

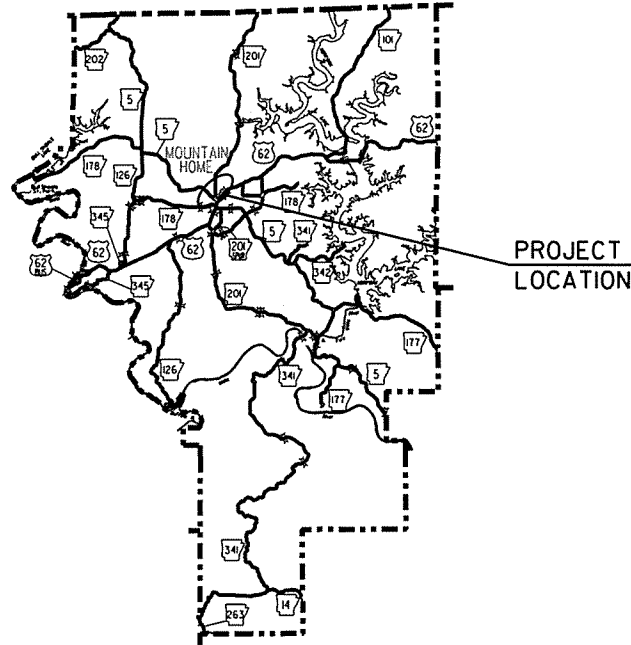
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS

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. 090403			1	26
				② HWY. 201/ARKANSAS AVE. SIGNAL (MOUNTAIN HOME) (S)				

HWY. 201/ARKANSAS AVE. SIGNAL  
(MOUNTAIN HOME) (S)

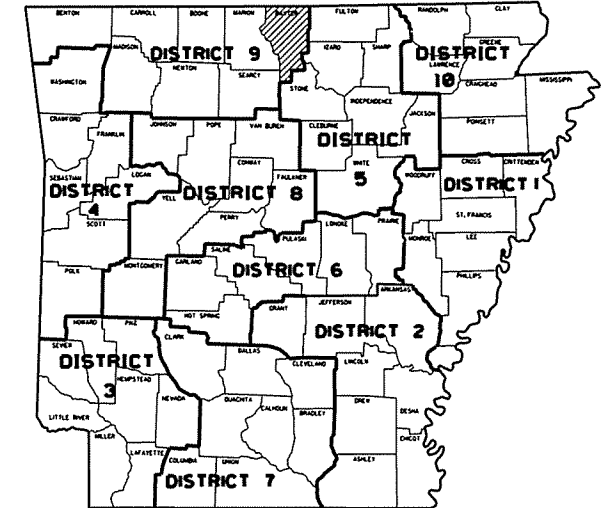
BAXTER COUNTY  
ROUTE 201 SECTION 1  
F.A.P. STP-9299(10)

JOB 090403

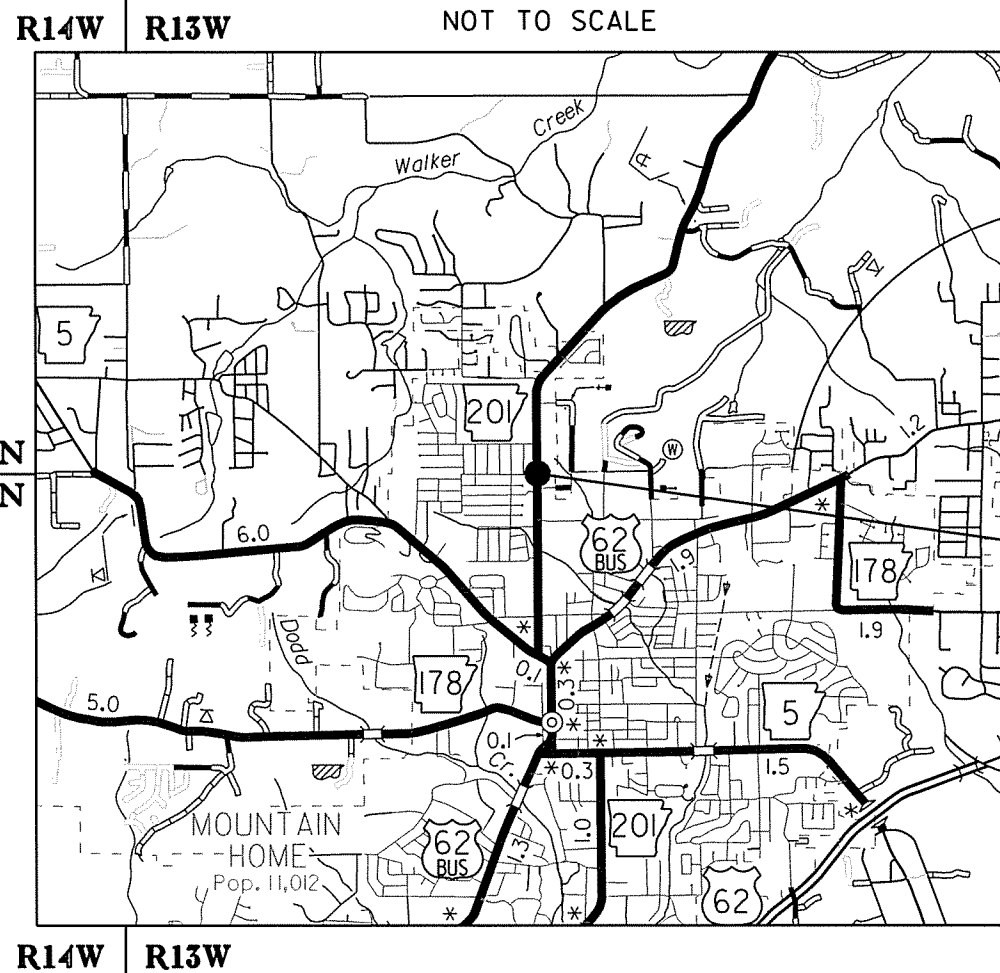


PROJECT LOCATION

VICINITY MAP



ARK. HWY. DIST. NO. 9

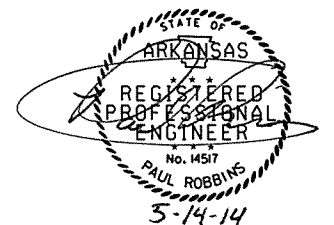


NOT TO SCALE



PROJECT LOCATION  
HWY. 201 & ARKANSAS AVE.

MID-POINT OF PROJECT  
LAT. 36°21'16"N  
LONG. 92°23'10"W



JOB 090403

INDEX OF SHEETS

SHEET NO.	TITLE	DRWG. NO.	DATE
1	TITLE SHEET		
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND NOTES		
3	SPECIAL DETAILS		
4	SYSTEM MAP		
5	MAINTENANCE OF TRAFFIC DETAILS		
6	PERMANENT PAVEMENT MARKINGS		
7	QUANTITIES		
8	SUMMARY OF QUANTITIES AND REVISIONS		
9	SURVEY CONTROL DETAILS		
10-12	SIGNALIZATION PLAN SHEETS		
13	CURBING DETAILS	CG-1	11-29-07
14	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	2-27-14
15	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	2-27-14
16	PAVEMENT MARKING DETAILS	PM-1	9-12-13
17	CONTROLLER CABINET UTILITY DRAWER	SD-5	9-12-13
18	HEAVY DUTY PULL BOX	SD-6	9-12-13
19	SIGNAL HEAD PLACEMENT	SD-8	9-12-13
20	SERVICE POINT	SD-9	9-12-13
21	STEEL POLE WITH MAST ARM	SD-11	2-27-14
22	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	12-15-11
23	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-12-13
24	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
25	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
26	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1	11-10-05

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
JOB 090403	CABINET DRAWER ASSEMBLY
JOB 090403	CLEARING AND GRUBBING TREES
JOB 090403	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 090403	EDGE CARD VIDEO PROCESSOR
JOB 090403	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 090403	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 090403	INTERNET BIDDING
JOB 090403	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 090403	LED TRAFFIC SIGNAL HEAD
JOB 090403	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 090403	PLASTIC PIPE
JOB 090403	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 090403	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 090403	SYSTEM LOCAL CONTROLLER
JOB 090403	UTILITY ADJUSTMENTS
JOB 090403	VIDEO DETECTOR (COLOR)

GENERAL NOTES

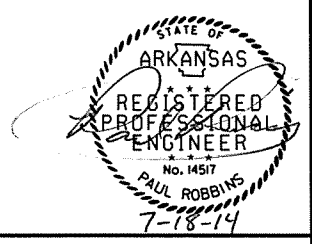
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

TRAFFIC SIGNAL NOTES

- PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101 (2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
- EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC 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 TO A SERVICE POLE WITH EXTERNAL RAINTIGHT 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 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'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 AWG UF 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 AASHTO, THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS AND DETAILS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
- 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 DETAILS MAY BE USED.
- TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
- PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PAVMENT MARKING PLAN SHEETS.
- 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 SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON
- CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
- LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
- 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, 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 21' SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 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 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 THE POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION.
- CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA 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 MUST NOTIFY 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, 6th EDITION 2013.
- CONTRACTOR SHALL PROVIDE CONTROLLER AND LOCAL RADIO TO THE DEPARTMENT'S TRAFFIC ENGINEERING STAFF AT THE MAINTENANCE DIVISION, FOR SETUP AND TIMING BEFORE IT IS PLACED INTO OPERATION.
- THE TRAFFIC SIGNAL CONTROLLER SHALL BE COMPATIBLE WITH THE CITY OF MOUNTAIN HOME'S EXISTING CLOSED LOOP SYSTEM.

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.	090403		2	26

2 INDEX OF SHEETS, GOVERNING SPECS., & NOTES



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR

CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1'-6")

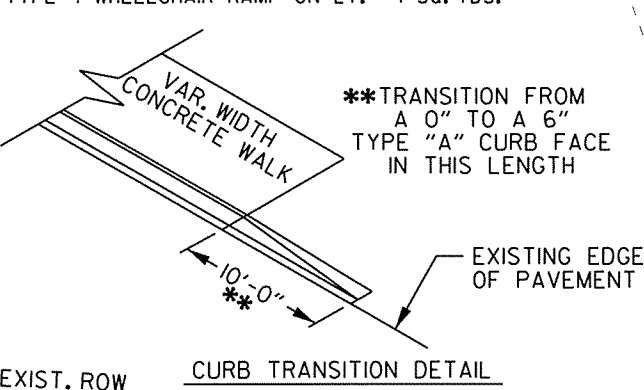
STA. 49+34.08 LT. OF @ CONST. HWY. 201 TO STA. 9+42.25 RT. OF @ CONST. ARKANSAS AVE. = 78 LIN. FT.  
 STA. 49+34.08 RT. OF @ CONST. HWY. 201 TO STA. 10+70.70 RT. OF @ CONST. ARKANSAS AVE. = 92 LIN. FT.  
 STA. 9+45.26 LT. OF @ CONST. ARKANSAS AVE. TO STA. 50+60.62 LT. OF @ CONST. HWY. 201 = 70 LIN. FT.  
 STA. 10+64.82 LT. OF @ CONST. ARKANSAS AVE. TO STA. 50+62.30 RT. OF @ CONST. HWY. 201 = 81 LIN. FT.

CONSTRUCT CONCRETE WALKS

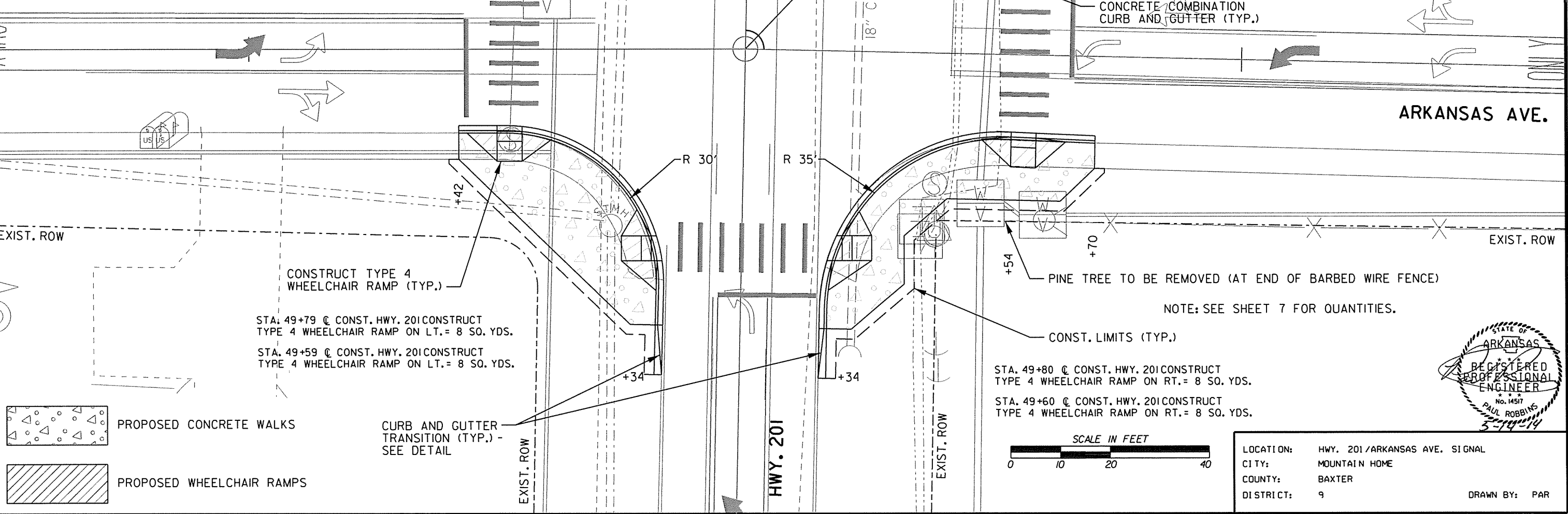
STA. 49+34.08 TO STA. 49+83.31 LT. OF @ CONST. HWY. 201 = 70 SQ. YD.  
 STA. 49+34.08 TO STA. 49+84.03 RT. OF @ CONST. HWY. 201 = 69 SQ. YD.  
 STA. 50+16.06 TO STA. 50+50.62 LT. OF @ CONST. HWY. 201 = 43 SQ. YD.  
 STA. 50+16.63 TO STA. 50+52.30 RT. OF @ CONST. HWY. 201 = 73 SQ. YD.

STA. 50+35 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 9 SQ. YDS.  
 STA. 50+21 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 4 SQ. YDS.

STA. 49+99 @ CONST. HWY. 201 - IN PLACE 18" X 86' C.M. PIPE CULVERT 25' LT. RETAIN



ARKANSAS AVE.



STA. 50+00.00 @ HWY. 201 =  
 STA. 10+00.00 @ ARKANSAS AVE.  
 < 90° 00' 00"

STA. 50+35 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON RT. = 9 SQ. YDS.  
 STA. 50+21 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON RT. = 8 SQ. YDS.

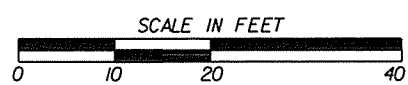
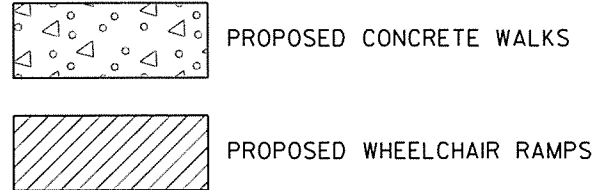
STA. 49+99 @ CONST. HWY. 201 - IN PLACE 18" X 101' C.M. PIPE CULVERT 23' RT. RETAIN AND EXTEND C.M. PIPE 14' LT.

SAW CUT CLEAN LINE AND REMOVE EXIST. CONCRETE IN AREA OF PROPOSED SIDEWALK

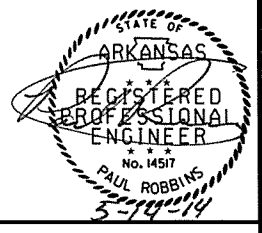
CONSTRUCT TYPE 4 WHEELCHAIR RAMP (TYP.)  
 STA. 49+79 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 8 SQ. YDS.  
 STA. 49+59 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 8 SQ. YDS.

STA. 49+80 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON RT. = 8 SQ. YDS.  
 STA. 49+60 @ CONST. HWY. 201 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON RT. = 8 SQ. YDS.

NOTE: SEE SHEET 7 FOR QUANTITIES.



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR



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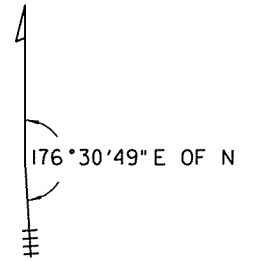
② SPECIAL DETAILS

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				JOB NO.	090403		4	26

② SYSTEM MAP

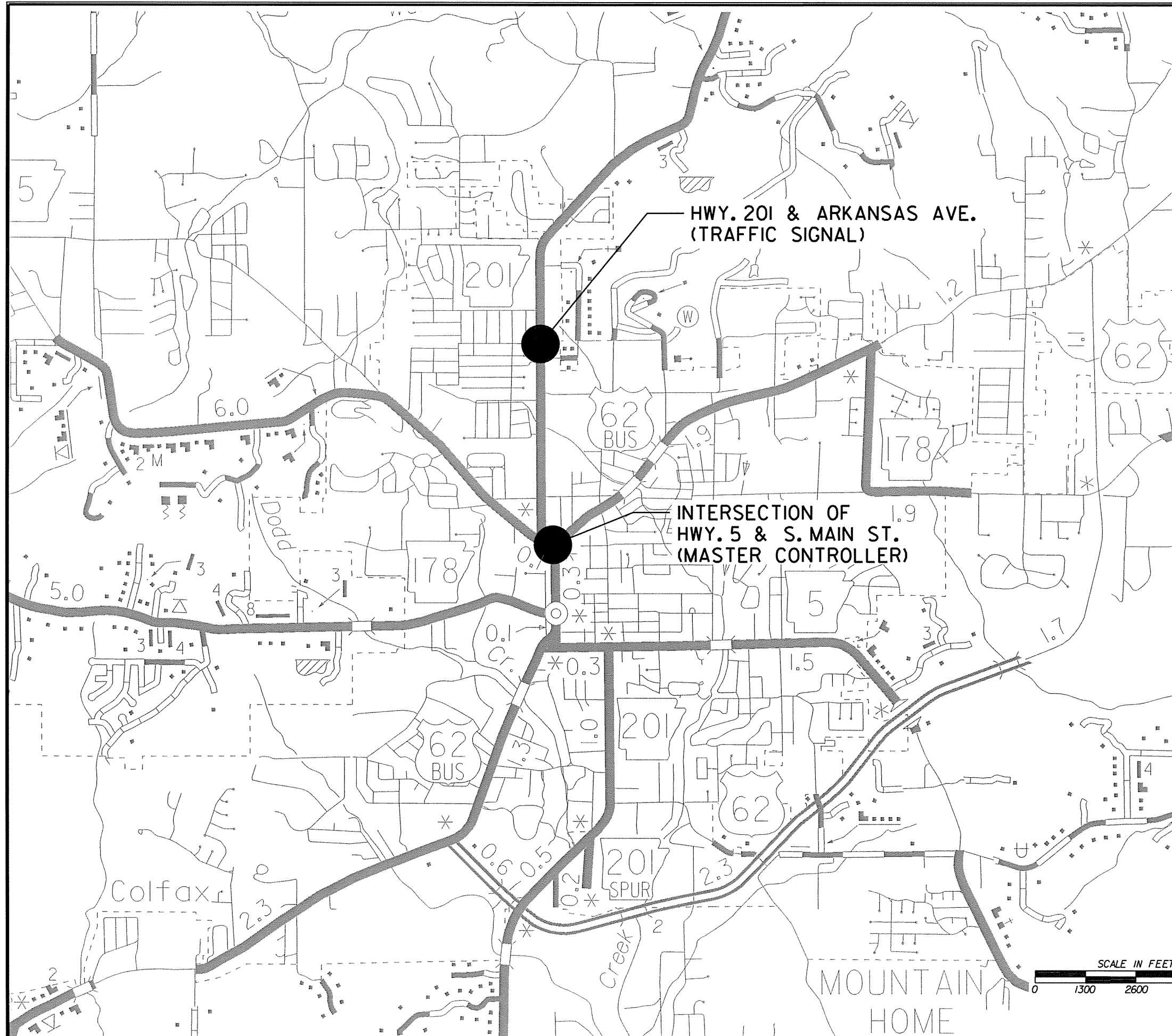


ANTENNA ORIENTATION

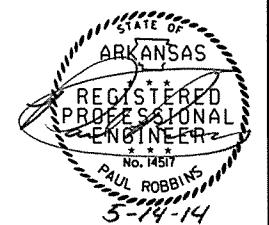
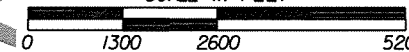


HWY. 201 & ARKANSAS AVE.  
(TRAFFIC SIGNAL)

INTERSECTION OF  
HWY. 5 & S. MAIN ST.  
(MASTER CONTROLLER)



SCALE IN FEET



LOCATION: HWY. 201/ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
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 DISTRICT: 9

DRAWN BY: PAR

**ADVANCE WARNING SIGNS & DEVICES**

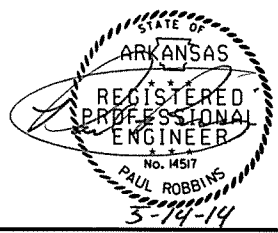
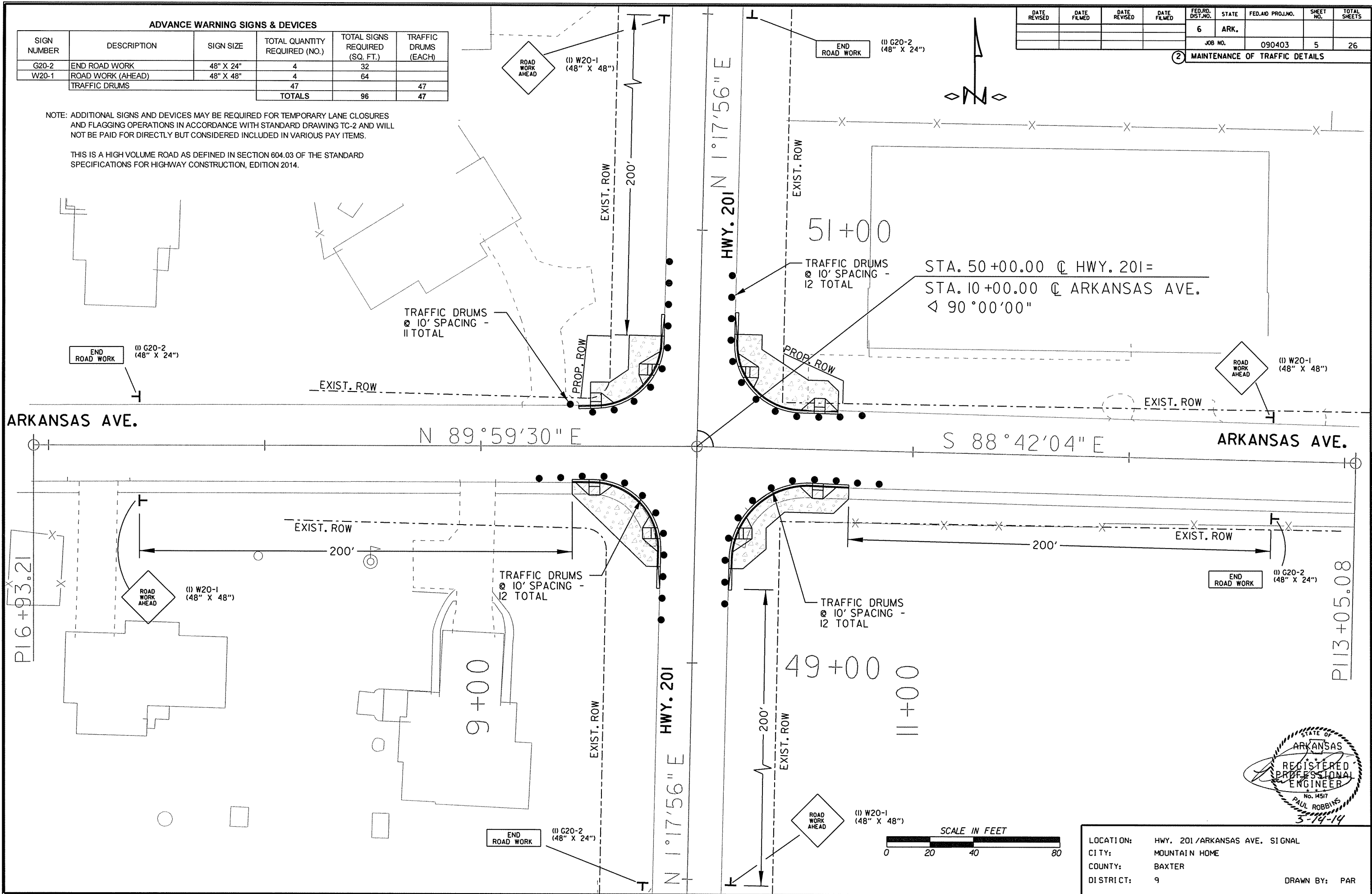
SIGN NUMBER	DESCRIPTION	SIGN SIZE	TOTAL QUANTITY REQUIRED (NO.)	TOTAL SIGNS REQUIRED (SQ. FT.)	TRAFFIC DRUMS (EACH)
G20-2	END ROAD WORK	48" X 24"	4	32	
W20-1	ROAD WORK (AHEAD)	48" X 48"	4	64	
	TRAFFIC DRUMS		47		47
<b>TOTALS</b>			<b>96</b>	<b>47</b>	

NOTE: ADDITIONAL SIGNS AND DEVICES MAY BE REQUIRED FOR TEMPORARY LANE CLOSURES AND FLAGGING OPERATIONS IN ACCORDANCE WITH STANDARD DRAWING TC-2 AND WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED INCLUDED IN VARIOUS PAY ITEMS.

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

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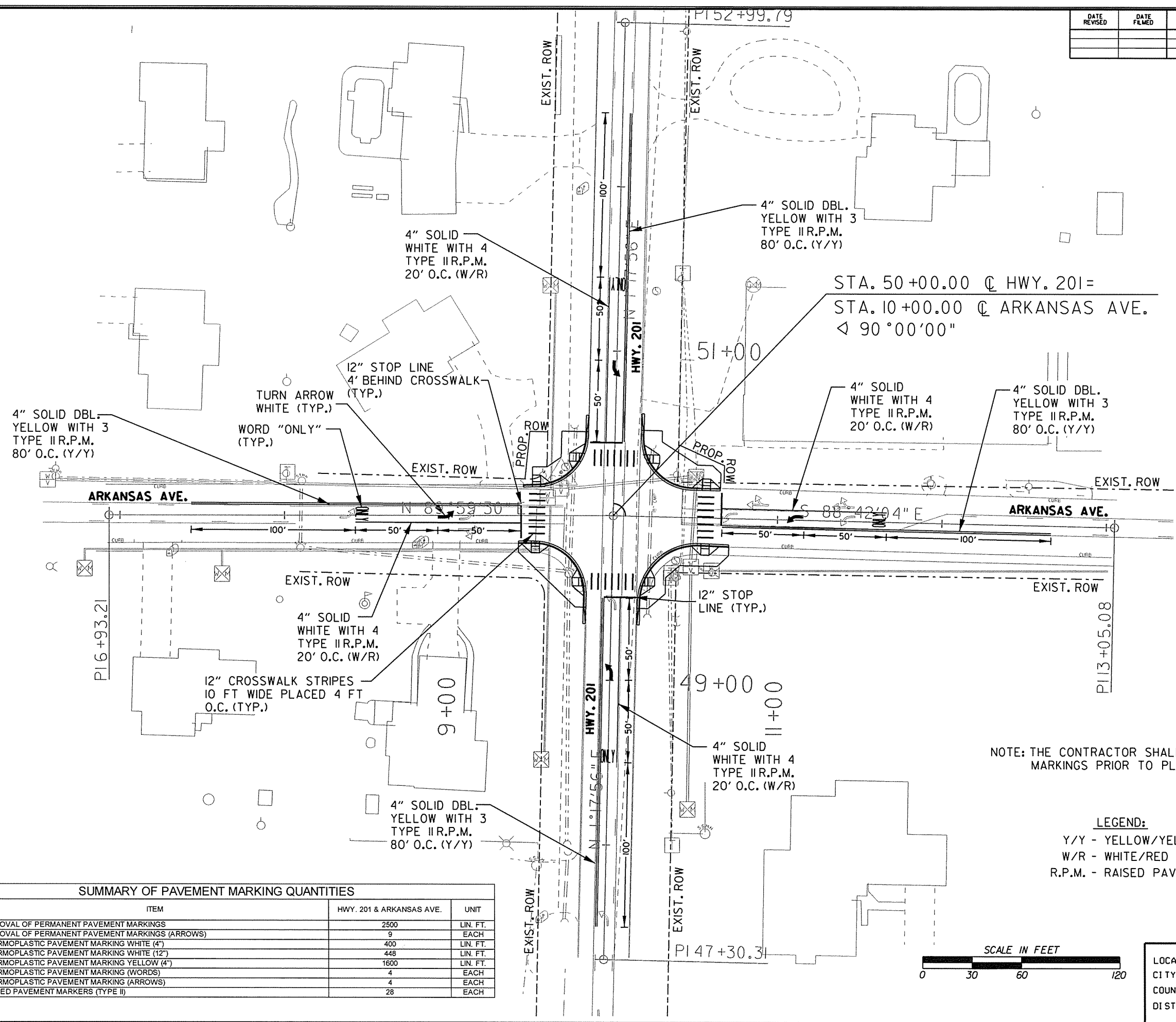
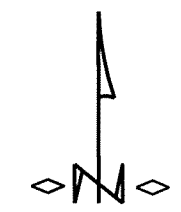
② MAINTENANCE OF TRAFFIC DETAILS



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
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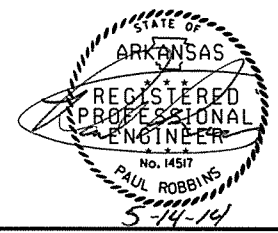
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2 PERMANENT PAVEMENT MARKINGS

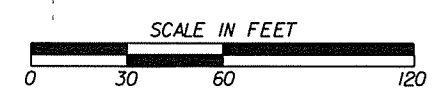


NOTE: THE CONTRACTOR SHALL REMOVE ALL CONFLICTING PAVEMENT MARKINGS PRIOR TO PLACING NEW MARKINGS.

**LEGEND:**  
 Y/Y - YELLOW/YELLOW  
 W/R - WHITE/RED  
 R.P.M. - RAISED PAVEMENT MARKERS



ITEM NO.	ITEM	HWY. 201 & ARKANSAS AVE.	UNIT
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	2500	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	9	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	400	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	448	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	1600	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	4	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	4	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	28	EACH



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
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				6	ARK.			
						JOB NO.	090403	7

② QUANTITIES

**TEMPORARY EROSION CONTROL**

STATION	STATION	LOCATION	SILT FENCE (E-11) LIN. FT.
* ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	350
<b>TOTALS:</b>			<b>350</b>

\* QUANTITIES ARE ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECS.

**EROSION CONTROL**

STATION	STATION	LOCATION	SOLID SODDING SQ. YDS.	WATER M. GAL.
* ENTIRE PROJECT			60	0.8
<b>TOTALS:</b>			<b>60</b>	<b>0.8</b>

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

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

**CONCRETE WALKS**

STATION	STATION	LOCATION	CONCRETE WALKS SQ. YD.
49+34.08	49+83.31	LT. OF C.L. CONST. HWY. 201	70
49+34.08	49+84.03	RT. OF C.L. CONST. HWY. 201	69
50+16.06	50+50.62	LT. OF C.L. CONST. HWY. 201	43
50+16.63	50+52.30	RT. OF C.L. CONST. HWY. 201	73
<b>TOTAL:</b>			<b>255</b>

**EARTHWORK**

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION CU. YD.	TOPSOIL FURNISHED CU. YD.
* ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50	30
<b>TOTALS:</b>			<b>50</b>	<b>30</b>

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

\* QUANTITIES ARE ESTIMATED SEE SECTION 104.03 OF THE STANDARD SPECS.

**WHEELCHAIR RAMPS**

STATION	LOCATION	WHEELCHAIR RAMP (TYPE 4) SQ. YD.
49+59	LT. OF C.L. CONST. HWY. 201	8
49+60	RT. OF C.L. CONST. HWY. 201	8
49+79	LT. OF C.L. CONST. HWY. 201	8
49+80	RT. OF C.L. CONST. HWY. 201	8
50+21	LT. OF C.L. CONST. HWY. 201	4
50+21	RT. OF C.L. CONST. HWY. 201	8
50+35	LT. OF C.L. CONST. HWY. 201	9
50+35	RT. OF C.L. CONST. HWY. 201	9
<b>TOTAL:</b>		<b>62</b>

**REMOVAL AND DISPOSAL QUANTITIES**

STATION	STATION	LOCATION	SIDE	CONCRETE WALKS SQ. YD.	CURB AND GUTTER LIN. FT.	FLARED END SECTIONS EACH	SIGNS EACH
9+42	49+54	C.L. CONST. ARKANSAS AVE./C.L. CONST. HWY. 201	RT./LT.		55		
9+45	50+51	C.L. CONST. ARKANSAS AVE./C.L. CONST. HWY. 201	LT./LT.		58		
10+51	10+65	C.L. CONST. ARKANSAS AVE.	LT.	22			
49+53	9+42	C.L. CONST. HWY. 201/C.L. CONST. ARKANSAS AVE.	LT./RT.	30			
49+53	10+71	C.L. CONST. HWY. 201/C.L. CONST. ARKANSAS AVE.	RT./RT.	33			
49+56	10+71	C.L. CONST. HWY. 201/C.L. CONST. ARKANSAS AVE.	RT./RT.		65		
49+74		C.L. CONST. HWY. 201	RT.				1
50+29		C.L. CONST. HWY. 201	LT.				1
50+41	10+50	C.L. CONST. HWY. 201/C.L. CONST. ARKANSAS AVE.	RT./LT.		43		
50+41		C.L. CONST. HWY. 201	RT.			1	
<b>TOTALS:</b>				<b>85</b>	<b>221</b>	<b>1</b>	<b>2</b>

**STRUCTURES**

STATION	DESCRIPTION	SIDE DRAIN 18" LIN. FT.	STD. DWG. NOS.
<b>HWY. 201</b>			
49+99	C.M. PIPE CULVERT EXTENSION 23' RT. OF C.L. CONST.	14	PCM-1
<b>TOTAL:</b>		<b>14</b>	

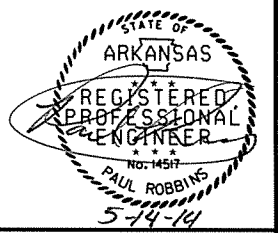
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.  
FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

**CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")**

STATION	STATION	DESCRIPTION	LENGTH LIN. FT.
49+34.08	9+42.25	LT. OF C.L. CONST. HWY. 201 & RT. OF C.L. CONST. ARKANSAS AVE.	78
49+34.08	10+70.70	RT. OF C.L. CONST. HWY. 201 & RT. OF C.L. CONST. ARKANSAS AVE.	92
9+45.26	50+60.62	LT. OF C.L. CONST. ARKANSAS AVE. & LT. OF C.L. CONST. HWY. 201	70
10+64.82	50+62.30	LT. OF C.L. CONST. ARKANSAS AVE. & RT. OF C.L. CONST. HWY. 201	81
<b>TOTAL:</b>			<b>321</b>

**CLEARING AND GRUBBING TREES**

STATION	LOCATION	CLEARING AND GRUBBING TREES EACH
49+67	RT. OF C.L. CONST. HWY. 201	1
<b>TOTAL:</b>		<b>1</b>



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR

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.	090403	8	26	

② SUMMARY OF QUANTITIES & REVISIONS

### SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP & 201	CLEARING AND GRUBBING TREES	1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE WALKS	85	SQ. YD.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	221	LIN. FT.
202	REMOVAL AND DISPOSAL OF FLARED END SECTIONS	1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	2	EACH
210	UNCLASSIFIED EXCAVATION	50	CU. YD.
601	MOBILIZATION	1.00	LUMP SUM
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	2500	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	9	EACH
604	SIGNS	96	SQ. FT.
604	TRAFFIC DRUMS	47	EACH
SP & 606	18" SIDE DRAIN	14	LIN. FT.
620	WATER	0.8	M.GAL.
621	SILT FENCE	350	LIN. FT.
624	SOLID SODDING	60	SQ. YD.
628	TOPSOIL FURNISHED AND PLACED	30	CU. YD.
633	CONCRETE WALKS	255	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	321	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
641	WHEELCHAIR RAMPS (TYPE 4)	62	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS2 - TYPE 2 (8 PHASES)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2625	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	272	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	439	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	30	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	498	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1)	2	EACH
711	CONCRETE PULL BOX (TYPE 2)	6	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40'-46')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	6	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	400	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	448	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	1600	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	4	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	4	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	28	EACH
733	VIDEO CABLE	986	LIN. FT.
* SP & 733	VIDEO DETECTOR (CLR)	7	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
* SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP	18" STREET NAME SIGN	4	EACH
SP	ANTENNA CABLE (TYPE 6)	64	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	654	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	194	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	37	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	519	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	LUMINAIRE ASSEMBLY	3	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

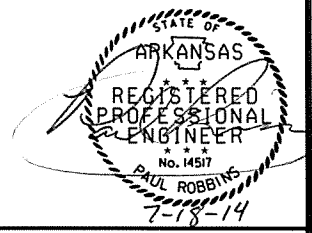
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\* ONE SPARE VIDEO PROCESSOR AND VIDEO DETECTOR PROVIDED TO CITY.

### REVISIONS

DATE	DESCRIPTION	PAGE NO.(S)



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR



SURVEY CONTROL COORDINATES

Project Name: 090403  
 Date: 11/04/2013  
 Coordinate System: ARKANSAS STATE PLANE COORDINATES BASED ON AHTD GPS PTS 030016 - 030001  
 PROJECTED TO GROUND COORDINATES  
 Units: U.S. SURVEY FOOT

POINT	NORTHING	SY	EASTING	SX	ELEVATION	SZ	FEATURE	DESCRIPTION
1	735177.9762	0.0470	1198661.8900	0.0410	874.98	0.001	CTL	Rebar Alum./Cap
2	735962.7542	0.0540	1198613.5020	0.0430	892.92	0.001	CTL	Rebar Alum./Cap
3	735883.7701	0.0440	1198827.8600	0.0360	866.92	0.002	CTL	Rebar Alum./Cap
4	735968.7900	0.0440	1197958.3340	0.0370	898.33	0.002	CTL	Rebar Alum./Cap
5	736803.9505	0.0580	1198637.6570	0.0450	889.11	0.002	CTL	Rebar Alum./Cap
100	728027.7772	0.0000	1202528.4990	0.0000	755.07	0.000	GPS	AHTD GPS Mon. 030001
101	721694.9060	0.0000	1197396.8740	0.0000	702.38	0.000	GPS	AHTD GPS Mon. 030016

ALL DISTANCES ARE GROUND.

SURVEY CONTROL NOTES:

\*STANDARD PRIMARY CONTROL MONUMENT - REBAR AND CAP - STANDARD - 5/8" x 24" REBAR WITH 2" ALUMINUM CAP STAMPED: "(INCLUDE ALL COMMON INFORMATION HERE)" PLUS OTHER MARKINGS INDICATED IN THE POINT DESCRIPTION OF THE INDIVIDUAL POINT. AHTD MONUMENTS WILL BE STAMPED "ARKANSAS HWY & TRANS DEPT" WITH "PN: ####" & "JOB #####". MONUMENTS THAT ARE SET BY CONSULTANTS WILL BE STAMPED "ARKANSAS HWY & TRANS DEPT" WITH "PN: ####", & "JOB#####", & "PS#####". THE CONSULTANT PROFESSIONAL SURVEYOR IN CHARGE WILL STAMP HIS/HER PS LICENSE NUMBER ON THE CAP.

\*\*STANDARD GPS CONTROL MONUMENT - 5/8" x 48" REBAR WITH 2.5" ALUMINUM CAP STAMPED: "(INCLUDE ALL COMMON INFORMATION HERE)" PLUS OTHER MARKINGS INDICATED IN THE POINT DESCRIPTION OF THE INDIVIDUAL POINT. THESE MONUMENTS WILL BE STAMPED "ARK. STATE HWY TRANS. DEPT.", "GPS SURVEY", & "POINT NO. #####".

SX, SY, SZ - REPRESENTS THE STANDARD ERROR ESTIMATE OF THE COORDINATE VALUES OF EACH POINT AT THE 67% CONFIDENCE LEVEL (ONE SIGMA) BASED ON THE LEAST SQUARES ANALYSIS OF THE CONTROL NETWORK. SEE THE AASHTO SDMS TECHNICAL DATA GUIDE DATA TAG DEFINITION FO SX, SY, AND SZ FOR ADDITIONAL INFORMATION. THESE VALUES SHALL BE USED WHEN CONTROL POINTS ARE ADDED AND THE ENTIRE NETWORK IS REPROCESSED USING LEAST SQUARE ANALYSIS. A VALUE OF 0.001 IS DEFINED AS FIXED (NO ADJUSTMENT) IN THE LEAST SQUARE ANALYSIS PROCESS. A VALUE OF 30 IS DEFINED AS LOCATION BY HANDHELD GPS DEVICE OR SCALED FROM USGS QUADMAP.

REFERENCE CONTROL POINTS (1500 SERIES) SHALL BE USED TO RE-ESTABLISH HORIZONTAL DATUM IF THE PRIMARY CONTROL HAS BEEN DESTROYED. THESE REFERENCE CONTROL POINTS SHALL NOT BE USED FOR VERTICAL CONTROL UNLESS THE ELEVATION HAS BEEN ESTABLISHED FROM THE PROJECT DATUM WITH 3-WIRE LEVEL TECHNIQUES.

ALL ADDITIONAL PROJECT CONTROL SHALL BE OCCUPIED, MEASURED, AND ADJUSTED WITH DIRECT SURVEY TIES TO AT LEAST TWO OF THE CONTROL POINTS LISTED IN THE TABLE ABOVE. NEW SURVEY CONTROL SHALL NOT BE INDEPENDENT OF THE SURVEY CONTROL LISTED ABOVE. THIS INCLUDES HORIZONTAL COORDINATES AND ELEVATIONS.

POSITIONAL ACCURACY: HORIZONTAL - GPS (1.0 CM ±1PPM)	PN: 100-101
HORIZONTAL - PRIMARY (2.0 CM ±20PPM)	PN: 1-5
HORIZONTAL - SECONDARY (3.0 CM ±50PPM)	PN: NA
VERTICAL - NGS 1st ORDER (±4MM x DIST IN KM)	PN: 901
VERTICAL - NGS 2nd ORDER (±6MM x DIST IN KM)	PN: NA
VERTICAL - NGS 3rd ORDER (±8MM x DIST IN KM)	PN: NA

HORIZONTAL DATUM: NAD 1983 (1977) STATE PLANE ZONE: 0301 - NORTH ZONE  
 A PROJECT CAF OF: 0.999983408 HAS BEEN USED TO COMPUTE THE ABOVE COORDINATES.  
 THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS ONLY.  
 GRID DISTANCE = GROUND DISTANCE X CAF  
 IF COORDINATES ARE LISTED AS GROUND:  
 TO COMPUTE GRID COORDINATES, MULTIPLY THE GROUND COORDINATES BY CAF ABOUT THE ORIGIN OF X=0 & Y=0  
 IF COORDINATES ARE LISTED AS GRID:  
 TO COMPUTE GROUND COORDINATES, DIVIDE THE GROUND COORDINATES BY CAF ABOUT THE ORIGIN OF X=0 & Y=0

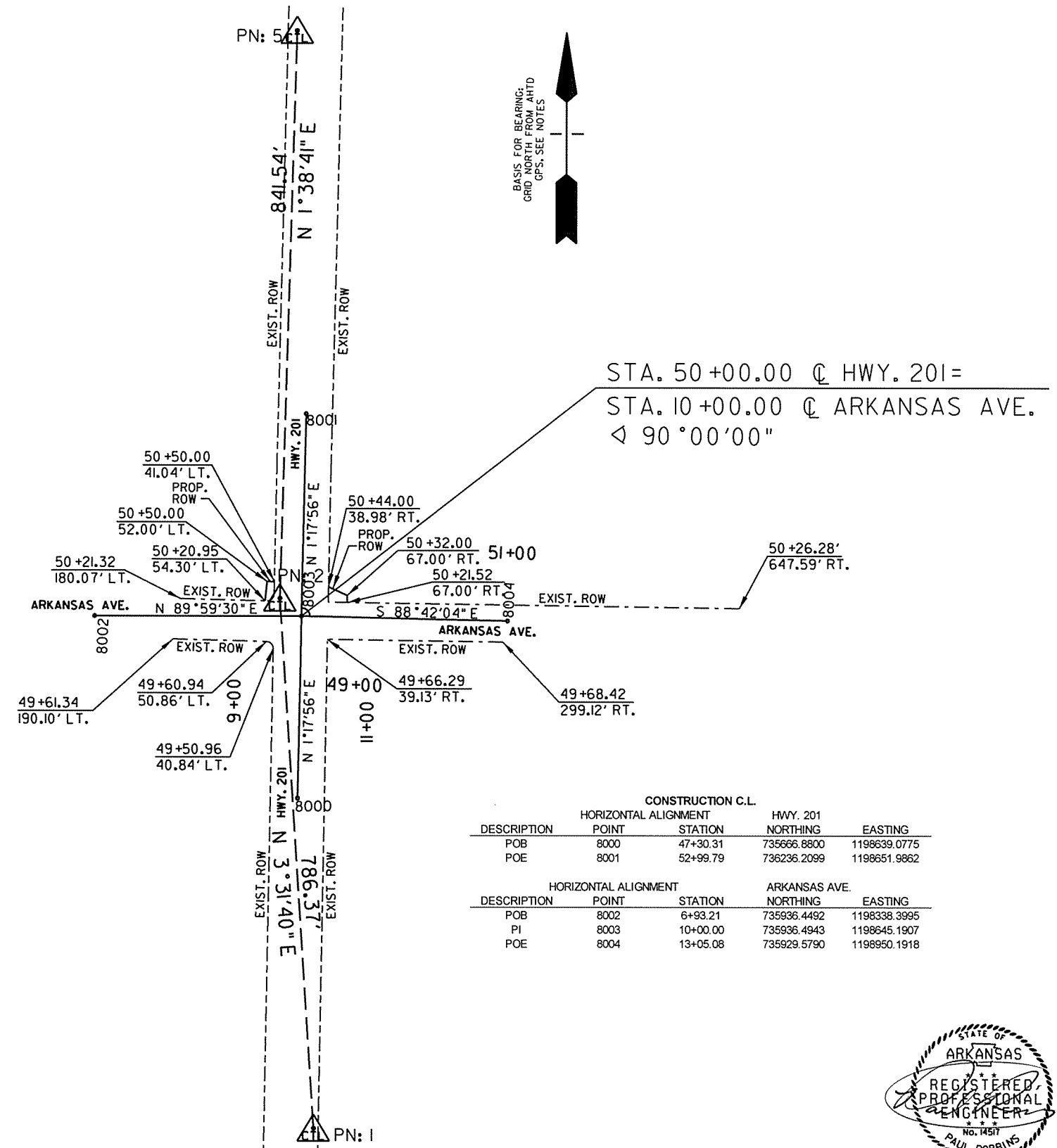
VERTICAL DATUM: NAVD 1988 BASED NGS BM.  
 A PROJECT ELEVATION FACTOR OF: 0.9999598238 HAS BEEN COMPUTED AND INCORPORATED IN THE ABOVE CAF.  
 THIS IS BASED ON THE AVERAGE ELEVATION OF THE PROJECT: 839.96 FEET  
 3 - WIRE LEVELING TECHNIQUES HAVE BEEN USED TO ESTABLISH ELEVATION ON POINTS: FROM NGS BM ELEVATIONS EST. BY RTK

VERTICAL DATUM: GRID BEARING BASED ON AHTD GPS POINTS: 030016 - 030001  
 CONVERGENCE ANGLE IS: 00-13-29 LEFT AT PN: 2  
 LT: 36-21-17N LG: 092-23-10W  
 GRID AZIMUTH= ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE

APPROXIMATE MIDPOINT:  
 LAT: 36°21'17" N  
 LONG: 92°23'10" W

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.	090403
							SHEET NO.	9
							TOTAL SHEETS	26

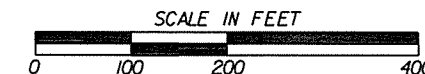
2 SURVEY CONTROL DETAILS



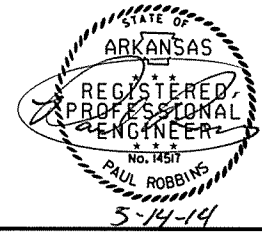
CONSTRUCTION C.L.				
DESCRIPTION	HORIZONTAL ALIGNMENT		HWY. 201	
	POINT	STATION	NORTHING	EASTING
POB	8000	47+30.31	735666.8800	1198639.0775
POE	8001	52+99.79	736236.2099	1198651.9862

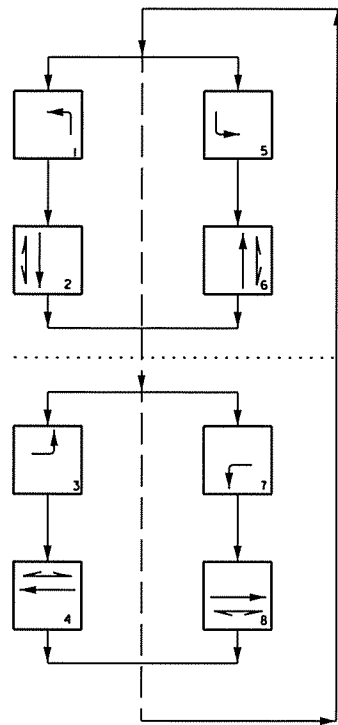
HORIZONTAL ALIGNMENT				
DESCRIPTION	POINT	STATION	ARKANSAS AVE.	
			NORTHING	EASTING
POB	8002	6+93.21	735936.4492	1198338.3995
PI	8003	10+00.00	735936.4943	1198645.1907
POE	8004	13+05.08	735929.5790	1198950.1918



LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR



PHASING DIAGRAM



DETECTOR SPACING CHART

HWY. 201/ARKANSAS AVE.		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD	LAG
HWY. 201 - 40 MPH	230'	100'
ARKANSAS AVE. - 35 MPH	N/A	N/A

LOCAL RADIO WITH ANTENNA. ANTENNA CABLE SHALL BE INSTALLED IN A SEPARATE 2" DIA. N.M.C. WHICH SHALL CONTAIN NO OTHER POWER CARRYING CONDUCTORS

SERVICE POINT AND MAIN BREAKER WITHIN 6' OF CONTROLLER (BY CONTRACTOR)

1.25" GALVANIZED STEEL CONDUIT (FROM CONTROLLER TO SERVICE POINT)

SYSTEM LOCAL CONTROLLER

6'X6' VIRTUAL DETECTOR (TYP.) VZ11, VZ31, VZ51 AND VZ71 LOCATED 85' BEHIND STOP LINE

6'X50' VIRTUAL DETECTOR (TYP.)

2-3" N.M.C.

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. 090403							10	26

2 SIGNALIZATION PLAN SHEETS

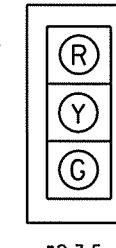
POLE CHART

POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	HWY. 201 STATION	NORTHING EASTING
A	48'	90 DEGREES	35'-0"	10'-0"	90 DEGREES	STA. 50+41.12 34.52' LT.	N 735978.3891 E 1198611.6107
B	N/A	N/A	15'-0"	N/A	N/A	STA. 50+45.09 21.23' LT.	N 735982.0584 E 1198624.9918
C	N/A	N/A	15'-0"	N/A	N/A	STA. 50+38.85 27.80' RT.	N 735974.7107 E 1198673.8681
D	N/A	N/A	15'-0"	N/A	N/A	STA. 50+23.14 60.09' RT.	N 735958.2665 E 1198705.7894
E	28'	270 DEGREES	35'-0"	10'-0"	270 DEGREES	STA. 49+76.97 61.33' RT.	N 735912.0865 E 1198705.9817
F	N/A	N/A	15'-0"	N/A	N/A	STA. 49+56.60 26.55' RT.	N 735892.5068 E 1198670.7522
G	N/A	N/A	15'-0"	N/A	N/A	STA. 49+53.58 22.16' LT.	N 735890.5920 E 1198621.9793
H	40' 46'	180 DEGREES 270 DEGREES	35'-0"	10'-0"	225 DEGREES	STA. 49+74.06 42.68' LT.	N 735911.5339 E 1198601.9386
I	N/A	N/A	15'-0"	N/A	N/A	STA. 50+28.30 50.42' LT.	N 735965.9323 E 1198595.4264

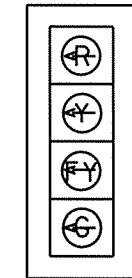
STA. 50+00.00 @ HWY. 201 =  
STA. 10+00.00 @ ARKANSAS AVE.  
∠ 90°00'00"

LED SIGNAL FACES

12" LENSES



\*2,3,5, 6,8,9,11,12



\*1,4,7,10

ONE SECTION (SOLID SYMBOL)

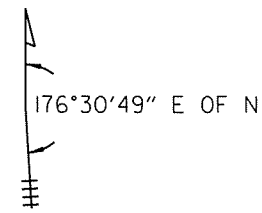


\*13-20

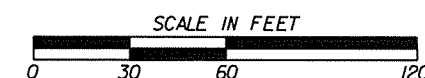
LEGEND

- TYPE 1 PULL BOX
- TYPE 1 HD PULL BOX
- TYPE 2 PULL BOX
- TYPE 2 HD PULL BOX
- ⊗ CONTROL CABINET
- ⊠ SIGNAL HEAD
- N.M.C.-NON-METALLIC CONDUIT
- ⊖ VIDEO DETECTOR

ANTENNA ORIENTATION



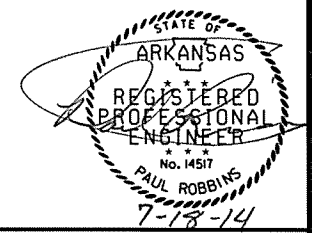
MASTER CONTROLLER - INTERSECTION OF HWY. 5 & S. MAIN ST.



SUMMARY OF TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	HWY. 201 / ARKANSAS AVE.	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	64	LIN. FT.
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2625	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	272	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	439	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	37	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	30	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	498	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1)	2	EACH
711	CONCRETE PULL BOX (TYPE 2)	6	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40'-46')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	6	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
* SP & 733	VIDEO DETECTOR (CLR)	7	EACH
733	VIDEO CABLE	986	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
* SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	18" STREET NAME SIGN	4	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	654	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	194	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	519	LIN. FT.
SP	LUMINAIRE ASSEMBLY	3	EACH

\* ONE SPARE VIDEO PROCESSOR AND VIDEO DETECTOR PROVIDED TO CITY.

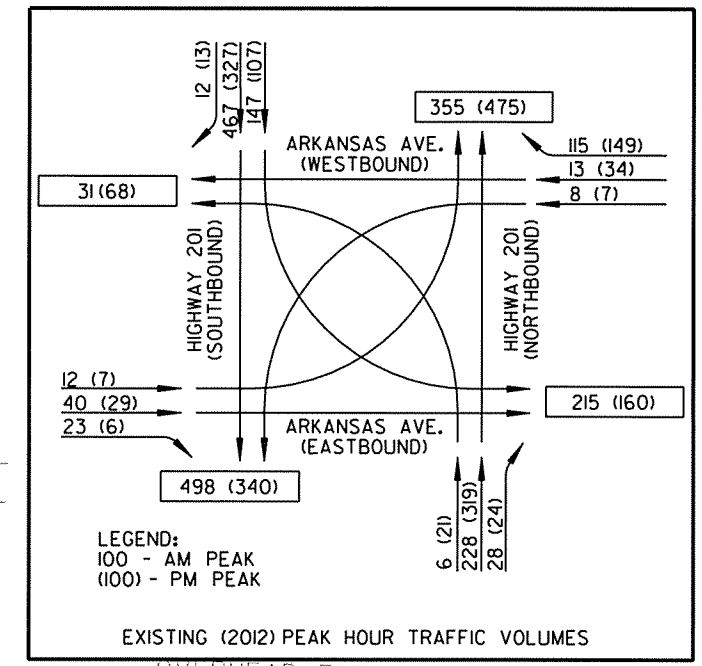


LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR

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. 090403							II	26

2 SIGNALIZATION PLAN SHEETS

TRAFFIC FLOW DIAGRAM



LOCAL RADIO WITH ANTENNA. ANTENNA CABLE SHALL BE INSTALLED IN A SEPARATE 2" DIA. N.M.C. WHICH SHALL CONTAIN NO OTHER POWER CARRYING CONDUCTORS

SERVICE POINT AND MAIN BREAKER WITHIN 6' OF CONTROLLER (BY CONTRACTOR)

1.25" GALVANIZED STEEL CONDUIT (FROM CONTROLLER TO SERVICE POINT)

SYSTEM LOCAL CONTROLLER

2-3" N.M.C.

EXIST. ROW OVERHEAD ELECTRIC

16" WATER MAIN ARKANSAS AVE.

8" WATER LINE

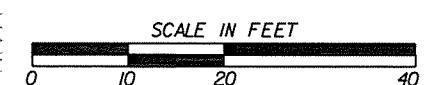
DESIGN PARAMETERS

POSTED SPEED LIMIT:  
 35 MPH EAST AND WEST APPROACH (ARKANSAS AVE.)  
 40 MPH NORTH AND SOUTH APPROACH (HWY. 201)

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

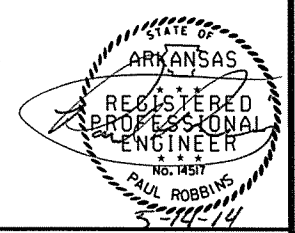
LOCATION OF STOP LINES AND CROSSWALKS SHOWN ON PAVEMENT MARKING PLAN. SEE SEPARATE SHEET.

STA. 50+00.00 @ HWY. 201 =  
 STA. 10+00.00 @ ARKANSAS AVE.  
 < 90°00'00"



UNDERGROUND FIBER OPTIC

LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR



# DETECTOR CHART

DETECTOR I.D. NUMBER	DIRECTION & LOCATION	TYPE	DET. NUM.	HARDWARE INPUTS			PROGRAM ASSIGNMENTS			COMMENT	TUBE LENGTH
				CAB. TER. NUM.	AMP. CHN. NUM.	CON. INP. NUM.	LOCAL		MSTR. SYS. DET.		
							PHS.	SYS. DET.			
Vz11	NB LT ADV	COMBO	-	1	V9	1	1	-	VIDEO 1	23"	
Vz12	NB LT PRESENT	LOCAL	-	2	V1	1	1	-	VIDEO 1	23"	
Vz21	SB ADV	LOCAL	-	5	V2	2	-	-	VIDEO 2	37"	
Vz22	SB NEAR	COMBO	-	6	V10	2	2	-	VIDEO 5	23"	
Vz31	EB LT ADV	COMBO	-	9	V11	3	3	-	VIDEO 3	23"	
Vz32	EB LT PRESENT	LOCAL	-	10	V3	3	-	-	VIDEO 3	23"	
Vz41	WB ADV	COMBO	-	13	V12	4	4	-	VIDEO 7	23"	
Vz42	WB PRESENT	LOCAL	-	14	V4	4	-	-	VIDEO 7	23"	
Vz51	SB LT ADV	COMBO	-	7	V13	5	5	-	VIDEO 5	23"	
Vz52	SB LT PRESENT	LOCAL	-	8	V5	5	-	-	VIDEO 5	23"	
Vz61	NB ADV	LOCAL	-	3	V6	6	-	-	VIDEO 6	37"	
Vz62	NB NEAR	COMBO	-	4	V14	6	6	-	VIDEO 1	23"	
Vz71	WB LT ADV	COMBO	-	15	V15	7	7	-	VIDEO 7	23"	
Vz72	WB LT PRESENT	LOCAL	-	16	V7	7	-	-	VIDEO 7	23"	
Vz81	EB ADV	COMBO	-	11	V16	8	8	-	VIDEO 3	23"	
Vz82	EB PRESENT	LOCAL	-	12	V8	8	-	-	VIDEO 3	23"	
PB2	N TO S	PED.	-	-	P2	2	-	-	ARKANSAS AVE.	-	
PB4	E TO W	PED.	-	-	P4	4	-	-	HWY. 201	-	
PB6	S TO N	PED.	-	-	P6	6	-	-	ARKANSAS AVE.	-	
PB8	W TO E	PED.	-	-	P8	8	-	-	HWY. 201	-	

CONTROLLER INPUT ABBREVIATIONS:  
 V1-V8 - VEHICLE INPUT  
 V9 - V16 - SYSTEM OR AUXILIARY INPUT  
 P1-P8 - PEDESTRIAN INPUT

NOTE: \*AMP.CHN.\* REFERS TO THE DETECTOR RACK OUTPUT POSITION AND IS WIRED TO THE CONTROLLER INPUT DETECTOR NUMBER THAT IS PROGRAMMED TO ACTIVATE THE DESIGNATED PHASE.

NOTES:

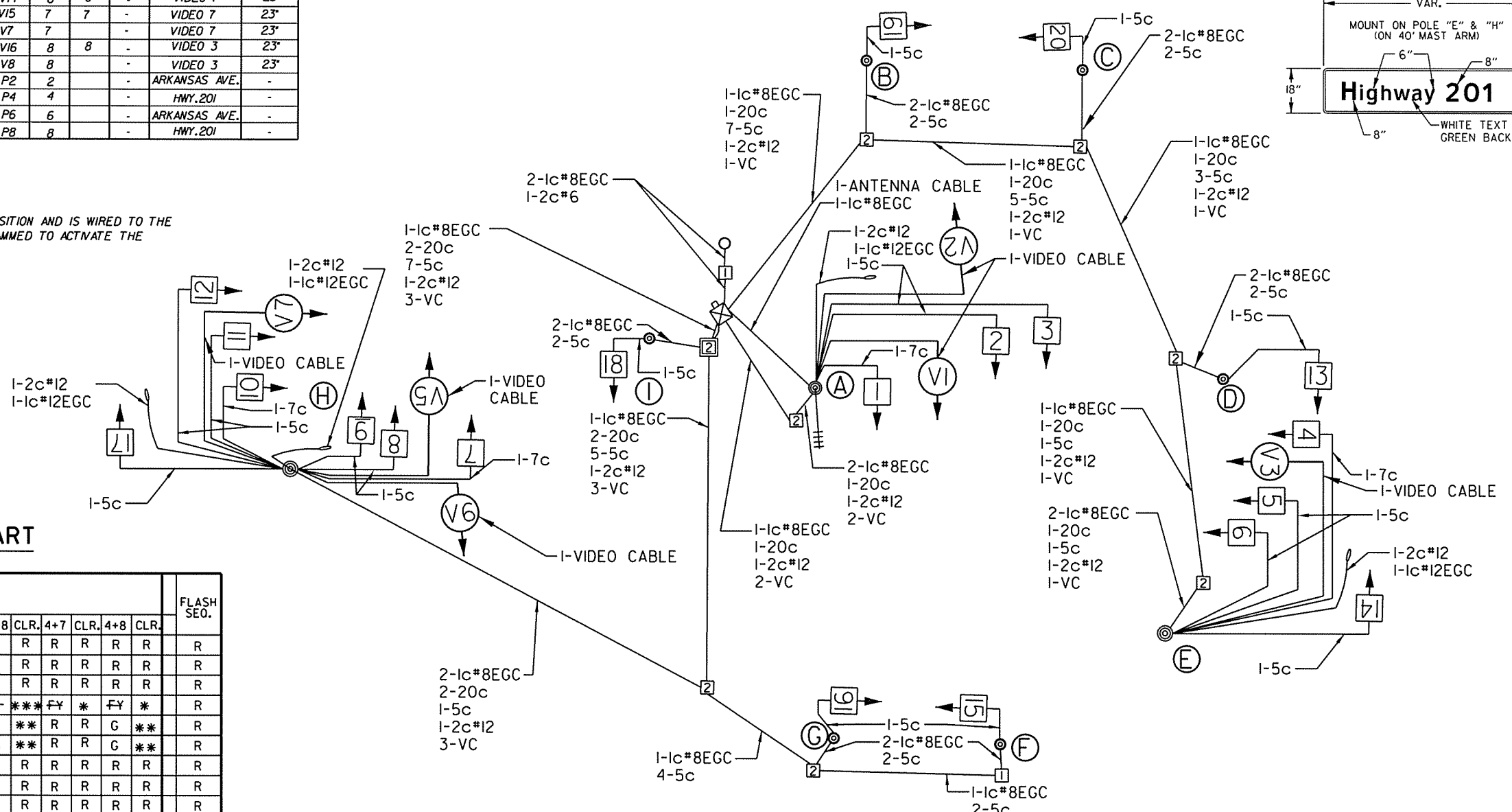
1. A SEPARATE 5c/14 AWG SHALL BE PROVIDED FROM EACH 3 SECTION HEAD TO THE BASE OF POLE.
2. A SEPARATE 5c/14 AWG SHALL BE PROVIDED TO EACH POLE WITH PEDESTRIAN PUSH BUTTONS.
3. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
4. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

## INTERVAL CHART

SIGNAL FACES	INTERVALS														FLASH SEQ.		
	I+5	CLR.	I+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.		4+8	CLR.
1	G	***	G	***	FY	*	FY	*	R	R	R	R	R	R	R	R	R
2	R	R	G	***	R	R	G	***	R	R	R	R	R	R	R	R	R
3	R	R	G	***	R	R	G	***	R	R	R	R	R	R	R	R	R
4	R	R	R	R	R	R	R	R	G	***	G	***	FY	*	FY	*	R
5	R	R	R	R	R	R	R	R	R	R	G	***	R	R	G	***	R
6	R	R	R	R	R	R	R	R	R	R	G	***	R	R	G	***	R
7	G	***	FY	*	G	***	FY	*	R	R	R	R	R	R	R	R	R
8	R	R	R	R	G	***	G	***	R	R	R	R	R	R	R	R	R
9	R	R	R	R	G	***	G	***	R	R	R	R	R	R	R	R	R
10	R	R	R	R	R	R	R	R	G	***	FY	*	G	***	FY	*	R
11	R	R	R	R	R	R	R	R	R	R	R	R	G	***	G	***	R
12	R	R	R	R	R	R	R	R	R	R	R	R	G	***	G	***	R
13-14	DW	DW	W	▲	DW	DW	W	▲	DW	DW	DW	DW	DW	DW	DW	DW	BLANK
15-16	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	▲	DW	DW	W	▲	DW	BLANK
17-18	DW	DW	DW	DW	W	▲	W	▲	DW	DW	DW	DW	DW	DW	DW	DW	BLANK
19-20	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	▲	W	▲	DW	BLANK	

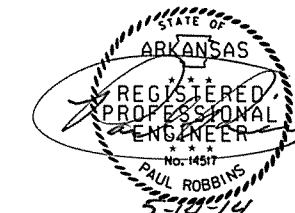
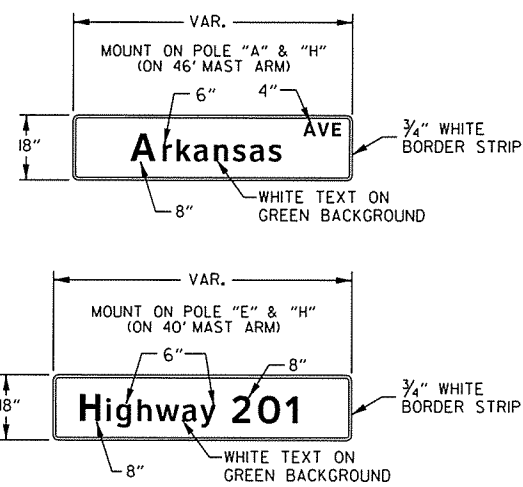
▲ DENOTES FLASHING DON'T WALK OR WALK DEPENDING ON NEXT PHASE  
 \* DENOTES YELLOW ARROW OR FLASHING YELLOW ARROW DEPENDING ON NEXT PHASE  
 \*\* DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE  
 \*\*\* DENOTES GREEN ARROW OR FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

## WIRING DIAGRAM

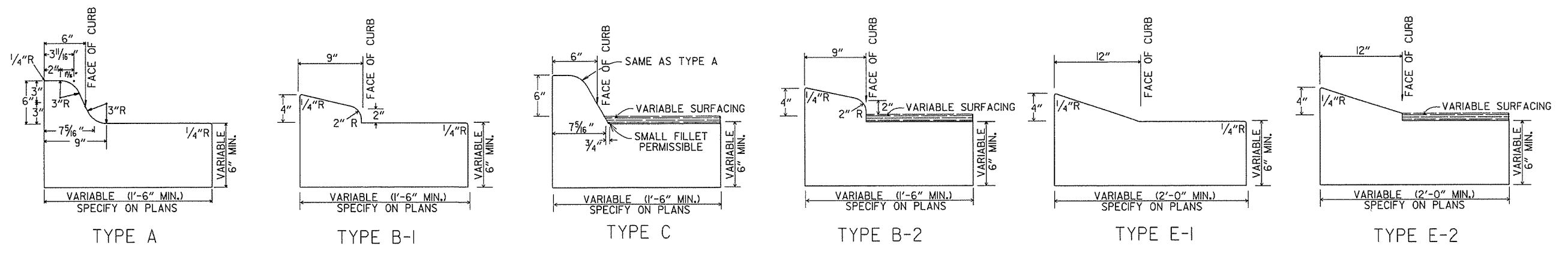


NOTES:  
 1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.  
 2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADIUS. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY.  
 3. SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ASSEMBLY.  
 4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

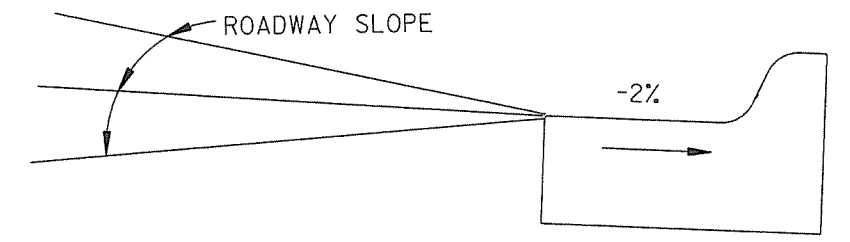
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090403							12	26



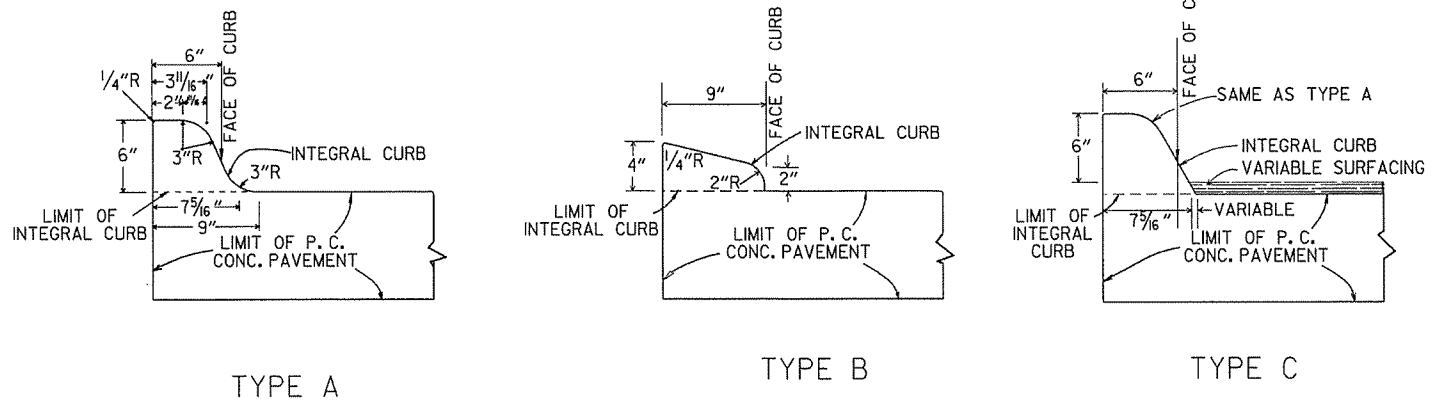
LOCATION: HWY. 201 / ARKANSAS AVE. SIGNAL  
 CITY: MOUNTAIN HOME  
 COUNTY: BAXTER  
 DISTRICT: 9  
 DRAWN BY: PAR



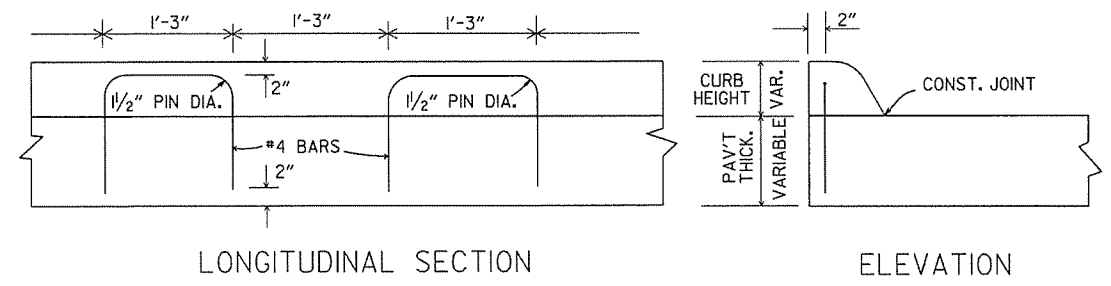
CONCRETE COMBINATION CURB AND GUTTER



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

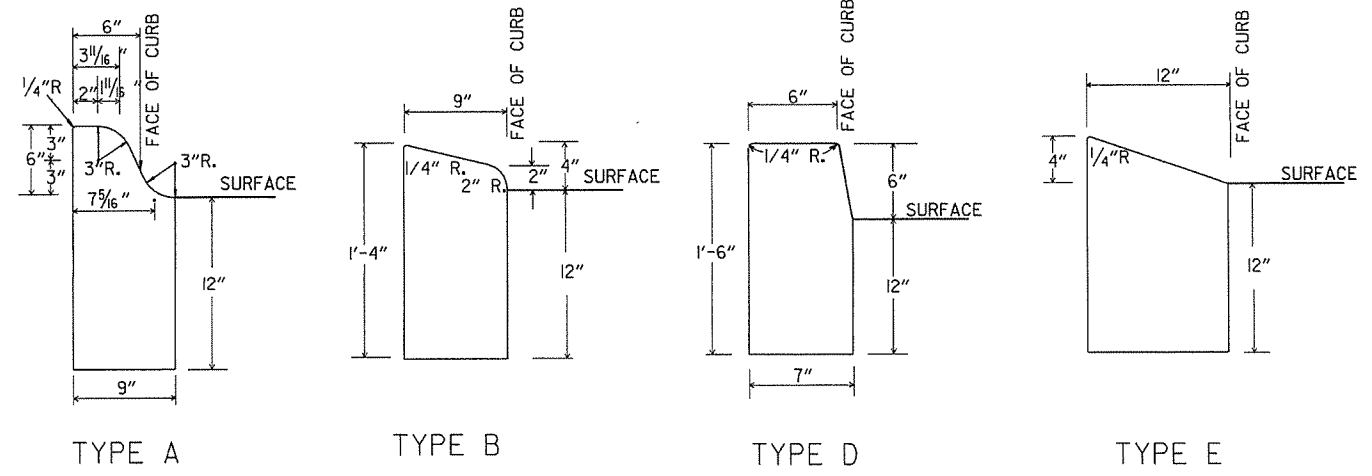


INTEGRAL CURB

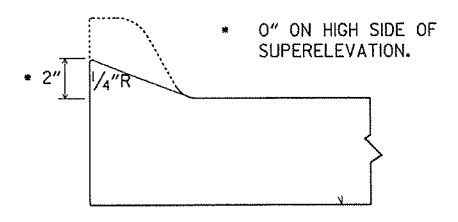


LONGITUDINAL SECTION ELEVATION

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



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.

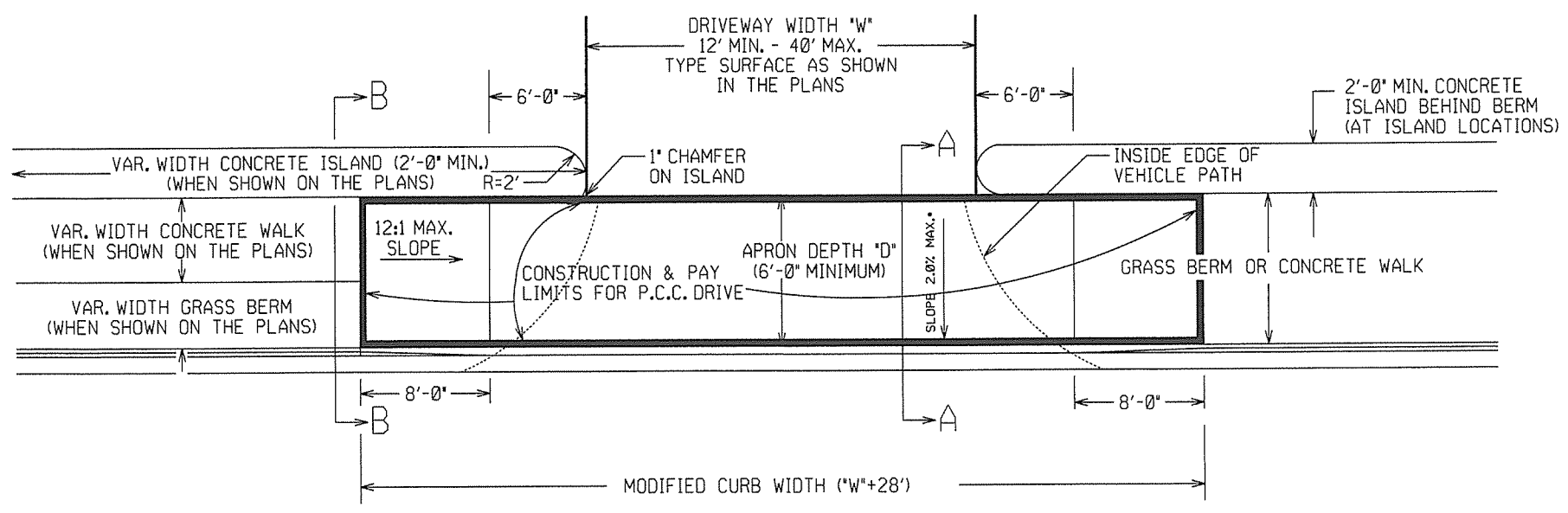
DETAILS OF MODIFIED CURB

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
6-24-90	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	912-10-2-72

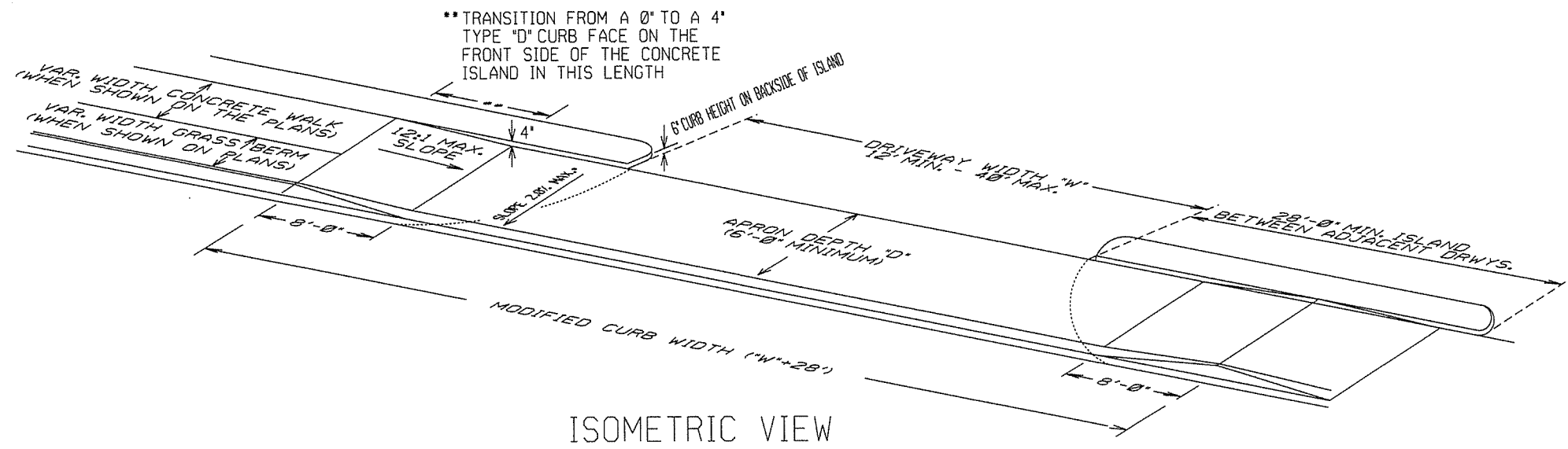
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

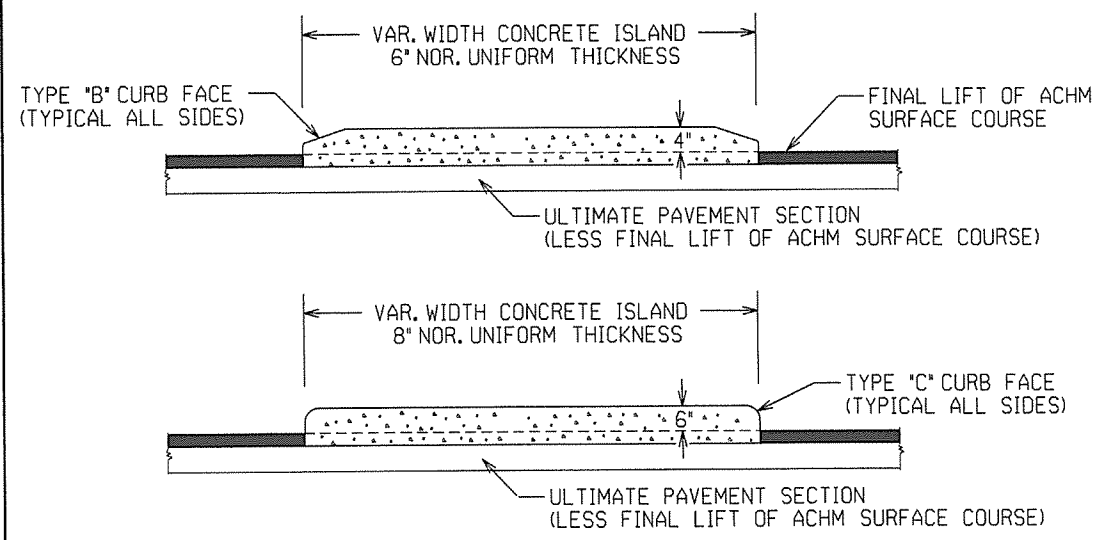
STANDARD DRAWING CG-1



PLAN VIEW

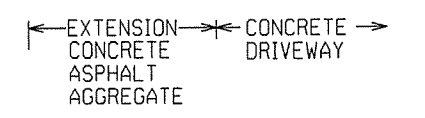


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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

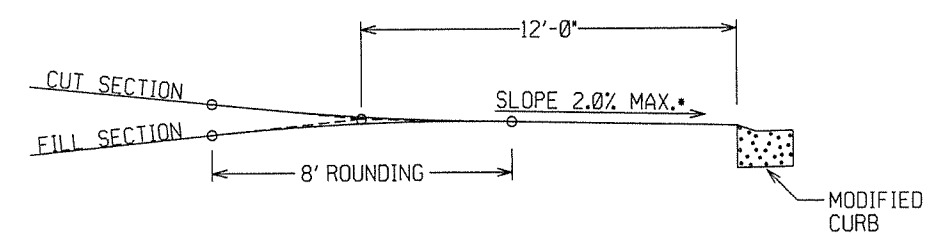


EXTENSION TYPICAL SECTIONS

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

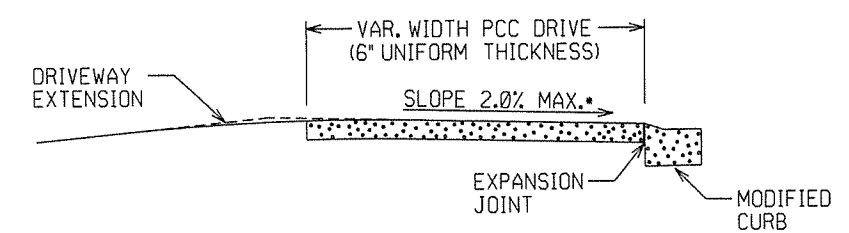
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS.  
THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER,  
SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU  
OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL  
COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

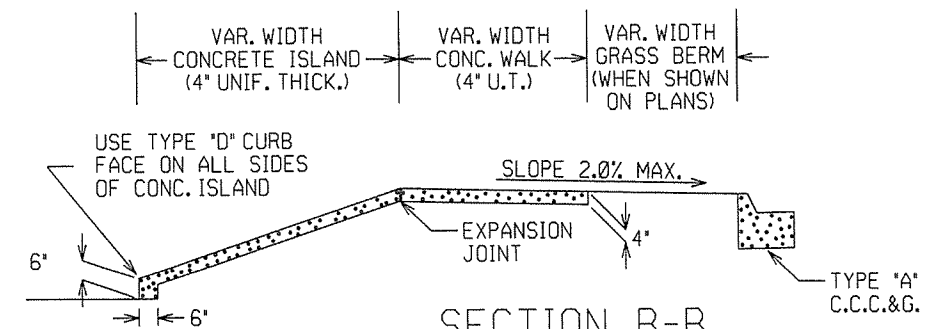


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



SECTION B-B  
CURBED ISLAND BEHIND WALK

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

ARKANSAS STATE HIGHWAY COMMISSION  
DETAILS OF DRIVEWAYS & ISLANDS  
STANDARD DRAWING DR-1

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 3/4 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.

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 3/4 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM						
12	1	45	45	52		
18	2	30	30	39	41	
24	2	22	22	27	28	34
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

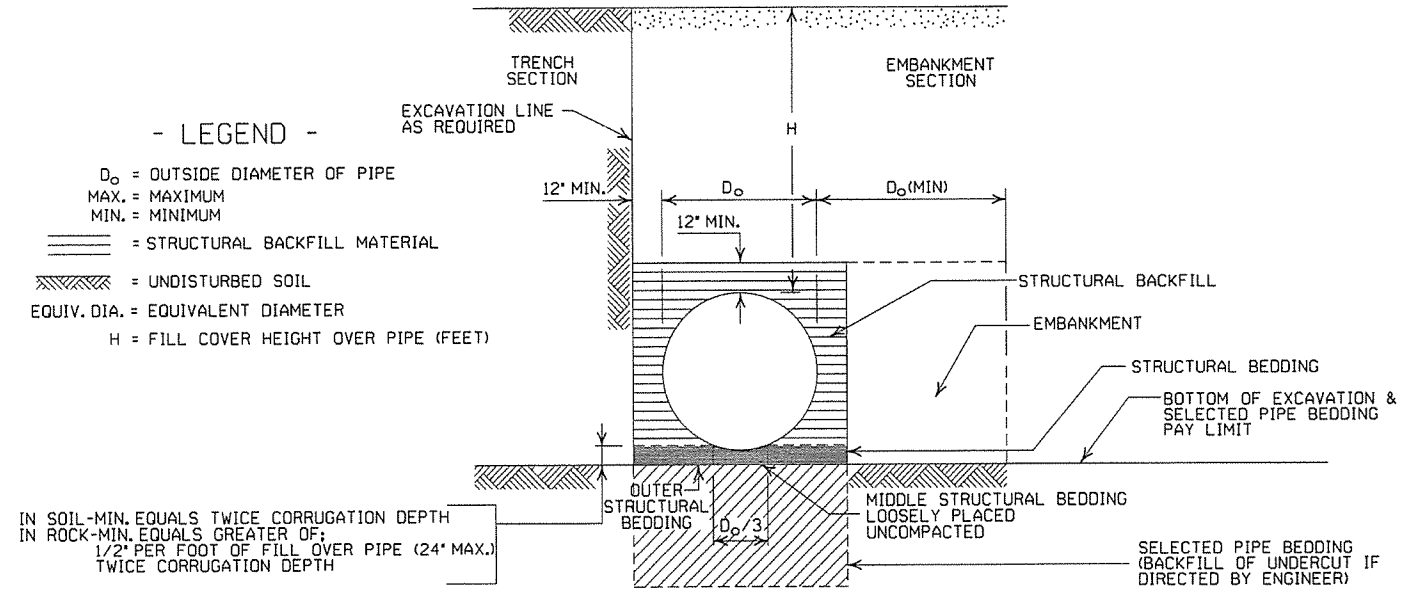
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)			
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION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

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

② WHERE THE STANDARD 2 2/3" x 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.

- LEGEND -

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



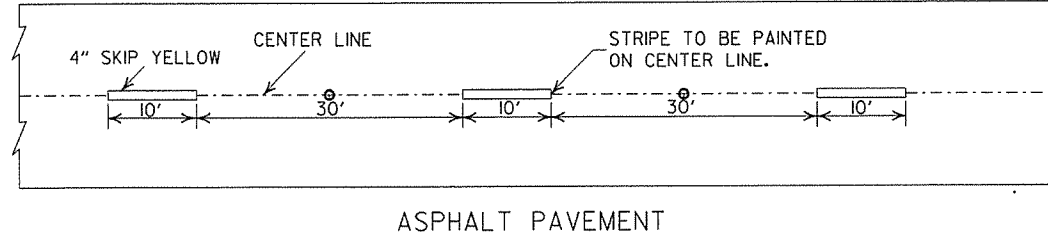
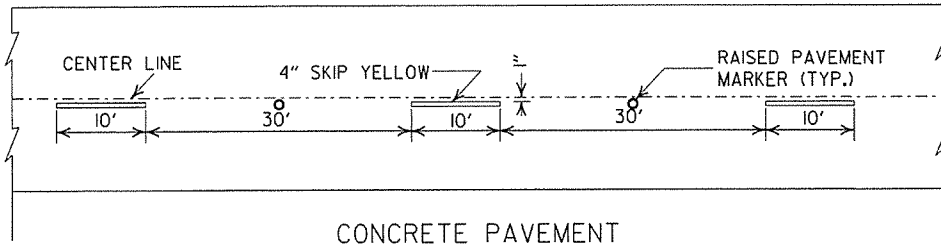
EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/4" 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 STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS, UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

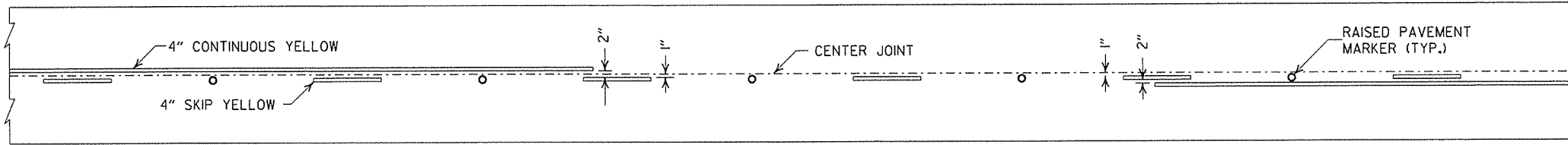
ARKANSAS STATE HIGHWAY COMMISSION	
METAL PIPE CULVERT FILL HEIGHTS & BEDDING	
STANDARD DRAWING PCM-1	
2-27-14	REVISED GENERAL NOTE 1
12-15-11	REVISED FOR LRFD DESIGN SPECS
3-30-00	REVISED INSTALLATIONS
11-06-97	ISSUED
DATE	REVISION
	DATE FILMED



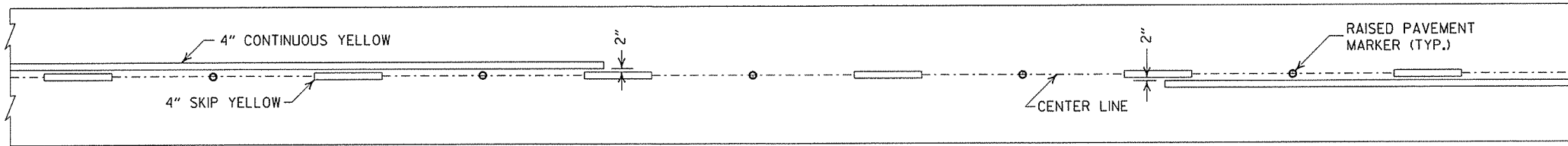
CONCRETE PAVEMENT

ASPHALT PAVEMENT

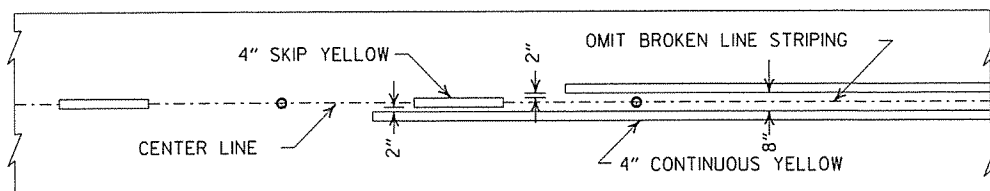
BROKEN LINE STRIPING



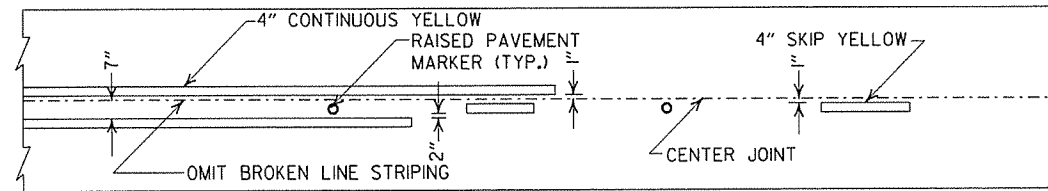
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

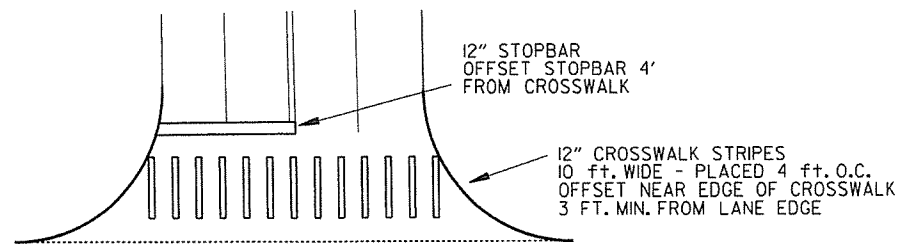


ASPHALT PAVEMENT



CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

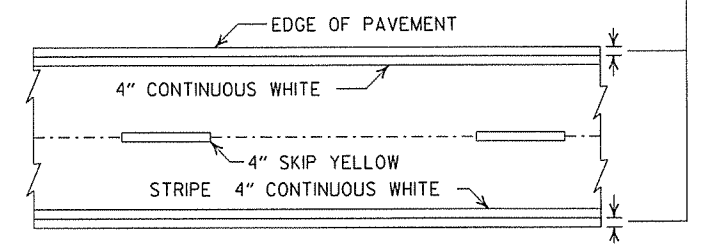


CROSSWALK AND STOPBAR DETAILS

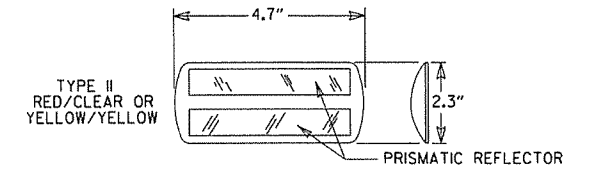
NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

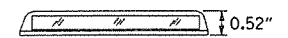
2" FOR ASPHALT OR CONCRETE PAVEMENT  
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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

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

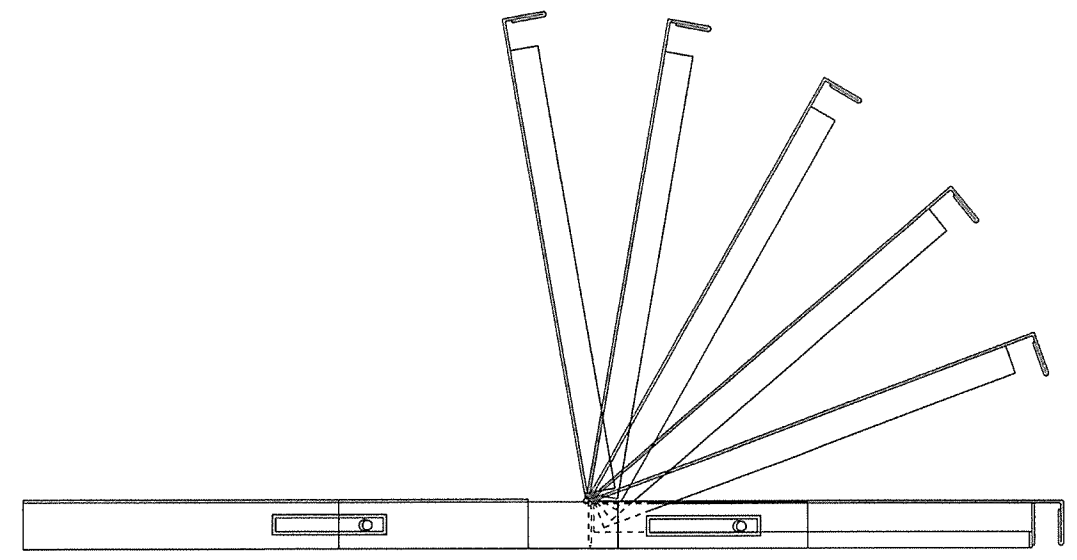
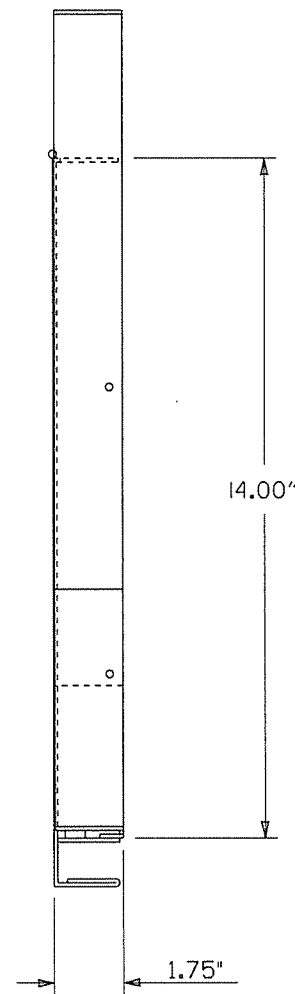
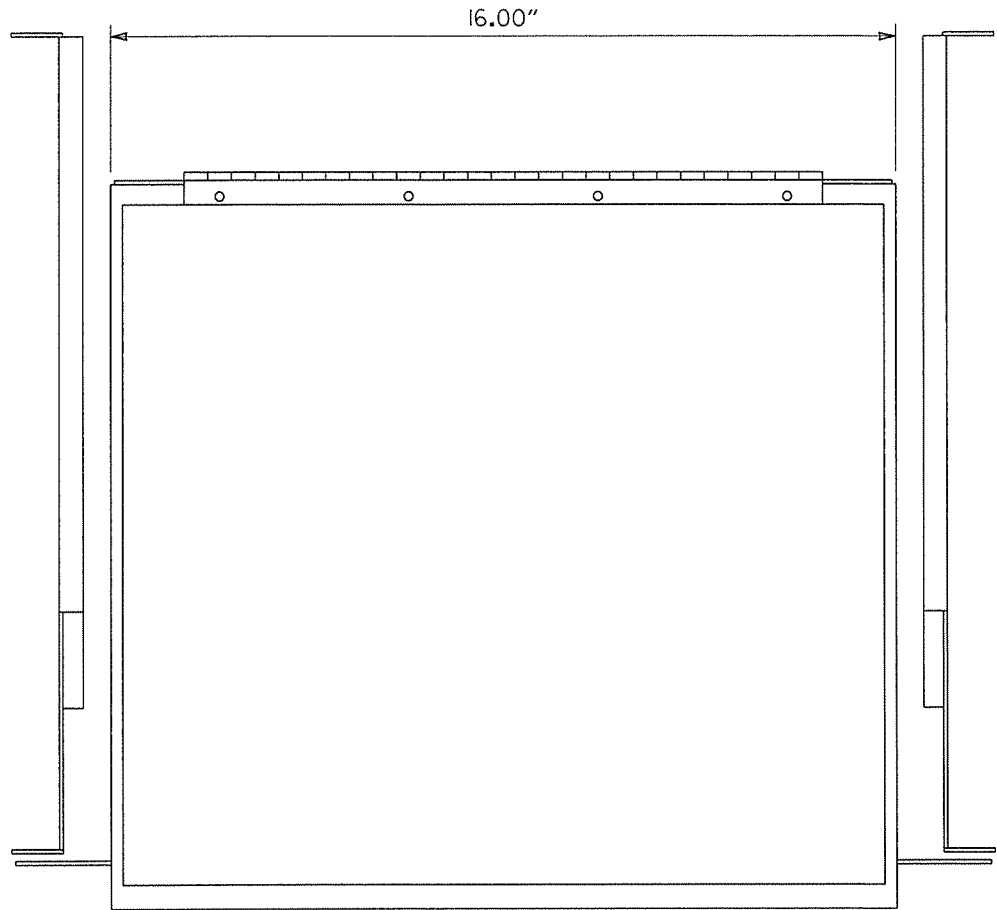
ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

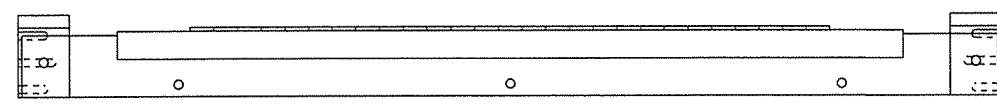
STANDARD DRAWING PM-1



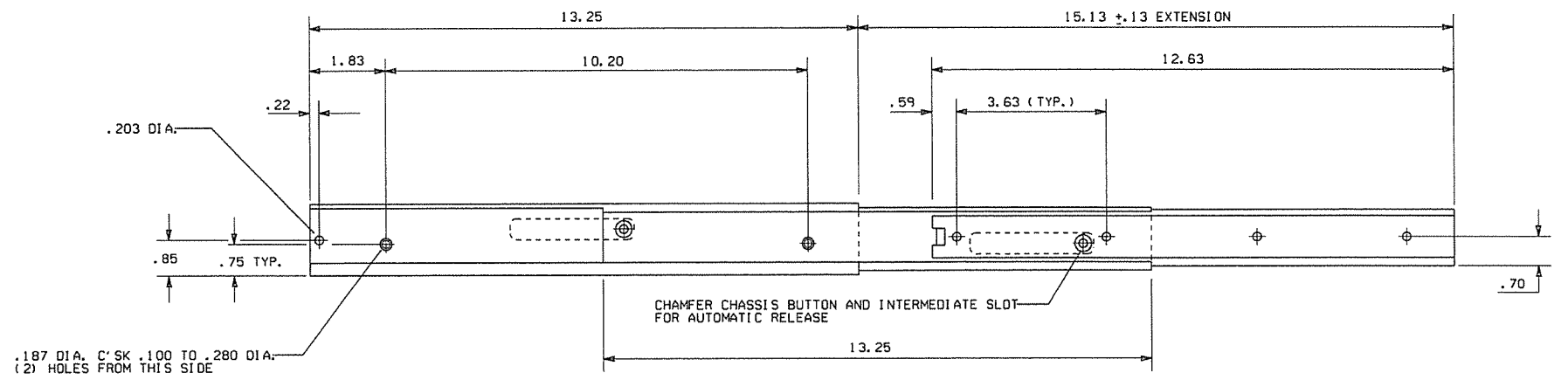
DRAWER PLAN VIEW



- 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.



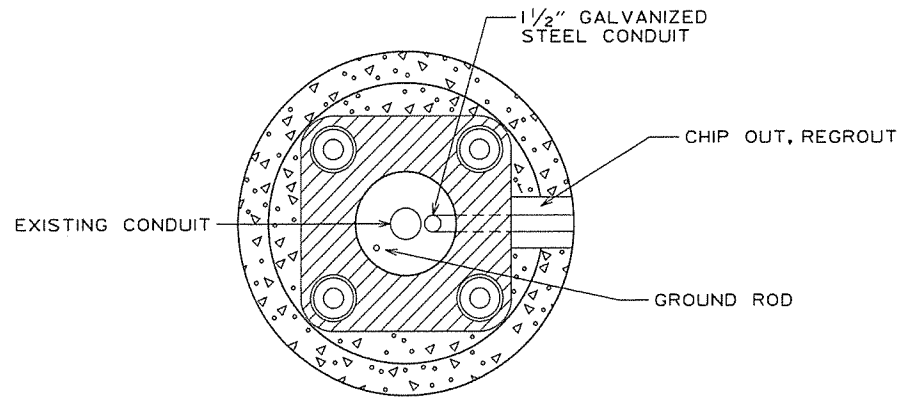
FRONT VIEW



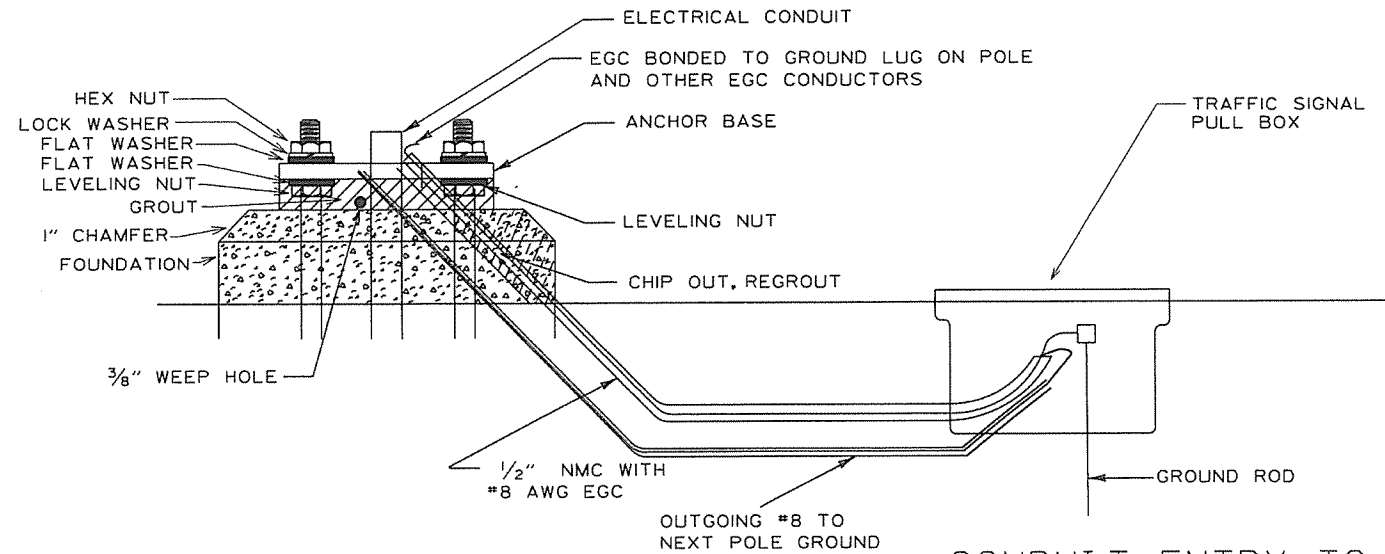
RIGHT SIDE ASSEMBLY

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

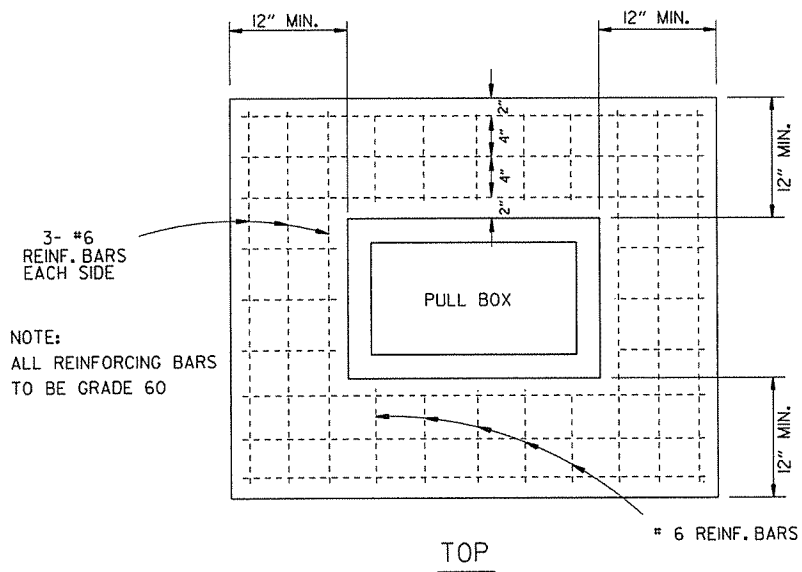
CONDUIT ENTRY TO EXISTING POLE BASE



ANCHOR BASE

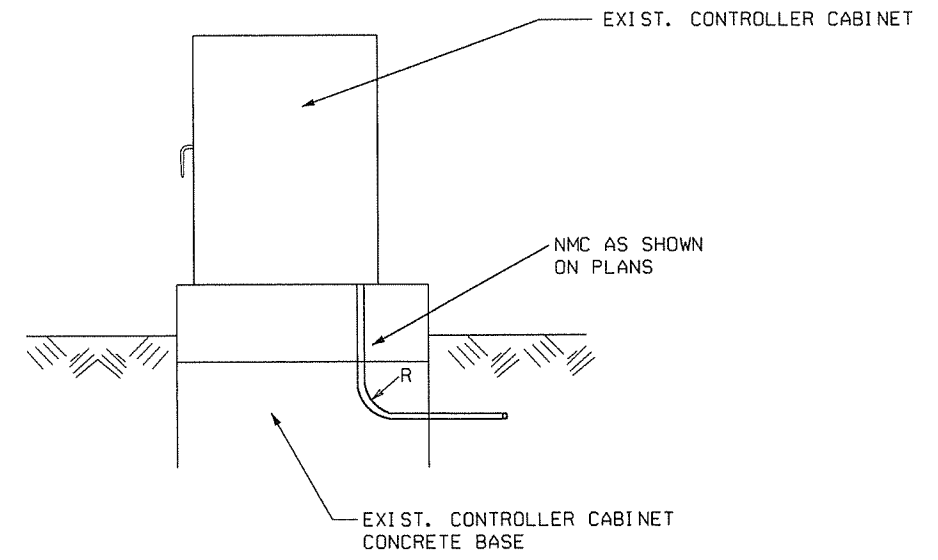
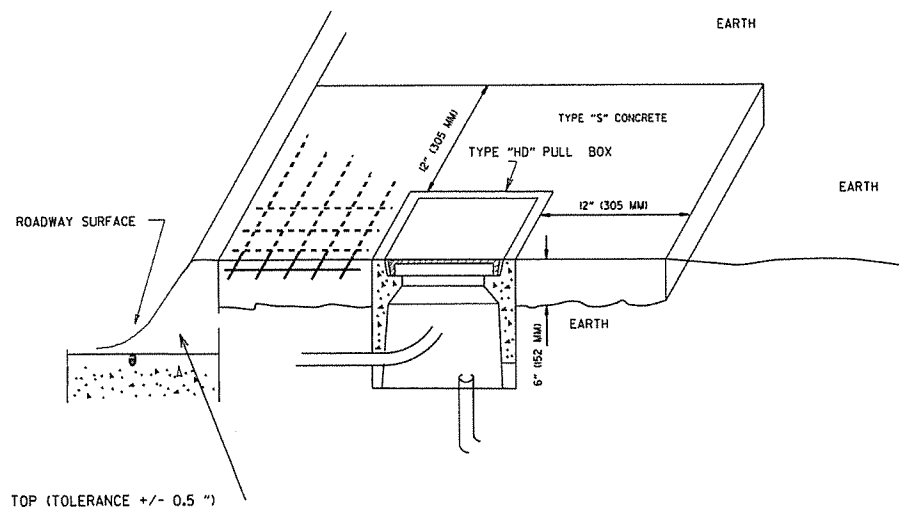


CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

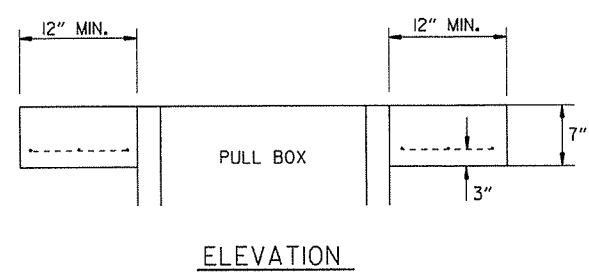


NOTE: ALL REINFORCING BARS TO BE GRADE 60

TYPE "HD" CONCRETE PULL BOX DETAIL



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

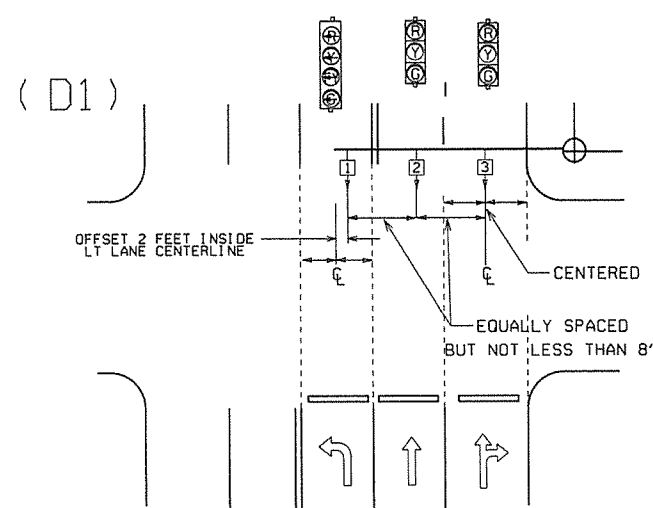
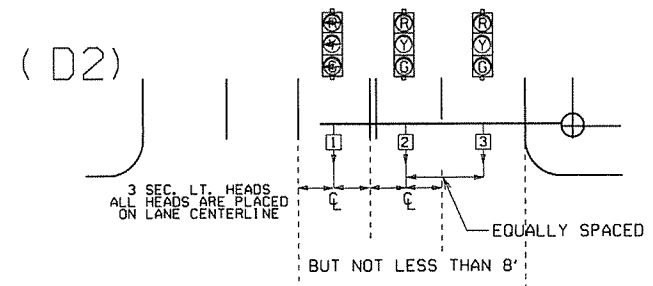
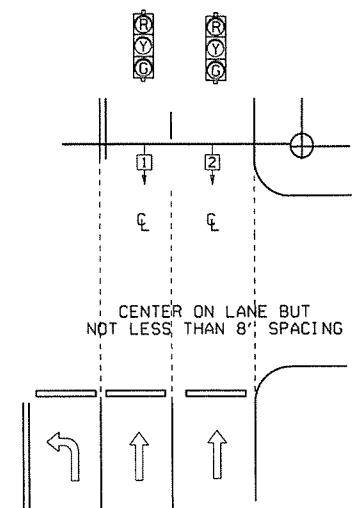
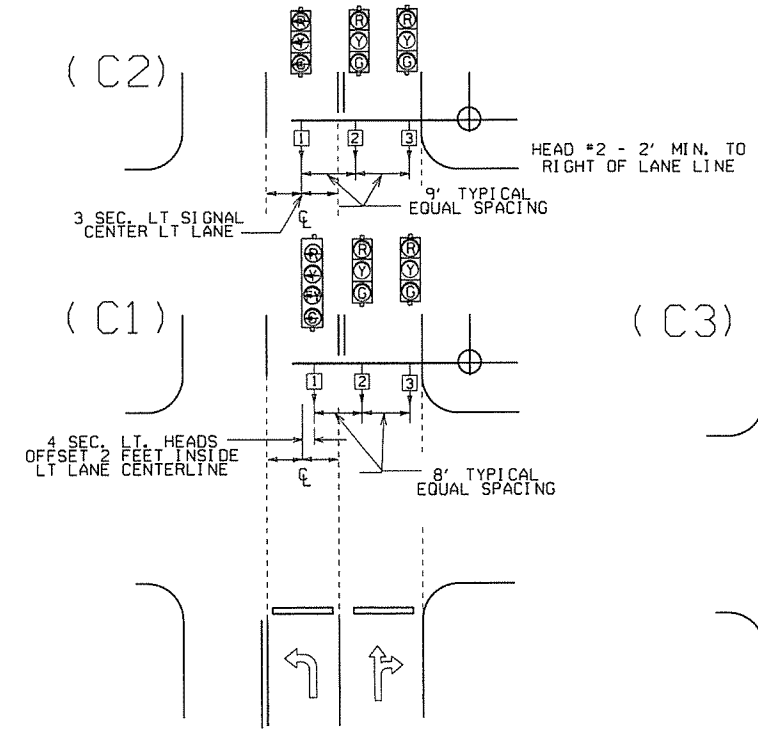
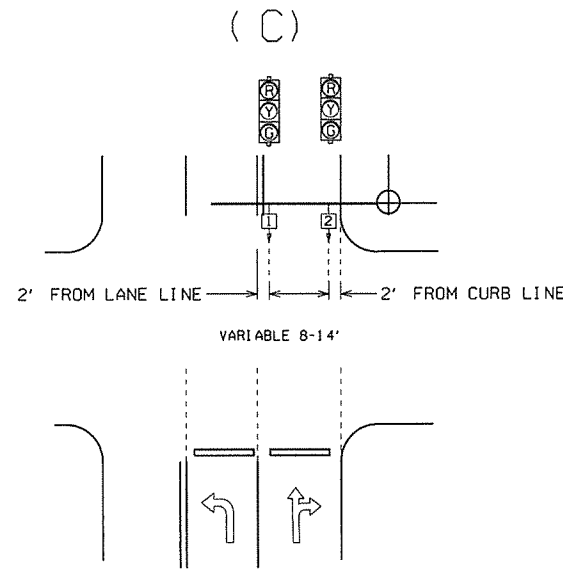
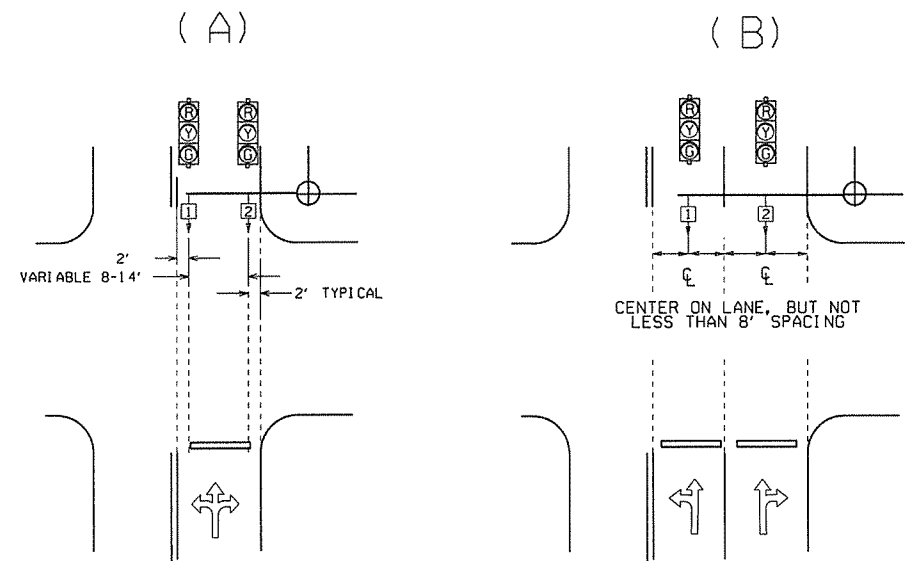


ELEVATION

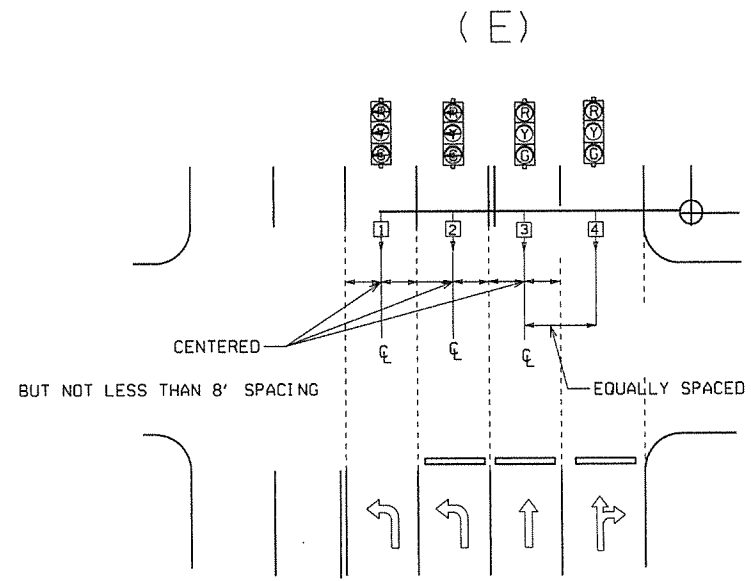
NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 6" (152 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	
DATE	REVISION	DATE FILED

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:

1. 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.
2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
3. 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.
4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.
5. 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.
6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

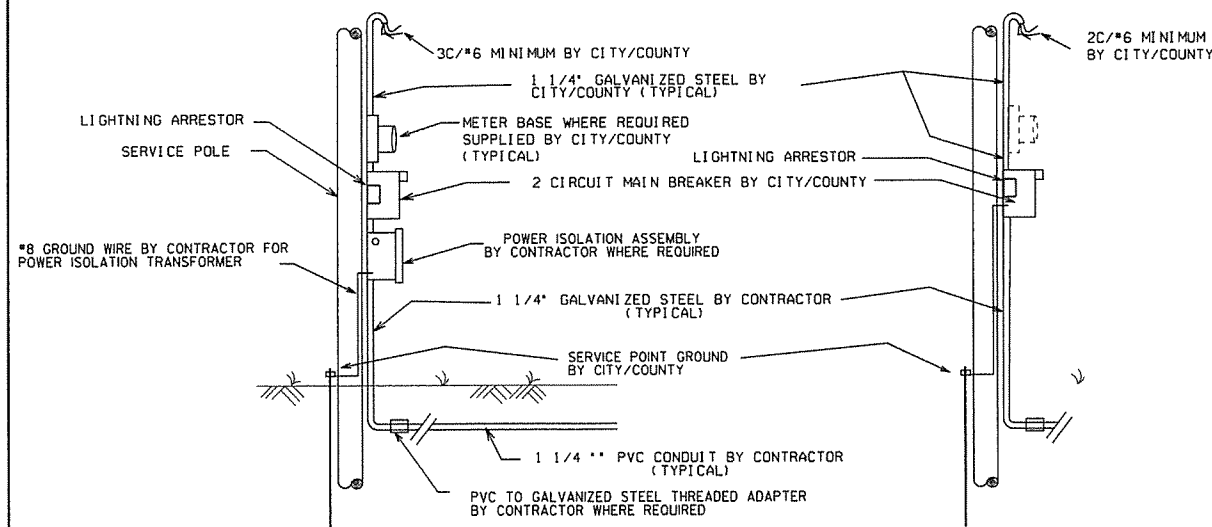
℄ = CENTER OF LANE FROM APPROACH SIDE

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

# MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY

WITHOUT POWER ISOLATION ASSEMBLY



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 OR COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

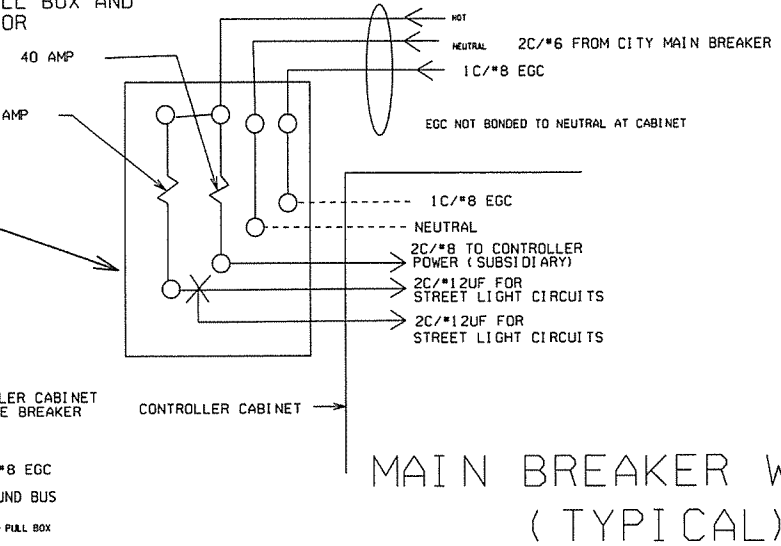
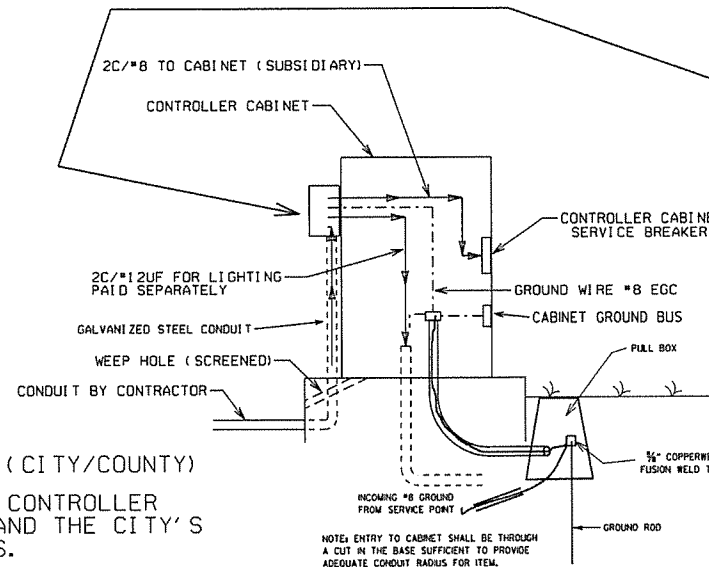
1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINLIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2C/#12 AWG 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.

2. 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.

3. 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.

GROUND ROD-A 10' X 3/4" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

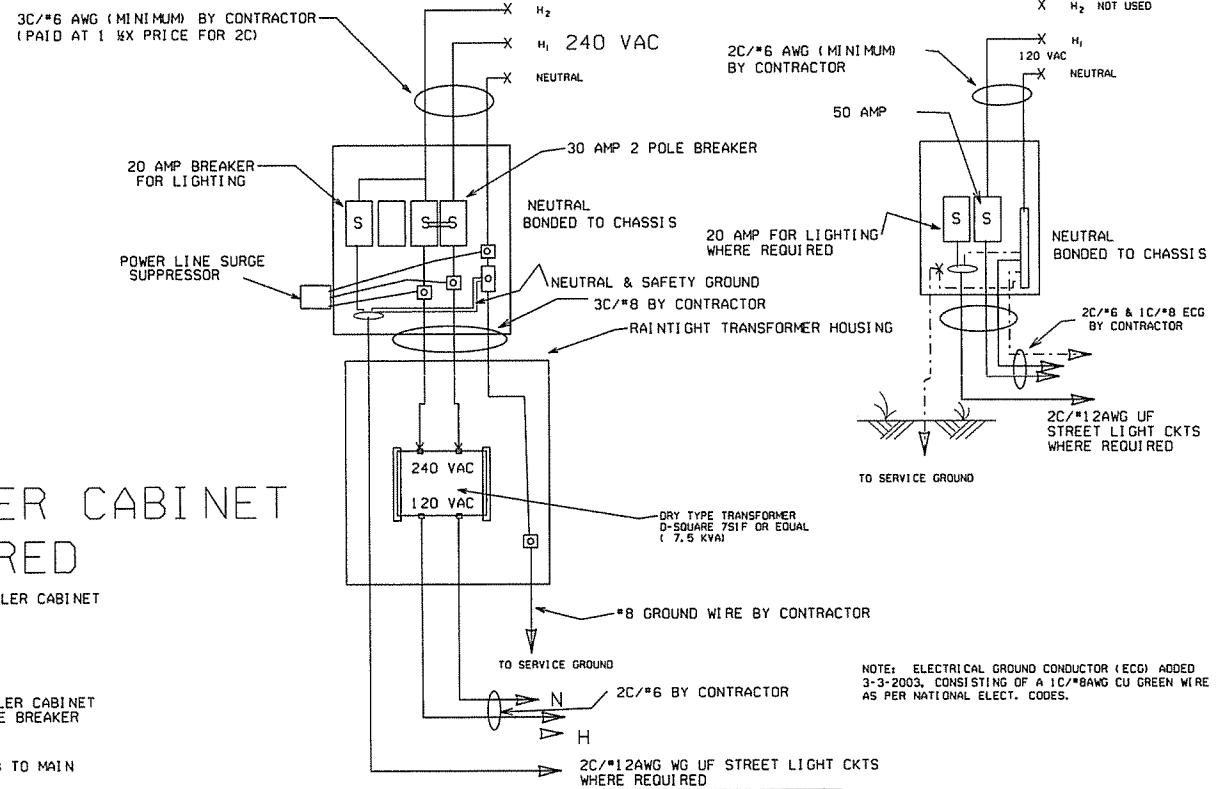
## SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



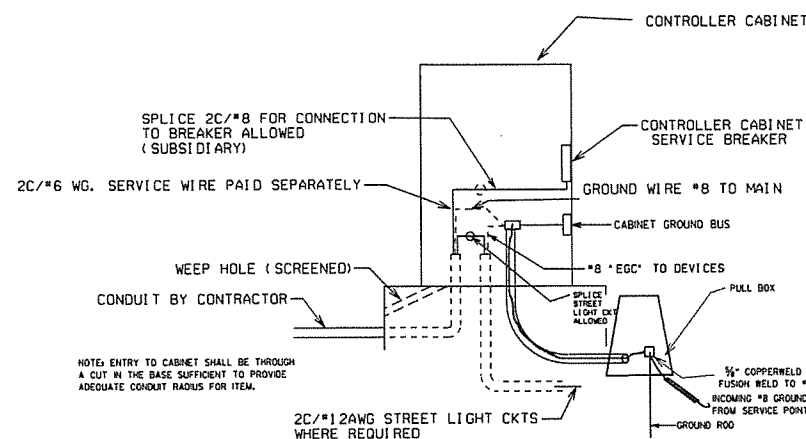
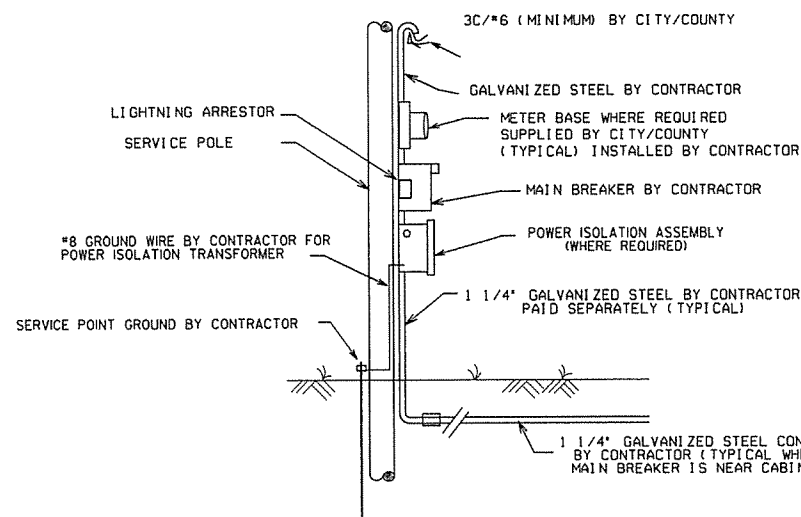
SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

WITH POWER ISOLATION ASSEMBLY  
4 CIRCUIT MAIN BREAKER

WITHOUT POWER ISOLATION ASSEMBLY  
2 CIRCUIT MAIN BREAKER



# MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED



DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
4-18-13	ADDED LIGHTNING ARRESTOR	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION  
SERVICE POINT  
STANDARD DRAWING SD-9

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS: EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12' TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:  
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS: DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT., ONE SIGN MOUNTED 3 FT. FROM SIGNAL \* 2' X 0' X 2' \* 6"; 20 LB., REMAINING HEADS SPACED 8 FT. \* 3 SEC., 56 LB., TWO 5 SEC.)

14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING 2 HEADS FOR ARMS 10 TO 16 FT., 2 HEADS FOR ARMS 10 TO 16 FT.; INCLUDING LB., 3 HEADS FOR 18 TO 24 FT. ARMS; 4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) \* VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

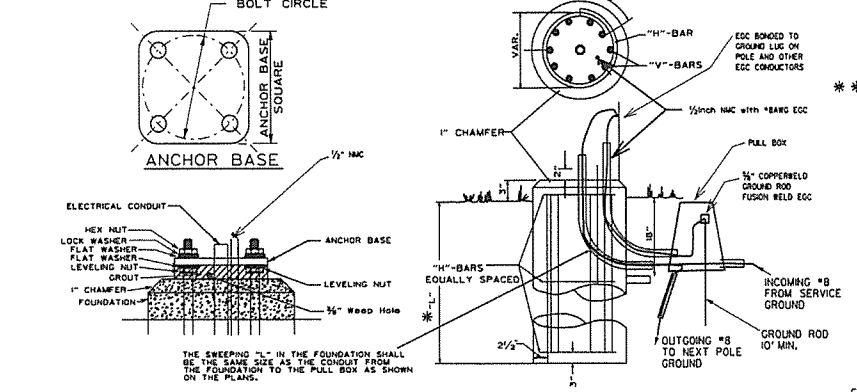
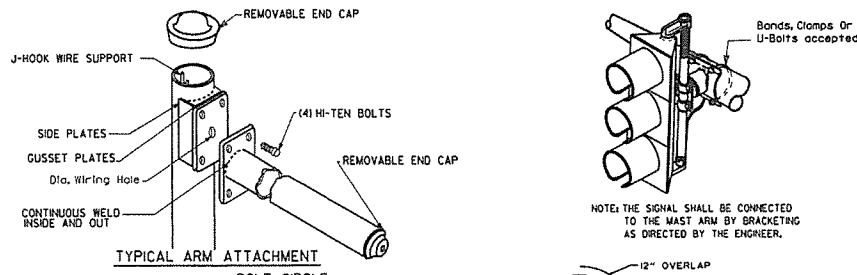
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.

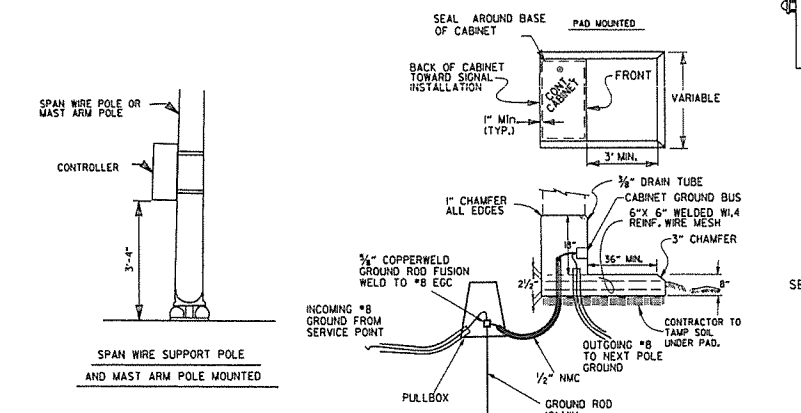


THE GROUND ROD SHALL BE FUSION WELDED TO A 1/2" X 1/8" A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH * L *	STEEL		
			VERT.	HORZ.	O/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44'
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42'
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66'
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88'
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56'
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74'
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76'
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76'
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76'
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64'



CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10" X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS 'S' OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS 'S' OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

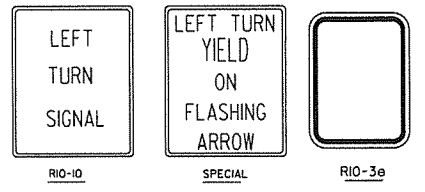
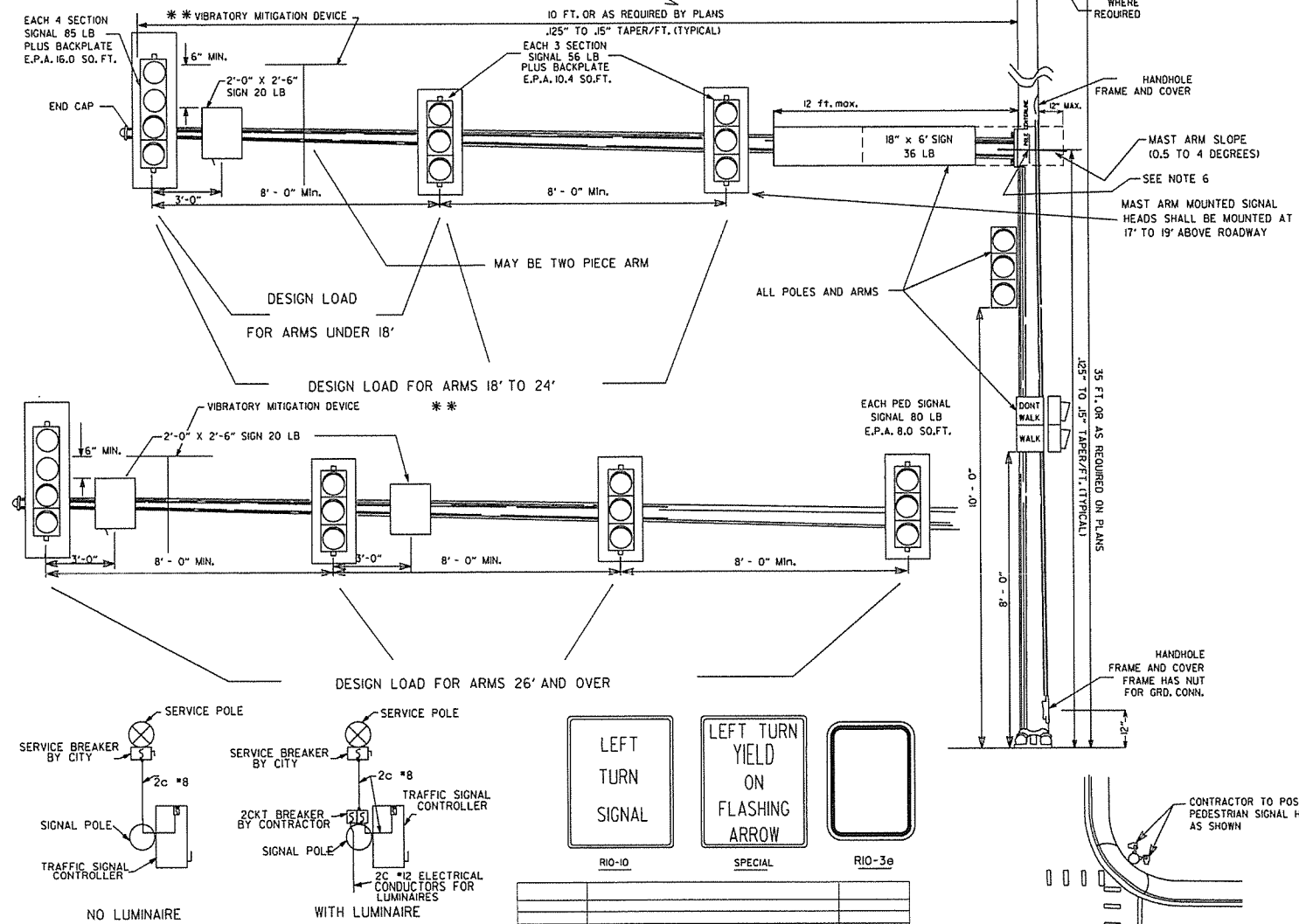
FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

\* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

\*\* IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60" X 16" X 0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.




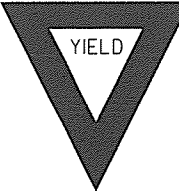
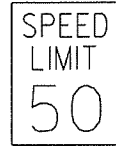
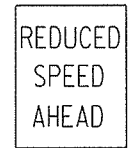

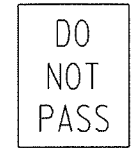



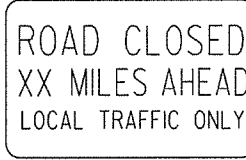
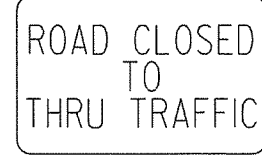

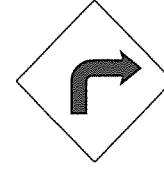
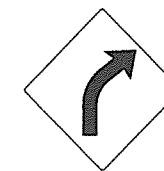
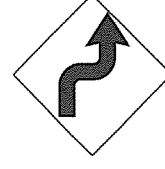

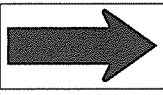
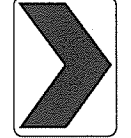
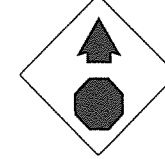
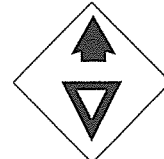
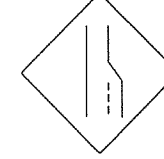

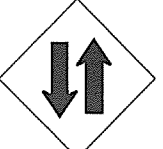

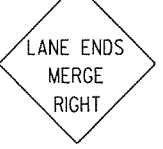


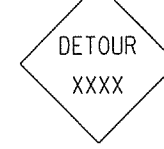






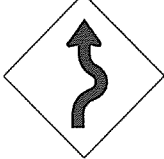
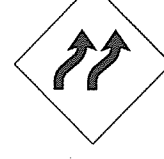


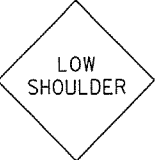
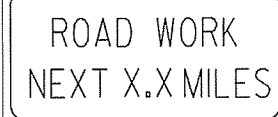
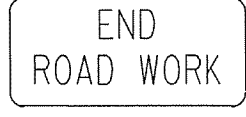
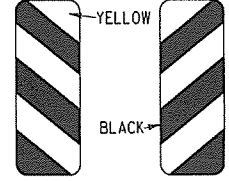


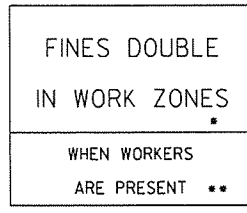
DATE	REVISION	DATE	FILM
2-21-84	REVISED NOTES		
9-12-83	ISSUED AS STANDARD DRAWING		
7-21-83	REVISED YMD SIGNAL HEADS		
5-21-09	REVISED GROUNDING		
7-31-08	REVISED GROUNDING		
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES		
4-18-08	REVISED AASHTO NOTES		
4-11-08	REVISED TO 2001 AASHTO STANDARDS		
10-12-04	REVISED CABINET ORIENTATION		
6-23-04	REVISED		
5-11-04	REV. NOTE 3/AASHTO REQUIREMENTS		
6-1-03	REV. NOTES & POLE MAST ARM SLOPE		
4-1-03	REVISED POLE TAPERS		
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT		
11-22-99	REVISED FOUNDATION DETAILS		
11-17-98	REVISED DETAILS AND NOTES		
11-21-95	ISSUED		

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

<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>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</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>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>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-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>WI-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>

ADVANCE DISTANCES (XXXX)

500 FT 1/2 MILE  
1000 FT 3/4 MILE  
1500 FT 1 MILE AHEAD

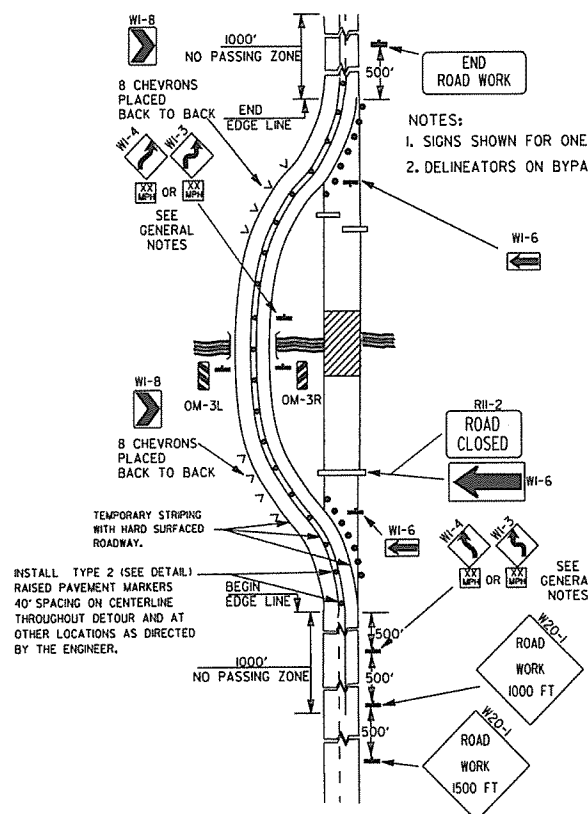
GENERAL NOTES:

- 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 SQ. 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.

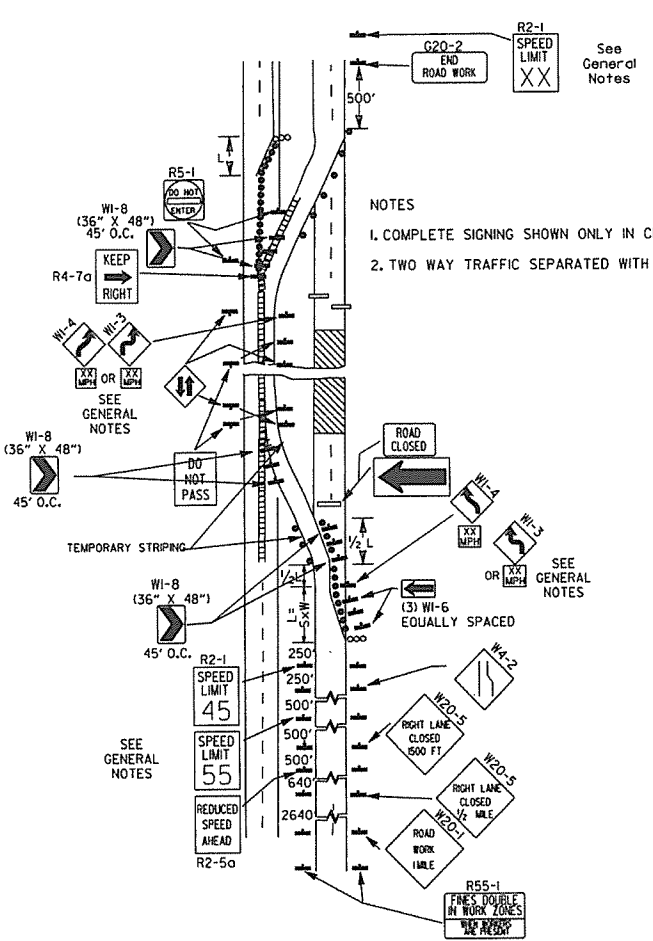
NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

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	
1-18-04	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

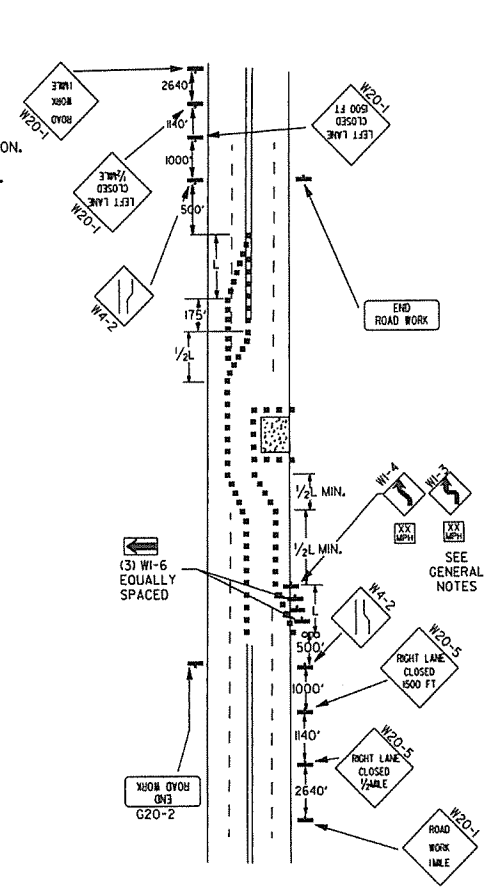
ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION  
STANDARD DRAWING TC-1



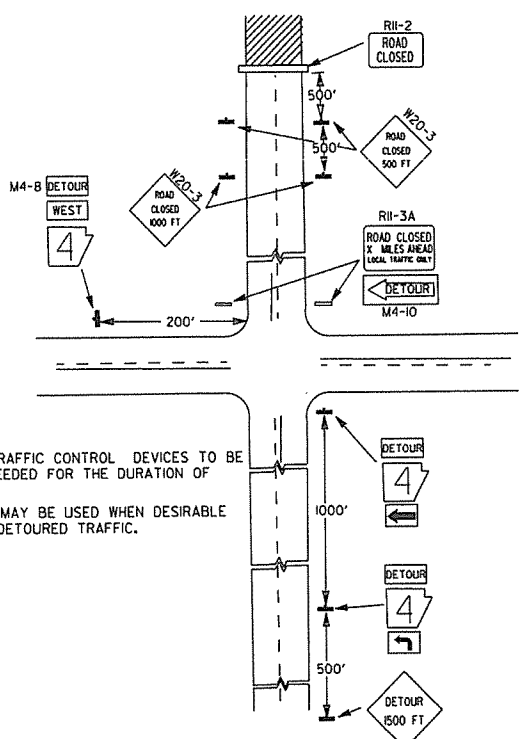
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



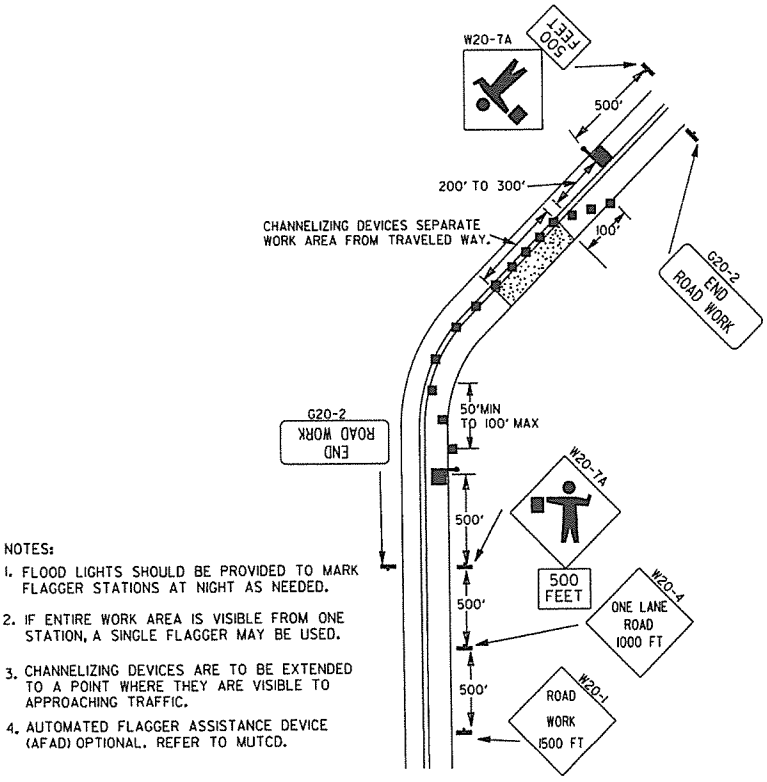
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



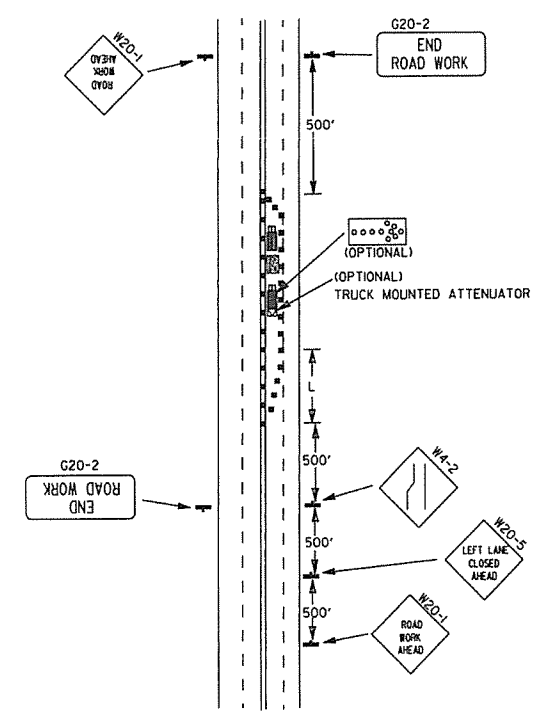
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



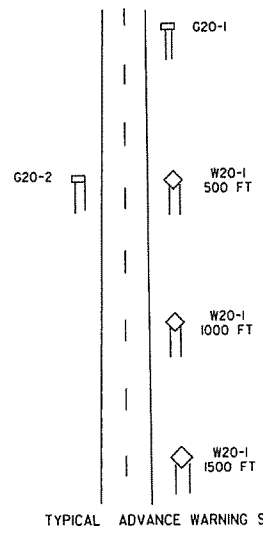
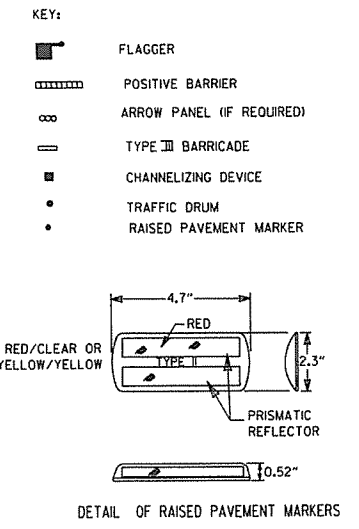
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(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.

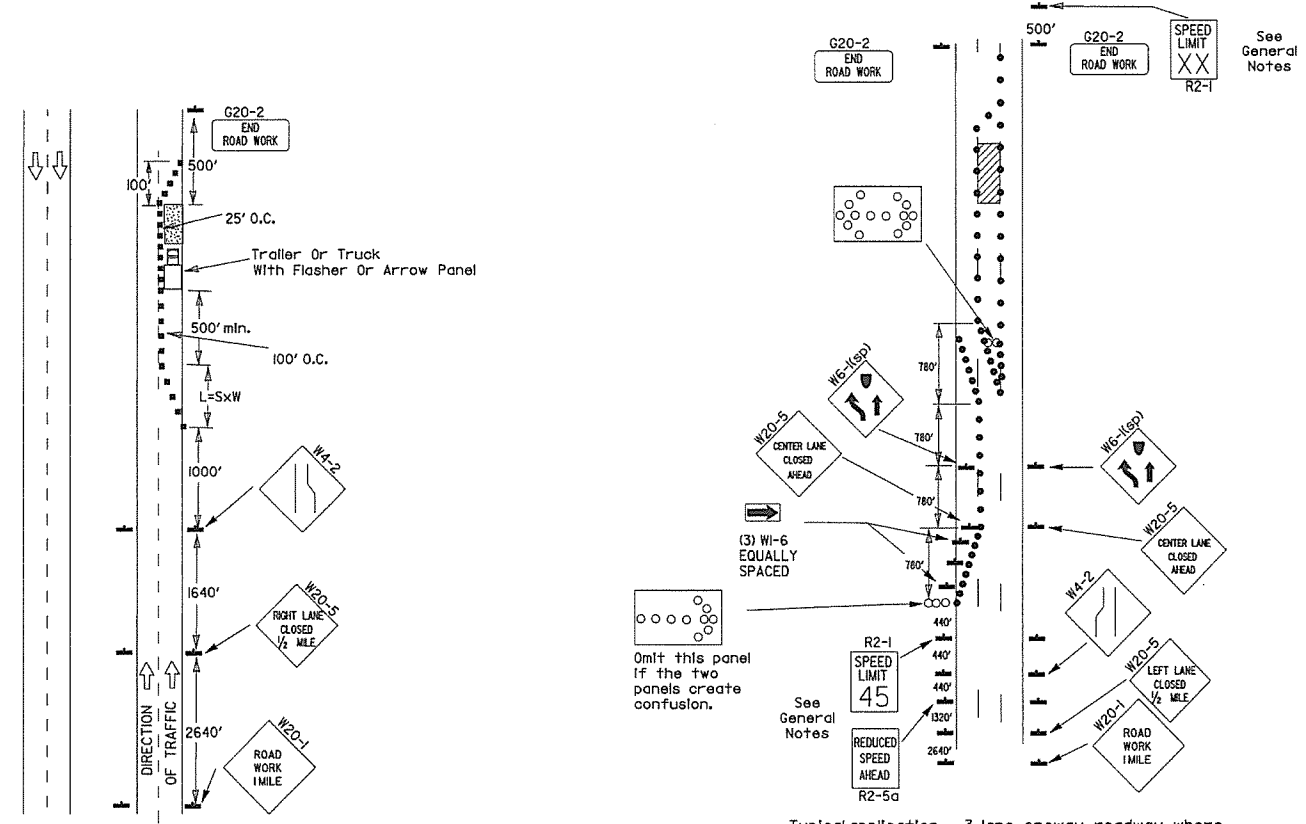


TAPER FORMULAE:  
 $L = SXW$  FOR SPEEDS OF 45MPH OR MORE.  
 $L = \frac{WS^2}{60}$  FOR SPEEDS OF 40MPH OR LESS.  
 WHERE:  
 L = MINIMUM LENGTH OF TAPER.  
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.  
 W = WIDTH OF OFFSET.

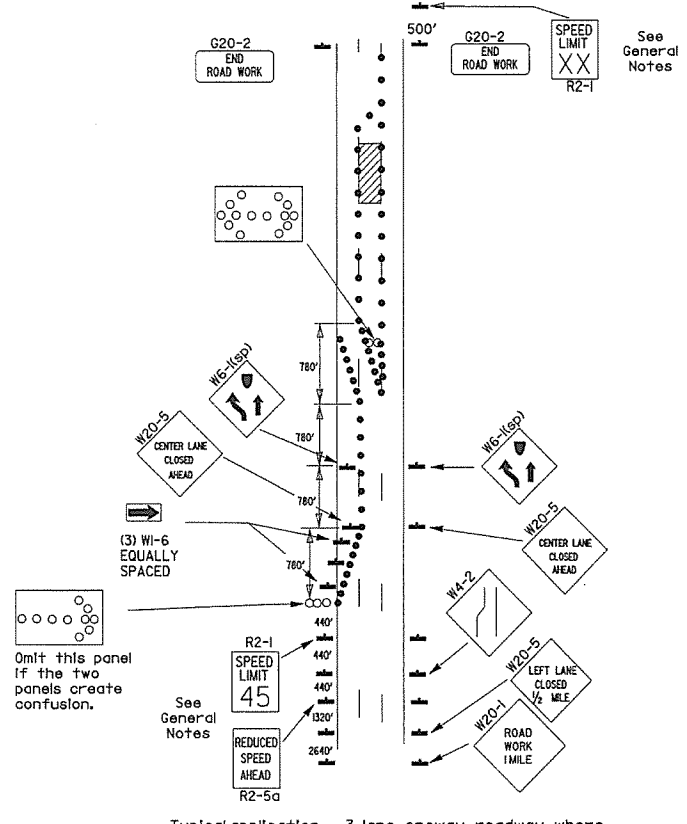
- GENERAL NOTES:  
 1. ADVISORY SPEED POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS.  
 2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(155) SHALL BE OMITTED AND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

DATE	REVISION	FILED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-1-10	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	

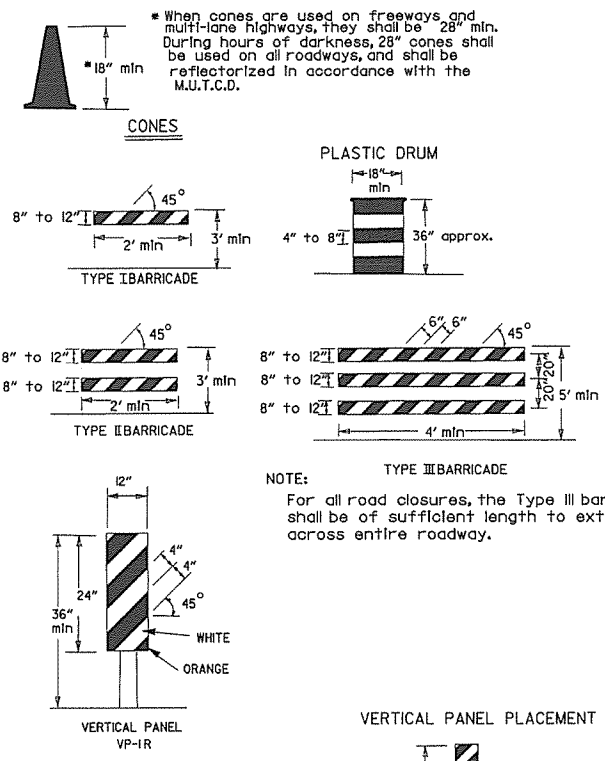
Channelizing devices



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



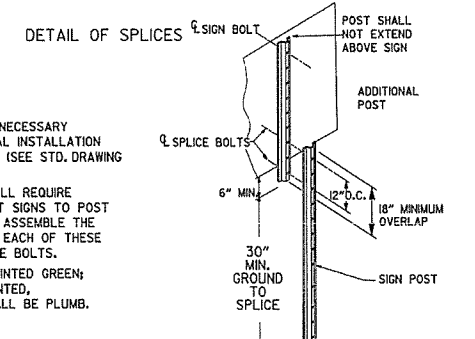
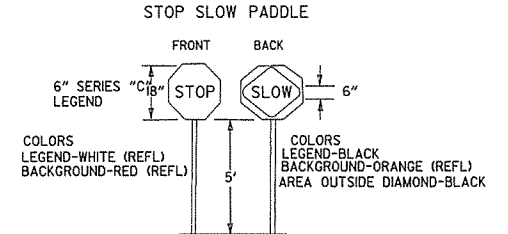
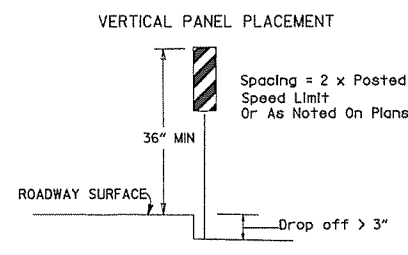
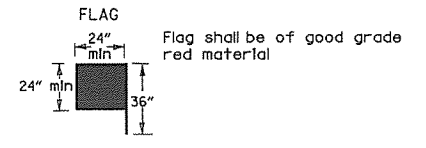
(B) Typical application - 3-lane oneway roadway where center lane is closed.



TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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

When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

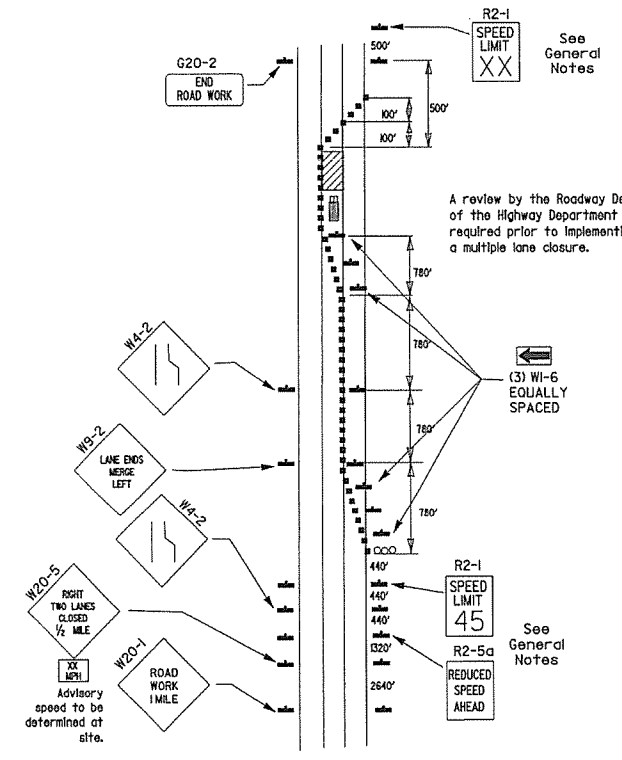


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21). NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS. SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

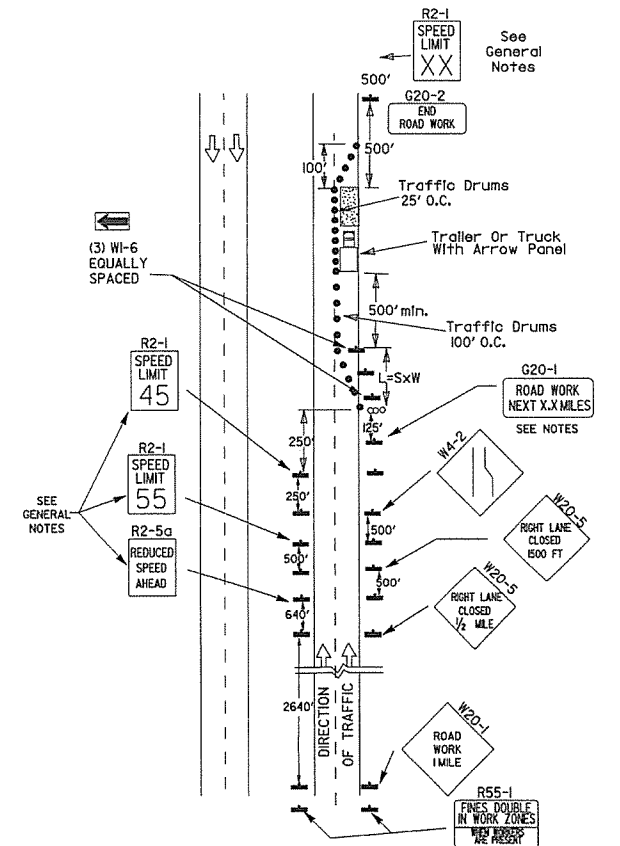
- KEY:
- Arrow Panel (if Required)
  - Channelizing Device
  - Traffic drum

GENERAL NOTES:

- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
- 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 R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1XX 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(65) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1XX 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.
- 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 shall be erected 125' in advance of the job limit. Additional W20-1(1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
- Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
- All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
- 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.



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

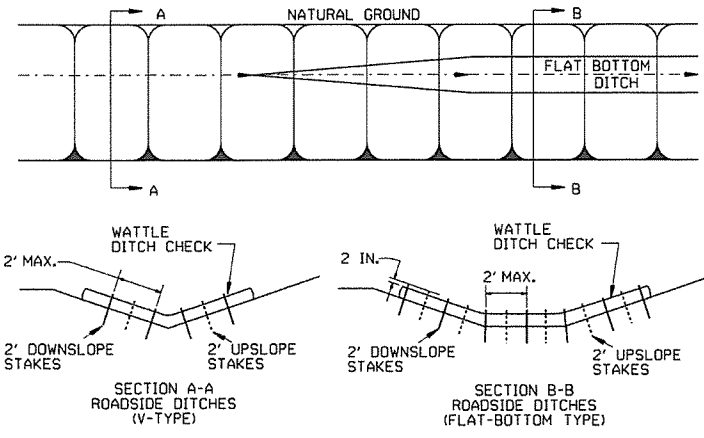


(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

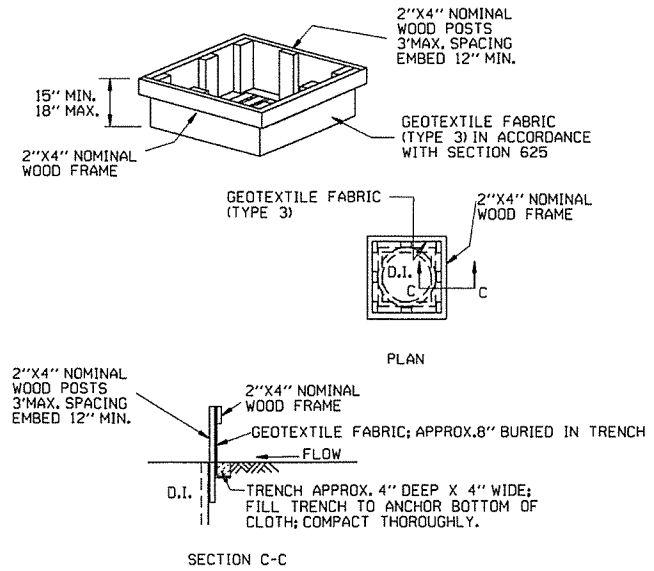
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED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



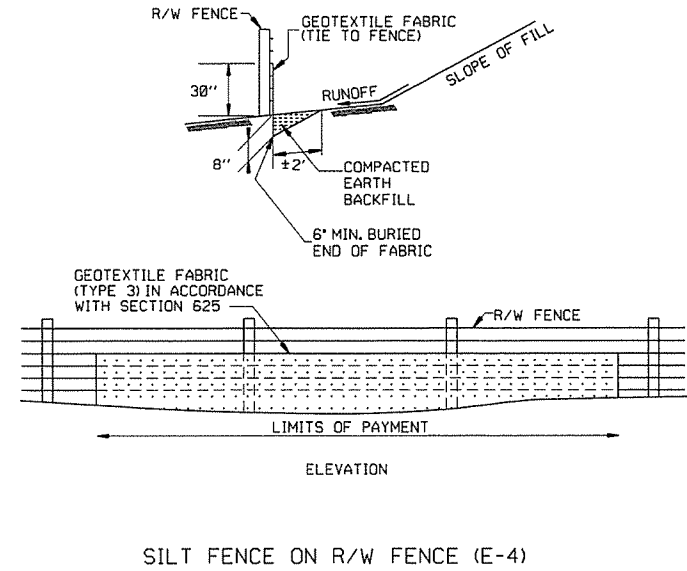
GENERAL NOTES  
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



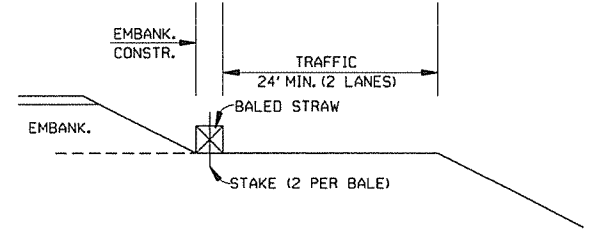
DROP INLET SILT FENCE (E-7)



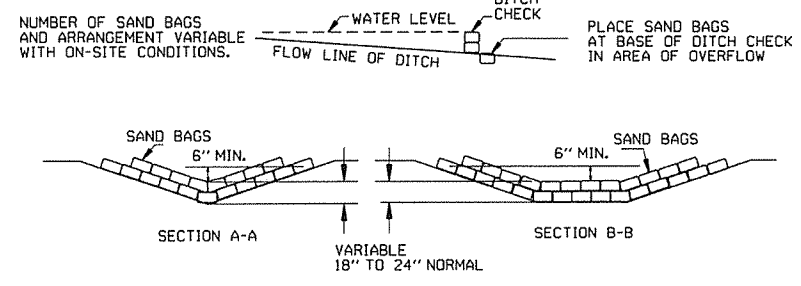
SILT FENCE ON R/W FENCE (E-4)

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

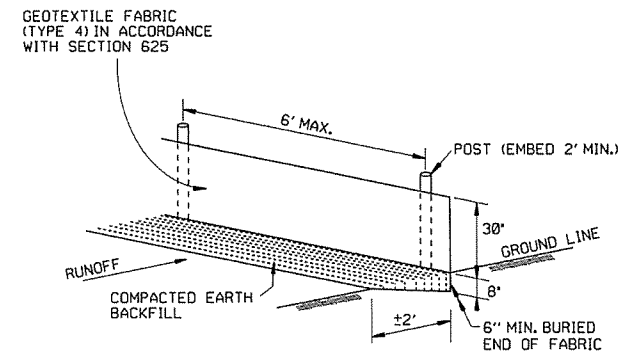
GENERAL NOTES  
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.  
2. NO GAPS SHALL BE LEFT BETWEEN BALES.  
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED 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)

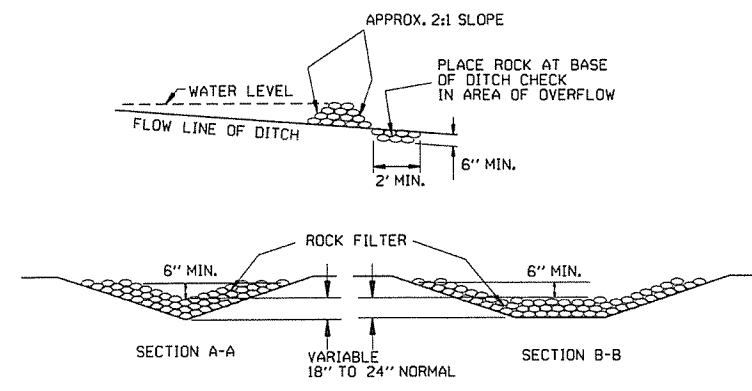


SAND BAG DITCH CHECK (E-5)



SILT FENCE (E-11)

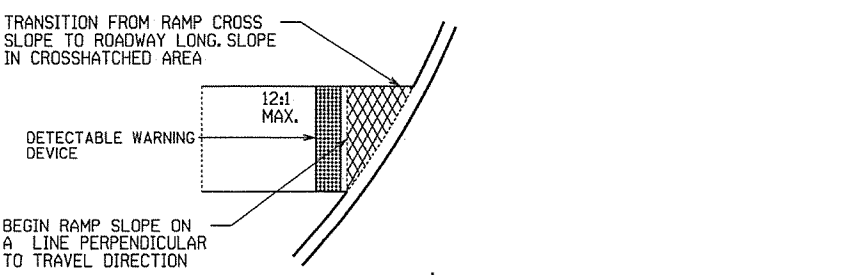
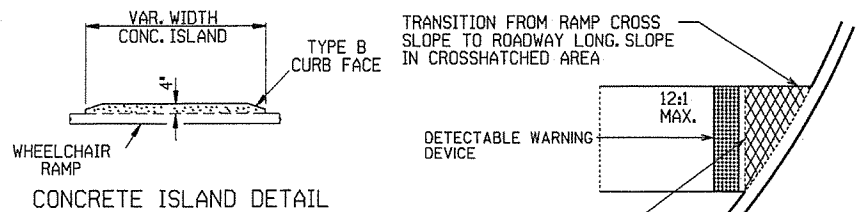
GENERAL NOTES  
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



ROCK DITCH CHECK (E-6)

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

TEMPORARY EROSION CONTROL DEVICES



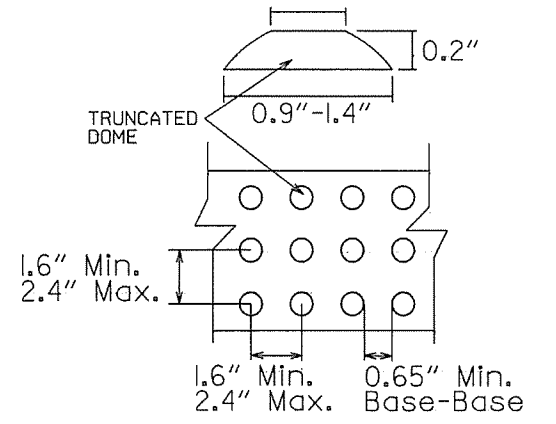
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS 'R'	DISTANCE 'X'	DISTANCE 'Y'	LENGTH 'L'	RAMP AREA 'A'
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

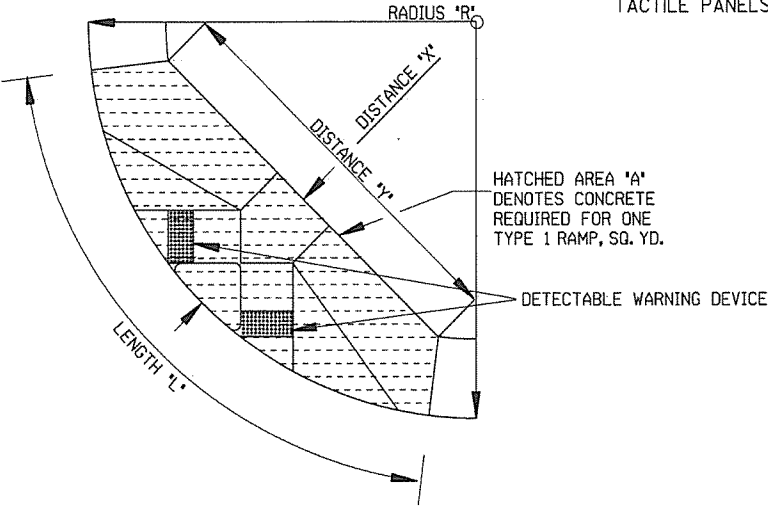
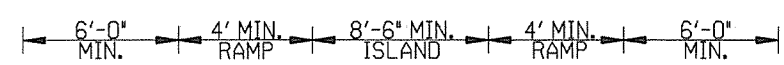
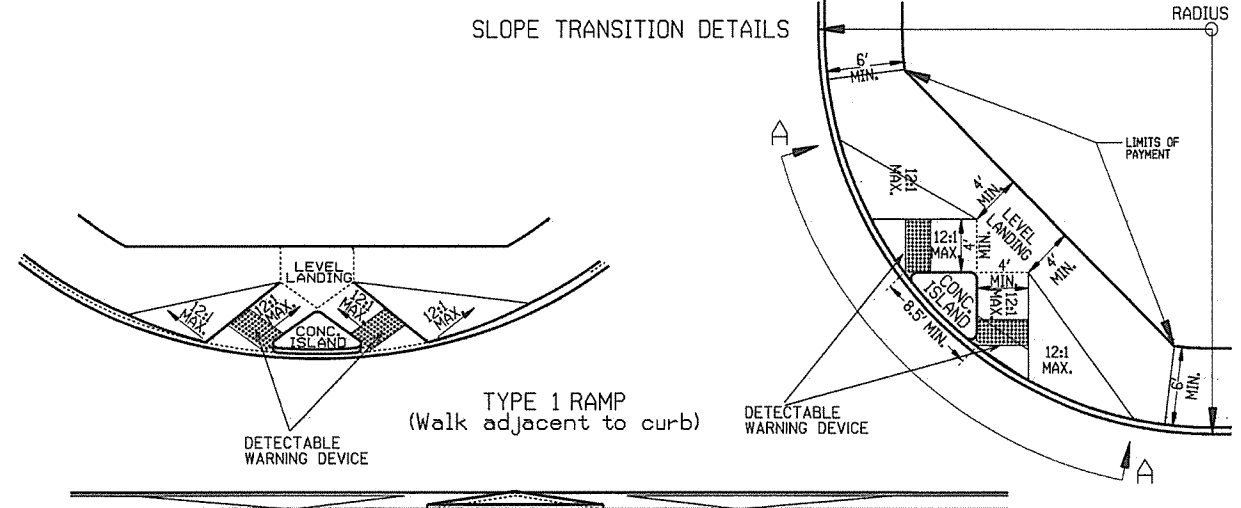
GENERAL NOTES FOR DETECTABLE WARNING DEVICES

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

50-65% of Base Dia. 26



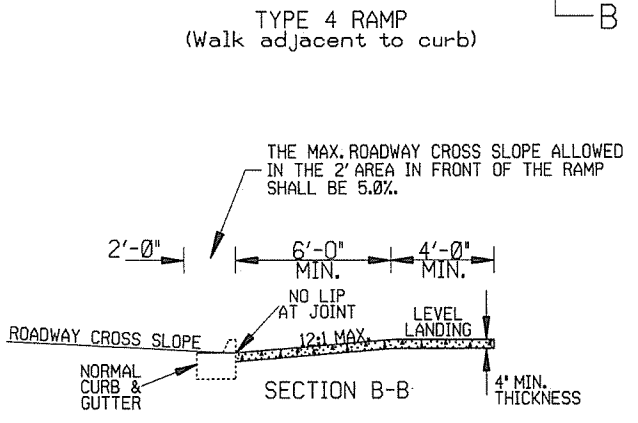
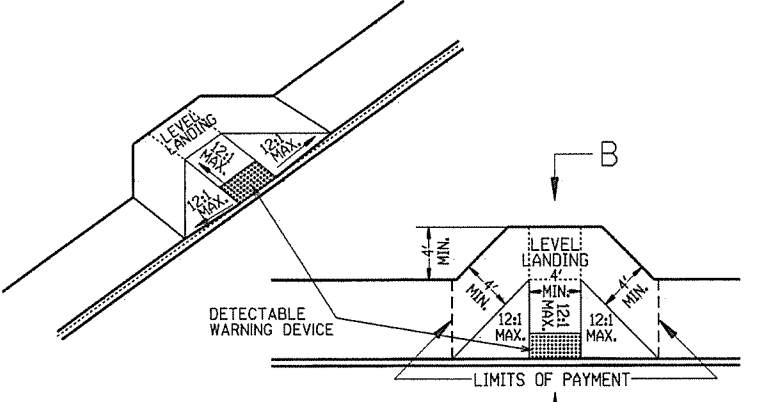
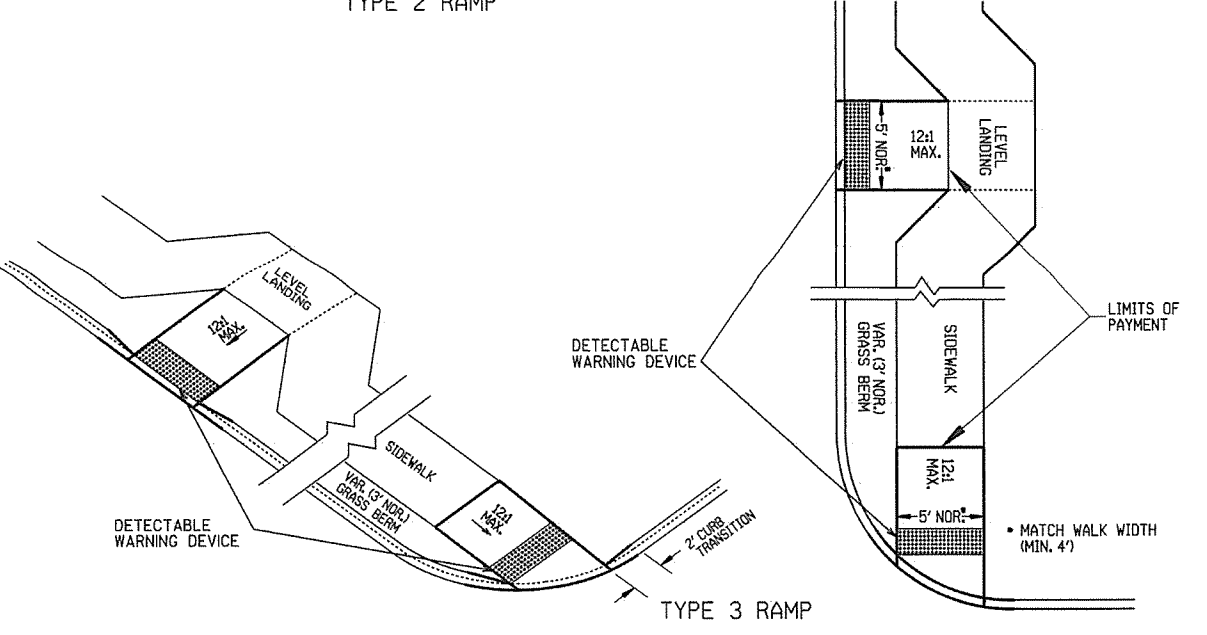
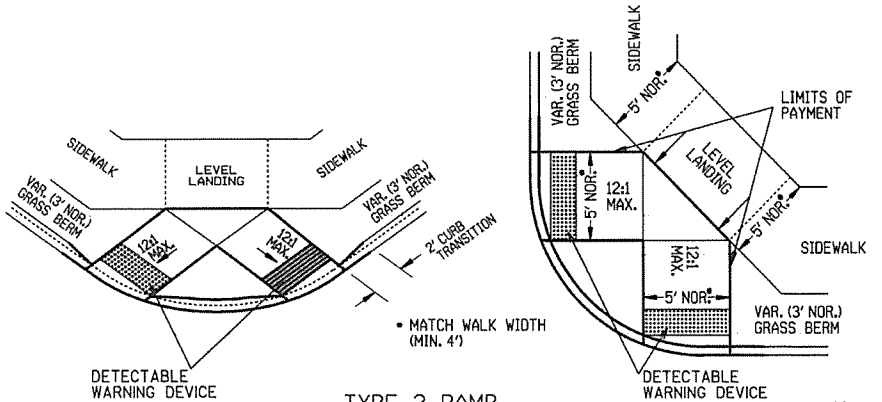
DETECTABLE WARNING DEVICE DETAIL



GENERAL NOTES:

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

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



RAMP SELECTION CRITERIA

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS  
NEW CONSTRUCTION  
AND ALTERATIONS

STANDARD DRAWING: WR-1