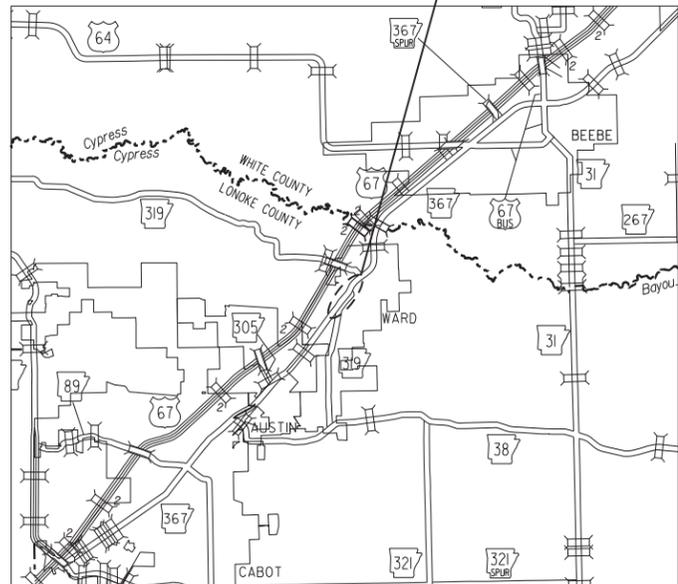


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				6	ARK.			
				JOB NO.	061457	1	37	

② HWY. 319 RR SIG. UPGRADE & TRAFFIC SIG. (WARD) (S)

PROJECT LOCATION



VICINITY MAP

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 319 RR SIG. UPGRADE & TRAFFIC SIG. (WARD) (S)

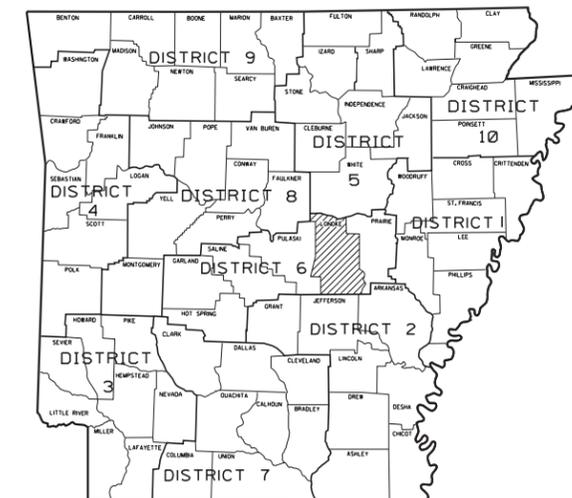
LONOKE COUNTY

ROUTE 367 SECTION 14
ROUTE 319 SECTION 1

JOB 061457

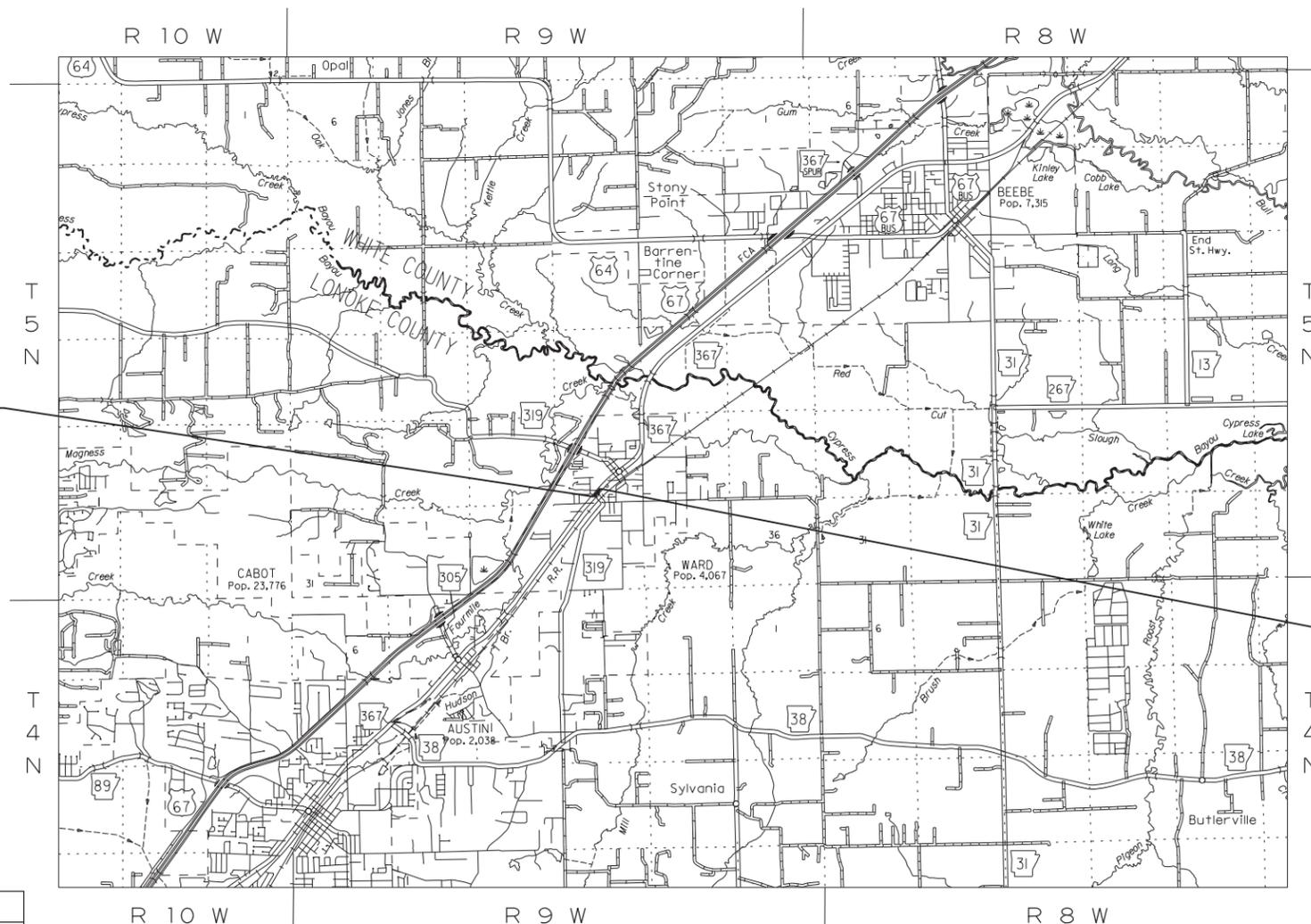
FED. AID PROJ. RPD-STPU-0043(29)

NOT TO SCALE



ARKANSAS HIGHWAY DISTRICT 6

STA. 470+93.85
BEGIN JOB 061457
LOG MILE 8.17



STA. 480+43.83
END JOB 061457

DESIGN TRAFFIC DATA

DESIGN YEAR	-----	2040
2020 ADT	-----	5100
2040 ADT	-----	7100
2040 DHV	-----	780
DIRECTIONAL DISTRIBUTION	-----	60%
TRUCKS	-----	3%
DESIGN SPEED	-----	45 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 35°01'31"	N 35°01'34"	N 35°01'39"
LONGITUDE	W 91°57'21"	W 91°57'18"	W 91°57'15"
STATION	470+93.85	475+68.84	480+43.83

GROSS LENGTH OF PROJECT	949.98 FEET OR 0.180 MILES
NET LENGTH OF ROADWAY	949.98 FEET OR 0.180 MILES
NET LENGTH OF BRIDGES	0.00 FEET OR 0.000 MILES
NET LENGTH OF PROJECT	949.98 FEET OR 0.180 MILES



DIGITALLY SIGNED DATE 8/17/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						061457	2	37

② INDEX OF SHEETS AND STANDARD DRAWINGS



DIGITALLY SIGNED DATE 8/17/2020

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4	TYPICAL SECTIONS OF IMPROVEMENT
5 - 8	SPECIAL DETAILS
9 - 10	TEMPORARY EROSION CONTROL DETAILS
11 - 12	MAINTENANCE OF TRAFFIC DETAILS
13	PERMANENT PAVEMENT MARKING DETAILS
14	SOIL BORING LOG
15 - 17	QUANTITIES
18	SUMMARY OF QUANTITIES AND REVISIONS
19 - 20	SURVEY CONTROL DETAILS
21 - 23	PLAN AND PROFILE SHEETS
24	TRAFFIC SIGNAL NOTES
25	TRAFFIC SIGNAL QUANTITIES
26 - 29	SIGNALIZATION PLAN SHEETS
30 - 37	CROSS SECTIONS

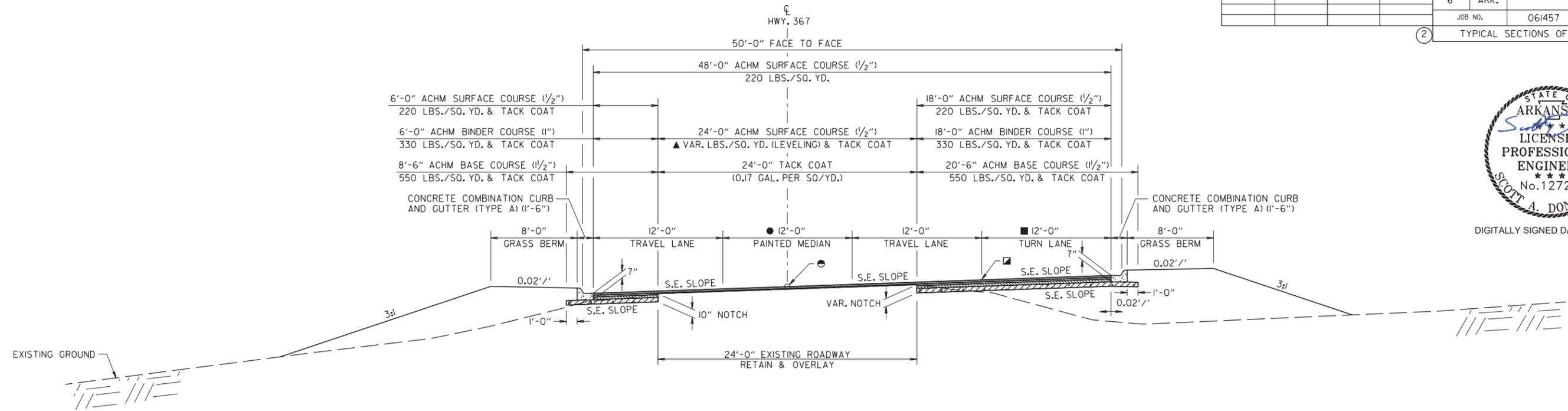
ROADWAY STANDARD DRAWINGS

DRWG. NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	11-07-19
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9E	DETAILS OF DROP INLETS (TYPE C)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
GR-5	GUARDRAIL DETAILS (TYPE C) STREET/ROAD BARRICADE OR TEMPORARY INSTALLATION	11-07-19
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RRS-1	PAVEMENT MARKING FOR RAILROAD CROSSING	12-08-16
SD-5	CONTROLLER CABINET UTILITY DRAWER	09-12-13
SD-6	HEAVY DUTY PULL BOX	11-16-17
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-07-19
SD-11	STEEL POLE WITH MAST ARM	11-16-17
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORTS ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	07-25-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94

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.	061457	4	37	
				② TYPICAL SECTIONS OF IMPROVEMENT				



DIGITALLY SIGNED DATE 8/17/2020



TYPICAL SECTION OF IMPROVEMENT

STA. 470+93.85 TO STA. 475+28.71

- TRANSITION FROM 0'-0" AT STA. 470+93.85 TO 12'-0" AT STA. 473+63.85
- TRANSITION FROM 0'-0" AT STA. 470+93.85 TO 12'-0" AT STA. 472+73.85
- ★ TRANSITION FROM 12'-0" AT STA. 477+73.83 TO 0'-0" AT STA. 480+43.83
- ▲ LEVELING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
- PROFILE GRADE AND POINT OF SUPERELEVATION ROTATION
- POINT OF ROTATION FOR RT. TURN LANE

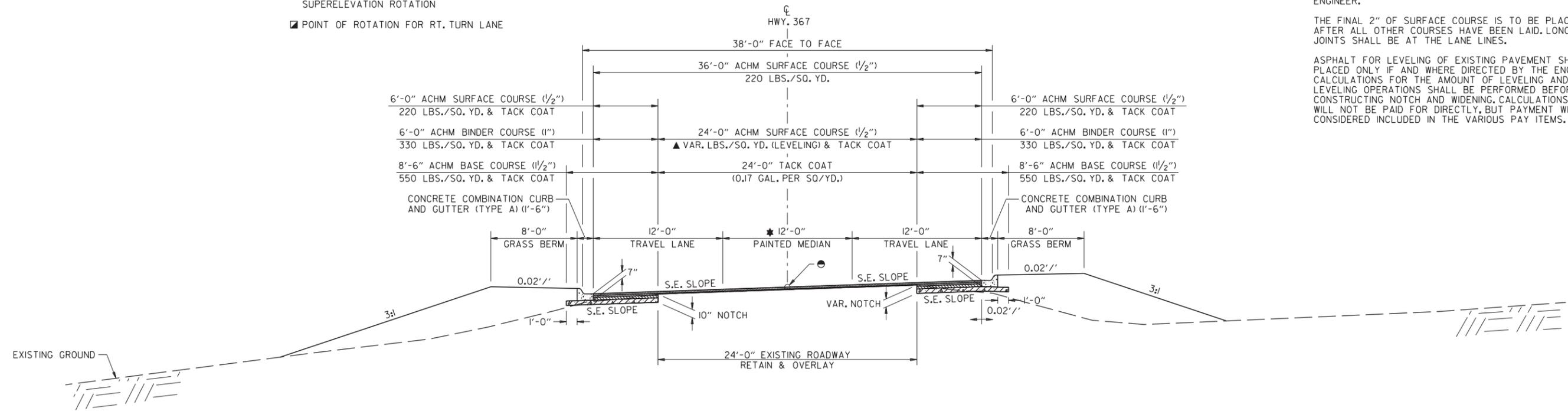
NOTES:

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT THE LANE LINES.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.



TYPICAL SECTION OF IMPROVEMENT

STA. 475+28.71 TO STA. 480+43.83

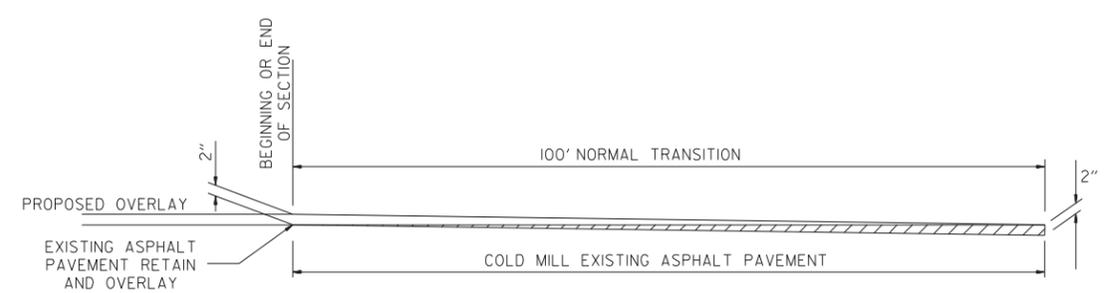
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				JOB NO.	061457	5	37	

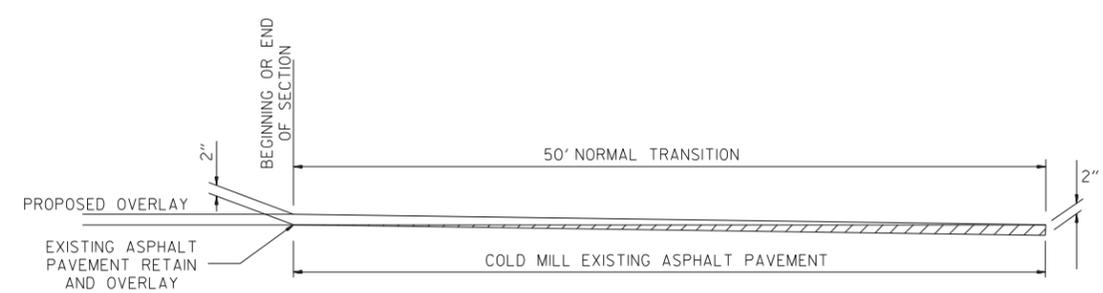
2 SPECIAL DETAILS



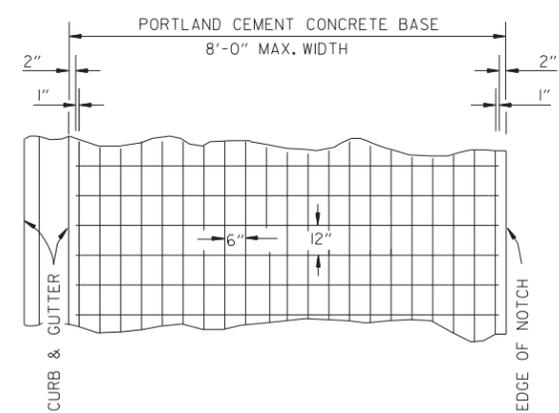
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DETAIL FOR TRANSITIONS
HWY. 367



DETAIL FOR TRANSITIONS
HWY. 319
GRIFFIN ST.

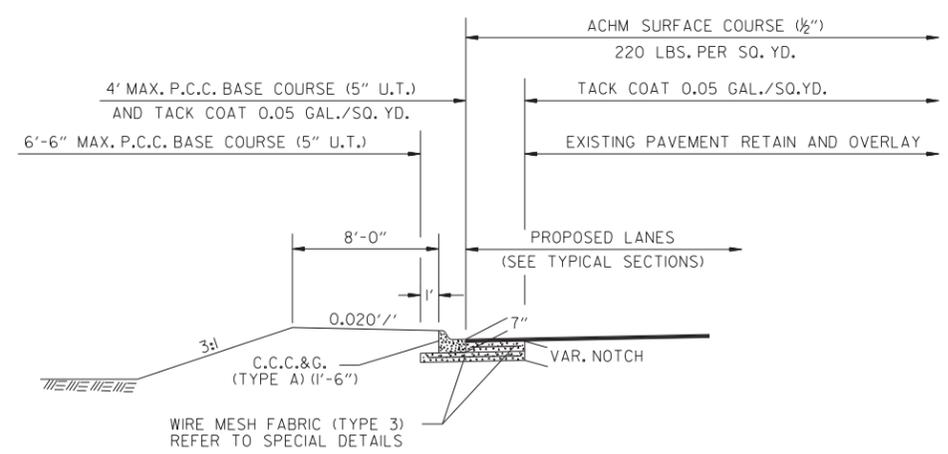


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ.YD.

NOTES:

- LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
- MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
- MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (5" U.T.)

DETAIL OF REINFORCING
STEEL FOR PAVEMENT
(MESH FABRIC TYPE 3)



P.C.C. BASE WIDENING DETAIL

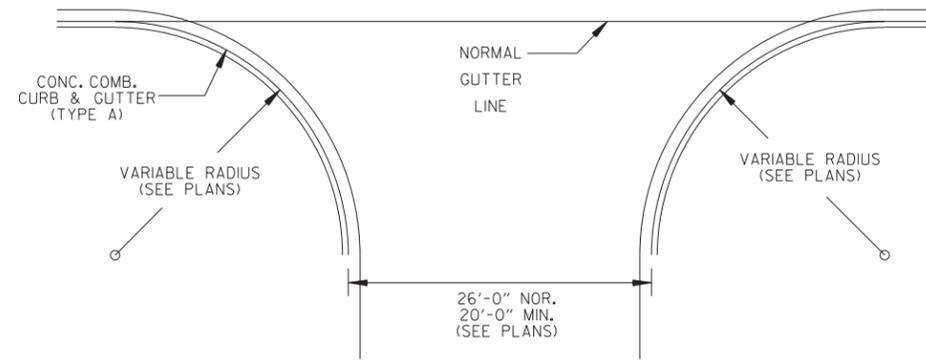
P.C.C. BASE WIDENING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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				6	ARK.			
				JOB NO.		061457	6	37
				2 SPECIAL DETAILS				

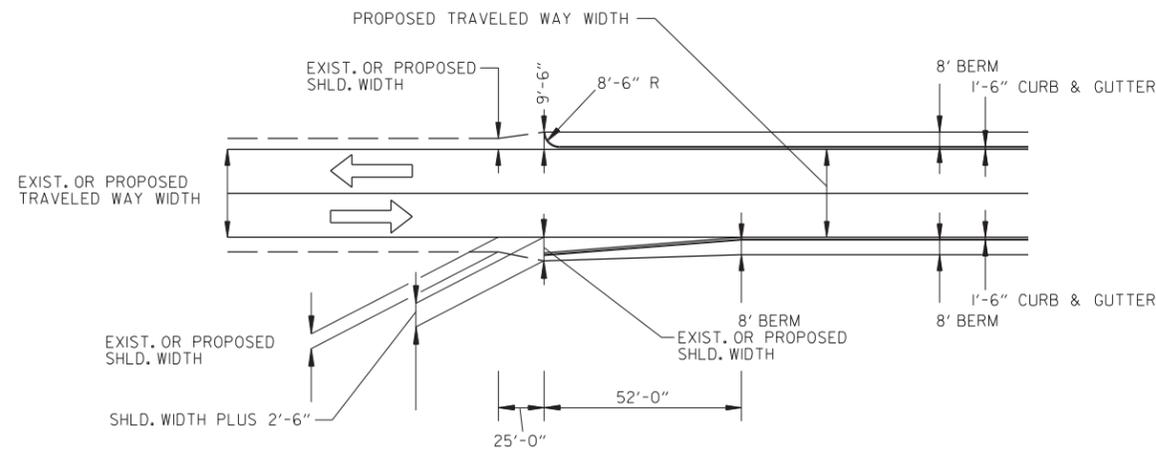


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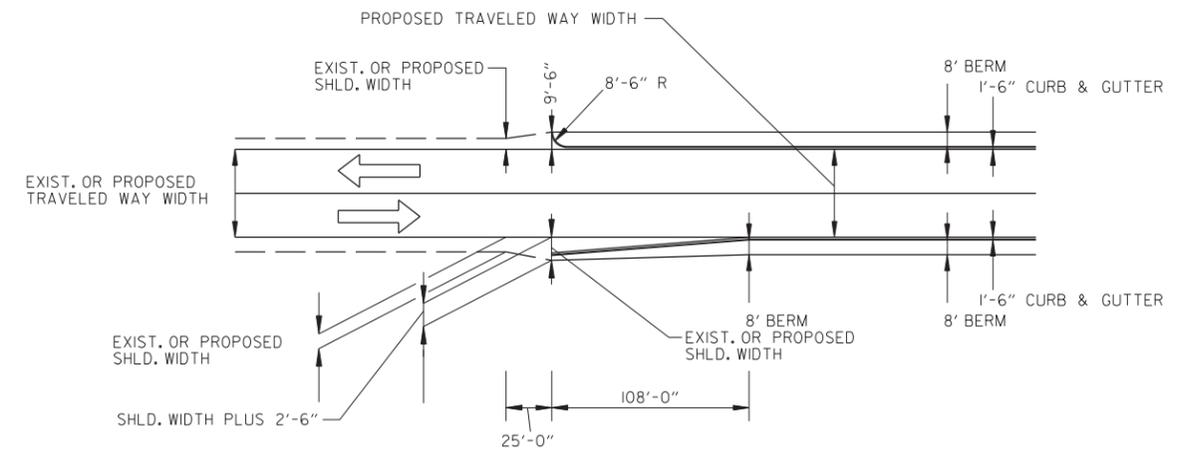


NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS,
& COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS,
COUNTY ROADS & STATE HIGHWAYS
CURB & GUTTER SECTION



TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION
HWY. 319



TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION
HWY. 367

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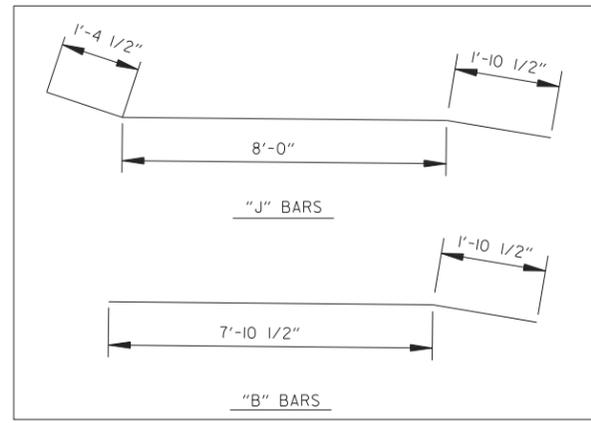
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				JOB NO.	061457	7	37	

2 SPECIAL DETAILS



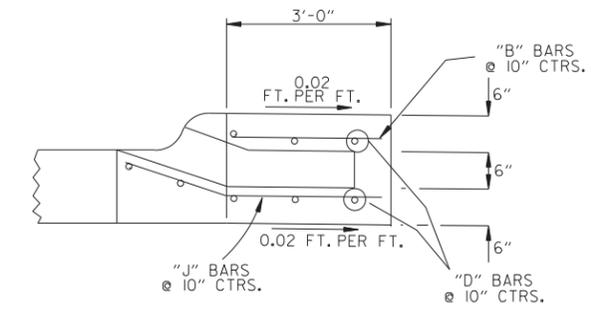
DIGITALLY SIGNED DATE 8/17/2020

BAR DIAGRAM

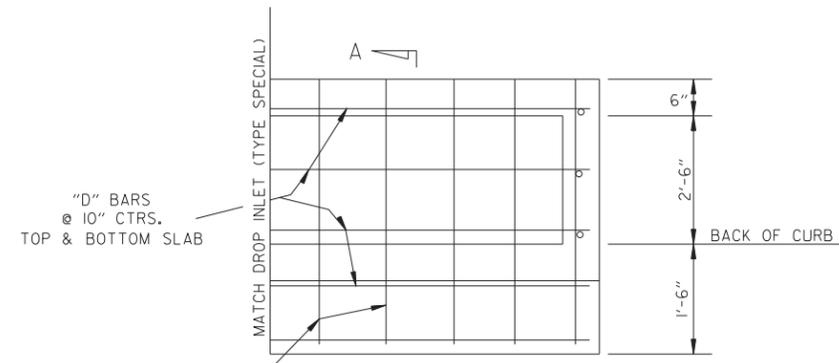


CLASS A CONC.	REINF. STEEL-RDWY. GRADE 60
CU. YDS.	POUND
2.53	207

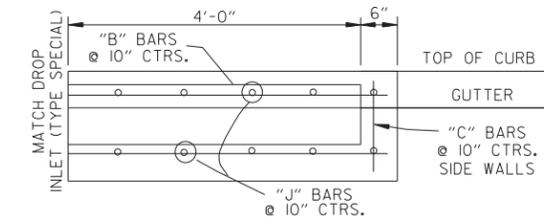
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)



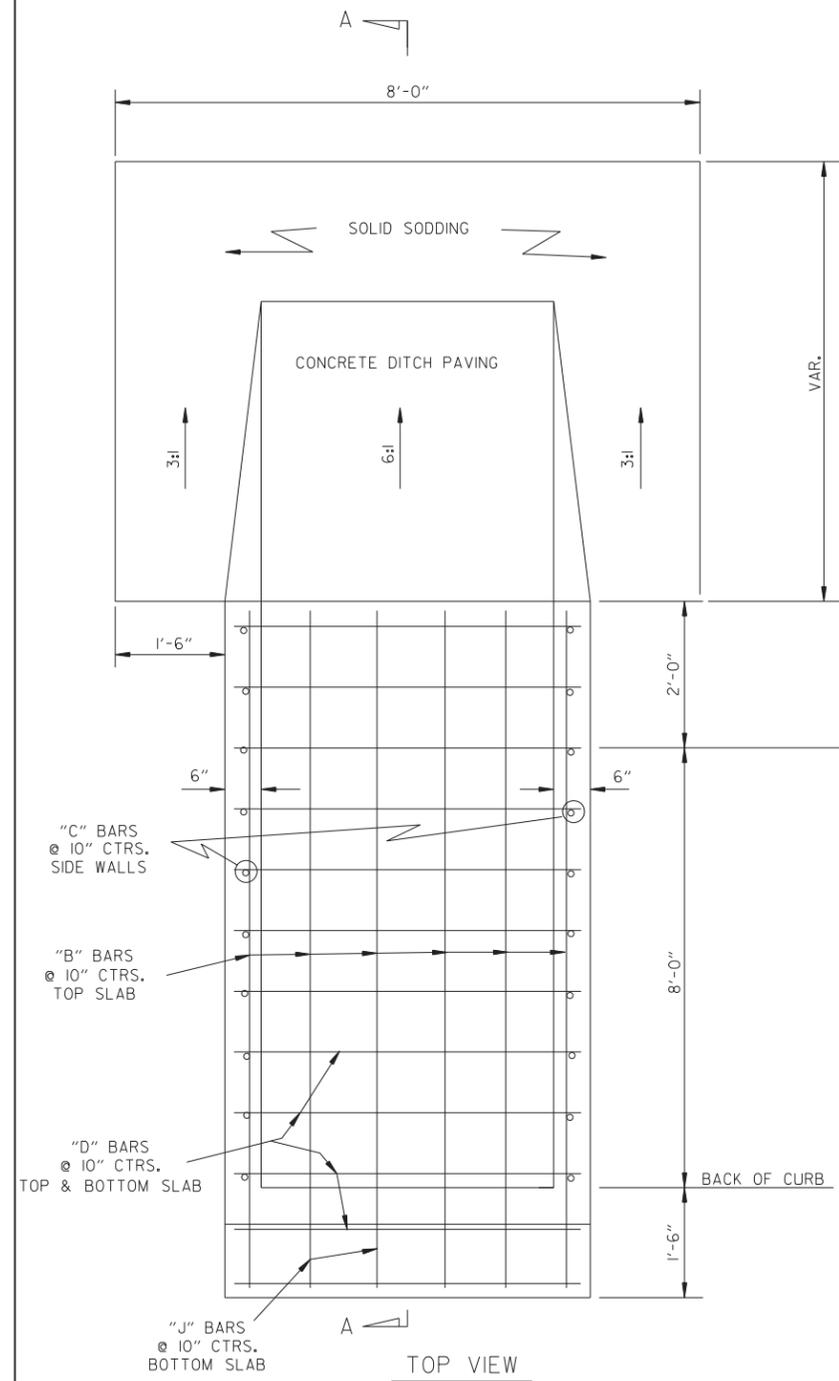
SECTION A-A - EXTENSION



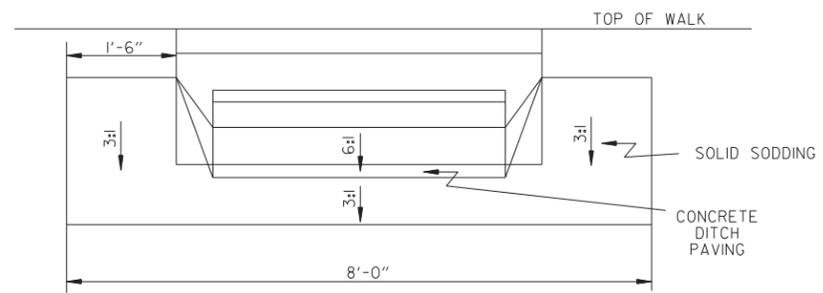
TOP VIEW - EXTENSION



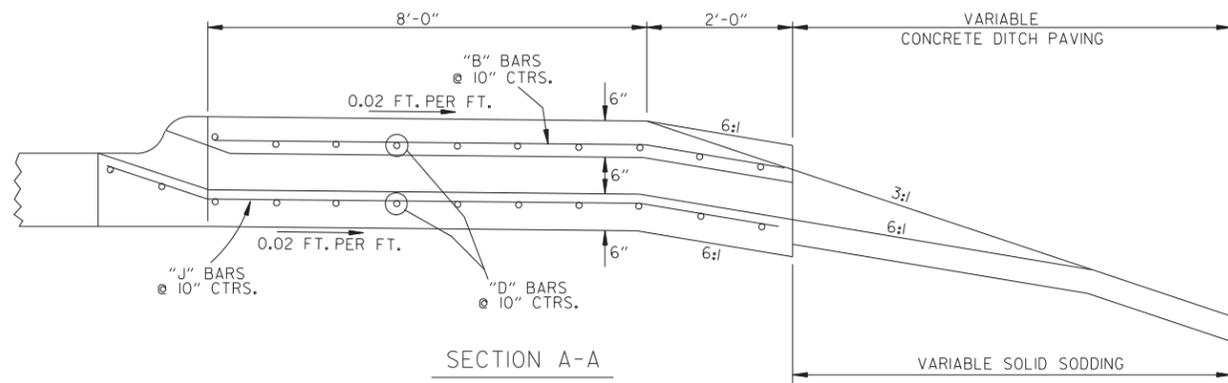
FRONT VIEW - EXTENSION



TOP VIEW

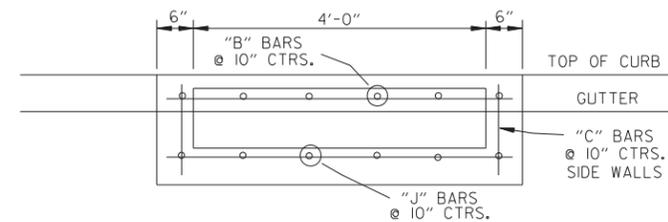


BACK VIEW



SECTION A-A

DROP INLET (TYPE SPECIAL)



FRONT VIEW

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2" COVER.
3. DROP INLETS AND EXTENSIONS ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
4. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
5. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
6. CONCRETE DITCH PAVING & SOLID SODDING SHALL BE PAID FOR SEPARATELY.
7. CONSTRUCT EXTENSIONS UPSTREAM OF DROP INLET UNLESS OTHERWISE SPECIFIED.

SPECIAL DETAILS

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				6	ARK.			
				JOB NO.	061457	9	37	
				② TEMPORARY EROSION CONTROL DETAILS				

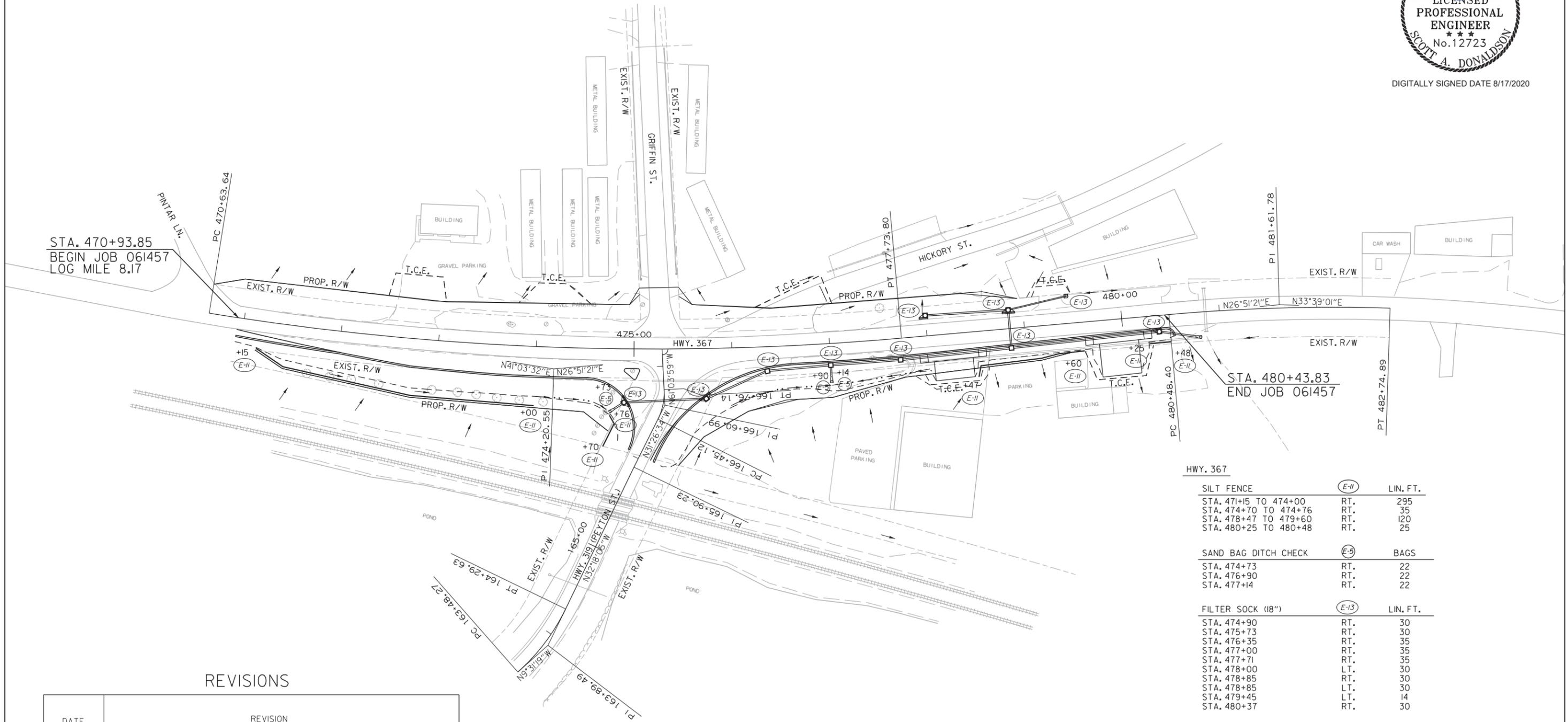
LEGEND

- ⊙-5 = SAND BAG DITCH CHECKS
- ⊙-11 = SILT FENCE
- ⊙-13 = FILTER SOCK (18")

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



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HWY. 367		
SILT FENCE	⊙-11	LIN. FT.
STA. 471+15 TO 474+00	RT.	295
STA. 474+70 TO 474+76	RT.	35
STA. 478+47 TO 479+60	RT.	120
STA. 480+25 TO 480+48	RT.	25
SAND BAG DITCH CHECK		
⊙-5		BAGS
STA. 474+73	RT.	22
STA. 476+90	RT.	22
STA. 477+14	RT.	22
FILTER SOCK (18")		
⊙-13		LIN. FT.
STA. 474+90	RT.	30
STA. 475+73	RT.	30
STA. 476+35	RT.	35
STA. 477+00	RT.	35
STA. 477+71	RT.	35
STA. 478+00	LT.	30
STA. 478+85	RT.	30
STA. 478+85	LT.	30
STA. 479+45	LT.	14
STA. 480+37	RT.	30

REVISIONS

DATE	REVISION

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				6	ARK.			
				JOB NO.	061457	10	37	
				② TEMPORARY EROSION CONTROL DETAILS				

LEGEND

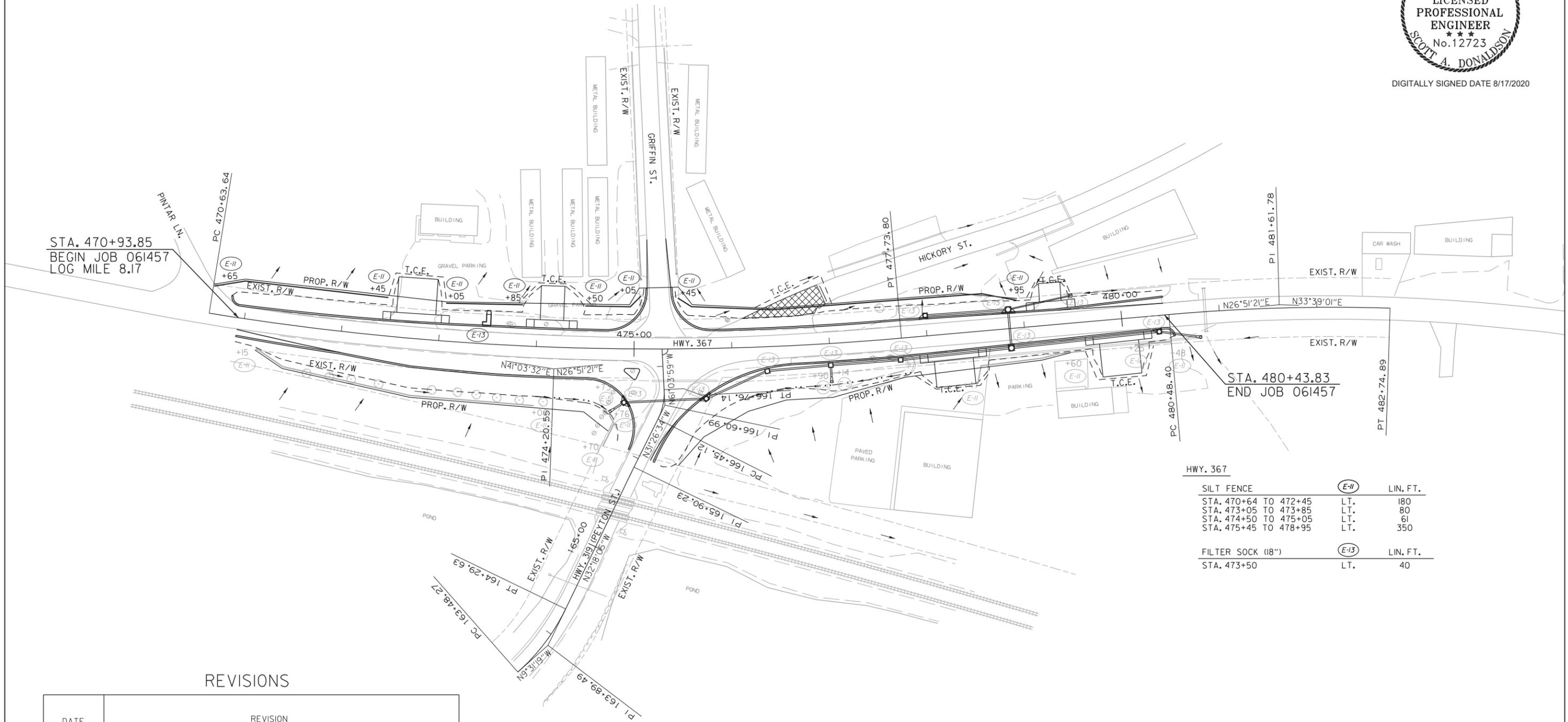
- ⊙ = SAND BAG DITCH CHECKS
- ⊙ = SILT FENCE
- ⊙ = FILTER SOCK (18")

⊘ OBLITERATE EXISTING PAVEMENT

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



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HWY. 367

SILT FENCE	E-II	LIN. FT.
STA. 470+64 TO 472+45	LT.	180
STA. 473+05 TO 473+85	LT.	80
STA. 474+50 TO 475+05	LT.	61
STA. 475+45 TO 478+95	LT.	350

FILTER SOCK (18")	E-I3	LIN. FT.
STA. 473+50	LT.	40

REVISIONS

DATE	REVISION

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				6	ARK.			
				JOB NO.	061457		11	37
				② MAINTENANCE OF TRAFFIC DETAILS				

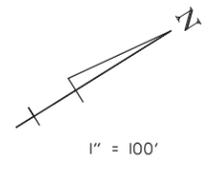
STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN HWY. 367 TRAFFIC ON EXISTING ALIGNMENT.
2. INSTALL ADVANCE WARNING SIGNS AND CHANNELIZING DEVICES AS SHOWN.
3. INSTALL DRAINAGE STRUCTURES AS SHOWN.
4. CONSTRUCT RIGHT PORTION OF HWY. 367 AS SHOWN. PLACE LEVELING COURSE ON EXISTING PAVEMENT UNDER TRAFFIC TO 2" BELOW FINISHED GRADE.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS SHOWN IN STAGE 2 ONCE STAGE I WORK IS COMPLETE.

OBLITERATE EXISTING PAVEMENT

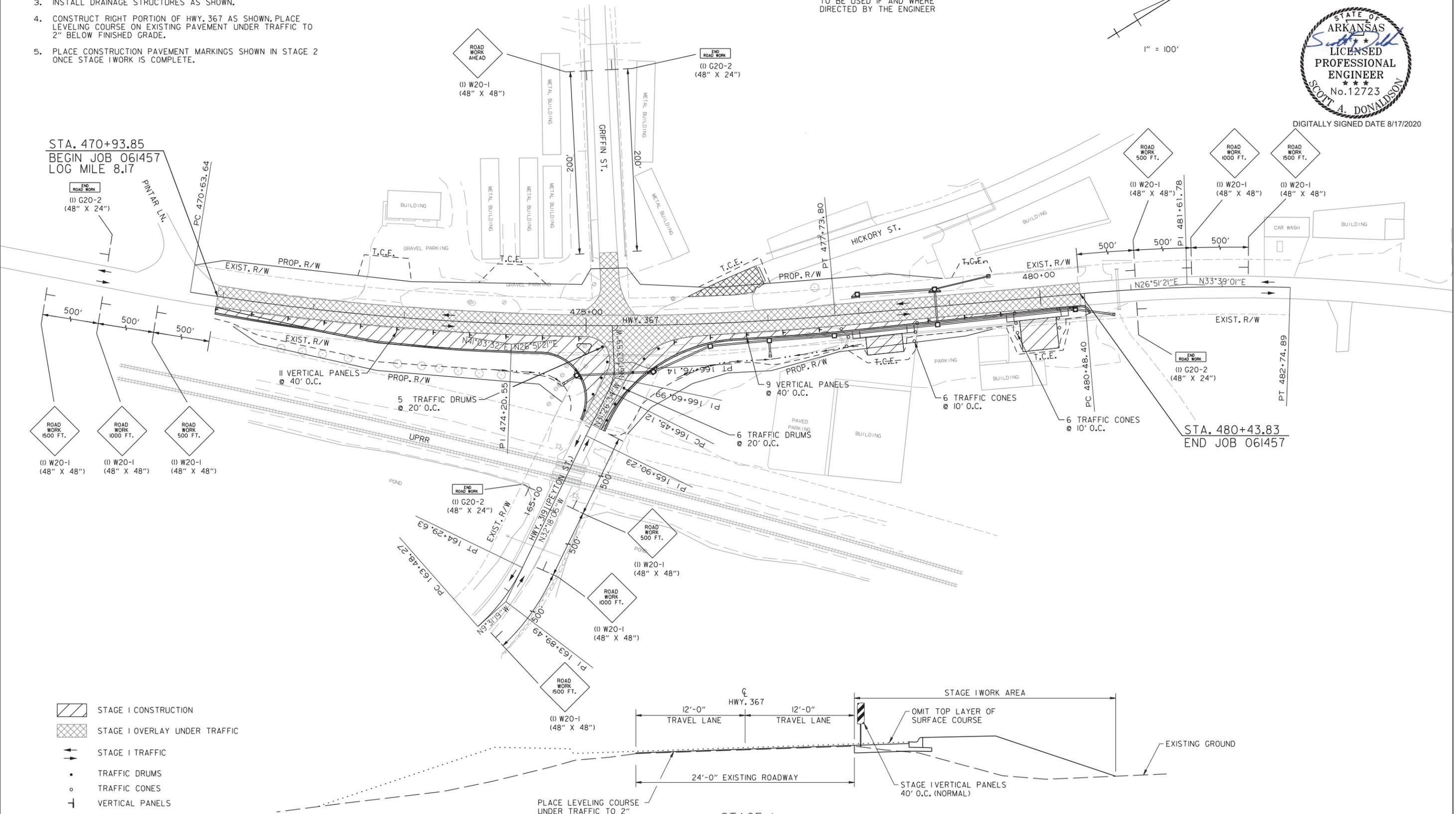
- RIGHT SHOULDER CLOSED (4) W21-5a (36" X 36")
- BUMP (4) W8-1 (30" X 30")
- DO NOT PASS (4) R4-1 (24" X 30")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

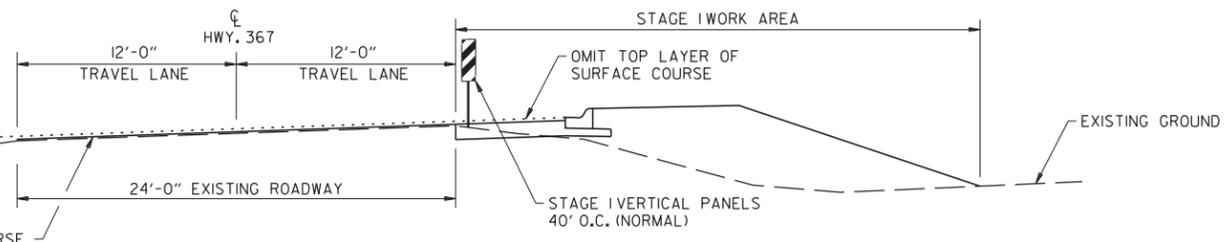


STA. 470+93.85
BEGIN JOB 061457
LOG MILE 8.17

STA. 480+43.83
END JOB 061457



- STAGE I CONSTRUCTION
- STAGE I OVERLAY UNDER TRAFFIC
- STAGE I TRAFFIC
- TRAFFIC DRUMS
- TRAFFIC CONES
- VERTICAL PANELS



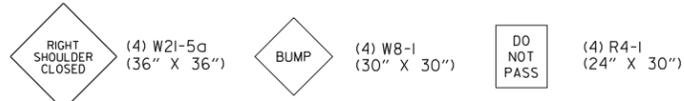
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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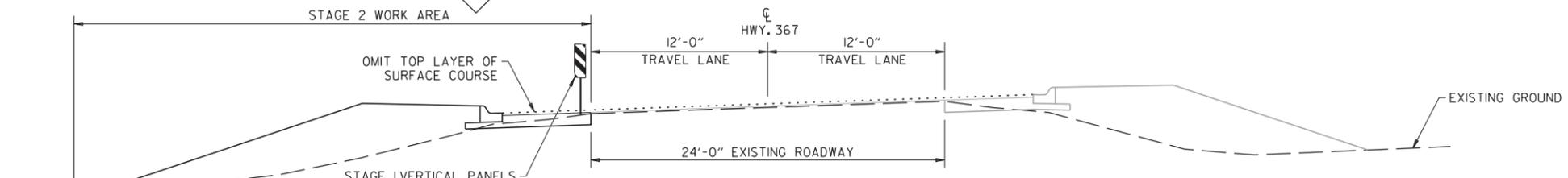
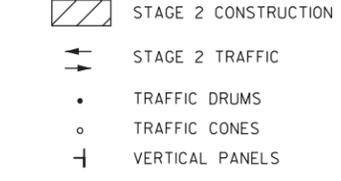
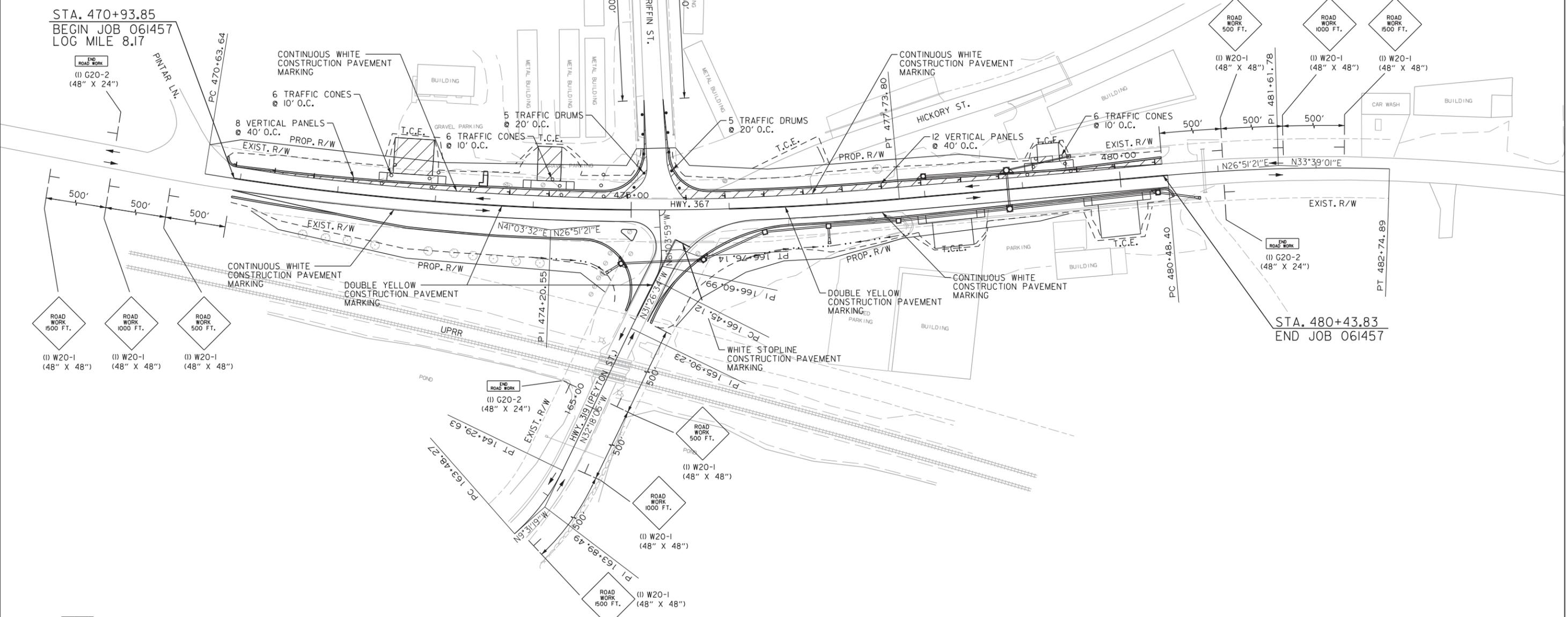
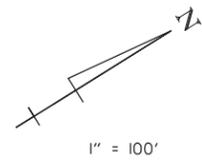
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				6	ARK.			
				JOB NO.	061457		12	37
				MAINTENANCE OF TRAFFIC DETAILS				

STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN HWY. 367 TRAFFIC ON EXISTING ALIGNMENT.
2. INSTALL ADVANCE WARNING SIGNS AND CHANNELIZING DEVICES AS SHOWN.
3. INSTALL DRAINAGE STRUCTURES AS SHOWN.
4. CONSTRUCT LEFT PORTION OF HWY. 367 AS SHOWN.
5. PLACE FINAL 2" OF ACHM SURFACE COURSE AND PLACE PERMANENT PAVEMENT MARKINGS.



TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

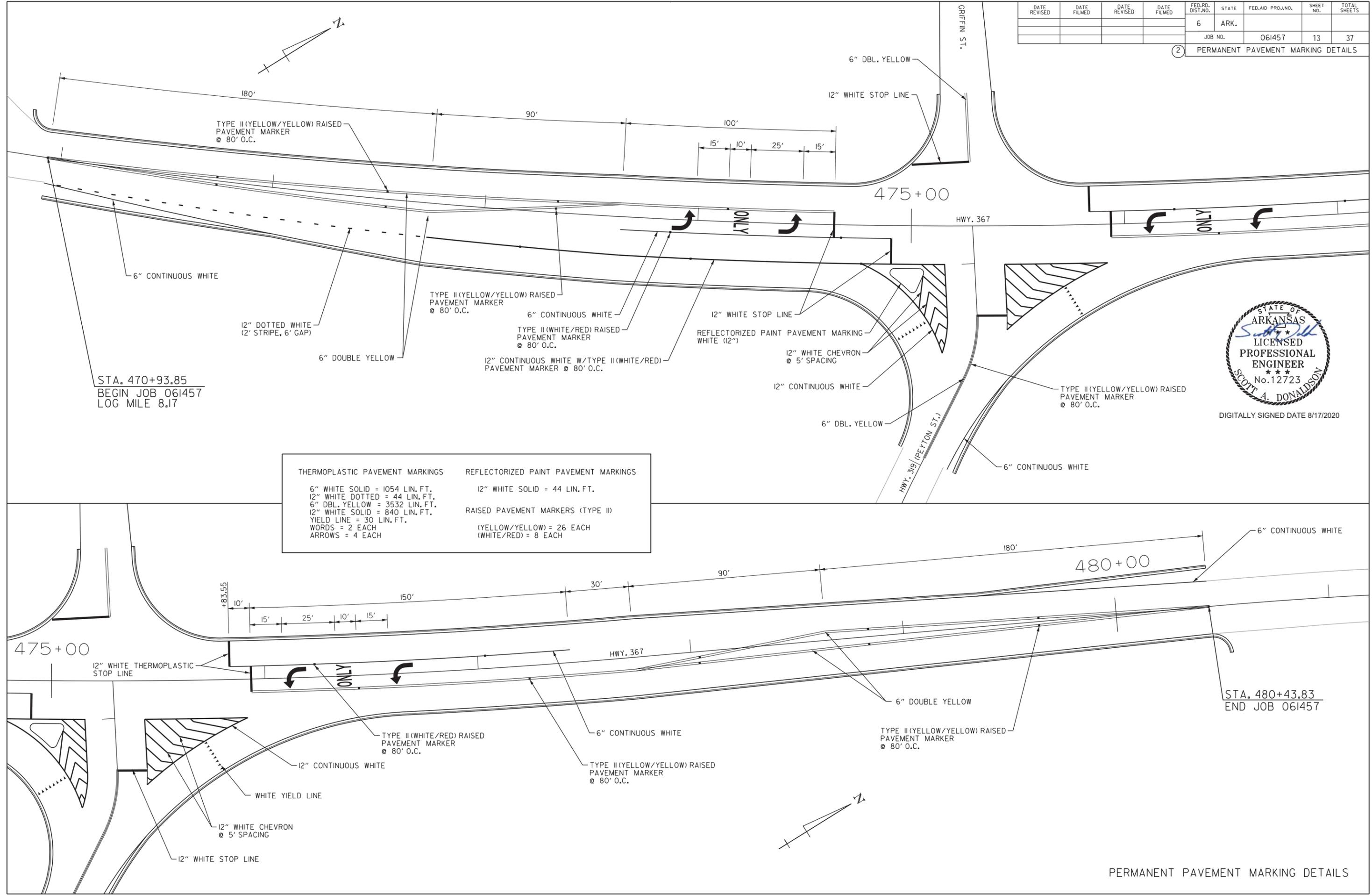


STAGE 2
TYPICAL SECTION

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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 REVISION DATE:

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.	061457	13	37	
② PERMANENT PAVEMENT MARKING DETAILS								



STA. 470+93.85
BEGIN JOB 061457
LOG MILE 8.17



DIGITALLY SIGNED DATE 8/17/2020

THERMOPLASTIC PAVEMENT MARKINGS	REFLECTORIZED PAINT PAVEMENT MARKINGS
6" WHITE SOLID = 1054 LIN. FT.	12" WHITE SOLID = 44 LIN. FT.
12" WHITE DOTTED = 44 LIN. FT.	
6" DBL. YELLOW = 3532 LIN. FT.	
12" WHITE SOLID = 840 LIN. FT.	
YIELD LINE = 30 LIN. FT.	
WORDS = 2 EACH	
ARROWS = 4 EACH	
	RAISED PAVEMENT MARKERS (TYPE II)
	(YELLOW/YELLOW) = 26 EACH
	(WHITE/RED) = 8 EACH

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 REVISED DATE:

STA. 480+43.83
END JOB 061457

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						061457	14	37
(2) SOIL BORING LOG								



DIGITALLY SIGNED DATE 8/17/2020

BORING NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			SIEVE ANALYSIS PERCENT PASSING								USCS CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	2 in.	1 in.	3/4 in.	3/8 in.	#4	#10	#40	#200		
1	479+15, LT.	2.5-3.5	26	29	17	12	---	---	---	---	100	---	---	86	CL	A-6
1	479+15, LT.	6.5-7.5	23	52	17	35	---	---	---	---	100	---	---	90	CH	A-7-6
2	476+90, LT.	0.5-1.5	7	---	---	---	100	92	91	79	68	55	43	20	SM	A-1-b
2	476+90, LT.	2.5-3.5	21	29	17	12	---	---	---	---	100	---	---	84	CL	A-6
3	475+05, RT.	2.5-3.5	23	28	18	10	---	---	---	---	100	---	---	79	CL	A-4
4	472+35, LT.	0.5-1.5	14	---	---	---	100	100	90	89	86	88	75	47	SM	A-4
4	472+35, LT.	2.5-3.5	27	38	19	19	---	---	---	---	100	---	---	83	CL	A-6
4	472+35, LT.	4.5-5.5	19	48	16	32	---	---	---	---	100	---	---	70	CL	A-7-6

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

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.	061457
								15
								37
							QUANTITIES	

ADVANCE WARNING SIGNS AND DEVICES - STPU-0043(29)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	TRAFFIC CONE
						NO.	SQ. FT.			
			LIN. FT. - EACH				EACH			
W20-1	ROAD WORK 1500 FT.	48"x48"	3	3	3	3	48.0			
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	48.0			
W20-1	ROAD WORK 500 FT.	48"x48"	3	3	3	3	48.0			
W20-1	ROAD WORK AHEAD	48"x48"	1	1	1	1	16.0			
G20-2	END ROAD WORK	48"x24"	4	4	4	4	32.0			
R4-1	DO NOT PASS	24"x30"	4	4	4	4	20.0			
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	36.0			
W8-1	BUMP	30"x30"	4	4	4	4	25.0			
VERTICAL PANELS			20	20	20			20		
TRAFFIC DRUMS			11	10	11				11	
TRAFFIC CONES			12	18	18					18
TOTALS:							273.0	20	11	18

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

* QUANTITY ESTIMATE: TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.



DIGITALLY SIGNED DATE 8/17/2020

EROSION CONTROL - STPU-0043(29)

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	SLT FENCE	FILTER SOCK (18")	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	ACRE	M.GAL.	BAG (E-5)	LIN. FT. (E-11)	LIN. FT. (E-13)	CU.YD. (E-14)	CU.YD.
ENTIRE PROJECT	STAGE 1		0.47	0.94	0.47	47.9	0.47	0.89	0.89	18.2	66	475	299			32
ENTIRE PROJECT	STAGE 2		0.37	0.74	0.37	37.7	0.37	0.60	0.60	12.2		671	40			26
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.21	0.42	0.21	21.4	0.21	0.37	0.37	7.5	22	287	90	20	20	35
TOTALS:			1.05	2.10	1.05	107.0	1.05	1.86	1.86	37.9	88	1433	429	20	20	93

BASIS OF ESTIMATE:

LIME 2 TONS / ACRE OF SEEDING
 WATER 102.0 M.G. / ACRE OF SEEDING
 WATER 20.4 M.G. / ACRE OF TEMPORARY SEEDING
 SAND BAG DITCH CHECKS 22 BAGS / LOCATION

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.

*QUANTITIES ESTIMATED.
 SEE SECTION 104.03 OF THE STD. SPECS.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC - STPU-0043(29)

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	5	10
TOTALS:	5	10

NOTE: QUANTITIES ARE ESTIMATED.
 SEE SECTION 104.03 OF THE STD. SPECS.
 BASIS OF ESTIMATE:
 ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC... 25 TON/MILE
 TACK COAT FOR MAINTENANCE OF TRAFFIC... 50 GAL/MILE

REMOVAL AND DISPOSAL OF ITEMS - STPU-0043(29)

STATION	LOCATION	MAILBOXES	CONCRETE PAVEMENT
		EACH	SQ. YD.
473+73	HWY. 367 LT.	1	
477+44	HWY. 367 RT.	1	
477+61	HWY. 367 RT.	1	
477+63	HWY. 367 RT.	1	
479+29	HWY. 367 LT.		36
TOTALS:		4	36

REMOVAL AND DISPOSAL OF CULVERTS - STPU-0043(29)

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
475+51	HWY. 367 RT.	1
479+28	HWY. 367 RT.	1
TOTAL:		2

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

EARTHWORK - STPU-0043(29)

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
470+93.85	481+43.83	STAGE 1-MAIN LANES	93	2093	
470+93.85	481+43.83	STAGE 2-MAIN LANES	111	533	
		HWY. 319		633	
		GRIFFIN ST.		40	
ENTIRE PROJECT	APPROACHES			200	
ENTIRE PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER				50
TOTALS:			204	3499	50

* QUANTITY ESTIMATED.
 SEE SECTION 104.03 OF THE STD. SPECS.

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

EROSION CONTROL MATTING - STPU-0043(29)

STATION	STATION	LOCATION	LENGTH	CLASS :
			LIN. FT.	SQ. YD.
473+50.00	474+75.00	HWY. 367 ON RT.	125.00	111.11
476+14.88	478+00.00	HWY. 367 ON RT.	185.12	164.55
TOTAL:				275.66

NOTE: AVERAGE WIDTH = 8'-0"

PAVEMENT REPAIR OVER CULVERTS (ASPHALT) - STPU-0043(29)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
478+85	HWY. 367	7.92	24	10
166+65	HWY. 319	7.92	27	12
TOTAL:				22

AVG. DEPTH = 9"

CLEARING AND GRUBBING - STPU-0043(29)

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
470+94	474+50	HWY. 367 RT.	4	4
477+00	478+00	HWY. 367 LT.	1	1
TOTALS:			5	5

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 061457							16	37
							QUANTITIES	

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS - STPU-0043(29)

DESCRIPTION	ENTIRE JOB LIN. FT. - EACH	CONSTRUCTION PAVEMENT MARKINGS LIN. FT.	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING						REFLECTORIZED PAINT PAVEMENT MARKING	
			TYPE II (WHITE/RED)	TYPE II (YELLOW/YELLOW)	6"		12"		YIELD LINE	WORDS	ARROWS	12"
			EACH	EACH	WHITE	YELLOW	WHITE	WHITE				WHITE
		EACH		LIN. FT.						EACH	LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	4195	4195										
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)	8		8									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	26			26								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")	1054				1054							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	3532					3532						
THERMOPLASTIC PAVEMENT MARKING WHITE (12")	884						884					
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	30							30				
THERMOPLASTIC PAVEMENT MARKING (WORDS)	2								2			
THERMOPLASTIC PAVEMENT MARKING (ARROWS)	4									4		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (12")	44										44	
TOTALS:		4195	8	26	1054	3532	884	30	2	4	44	

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.



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ACHM PATCHING OF EXISTING ROADWAY - STPU-0043(29)

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	25
TOTAL:	25

NOTE: QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

STANDARD SIGNS & POSTS - STPU-0043(29)

SIGN NUMBER	DESCRIPTION	SIGN SIZE IN.	MAXIMUM NUMBER REQUIRED EACH	TOTAL REQUIRED SQ. FT.	CHANNEL POST SIGN SUPPORT (TYPE U-1) EACH
TOTALS:				4.5	2

GUARDRAIL - STPU-0043(29)

STATION	LOCATION	GUARDRAIL (TYPE C) LIN. FT.
476+97.00	HWY. 367 LT.	13
TOTAL:		13

COLD MILLING ASPHALT PAVEMENT - STPU-0043(29)

STATION	STATION	LOCATION	AVG. WIDTH FEET	COLD MILLING ASPHALT PAVEMENT SQ. YD.
469+93.85	470+93.85	HWY. 367	24.00	266.67
480+43.83	481+43.83	HWY. 367	24.00	266.67
	475+28.00	HWY. 367 LT. (GRIFFIN ST.)	20.00	111.11
	165+53.75	166+03.75 HWY. 319	21.00	116.67
TOTAL:				761.12

NOTE: AVERAGE MILLING DEPTH 1".

CONCRETE DITCH PAVING - STPU-0043(29)

STATION	LOCATION	LENGTH LIN. FT.	"W" FEET	"B" FEET	CONC. DITCH PAVING	SOLID SODDING	WATER
					(TYPE A) SQ. YD.	SQ. YD.	M. GAL.
473+50.00	HWY. 357 LT.	4.00	4.50	4.00	2.00	1.78	0.02
TOTALS:					2.00	1.78	0.02

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

CONCRETE ISLAND - STPU-0043(29)

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ. YD.
475+00	HWY. 367 RT.	C	13
TOTAL:			13

MAILBOXES - STPU-0043(29)

STATION	LOCATION	MAILBOXES EACH	MAILBOX SUPPORTS (SINGLE)
			EACH
473+73	HWY. 367 LT.	1	1
477+44	HWY. 367 RT.	1	1
477+61	HWY. 367 RT.	1	1
477+63	HWY. 367 RT.	1	1
TOTALS:		4	4

STRUCTURES - STPU-0043(29)

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III)	SIDE DRAIN 12"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	DROP INLETS			JUNCT. BOXES (TYPE E)	YARD DRAINS	SOLID SODDING SQ. YD.	WATER M. GAL.	STD. DWG. NOS.
		18"			MO	SPECIAL	4'						
		LIN. FT.			EACH								
473+50	HWY. 367 CONSTRUCT DRCP INLET ON LT.					1	1	1					SPECIAL DETAILS
474+90	HWY. 367 CONSTRUCT DRCP INLET ON RT.	91			1	1	2			5	0.06		FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
475+73	HWY. 367 CONSTRUCT DRCP INLET ON RT.				65	1	2						FPC-9E, FPC-9M, PCC-1
476+35	HWY. 367 JUNCTION BOX ON RT.				61				1				FPC-9, PCC-1
477+00	HWY. 367 JUNCTION BOX ON RT.	10			68	1			1	5	0.06		FES-1, FES-2, FPC-9, PCC-1
477+71	HWY. 367 JUNCTION BOX ON RT.				110				1				FPC-9E, PCC-1
478+00	HWY. 367 CONSTRUCT DRCP INLET ON LT.				81	1	1						FPC-9E, FPC-9M, PCC-1
478+85	HWY. 367 CONSTRUCT DRCP INLET ON LT.	34				1	2						FPC-9E, FPC-9M, PCC-1
478+85	HWY. 367 CONSTRUCT DRCP INLET ON RT.				148	1							FPC-9E, FPC-9M, PCC-1
479+45	HWY. 367 CONSTRUCT YARD DRAIN ON LT.		62							1			FPC-9, PCC-1, PCM-1
480+37	HWY. 367 CONSTRUCT DRCP INLET ON RT.	36				1	1	1		5	0.06		FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
	ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER		300							3			FPC-9, PCC-1, PCM-1
TOTALS:		171	362	533	3	6	1	9	3	4	15	0.18	

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

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

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

* QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

SELECTED PIPE BEDDING - STPU-0043(29)

LOCATION	SELECTED PIPE BEDDING CU. YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100
TOTAL:	100

NOTE: QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

CONCRETE COMBINATION CURB AND GUTTER - STPU-0043(29)

STATION	STATION	LOCATION	TYPE A (1' 6") LIN. FT.
470+84	475+14	HWY. 367 LT.	455
470+94	475+00	HWY. 367 RT.	465
475+38	480+44	HWY. 367 LT.	530
475+20	480+53	HWY. 367 RT.	580
TOTAL:			2030

QUANTITIES

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 REVISION DATE:

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.		061457	19	37
2 SURVEY CONTROL DETAILS								



DIGITALLY SIGNED DATE 8/17/2020

SURVEY CONTROL COORDINATES

PROJECT NAME: S061457
 DATE: 9/25/2018
 COORDINATE SYSTEM: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
 PROJECTED TO GROUND.
 UNITS: U.S. SURVEY FOOT

POINT NAME	NORTHING	EASTING	ELEV	FEATURE	DESCRIPTION
1	252210.3620	1325824.6990	244.62	CTL	*ALUM MON
2	252156.9461	1325957.5745	245.60	CTL	*ALUM MON
3	252050.2684	1325892.4400	248.75	CTL	*ALUM MON
100	251227.6703	1325021.7560	252.71	GPS	*STD ARDOT MON. STAMPED PN:100
101	251864.9386	1325586.0700	247.96	GPS	*STD ARDOT MON. STAMPED PN:101
901	252437.4170	1325847.3660	244.61	TBM	*901 CHISELED SQ IN SW
902	252073.3470	1325636.8940	245.46	TBM	*902 CHISELED SQ IN NE CORNER SW

*NOTE - REBAR AND CAP - STANDARD - 5/8" REBAR WITH 2" ALUMINUM CAP STAMPED
 *(STANDARD MARKINGS COMMON TO ALL CAPS), OR AS INDICATED
 (OTHER MARKINGS INDICATED IN THE POINT DESCRIPTION OF THE INDIVIDUAL POINT).
 ALL DISTANCES ARE GROUND.
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
 A PROJECT CAF OF 0.99997561 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
 THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
 GRID DISTANCE = GROUND DISTANCE X CAF.
 GRID COORDINATES CTL FILE WAS NOT CREATED.
 HORIZONTAL DATUM: NAD 83 (2011)
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
 AT A SPECIFIC POINT.

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

BASIS OF BEARING:
 ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
 DETERMINED FROM GPS CONTROL POINTS: 100 AND 101
 CONVERGENCE ANGLE: 00-01-32.5 LEFT AT PN:101
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

ALIGNMENT NAME: HWY. 367

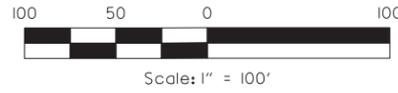
POINT	STATION	TYPE	NORTHING	EASTING
8000	470+63.64	PC	1325556.3468	251804.7762
8002	477+73.80	PT	1325952.0079	252392.3095
8003	480+48.40	PC	1326076.0597	252637.2964
8005	482+74.89	PT	1326190.0990	252832.8186

ALIGNMENT NAME: HWY. 319

POINT	STATION	TYPE	NORTHING	EASTING
8006	163+48.27	PC	1326033.8231	251879.3076
8008	164+29.63	PT	1326004.8762	251954.8046
8009	165+90.23	PI	1325919.1560	252090.5521
8010	166+45.12	PC	1325890.5216	252137.3843
8012	166+76.14	PT	1325868.3595	252158.5964
8013	167+17.60	POE	1325832.0765	252178.6533

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061457	20	37
				2 SURVEY CONTROL DETAILS				



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



DIGITALLY SIGNED DATE 8/17/2020

C.L. HWY. 367
 PI = 474+20.55
 Δ = 14°12'11" LT.
 D = 2°00'00"
 T = 356.91'
 L = 710.16'
 PC = 470+63.64
 PT = 477+73.80
 e = 0.034'/'
 Ls = 240'

STA. 470+93.85
 BEGIN JOB 061457
 LOG MILE 8.17

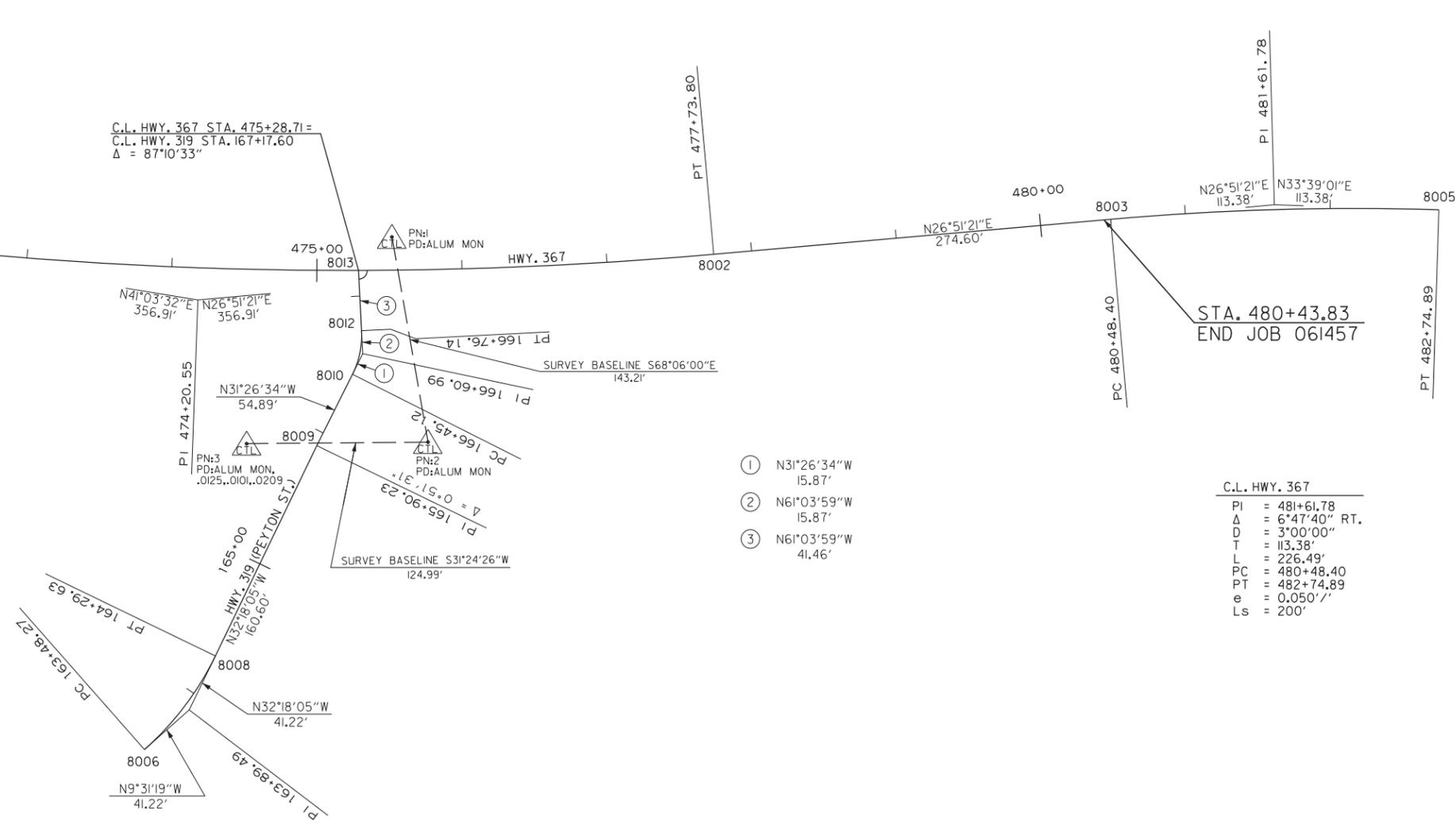
C.L. HWY. 367 STA. 475+28.71 =
 C.L. HWY. 319 STA. 167+17.60
 Δ = 87°10'33"

C.L. HWY. 319
 PI = 166+60.99
 Δ = 29°37'25" LT.
 D = 95°29'54"
 T = 15.87'
 L = 31.02'
 PC = 166+45.12
 PT = 166+76.14
 NO SUPER

C.L. HWY. 319
 PI = 163+89.49
 Δ = 22°46'46" LT.
 D = 27°59'54"
 T = 41.22'
 L = 81.36'
 PC = 163+48.27
 PT = 164+29.63
 e = MATCH EXISTING
 Ls = MATCH EXISTING

C.L. HWY. 367
 PI = 481+61.78
 Δ = 6°47'40" RT.
 D = 3°00'00"
 T = 113.38'
 L = 226.49'
 PC = 480+48.40
 PT = 482+74.89
 e = 0.050'/'
 Ls = 200'

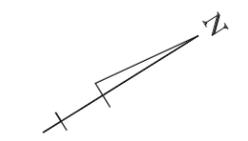
- ① N31°26'34"W
15.87'
- ② N61°03'59"W
15.87'
- ③ N61°03'59"W
41.46'



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	061457	21	37	
								PLAN AND PROFILE SHEETS

 OBLITERATE EXISTING PAVEMENT



DIGITALLY SIGNED DATE 8/17/2020

STA. 473+50 LT. OF C.L.
CONCRETE DITCH PAVING = 2.0 SO. YD.

STA. 472+75 CONSTRUCT
APPROACH ON LT. = 60 CU. YDS.

STA. 474+15 CONSTRUCT
APPROACH ON LT. = 65 CU. YDS.

STA. 476+97 CONSTRUCT
12.5' GUARDRAIL (TYPE C) 50' LT. WITH
TWO (2) REFLECTIVE RED DIAMOND OBJECT
MARKERS MOUNTED ON U-CHANNEL POSTS
DIRECTLY BEHIND THE GUARDRAIL AT A
HEIGHT OF 4'.

STA. 479+29 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

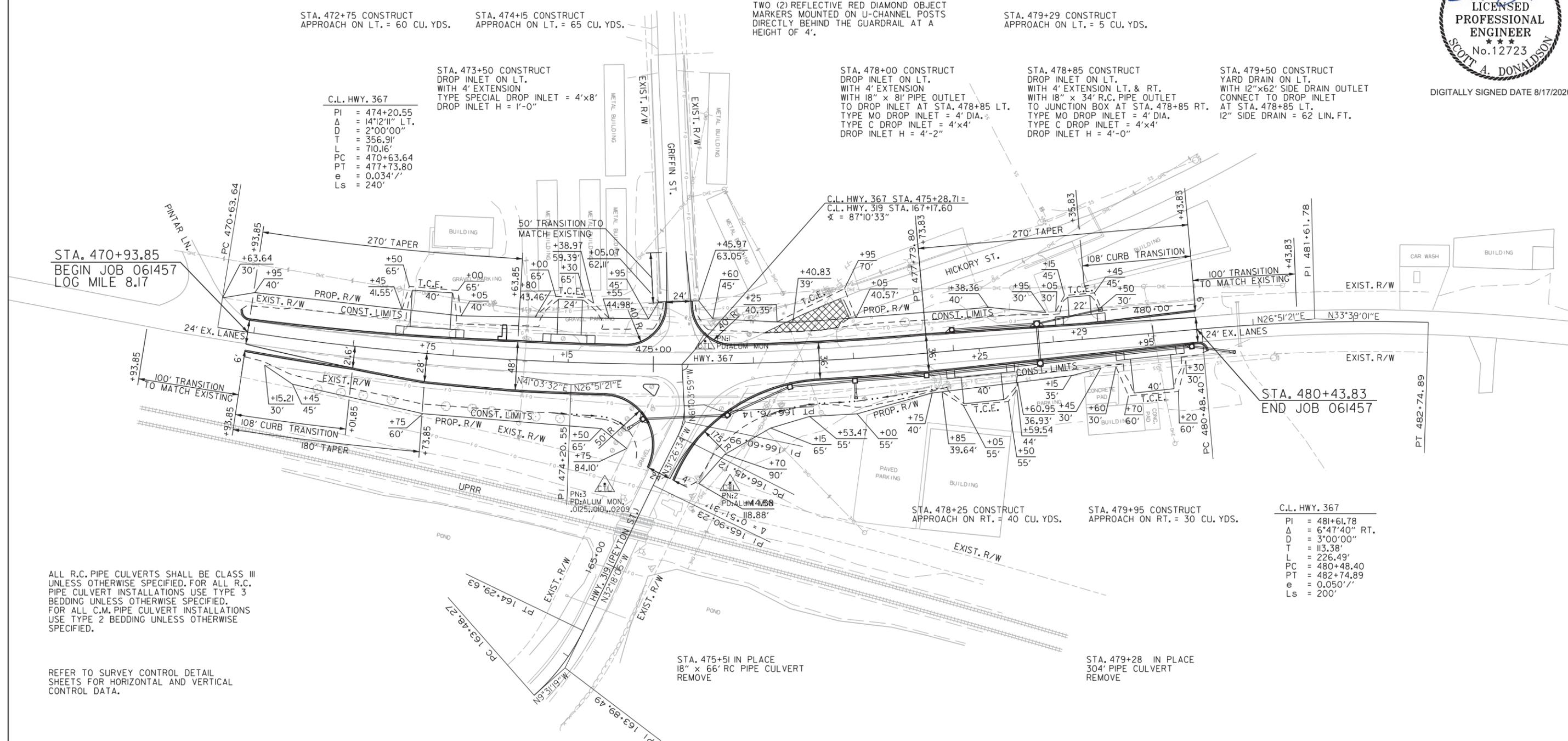
C.L. HWY. 367
PI = 474+20.55
Δ = 141°12'11" LT.
D = 2°00'00"
T = 356.91'
L = 710.16'
PC = 470+63.64
PT = 477+73.80
e = 0.034'/'
Ls = 240'

STA. 473+50 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
TYPE SPECIAL DROP INLET = 4'x8'
DROP INLET H = 1'-0"

STA. 478+00 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
WITH 18" x 81' PIPE OUTLET
TO DROP INLET AT STA. 478+85 LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-2"

STA. 478+85 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION LT. & RT.
WITH 18" x 34' R.C. PIPE OUTLET
TO JUNCTION BOX AT STA. 478+85 RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-0"

STA. 479+50 CONSTRUCT
YARD DRAIN ON LT.
WITH 12"x62' SIDE DRAIN OUTLET
CONNECT TO DROP INLET
AT STA. 478+85 LT.
12" SIDE DRAIN = 62 LIN. FT.



ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

STA. 474+90 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION LT. & RT.
WITH 18" x 10' R.C. PIPE INLET W/F.E.S.
AND 18" x 81' R.C. PIPE OUTLET
TO DROP INLET AT STA. 475+73 RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-4"

STA. 475+73 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION LT. & RT.
WITH 18" x 65' PIPE OUTLET
TO JUNCTION BOX AT STA. 476+35 RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-6"

STA. 476+35 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 61' PIPE OUTLET
TO JUNCTION BOX AT STA. 477+00 RT.
TYPE E JUNCTION BOX = 4'x4'
DROP INLET H = 5'-1"

STA. 477+00 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 10' R.C. PIPE INLET W/F.E.S.
AND 18" x 68' PIPE OUTLET
TO JUNCTION BOX AT STA. 477+71 RT.
TYPE E JUNCTION BOX = 4'x4'
DROP INLET H = 4'-10"

STA. 477+71 CONSTRUCT
JUNCTION BOX ON RT.
WITH 18" x 110' PIPE OUTLET
TO JUNCTION BOX AT STA. 478+85 RT.
TYPE E JUNCTION BOX = 4'x4'
DROP INLET H = 4'-7"

STA. 478+85 CONSTRUCT
DROP INLET ON RT.
AND 18" x 148' PIPE OUTLET
TO DROP INLET AT STA. 480+37 RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-2"

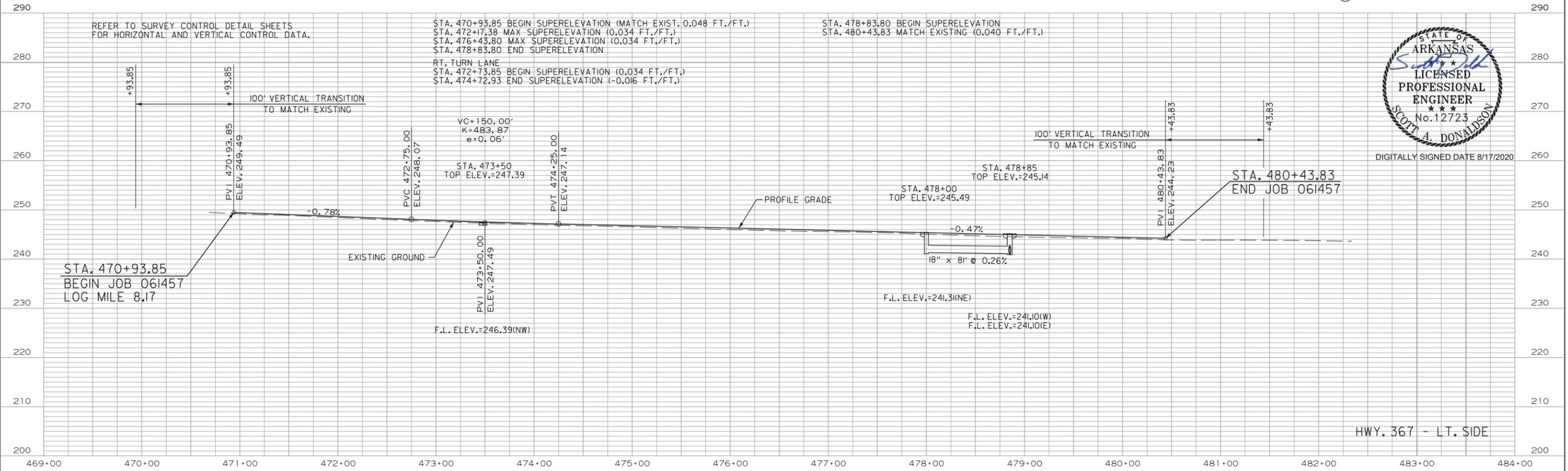
STA. 480+37 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
WITH 18" x 36' R.C. PIPE OUTLET W/F.E.S.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-0"

C.L. HWY. 367
PI = 481+61.78
Δ = 6°47'40" RT.
D = 3°00'00"
T = 113.38'
L = 226.49'
PC = 480+48.40
PT = 482+74.89
e = 0.050'/'
Ls = 200'

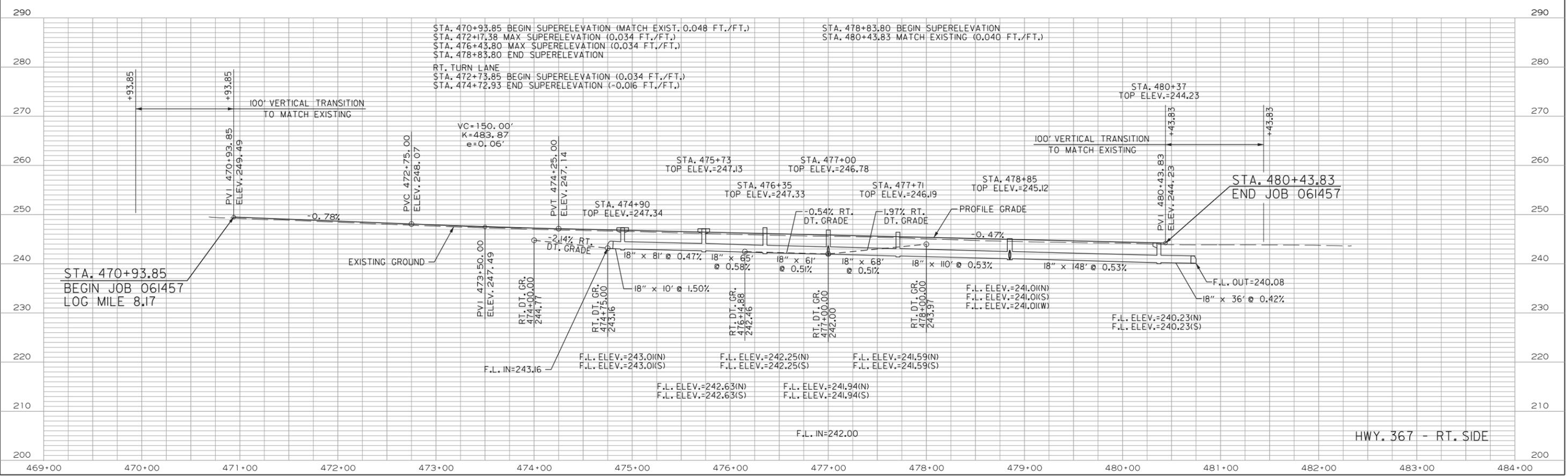
SADonaldson 8/16/2020 3:34:39 PM WORKSPACE: AHTD L:\2017\10101540 - ARDOT - Word Traffic Signal\Drawings\061457_LP_01.dgn REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		22	37
				JOB NO.		061457	PLAN AND PROFILE SHEETS	

2



DIGITALLY SIGNED DATE 8/17/2020



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 WORKSPACE: AHTD
 L:\2017\07540 - ARDOT - Ward Traffic Signal\Drawings\061457_PP_01.dgn
 REVISED DATE:

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.	061457	23	37	

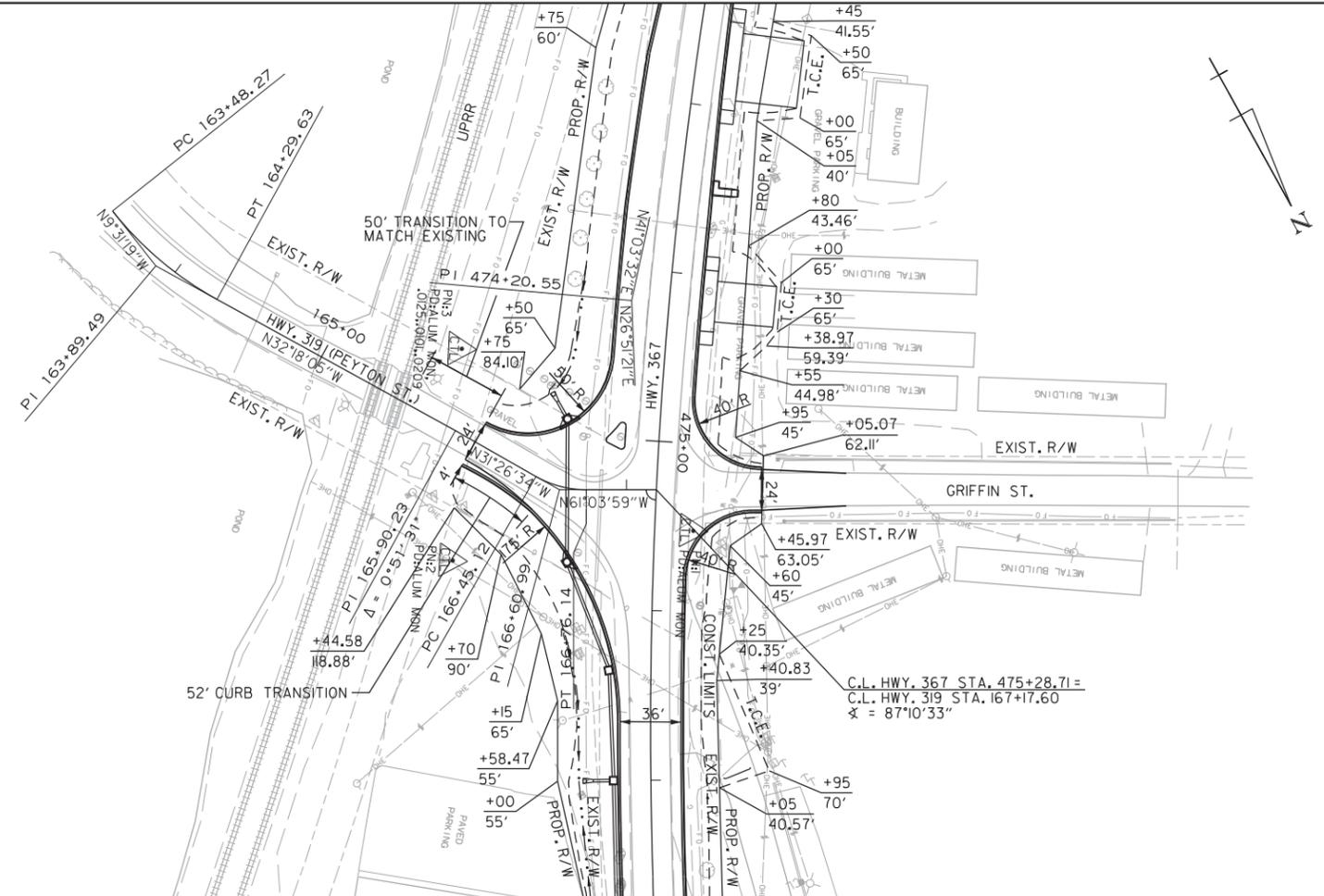
2 PLAN AND PROFILE SHEETS



DIGITALLY SIGNED DATE 8/17/2020

C.L. HWY. 319
 PI = 163+89.49
 Δ = 22°46'46" LT.
 D = 27°59'54"
 T = 41.22'
 L = 81.36'
 PC = 163+48.27
 PT = 164+29.63
 e = MATCH EXISTING
 Ls = MATCH EXISTING

C.L. HWY. 319
 PI = 166+60.99
 Δ = 29°37'25" LT.
 D = 95°29'54"
 T = 15.87'
 L = 31.02'
 PC = 166+45.12
 PT = 166+76.14
 NO SUPER



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



S.A. Donaldson
 8/16/2020 3:34:42 PM
 WORKSPACE: AHTD
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 REVISED DATE:

HWY. 319

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						061457	24	37

② TRAFFIC SIGNAL NOTES

TRAFFIC SIGNAL NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (CURRENT EDITION) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
- EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
- ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN-TIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c#6 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/ COUNTY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c#12 A.W.G. JF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
- CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
- TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
- CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
- ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
- CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED.
- TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
- PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.
- FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.
- ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS.
- CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
- LED LUMINAIRE ASSEMBLIES SHALL HAVE A BUG RATING OF U0.
- HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
- TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, THIRTY-EIGHT (38') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6') FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
- THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6') FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.

- AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.
- CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.
- CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO INSA STANDARDS.
- ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
- TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
- ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.
- DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.
- ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.
- IN PULL BOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS, THE DIRECTION OF EACH CABLE RUN SHALL BE INDICATED BY ATTACHING A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO THE CONDUIT. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. IN INSTANCES WHERE THE CONDUIT OR CONDUIT ENTRANCES ARE NOT VISIBLE OR ACCESSIBLE, A DIRECTION TAG SHALL BE ATTACHED TO EACH CABLE.
- ALL NON-METALLIC CONDUIT RUNS SHALL HAVE BELL RING FITTINGS INSTALLED ON THE TERMINATING ENDS OF THE CONDUIT. THIS INCLUDES PULL BOXES, POLE BASES, AND TRAFFIC SIGNAL CABINETS.
- ALL CONCRETE PULL BOXES SHALL BE SET ON A GRAVEL OR CRUSHED STONE BEDDING AS SPECIFIED IN SECTION 711, CONCRETE PULL BOX, OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.



DIGITALLY SIGNED DATE 8/17/2020

LOCATION: HWY. 367 AT HWY. 319/GRIFFIN ST.
 CITY: WARD
 COUNTY: LONOKE
 DISTRICT: 06 SCALE: N/A DRAWN BY: ARM

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.	061457	25	37	

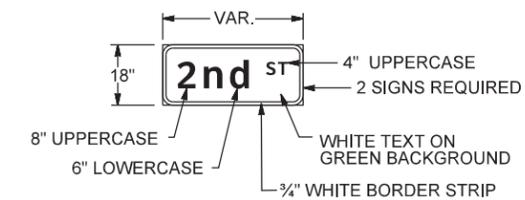
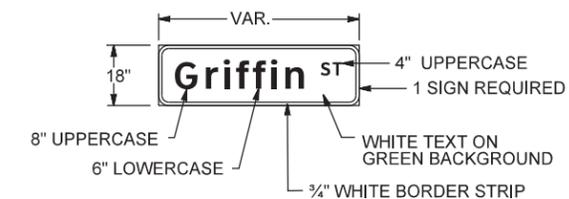
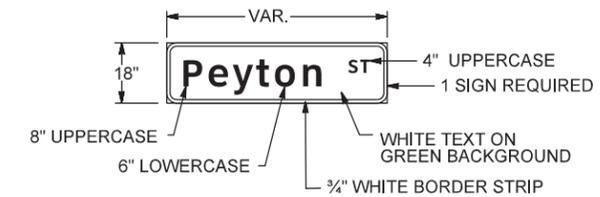
2 TRAFFIC SIGNAL QUANTITIES

TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP	RAILROAD PREEMPTION INTERCONNECT SYSTEM	1	EACH
SP	BATTERY BACKUP SYSTEM	1	EACH
SP	LED BLANK OUT SIGN	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	11	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	1	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	540	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	213	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	75	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	634	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	463	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	65	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/12 A.W.G.)	795	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	230	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	49	LIN. FT.
710	NON-METALLIC CONDUIT (3")	485	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	1	EACH
711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	7	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	18" STREET NAME SIGN	4	EACH
* SP & 733	VIDEO DETECTOR (CLR)	7	EACH
733	VIDEO CABLE	1198	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
* SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED

OVERHEAD STREET NAME MARKER STANDARD MAST ARM MOUNTED



NOTES:

- REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.
- ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL BE ALSO ALODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY/COUNTY.
- WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM ON THE NEAR SIDE LEFT POLE. SEE STANDARD DRAWING SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
- THE SERIES C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.



DIGITALLY SIGNED DATE 8/17/2020

LOCATION: HWY. 367 AT HWY. 319/GRIFFIN ST.
 CITY: WARD
 COUNTY: LONOKE
 DISTRICT: 06 SCALE: N/A DRAWN BY: ARM

DATE: 06/23/2020 FILE NAME: t061457_qty2.dgn

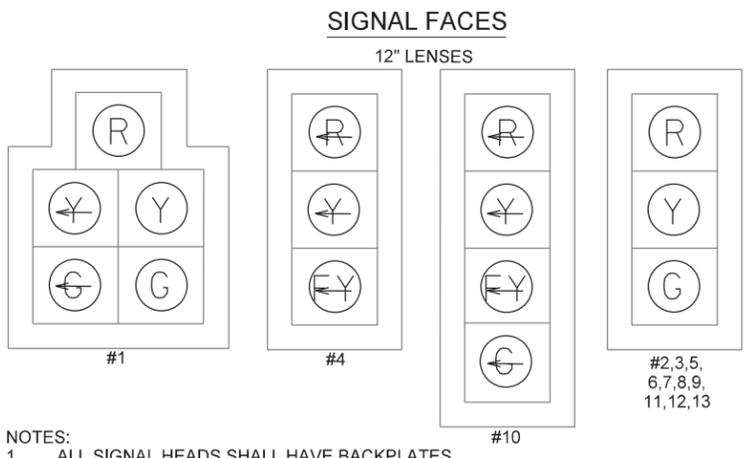
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		26	37
JOB NO. 061457							26	37
② SIGNALIZATION PLAN SHEET								



DIGITALLY SIGNED DATE 8/17/2020

DETECTOR SPACING CHART

POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
HWY. 367/2ND ST. VIRTUAL LOOPS		
45 MPH	260'	115'
HWY. 319/PEYTON ST. VIRTUAL LOOPS		
40 MPH	85'	N/A
GRIFFIN ST. VIRTUAL LOOPS		
15 MPH	65'	N/A



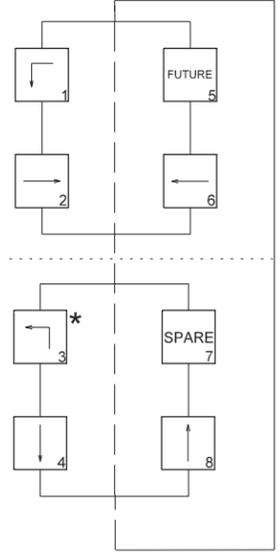
- NOTES:
- ALL SIGNAL HEADS SHALL HAVE BACKPLATES. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
 - SIGNAL HEAD 14 WILL ACTIVATE DURING RR PRE-EMPT CLEAR PHASE AND SHALL REMAIN ON THROUGH THE RR PRE-EMPT DWELL PHASE.

(HWY. 367/2ND ST.) (HWY. 319/PEYTON ST. & GRIFFIN ST.)
POLE DIMENSIONS

POLE	MAST ARM	*MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	*LUM. ANGLE
A	32'	180°	35'	15'	180°
B	38'	180°	35'	15'	180°
C	44'	270°	35'	25'	270°
D	48'	270°	35'	15'	270°

* ANGLE MEASURED CLOCKWISE FROM HAND HOLE.

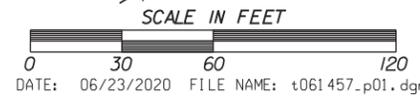
PHASING DIAGRAM



RR INTERCONNECT
CONTROLLER AND CABINET SHALL BE WIRED FOR INTERCONNECT TO RAILROAD TO PROVIDE PROGRAMMABLE SEQUENCING AS SHOWN ON SHEET 29.

*PHASE ONLY ACTIVATED DURING RR TRACK CLEARANCE GREEN PHASE

** INSTALLED BY UNION PACIFIC RAILROAD.



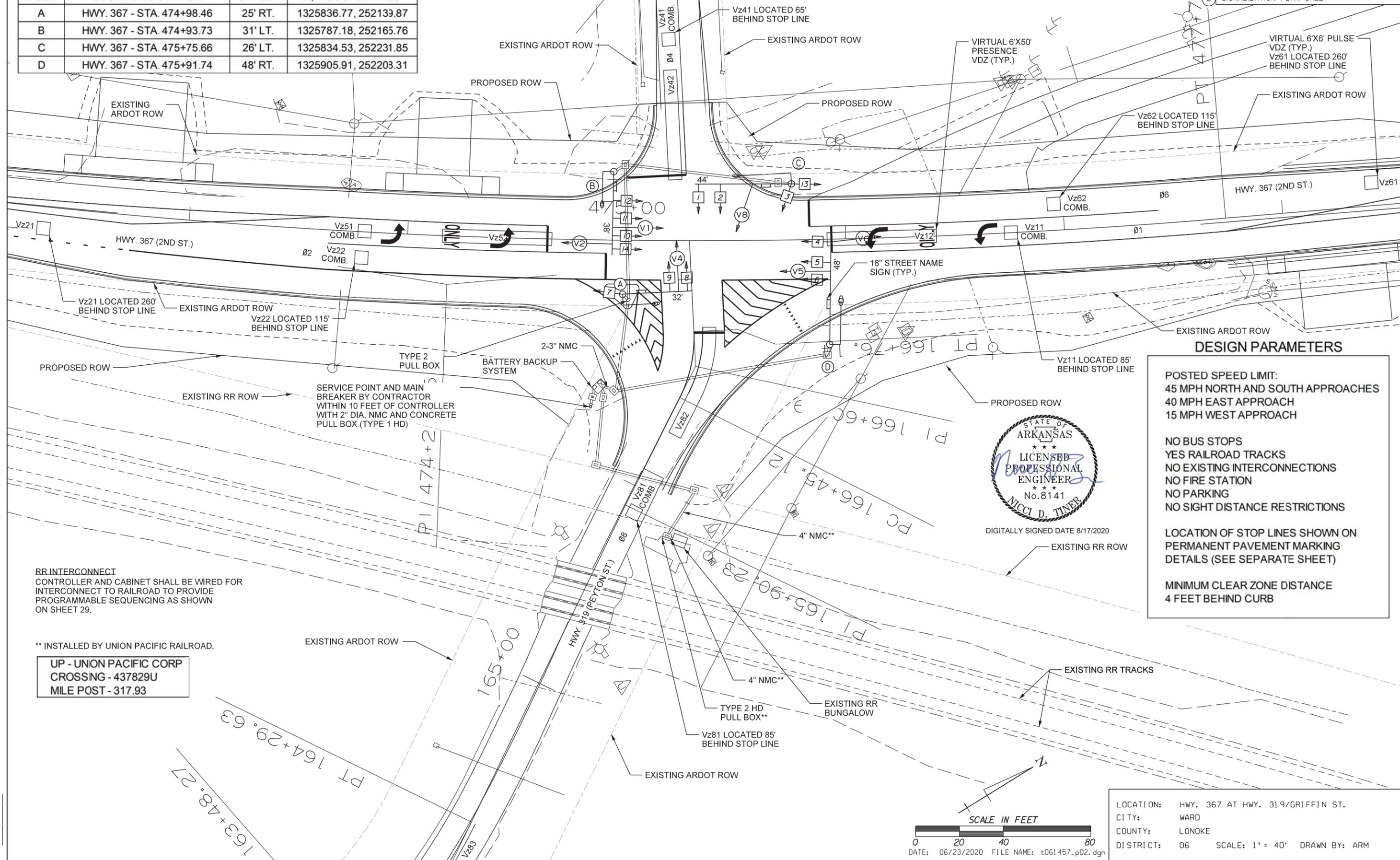
LOCATION: HWY. 367 AT HWY. 319/GRIFFIN ST.
CITY: WARD
COUNTY: LONOKE
DISTRICT: 06
SCALE: 1" = 60'
DRAWN BY: ARM

8/16/2020 3:35:05 PM
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 REVISION DATE:

(HWY. 367/2ND ST.) (HWY. 319/PEYTON ST. & GRIFFIN ST.)
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 367 - STA. 474+98.46	25' RT.	1325836.77, 252139.87
B	HWY. 367 - STA. 474+93.73	31' LT.	1325787.18, 252165.76
C	HWY. 367 - STA. 475+75.66	26' LT.	1325834.53, 252231.85
D	HWY. 367 - STA. 475+91.74	48' RT.	1325905.91, 252203.31

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		27	37
				JOB NO.	061457			
				SIGNALIZATION PLAN SHEET				



DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH NORTH AND SOUTH APPROACHES
40 MPH EAST APPROACH
15 MPH WEST APPROACH

NO BUS STOPS
YES RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET)

MINIMUM CLEAR ZONE DISTANCE 4 FEET BEHIND CURB



RR INTERCONNECT
CONTROLLER AND CABINET SHALL BE WIRED FOR INTERCONNECT TO RAILROAD TO PROVIDE PROGRAMMABLE SEQUENCING AS SHOWN ON SHEET 29.

** INSTALLED BY UNION PACIFIC RAILROAD.

UP - UNION PACIFIC CORP
CROSSING - 437829U
MILE POST - 317.93



LOCATION: HWY. 367 AT HWY. 319/GRIFFIN ST.
CITY: WARD
COUNTY: LONOKE
DISTRICT: 06 SCALE: 1" = 40' DRAWN BY: ARM

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 REVISION DATE:

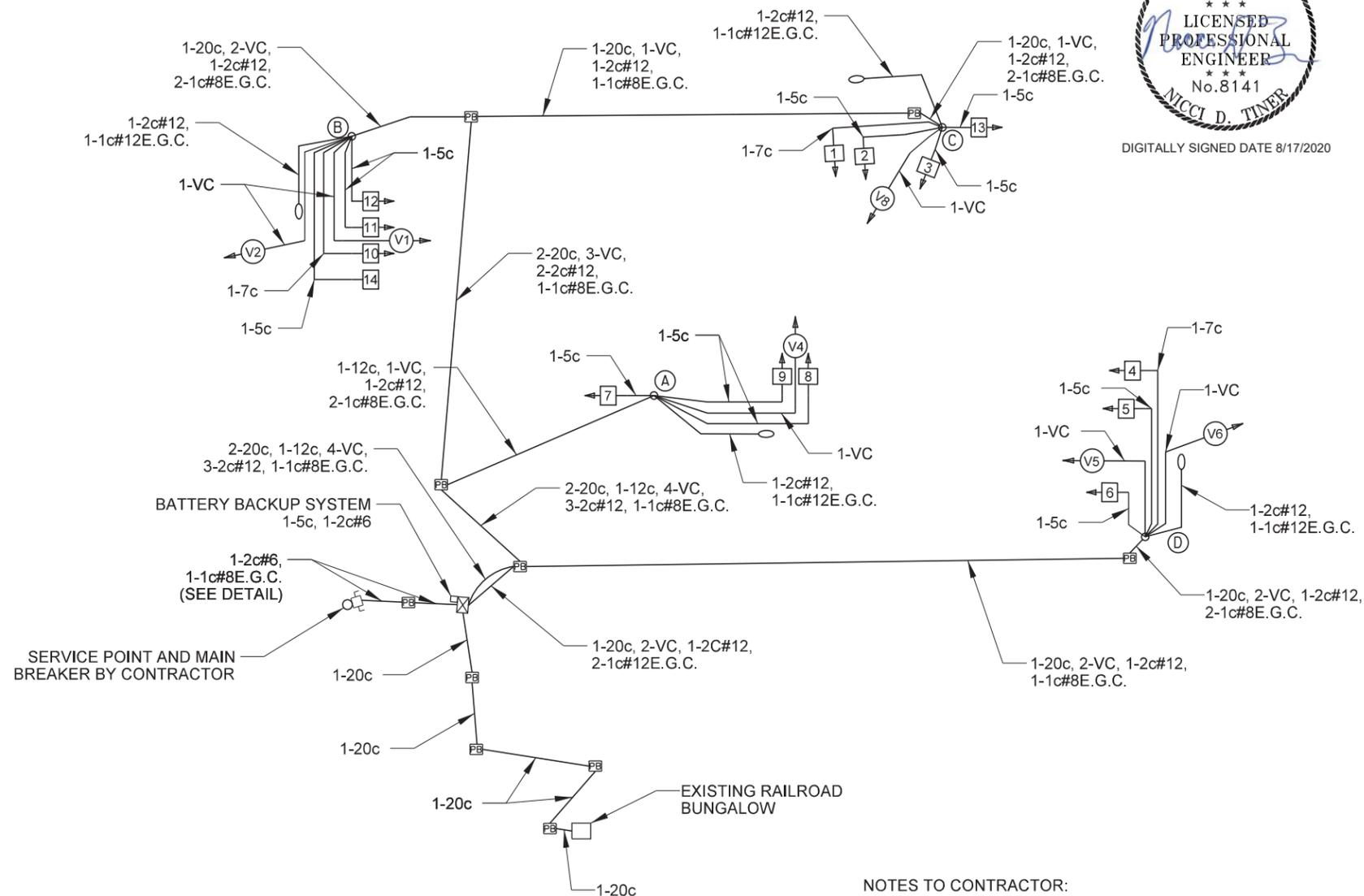
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	061457		28	37

2 SIGNALIZATION PLAN SHEET

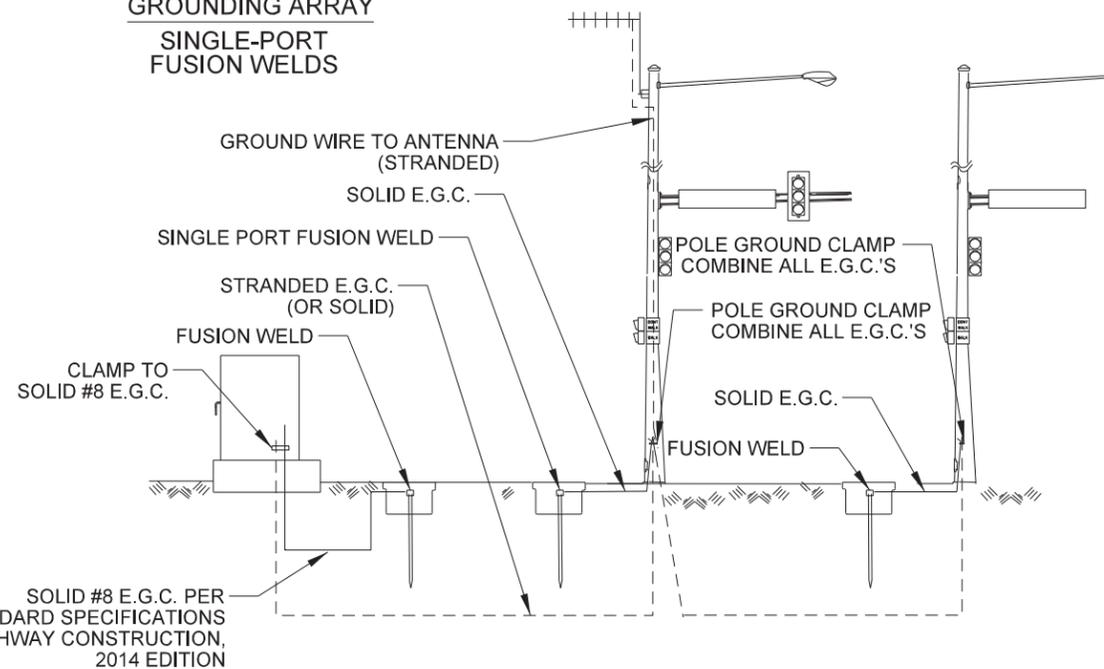


DIGITALLY SIGNED DATE 8/17/2020

WIRING DIAGRAM



**GROUNDING ARRAY
SINGLE-PORT
FUSION WELDS**



RR INTERCONNECT

CONTROLLER AND CABINET SHALL BE WIRED FOR INTERCONNECT TO RAILROAD TO PROVIDE PROGRAMMABLE SEQUENCING AS SHOWN ON SHEET 29.

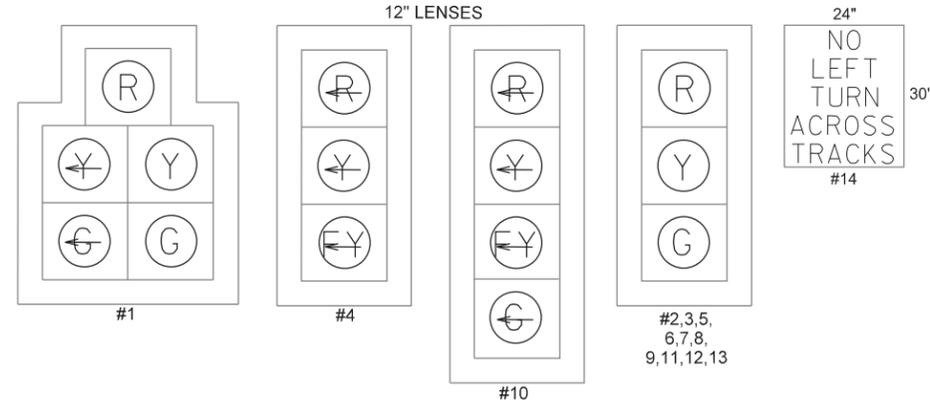
NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
3. SEPARATE 1-20c TO RAILROAD BUNGALOW.

LOCATION: HWY. 367 AT HWY. 319/GRIFFIN ST.
 CITY: WARD
 COUNTY: LONOKE
 DISTRICT: 06 SCALE: N/A DRAWN BY: ARM

DATE: 06/23/2020 FILE NAME: t061457.p03.dgn

SIGNAL FACES



- NOTES:
- ALL SIGNAL HEADS SHALL HAVE BACKPLATES. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
 - SIGNAL HEAD 14 WILL ACTIVATE DURING RR PRE-EMPT CLEAR PHASE AND SHALL REMAIN ON THROUGH THE RR PRE-EMPT DWELL PHASE.

DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 061457												
(HWY. 367/2ND ST.) (HWY. 319/PEYTON ST. & GRIFFIN ST.)				DETECTOR ASSIGNMENTS				PROGRAM ASSIGNMENTS				
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	HARDWARE INPUTS BY SUPPLIER			LOCAL		MASTER SYSTEM		COMMENTS	TUBE LENGTHS
				CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #	DETECTOR NUMBERS			
Vz11	SB LEFT TURN ADVANCE	COMB.		1	V9		1	1			CAMERA V1	37"
Vz12	SB LEFT TURN	LOCAL		2	V1		1				CAMERA V1	37"
Vz21	NB ADVANCE	LOCAL		5	V2		2				CAMERA V2	74"
Vz22	NB NEAR	COMB.		6	V10		2	2			CAMERA V5	37"
Vz41	EB ADVANCE	COMB.		9	V12		4	4			CAMERA V4	37"
Vz42	EB NEAR	LOCAL		10	V4		4				CAMERA V4	37"
Vz51	NB LEFT TURN ADVANCE	COMB.		7	V13		2				CAMERA V5	37"
Vz52	NB LEFT TURN	LOCAL		8	V5		2	2			CAMERA V5	37"
Vz61	SB ADVANCE	LOCAL		3	V6		6				CAMERA V6	74"
Vz62	SB NEAR	COMB.		4	V14		6	6			CAMERA V1	37"
Vz81	WB ADVANCE	COMB.		11	V16		8	8			CAMERA V8	37"
Vz82	WB NEAR	LOCAL		12	V8		8				CAMERA V8	37"
SPARE: 13-16												

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION. THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE. EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2



DIGITALLY SIGNED DATE 8/17/2020

INTERVAL CHART

SIGNAL FACES	(HWY. 367/2ND ST.) (HWY. 319/PEYTON ST. & GRIFFIN ST.)										FLASH SEQ.
	NORMAL CYCLE						RR PRE-EMPT				
	1+6	CLR.	2+6	CLR.	4+8	CLR.	3+8	CLR.	2+6	CLR.	
1	R	R	R	R	G	**	G	Y	R	R	R
2 & 3	R	R	R	R	G	**	G	Y	R	R	R
4	RY	***	RY	***	R	R	R	R	RY	Y	R
5, 6 & 7	R	R	G	Y	R	R	R	R	G	Y	R
8 & 9	R	R	R	R	G	Y	R	R	R	R	R
10	G	*	RY	***	R	R	R	R	R	R	R
11, 12 & 13	G	**	G	**	R	R	R	R	G	Y	R
14	BLK	BLK	BLK	BLK	BLK	BLK	NLT	NLT	NLT	NLT	BLK

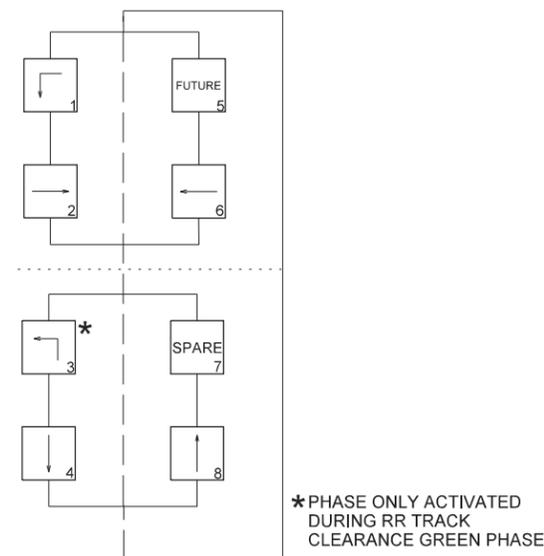
- * DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
- ** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
- *** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

NLT = NO LEFT TURN
BLK = BLANK SIGN

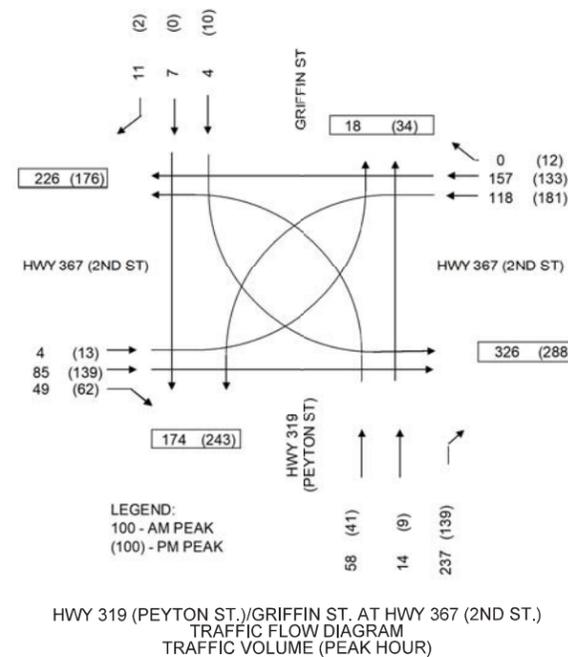
RR INTERCONNECT

CONTROLLER AND CABINET SHALL BE WIRED FOR INTERCONNECT TO RAILROAD TO PROVIDE PROGRAMMABLE SEQUENCING AS SHOWN ON THE INTERVAL CHART.

PHASING DIAGRAM

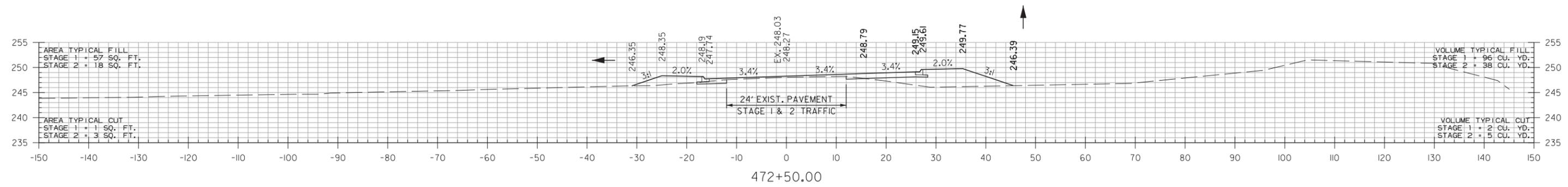


* PHASE ONLY ACTIVATED DURING RR TRACK CLEARANCE GREEN PHASE

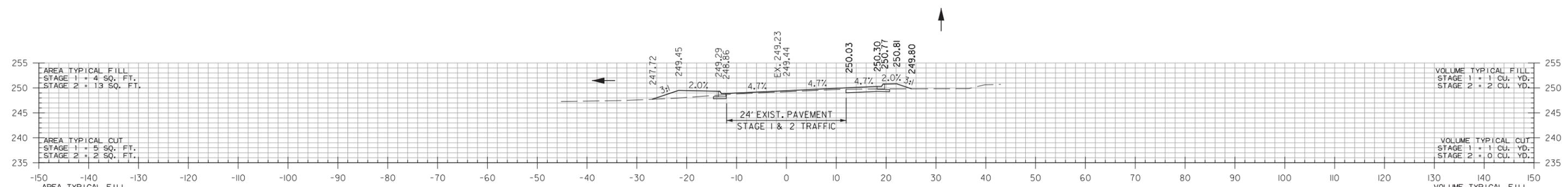
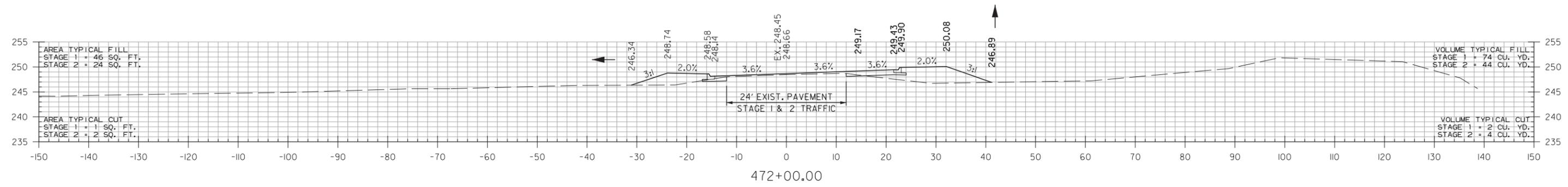


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061457	30	37

2 CROSS SECTIONS



STA. 472+17.38 MAX SUPERELEVATION (0.034 FT./FT.)



STA. 470+93.85 BEGIN SUPERELEVATION (MATCH EXIST. 0.048 FT./FT.)
 STA. 470+93.85 BEGIN JOB 061457, END 100' TRANSITION
 STA. 469+93.85 BEGIN 100' TRANSITION

STA. 471+00 TO STA. 472+50

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 REVISION DATE:

AREA TYPICAL FILL
 STAGE 1 = 57 SQ. FT.
 STAGE 2 = 18 SQ. FT.

AREA TYPICAL CUT
 STAGE 1 = 1 SQ. FT.
 STAGE 2 = 3 SQ. FT.

AREA TYPICAL FILL
 STAGE 1 = 46 SQ. FT.
 STAGE 2 = 24 SQ. FT.

AREA TYPICAL CUT
 STAGE 1 = 1 SQ. FT.
 STAGE 2 = 2 SQ. FT.

AREA TYPICAL FILL
 STAGE 1 = 33 SQ. FT.
 STAGE 2 = 23 SQ. FT.

AREA TYPICAL CUT
 STAGE 1 = 1 SQ. FT.
 STAGE 2 = 2 SQ. FT.

AREA TYPICAL FILL
 STAGE 1 = 4 SQ. FT.
 STAGE 2 = 13 SQ. FT.

AREA TYPICAL CUT
 STAGE 1 = 5 SQ. FT.
 STAGE 2 = 2 SQ. FT.

AREA TYPICAL FILL
 STAGE 1 = 0 SQ. FT.
 STAGE 2 = 0 SQ. FT.

AREA TYPICAL CUT
 STAGE 1 = 0 SQ. FT.
 STAGE 2 = 0 SQ. FT.

VOLUME TYPICAL FILL
 STAGE 1 = 96 CU. YD.
 STAGE 2 = 38 CU. YD.

VOLUME TYPICAL CUT
 STAGE 1 = 2 CU. YD.
 STAGE 2 = 5 CU. YD.

VOLUME TYPICAL FILL
 STAGE 1 = 74 CU. YD.
 STAGE 2 = 44 CU. YD.

VOLUME TYPICAL CUT
 STAGE 1 = 2 CU. YD.
 STAGE 2 = 4 CU. YD.

VOLUME TYPICAL FILL
 STAGE 1 = 34 CU. YD.
 STAGE 2 = 34 CU. YD.

VOLUME TYPICAL CUT
 STAGE 1 = 6 CU. YD.
 STAGE 2 = 4 CU. YD.

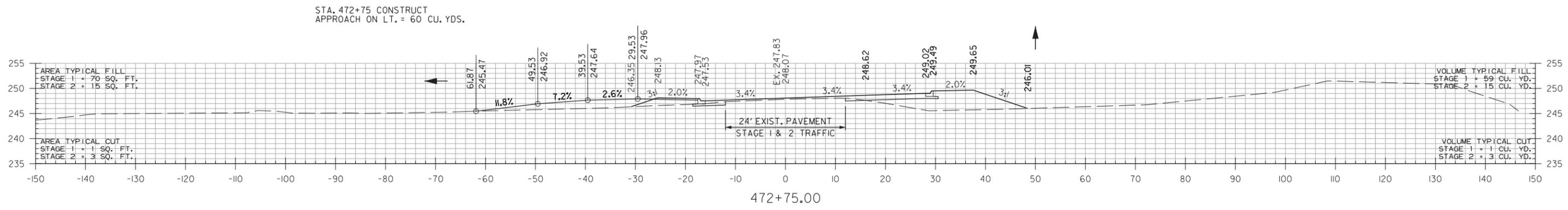
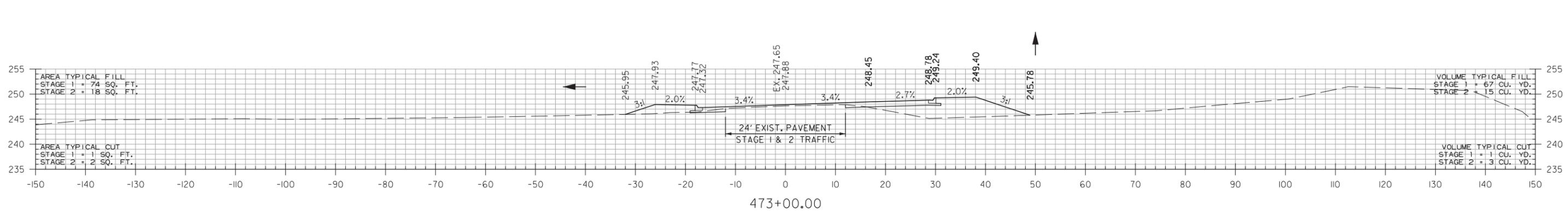
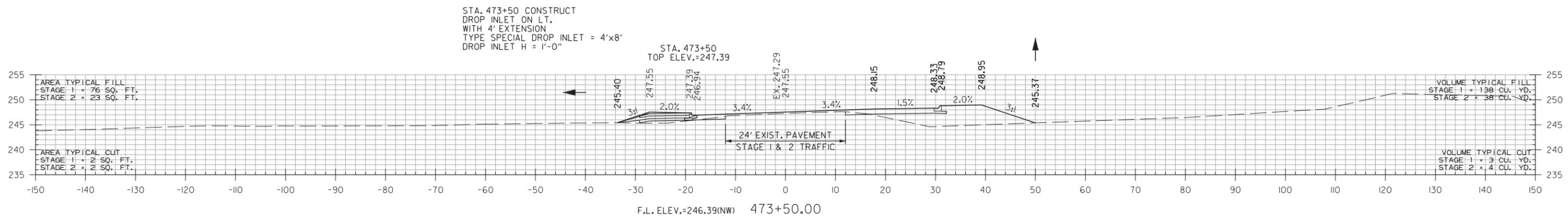
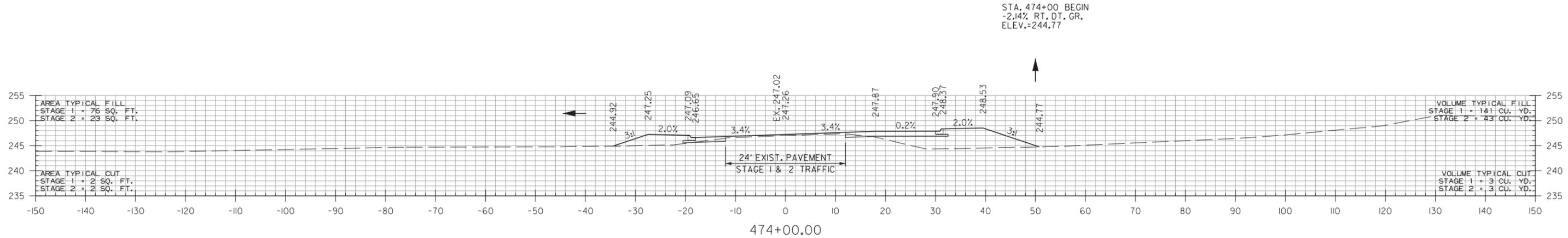
VOLUME TYPICAL FILL
 STAGE 1 = 4 CU. YD.
 STAGE 2 = 13 CU. YD.

VOLUME TYPICAL CUT
 STAGE 1 = 5 CU. YD.
 STAGE 2 = 2 CU. YD.

VOLUME TYPICAL FILL
 STAGE 1 = 0 CU. YD.
 STAGE 2 = 0 CU. YD.

VOLUME TYPICAL CUT
 STAGE 1 = 0 CU. YD.
 STAGE 2 = 0 CU. YD.

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.		061457	31	37
				2 CROSS SECTIONS				

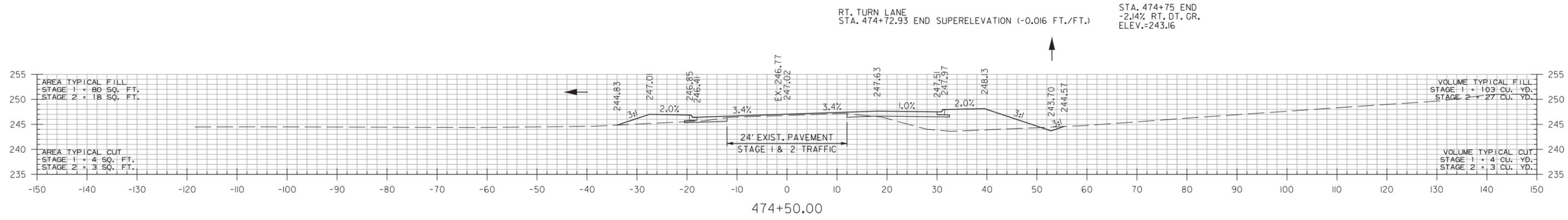
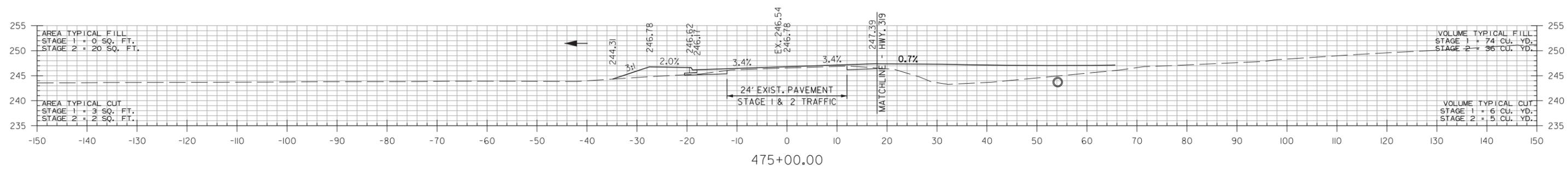
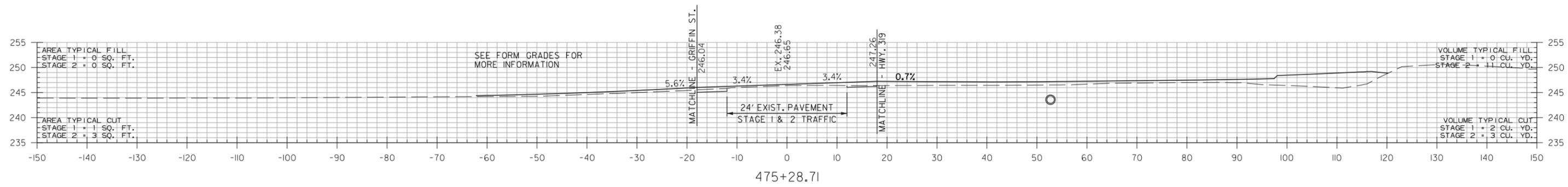


RT. TURN LANE
STA. 472+73.85 BEGIN SUPERELEVATION (0.034 FT./FT.)

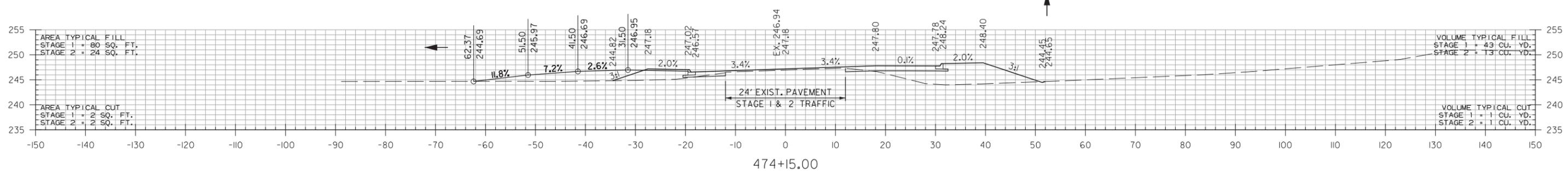
STA. 472+75 TO STA. 474+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	061457	32	37
				(2)		CROSS SECTIONS		



STA. 474+15 CONSTRUCT
APPROACH ON LT. = 65 CU. YDS.

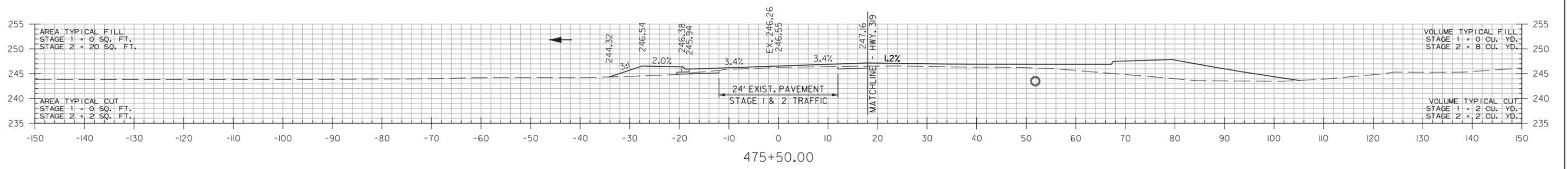
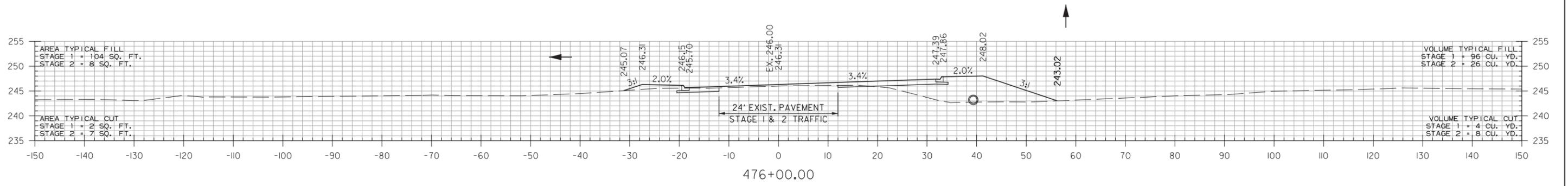
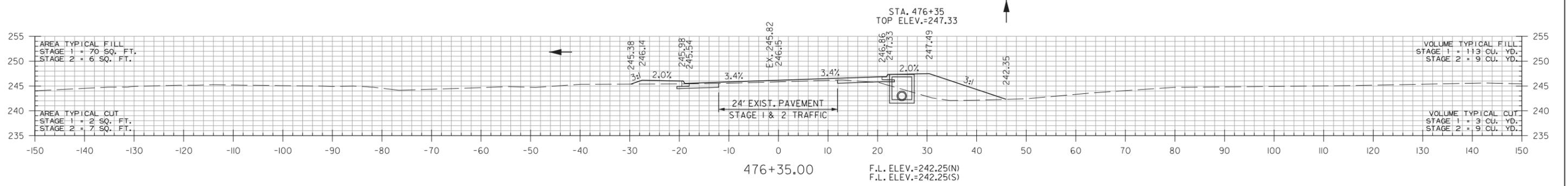
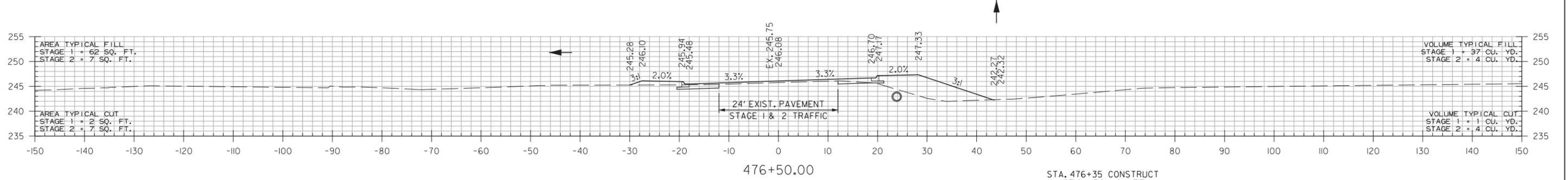


STA. 474+15 TO STA. 475+29

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 REVISION DATE:

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.	061457	33	37	

2 CROSS SECTIONS



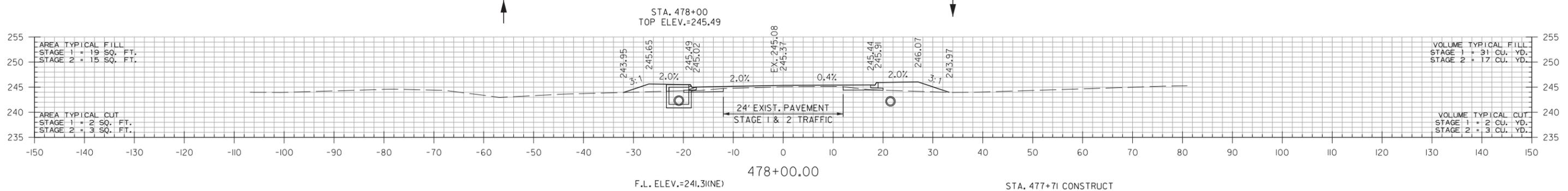
STA. 475+50 TO STA. 476+50

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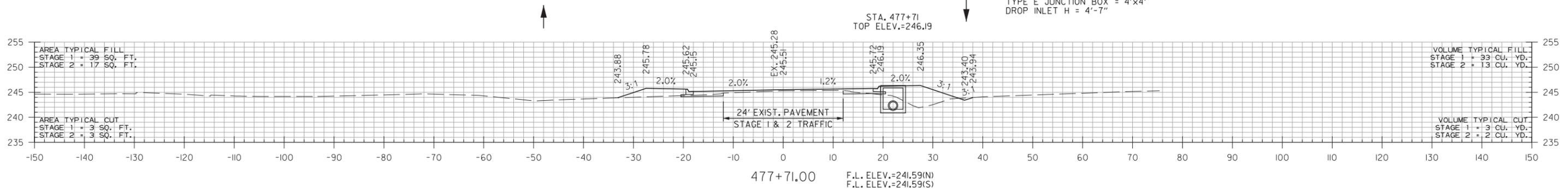
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
				JOB NO.		061457	34	37	
(2)								CROSS SECTIONS	

STA. 478+00 CONSTRUCT
 DROP INLET ON LT.
 WITH 4' EXTENSION
 WITH 18" x 8' PIPE OUTLET
 TO DROP INLET AT STA. 478+85 LT.
 TYPE MO DROP INLET = 4' DIA.
 TYPE C DROP INLET = 4'x4'
 DROP INLET H = 4'-2"

STA. 478+00 END
 1.97% RT. DT. GR.
 ELEV.=243.97

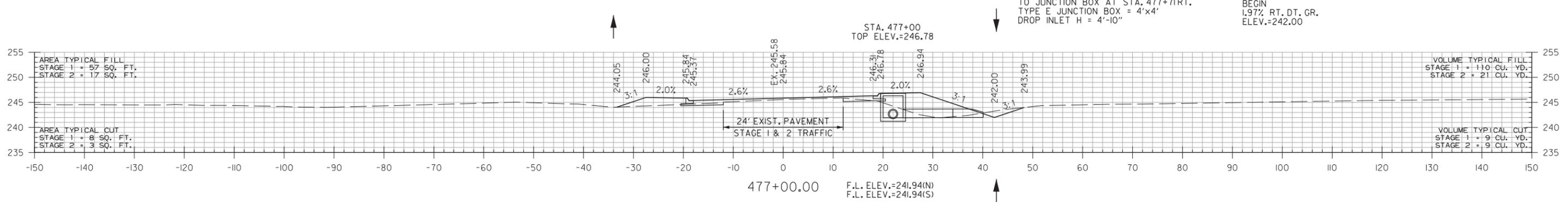
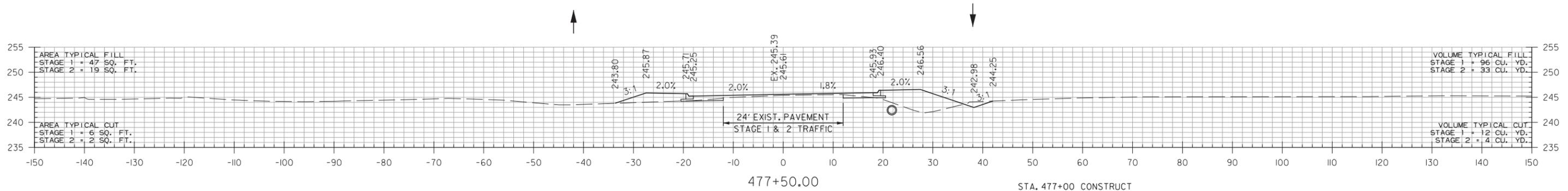


STA. 477+71 CONSTRUCT
 JUNCTION BOX ON RT.
 WITH 18" x 10' PIPE OUTLET
 TO JUNCTION BOX AT STA. 478+85 RT.
 TYPE E JUNCTION BOX = 4'x4'
 DROP INLET H = 4'-7"



STA. 477+00 CONSTRUCT
 JUNCTION BOX ON RT.
 WITH 18" x 10' R.C. PIPE INLET W/F.E.S.
 AND 18" x 68' PIPE OUTLET
 TO JUNCTION BOX AT STA. 477+71 RT.
 TYPE E JUNCTION BOX = 4'x4'
 DROP INLET H = 4'-10"

STA. 477+00 END
 -0.54% RT. DT. GR.
 BEGIN
 1.97% RT. DT. GR.
 ELEV.=242.00

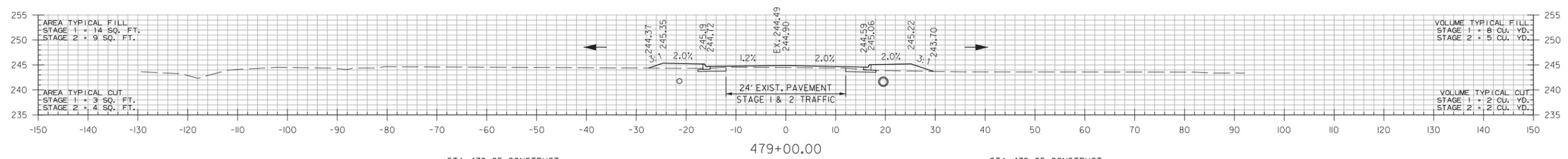


STA. 477+00 TO STA. 478+00

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 REVISION DATE:

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.		061457	35	37

2 CROSS SECTIONS

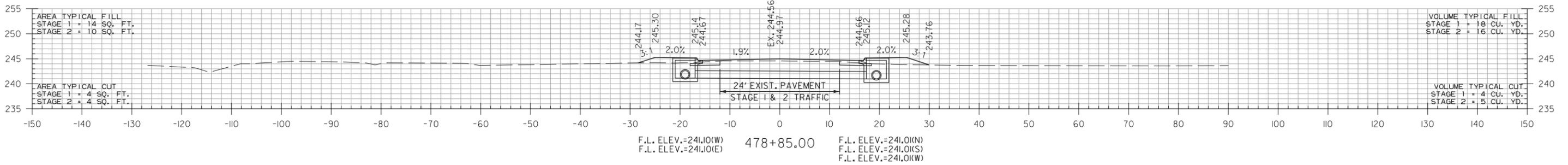


STA. 478+85 CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION LT. & RT.
WITH 18" x 34' R.C. PIPE OUTLET
TO JUNCTION BOX AT STA. 478+85 RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-0"

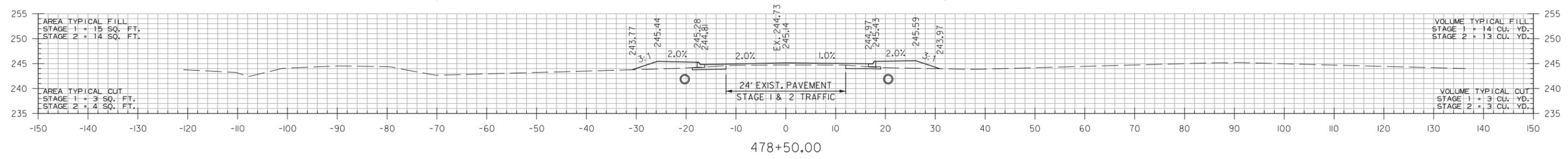
STA. 478+85
TOP ELEV.=245.14

STA. 478+85
TOP ELEV.=245.12

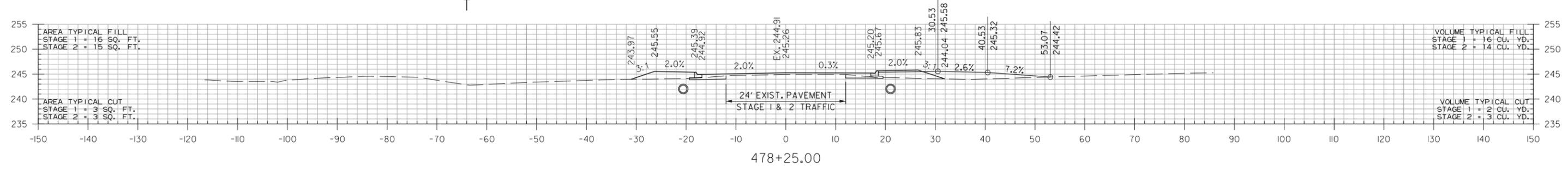
STA. 478+85 CONSTRUCT
DROP INLET ON RT.
AND 18" x 148' PIPE OUTLET
TO DROP INLET AT STA. 480+37 RT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-2"



STA. 478+83.80 BEGIN SUPERELEVATION
STA. 478+83.80 END SUPERELEVATION



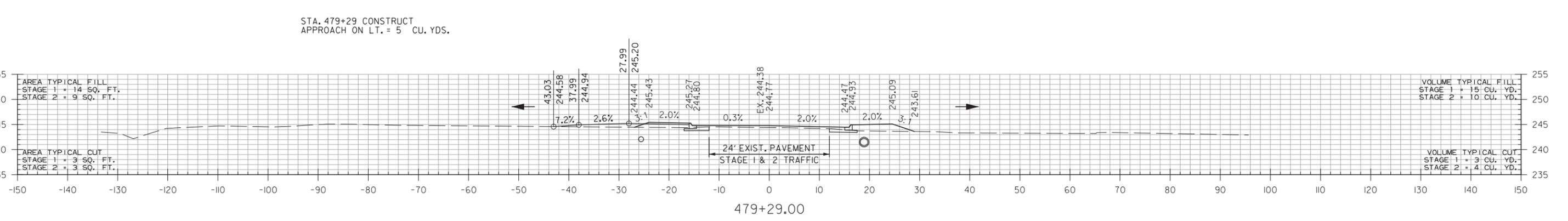
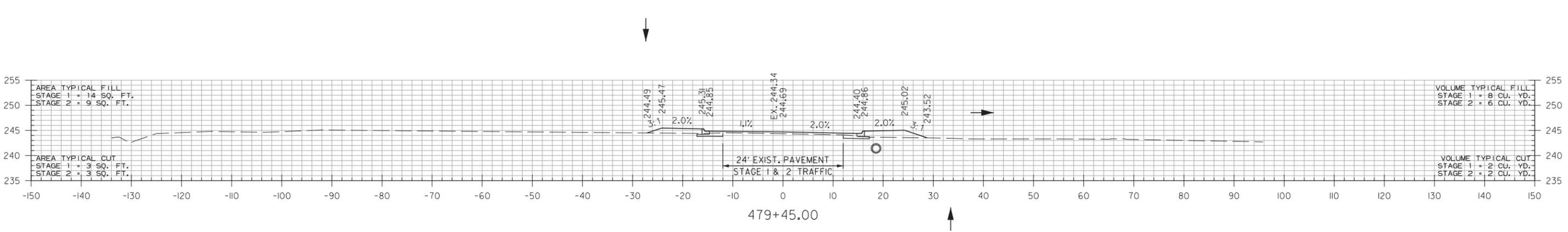
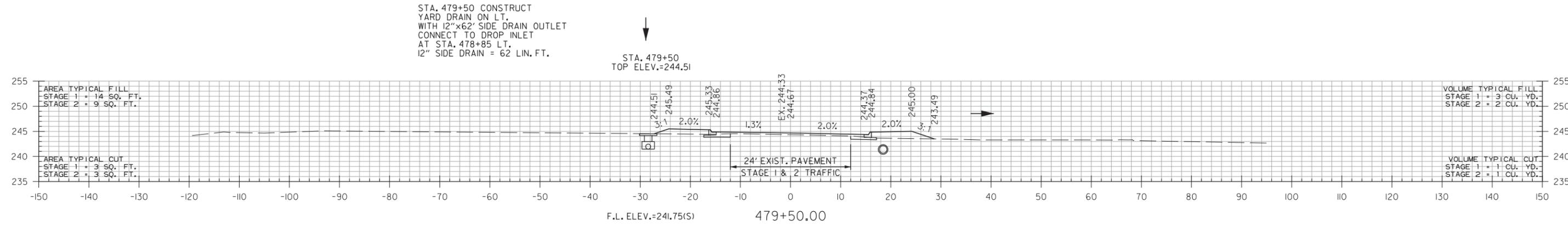
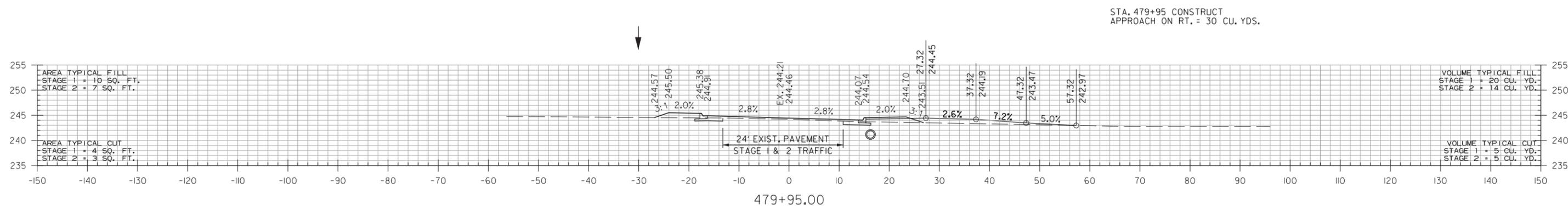
STA. 478+25 CONSTRUCT
APPROACH ON RT. = 40 CU. YDS.



STA. 478+25 TO STA. 479+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061457	36	37
				2 CROSS SECTIONS				

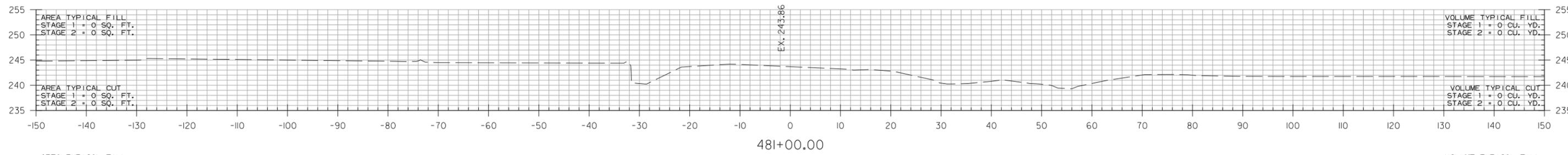


STA. 479+29 TO STA. 479+85

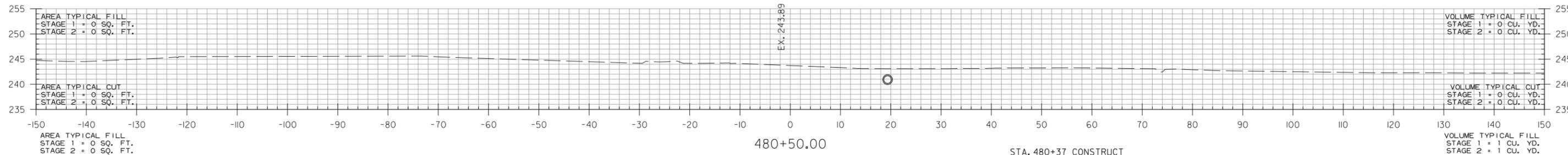
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	061457		37	37

2 CROSS SECTIONS



481+00.00
STA. 481+43.83 END 100' TRANSITION

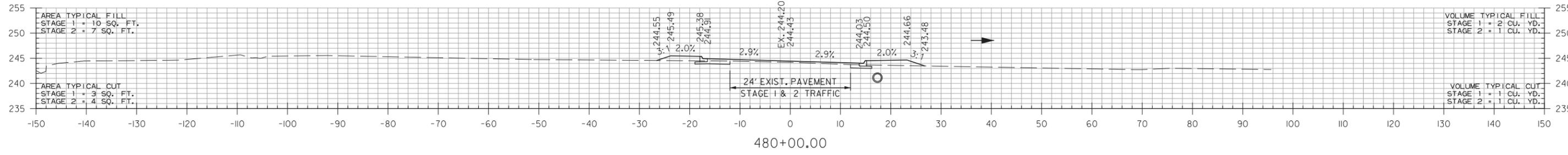


480+50.00
STA. 480+43.83 END JOB 061457, BEGIN 100' TRANSITION
STA. 480+43.83 MATCH EXISTING (0.040 FT./FT.)

STA. 480+37 CONSTRUCT
DROP INLET ON RT.
WITH 4' EXTENSION
WITH 18" x 36" R.C. PIPE OUTLET W/F.E.S.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4'x4'
DROP INLET H = 4'-0"



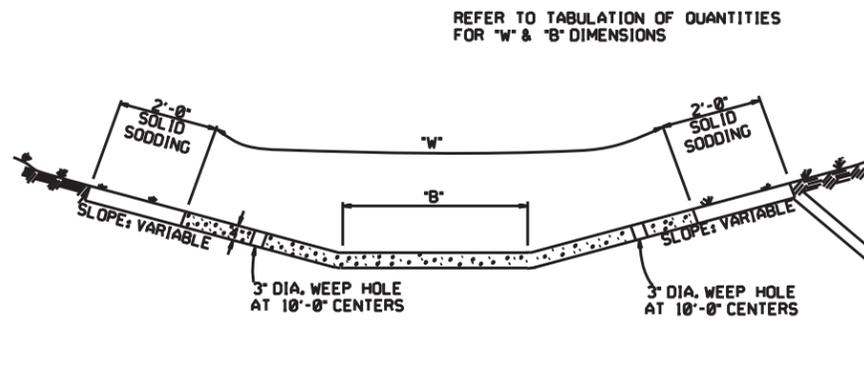
480+37.00 F.L. ELEV.=240.23(N)
F.L. ELEV.=240.23(S)



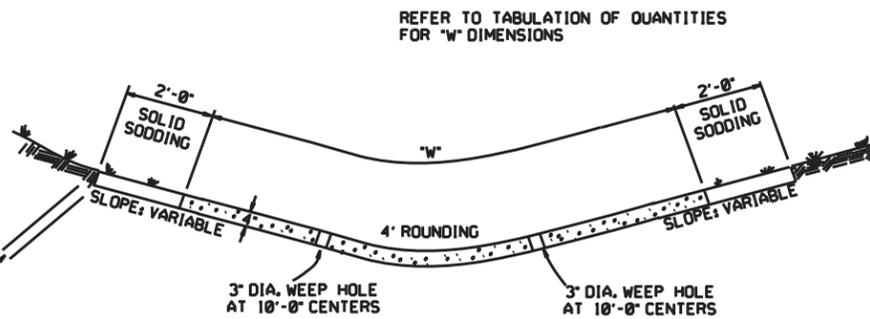
480+00.00

STA. 480+00 TO STA. 481+00

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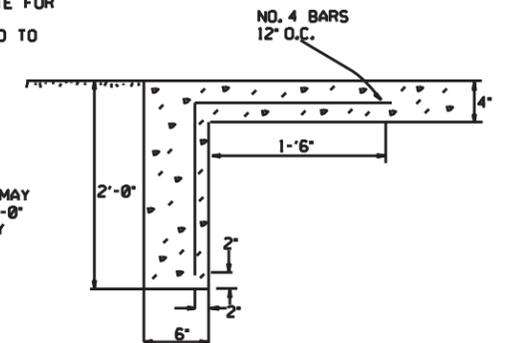
TYPE A



TYPE B

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

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



TOE WALL DETAIL FOR CONCRETE DITCH PAVING

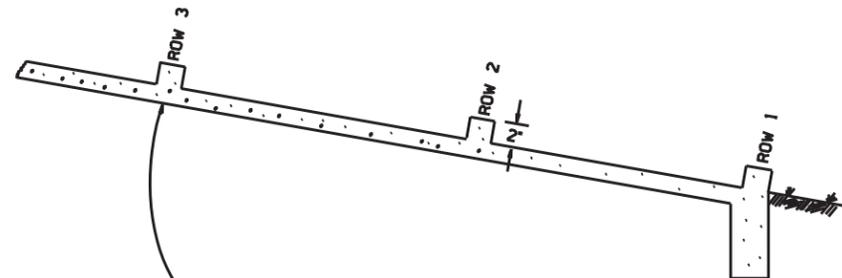
GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

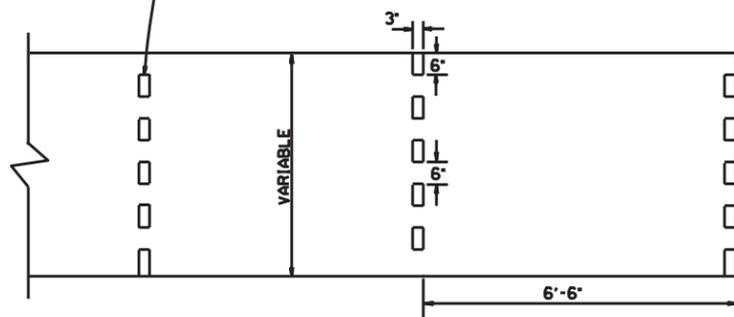
SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

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



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



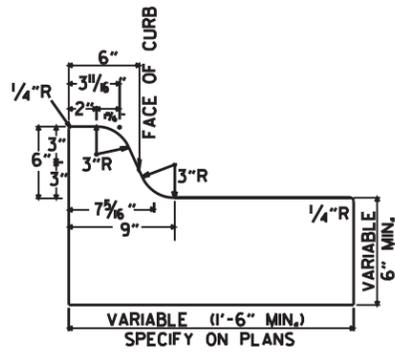
ENERGY DISSIPATORS
(NO SCALE)

DATE	REVISION	DATE	FILM D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE		
11-17-10	ADDED GENERAL NOTE		
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING		
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	1111-30-89	
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88	
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87	
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87	
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86	
11-1-84	ENERGY DISSIPATOR DETAILS	508-11-1-84	
11-1-84	ADDED		
11-1-84	EXCAVATION DETAILS ADDED		
10-2-72	TYPED A & B		
	REVISED AND REDRAWN	508-10-2-72	
	DATE		
	REVISION		
	DATE		

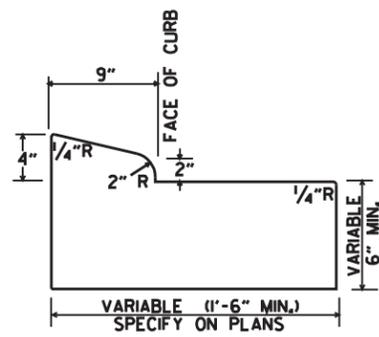
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

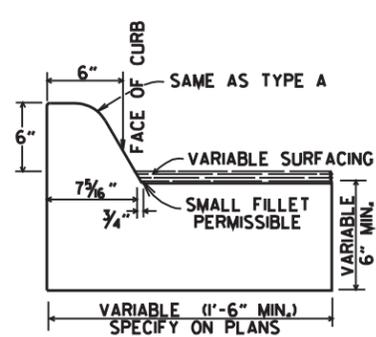
STANDARD DRAWING CDP-1



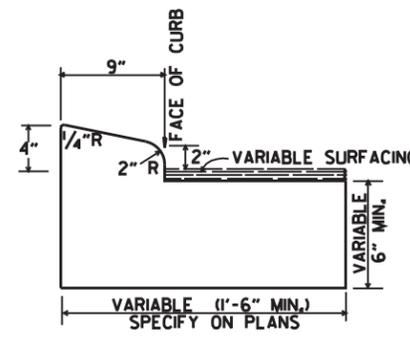
TYPE A



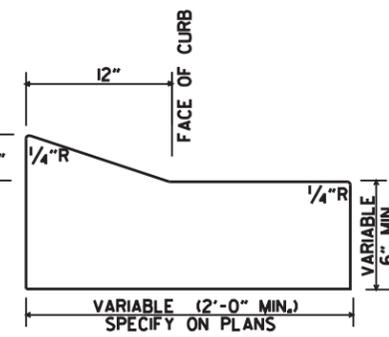
TYPE B-1



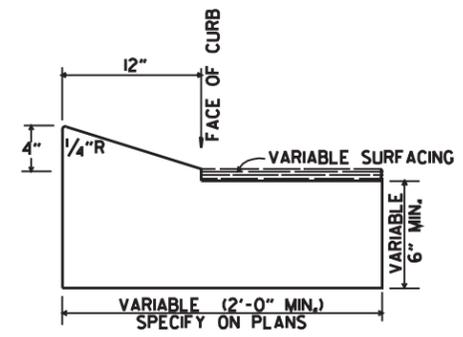
TYPE C



TYPE B-2

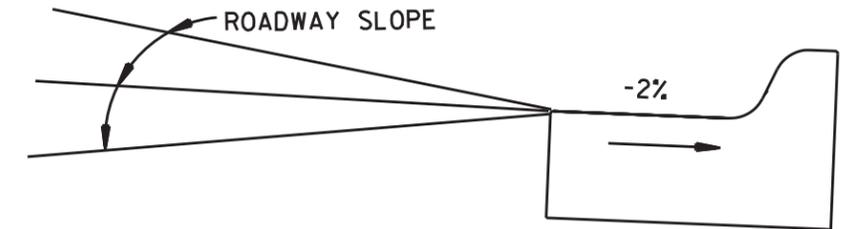


TYPE E-1

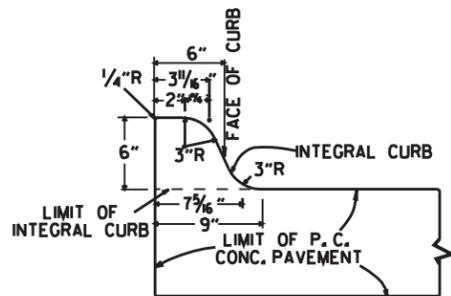


TYPE E-2

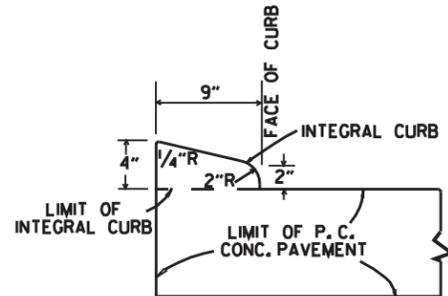
CONCRETE COMBINATION CURB AND GUTTER



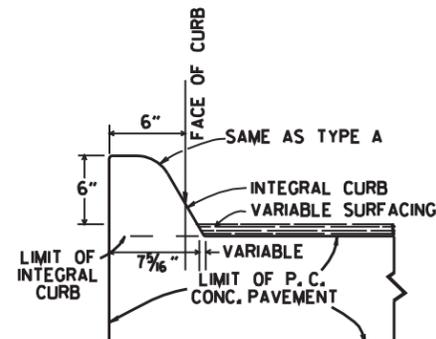
DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

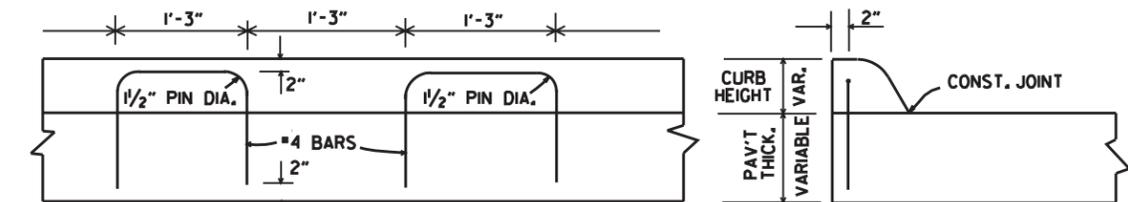


TYPE B



TYPE C

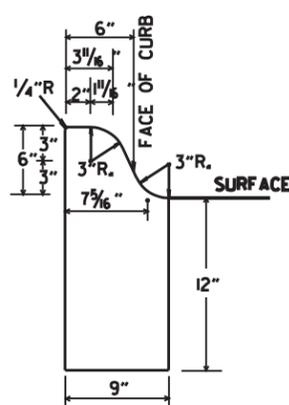
INTEGRAL CURB



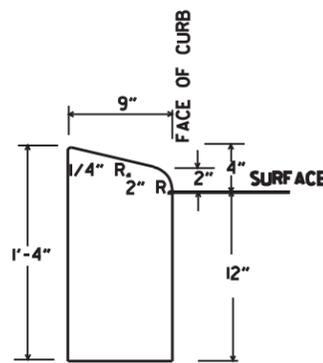
LONGITUDINAL SECTION

ELEVATION

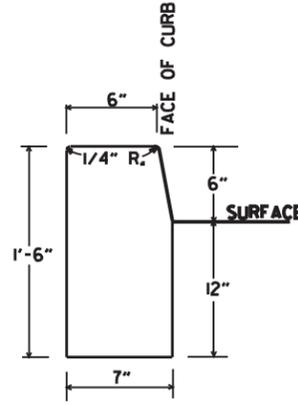
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



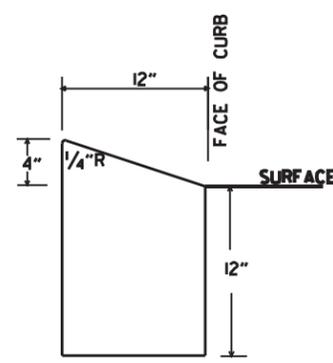
TYPE A



TYPE B

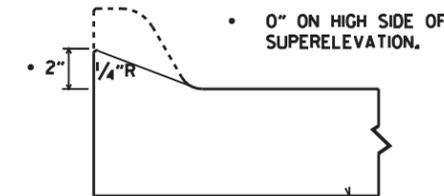


TYPE D



TYPE E

CONCRETE CURB



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

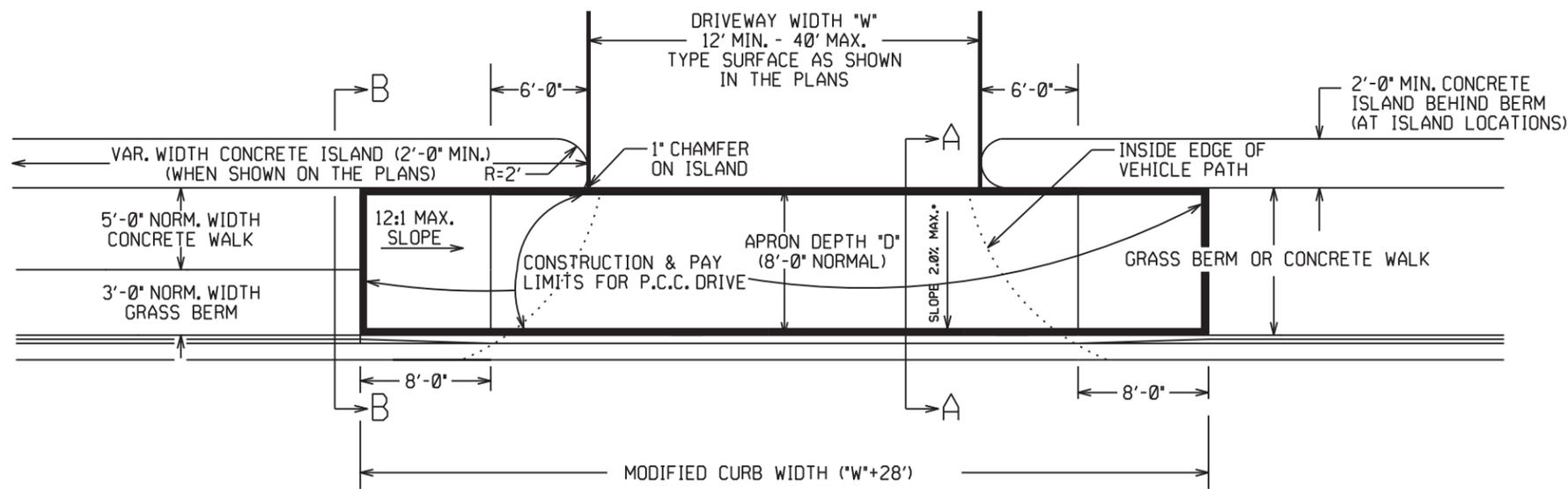
DETAILS OF MODIFIED CURB

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

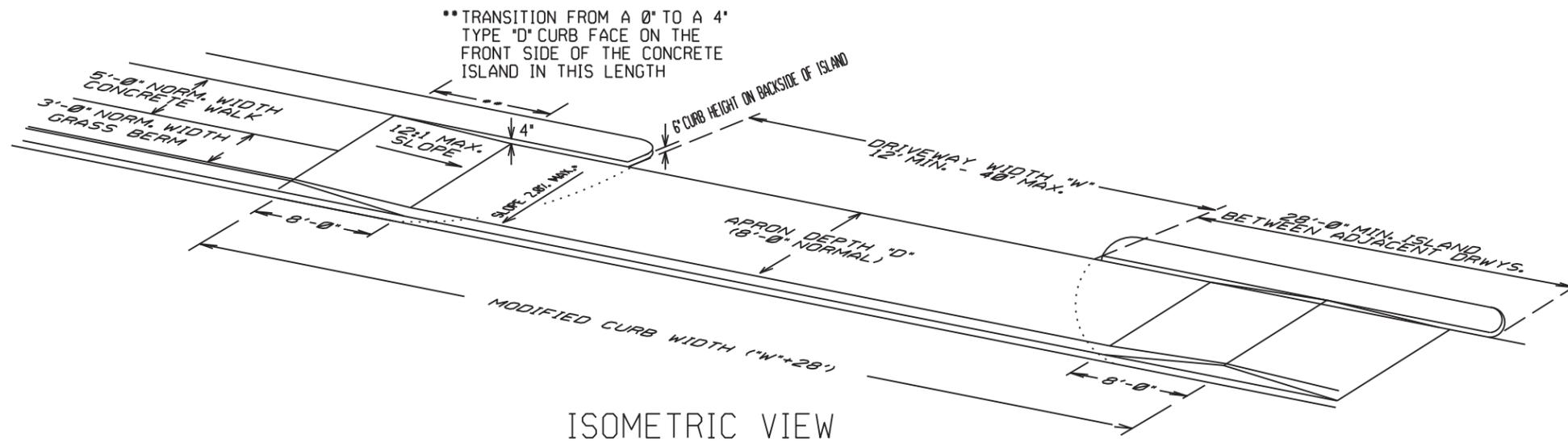
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

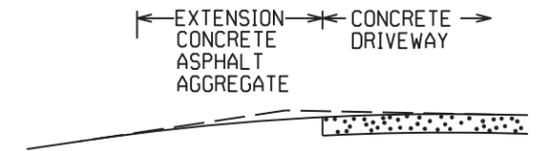
STANDARD DRAWING CG-1



PLAN VIEW



ISOMETRIC VIEW

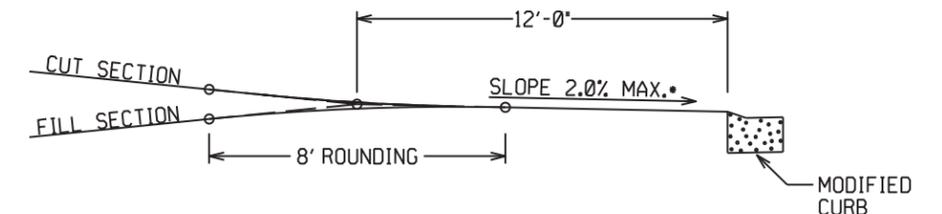


EXTENSION TYPICAL SECTIONS

- 1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY
- 2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")
- 3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE
- 4: AGGREGATE - 6" AGGREGATE BASE COURSE

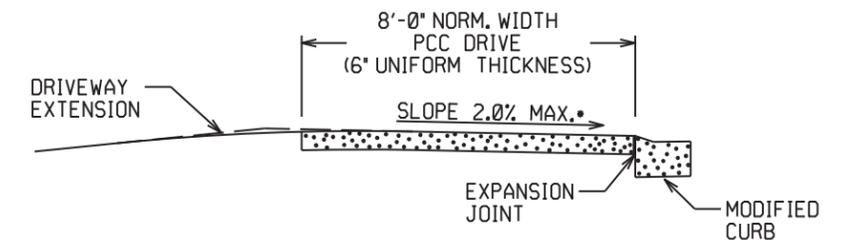
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

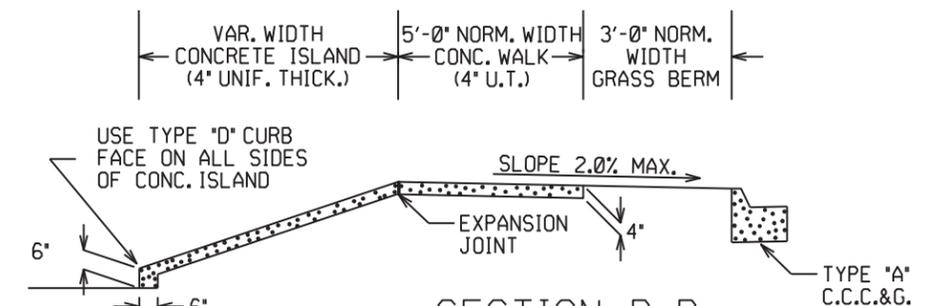


DRIVEWAY VERTICAL ALIGNMENT DETAILS

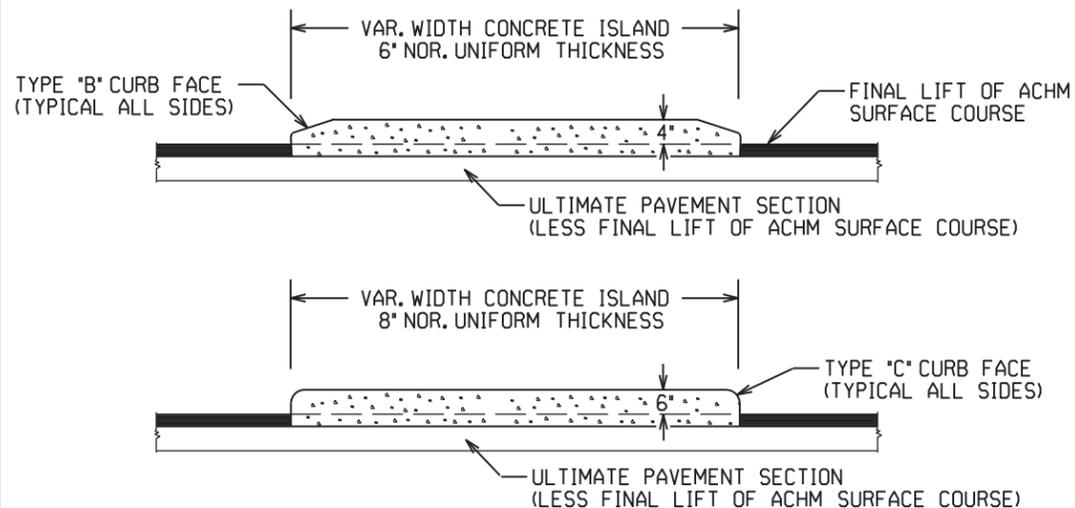
NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A



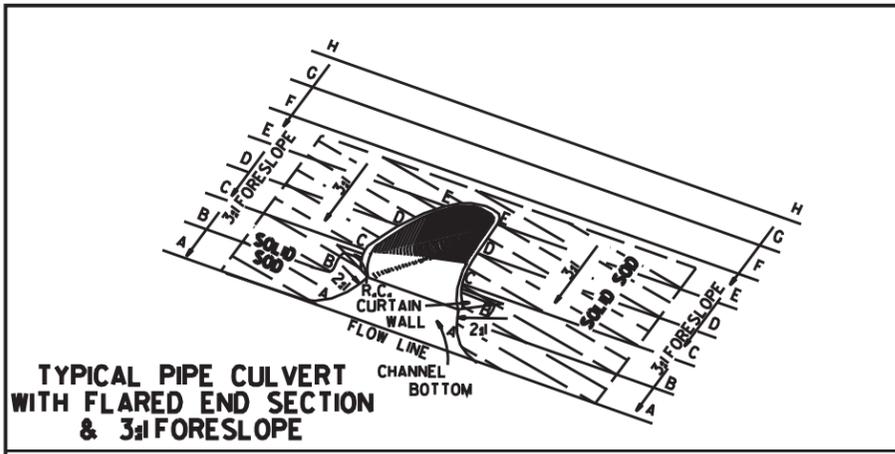
SECTION B-B
CURBED ISLAND BEHIND WALK



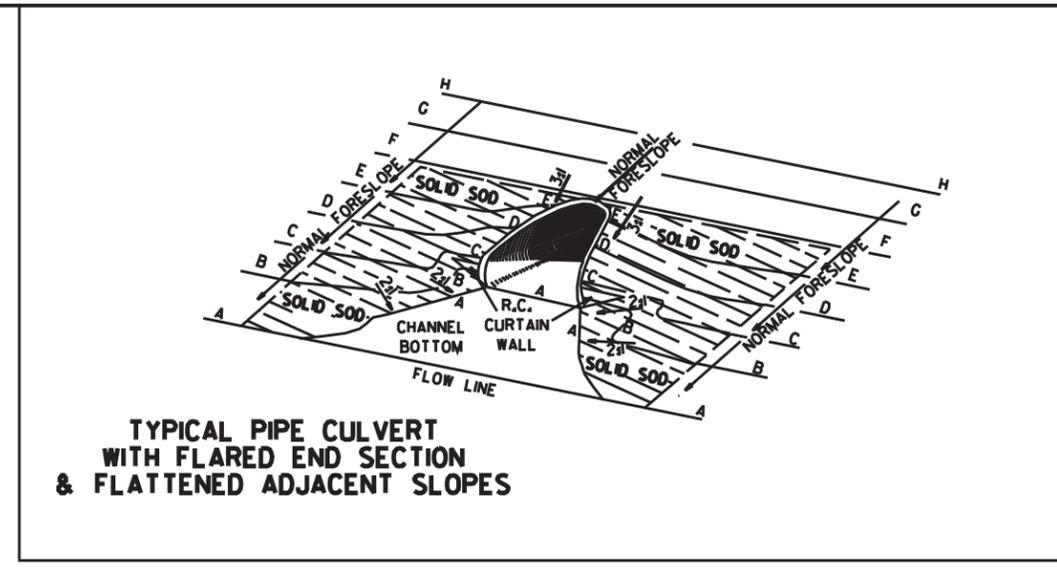
CURBED ISLANDS FOR CHANNELIZATION

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

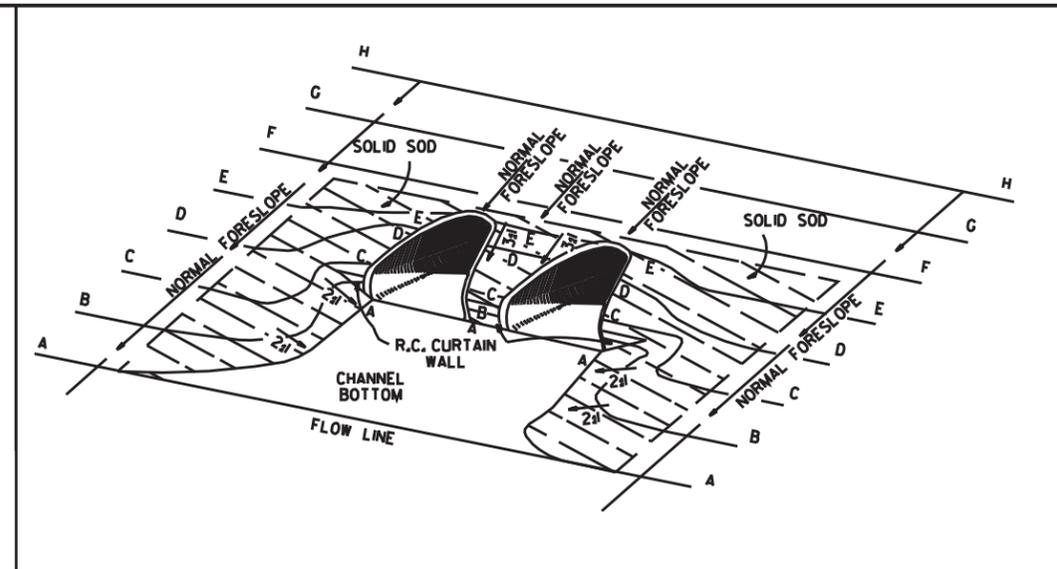
DATE	REV	DATE FILMED	DESCRIPTION
11-07-19			REVISED WALK DETAILS
2-27-14			REVISED PLAN & ISOMETRIC VIEW
11-29-07			ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05			REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02			ADDED ISLAND DETAILS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



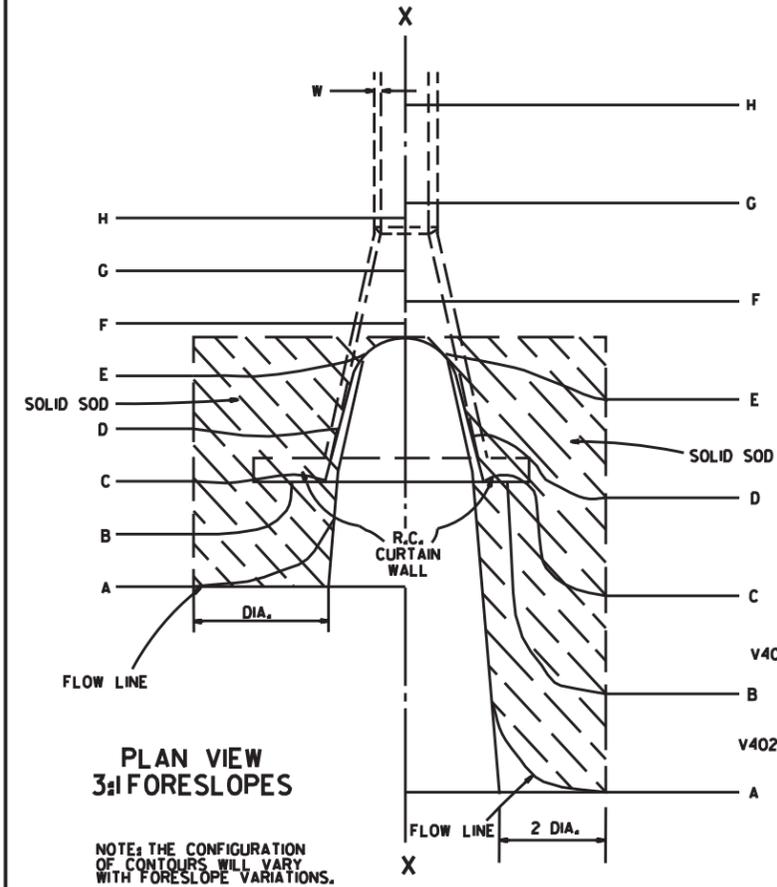
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3/1 FORESLOPE



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

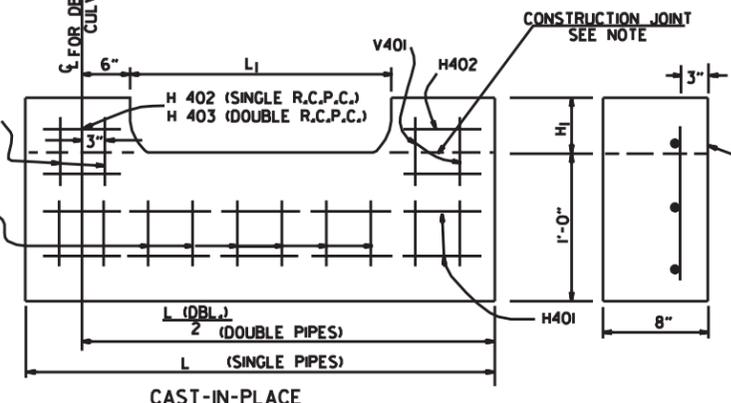
PLAN VIEW FLATTENED FORESLOPES

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

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

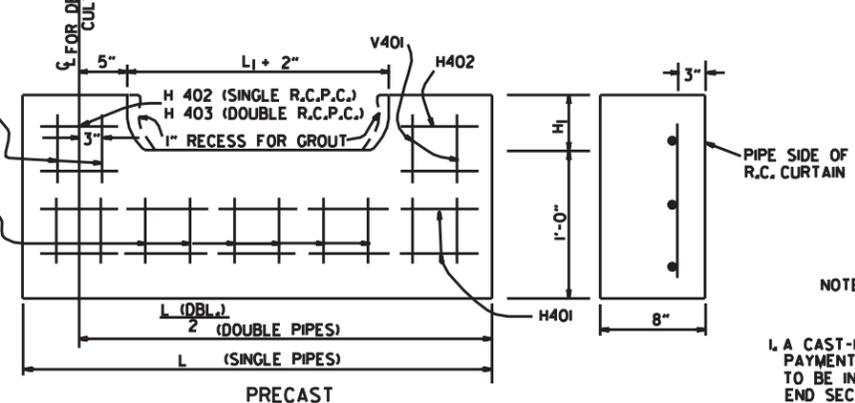
PIPE DIA.	H ₁	L ₁	L	L (DBL.) / 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	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.



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.

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'-11/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11/2"	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'-11/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11/2"	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.

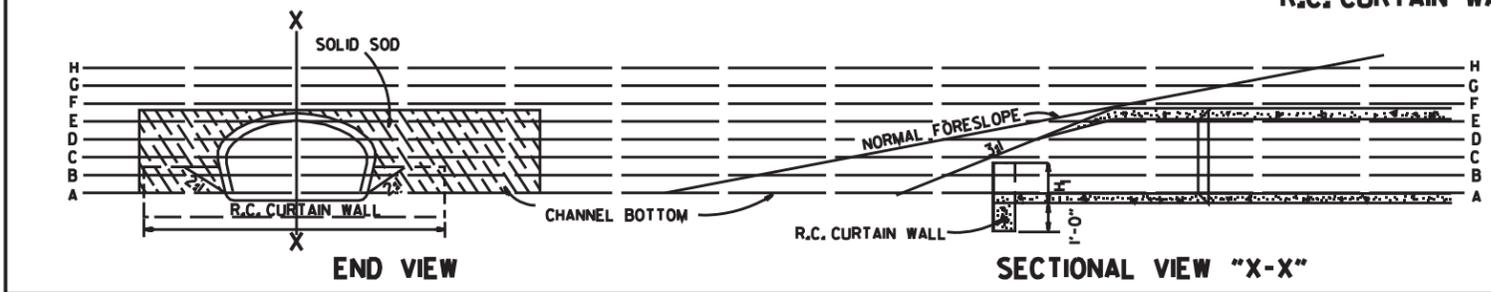
SOLID SODDING

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

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

GENERAL NOTES

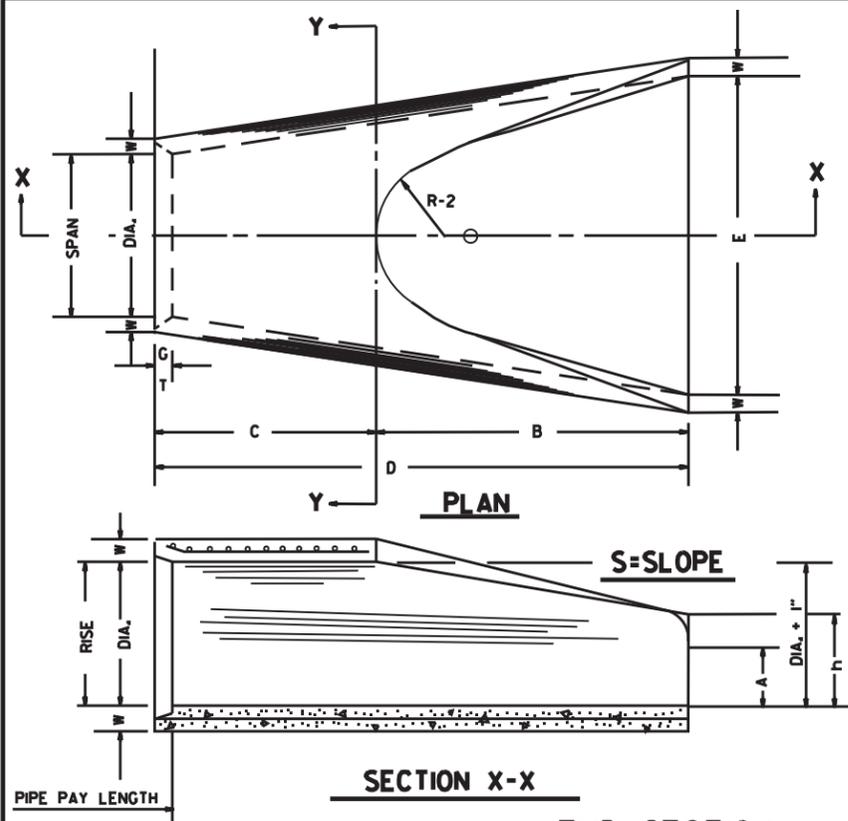
- A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
- ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
- 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.
- 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"

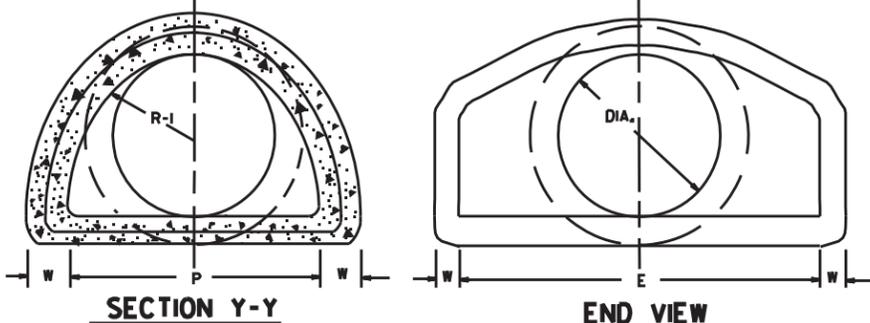
10-18-98	ADDED NOTE TO SOLID SODDING		ARKANSAS STATE HIGHWAY COMMISSION
10-12-95	CORRECTED SPELLING		
11-3-94	ADDED GENERAL NOTE NO. 4		
8-15-91	REV. CURTAIN WALL QUANT., STEEL SCH. & SOLID SOD QUANT.		
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES		
5-15-80	ADDED PRECAST WALL & GENERAL NOTES		
10-2-72	REVISED AND REDRAWN		
DATE	REVISION	FILMED	STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

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"	3d	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"	3d	25"	33 3/8"	16 1/4"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 1/4"	6'-1 3/4"	5'-0"	3d	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 1/4"
36"	4"	1'-3"	5'-3"	2'-10 1/4"	8'-1 1/2"	6'-0"	3d	37"	47 1/4"	24 1/4"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3d	43"	53 1/4"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3d	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"	3d	55"	65 1/2"	33 1/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3d	61"	72 1/2"	36 1/4"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3d	73"	77 1/4"	38 1/4"	24"	5"	13250	4'-6"

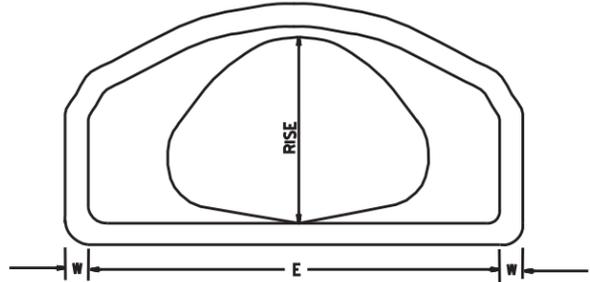


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

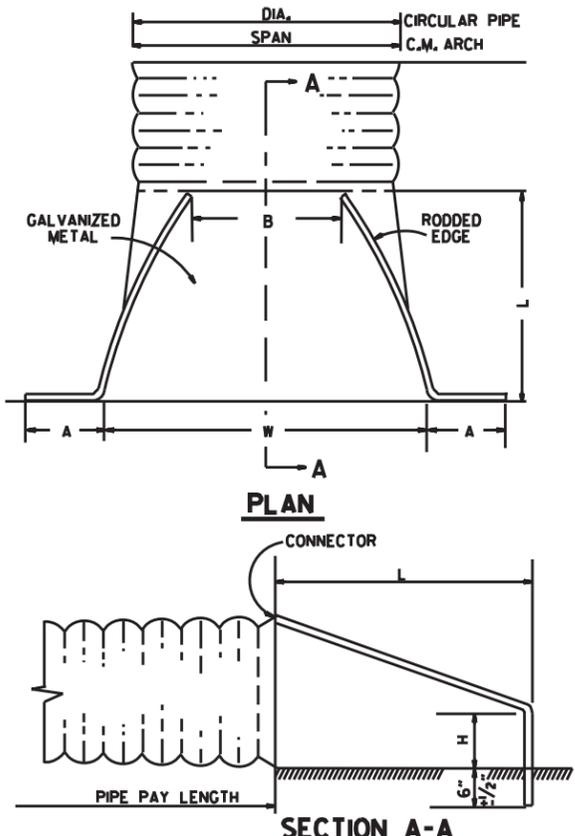
ARCH PIPE

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 1/2d
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 1/2d
21	26	26	15 1/2	16	3"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2d
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 1/2d
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 1/4"	20"	3"	2 1/2d
36	43 1/4	44	26 1/2	27	4"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	6'-6"	54 1/4"	22"	3 1/2"	2 1/2d
42	51 1/8	51	31 1/2	31	4 1/2"	11 1/2"	4'-7"	1'-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2d
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 1/4"	8'-1 1/4"	7'-10"	70 1/4"	24"	4 1/4"	2 1/2d
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/4"	24"	4 1/4"	2 1/2d
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/4"	24"	5"	2 1/2d

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



END VIEW CONCRETE ARCH PIPE

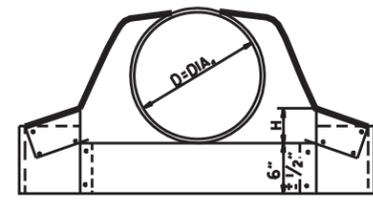


END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

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

CIRCULAR PIPE

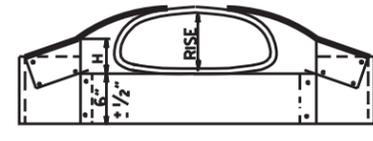
D. DIA.	GAUGE	A	B. MAX.	H	L	W	S
12	16	6	6	6	21	24	2 1/2d
15	16	7	8	6	26	30	2 1/2d
18	16	8	10	6	31	36	2 1/2d
21	16	9	12	6	36	42	2 1/2d
24	16	10	13	6	41	48	2 1/2d
30	14	12	16	8	51	60	2 1/2d
36	14	14	19	9	60	72	2 1/2d
42	12	16	22	11	69	84	2 1/2d
48	12	18	27	12	78	90	2 1/2d
54	12	18	30	12	84	102	2d
60	12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



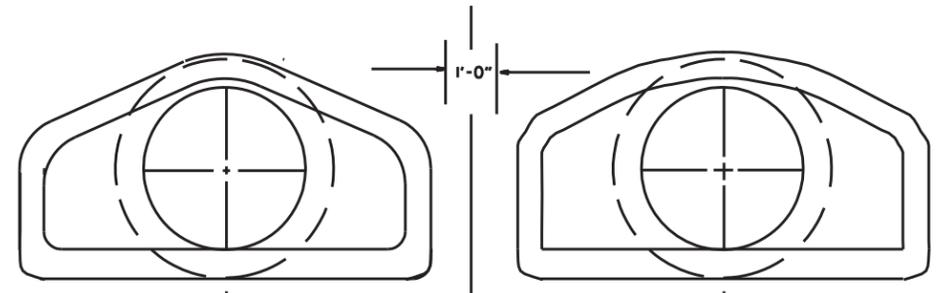
CIRCULAR PIPE

C.M. ARCH PIPE

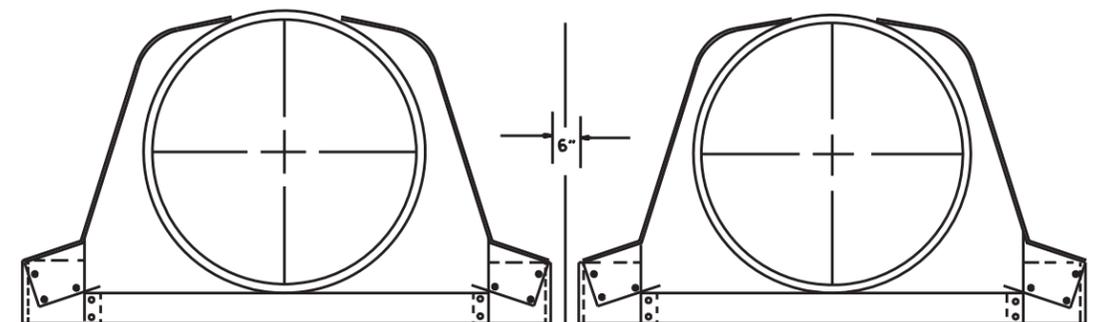
EQUIV. DIA.	SPAN	RISE	A	B	H	L	W	S	GAUGE
15"	17	13	7	9	6	19	30	2 1/2d	16
18"	21	15	7	10	6	23	36	2 1/2d	16
21"	24	18	8	12	6	28	42	2 1/2d	16
24"	28	20	9	14	6	32	48	2 1/2d	16
30"	35	24	10	16	6	39	60	2 1/2d	14
36"	42	29	12	18	8	46	75	2 1/2d	14
42"	49	33	13	21	9	53	85	2 1/2d	12
48"	57	38	18	26	12	63	90	2 1/2d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



C.M. ARCH PIPE

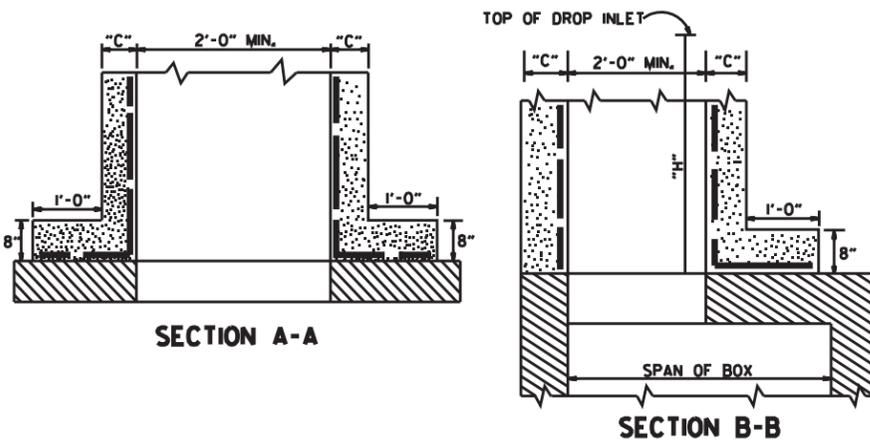
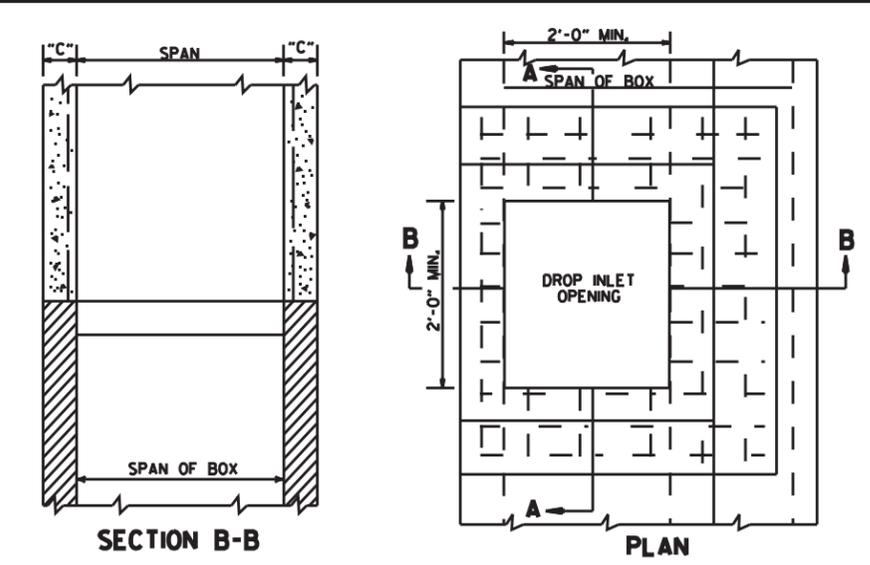


MULTIPLE R.C. PIPE CULVERTS

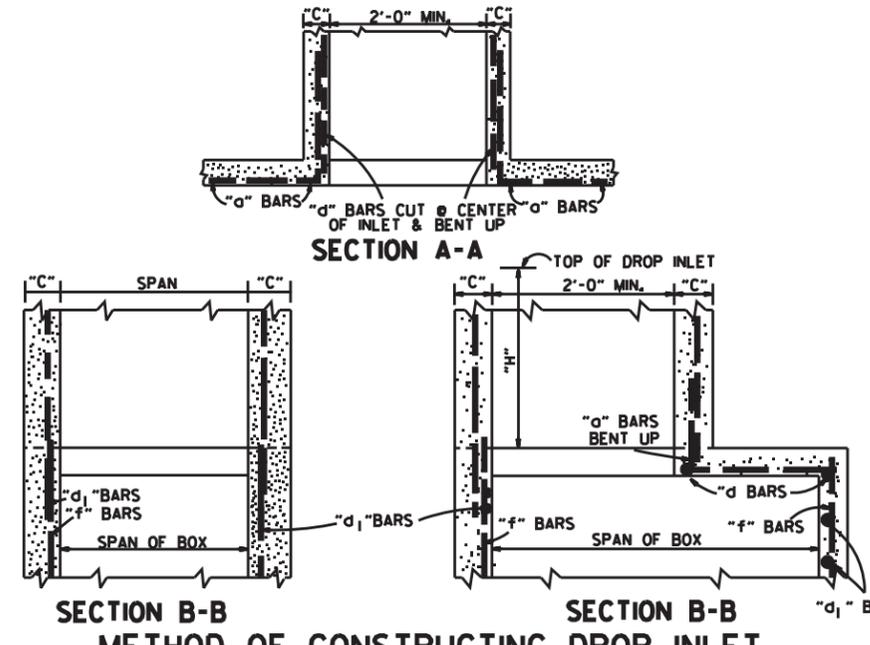


MULTIPLE C.M. PIPE CULVERTS

10-18-96	REVISED ASTM REF. TO AASHTO		
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	ARKANSAS STATE HIGHWAY COMMISSION
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	FIG. NO.	

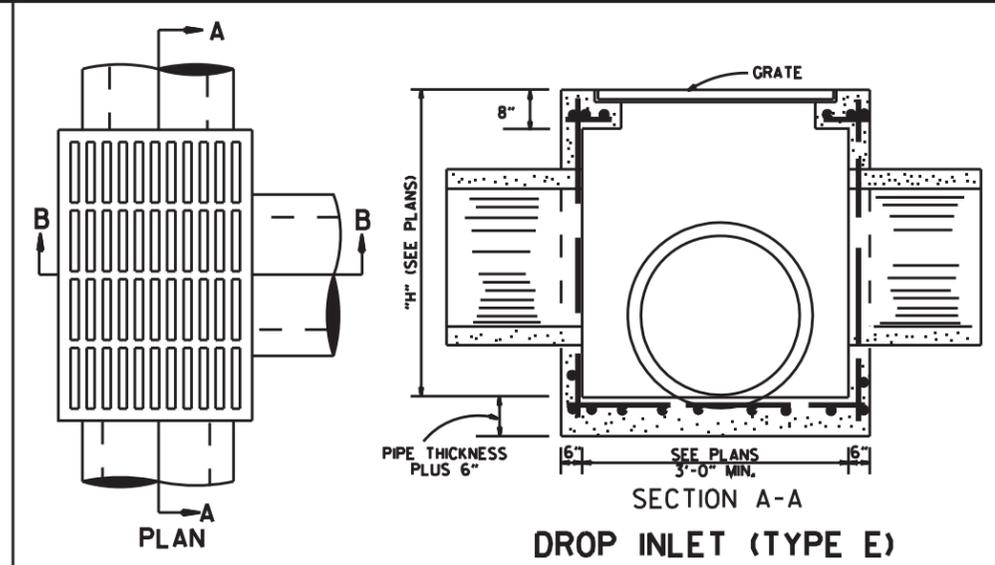


METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT

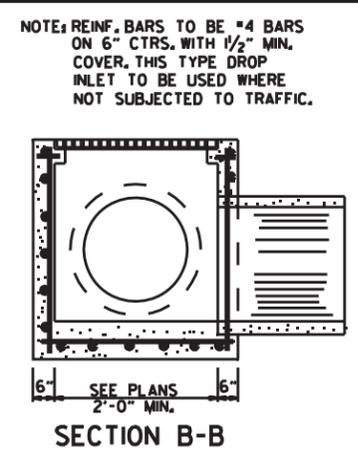


METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

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

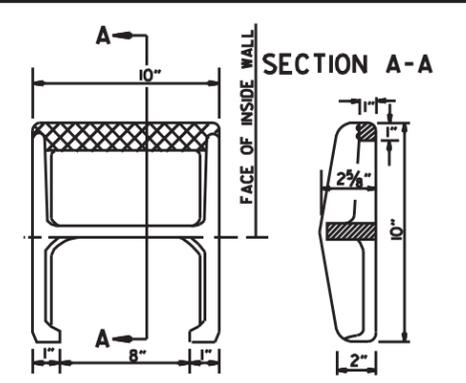


DROP INLET (TYPE E)



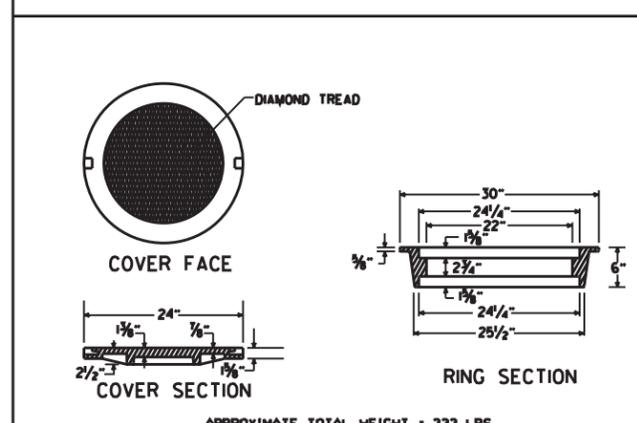
SECTION B-B

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



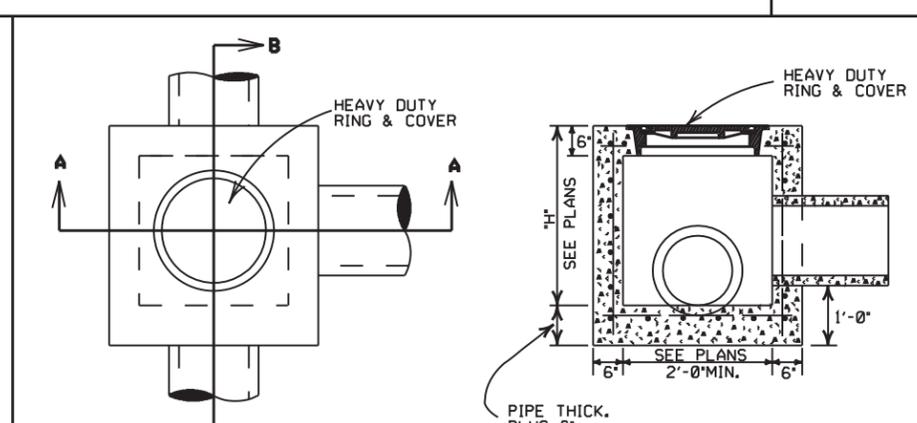
APPROX. WEIGHT = 11 LBS. (CAST IRON)
PLAN
 NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

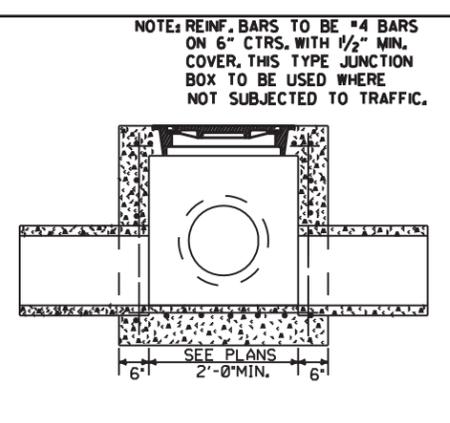


HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

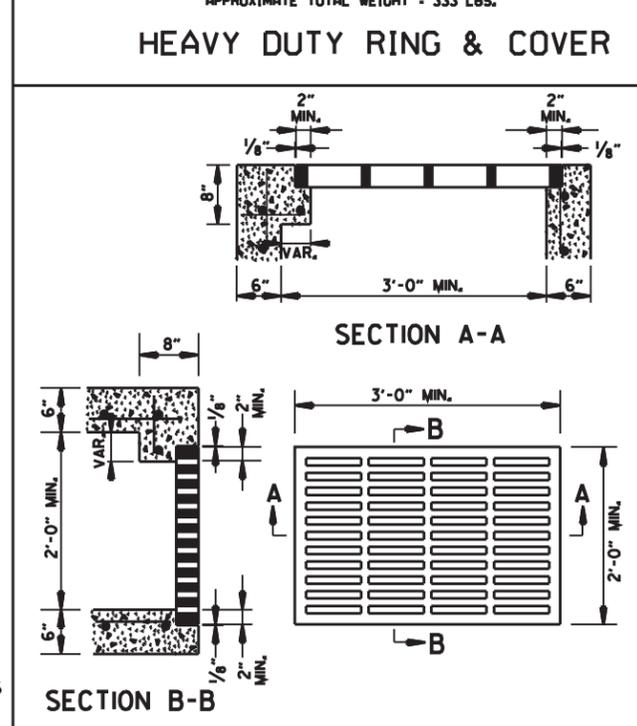


JUNCTION BOX (TYPE E)



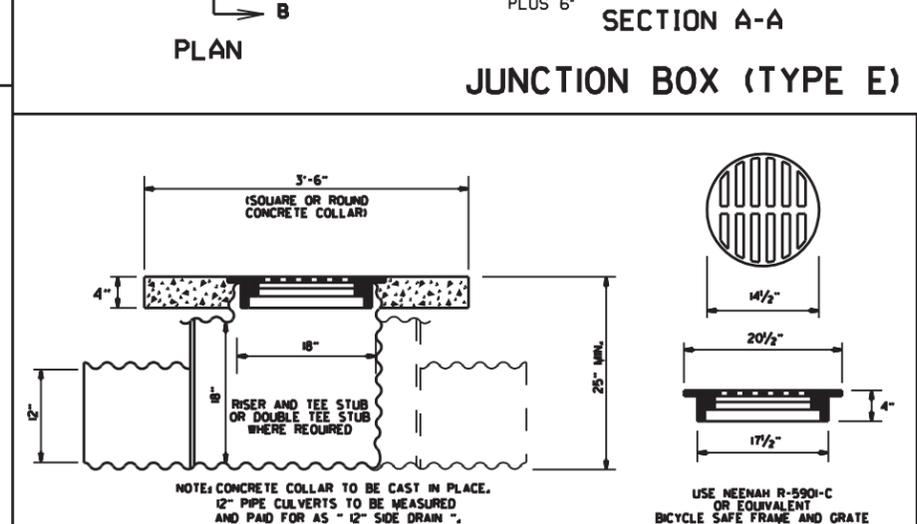
SECTION B-B

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



GRATE FOR TYPE E DROP INLET

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.



DETAIL OF YARD DRAIN

DATE	REV.	REVISION	DATE FILMED
11-16-01		ADDED NOTE 10	
1-12-00		REVISED HEAVY DUTY RING & COVER	
7-02-98		CHANGED GRATE DETAIL, DELETED 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:**
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.

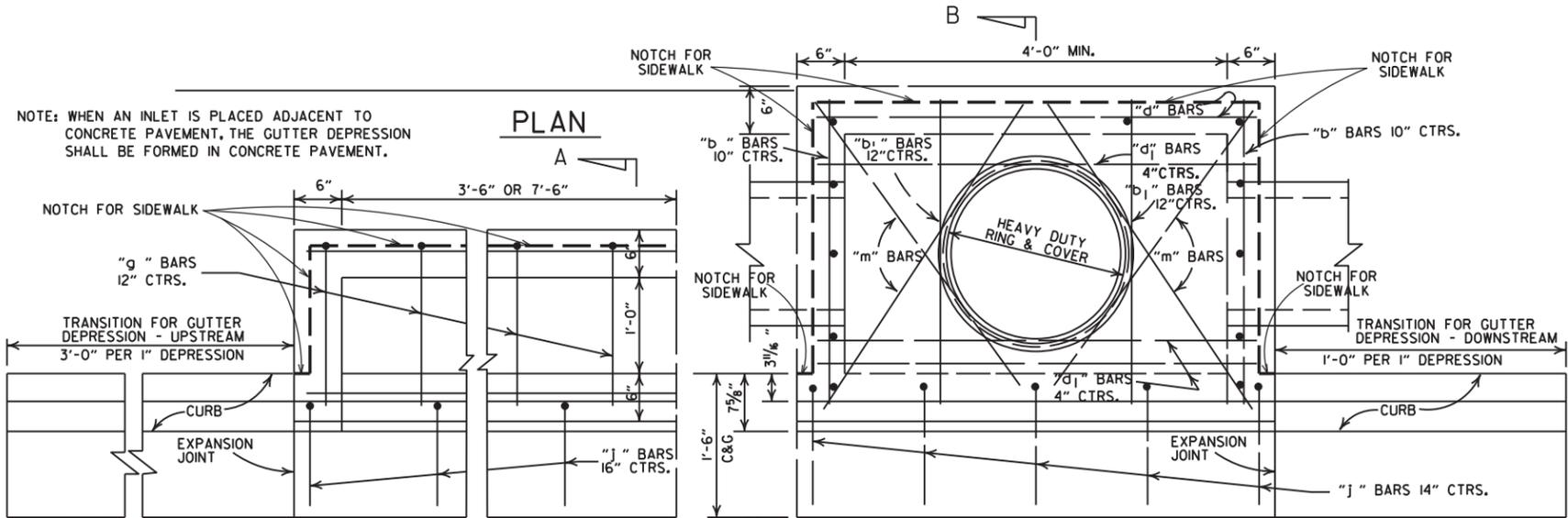
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DROP INLETS & JUNCTION BOXES
STANDARD DRAWING FPC-9

4'-0" LENGTH DROP INLET DROP INLET EXTENSION

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0"		PLUS OR MINUS PER LIN. FT. OF HEIGHT		4'-0"		8'-0"	
		CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS
18"	2'-6"	1.77	156	0.28	22	0.58	38	0.87	72
24"	2'-6"	1.79	156	0.28	22				
30"	3'-2"	2.39	205	0.30	26				
36"	3'-8"	2.63	236	0.32	28				
42"	4'-4"	2.95	250	0.34	30				
48"	4'-10"	3.21	265	0.36	32				
						DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
						0.04	3		

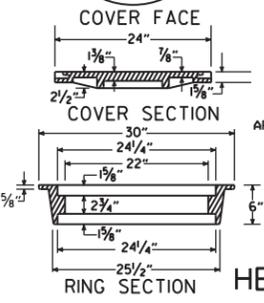
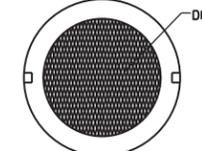
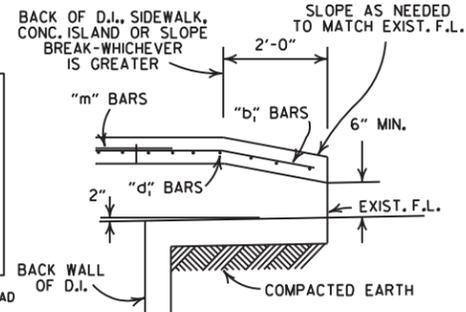
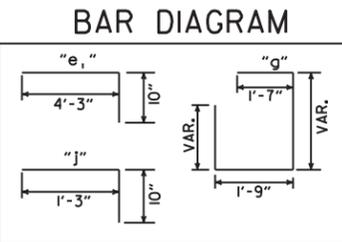
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

NOTE: WHEN AN INLET IS PLACED ADJACENT TO CONCRETE PAVEMENT, THE GUTTER DEPRESSION SHALL BE FORMED IN CONCRETE PAVEMENT.



DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

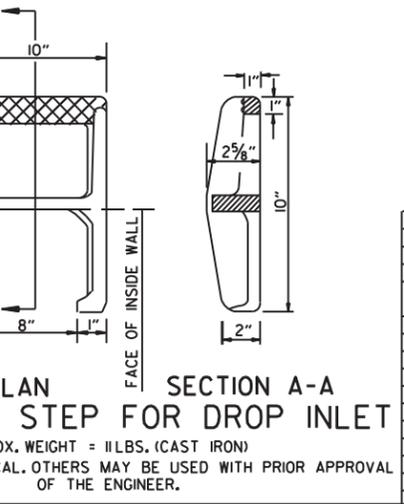
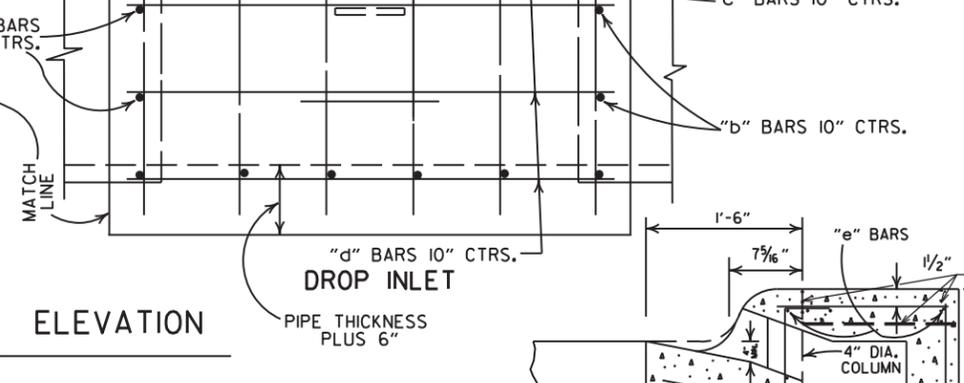
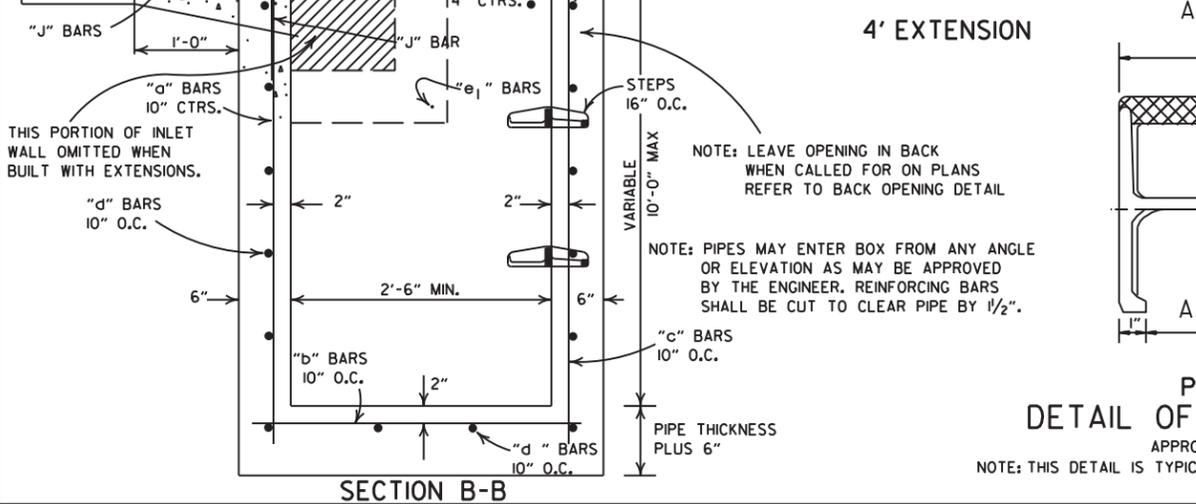
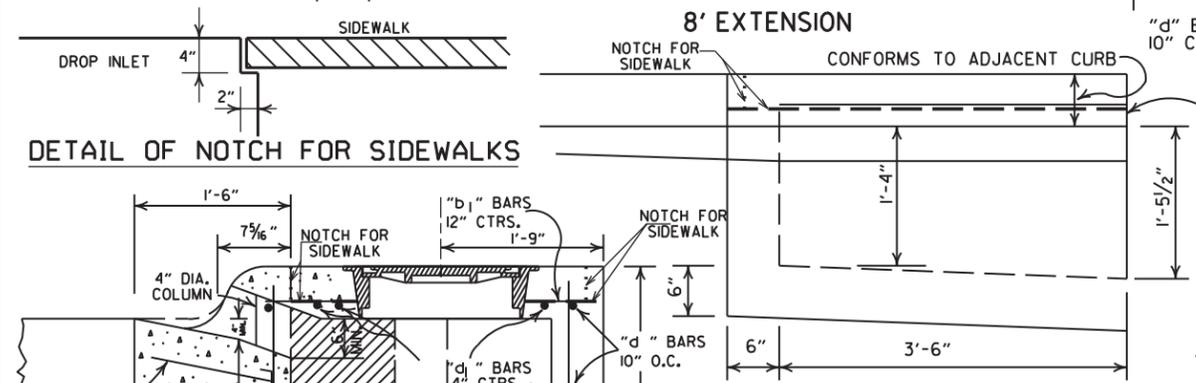
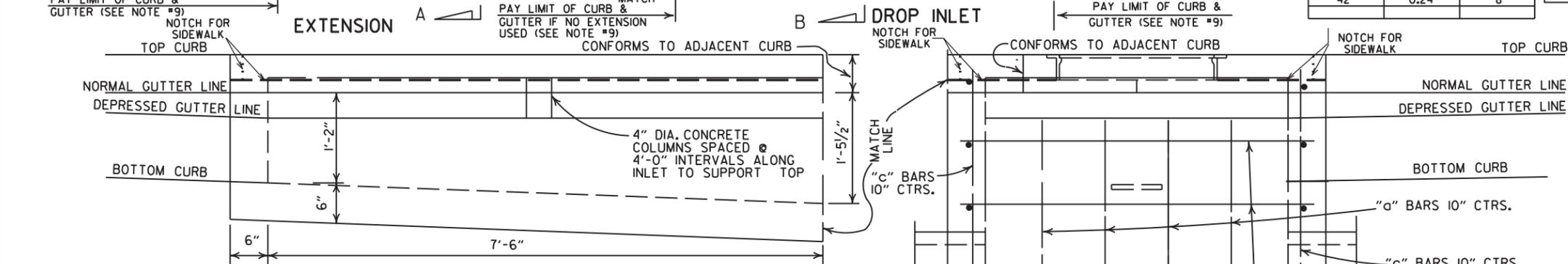
INSIDE DIA. PIPE	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

- GENERAL NOTES:
- ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
 - STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
 - ALL REINF. BARS SHALL BE #4 AND HAVE 1/2" COVER.
 - DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
 - THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9
 - WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (FPC-9D).
 - HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
 - DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
 - PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
 - 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.
 - HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
 - 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
 - DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



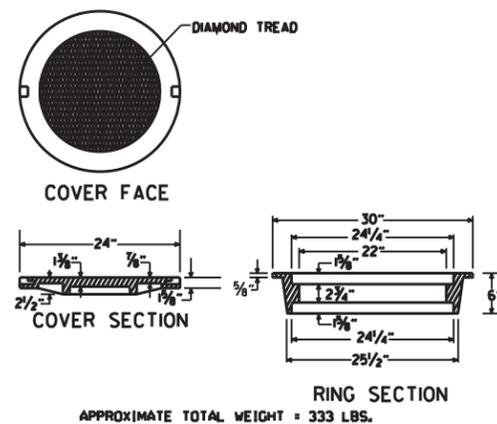
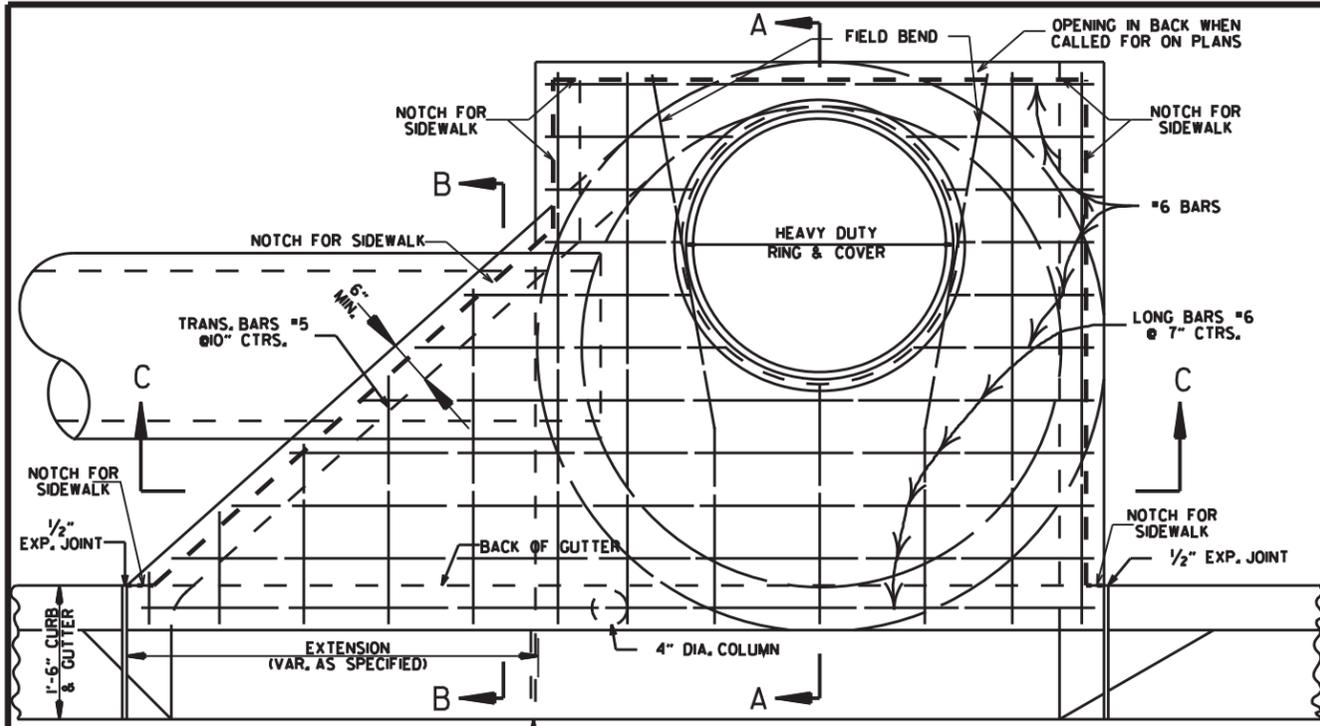
DATE	REV.	REVISION	DATE FILMED
8-22-02		ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01		ADDED NOTE 13; REVISED SECTION B-B	
1-12-00		CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99		ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98		REPLACED RING & COVER W/HEAVY DUTY RING & COVER	
		ADDED NOTES 9,10,&11	
10-18-96		CORRECTED SPELLING	
4-26-96		ADDED NOTE 8 & REVISED (4')X(8') EXTENSION TITLES	10-18-96
4-1-93		REVISED BACK OPENING & NOTE	
8-15-91		DELETE TYPE IV GRATE	
7-15-88		REVISED STEP DETAIL	
5-20-83		REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83		ADDED GENERAL NOTE NO. 4	
3-2-81		ADDED TYPE IV-A GRATE	
5-22-74		DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72		REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS (TYPE C)

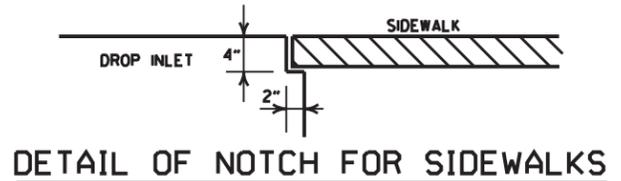
STANDARD DRAWING FPC-9E

PLAN SECTION A-A
DETAIL OF STEP FOR DROP INLET
APPROX. WEIGHT = 11 LBS. (CAST IRON)
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

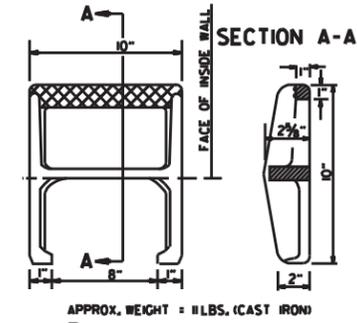


HEAVY DUTY RING & COVER

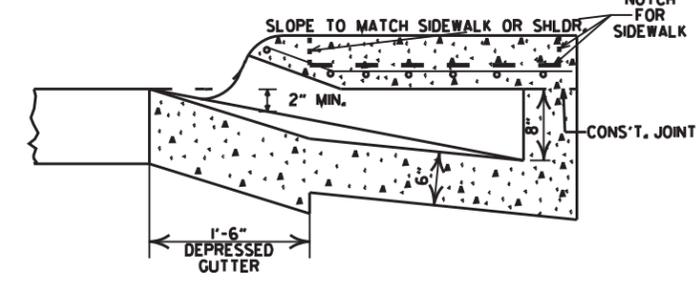
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON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



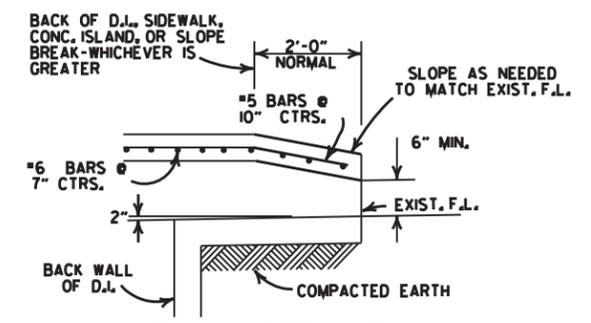
DETAIL OF NOTCH FOR SIDEWALKS



DETAIL OF STEP FOR DROP INLET



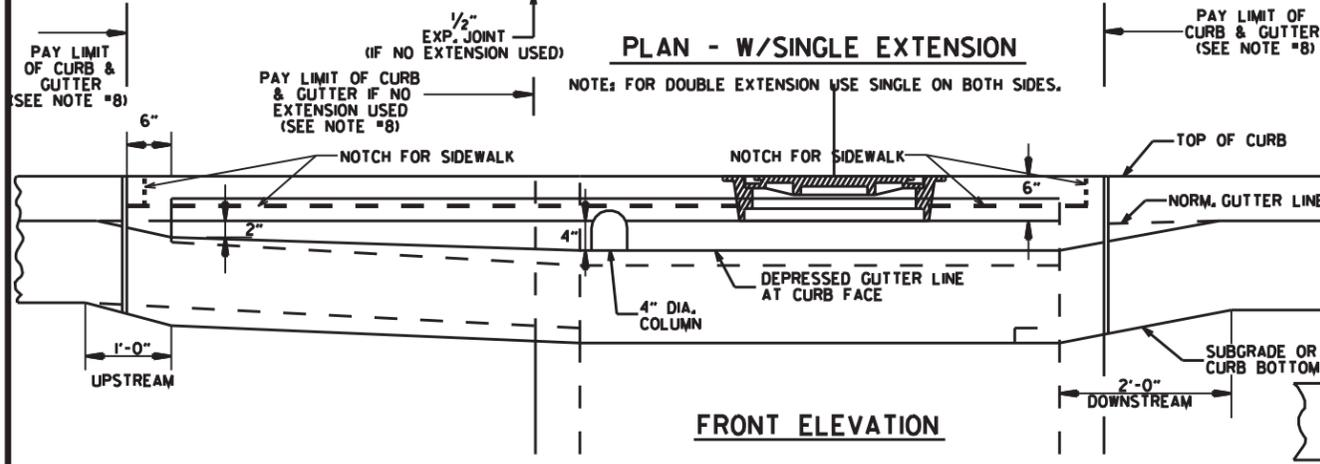
SECTION B-B



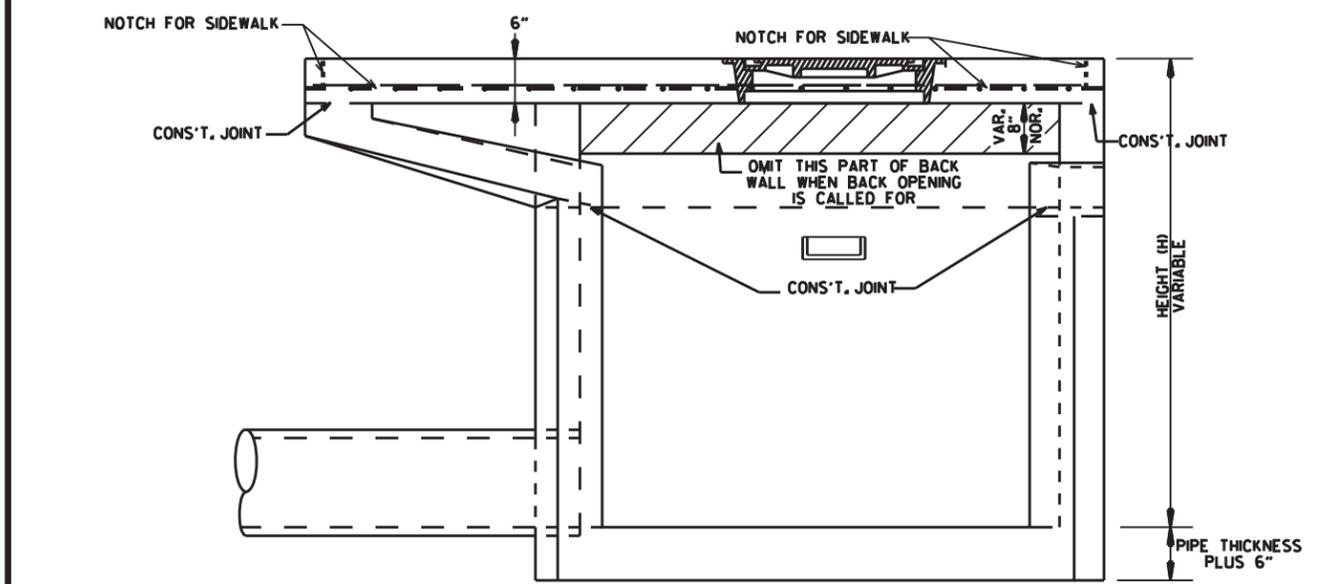
BACK OPENING

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

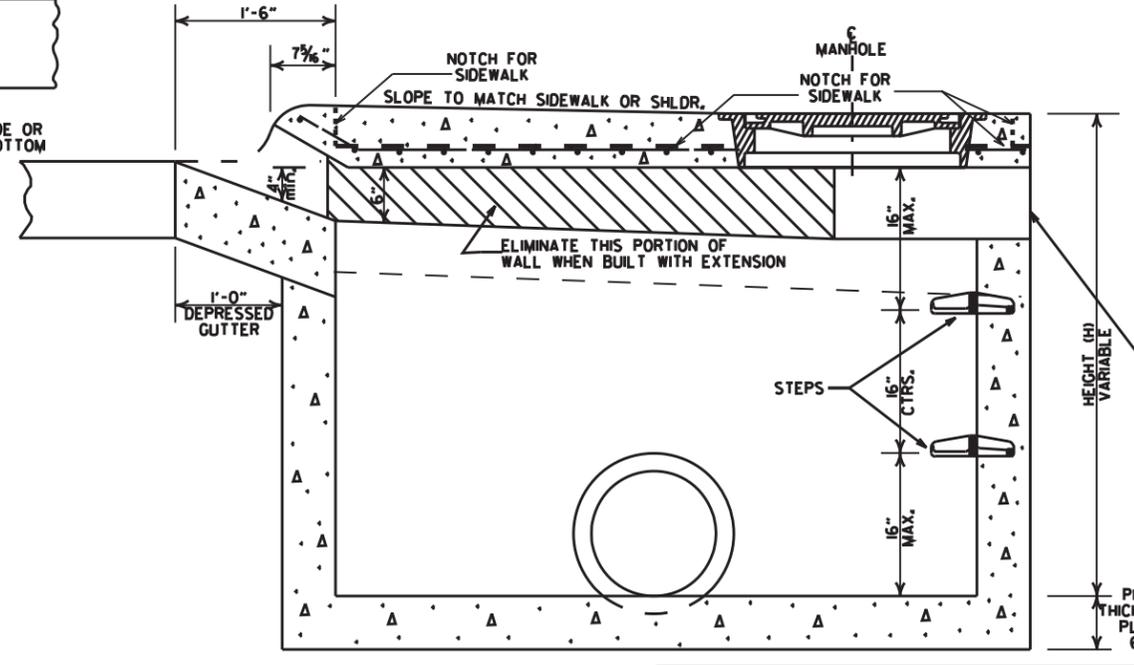
- GENERAL NOTES:**
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
 2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
 3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1/2" COVER.
 4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE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



FRONT ELEVATION



SECTION C-C



SECTION A-A

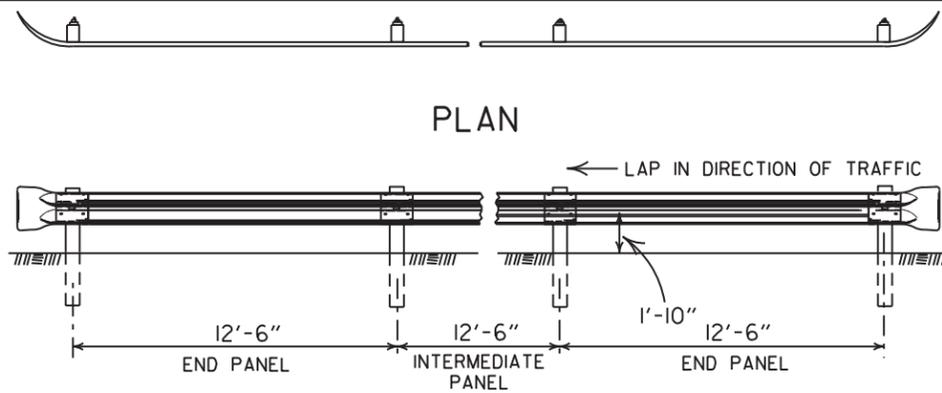
MINIMUM WALL THICKNESS			
DIA. OF D.I.	DIA. OF OUTLET PIPE	CAST IN PLACE	PRECAST
4" LD.	12" THRU 27"	6"	5"
5" LD.	30" THRU 42"	8"	6"
6" LD.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILED
11-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
11-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE B, RING PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
11-25-96	ADDED NOTE 11, ADD. OPENING DIMENSION	
10-12-95	CORRECTED #5 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
10-15-94	REVISED GENERAL NOTES	11-1-94
10-15-94	REV. BACK OPEN DETAIL & NOTE	4-1-94
8-15-91	REVISED NOTES 11, 2 & ADDED BACK OPEN DETAIL	8-15-91
11-10-89	ADDED NOTE NO. 12	11-30-89
11-21-89	ADDED NOTE 1 & MINIMUM WALL THICKNESS	11-21-89
1-25-89	ADDED EXTENT NOTE TO SECTION A-A	1-25-89
11-15-87	MODIFIED WALL THICKNESS	11-15-87
11-15-87	ISSUED	11-15-87

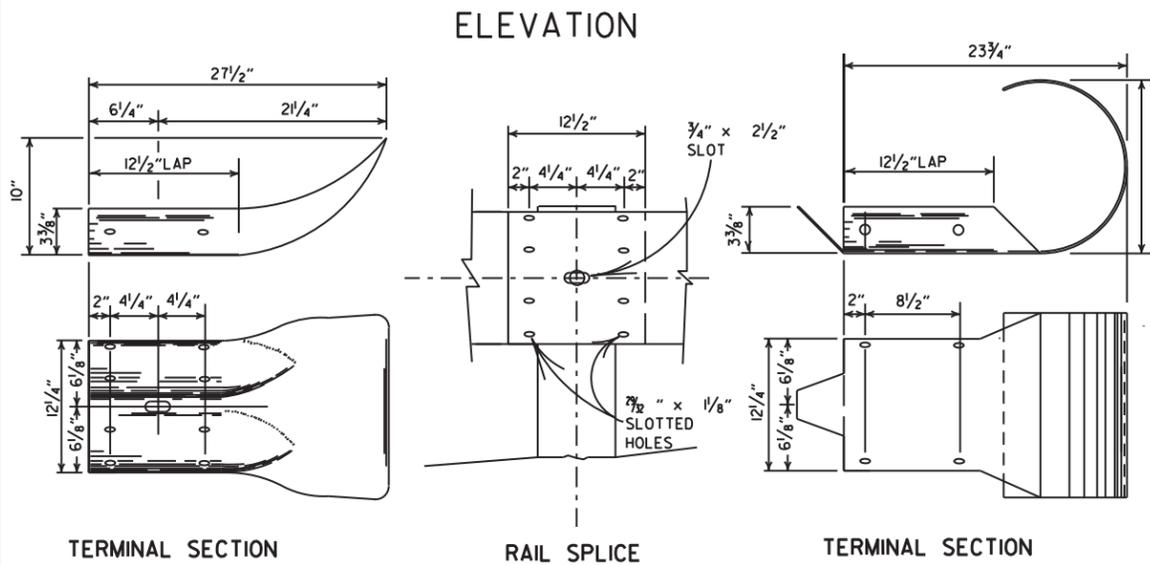
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

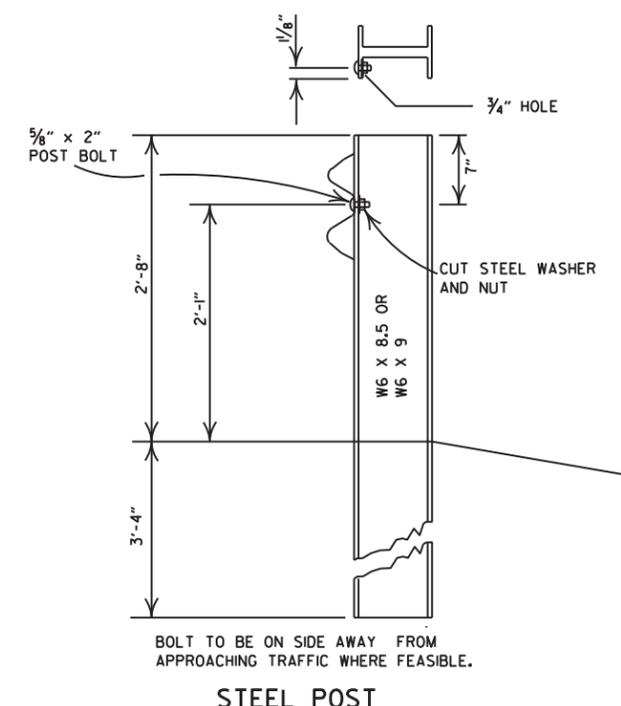
STANDARD DRAWING FPC-9M



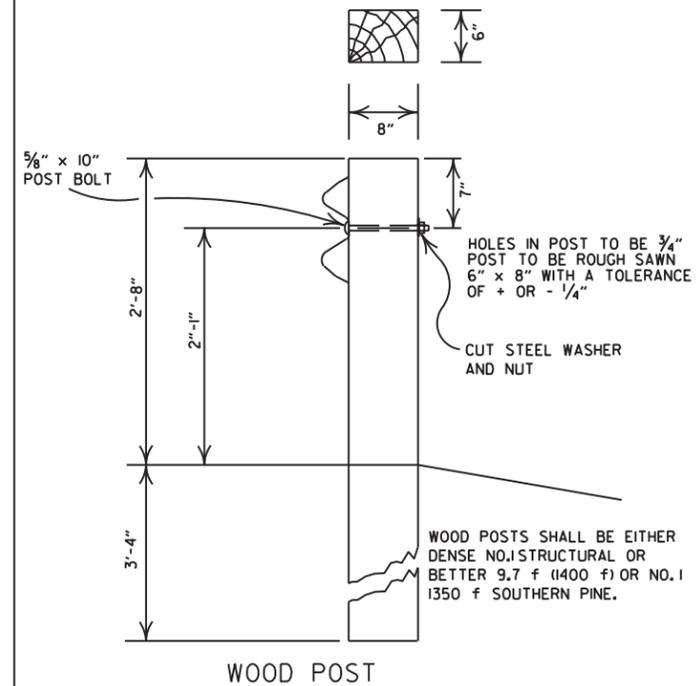
PLAN



ELEVATION



STEEL POST



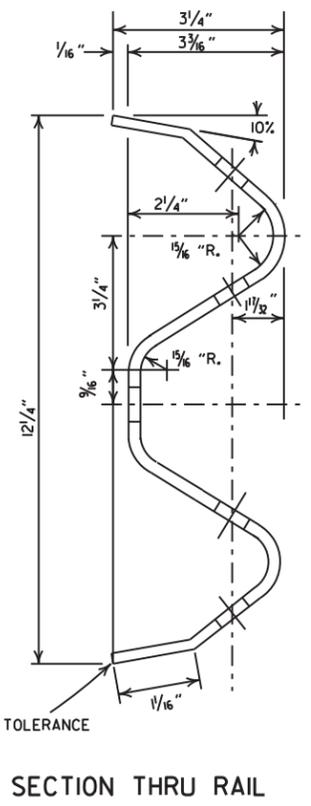
WOOD POST

DETAILS OF POST CONNECTIONS

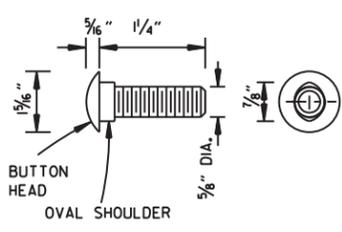
TERMINAL SECTION

RAIL SPLICE

TERMINAL SECTION

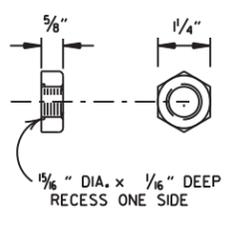


SECTION THRU RAIL

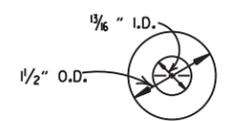


SPLICE BOLT

NOTE: POST BOLT SAME EXCEPT LENGTH.



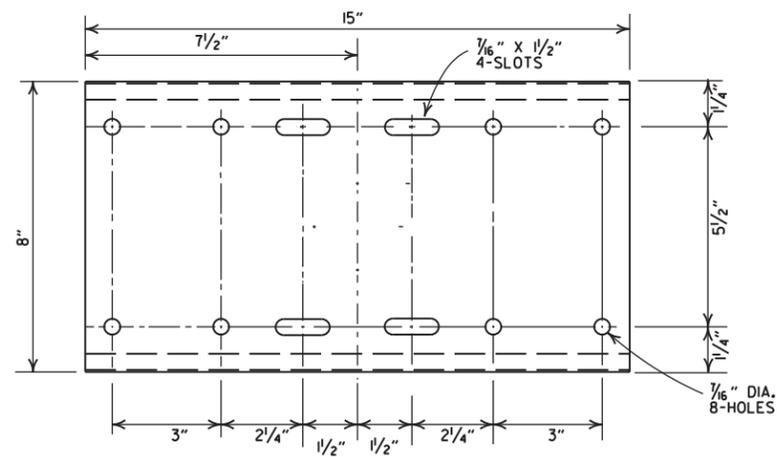
NUT



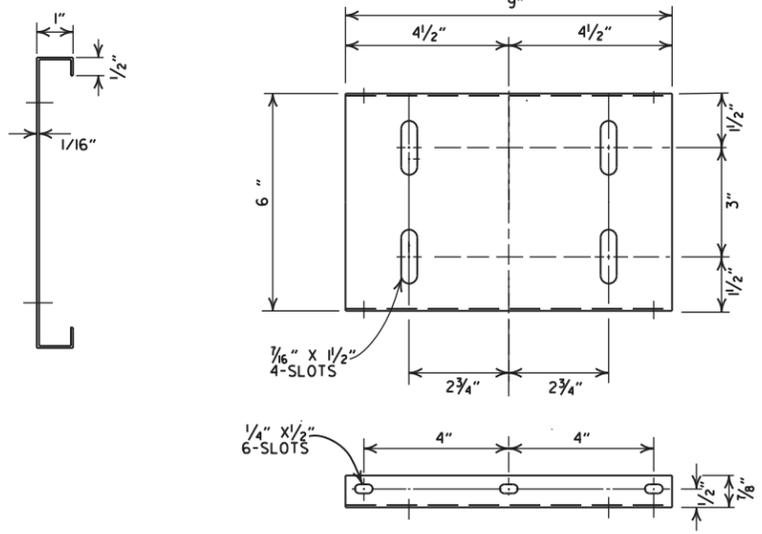
CUT STEEL WASHER

11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
08-22-02	REVISED DIMENSION ON STEEL POST	
11-16-01	REVISED STEEL AND WOOD POST	
08-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
06-02-94	ADDED ALTERNATE STEEL POST SIZE	
08-05-93	REVISED STEEL PLATE WASHER	8-5-93
08-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
10-30-87	REMOVED DET. PLCMNT. ON HWY.	555-11-20-87
01-04-83	GRADE FOR WOOD POSTS	679-1-4-83
10-01-77	HARDENED WASHER	922-10-1-72
10-02-72	REVISED & REDRAWN	521-10-2-72
DATE	REVISION	FILMED

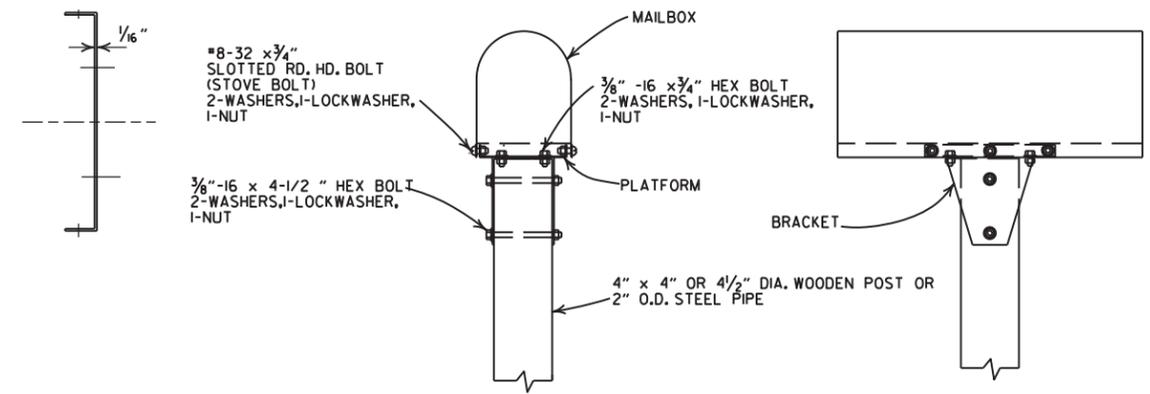
ARKANSAS STATE HIGHWAY COMMISSION
**GUARDRAIL DETAILS (TYPE C)
 STREET / ROAD BARRICADE OR
 TEMPORARY INSTALLATION**
 STANDARD DRAWING GR-5



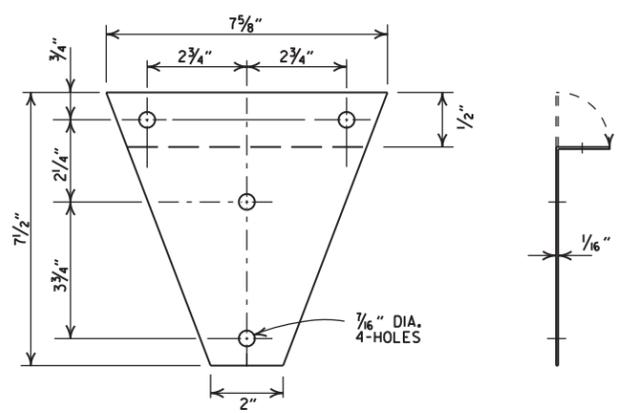
SHELF



PLATFORM

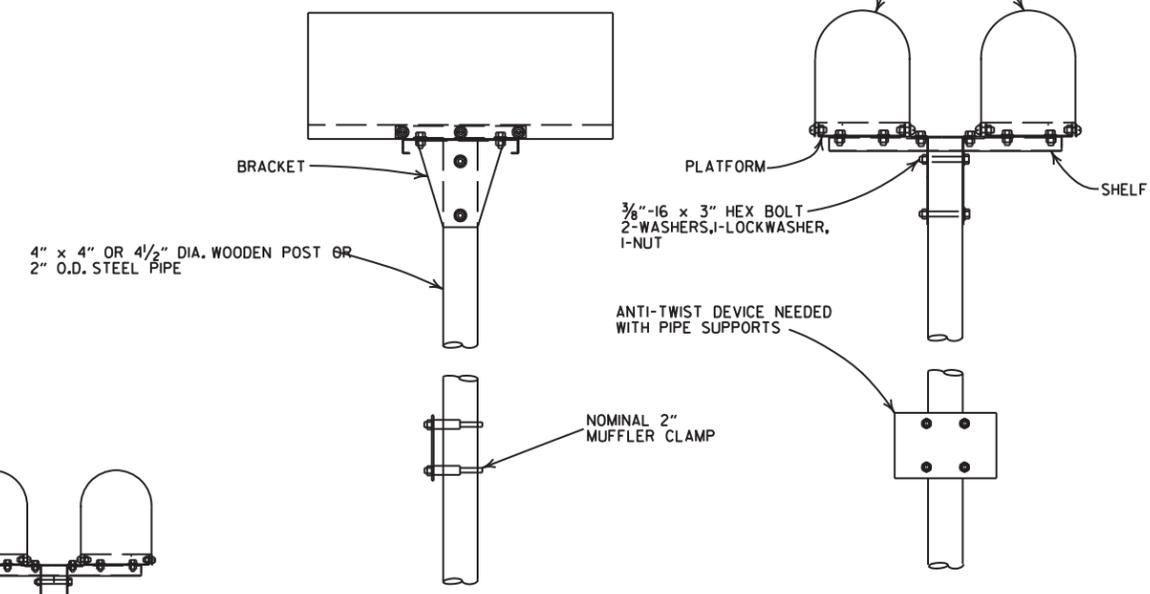


SINGLE INSTALLATION

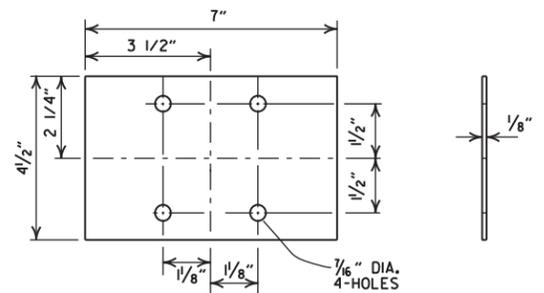


BRACKET

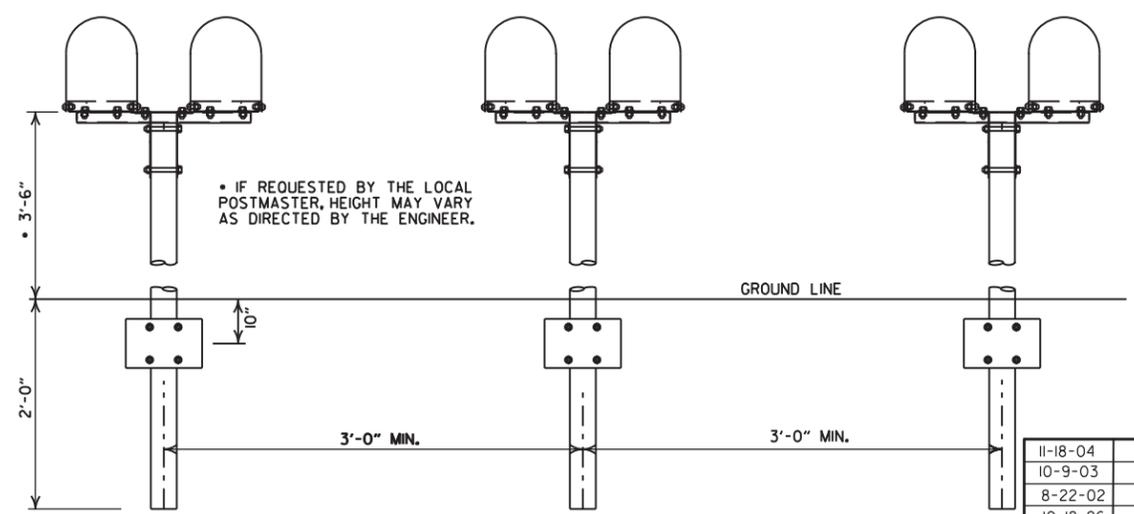
- GENERAL NOTES**
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
 2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
 3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED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



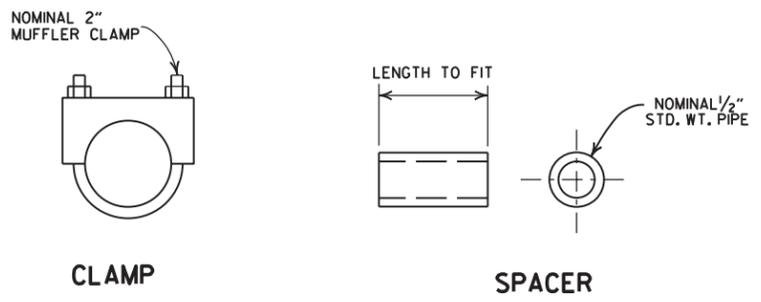
DOUBLE INSTALLATION



ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP

SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	120-7-15-88	ISSUED
		DATE FILMED REVISION

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS
STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA. INCHES	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
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	31½	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. INCHES	AASHTO M 207	
	SPAN	RISE
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

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

CONSTRUCTION SEQUENCE

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

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

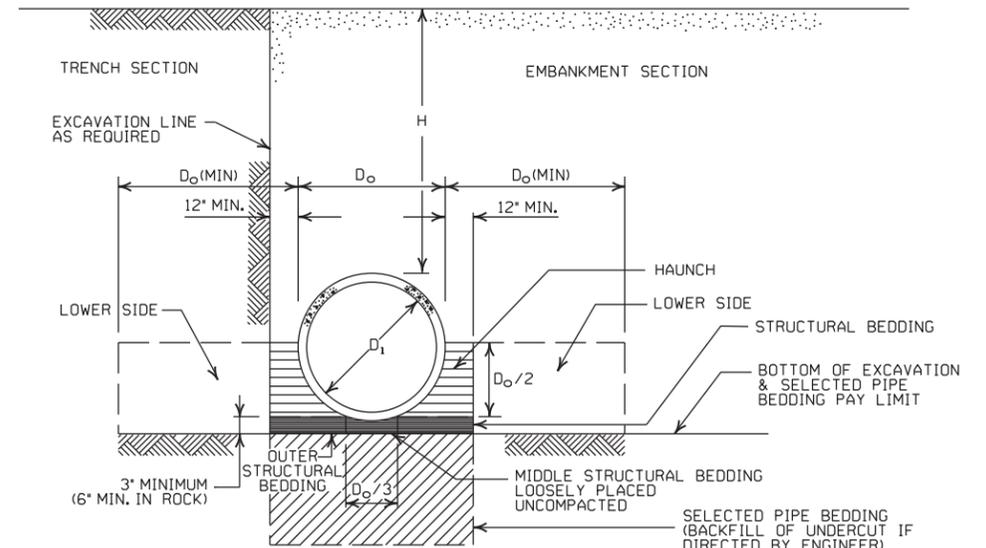
- LEGEND -

- D₁ = NORMAL INSIDE DIAMETER OF PIPE
- D_o = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- [Hatched Pattern] = UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

INSTALLATION TYPE	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
PIPE ID (IN.)	TYPE 1 OR 2	TYPE 3	ALL	ALL
	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.

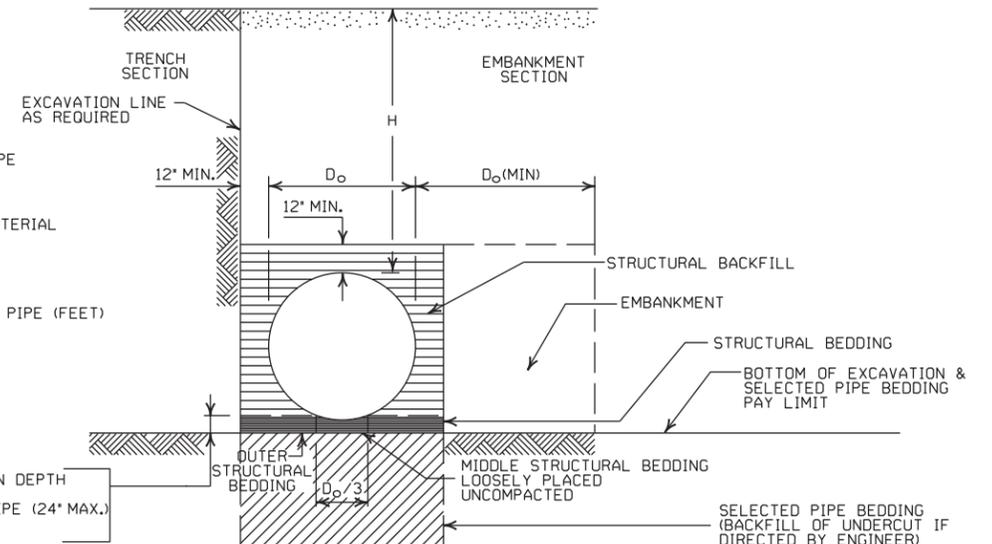
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2,5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

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				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.

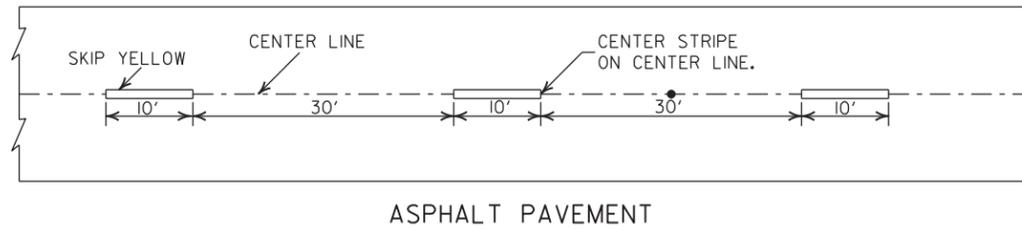
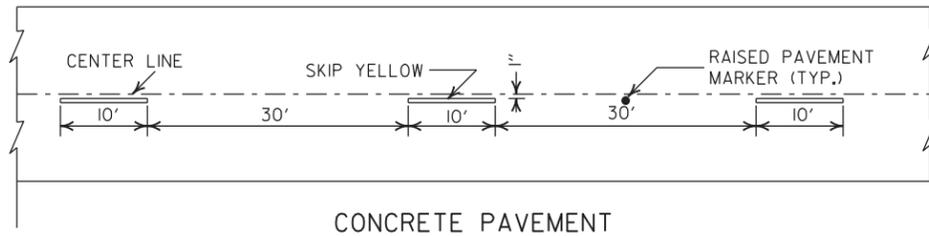
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

**METAL PIPE CULVERT
FILL HEIGHTS & BEDDING**

STANDARD DRAWING PCM-1

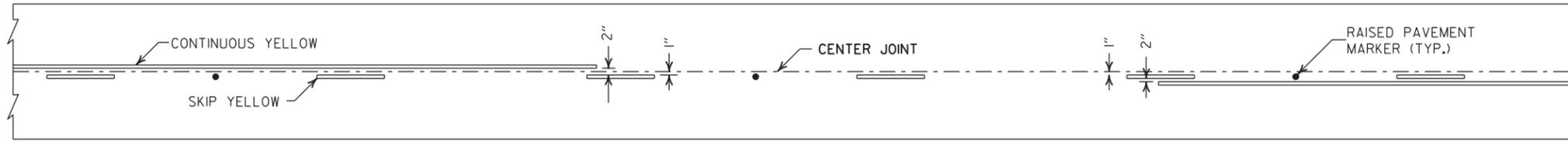




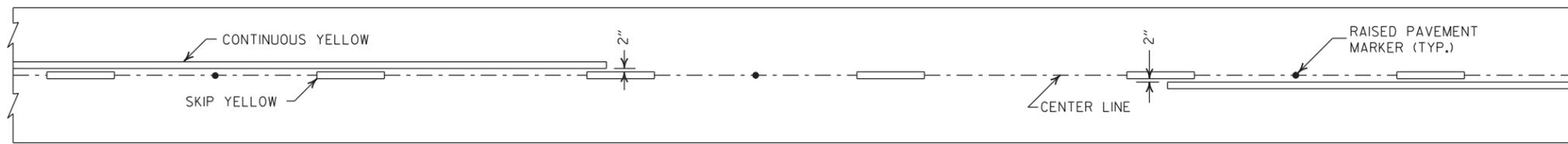
CONCRETE PAVEMENT

ASPHALT PAVEMENT

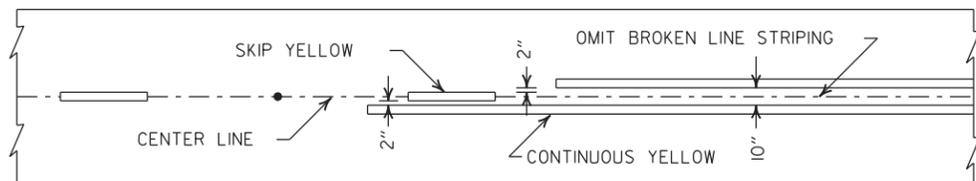
BROKEN LINE STRIPING



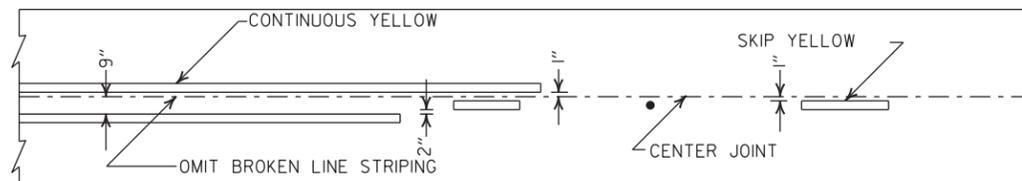
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

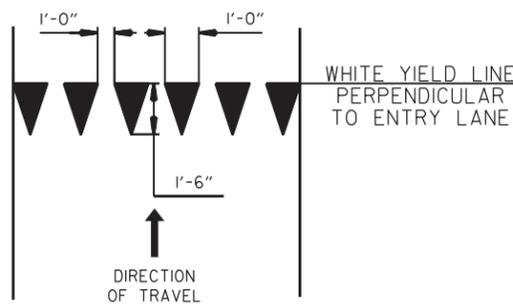


ASPHALT PAVEMENT

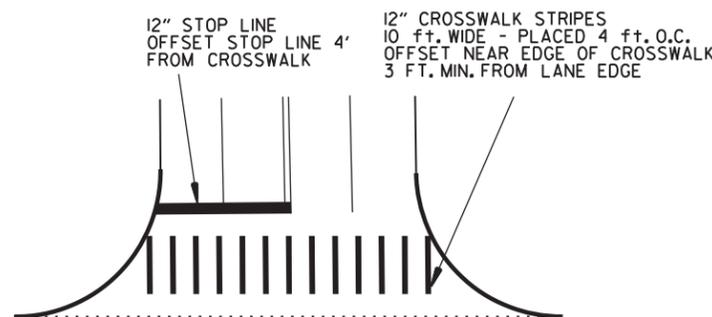


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL

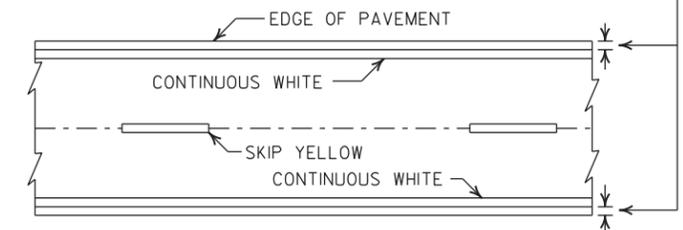


CROSSWALK AND STOP LINE DETAILS

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.

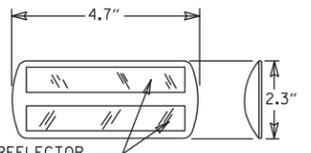
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II RED/CLEAR OR YELLOW/YELLOW



PRISMATIC REFLECTOR

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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

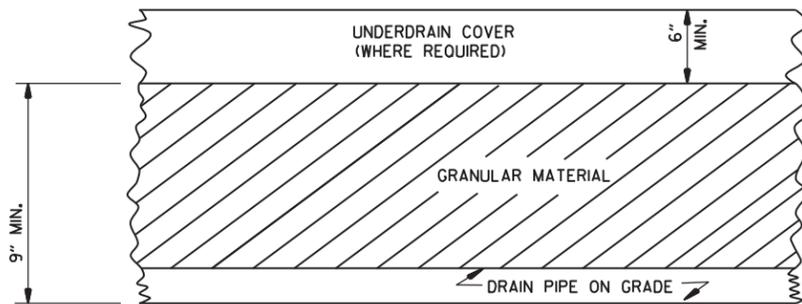
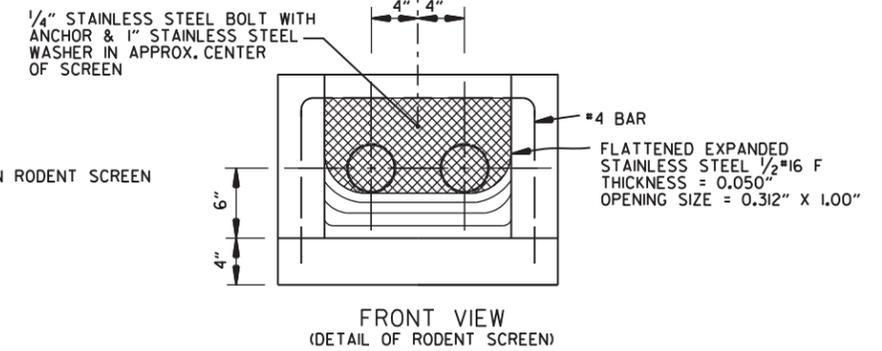
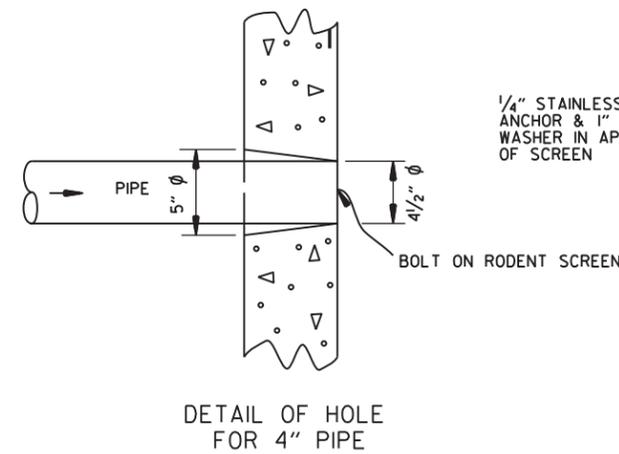
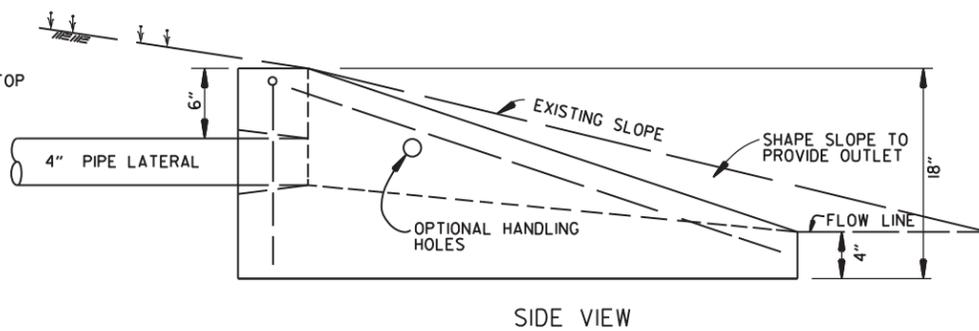
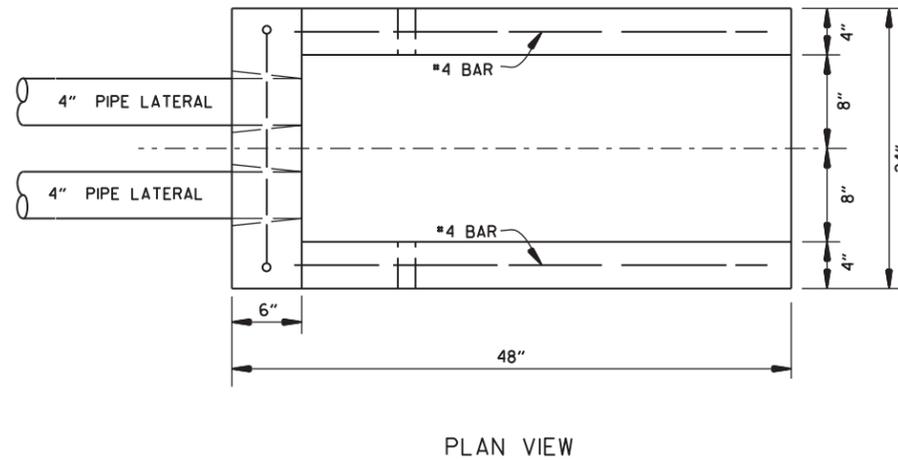
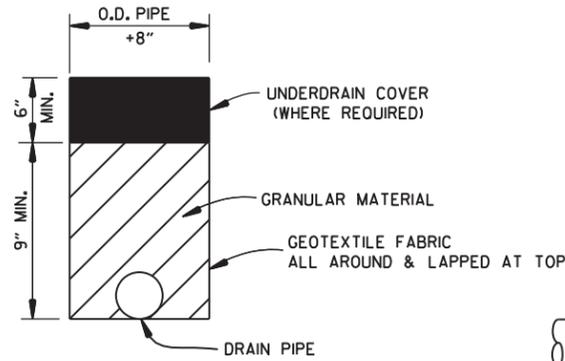
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

NOTE:
 1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



DETAILS OF PIPE UNDERDRAIN

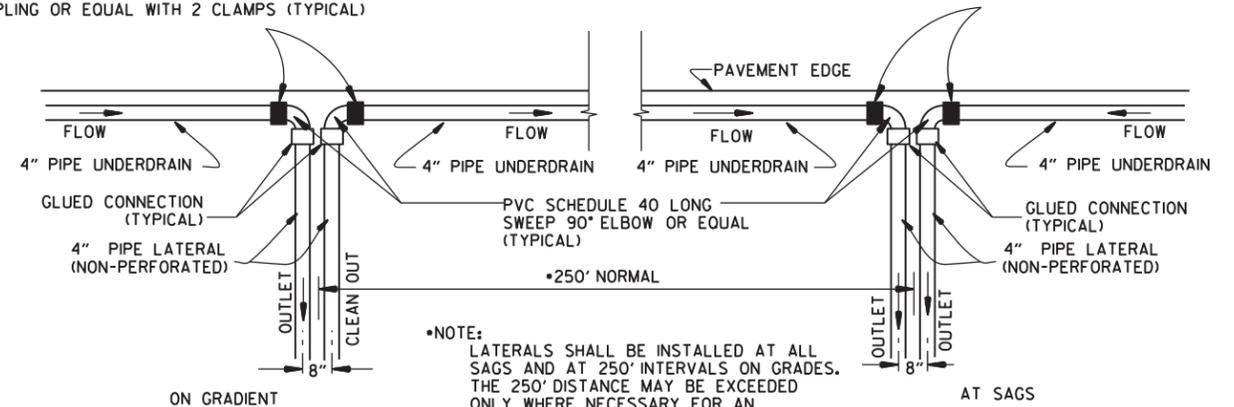
NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.
5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."
6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."
7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



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

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

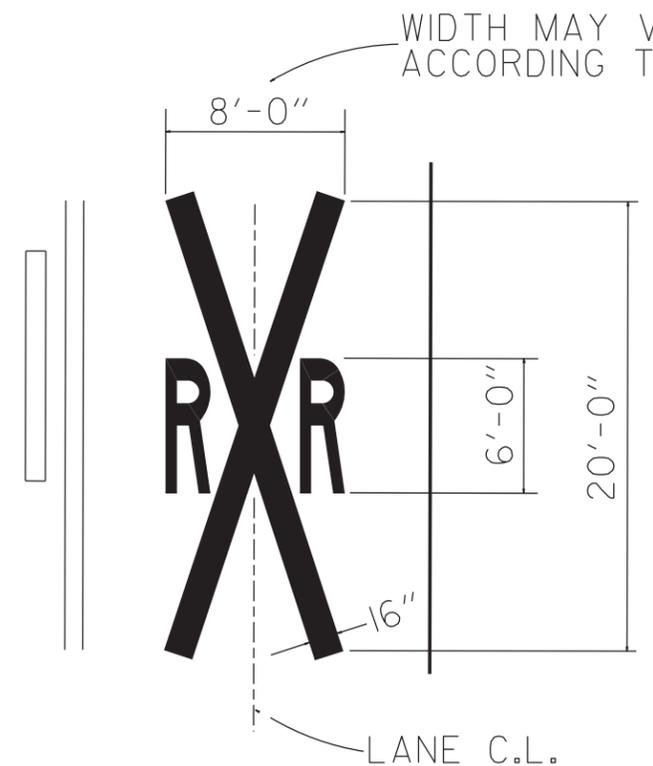
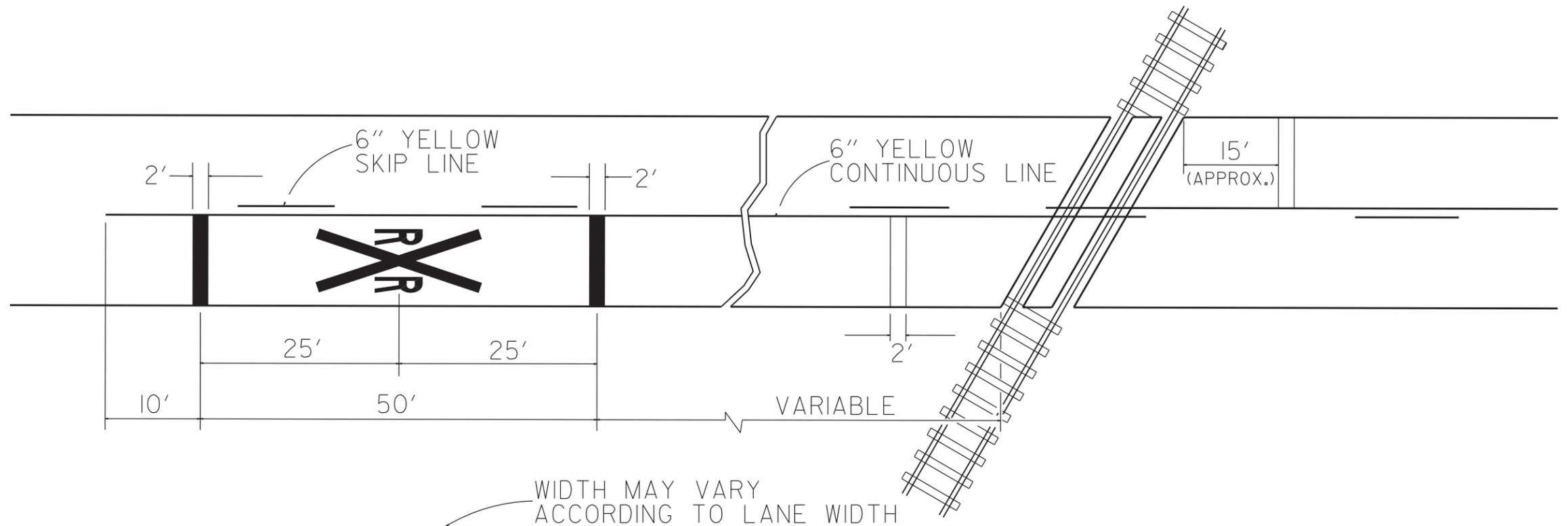
NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE: 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11-3-94	REVISED FOR DUAL LATERALS	11-3-94
10-1-92	SUBSTITUTED GEOTEXTILE	10-1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11-8-90	DELETED ALTERNATE NOTE	11-8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1



DETAIL OF PAVEMENT MARKINGS FOR RAILROAD CROSSING

PAVEMENT MARKING TO BE SYMMETRICAL ABOUT RAILROAD

WIDTH MAY VARY ACCORDING TO LANE WIDTH

NOTES:
THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND THE SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT PROBABLY SHOULD BE NOT LESS THAN 50 FEET.

A THREE LANE ROADWAY SHOULD BE MARKED WITH A CENTERLANE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.

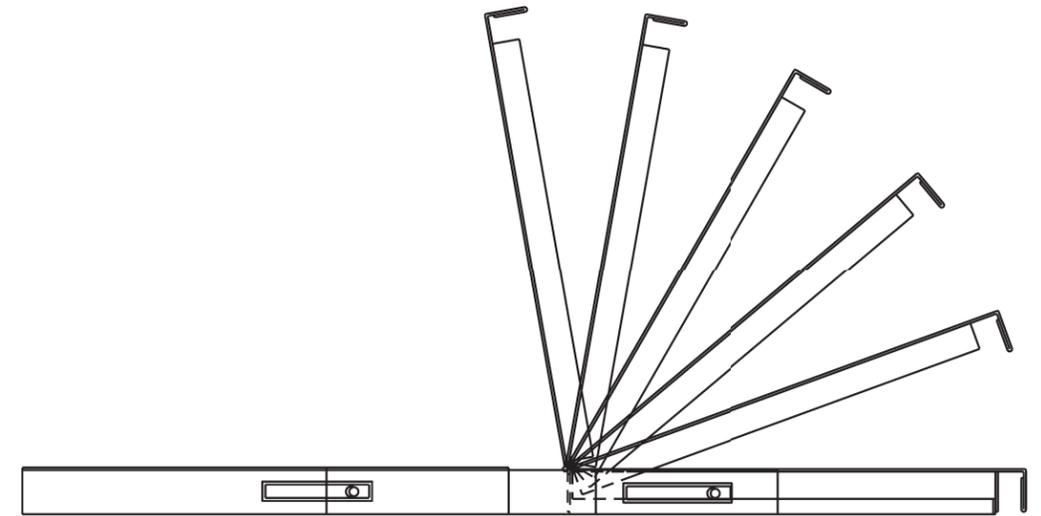
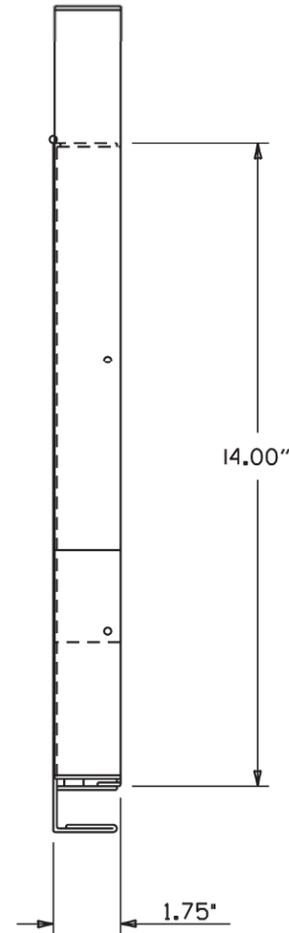
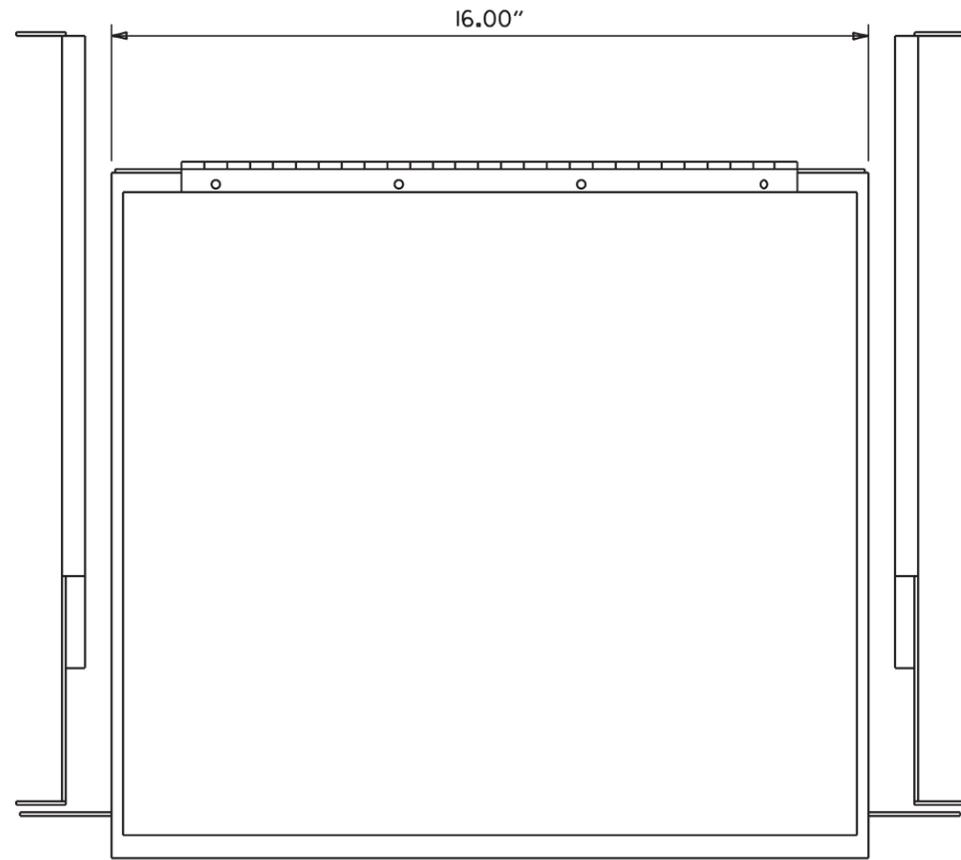
ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RRR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR RRR SYMBOLS DETAILS.

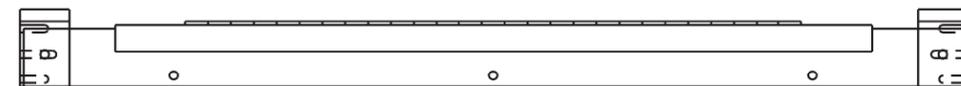
DATE	REVISION	DATE FILMED
12-8-16	REVISED CENTERLINE LABELS	
11-20-08	CORRECTED SPELLING	
4-10-03	REVISED NOTES	
3-2-81	DELETED LETTER & ADDED NOTE	684-3-2-81
7-20-79	STOP LINE CHGD. TO PERP.	636-8-30-79
4-23-75	SHEET RENUMBER	697-4-20-79
4-23-75	REDRAWN	860-4-23-75

ARKANSAS STATE HIGHWAY COMMISSION
PAVEMENT MARKING FOR RAILROAD CROSSING
STANDARD DRAWING RRS-1

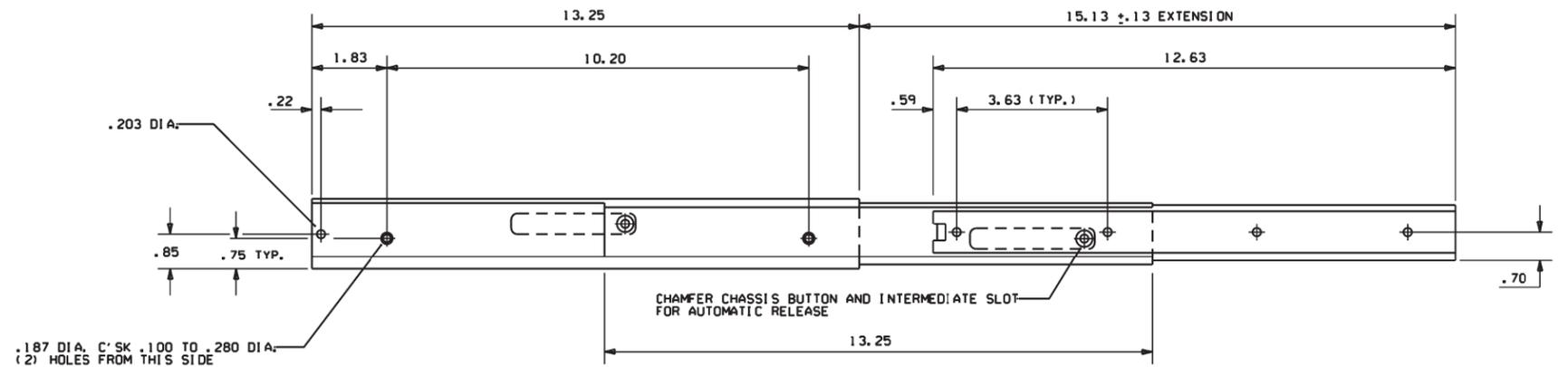
DRAWER PLAN VIEW



- NOTES:
 1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
 2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
 3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



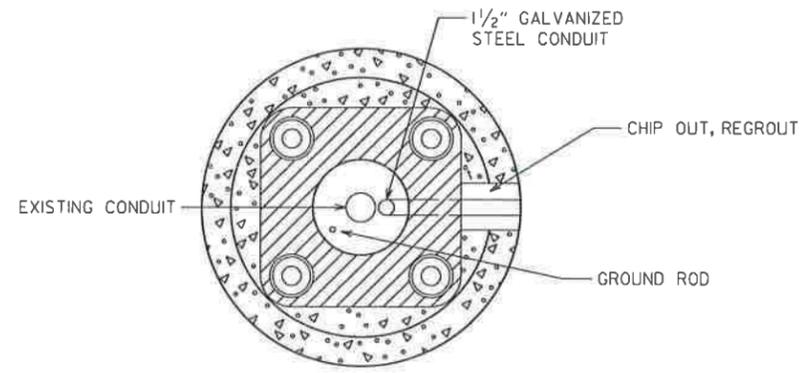
FRONT VIEW



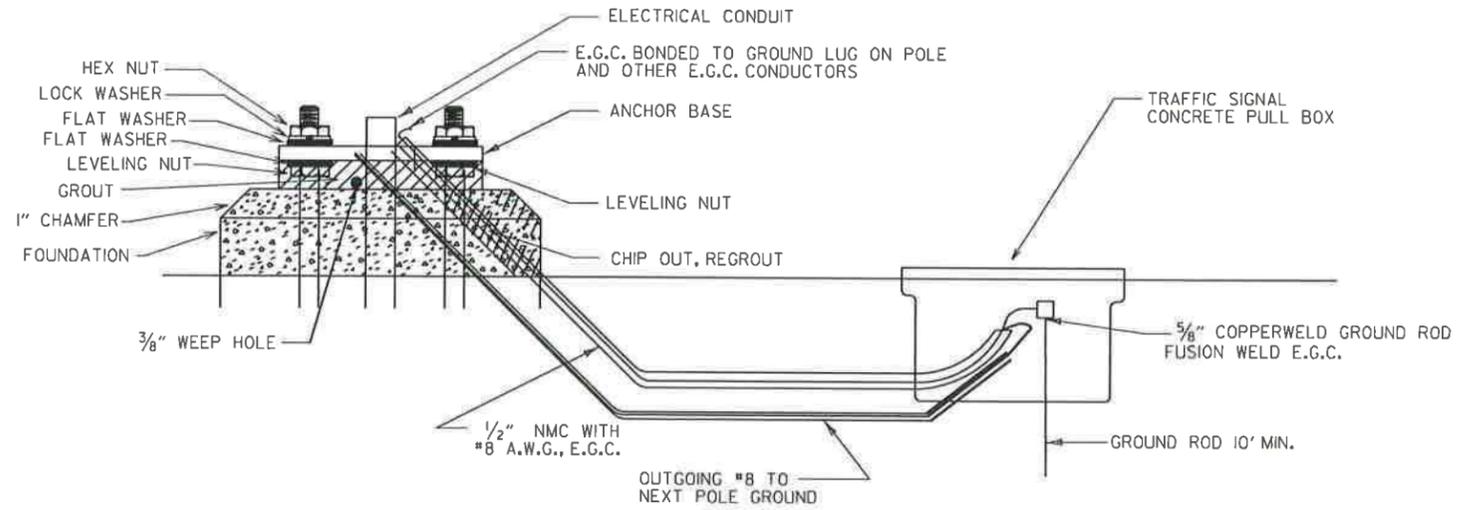
RIGHT SIDE ASSEMBLY

			ARKANSAS STATE HIGHWAY COMMISSION
			CONTROLLER CABINET UTILITY DRAWER
9-12-13	ISSUED AS STANDARD DRAWING		
6-15-05	ISSUED		
DATE	REVISION	DATE	FILM
			STANDARD DRAWING SD-5

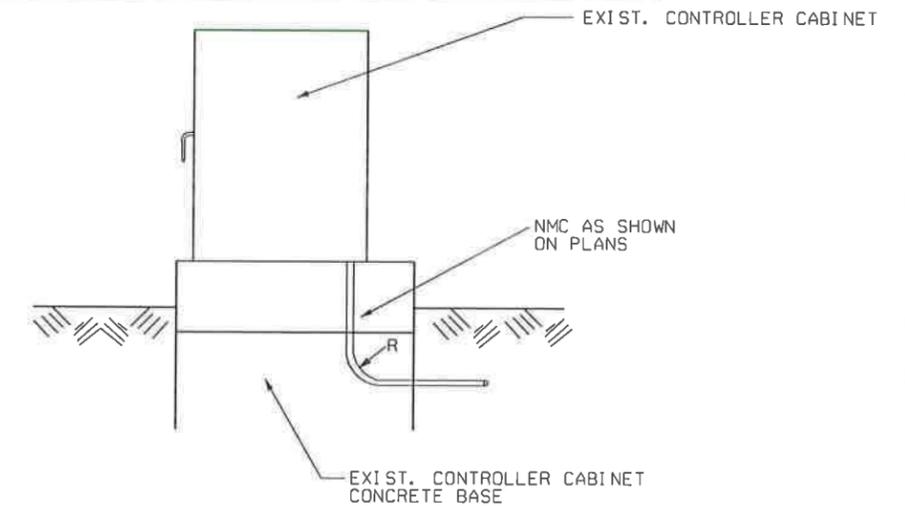
CONDUIT ENTRY TO EXISTING POLE BASE



ANCHOR BASE

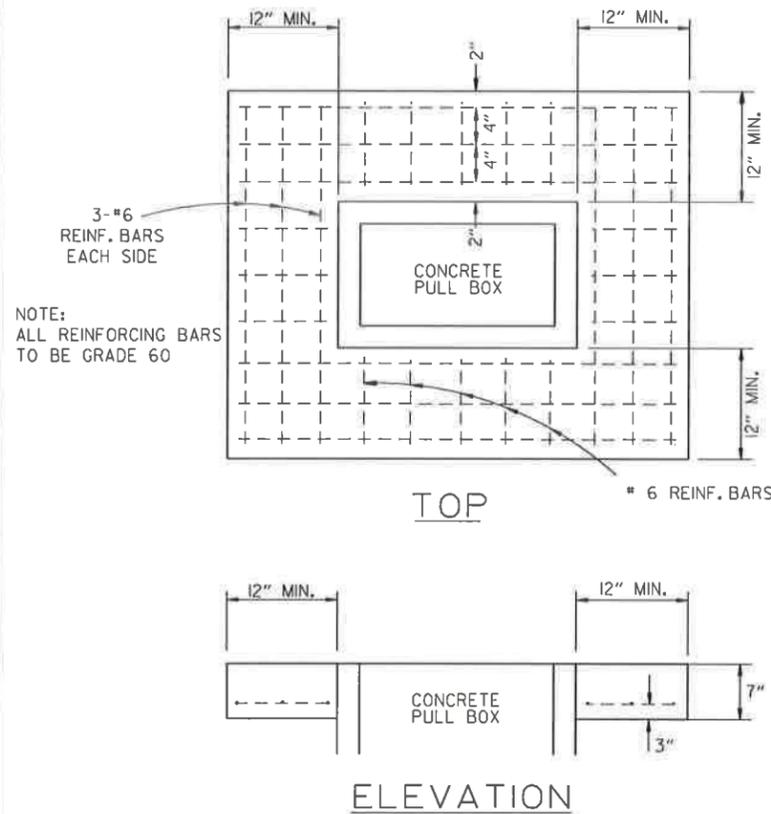
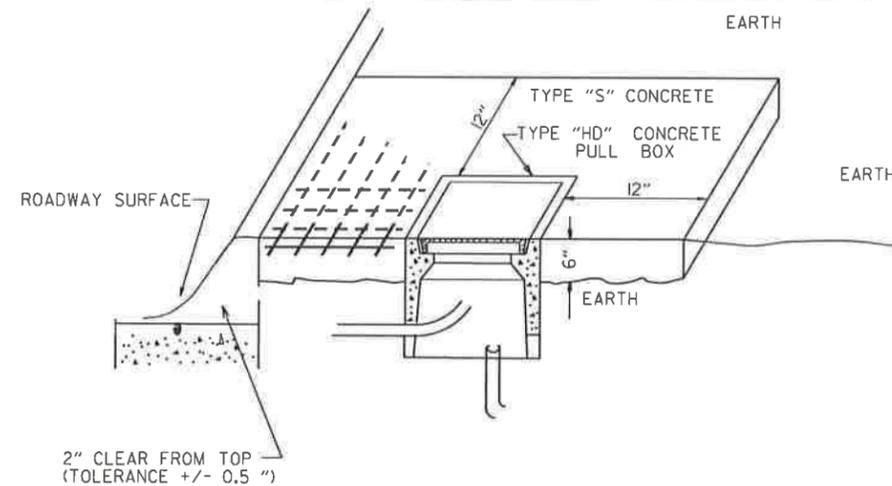


CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

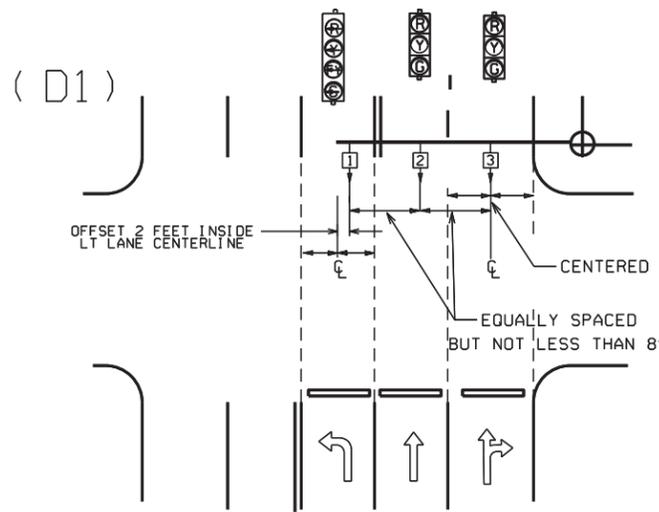
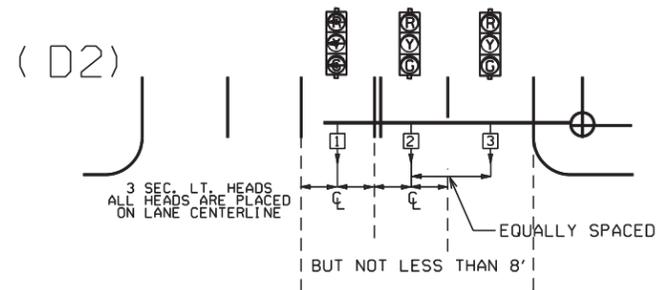
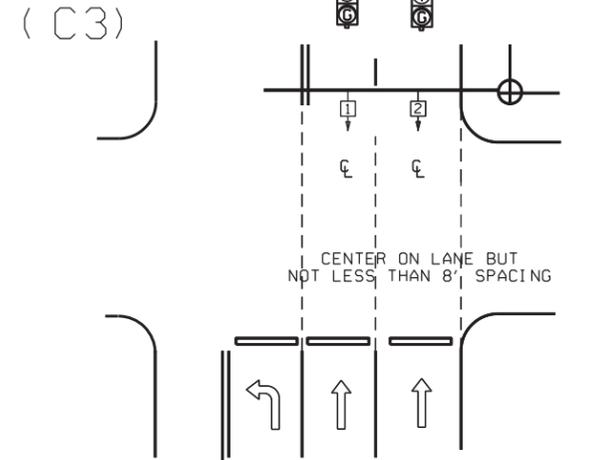
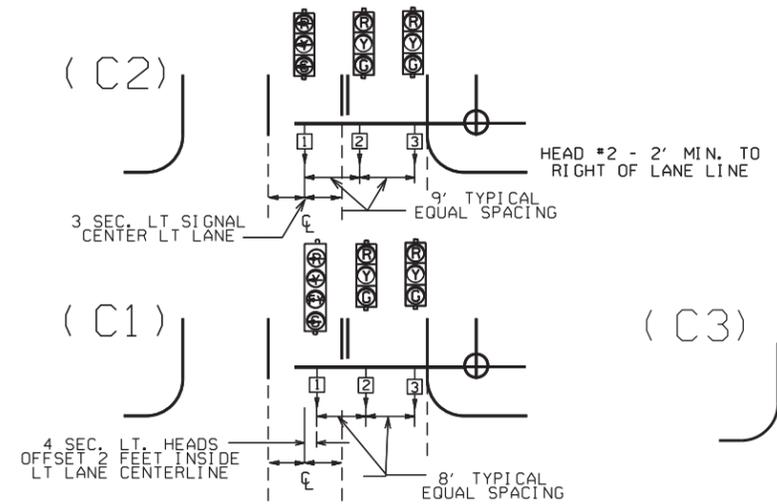
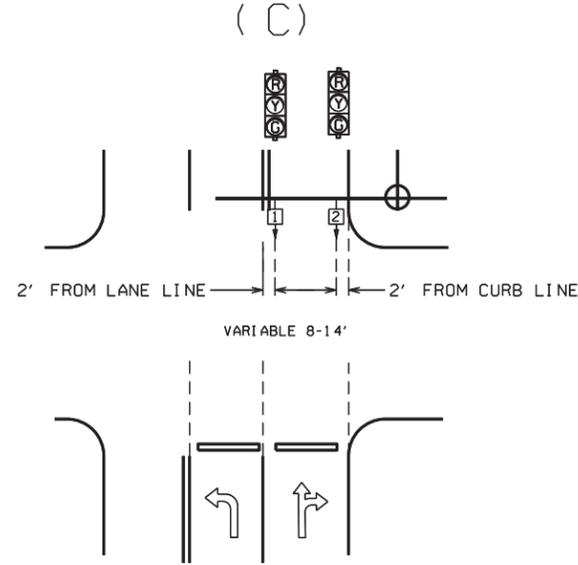
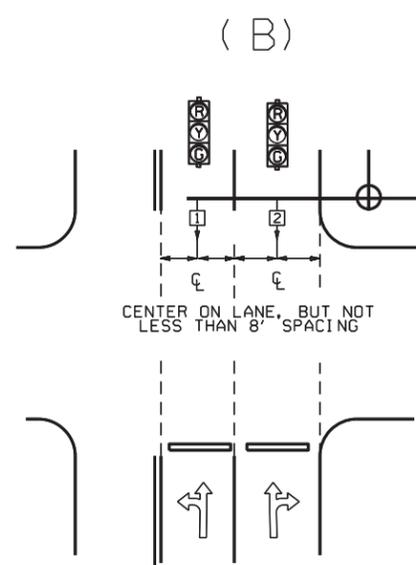
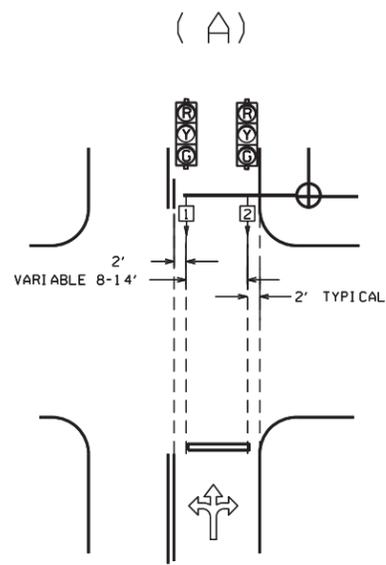
TYPE "HD" CONCRETE PULL BOX DETAIL



NOTE: ALL TYPE 1 AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

11-16-17	REVISED NOTES		
09-02-15	REVISED PULL BOX DEPTH		
09-12-13	ISSUED AS STANDARD DRAWING		
05-21-09	REVISED GROUNDING		
07-31-08	ADDED & REVISED CONDUIT ENTRY		
06-23-04	REVISED CLEARANCE AT CURB ENTRY		
01-04-02	ADDED REINFORCING TO BOX APRON		
07-02-01	REVISED		
12-27-99	REVISED NOTES		
11-18-98	ISSUED		
DATE	REVISION	FILMED	

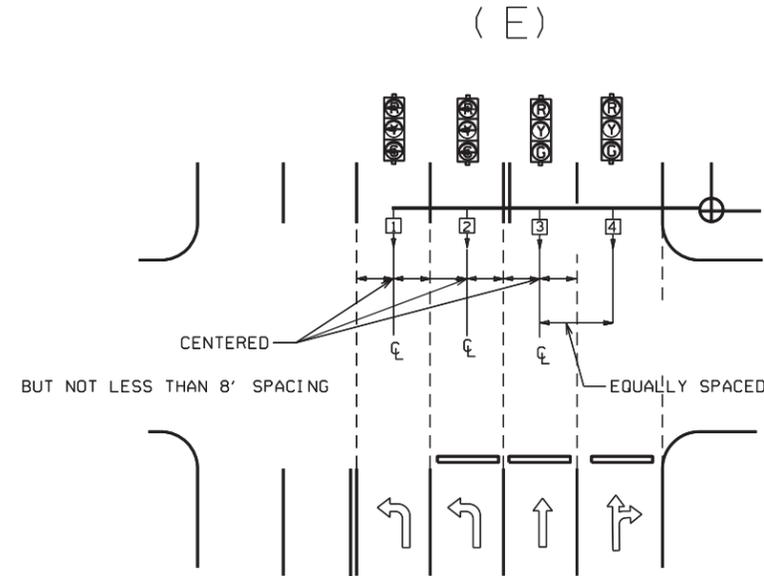
ARKANSAS STATE HIGHWAY COMMISSION
HEAVY DUTY PULL BOX
STANDARD DRAWING SD-6



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

GENERAL NOTES:

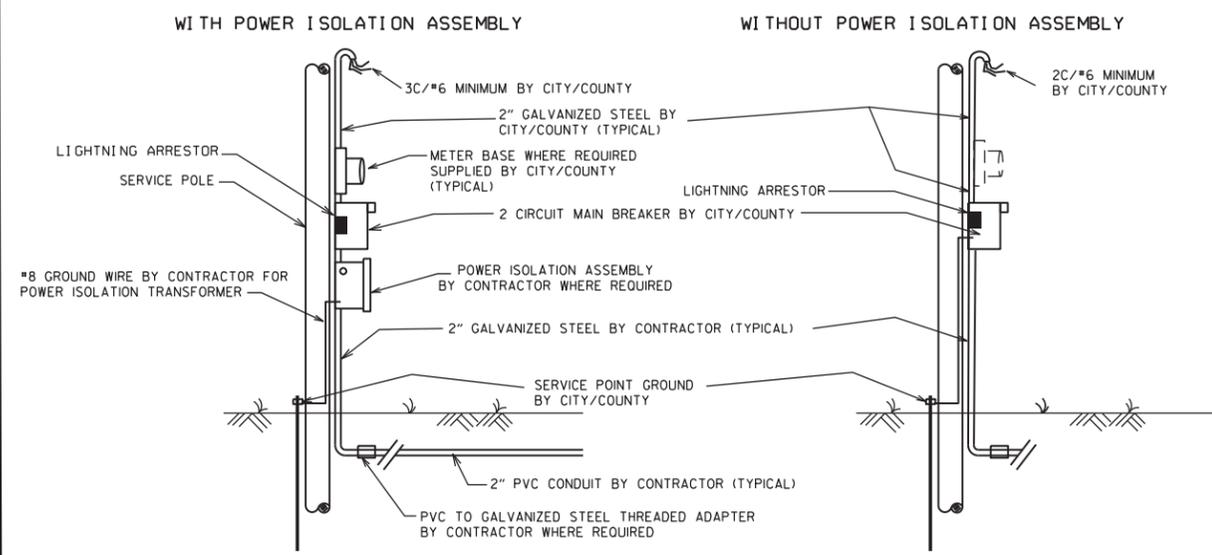
- FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.
- SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.
- ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.
- MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.



℄ = CENTER OF LANE FROM APPROACH SIDE

12-8-16	REVISED NOTE 6		ARKANSAS STATE HIGHWAY COMMISSION
9-12-13	ISSUED AS STANDARD DRAWING		SIGNAL HEAD PLACEMENT
3-11-10	2009 MUTCD		
12-9-99	ISSUED		STANDARD DRAWING SD-8
DATE	REVISION	DATE FILM	

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED



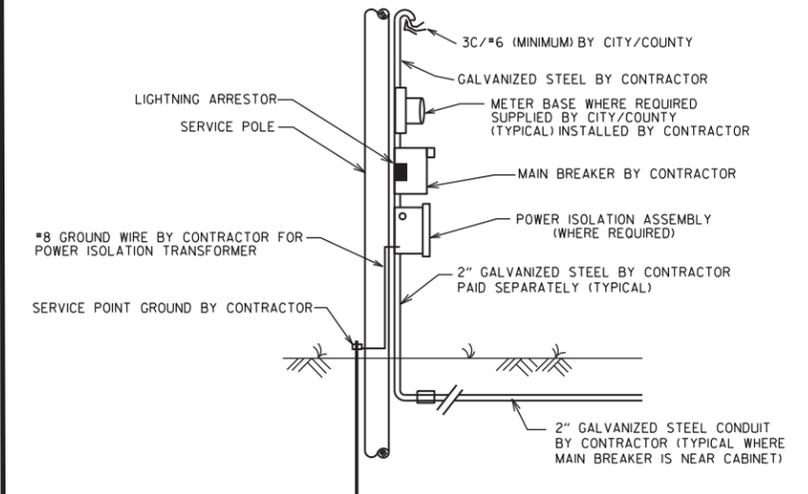
NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY):

ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

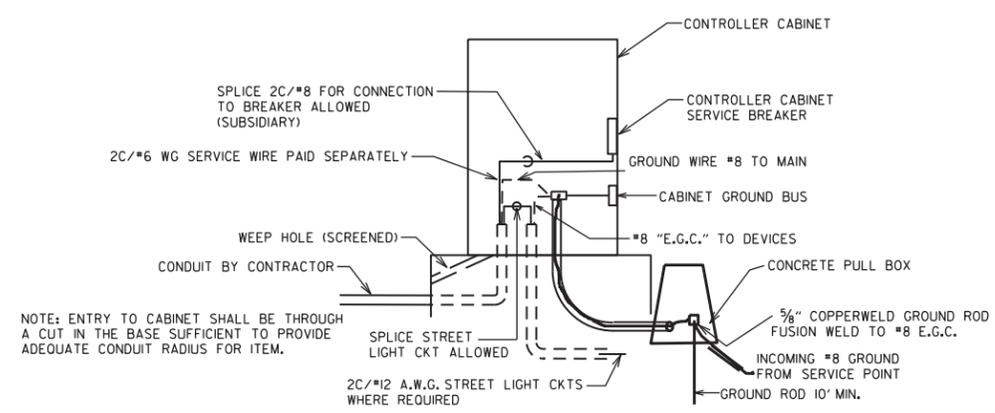
ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN-TIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY COMPANY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION STREET LIGHTING CIRCUIT (2C/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.



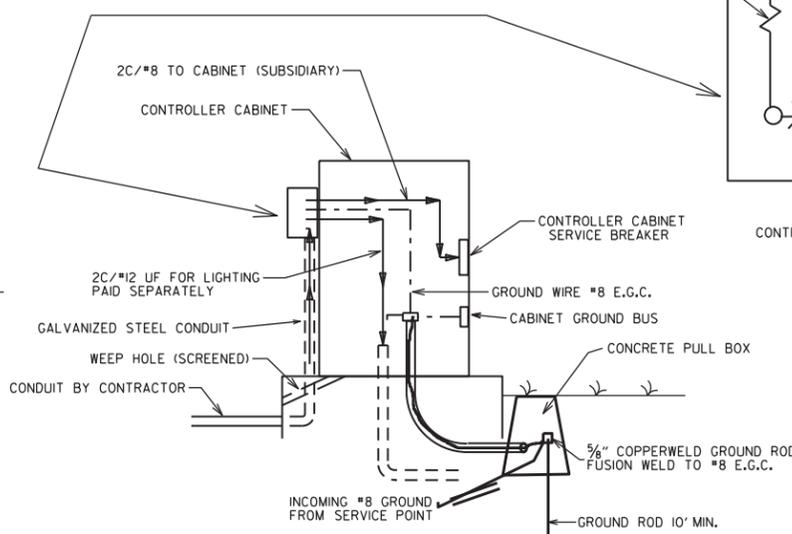
MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED



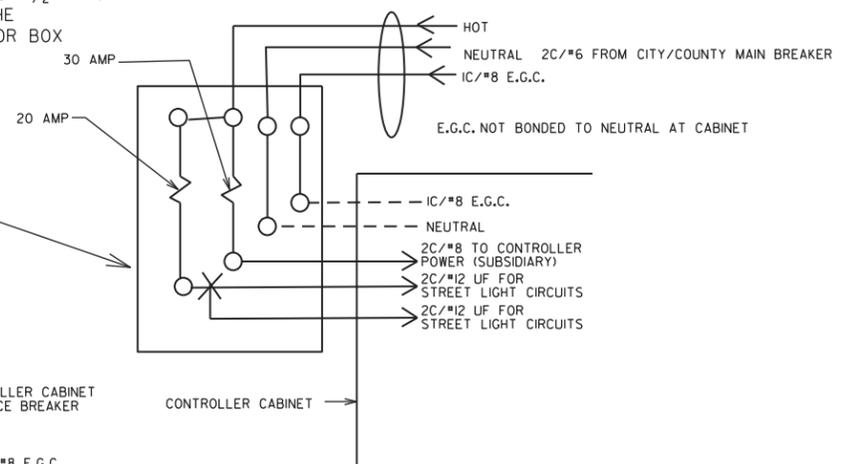
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



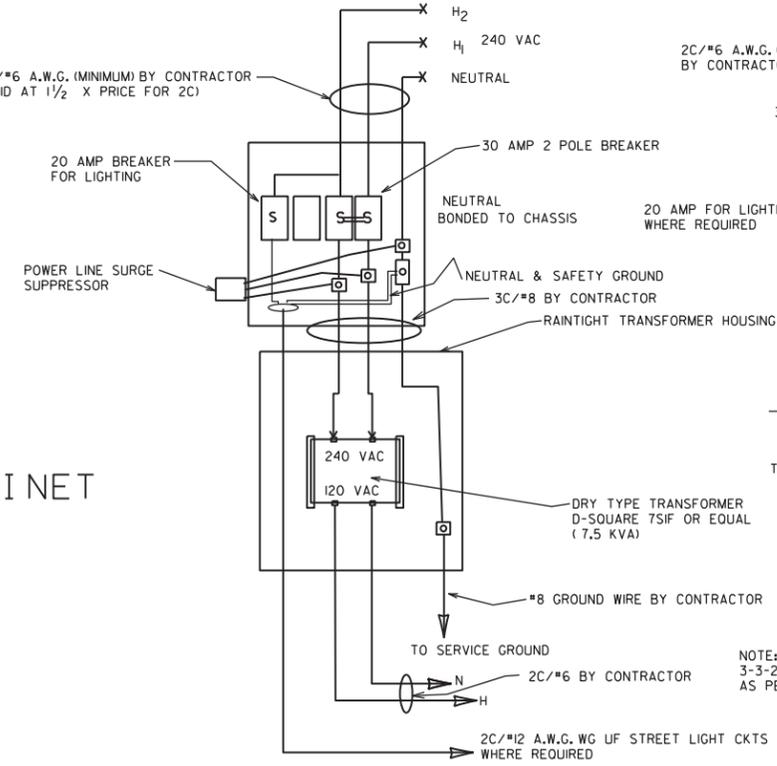
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



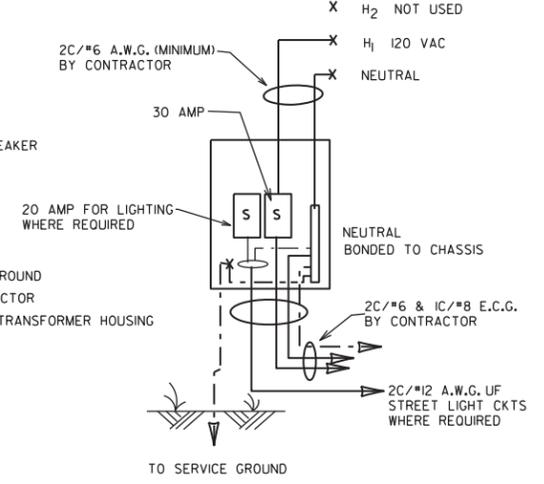
MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

WITH POWER ISOLATION ASSEMBLY 4 CIRCUIT MAIN BREAKER



WITHOUT POWER ISOLATION ASSEMBLY 2 CIRCUIT MAIN BREAKER



DATE	REVISION	FILMED
11-07-19	REVISED	
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
04-18-13	ADDED LIGHTNING ARRESTOR	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
03-03-03	ADDED EGC NOTE	
09-26-01	REVISED	
12-27-99	REVISED	
07-28-99	REVISED	
02-05-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
SERVICE POINT
STANDARD DRAWING SD-9

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		35 MPH		40 MPH		45 MPH		50 MPH		55 MPH		60 MPH		65 MPH		70 MPH		75 MPH		
	e	Ls (FT)																			
	MINIMUM	DESIRABLE																			
0° 15'	NC		NC																		
0° 30'	NC		NC																		
0° 45'	NC		NC		NC		NC		RC	96		RC	96	0.024	106		RC	96	0.030	120	
1° 00'	NC		NC		NC		RC	90	0.022	101		0.026	110	0.030	120		0.034	130	0.038	139	
1° 15'	NC		NC		RC	84	0.022	95	0.028	115		0.032	125	0.038	139		0.042	149	0.046	158	300
1° 30'	NC		RC	78	0.022	88	0.028	108	0.032	125		0.038	139	0.044	154		0.050	168	0.056	182	300
1° 45'	RC	72	RC	78	0.026	97	0.030	113	0.036	134		0.044	154	0.050	168		0.056	182	0.064	202	300
2° 00'	RC	72	0.024	86	0.028	101	0.034	122	0.042	149		0.048	163	0.056	182		0.064	202	0.070	216	300
2° 15'	RC	72	0.026	90	0.032	109	0.038	131	0.046	158		0.054	178	0.062	197		0.070	216	0.078	235	350
2° 30'	0.022	75	0.028	94	0.034	113	0.042	140	0.050	168		0.058	187	0.068	211		0.076	230	0.086	254	350
2° 45'	0.024	79	0.030	98	0.038	122	0.046	149	0.054	178		0.064	202	0.072	221		0.082	245	0.092	269	350
3° 00'	0.026	83	0.034	105	0.040	126	0.050	158	0.058	187		0.068	211	0.078	235		0.088	259	0.098	283	350
3° 15'	0.028	86	0.036	109	0.044	134	0.052	162	0.062	197		0.072	221	0.082	245		0.092	269	0.100	288	350
3° 30'	0.030	90	0.038	113	0.046	139	0.056	171	0.066	206		0.076	230	0.086	254		0.096	278	0.100	288	350
3° 45'	0.032	93	0.040	117	0.050	147	0.058	176	0.070	203		0.080	240	0.090	264		0.098	283	0.100	288	350
4° 00'	0.034	97	0.042	121	0.052	151	0.062	185	0.072	221		0.084	250	0.094	274		0.098	283	0.100	288	350
4° 15'	0.036	100	0.044	125	0.054	155	0.064	189	0.076	230		0.088	259	0.098	283		0.098	283	0.100	288	350
4° 30'	0.036	100	0.046	129	0.056	160	0.068	198	0.078	235		0.090	264	0.098	283		0.098	283	0.100	288	350
4° 45'	0.038	104	0.048	133	0.060	168	0.070	203	0.082	245		0.092	269	0.098	283		0.098	283	0.100	288	350
5° 00'	0.040	108	0.050	137	0.062	172	0.072	207	0.084	250		0.094	274	0.098	283		0.098	283	0.100	288	350
5° 30'	0.044	115	0.054	144	0.066	181	0.078	221	0.088	259		0.098	283	0.098	283		0.098	283	0.100	288	350
6° 00'	0.046	119	0.058	152	0.070	189	0.082	230	0.092	269		0.100	288	0.100	288		0.100	288	0.100	288	350
6° 30'	0.050	126	0.062	160	0.074	198	0.086	239	0.096	278		0.096	278	0.096	278		0.096	278	0.100	288	350
7° 00'	0.052	130	0.064	164	0.078	206	0.090	248	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
7° 30'	0.054	133	0.068	172	0.080	210	0.092	252	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
8° 00'	0.058	140	0.070	176	0.084	219	0.094	257	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
8° 30'	0.060	144	0.072	179	0.086	223	0.096	261	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
9° 00'	0.062	148	0.076	187	0.088	227	0.098	266	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
9° 30'	0.064	151	0.078	191	0.092	235	0.098	270	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
10° 00'	0.066	155	0.080	195	0.094	240	0.098	274	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
11° 00'	0.070	162	0.084	203	0.096	244	0.098	278	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
12° 00'	0.074	169	0.088	211	0.098	248	0.098	283	0.098	283		0.098	283	0.098	283		0.098	283	0.100	288	350
13° 00'	0.076	173	0.090	215	0.100	252	0.100	252	0.100	252		0.100	252	0.100	252		0.100	252	0.100	252	350
14° 00'	0.080	180	0.094	222	0.094	222	0.094	222	0.094	222		0.094	222	0.094	222		0.094	222	0.094	222	350
15° 00'	0.082	184	0.096	226	0.096	226	0.096	226	0.096	226		0.096	226	0.096	226		0.096	226	0.096	226	350
16° 00'	0.086	191	0.098	230	0.098	230	0.098	230	0.098	230		0.098	230	0.098	230		0.098	230	0.098	230	350
17° 00'	0.088	194	0.100	234	0.100	234	0.100	234	0.100	234		0.100	234	0.100	234		0.100	234	0.100	234	350
18° 00'	0.090	198	0.100	238	0.100	238	0.100	238	0.100	238		0.100	238	0.100	238		0.100	238	0.100	238	350
19° 00'	0.092	202	0.100	242	0.100	242	0.100	242	0.100	242		0.100	242	0.100	242		0.100	242	0.100	242	350
20° 00'	0.094	205	0.100	246	0.100	246	0.100	246	0.100	246		0.100	246	0.100	246		0.100	246	0.100	246	350
21° 00'	0.096	209	0.100	250	0.100	250	0.100	250	0.100	250		0.100	250	0.100	250		0.100	250	0.100	250	350
22° 00'	0.096	209	0.100	250	0.100	250	0.100	250	0.100	250		0.100	250	0.100	250		0.100	250	0.100	250	350
23° 00'	0.098	212	0.100	254	0.100	254	0.100	254	0.100	254		0.100	254	0.100	254		0.100	254	0.100	254	350
24° 00'	0.098	212	0.100	254	0.100	254	0.100	254	0.100	254		0.100	254	0.100	254		0.100	254	0.100	254	350
25° 00'	0.100	216	0.100	258	0.100	258	0.100	258	0.100	258		0.100	258	0.100	258		0.100	258	0.100	258	350

ABBREVIATIONS

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

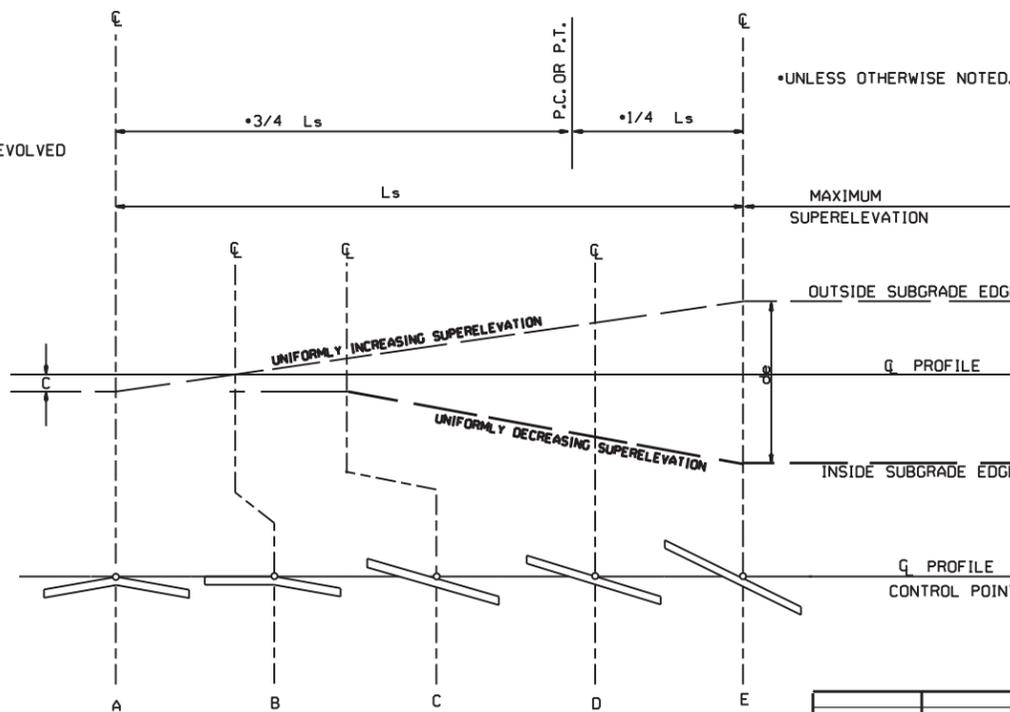
GENERAL NOTES

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

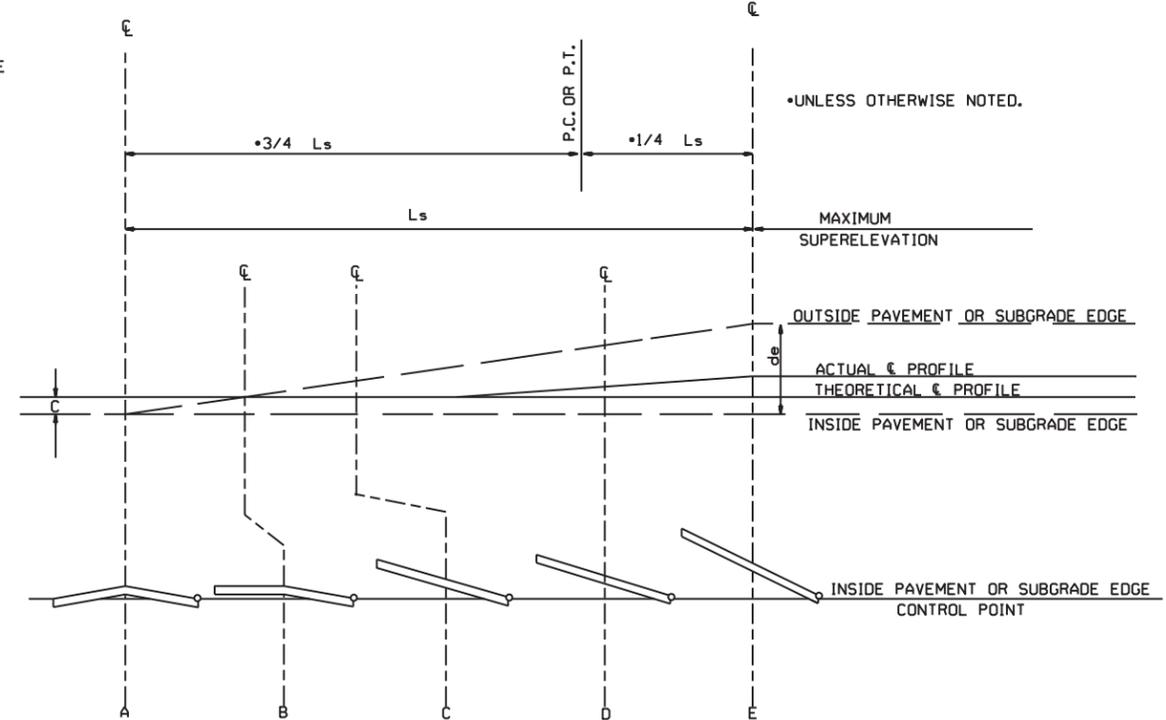
- 3 LANE UNDIVIDED - - - - - +20%
- 4 LANE UNDIVIDED - - - - - +50%
- 5 LANE UNDIVIDED - - - - - +80%
- 6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

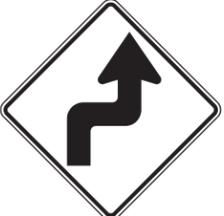
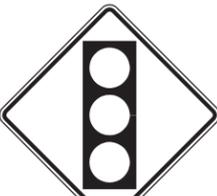
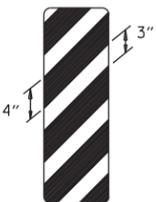
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

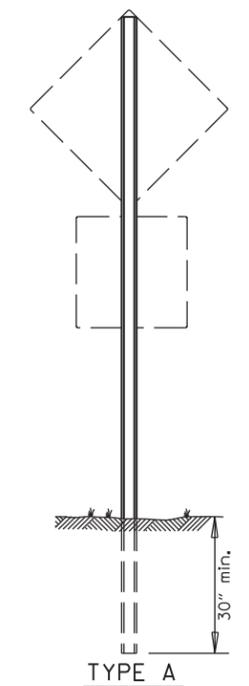
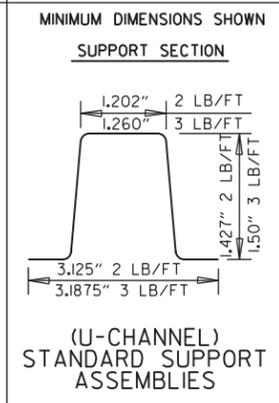
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

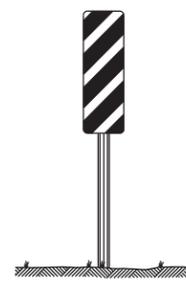
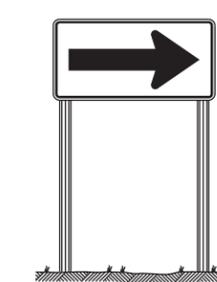
STANDARD DRAWING SE-2

11-07-19	REVISED SUPERELEVATION TABLE		
10-18-96	ADDED FORMULA		
01-09-87	ISSUED	534-1-9-87	
DATE	REVISION	DATE FILLED	

 RI-1 30"x30"	 W1-3 30"x30" (LT. OR RT.)	 W1-8 18"x24"	 W2-5 30"x30"	 W3-1 36"x36"	 W5-1 36"x36"	 M6-3 21"x15"
 RI-2 36"x36"x36"	 W1-4 30"x30" (LT. OR RT.)	 W2-1 30"x30"	 SI-1 36"x36"	 W3-2 36"x36"	 LASSEN 16 COUNTY County Route Marker MI-6 24"x24"	 M6-4 21"x15"
 R2-1 24"x30"	 W1-5 30"x30" (LT. OR RT.)	 W2-2 30"x30"	 NARROW BRIDGE W5-2 36"x36"	 PAVEMENT ENDS W8-3 36"x36"	NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.	 RI-3P 18"x6"
 W1-1 30"x30" (LT. OR RT.)	 W1-6 48"x24"	 W2-3 30"x30" (LT. OR RT.)	 ONE LANE BRIDGE W5-3 36"x36"	 35 M.P.H. W13-IP 18"x18"	 M6-1 21"x15"	 M6-6 21"x15"
 W1-2 30"x30" (LT. OR RT.)	 W1-7 48"x24"	 W2-4 30"x30"	 R X R W10-1 36" DIAMETER	 W3-3 36"x36"	 M6-2 21"x15"	 SCHOOL S4-3P 24"x8"
						 WHEN CHILDREN ARE PRESENT S4-2P 24"x10"
						 OM-3 12"x36" (LT. OR RT.)



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

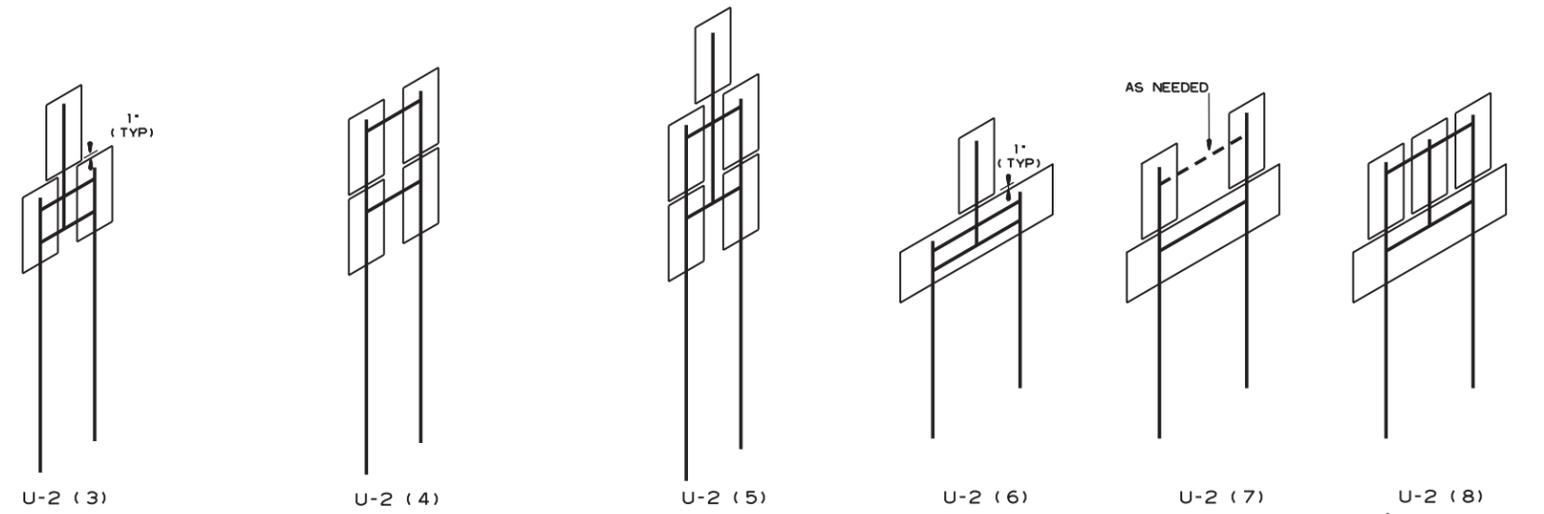
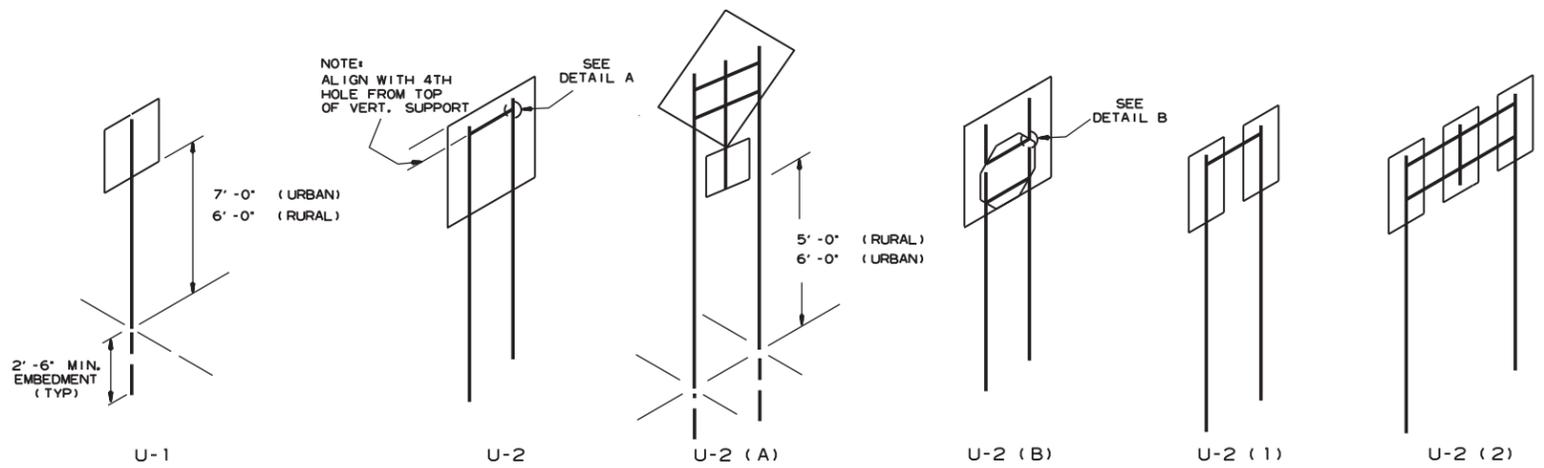


MINIMUM WEIGHT
TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

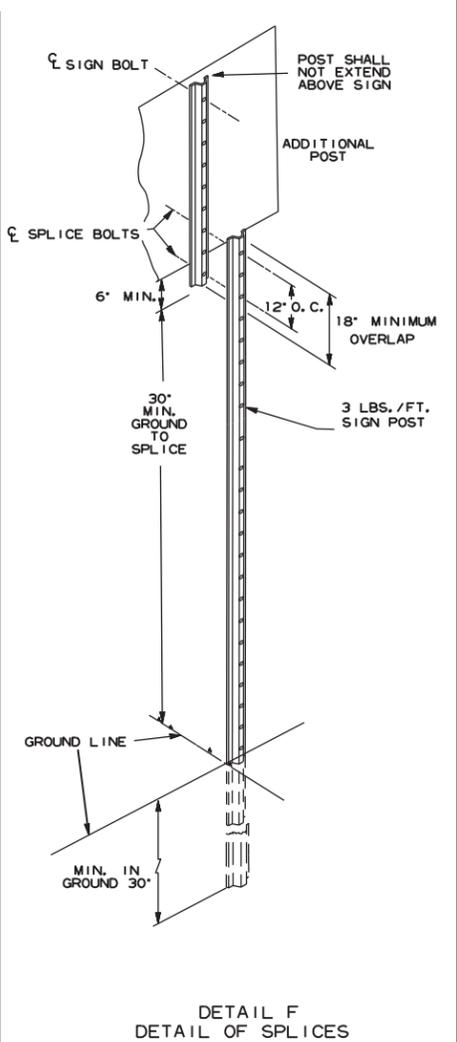
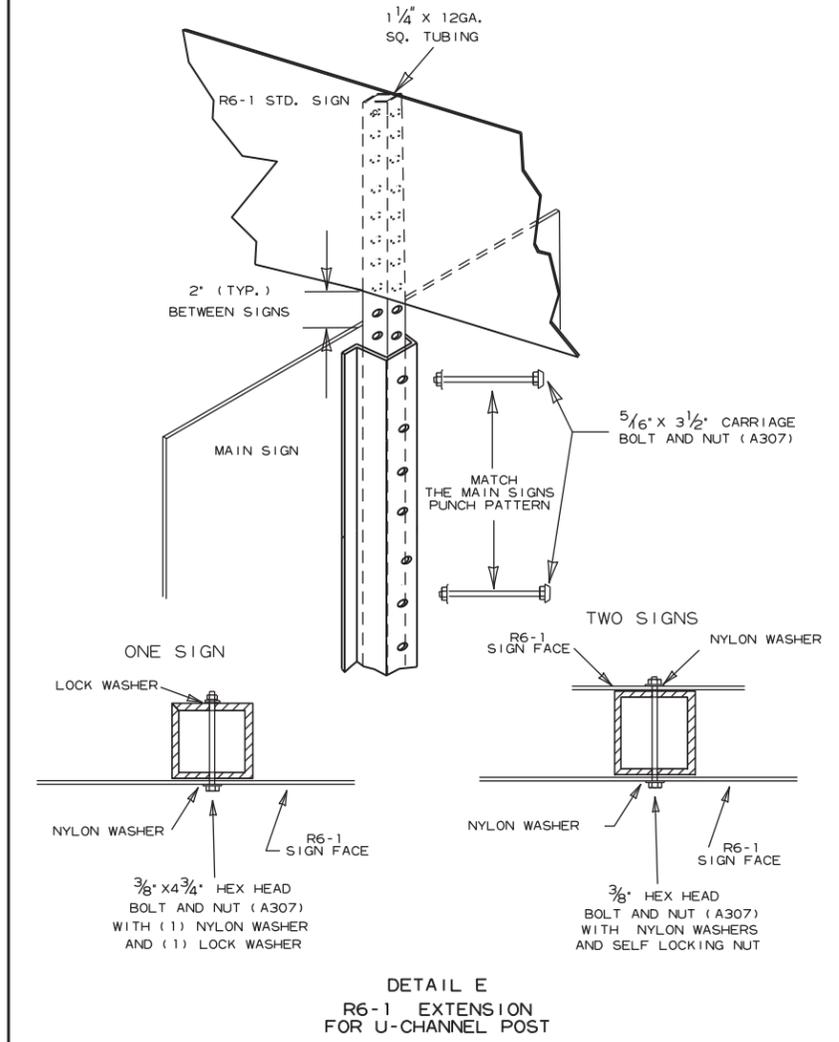
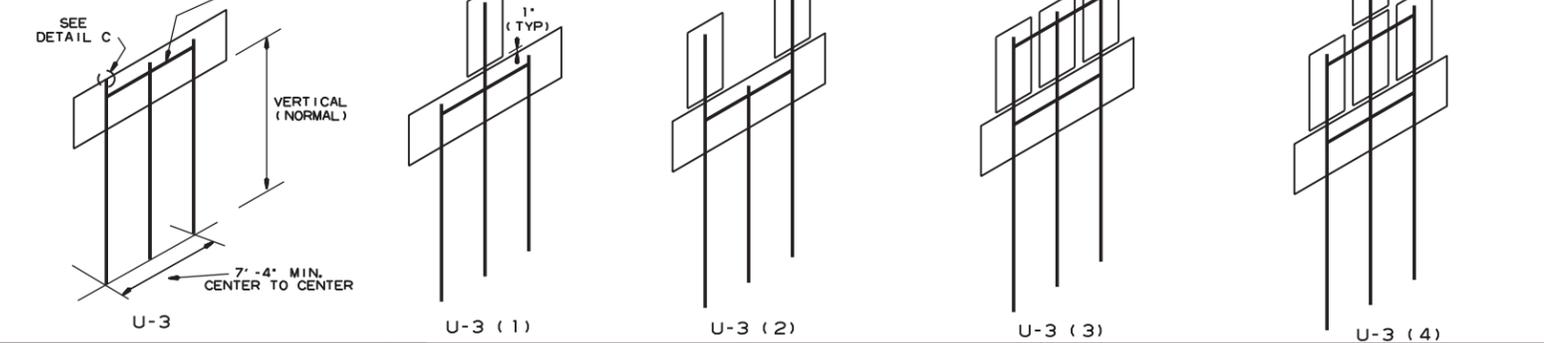
STANDARD HIGHWAY SIGNS

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 W1-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W1-3	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



HORIZONTAL BRACE (FOR ALL MULTIPLE POST ASSEM. WITH FLAT SHEET SIGNS)



NOTES:

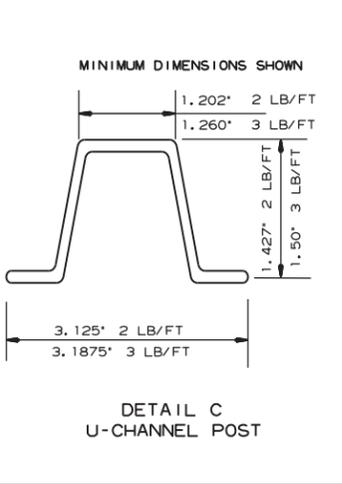
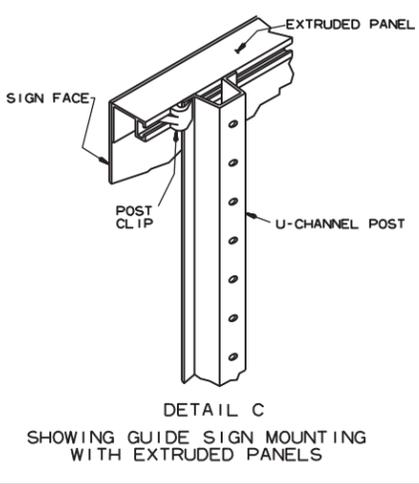
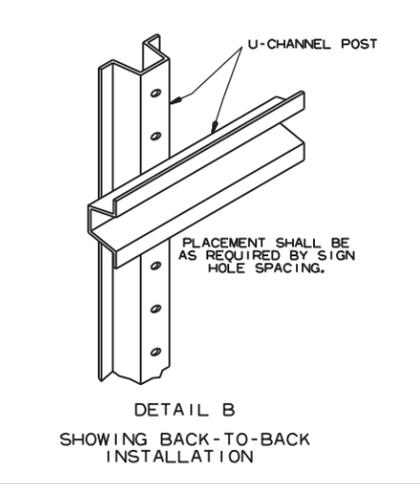
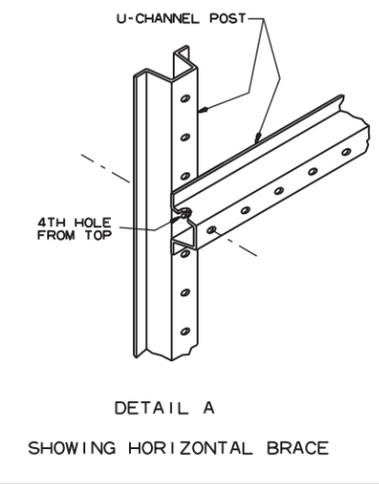
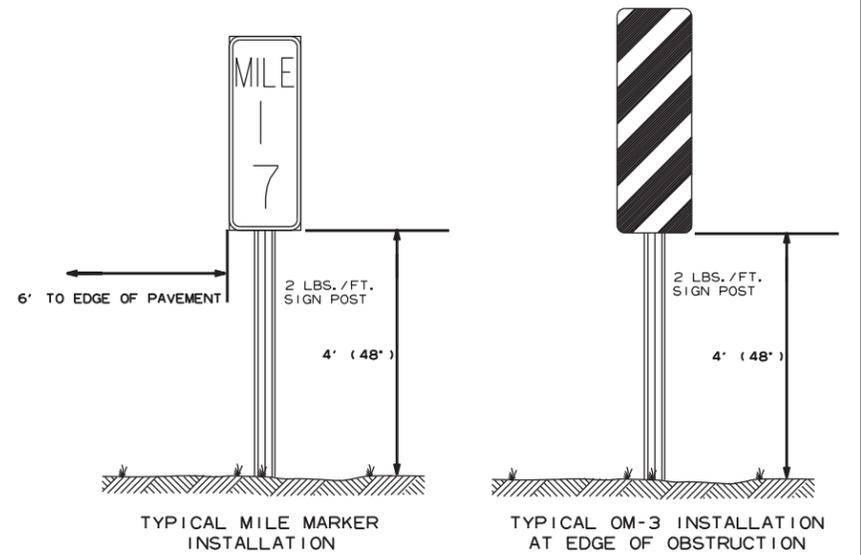
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

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.

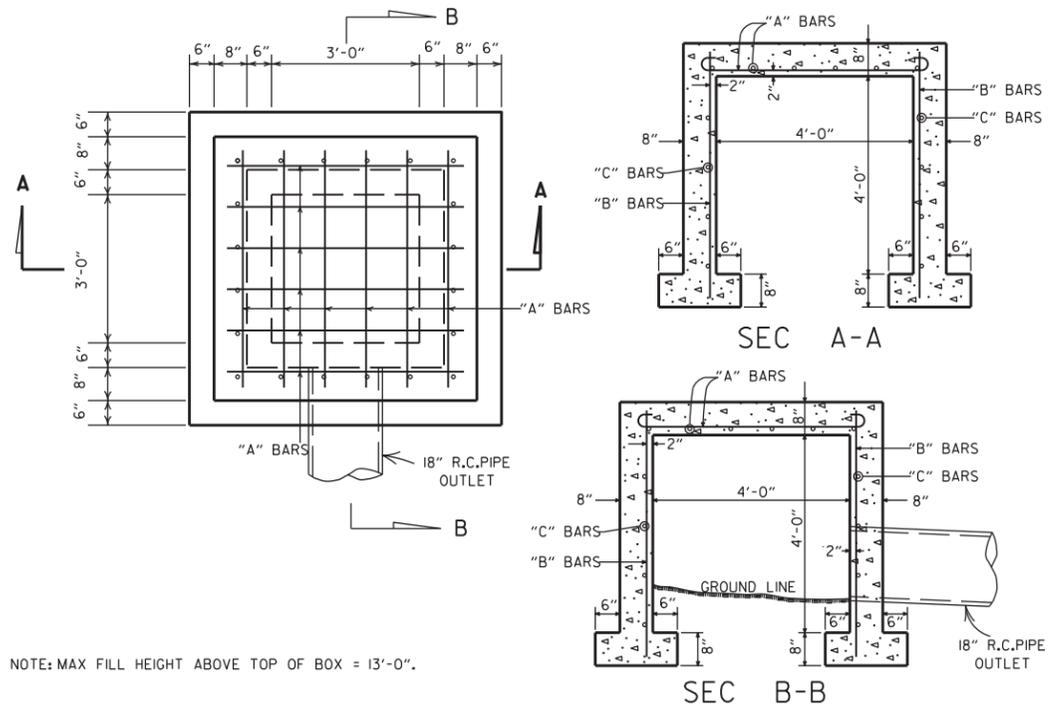


7-25-19	REVISED CARRIAGE BOLT WITH MATERIAL REQUIREMENT	
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN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

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

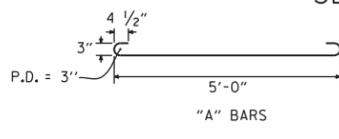
STANDARD DRAWING SHS-2



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

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

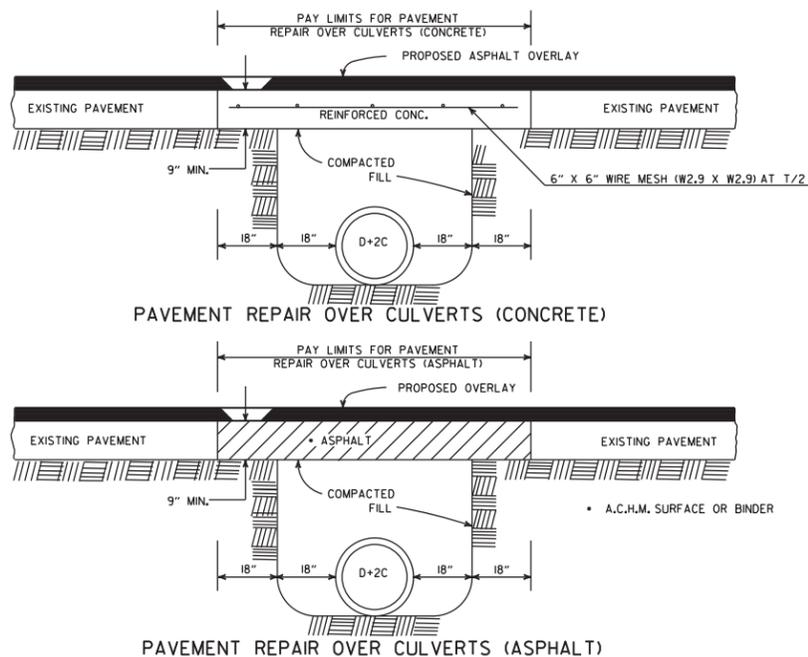
ALL STEEL TO BE #4 BARS



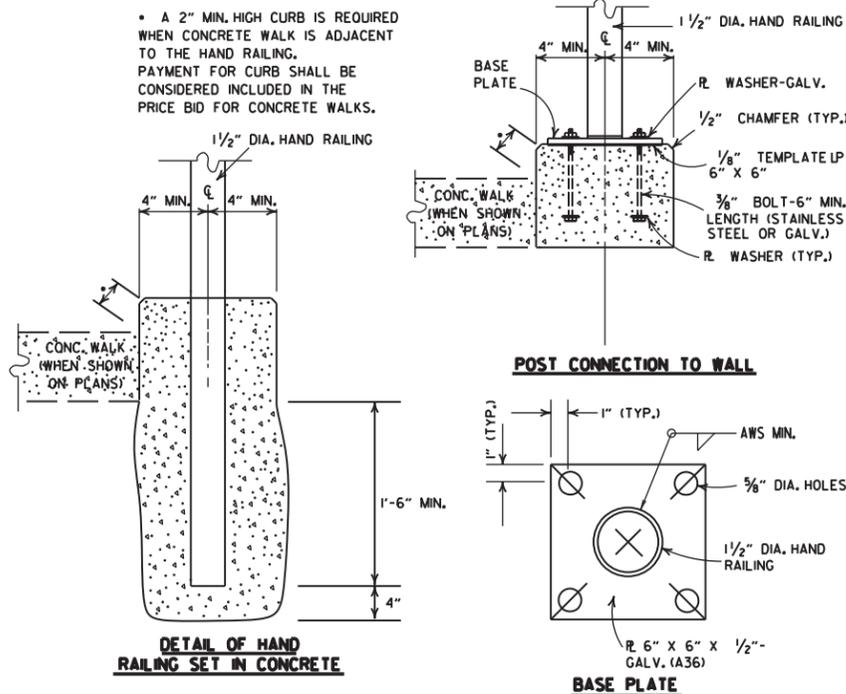
QUANTITIES
CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

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.

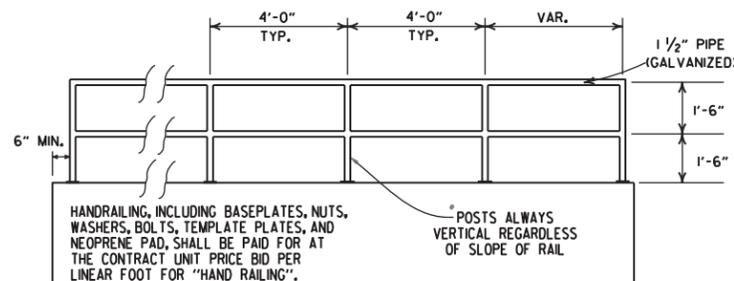
REINFORCED CONCRETE SPRING BOX



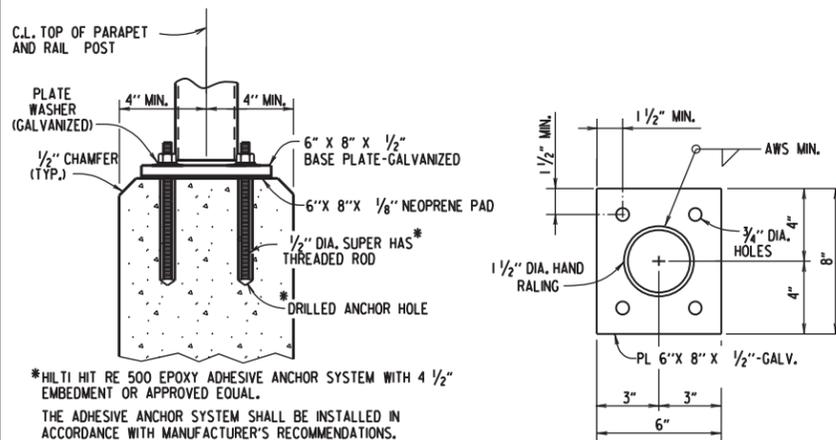
DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS



POST CONNECTION DETAILS



HAND RAILING SHALL CONFORM TO SECTION 633.

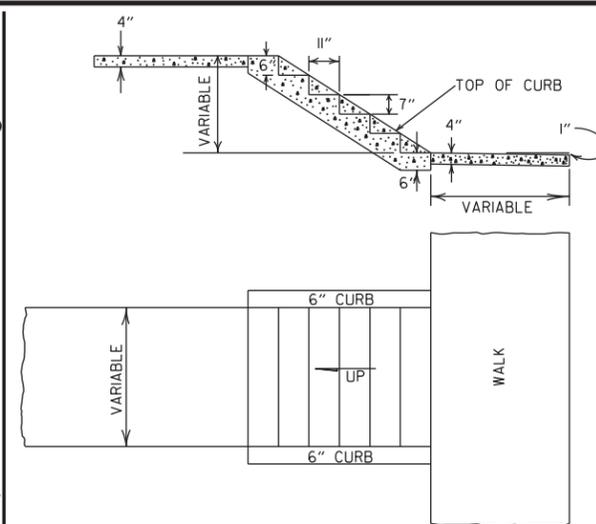


POST CONNECTION TO WALL

BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



DETAILS OF CONCRETE STEPS & WALKS

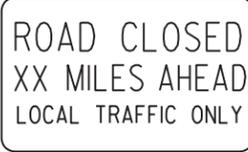
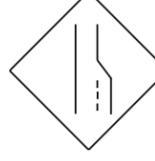
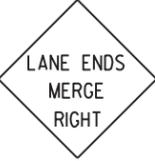
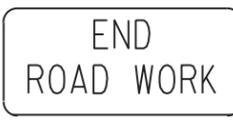
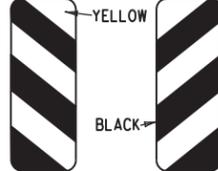
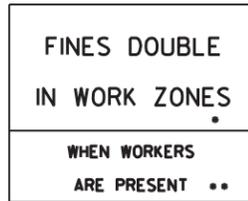
GENERAL NOTES
1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DATE	REVISION	DATE FILMED
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
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
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	8-15-91
8-15-91	DELETED HDWL MODIFICATION DETAIL	11-8-90
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-30-89
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	665-11-17-88
11-17-88	V. BARS BEHIND ARROW	649-7-15-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	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	REM. 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

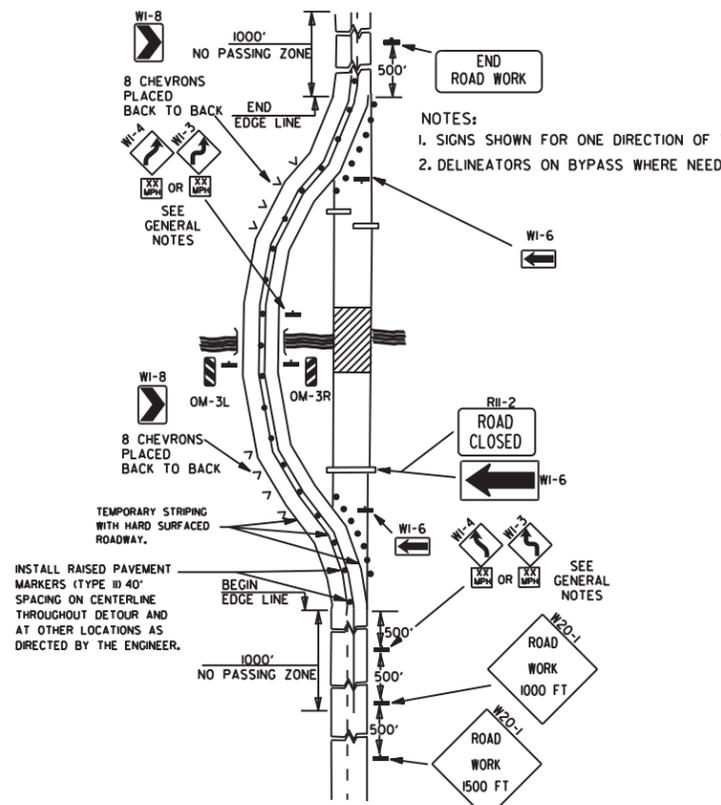
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

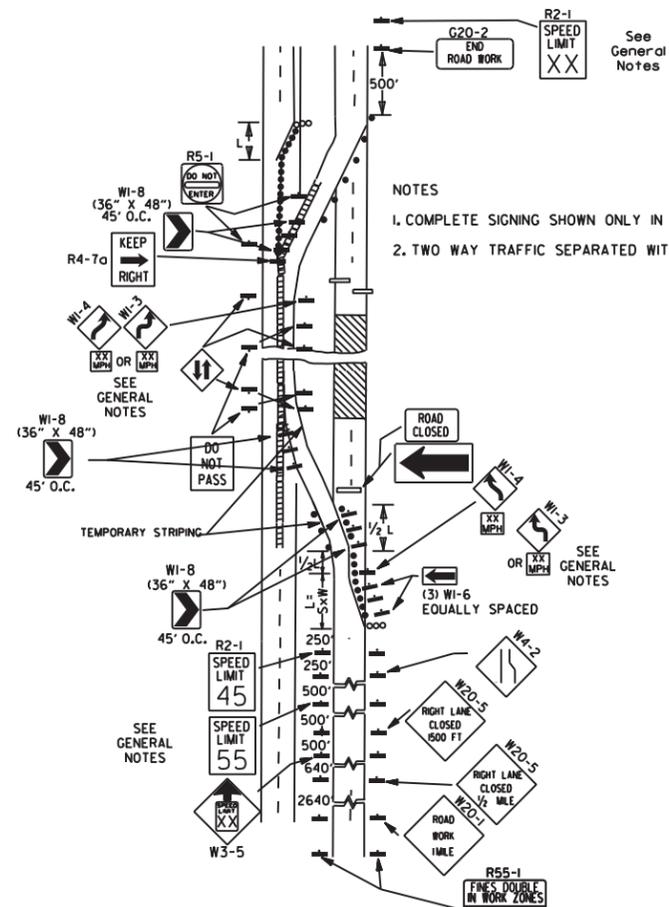
STANDARD DRAWING SI - 1

							ADVANCE DISTANCES (XXXX)
<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>500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD</p> <p>GENERAL NOTES:</p> <ol style="list-style-type: none"> 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. 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. 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. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SO. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE. 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. 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. 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. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS. 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. 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. <p>NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.</p>
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>W21-5a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>18" 500 FEET W16-2 24"</p> <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

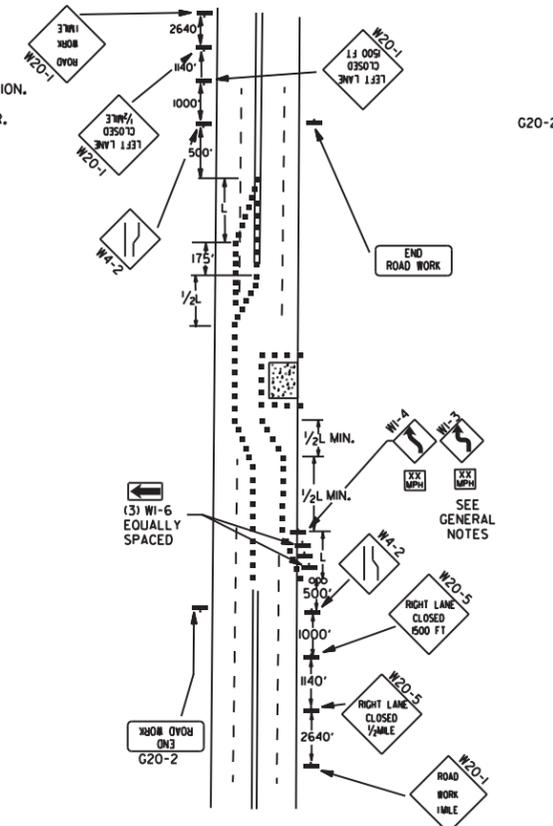
DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN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



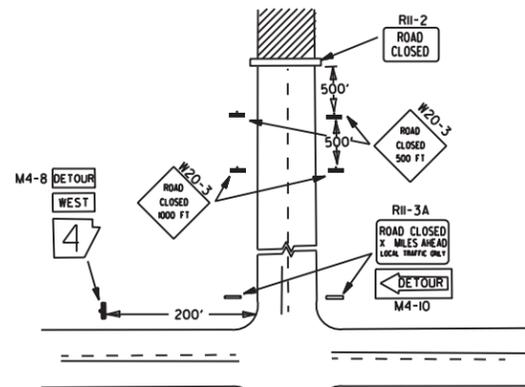
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



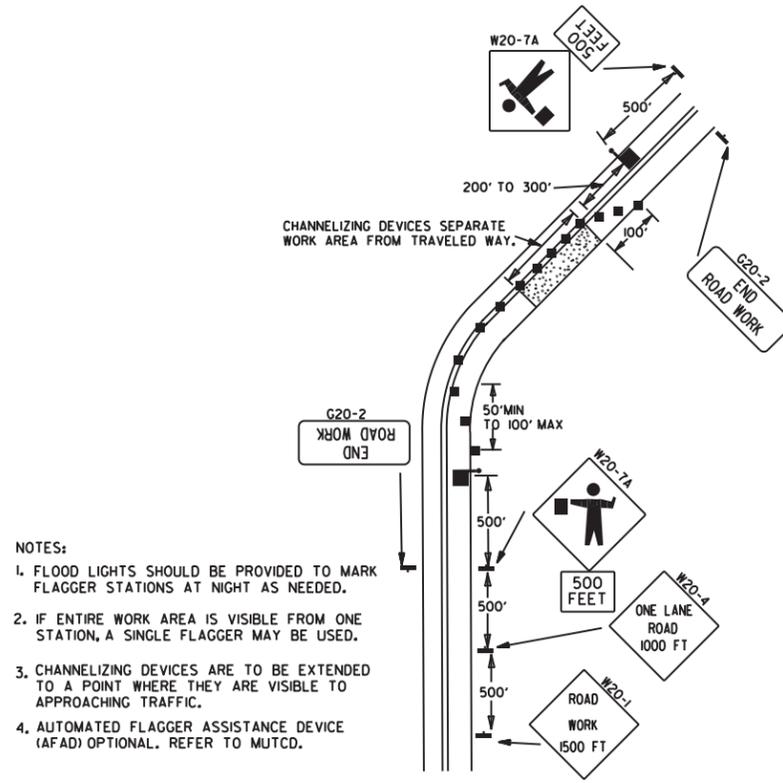
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



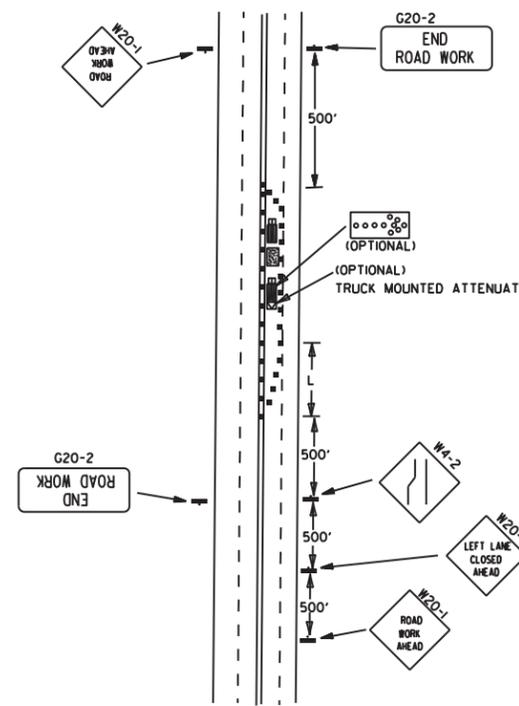
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

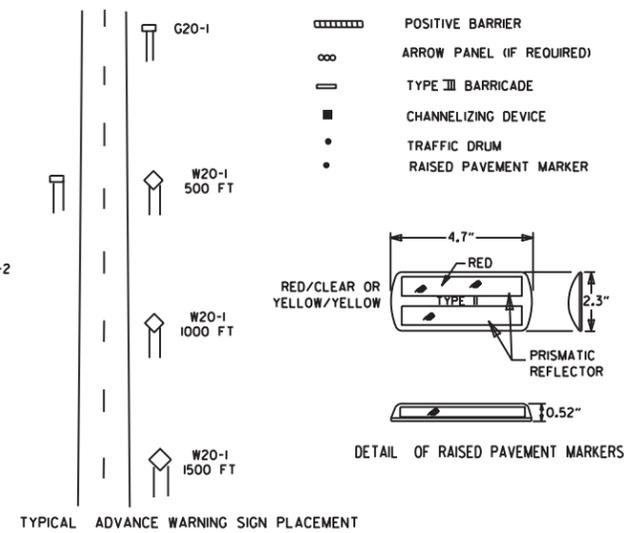


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

- KEY:
- FLAGGER
 - POSITIVE BARRIER
 - ARROW PANEL (IF REQUIRED)
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM
 - RAISED PAVEMENT MARKER



TAPER FORMULAE:
 $L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W = WIDTH OF OFFSET.

- GENERAL NOTES:
- THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
 - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(K51) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45MPH) SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(KXX) 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 R2-1(K45) SHALL BE OMITTED. ADDITIONAL R2-1(55MPH) SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(KXX) 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 ADOPTED QUALIFIED PRODUCTS LIST.
 - ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

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

TRAFFIC CONTROL DEVICES

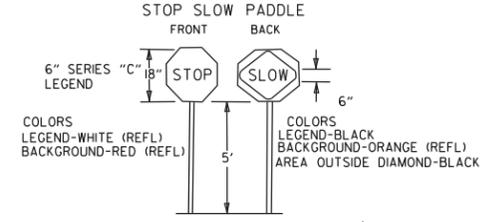
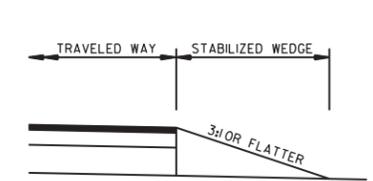
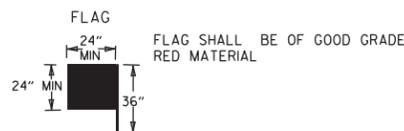
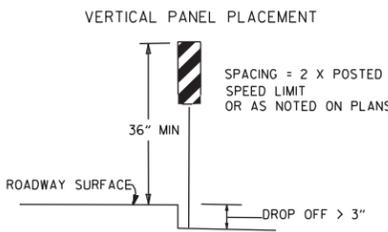
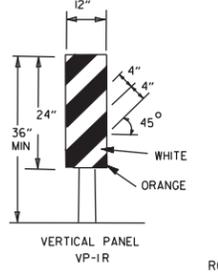
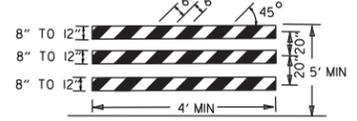
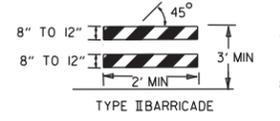
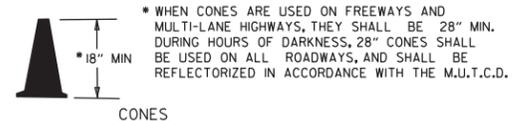
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽²⁾
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS ⁽³⁾
> 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS ⁽³⁾
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER ⁽⁴⁾ & EDGE LINES	PRECAST CONCRETE BARRIER ⁽⁴⁾ & EDGE LINES

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

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

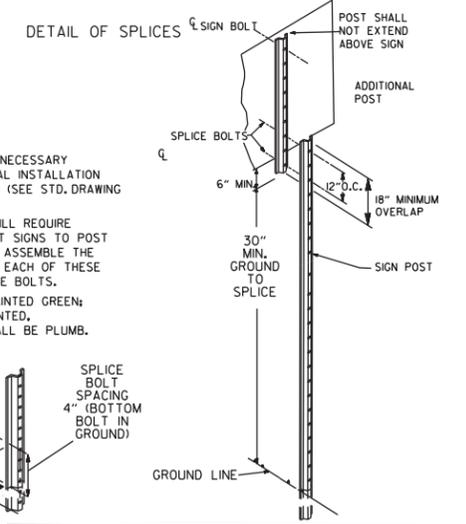
- GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
 2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED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

CHANNELIZING DEVICES



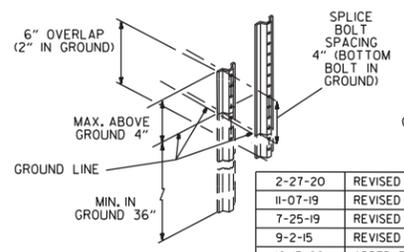
STABILIZED WEDGE

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



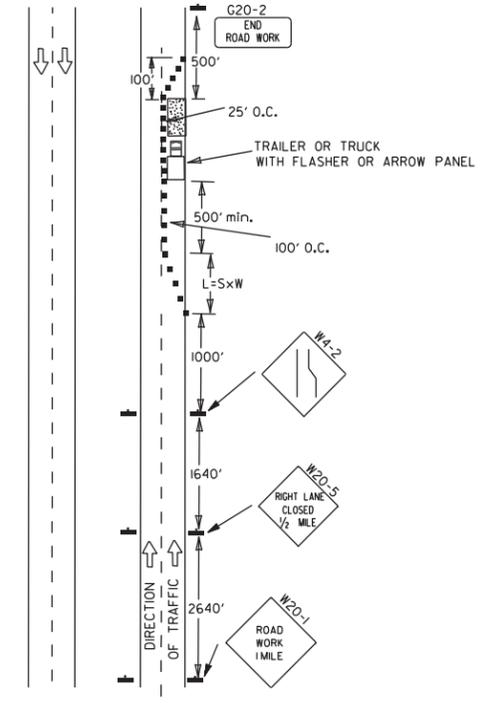
NOTES:

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

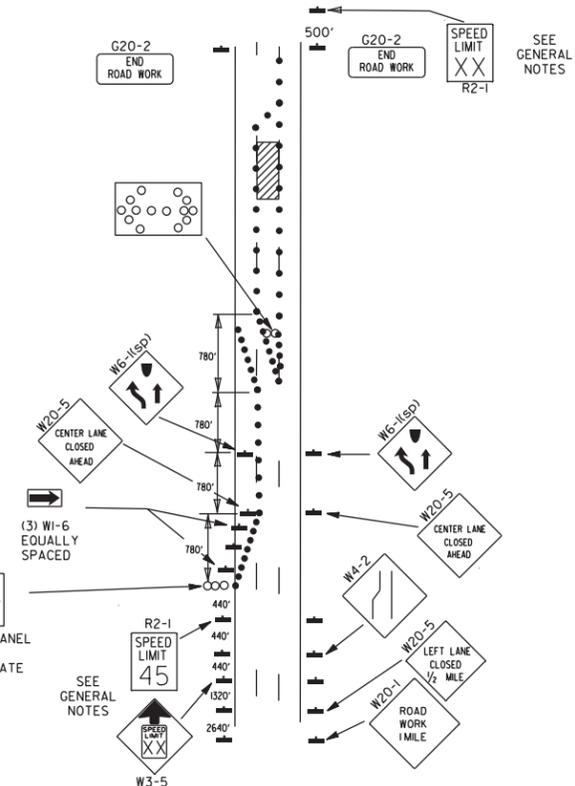


DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SPI) 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



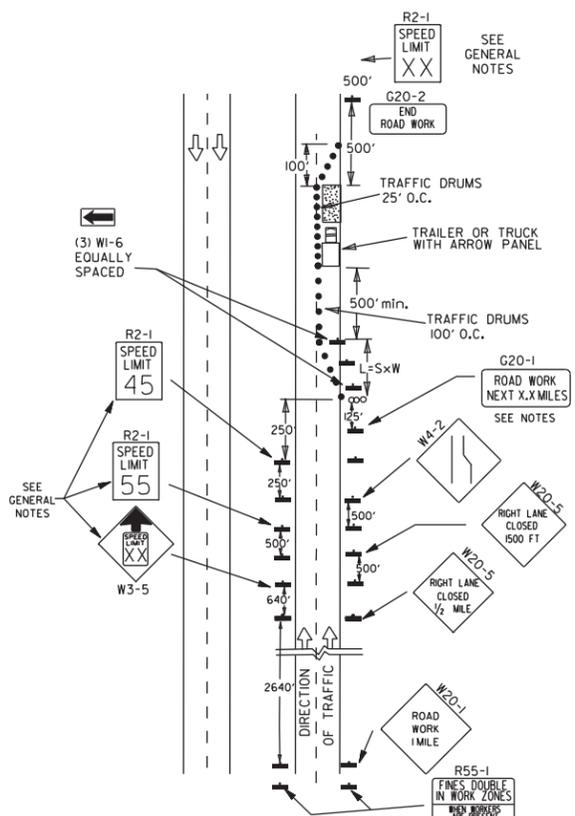
(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



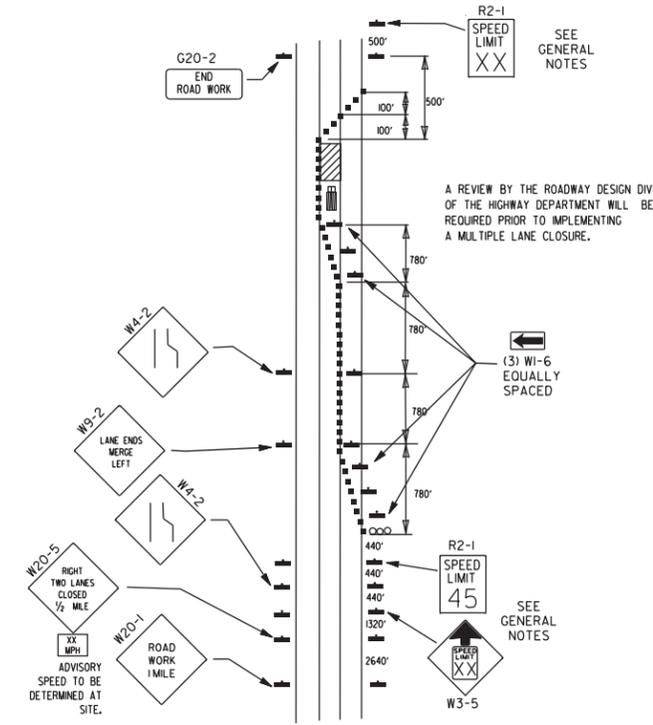
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

- KEY:
- ○ ○ ○ ARROW PANEL (IF REQUIRED)
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM

- GENERAL NOTES:
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
 2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45)MPH 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 R2-1(55)MPH 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 ERRECTED 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 MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
 10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
 11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



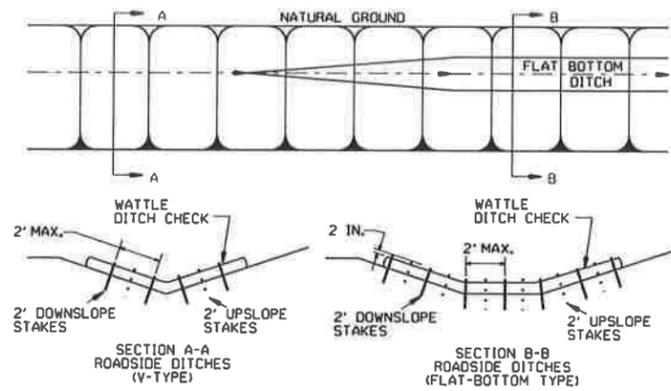
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

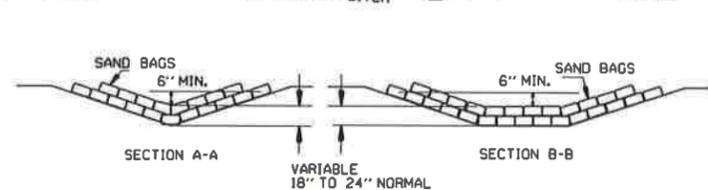
GENERAL NOTES

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

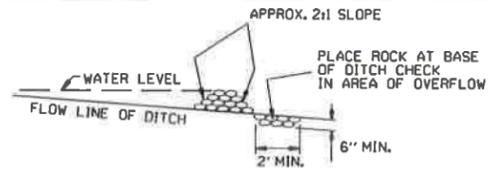


WATTLE DITCH CHECK (E-1)

NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.

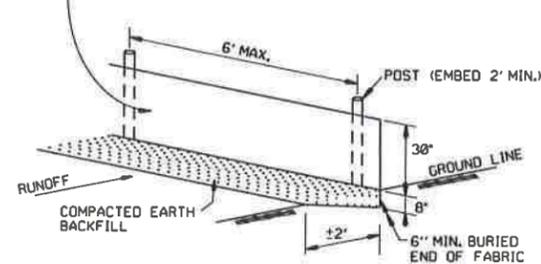


SAND BAG DITCH CHECK (E-5)

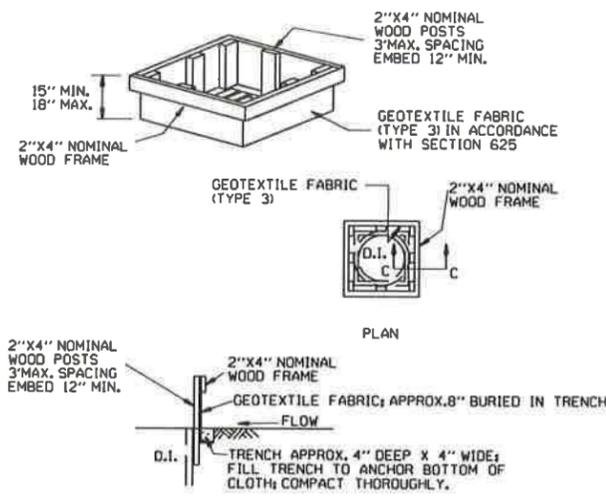


ROCK DITCH CHECK (E-6)

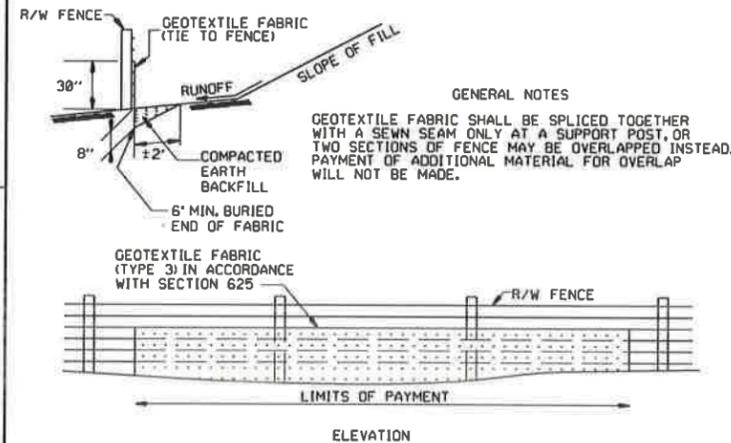
GENERAL NOTES
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625
 GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

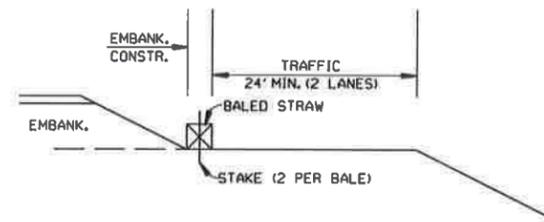


DROP INLET SILT FENCE (E-7)

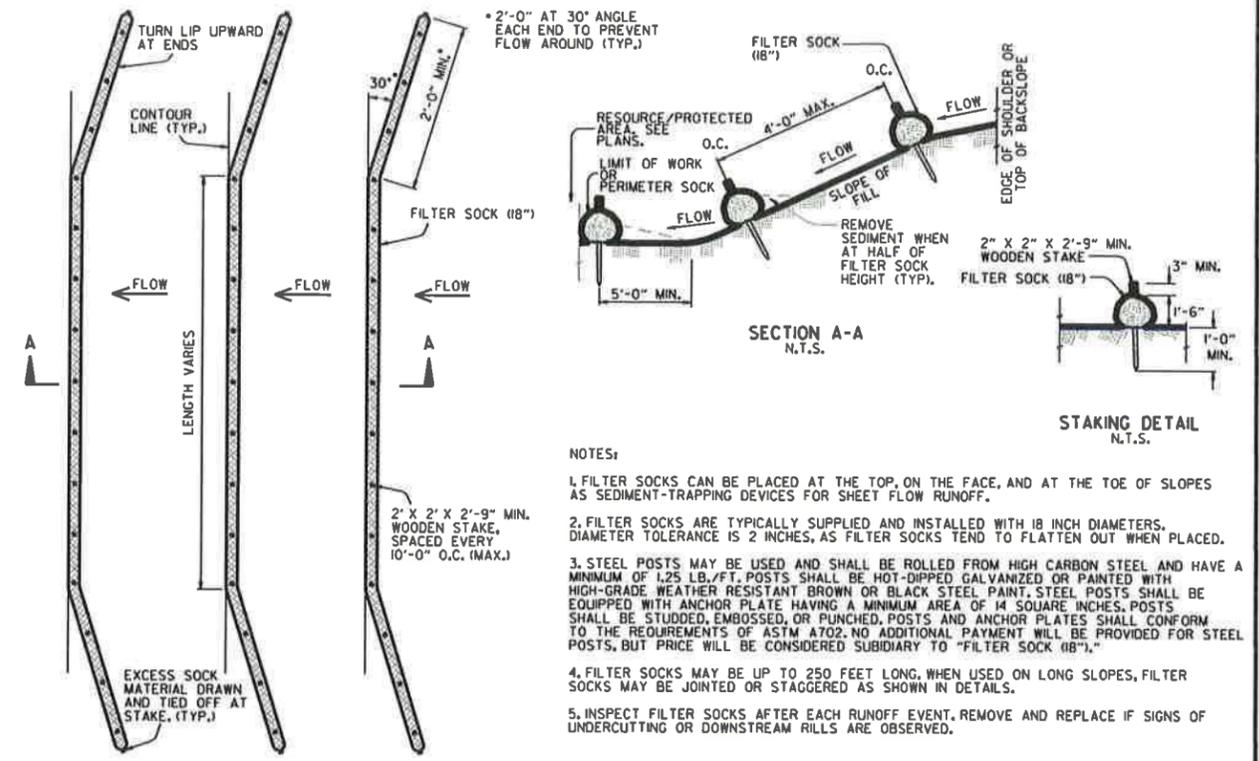


SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES
 1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
 2. NO GAPS SHALL BE LEFT BETWEEN BALES.
 3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

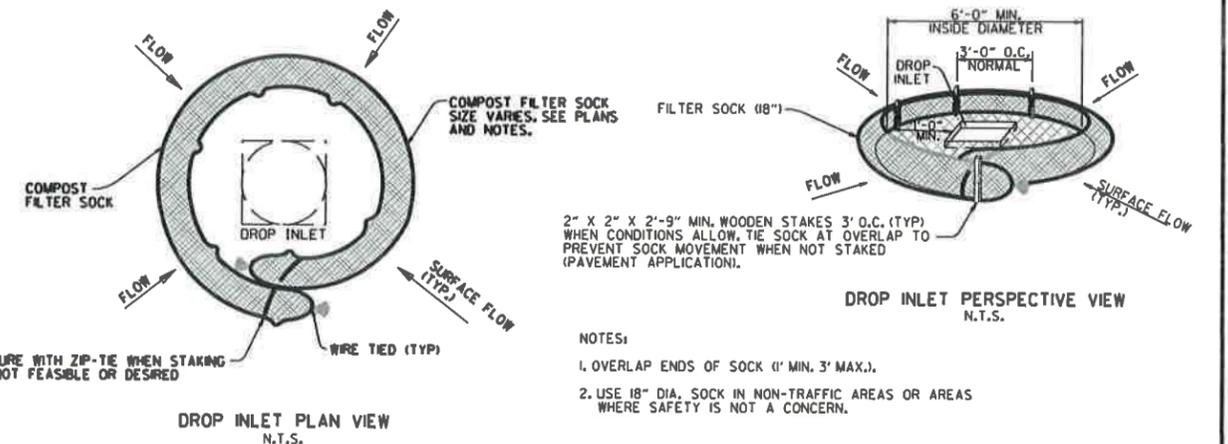


BALED STRAW FILTER BARRIER (E-2)



NOTES:
 1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
 2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
 3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18\"/>

FILTER SOCK ALONG SLOPE (E-3)

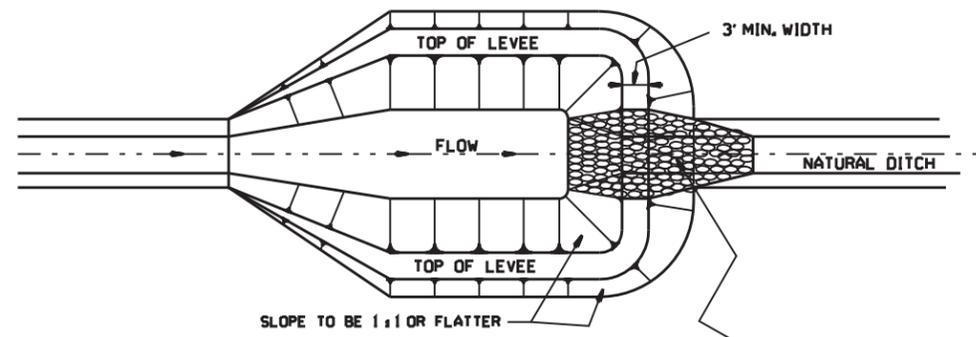


NOTES:
 1. OVERLAP ENDS OF SOCK (1\"/>

COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

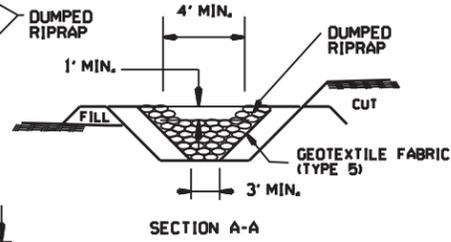
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION CONTROL DEVICES
 STANDARD DRAWING TEC-1



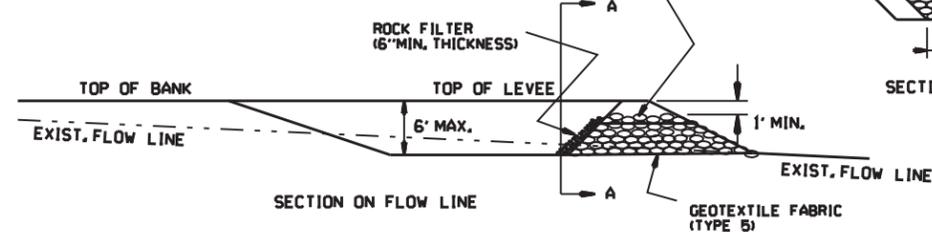
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SLOPE TO BE 1:1 OR FLATTER

PLAN

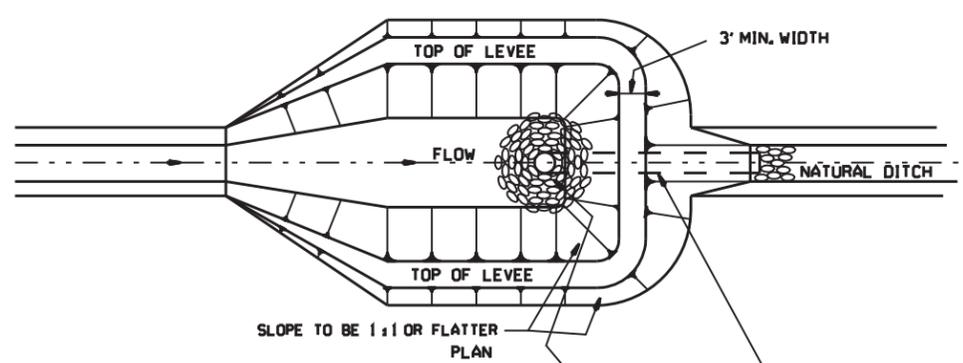


SECTION A-A



SECTION ON FLOW LINE

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

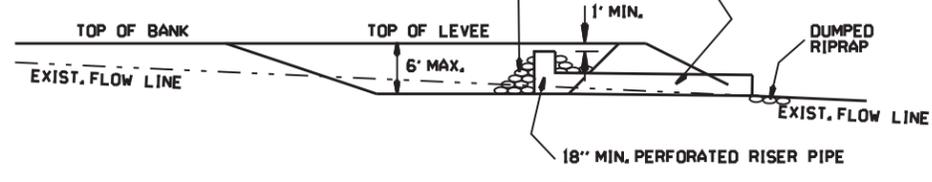


NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SLOPE TO BE 1:1 OR FLATTER

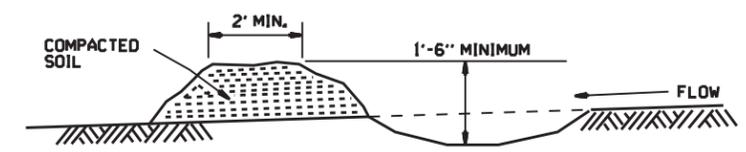
PLAN

ROCK FILTER
18" MIN. NON-PERFORATED
PIPE WITH
ANTI-SEEP COLLAR



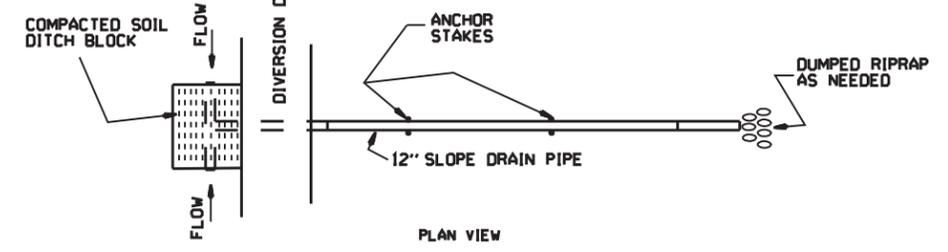
SECTION ON FLOW LINE

SEDIMENT BASIN WITH PIPE OUTLET (E-10)

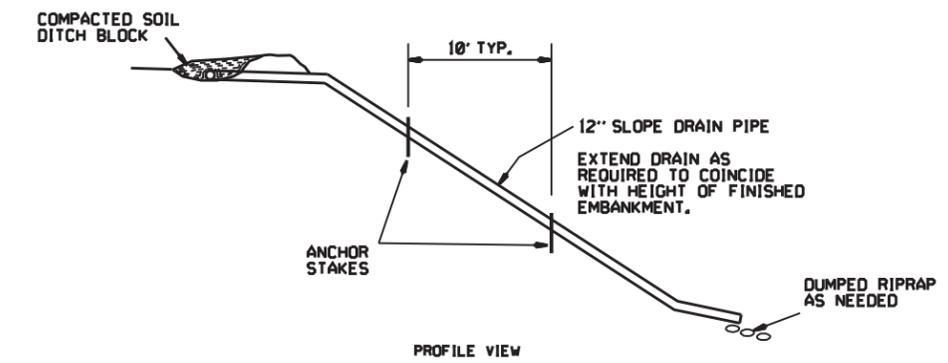


DIVERSION DITCH (E-8)

NOTE:
A T-SECTION SHALL BE USED AT THE INLET
FOR TWO-DIRECTIONAL FLOW.
AN ELBOW SHALL BE USED FOR
ONE-DIRECTIONAL FLOW.

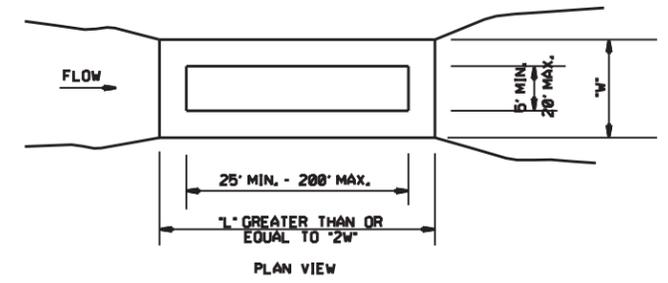


PLAN VIEW

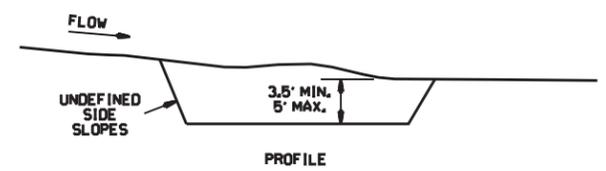


PROFILE VIEW

SLOPE DRAIN (E-12)



PLAN VIEW



PROFILE

SEDIMENT BASIN (E-14)

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

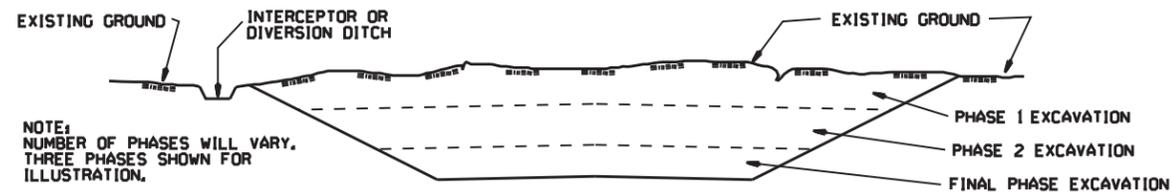
ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION
CONTROL DEVICES
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



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

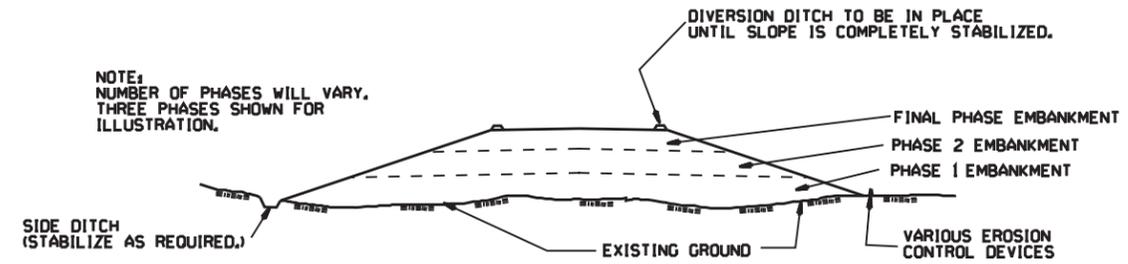
GENERAL NOTE

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