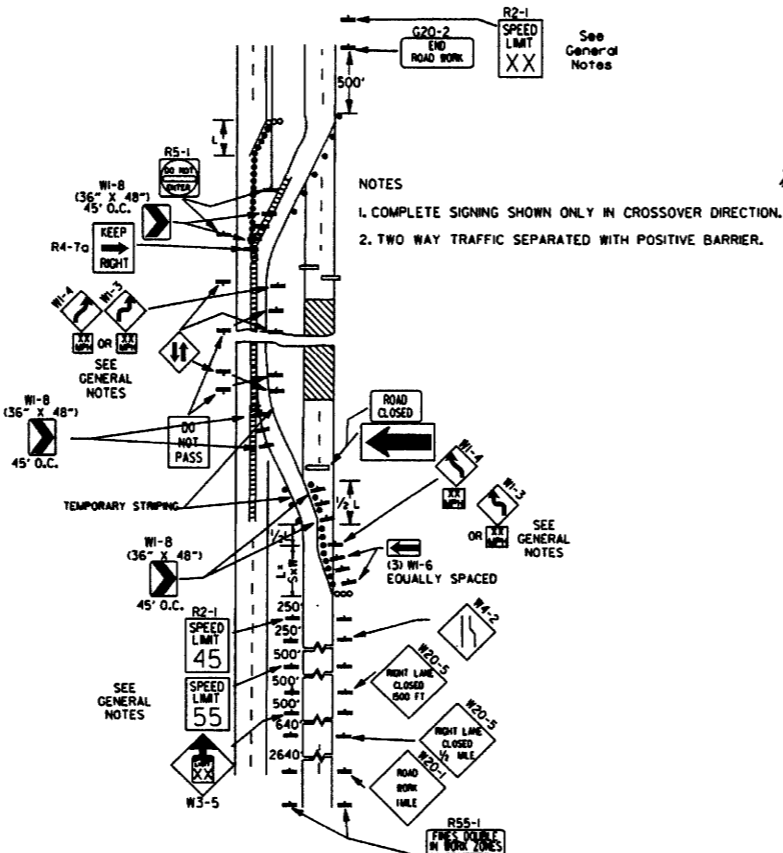
STANDARD DRAWING SI - 1

							ADVANCE DISTANCES (XXXX)																																																										
							500 FT	1/2 MILE																																																									
							1000 FT	3/4 MILE																																																									
							1500 FT	1 MILE AHEAD																																																									
<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p><b>GENERAL NOTES:</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.</li> <li>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.</li> <li>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.</li> </ol> <p><b>NOTE:</b> SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 &amp; 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.</p> <table border="1"> <tr><td>4-13-17</td><td>DELETED RSP-1 &amp; ADDED W21-5a</td><td></td></tr> <tr><td>9-2-15</td><td>REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES</td><td></td></tr> <tr><td>12-15-11</td><td>REVISED W24-1</td><td></td></tr> <tr><td>11-17-10</td><td>DELETED W8-9a &amp; ADDED W8-9</td><td></td></tr> <tr><td>10-15-09</td><td>ADDED REFERENCE TO MASH &amp; ADDED SIGN W24-1</td><td></td></tr> <tr><td>4-17-08</td><td>REVISED SIGN DESIGNATIONS</td><td></td></tr> <tr><td>11-18-04</td><td>REVISED NOTES</td><td></td></tr> <tr><td>10-9-03</td><td>REVISED NOTE 1</td><td></td></tr> <tr><td>11-16-01</td><td>REVISED NOTE 7</td><td></td></tr> <tr><td>9-28-00</td><td>REVISED NOTE</td><td></td></tr> <tr><td>1-18-98</td><td>ADDED NOTE</td><td></td></tr> <tr><td>6-26-97</td><td>REVISED NOTE 5</td><td></td></tr> <tr><td>4-03-97</td><td>REVISED NOTE 5</td><td></td></tr> <tr><td>10-18-96</td><td>ADDED CONTROLLED ACCESS HWY. SIGN &amp; TO NOTE 7</td><td></td></tr> <tr><td>10-12-95</td><td>ADDED R55-1</td><td></td></tr> <tr><td>6-8-95</td><td>REVISED TO CORRECT SIGN ILLUSTRATIONS</td><td>6-8-95</td></tr> <tr><td>2-2-95</td><td>REVISED PER PART VI, MUTCD SEPT. 3, 1993</td><td></td></tr> <tr><td>8-15-91</td><td>DRAWN AND PLACED IN USE</td><td></td></tr> <tr><td>DATE</td><td>REVISION</td><td>FILMED</td></tr> </table>		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		1-18-98	ADDED NOTE		6-26-97	REVISED NOTE 5		4-03-97	REVISED NOTE 5		10-18-96	ADDED CONTROLLED ACCESS HWY. 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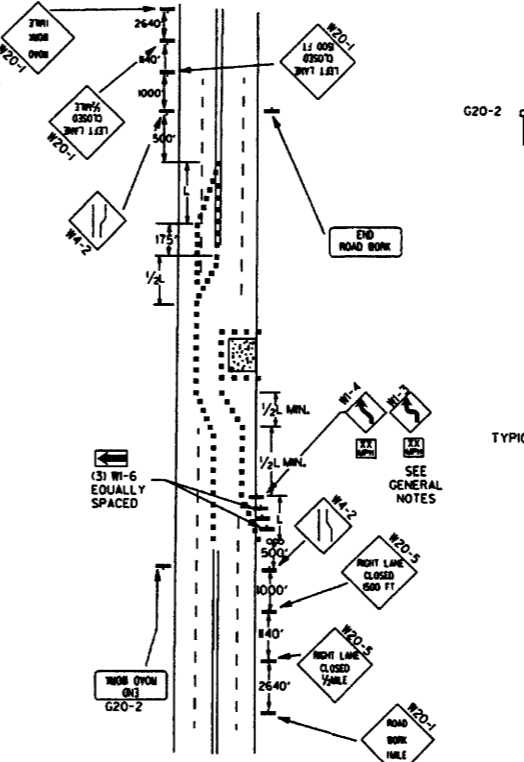
4-13-17	DELETED RSP-1 & ADDED W21-5a	
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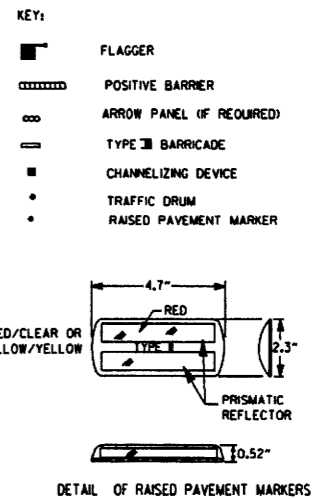
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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



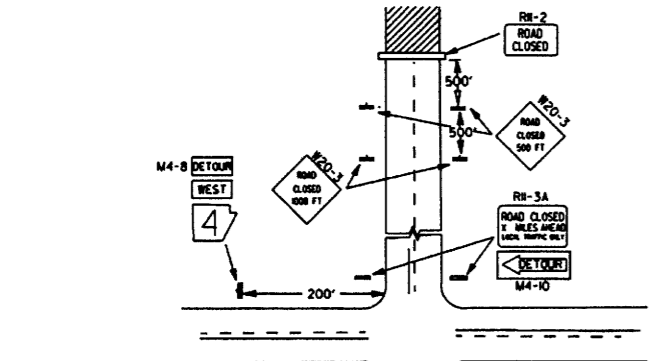
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

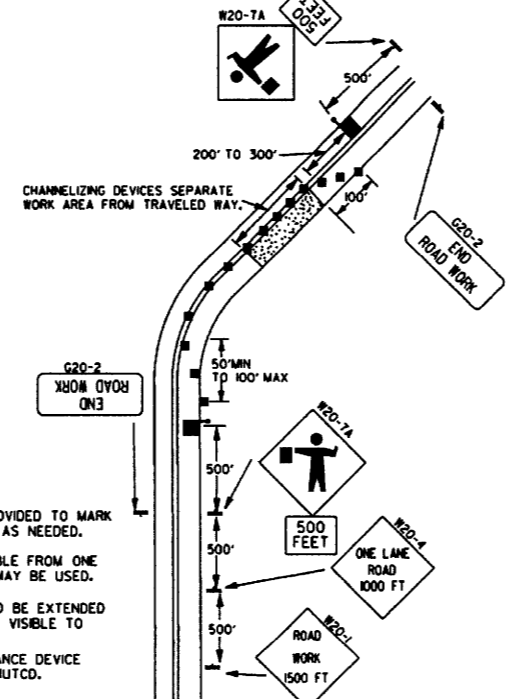
TAPER FORMULAE:  
 $L = SXW$  FOR SPEEDS OF 45MPH OR MORE.  
 $L = \frac{WS}{60}$  FOR SPEEDS OF 40MPH OR LESS.  
 WHERE:  
 L = MINIMUM LENGTH OF TAPER.  
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.  
 W = WIDTH OF OFFSET.

- GENERAL NOTES:
- ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE, USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
  - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-155 SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-145 SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-165 SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-155 SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT, BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
  - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
  - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
  - TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
  - DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



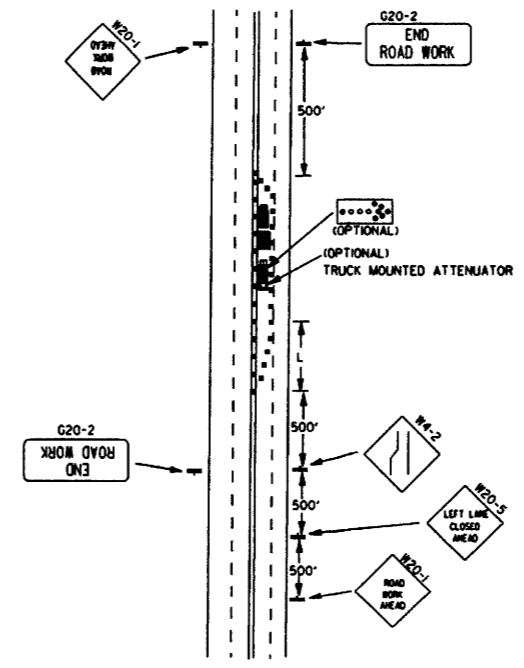
- NOTES:
- REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
  - STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

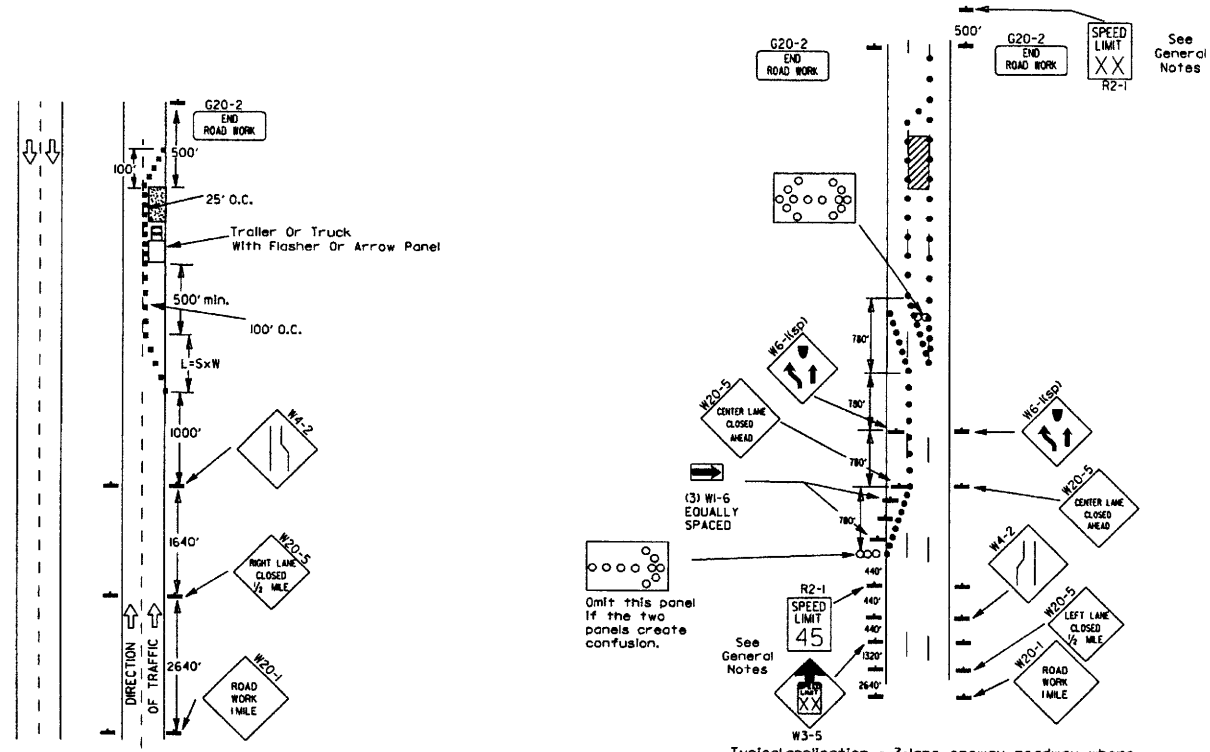


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

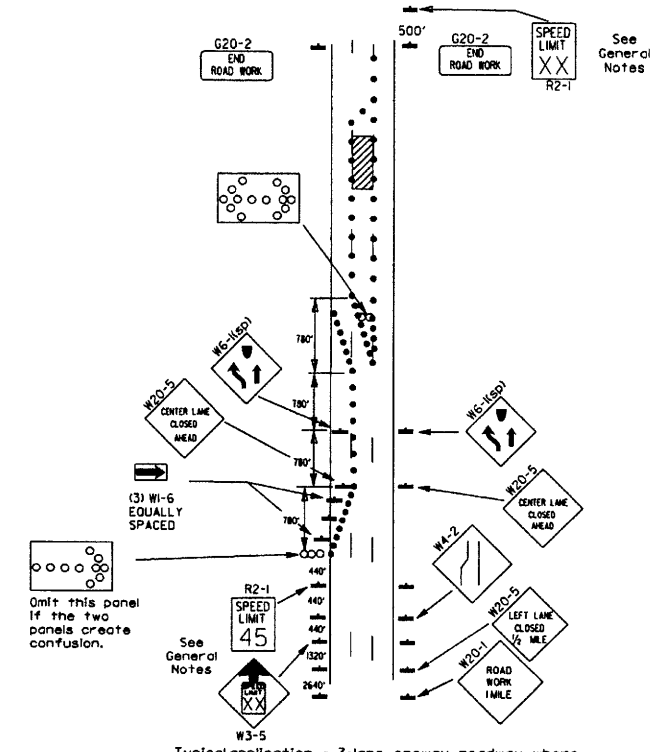
DATE	REVISION	FILED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95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

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

Channelizing devices



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

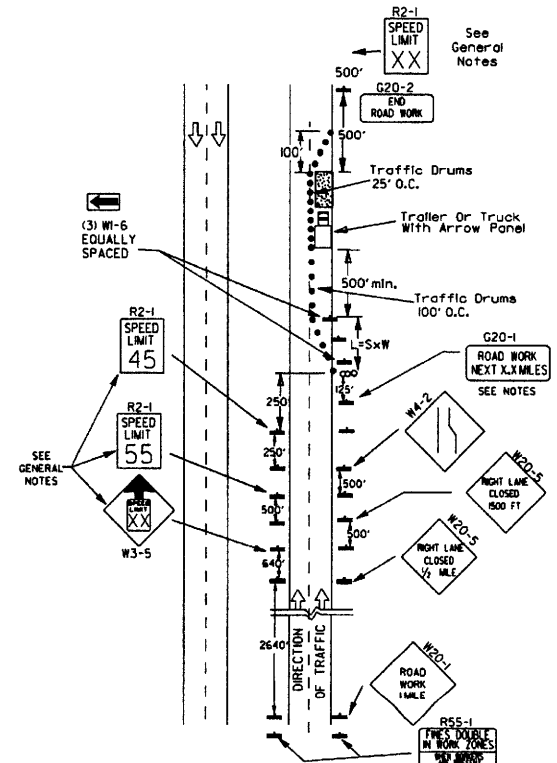


(B) Typical application - 3-lane oneway roadway where center lane is closed.

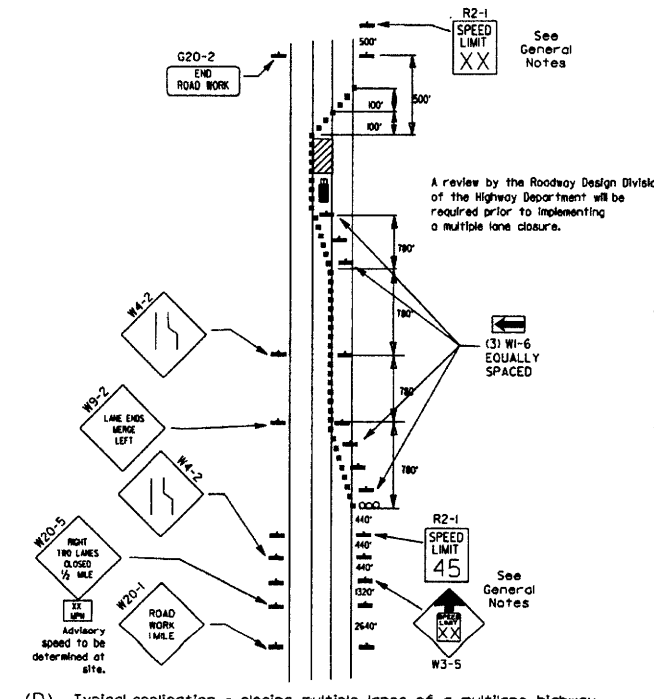
- KEY:
- ◻ Arrow Panel (if Required)
  - Channelizing Device
  - Traffic drum

GENERAL NOTES:

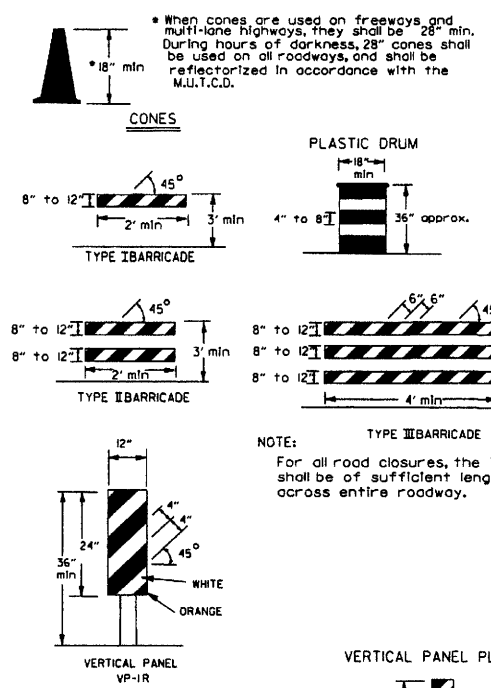
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(65) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1(1/2 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



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



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

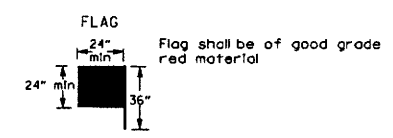


When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

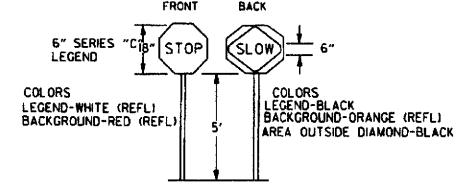
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical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

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



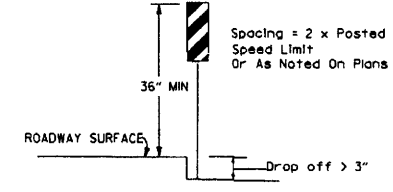
FLAG shall be of good grade red material

STOP SLOW PADDLE

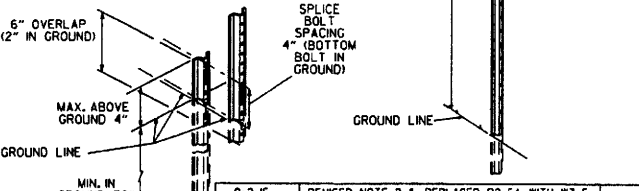


COLORS LEGEND-WHITE (REFL) BACKGROUND-RED (REFL) LEGEND-BLACK BACKGROUND-ORANGE (REFL) AREA OUTSIDE DIAMOND-BLACK

VERTICAL PANEL PLACEMENT

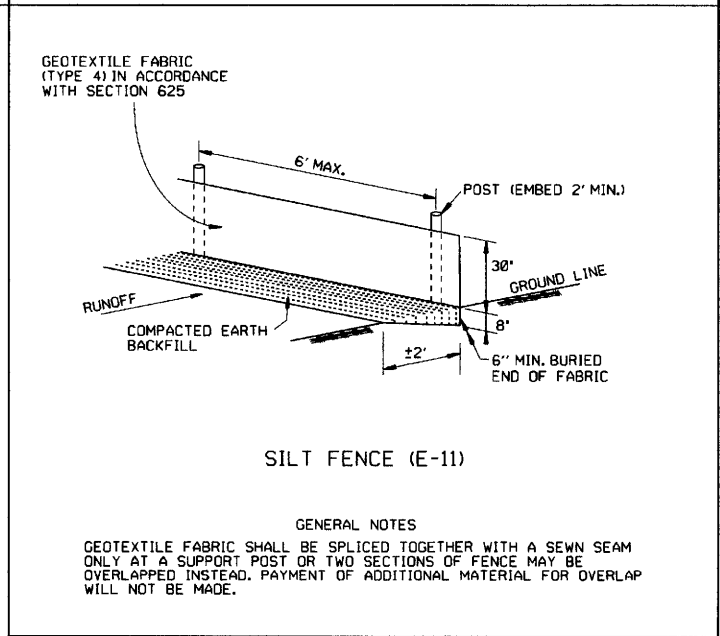
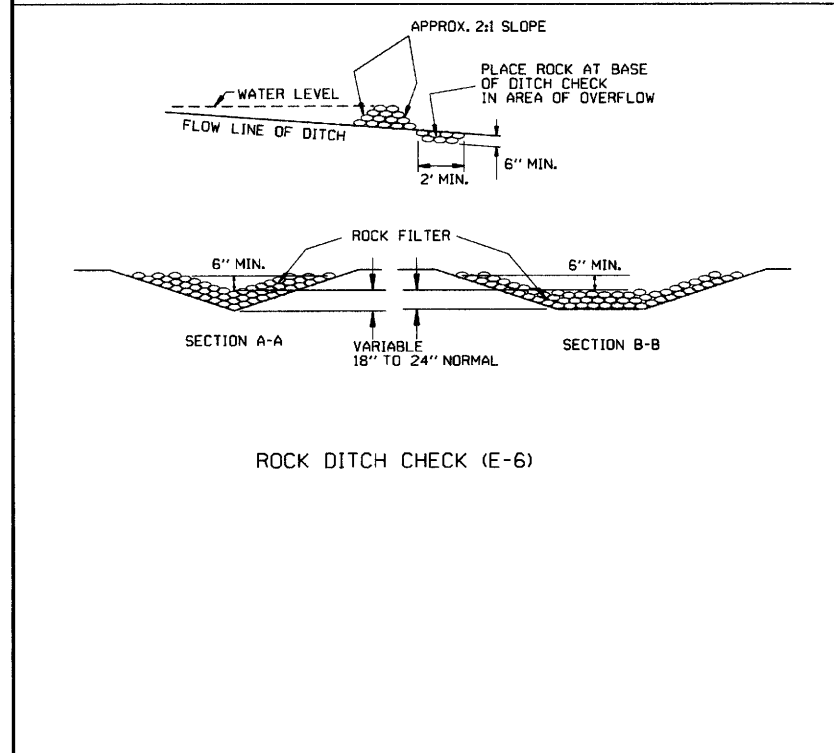
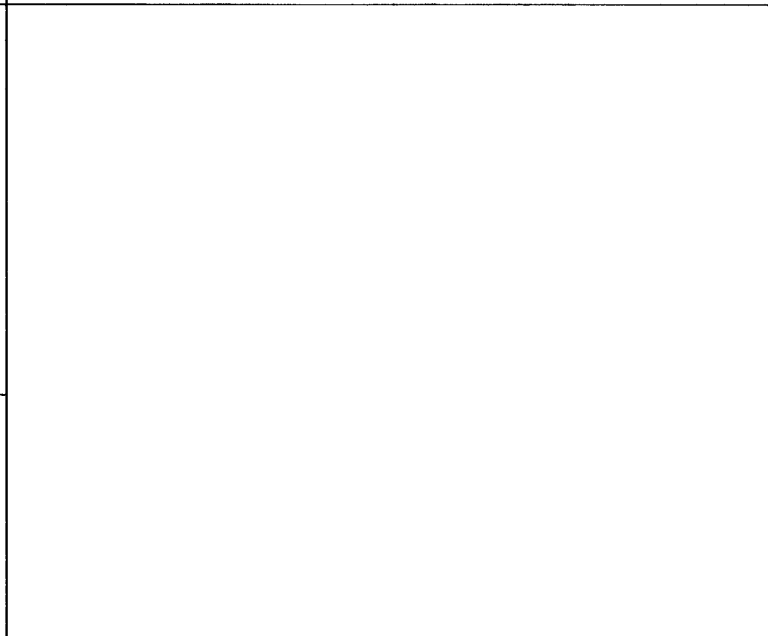
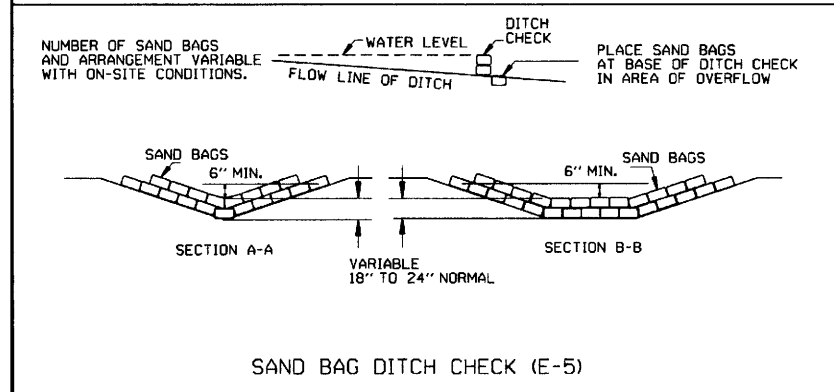
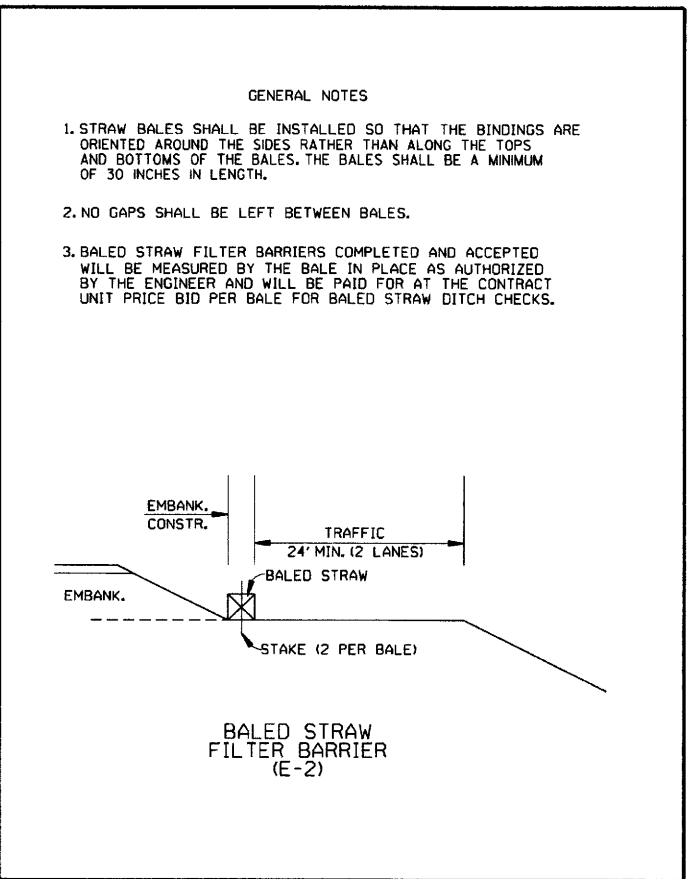
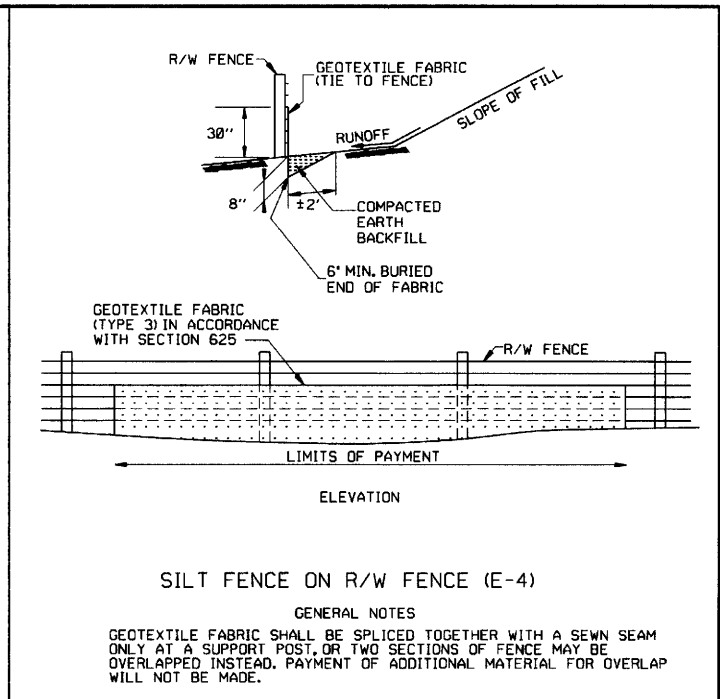
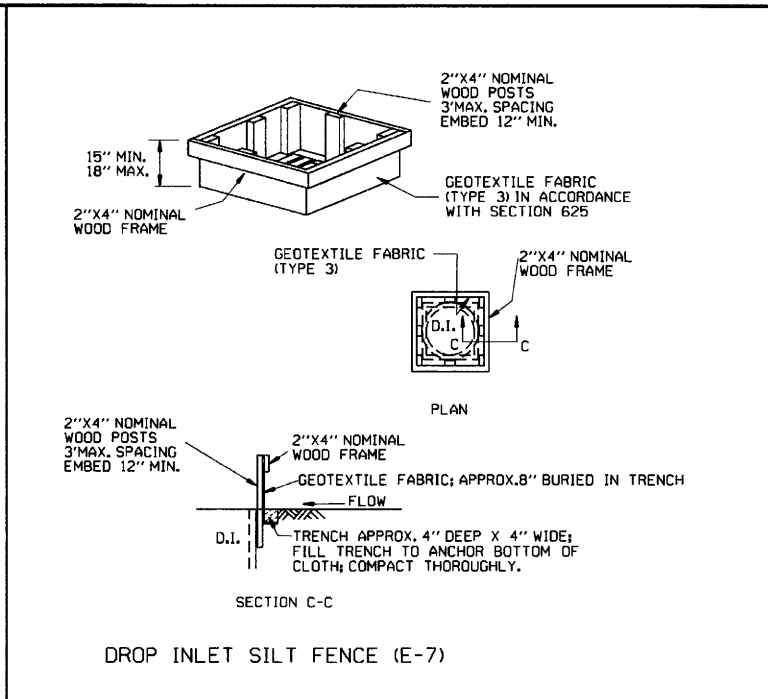
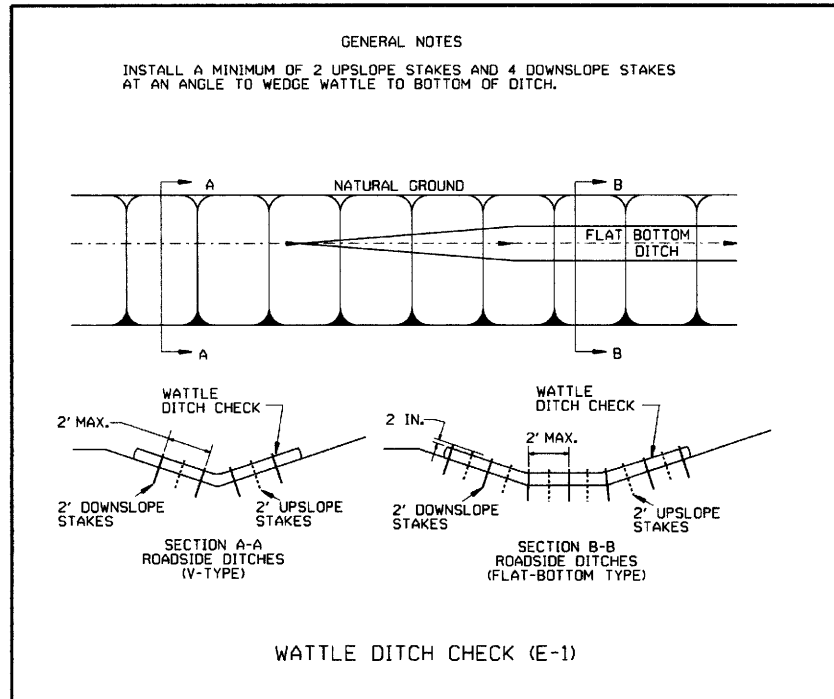


USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2) NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS, EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS. SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED. AND ALL SIGN POSTS SHALL BE PLUMB.

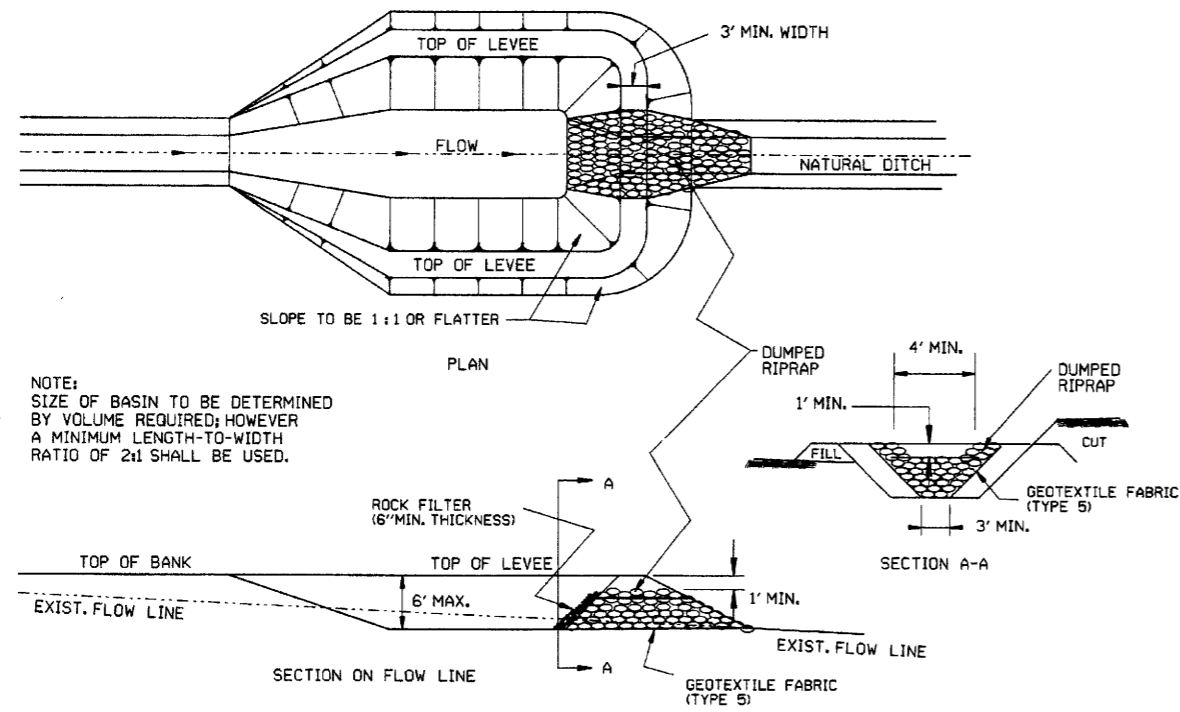


DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95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

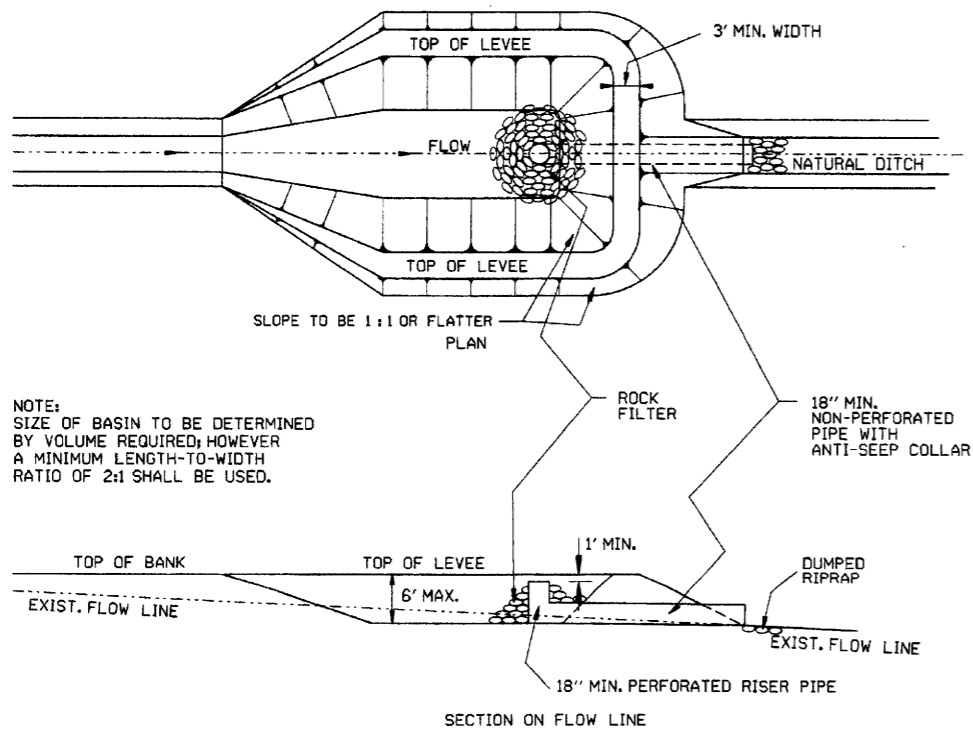
ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION  
STANDARD DRAWING TC-3



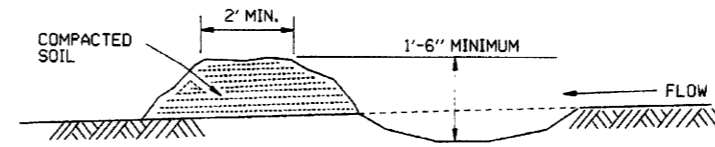
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	TEMPORARY EROSION CONTROL DEVICES
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END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



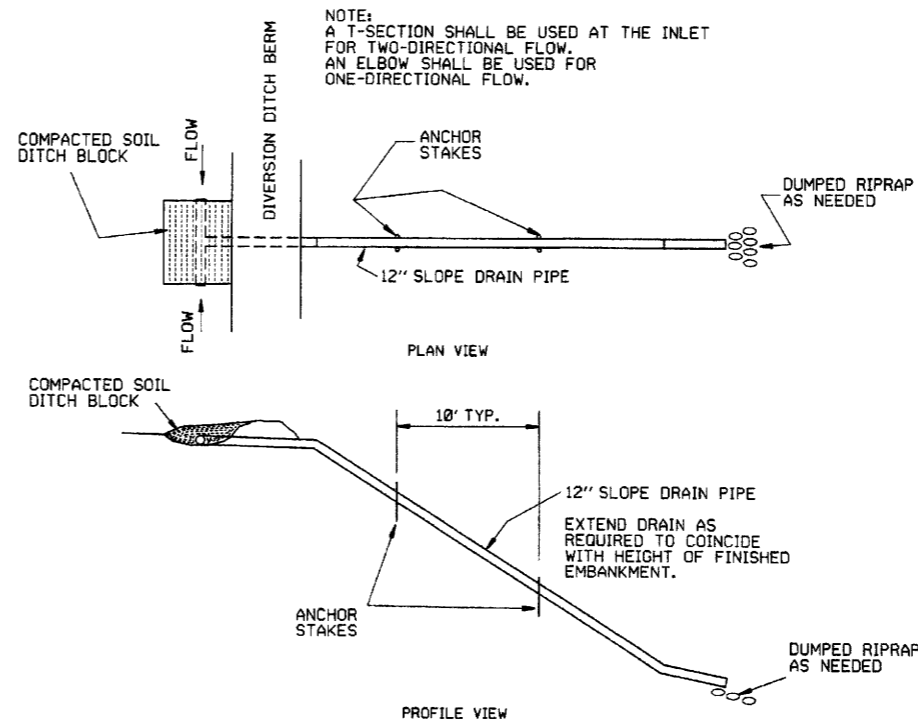
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



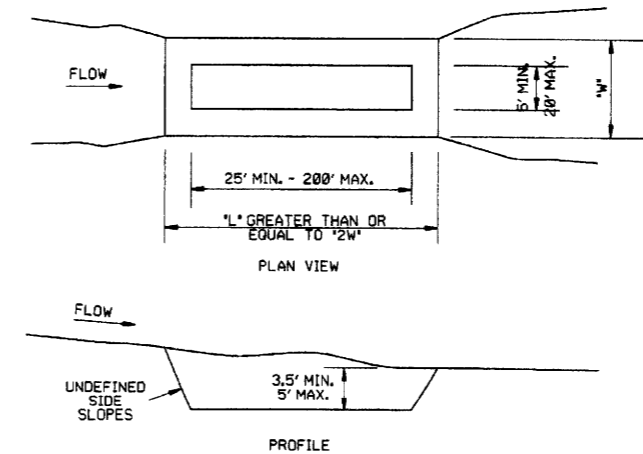
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		STANDARD DRAWING TEC-2
4-1-93	ISSUED		
DATE	REVISION	FILMED	

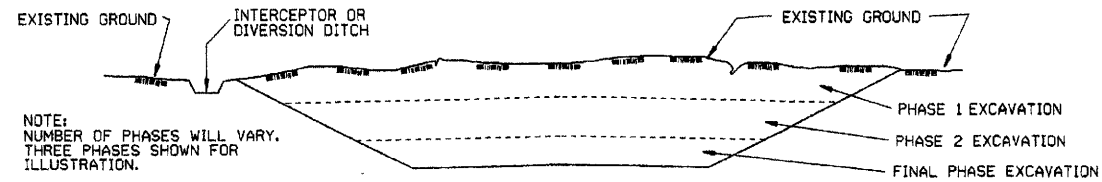


## CLEARING AND GRUBBING

### CONSTRUCTION SEQUENCE

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

## EXCAVATION



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

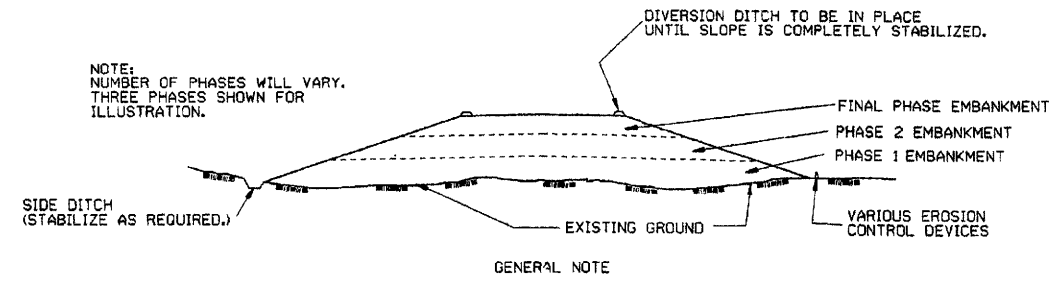
### GENERAL NOTE

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

### CONSTRUCTION SEQUENCE

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

## EMBANKMENT



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

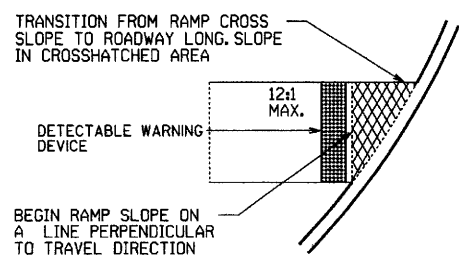
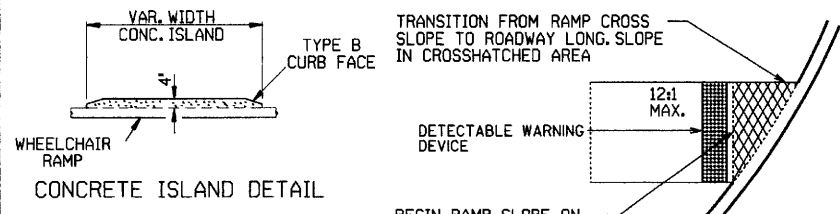
### GENERAL NOTE

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

### CONSTRUCTION SEQUENCE

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

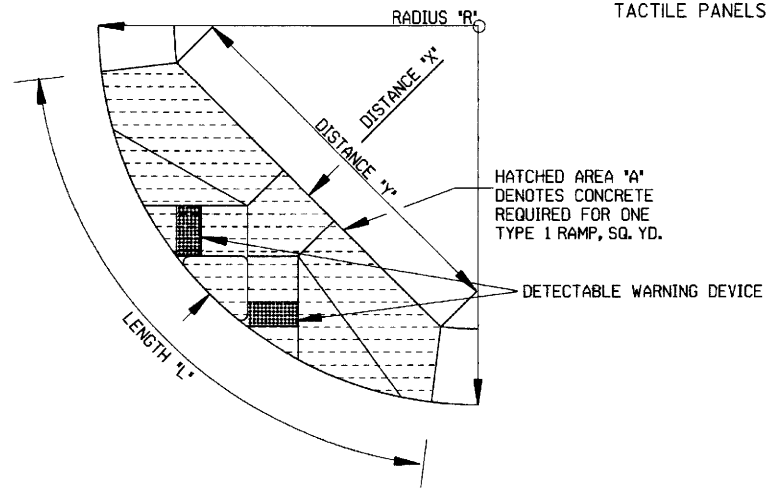
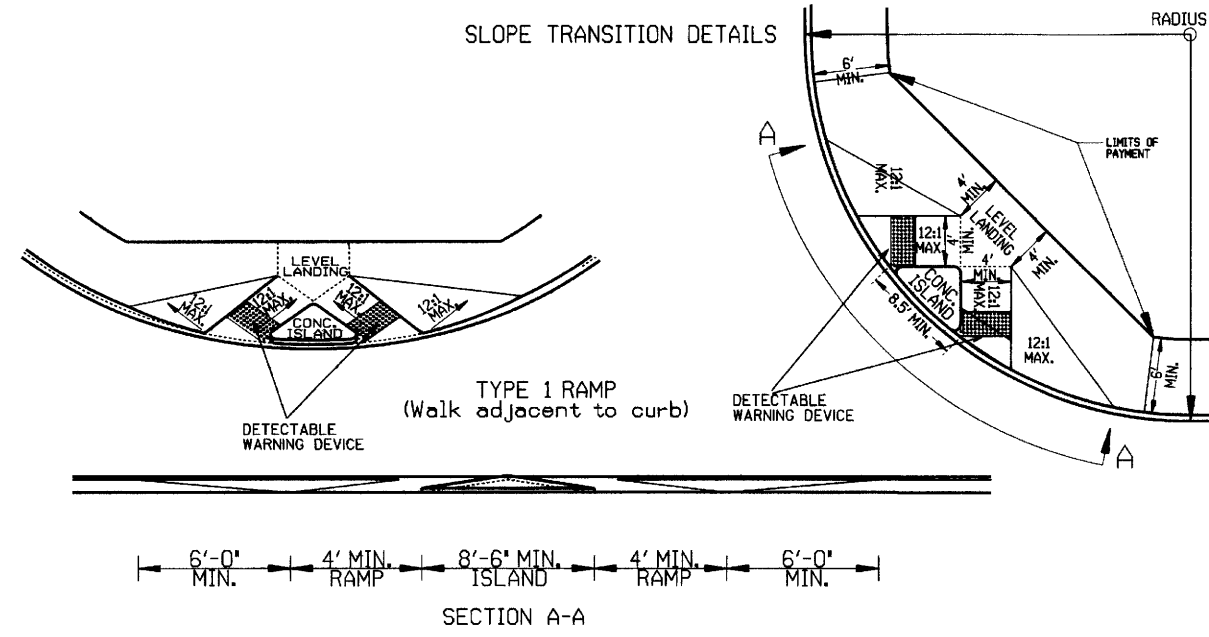
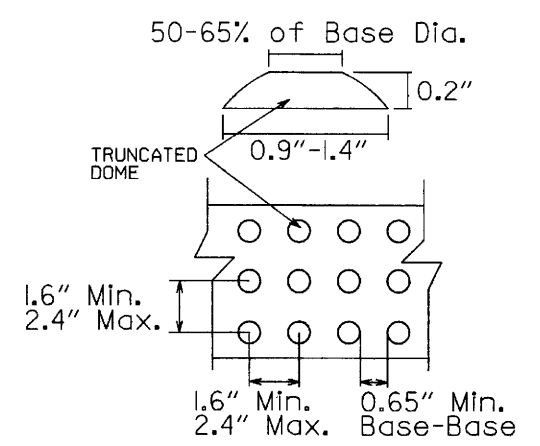
ARKANSAS STATE HIGHWAY COMMISSION			
TEMPORARY EROSION CONTROL DEVICES			
STANDARD DRAWING TEC-3			
11-23-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued		6-2-94
DATE	REVISION		FILMED



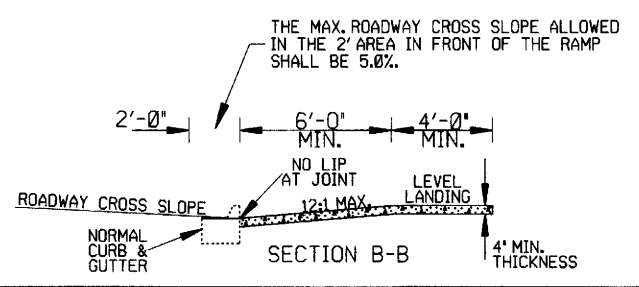
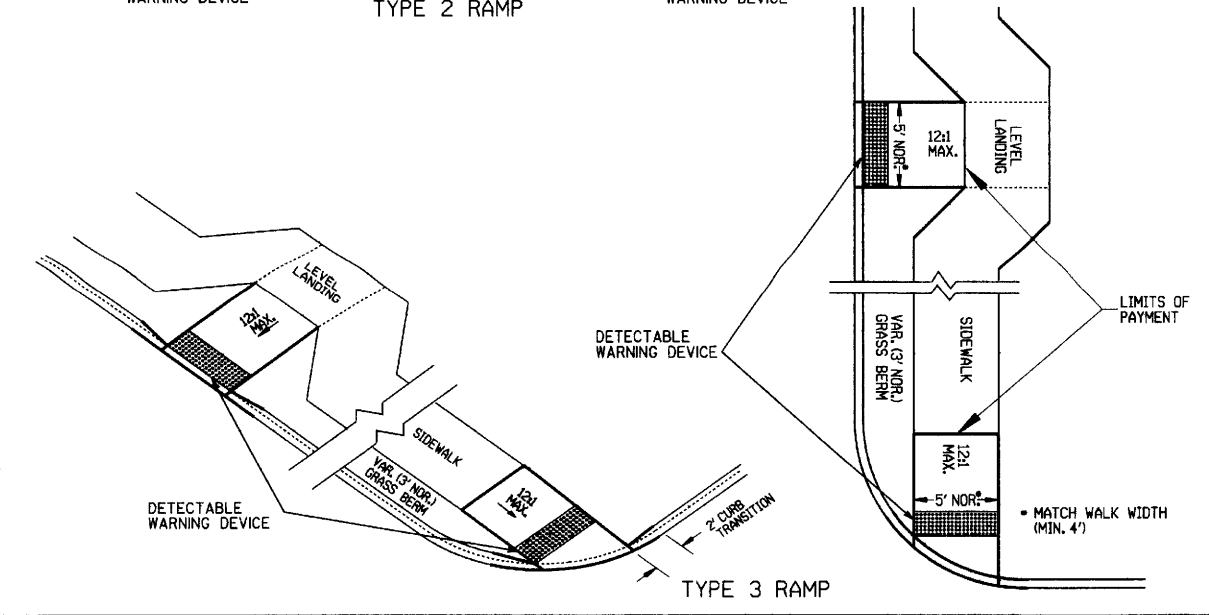
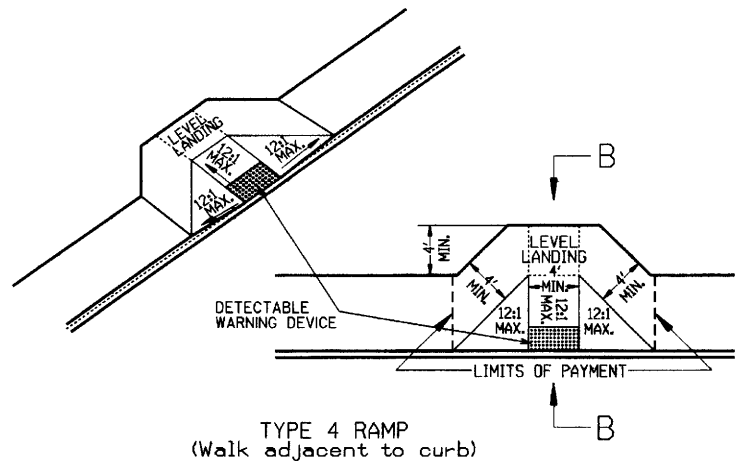
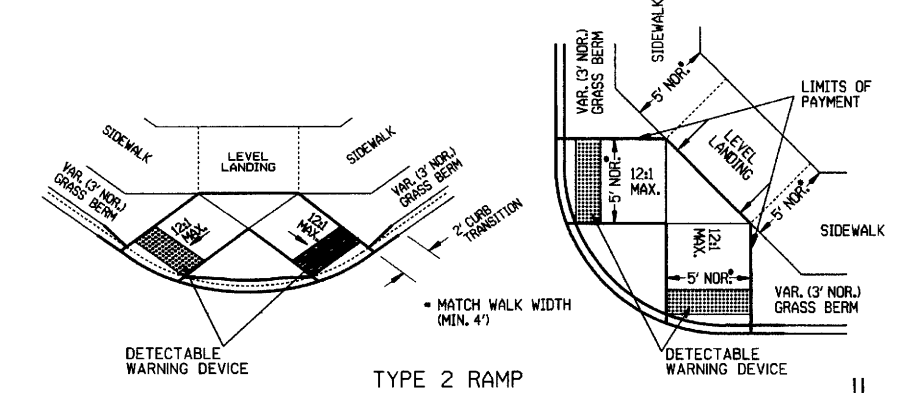
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R"	DISTANCE "Y"	DISTANCE "Y"	LENGTH "L"	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	25.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES  
 THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.  
 TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.  
 DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.  
 DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.  
 DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



NOTE:  
 THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGITUDINAL GRADE.



GENERAL NOTES:  
 IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.  
 IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.  
 THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.  
 THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.  
 ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.  
 THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4". THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.  
 RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.  
 THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

RAMP SELECTION CRITERIA

CHOICE	TYPE	DESCRIPTION
FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED. AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 10:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCL. "CONC. ISL. IN PAY ITEM	
6-02-76	ISSUED P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION  
 WHEELCHAIR RAMPS  
 NEW CONSTRUCTION  
 AND ALTERATIONS  
 STANDARD DRAWING WR-1