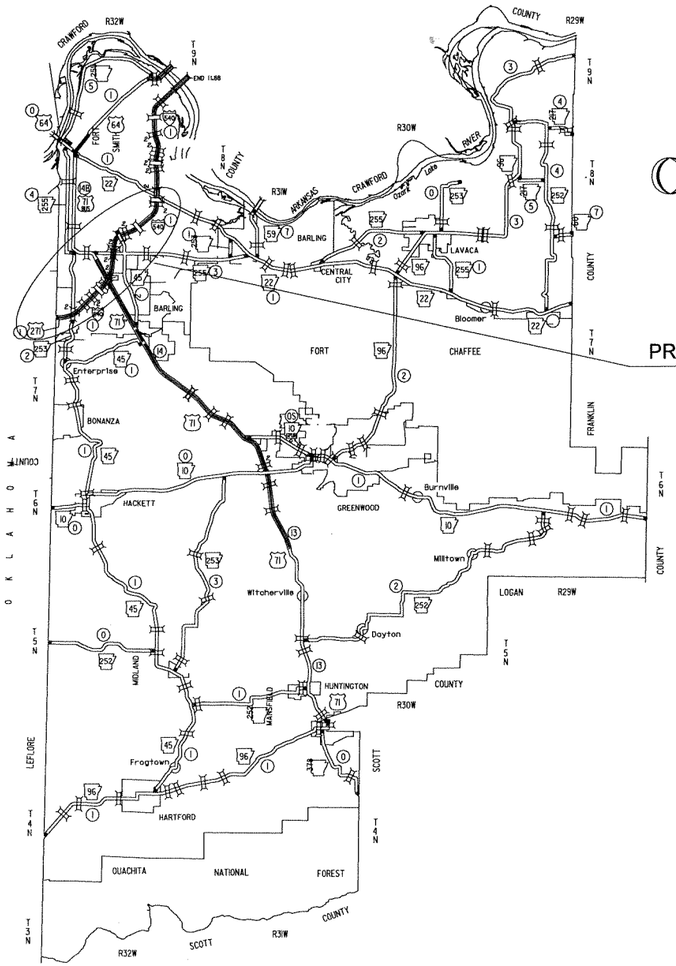
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	1	56
				(2)	OKLAHOMA STATE LINE - HWY 22 (SIGNING) (S)			

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

OKLAHOMA STATE LINE - HWY. 22 (SIGNING) (S)

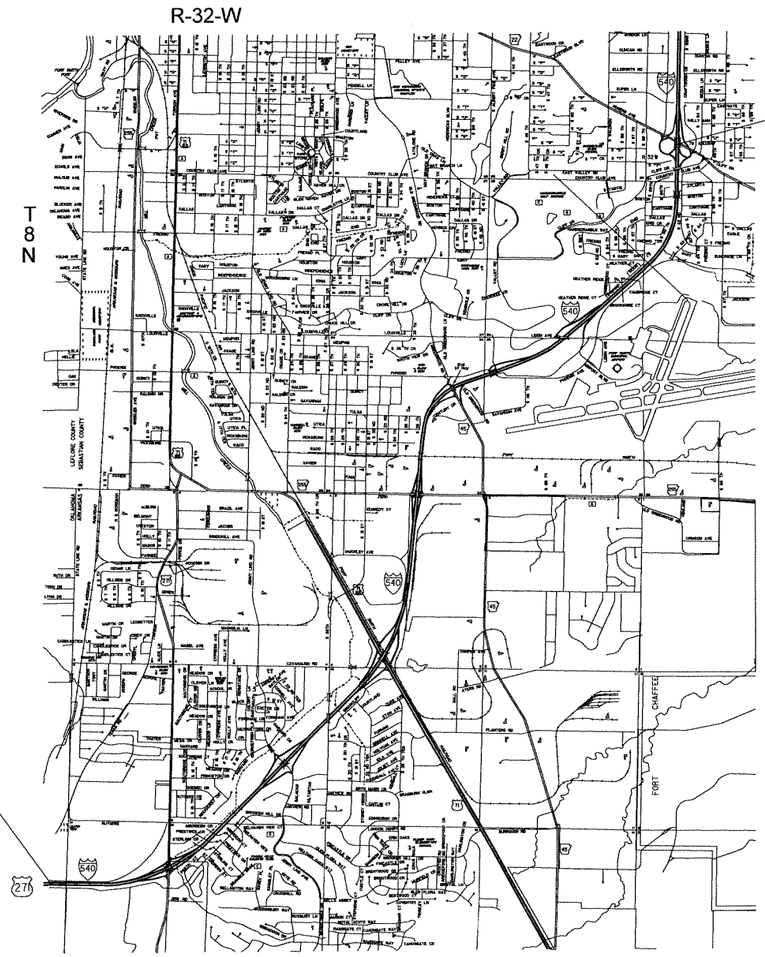
SEBASTIAN COUNTY
ROUTE 540 SECTION 1
JOB 040279
FAP NHPP-540-1(254)14



VICINITY MAP

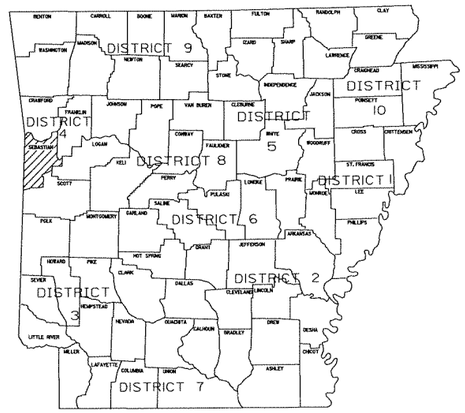
PROJECT LOCATION

R-32-W



END JOB 040279
STA. 330+00.00
LOG MILE 6.55

BEGIN JOB 040279
STA. 0+00.00
LOG MILE 0.00



ARK. HWY. DIST. NO. 4

PROJECT COORDINATES:

	LATITUDE	LONGITUDE
MID-POINT	N 35^21'24"	W 94^21'59"

GROSS LENGTH OF PROJECT	33000.00	FEET OR	6.250	MILES
NET LENGTH OF ROADWAY	33000.00	FEET OR	6.250	MILES
NET LENGTH OF BRIDGES	0.00	FEET OR	0.000	MILES
NET LENGTH OF PROJECT	33000.00	FEET OR	6.250	MILES

P.E. JOB 040279
NON-PART.

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3917
FRANK VIZZO

7/16/13
DEPUTY DIRECTOR
AND CHIEF ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07/10/2013			
08/21/2013			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040279	2	56

(2) INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GEN. NOTES

INDEX OF SHEETS

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS
FOR HIGHWAY CONSTRUCTION, EDITION OF 2003 AND THE FOLLOWING
SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
723-1	GENERAL REQUIREMENTS FOR SIGNS
JOB 040279	INTERNET BIDDING
JOB 040279	MAINTENANCE OF TRAFFIC
JOB 040279	SIGN PANEL MATERIALS AND FABRICATION
JOB 040279	SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS
JOB 040279	STEEL SIGN STRUCTURES
JOB 040279	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 040279	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040279	WARM MIX ASPHALT
JOB 040279	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 040279	COORDINATION OF WORK
JOB 040279	ASSESSMENT OF WORKING DAYS
JOB 040279	TEMPORARY IMPACT ATTENUATION BARRIER

GENERAL NOTES

THE EXISTING SIGNS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE REMOVAL AND DISPOSAL OF OVERHEAD / GROUND MOUNTED SIGNS AND SIGN STRUCTURES, INCLUDING FOOTINGS, SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

ALL SIGNS SHALL BE CONSTRUCTED WITH TYPE-III SHEETING BACKGROUND AND SHALL HAVE DEMOUNTABLE LEGEND CONSTRUCTED OF PRISMATIC SHEETING (TYPE-VIII OR IX), UNLESS OTHERWISE NOTED IN THE PLANS. THE LEGEND SHALL BE PLACED USING CLEARVIEW SPACING AND SERIES-5W AND 5WR CHARACTERS, UNLESS OTHERWISE NOTED IN THE PLANS.

THE CLEARVIEW FONT SHALL FOLLOW THE SPACE TABLES FOR CLEARVIEW AND NOT SHS E-MODIFIED. THIS INCLUDES THE USE OF CLEARVIEW 5-W-R. FOR GENERAL GUIDANCE ON LETTER AND WORD SPACING REFER TO THE FHWA CLEARVIEW TYPEFACE SUPPLEMENT. (HTTP://MUTCD.FHWA.DOT.GOV)

THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS AND SIGN STRUCTURES OVER ROADWAYS OPEN TO TRAFFIC. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY LANE OR ROAD CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN ITEM 603 OF THE STANDARD SPECIFICATIONS.

PLACEMENT OR REMOVAL OF SIGNS AND SIGN STRUCTURES OVER THE TRAFFIC LANES OR AS SPECIFIED BY THE ENGINEER SHALL BE LIMITED TO THE HOURS BETWEEN 11:00 P.M. AND 5:00 A.M. ANY DAY OF THE WEEK. THE ALLOWABLE WORK PERIOD MAY BE INCREASED OR DECREASED BY THE ENGINEER BASED UPON IMPACT TO TRAFFIC.

THE CONTRACTOR WILL CEASE ALL WORK REQUIRING LANE CLOSURES BETWEEN THE HOURS OF 7AM-10AM AND 3PM-6PM UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
8/21/13
LARRY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
08/21/2013				JOB NO.		040279	3	56
				(2) SIGNING SUMMARY OF QUANTITIES & REVISIONS				

SIGNING SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	TOTAL	UNIT
202	REMOVAL AND DISPOSAL OF CONCRETE MEDIAN BARRIER	234	LIN. FT.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	210	TON
SP, SS & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	48	TON
SP, SS & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	3	TON
601	MOBILIZATION	1.00	LUMP SUM
SP, SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 617	GUARDRAIL (TYPE A)	525	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)	3	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	2	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	1	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER	4	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	4	EACH
631	CONCRETE BARRIER WALL (MEDIAN TYPE SP-1)	100	LIN. FT.
631	CONCRETE BARRIER WALL (MEDIAN TYPE SP-2)	100	LIN. FT.
SP	STEEL OVERHEAD SIGN STRUCTURE (OH540-65-05)	1	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH540-65-06)	1	EACH
SP	STEEL CANTILEVER SIGN STRUCTURE (OC-540-65-07)	1	EACH
SP & SS & 725	GUIDE SIGN - ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	5090	SQ. FT.
SP & SS & 725	GUIDE SIGN - OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)	630	SQ. FT.
SP & SS & 726	STANDARD SIGN	550	SQ. FT.
SP & SS & 727	EXIT NUMBER PANEL (TYPE A)	403	SQ. FT.
730	BREAKAWAY SIGN SUPPORT (TYPE G - 1)	2507	POUND
730	BREAKAWAY SIGN SUPPORT (TYPE G - 2)	30291	POUND

REVISIONS

DATE	REVISION	SHEET NUMBER
7/10/2013	ADDED GUARD RAIL STANDARDS TO INDEX OF SHEETS, RENUMBERED SHEETS	ALL
7/10/2013	ADDED BARRIER WALL QUANTITIES,REVISED GUARD RAIL, BASE & SURFACING QUANTITIES	3, 4, 5,
7/10/2013	REVISED GUARD RAIL NOTE	11, 24
8/21/2013	ADDED TEMPORARY IMPACT ATTENUATION BARRIER QUANTITIES	3,5
8/21/2013	ADDED TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) QUANTITIES	3,5
8/21/2013	ADDED SPECIAL PROVISION TEMPORARY IMPACT ATTENUATION BARRIER TO GOVERNING SPECIFICATIONS	2
8/21/2013	REVISED WORDING OF THE MAINTENANCE OF TRAFFIC SPECIAL PROVISION	

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
8/21/13
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	4	56
				(2)	SIGNING QUANTITIES			

MAIN LANES SIGNING QUANTITIES

SIGN NO./ LOCATION	STRUCTURE TYPE					SIGN			BREAKAWAY SIGN SUPPORT										EXIT NUMBER PANEL				GUARDRAIL					
						GUIDE SIGN			STEEL SECT.		SIGN POST LENGTH		STUB POST		FOOTINGS			SIGN POST	LEGEND	TYPE			TYPE A	TERM. ANCHOR	GUARDRAIL TERM.	AGG. BASE CR	ACHM SURF. CR.	THRIE BEAM GUARDRAIL
						Length	Height		A-572		H-1	H-2	H-1	H-2	DIA.	DEPTH	EMBED.	AND STUB		A	B	C		POSTS TYPE 1	TYPE 2	(CL. 7)	220 LBS/SY	TERMINAL
	ST	CL	OH	BM	G-2	LIN. FT.		SQ. FT.	BEAM	LBS	LIN FT		LIN FT		LIN FT			POUND		SQ. FT.			LIN. FT.	EACH	EACH	TON	TON	EACH
EXIT 1																												
GM540-STA5+00NB					1	18.50	6.00	111.00	W6	12.00	13.50	14.50	3.66	3.66	2.00	5.00	3.33	423.84										
GM540-STA7+50NB					1	9.00	4.00	36.00	W6	9.00	11.50	12.50	2.33	2.33	1.50	3.00	2.00	257.94										
GM540-STA11+00NB					1	17.00	7.00	119.00	W8	18.00	14.50	15.50	3.99	3.99	2.00	5.50	3.66	683.64										
GM540-STA14+00NB					1	8.50	4.00	34.00	W6	9.00	11.50	12.50	2.33	2.33	1.50	3.00	2.00	257.94										
GM540-STA18+00NB					1	16.50	7.00	115.50	W6	12.00	14.50	15.50	3.66	3.66	2.00	5.00	3.33	447.84	1	17.50								
GM540-STA25+90NB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA43+50SB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA50+20SB					1	16.50	7.00	115.50	W6	12.00	14.50	15.50	3.66	3.66	2.00	5.00	3.33	447.84	1	17.50								
GM540-STA89+40SB					1	13.50	9.00	121.50	W8	18.00	16.50	17.50	3.99	3.99	2.00	5.00	3.66	755.64	1	17.50								
EXIT 2																												
GM540-STA33+10NB					1	14.00	7.50	105.00	W6	12.00	15.00	16.00	3.66	3.66	2.00	5.00	3.33	459.84	2	17.50								
GM540-STA73+00NB					1	17.50	5.50	96.25	W6	12.00	13.00	14.00	3.33	3.33	2.00	4.50	3.00	403.92	2	17.50								
GM540-STA79+50NB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA97+50SB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA103+00SB					1	17.50	5.50	96.25	W6	12.00	13.00	14.00	3.33	3.33	2.00	4.50	3.00	403.92	2	17.50								
GM540-STA141+00SB					1	14.00	7.50	105.00	W6	12.00	15.00	16.00	3.66	3.66	2.00	5.00	3.33	459.84	2	17.50								
EXIT 3																												
GM540-STA86+00NB					1	13.00	9.50	123.50	W8	18.00	17.00	18.00	3.99	3.99	2.00	5.50	3.66	773.64	3	17.50								
GM540-STA93+00NB					1	12.00	6.50	78.00	W6	9.00	14.00	15.00	3.66	3.66	1.50	5.00	3.33	326.88										
GM540-STA108+00NB					1	18.00	12.00	216.00	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58										
GM540-STA116+60NB					1	16.50	7.50	123.75	W8	18.00	15.00	16.00	3.99	3.99	2.00	5.50	3.66	701.64	3	17.50								
GM540-STA123+70NB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA151+90SB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA157+90SB					1	16.50	7.50	123.75	W8	18.00	15.00	16.00	3.99	3.99	2.00	5.50	3.66	701.64	3	17.50								
GM540-STA169+50SB					1	18.00	12.00	216.00	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58										
GM540-STA181+00SB					1	12.00	6.50	78.00	W6	9.00	17.00	18.00	3.66	3.66	1.50	5.00	3.33	380.88										
EXIT 4																												
OH-540-65-05			1																				175	1		70	17	1
OH540-STA197+85SB(A)						13.00	9.50	123.50											3	17.50								
OH540-STA197+85SB(B)						11.50	9.50	109.25											4	17.50								
GM540-STA126+60NB					1	10.00	9.50	95.00	W6	12.00	17.00	18.00	3.66	3.66	2.00	5.00	3.33	507.84	4	17.50								
GM540-STA231+00SB					1	10.00	9.50	95.00	W6	12.00	17.00	18.00	3.66	3.66	2.00	5.00	3.33	507.84	4	17.50								
GM540-STA165+00NB					1	13.50	5.50	74.25	W6	9.00	13.00	14.00	3.33	3.33	1.50	4.50	3.00	302.94										
GM540-STA156+00NB					1	17.00	8.50	144.50	W8	18.00	16.00	17.00	4.33	4.33	2.00	6.00	4.00	749.88										
GM540-STA208+00SB					1	17.00	8.50	144.50	W8	18.00	16.00	17.00	4.33	4.33	2.00	6.00	4.00	749.88										
GM540-STA183+90NB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA194+00SB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA221+00SB					1	18.00	12.00	216.00	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58										
GM540-STA247+00SB					1	18.00	12.00	216.00	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58										
GM540-STA188+00NB					1	18.50	11.50	212.75	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58	5	17.50								
GM540-STA178+00NB					1	11.50	9.50	109.25	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58	4	17.50								
EXIT 5																												
GM540-STA191+90NB					1	18.00	12.00	216.00	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58										
GM540-STA276+50SB					1	18.00	12.00	216.00	W8	21.00	19.50	20.50	4.99	4.99	2.50	7.00	4.66	1049.58										
GM540-STA252+00SB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GM540-STA215+50NB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GUIDE SIGNS ROADSIDE MOUNTED TOTALS;								4053.25																				
GUIDE SIGNS OVERHEAD MOUNTED TOTALS;								232.75																				
TOTALS:			**1**		**39**			**4286.00**										**21861.30**		**280.00**			**175**	**1**		**70**	**17**	**1**

STATE OF ARKANSAS
REGISTERED ENGINEER
No. 5851
7/10/13
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
08/21/2013				JOB NO.		040279	5	56
				(2)	SIGNING QUANTITIES			

MAIN LANES SIGNING QUANTITIES

SIGN NO./ LOCATION	STRUCTURE TYPE ST	CL	OH	BM	G-2	SIGN GUIDE SIGN Length LIN. FT.	Height LIN. FT.	SQ. Ft.	BREAKAWAY SIGN SUPPORT STEEL SECT. A-572 BEAM	LBS	SIGN POST LENGTH H-1 LIN FT	H-2 LIN FT	STUB POST H-1 LIN FT	H-2 LIN FT	FOOTINGS DIA.	DEPTH LIN FT	EMBED. LIN FT	SIGN POST AND STUB POUND	EXIT NUMBER PANEL LEGEND	TYPE A SQ. FT.	TYPE B SQ. FT.	TYPE C SQ. FT.	GUARDRAIL TYPE A LIN. FT.	TERM. ANCHOR POSTS TYPE 1 EACH	GUARDRAIL TERM. TYPE 2 EACH	AGG. BASE CR (CL. 7) TON	ACHM SURF. CR. 220 LBS/SY TON	THRIE BEAM GUARDRAIL TERMINAL TON
EXIT 5 CONT.																												
GM540-STA260+45SB					1	22.00	9.50	209.00	W8	18.00	17.00	18.00	4.66	4.66	2.50	6.50	4.33	797.76	5	17.50								
GM540-STA269+10SB					1	18.50	11.50	212.75	W8	21.00	19.00	20.00	4.99	4.99	2.50	7.00	4.66	1028.58	5	17.50								
OH-540-65-06			1																									
OH-540-STA209+00NB(A)						13.00	7.50	97.50											6	17.50			175	1	1	70	17	
OH-540-STA209+00NB(B)						22.00	9.50	209.00											5	17.50								
EXIT 6																												
OC-540-65-07		1																					175	1	1	70	17	
OC-540-STA263+00NB						16.50	5.50	90.75											6	17.50								
GM540-STA247+00NB					1	17.00	8.50	144.50	W8	18.00	16.00	17.00	4.33	4.33	2.00	6.00	4.00	749.88										
GM540-STA301+00SB					1	17.00	8.50	144.50	W8	18.00	16.00	17.00	4.33	4.33	2.00	6.00	4.00	749.88										
GM540-STA287+00SB					1	21.00	5.50	115.50	W6	12.00	13.00	14.00	3.66	3.66	2.00	5.00	3.33	411.84	6	17.50								
GM540-STA311+00SB					1	18.00	7.50	135.00	W8	18.00	15.00	16.00	3.99	3.99	2.00	5.50	3.66	701.64	6	17.50								
GM540-STA266+00NB					1	6.50	7.00	45.50	W6	9.00	14.50	15.50	2.99	2.99	1.50	4.00	2.66	323.82										
GM540-STA283+00SB					1	6.00	5.00	30.00	W6	9.00	12.50	13.50	2.33	2.33	1.50	3.00	2.00	275.94										
GUIDE SIGNS ROADSIDE MOUNTED TOTALS;								1036.75																				
GUIDE SIGNS OVERHEAD MOUNTED TOTALS;								397.25																				
TOTALS:		1	1		8			1434.00										5039.34		122.50			350	2	2	140	34	

STANDARD SIGNS FLAT SHEET

SIGN NO./ LOCATION	STANDARD SIGNS FLAT SHEET I-BEAM SIGN SUPPORTS TYPE G-1	G-2	STANDARD SIGN SQ. FT.	BREAKAWAY SIGN SUPPORT STEEL SECT. A-572 BEAM	LBS	SIGN POST LENGTH H-1 LIN FT	H-2 LIN FT	STUB POST H-1 LIN FT	H-2 LIN FT	FOOTINGS DIA.	DEPTH LIN FT	EMBED. LIN FT	G-1 SIGN POST AND STUB POUND	G-2 SIGN POST AND STUB POUND
EXIT 1														
SS-540-STA20+00NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00		260.82
SS-540-STA48+50SB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00		260.82
SS540-STA57+00NB	1		24.50	W6	9	12.50		1.99		1.50	3.00	2.00	112.50	
SS540-STA29+00SB		1	16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA42+00NB		1	16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA65+00NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00		260.82
EXIT 2														
SS540-STA74+00NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA101+50SB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA80+00SB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA95+00NB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
EXIT 3														
SS540-STA167+50NB	1		24.50	W6	9	12.50		1.99		1.50	3.00	2.00	112.50	
SS540-STA174+00NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA155+50SB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA119+00NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA128+00NB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA145+00NB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
EXIT 4														
SS540-STA198+00SB		1	20.00	OH540-STA198+00SB										
SS540-STA180+50NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA184+00SB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA194+00NB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
EXIT 5														
SS540-STA210+50NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA228+50SB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA228+00NB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA217+00SB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
EXIT 6														
SS540-STA263+00NB		1	20.00	OH540-STA263+00NB										
SS540-STA285+00SB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA316+50NB		1	20.00	W6	9	12.00	13.00	1.99	1.99	1.50	3.00	2.00	108.00	260.82
SS540-STA281+00NB	1		16.00	W6	9	11.00		1.99		1.50	3.00	2.00	99.00	
SS540-STA300+00NB	1		24.50	W6	9	12.50		1.99		1.50	3.00	2.00	112.50	
TOTALS:	12	17	549.50										2506.50	3390.66

BASIS OF ESTIMATE:

NMAX = 205

ACHM SURFACE COURSE (1/2"): (PG 76-22)
MINERAL AGGREGATE 94.0%
ASPHALT BINDER (PG 76-22) 6.0%

CONCRETE BARRIER WALL

LOCATION	REMOVAL & DISPOSAL OF CONCRETE MEDIAN BARRIER	CONCRETE BARRIER WALL MEDIAN TYPE SP-1	MEDIAN TYPE SP-2
STA 197+26.5 - STA 198+43.5	117	100	
STA 208+41.5 - STA 209+58.5	117		100
TOTALS	234	100	100

NOTE:
REFER TO JOB SP "SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS" FOR PRECAST BARRIER REQUIREMENTS.

TEMPORARY IMPACT ATTENUATION BARRIER

LOCATION	TEMPORARY IMPACT ATTENUATION BARRIER EACH	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) EACH
STA 197+26.5 - STA 198+43.5	2	2
STA 208+41.5 - STA 209+58.5	2	2
TOTALS	4	4

STATE OF ARKANSAS
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No. 5851
9/22/13
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	6	56
				(2)	SIGN LAYOUT SHEET			

NOTE:

ALL EXISTING GUIDE SIGNS SHALL BE MAINTAINED IN SUCH A MANNER THAT THE SIGNS ARE FULLY VISIBLE, INTACT, AND ERECT FOR THE DURATION OF THE PROJECT, AND SHALL BE REMOVED WHEN THEIR USE IS NO LONGER REQUIRED.

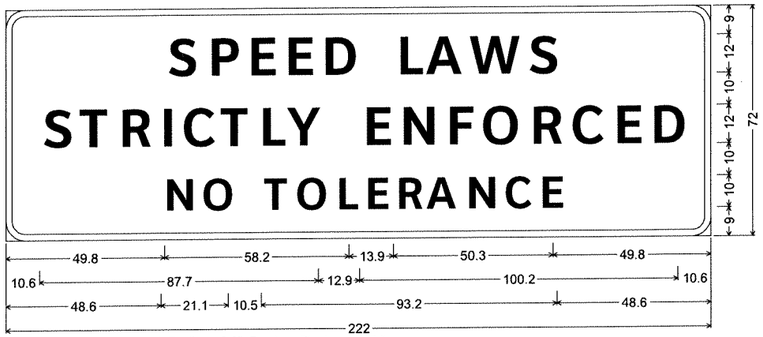
REMOVAL AND DISPOSAL OF ROADSIDE AND OVERHEAD MOUNTED SIGNS, SUPPORTS AND FOUNDATIONS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE EXISTING SIGNS AND SIGNS SUPPORTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING FOOTINGS SHALL BE REMOVED AND THE HOLES FILLED WITH A SUITABLE MATERIAL AND COMPACTED.

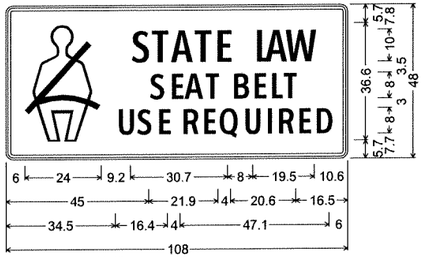
THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS AND SIGN STRUCTURES OVER SOME ROADWAYS OPEN TO TRAFFIC. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE TRAFFIC CONTROL. PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN ITEM 604 OF THE STANDARD SPECIFICATIONS.

EXISTING LOGOS WILL BE RELOCATED TO THE NEW LOGO SIGN BY THE CONTRACTOR. THE LOGO INSTALLATION SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

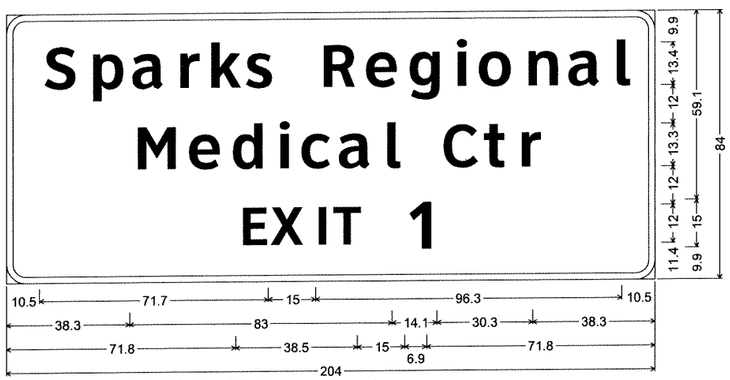
THE CLEARVIEW FONT SHALL FOLLOW THE SPACING TABLES FOR CLEARVIEW AND NOT SHS E-MODIFIED. THIS INCLUDES THE USE OF CLEARVIEW 5-W-R. FOR GENERAL GUIDANCE ON LETTER AND WORD SPACING REFER TO FHWA CLEARVIEW TYPEFACE SUPPLEMENT. (http://mutcd.fhwa.dot.gov)



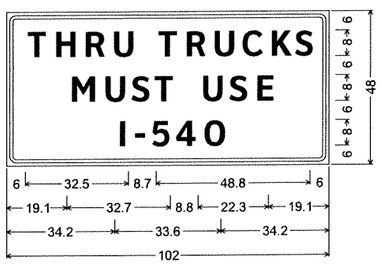
GM540-STA5+00NB; 6.0" Radius, 2.0" Border, Black on White;
[SPEED LAWS] ClearviewHwy-5-W; [STRICTLY ENFORCED] ClearviewHwy-5-W;
[NO TOLERANCE] ClearviewHwy-5-W;



GM540-STA7+50NB;
2.3" Radius, 0.9" Border, 0.6" Indent, Black on White;
Symbol RG015;
[STATE] ClearviewHwy-2-W specified length;
[LAW] ClearviewHwy-2-W specified length;
[SEAT] ClearviewHwy-2-B [ ] C;
[BELT] ClearviewHwy-2-B; [USE] ClearviewHwy-2-B;
[REQUIRED] ClearviewHwy-2-B;



GM540-STA11+00NB; 6.0" Radius, 2.0" Border, White on Green;
[Sparks Regional] ClearviewHwy-5-W; [Medical Ctr] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W;
[1] ClearviewHwy-5-W;



GM540-STA14+00NB;
3.0" Radius, 1.0" Border, 1.0" Indent, Black on White;
[THRU TRUCKS] ClearviewHwy-5-W;
[MUST USE] ClearviewHwy-5-W;
[I-540] ClearviewHwy-5-W;

W13-2(35) 48"X60"
SS540-STA20+00NB
SS540-STA48+50SB

W4-1RT 48"X48"
SS540-STA29+00SB
SS540-STA42+00NB

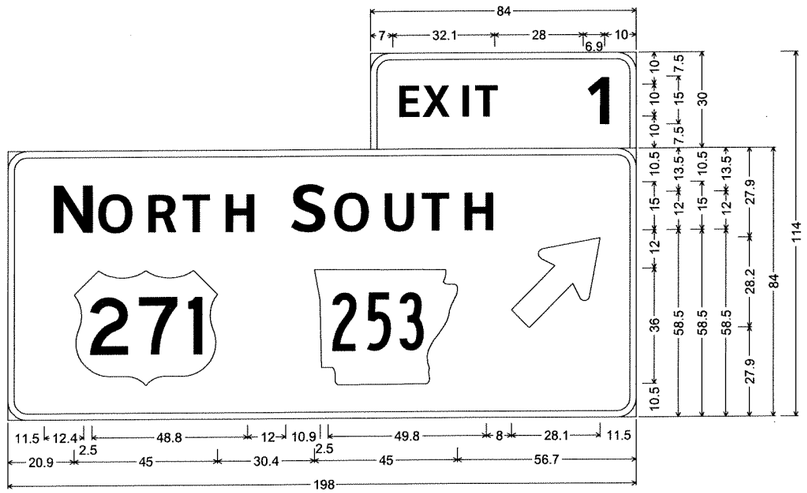
M3-1(Blue) 36"X18"
M1-1(540) 60"X48"
SS540-STA57+00NB

R2-1(65) 48"X60"
SS540-STA65+00NB

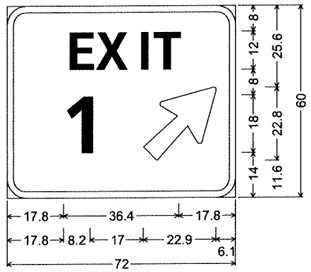
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
J. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	7	56

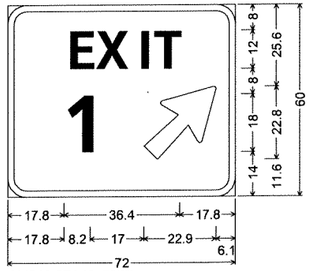
(2) SIGN LAYOUT SHEET



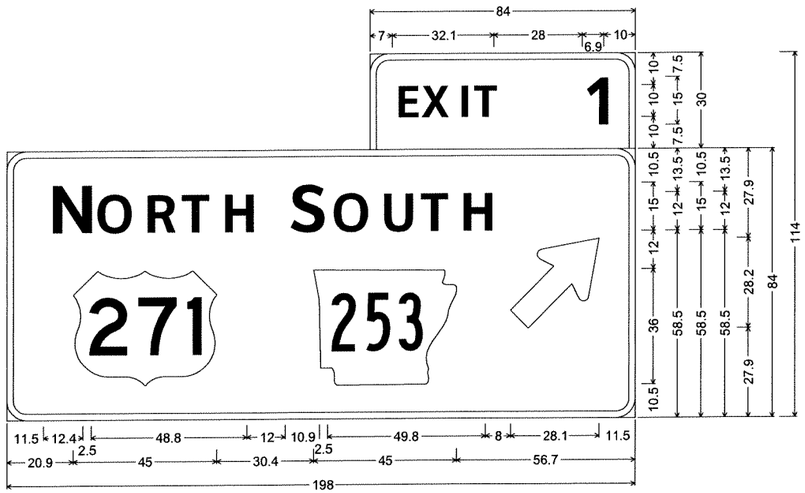
GM540-STA18+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [1] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [S] ClearviewHwy-5-W;
[OUTH] ClearviewHwy-5-W; M1-6; Standard Arrow Custom 35.8" X 21.6" 45°;



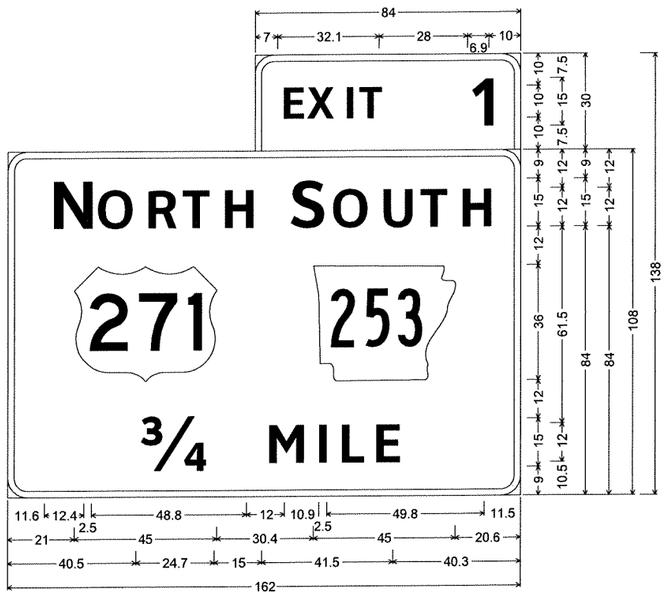
GM540-STA25+90NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[1] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;



GM540-STA43+50SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[1] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;



GM540-STA50+20SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [1] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [S] ClearviewHwy-5-W;
[OUTH] ClearviewHwy-5-W; M1-6; Standard Arrow Custom 35.8" X 21.6" 45°;



GM540-STA89+40SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [1] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [S] ClearviewHwy-5-W;
[OUTH] ClearviewHwy-5-W; M1-6; [3/4] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

STATE OF ARKANSAS
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No. 5851
J. TONY SULLIVAN
7/10/13

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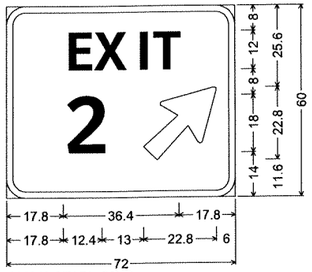
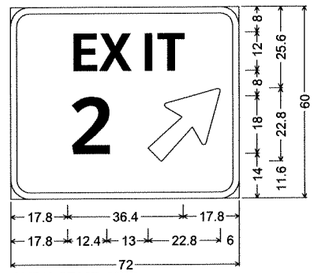
07/10/2013				6	ARK.			
				JOB NO.		040279	8	56
				(2)	SIGN LAYOUT SHEET			



GM540-STA79+50NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[2] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;



GM540-STA97+50SB;
6.0" Radius, 2.0" Border, White on Green;
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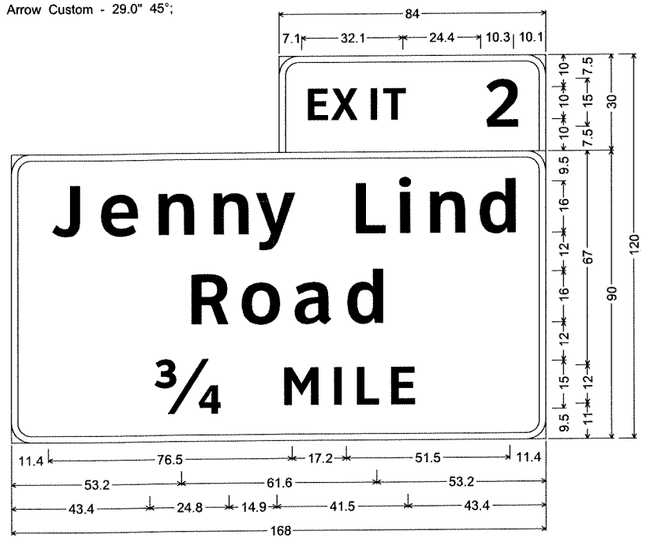
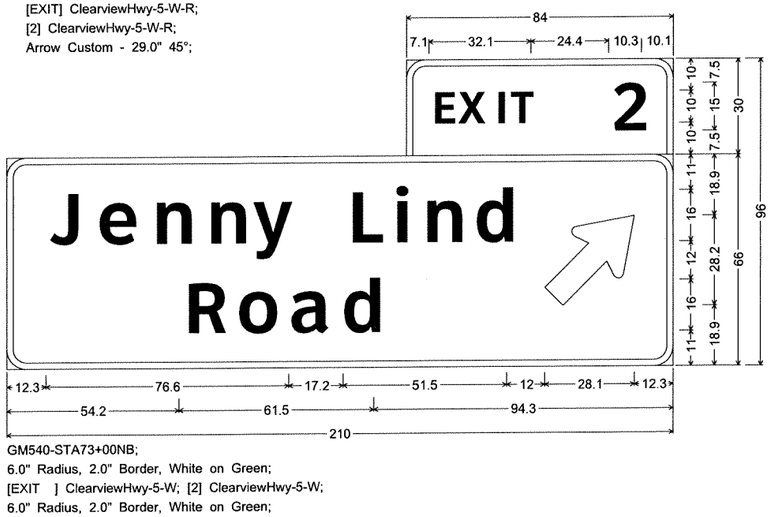
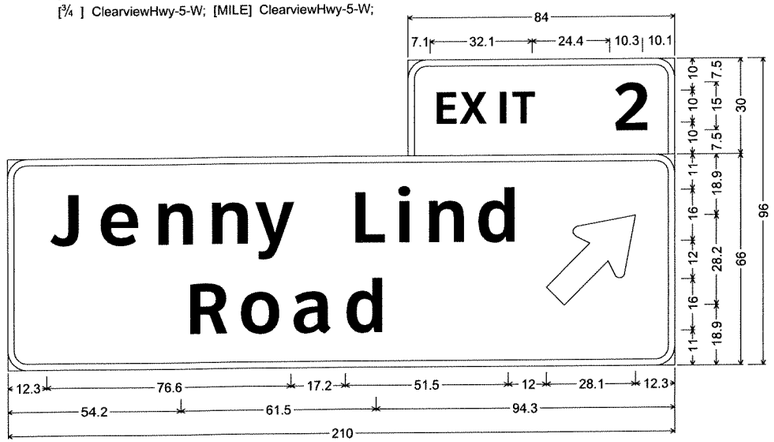
[2] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;



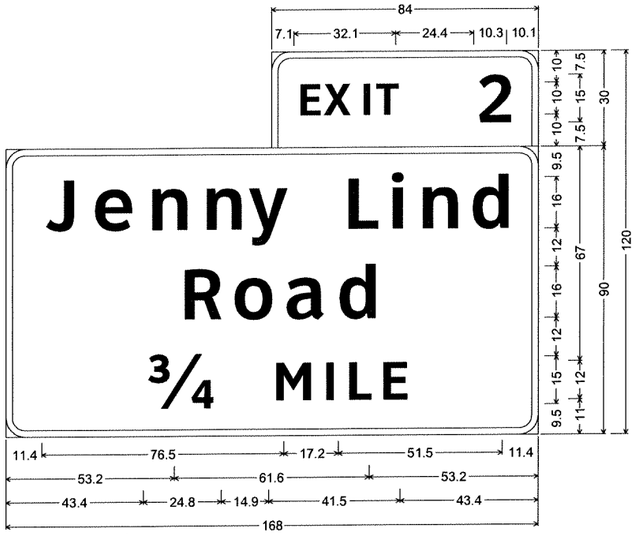
GM540-STA33+10NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [2] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Jenny Lind] ClearviewHwy-5-W; [Road] ClearviewHwy-5-W;
[¾] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;



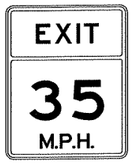
GM540-STA73+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [2] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Jenny Lind] ClearviewHwy-5-W; [Road] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;



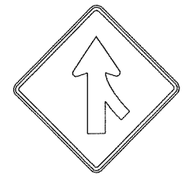
GM540-STA103+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [2] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Jenny Lind] ClearviewHwy-5-W; [Road] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;



GM540-STA141+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [2] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Jenny Lind] ClearviewHwy-5-W; [Road] ClearviewHwy-5-W;
[¾] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;



W13-2(35) 48"X60"
SS540-STA74+00NB
SS540-STA101+50SB



W4-1RT 48"X48"
SS540-STA80+00SB
SS540-STA95+00NB

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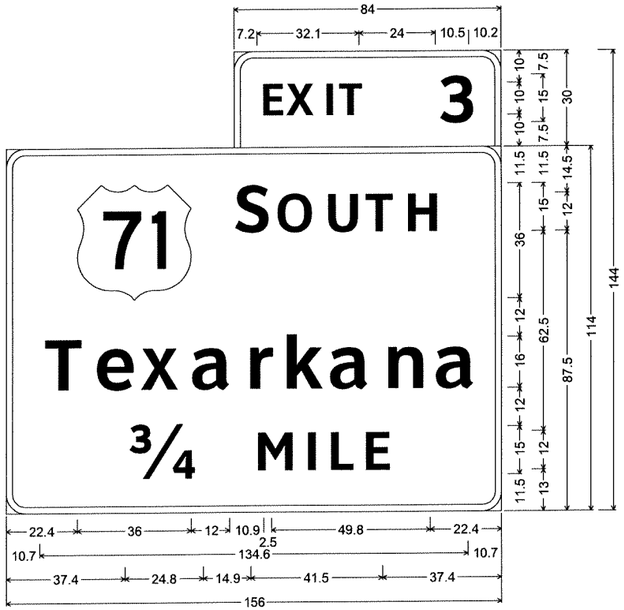
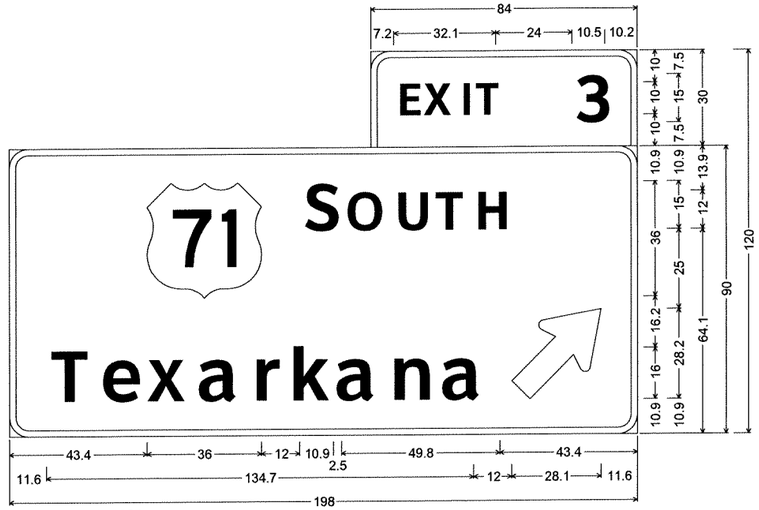
07/10/2013				6	ARK.			
				JOB NO.		040279	9	56

(2) SIGN LAYOUT SHEET



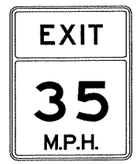
GM540-STA86+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [3] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Texarkana] ClearviewHwy-5-W; [3/4] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;



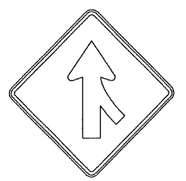
GM540-STA157+90SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [3] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W; [Texarkana] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;

M3-1(Blue) 36"X18"
M1-1(540) 60"X48"
SS540-STA167+50NB

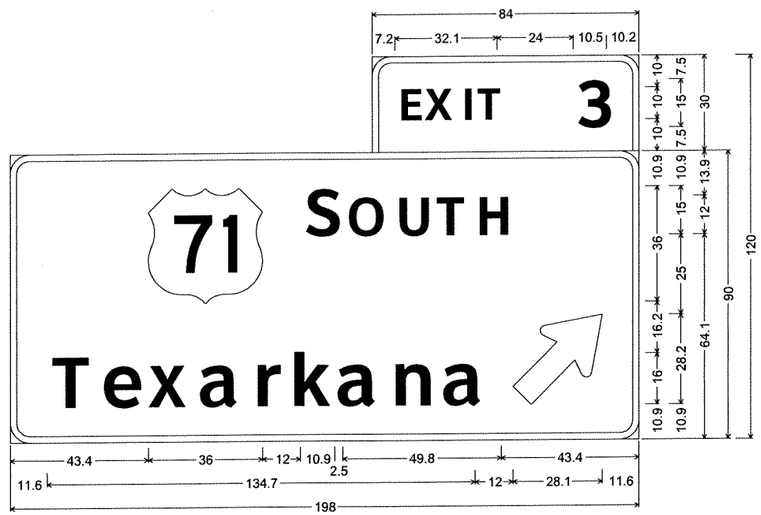
R2-1(65) 48"X60"
SS540-STA174+00NB



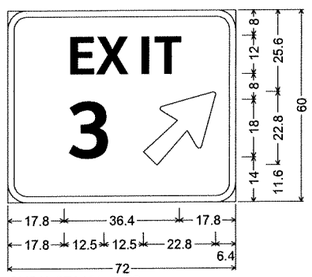
W13-2(35) 48"X60"
SS540-STA119+00NB
SS540-STA155+50SB



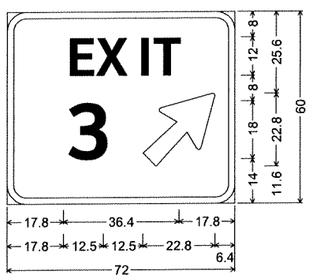
W4-1RT 48"X48"
SS540-STA128+00SB
SS540-STA145+00NB



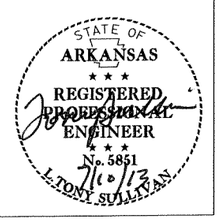
GM540-STA116+60NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [3] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W; [Texarkana] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;



GM540-STA151+90SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[3] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;

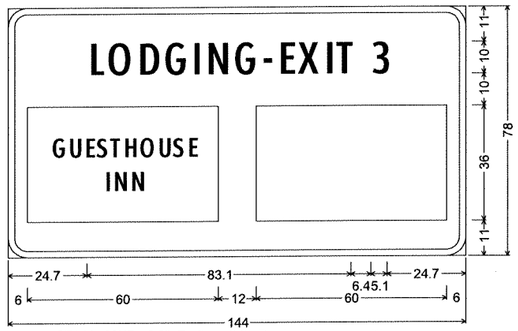


GM540-STA123+70NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[3] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;

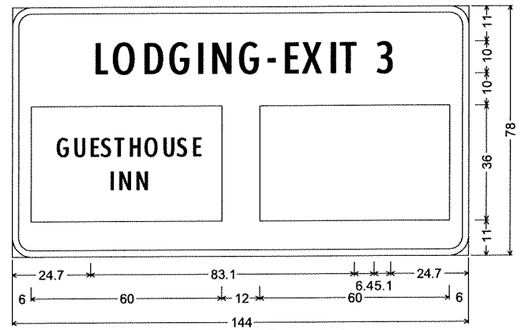


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	10	56

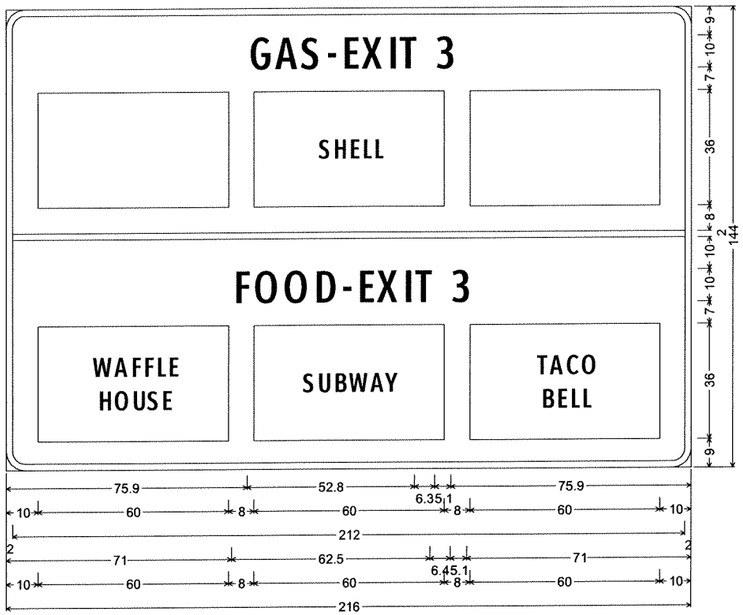
(2) SIGN LAYOUT SHEET



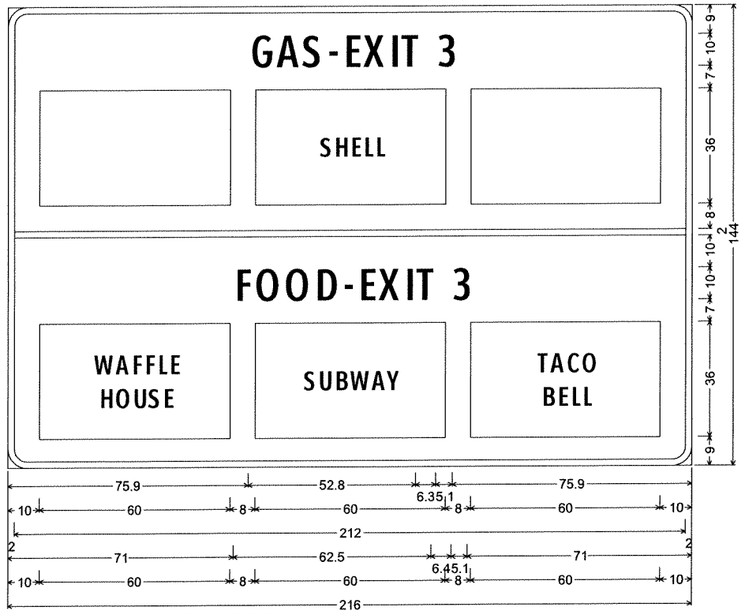
GM540-STA93+00NB; 6.0" Radius, 2.0" Border, White on Blue;
[LODGING-EXIT 3] ClearviewHwy-2-W;



GM540-STA181+00SB; 6.0" Radius, 2.0" Border, White on Blue;
[LODGING-EXIT 3] ClearviewHwy-2-W;



GM540-STA169+50SB; 6.0" Radius, 2.0" Border, White on Blue;
[GAS-EXIT 3] ClearviewHwy-2-W;
[FOOD-EXIT 3] ClearviewHwy-2-W;



GM540-STA108+00NB; 6.0" Radius, 2.0" Border, White on Blue;
[GAS-EXIT 3] ClearviewHwy-2-W;
[FOOD-EXIT 3] ClearviewHwy-2-W;

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7/10/13
J. TONY SULLIVAN

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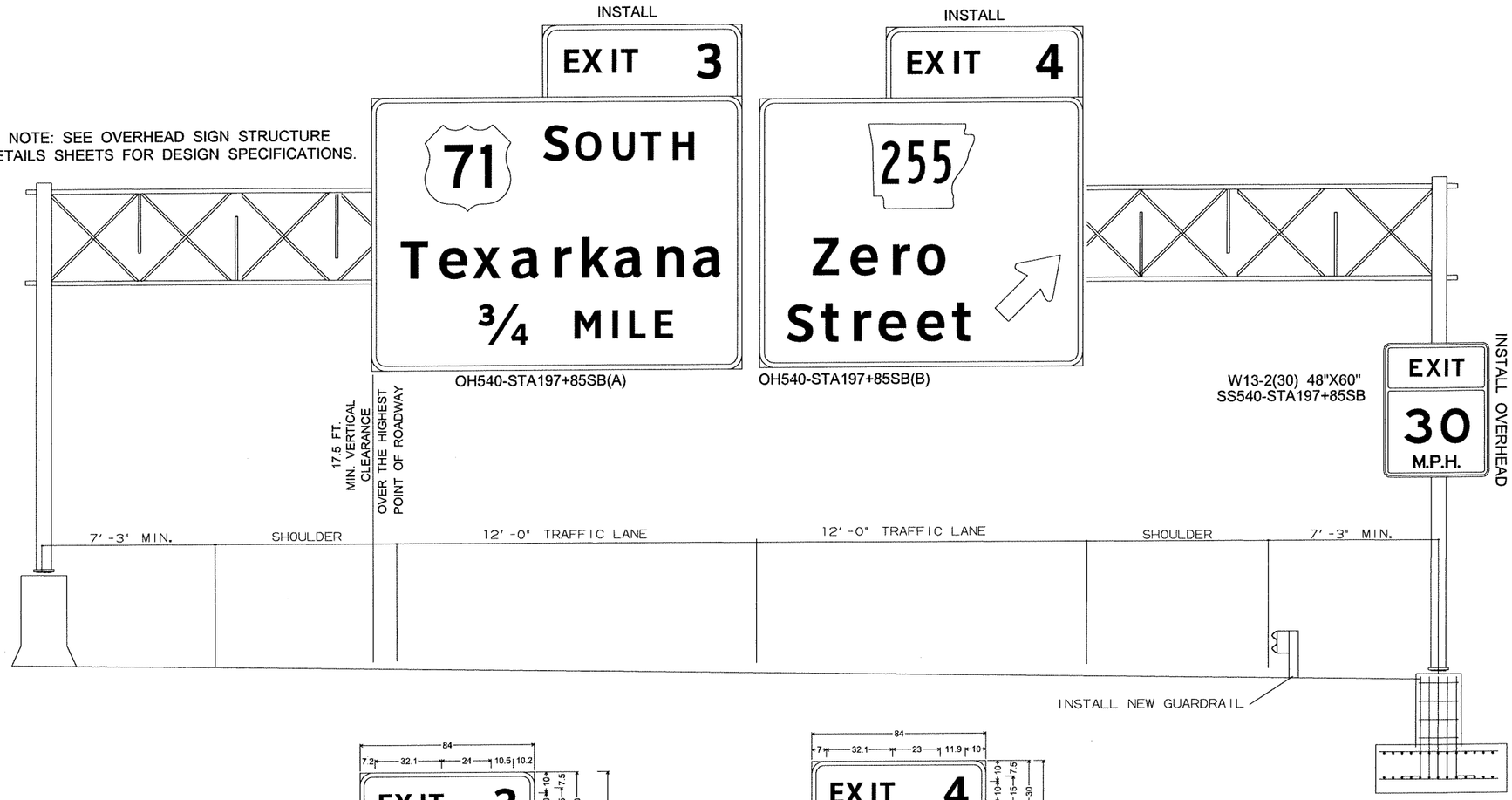
07/10/2013				6	ARK.			
				JOB NO.		040279	11	56
				(2)	SIGN LAYOUT SHEET			

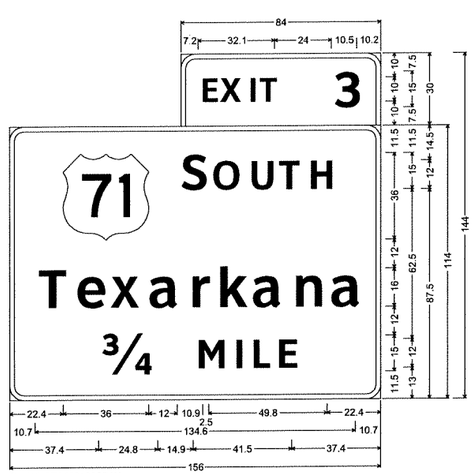
OH-540-65-05

NOTE: SEE OVERHEAD SIGN STRUCTURE DETAILS SHEETS FOR DESIGN SPECIFICATIONS.

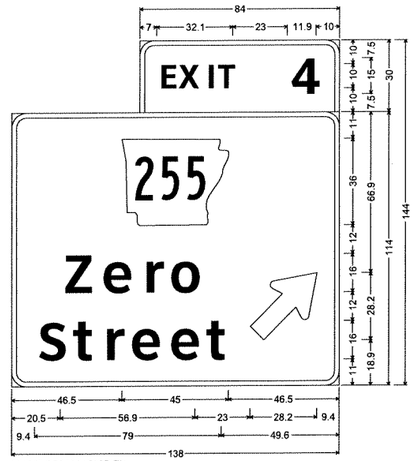


OH540-STA197+85SB(A)

OH540-STA197+85SB(B)



OH540-STA198+00SB(A);
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [3] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Texarkana] ClearviewHwy-5-W; [¾] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;



OH540-STA198+00SB(B);
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [4] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Zero] ClearviewHwy-5-W; [Street] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;

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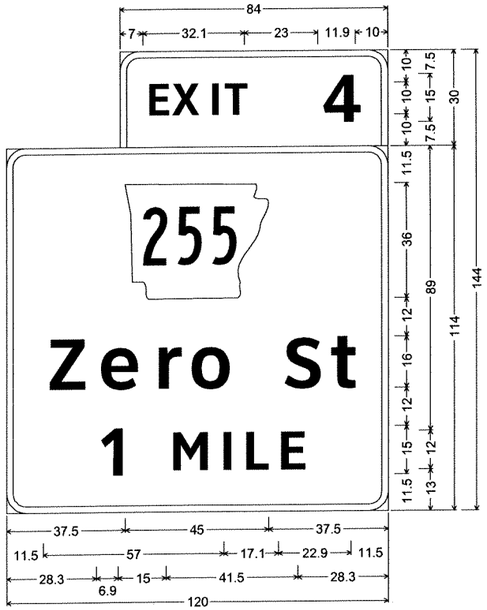
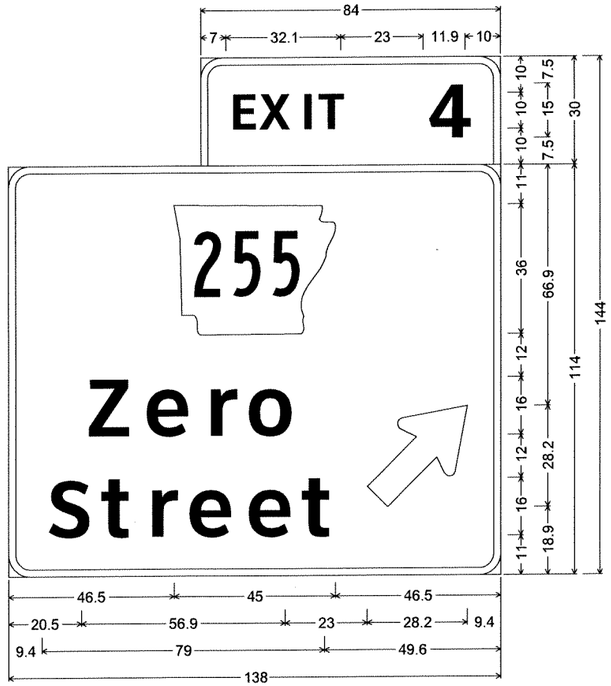
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	12	56

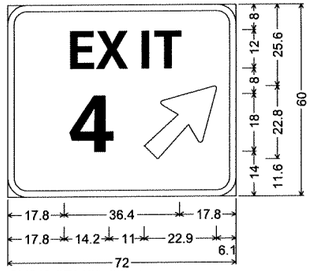
(2) SIGN LAYOUT SHEET



GM540-STA126+60NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [4] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Zero St] ClearviewHwy-5-W; [1] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

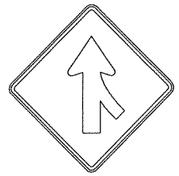


GM540-STA178+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [4] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Zero] ClearviewHwy-5-W; [Street] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;

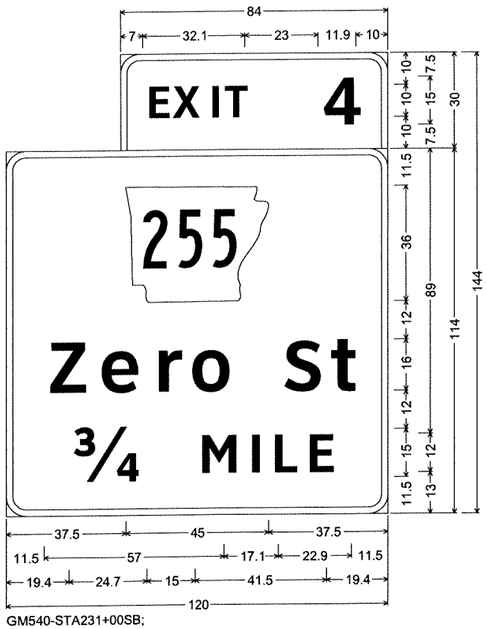


GM540-STA183+90NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[4] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;

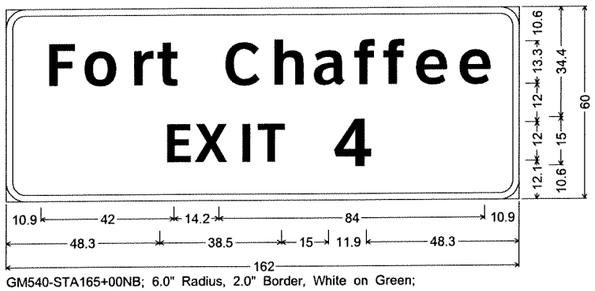
W13-2(35) 48"X60"
SS540-STA180+50NB



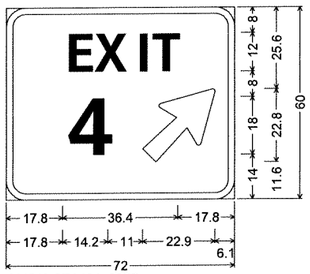
W4-1RT 48"X48"
SS540-STA184+00SB
SS540-STA194+00NB



GM540-STA231+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [4] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Zero St] ClearviewHwy-5-W;
[3/4] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;



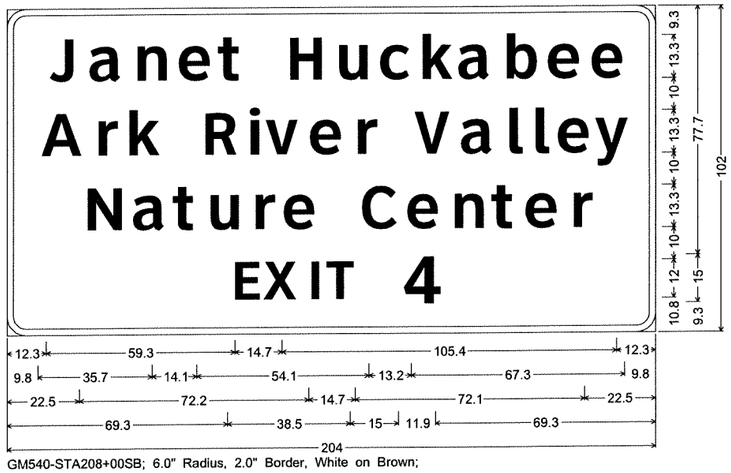
GM540-STA165+00NB; 6.0" Radius, 2.0" Border, White on Green;
[Fort Chaffee] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W;
[4] ClearviewHwy-5-W;



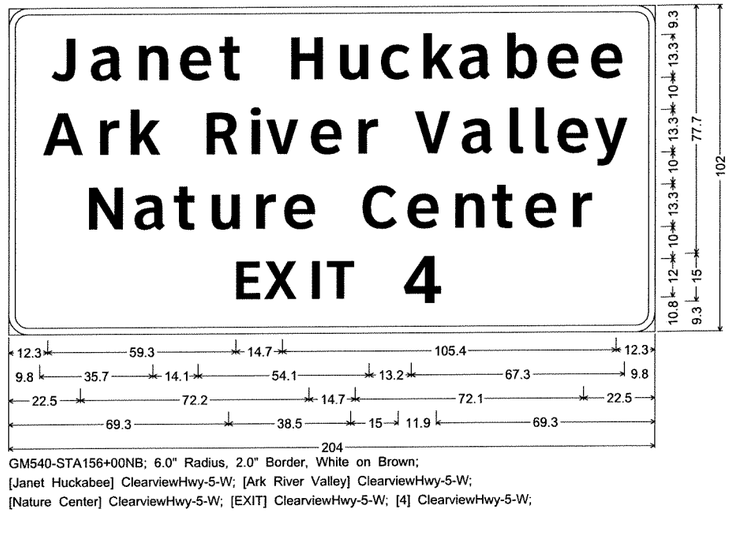
GM540-STA194+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[4] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	13	56

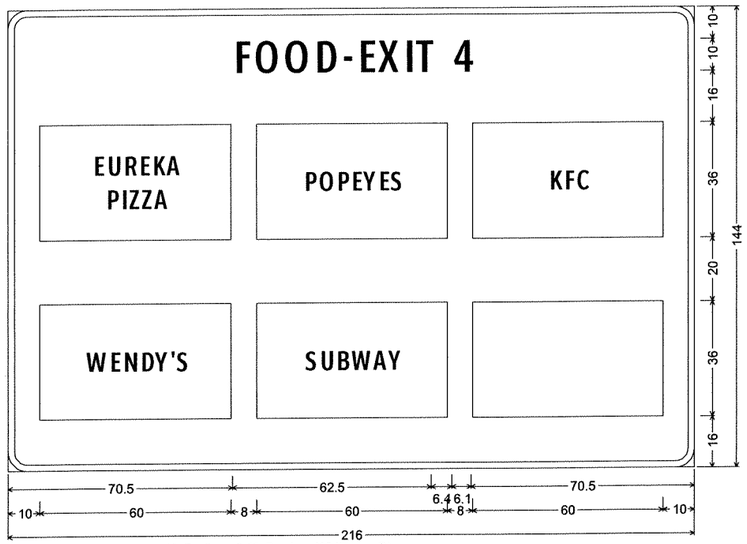
(2) SIGN LAYOUT SHEET



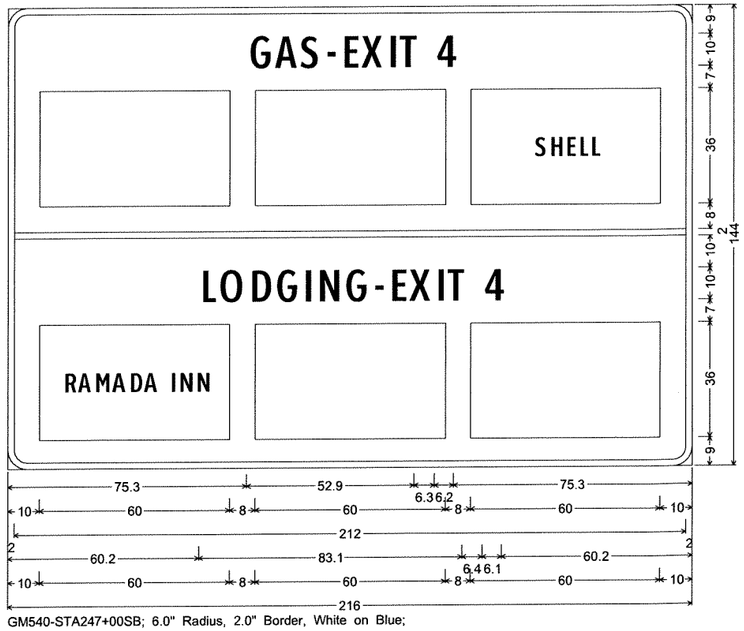
GM540-STA208+00SB; 6.0" Radius, 2.0" Border, White on Brown;
[Janet Huckabee] ClearviewHwy-5-W; [Ark River Valley] ClearviewHwy-5-W;
[Nature Center] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W; [4] ClearviewHwy-5-W;



GM540-STA156+00NB; 6.0" Radius, 2.0" Border, White on Brown;
[Janet Huckabee] ClearviewHwy-5-W; [Ark River Valley] ClearviewHwy-5-W;
[Nature Center] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W; [4] ClearviewHwy-5-W;



GM540-STA221+00SB; 6.0" Radius, 2.0" Border, White on Blue;
[FOOD-EXIT 4] ClearviewHwy-2-W;



GM540-STA247+00SB; 6.0" Radius, 2.0" Border, White on Blue;
[GAS-EXIT 4] ClearviewHwy-2-W;
[LODGING-EXIT 4] ClearviewHwy-2-W;

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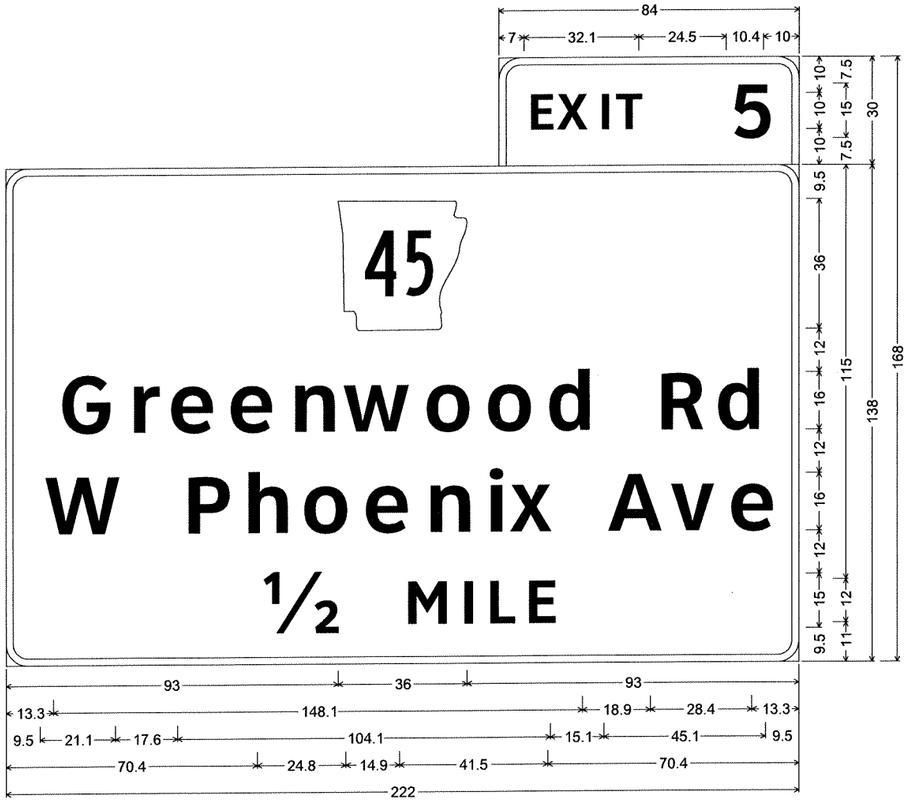
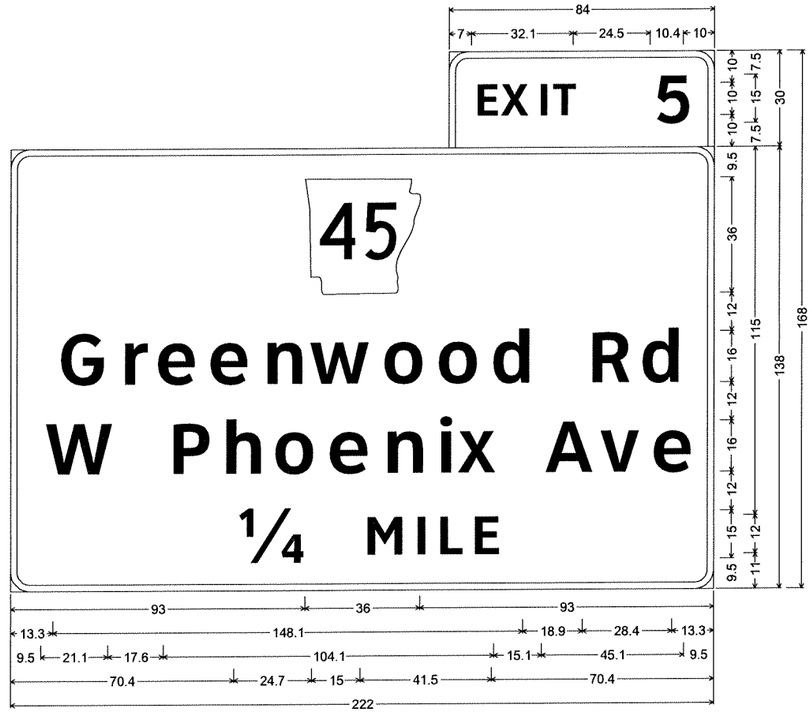
				JOB NO.		040279	14	56
				(2)	SIGN LAYOUT SHEET			



GM540-STA188+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [5] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Greenwood Rd] ClearviewHwy-5-W; [W Phoenix Ave] ClearviewHwy-5-W; [½] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;



GM540-STA269+10SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [5] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Greenwood Rd] ClearviewHwy-5-W; [W Phoenix Ave] ClearviewHwy-5-W; [¼] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

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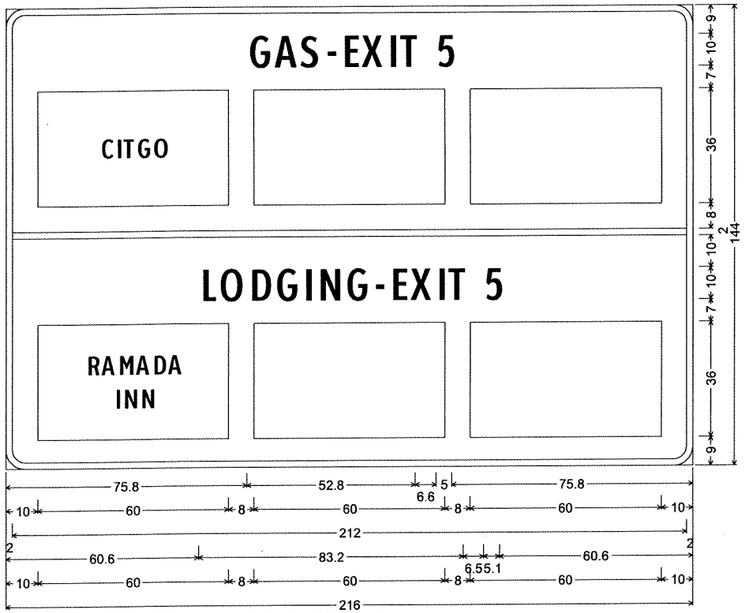
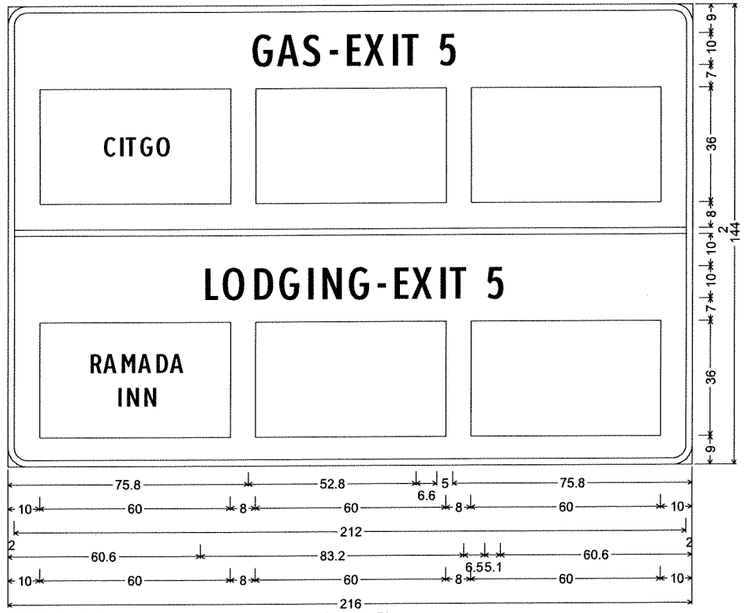
07/10/2013				6	ARK.			
				JOB NO.		040279	15	56

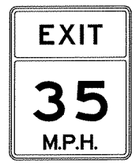
(2) SIGN LAYOUT SHEET



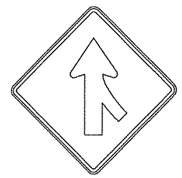
GM540-STA191+90NB; 6.0" Radius, 2.0" Border, White on Blue;
[GAS-EXIT 5] ClearviewHwy-2-W;
[LODGING-EXIT 5] ClearviewHwy-2-W;



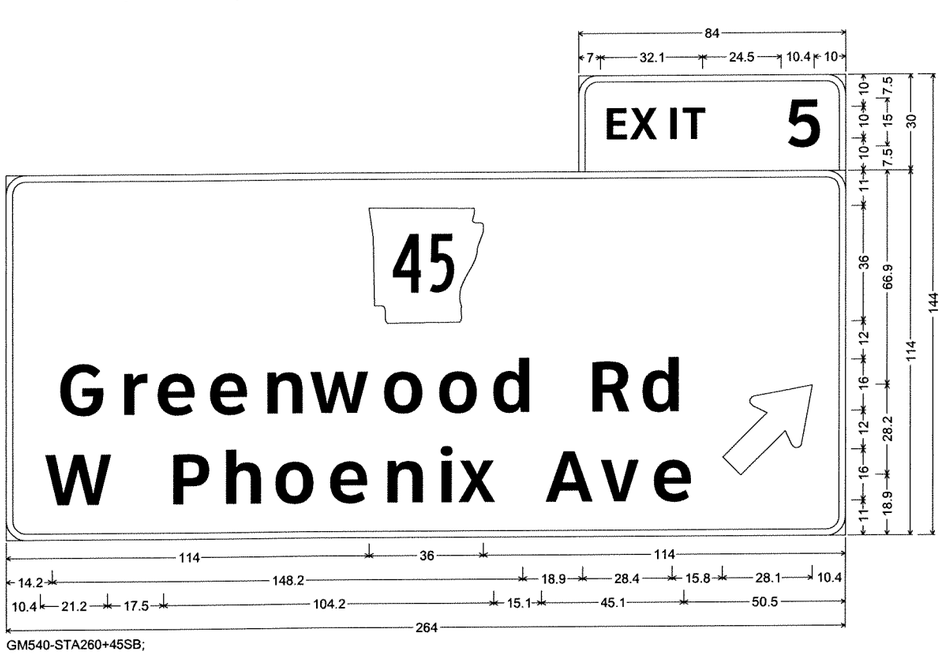
GM540-STA276+50SB; 6.0" Radius, 2.0" Border, White on Blue;
[GAS-EXIT 5] ClearviewHwy-2-W;
[LODGING-EXIT 5] ClearviewHwy-2-W;



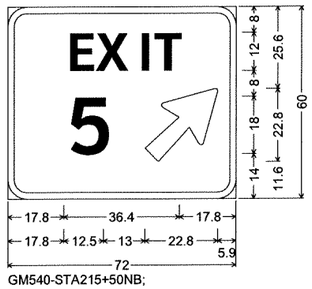
W13-2(35) 48"X60"
SS540-STA210+50NB
SS540-STA228+50SB



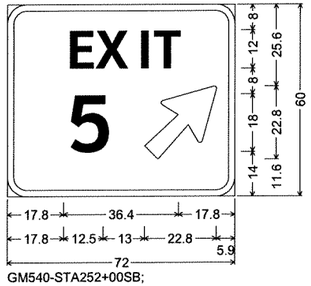
W4-1RT 48"X48"
SS540-STA228+00NB
SS540-STA217+00SB



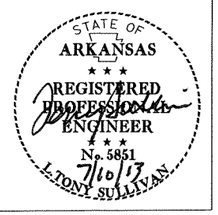
GM540-STA260+45SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [5] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Greenwood Rd] ClearviewHwy-5-W; [W Phoenix Ave] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45°;



GM540-STA215+50NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[5] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;



GM540-STA252+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[5] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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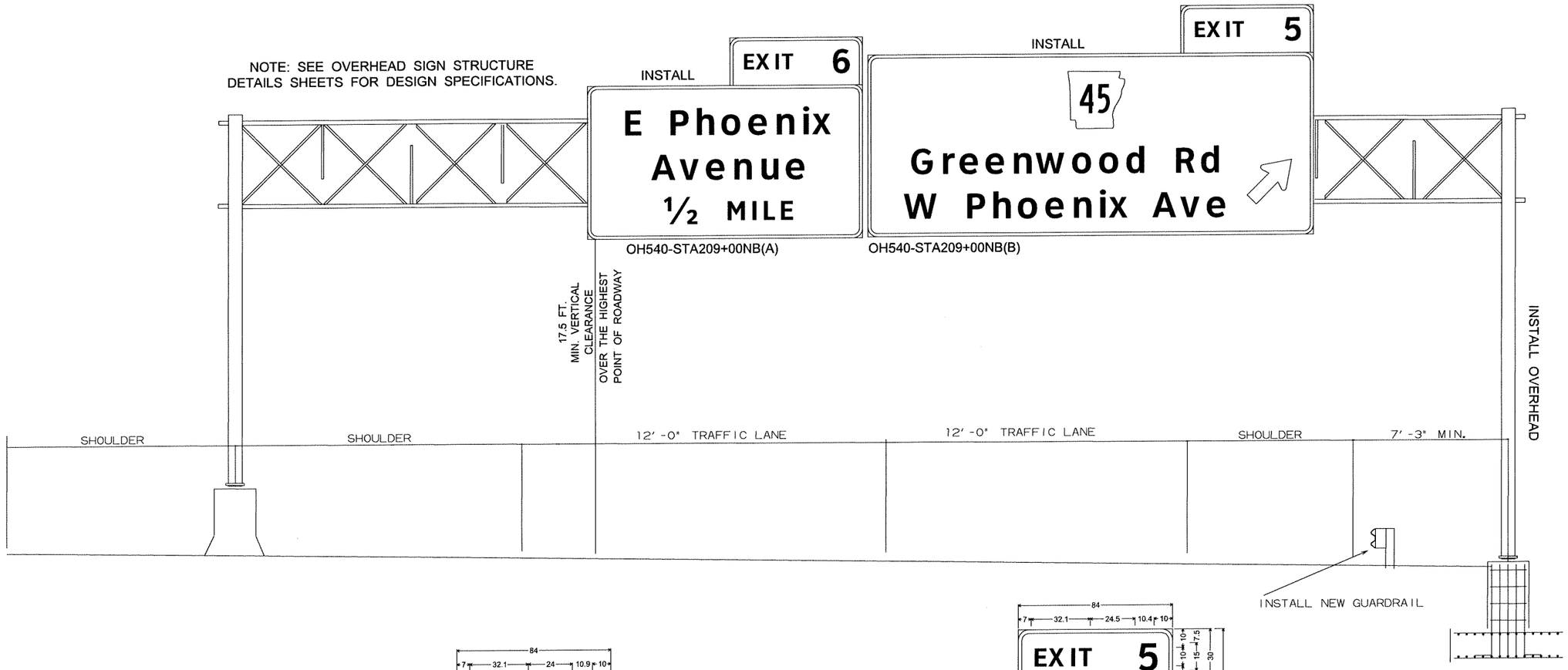
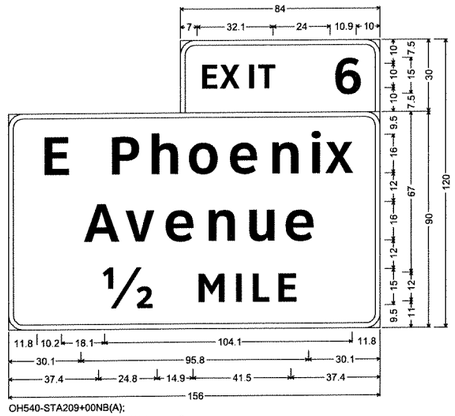
				JOB NO.		040279	16	56
				(2)	SIGN LAYOUT SHEET			

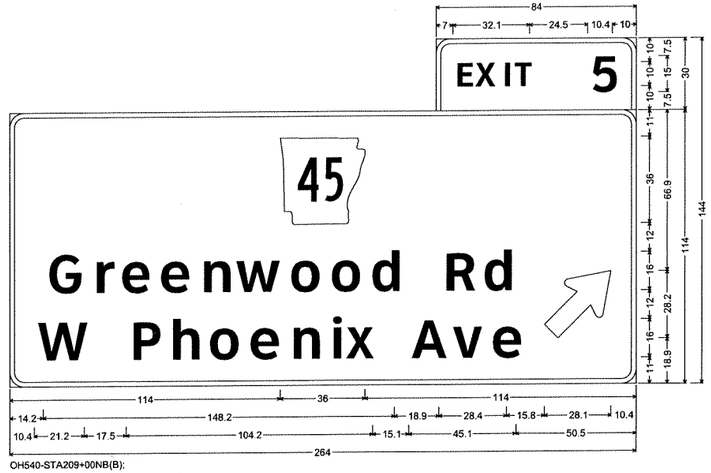
OH-540-65-06

NOTE: SEE OVERHEAD SIGN STRUCTURE DETAILS SHEETS FOR DESIGN SPECIFICATIONS.





OH540-STA209+00NB(A);
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [6] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[E Phoenix] ClearviewHwy-5-W; [Avenue] ClearviewHwy-5-W;
[½] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;



OH540-STA209+00NB(B);
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [5] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
M1-6; [Greenwood Rd] ClearviewHwy-5-W; [W Phoenix Ave] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45";

STATE OF ARKANSAS
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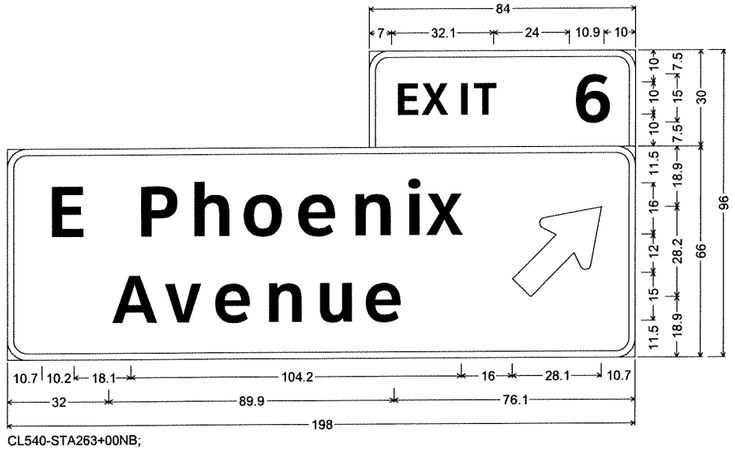
07/10/2013				6	ARK.			
				JOB NO.		040279	17	56

(2) SIGN LAYOUT SHEET

OC-540-65-07

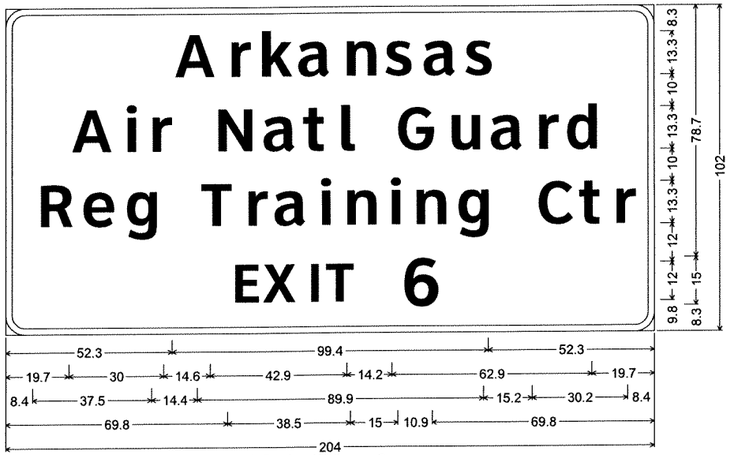
NOTE: SEE OVERHEAD SIGN STRUCTURE DETAILS SHEETS FOR DESIGN SPECIFICATIONS.



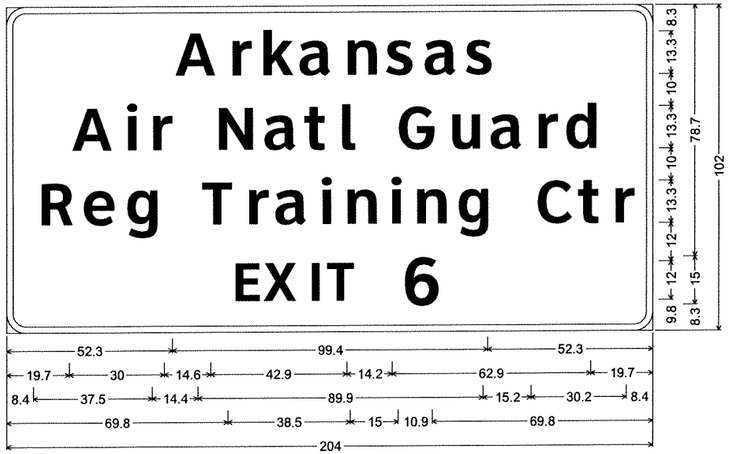
CL540-STA263+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [6] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[E Phoenix] ClearviewHwy-5-W; [Avenue] ClearviewHwy-5-W;
Standard Arrow Custom 35.8" X 21.6" 45°;

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	18	56
				(2)	SIGN LAYOUT SHEET			



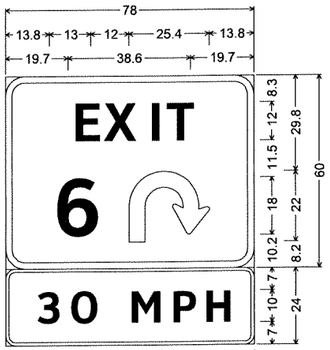
GM540-STA247+00NB; 6.0" Radius, 2.0" Border, White on Green;
[Arkansas] ClearviewHwy-5-W; [Air Natl Guard] ClearviewHwy-5-W;
[Reg Training Ctr] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W; [6] ClearviewHwy-5-W;



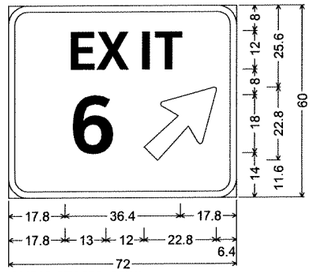
GM540-STA301+00SB; 6.0" Radius, 2.0" Border, White on Green;
[Arkansas] ClearviewHwy-5-W; [Air Natl Guard] ClearviewHwy-5-W;
[Reg Training Ctr] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W; [6] ClearviewHwy-5-W;

W13-2(35) 48"X60"
SS540-STA285+00SB

W4-1RT 48"X48"
SS540-STA281+00NB



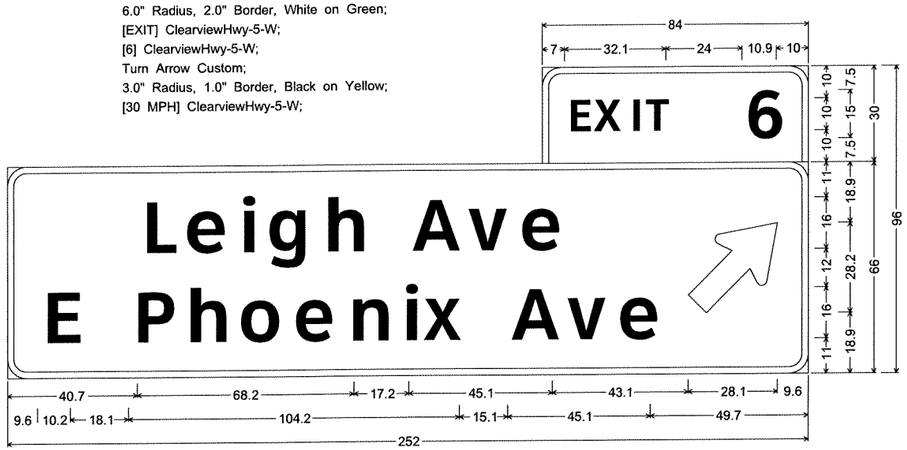
GM540-STA266+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W;
[6] ClearviewHwy-5-W;
Turn Arrow Custom;
3.0" Radius, 1.0" Border, Black on Yellow;
[30 MPH] ClearviewHwy-5-W;



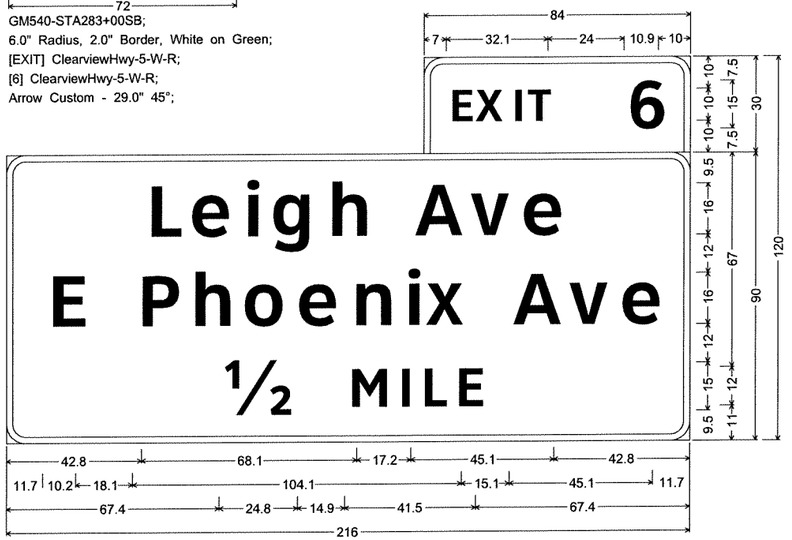
GM540-STA283+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[6] ClearviewHwy-5-W-R;
Arrow Custom - 29.0" 45°;

R2-1(65) 48"X60"
SS540-STA316+50NB

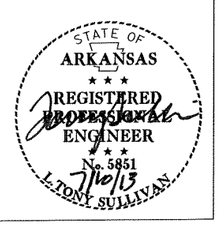
M3-1(Blue) 36"X18"
M1-1(540) 60"X48"
SS540-STA300+00NB



GM540-STA287+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [6] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Leigh Ave] ClearviewHwy-5-W; [E Phoenix Ave] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45°;



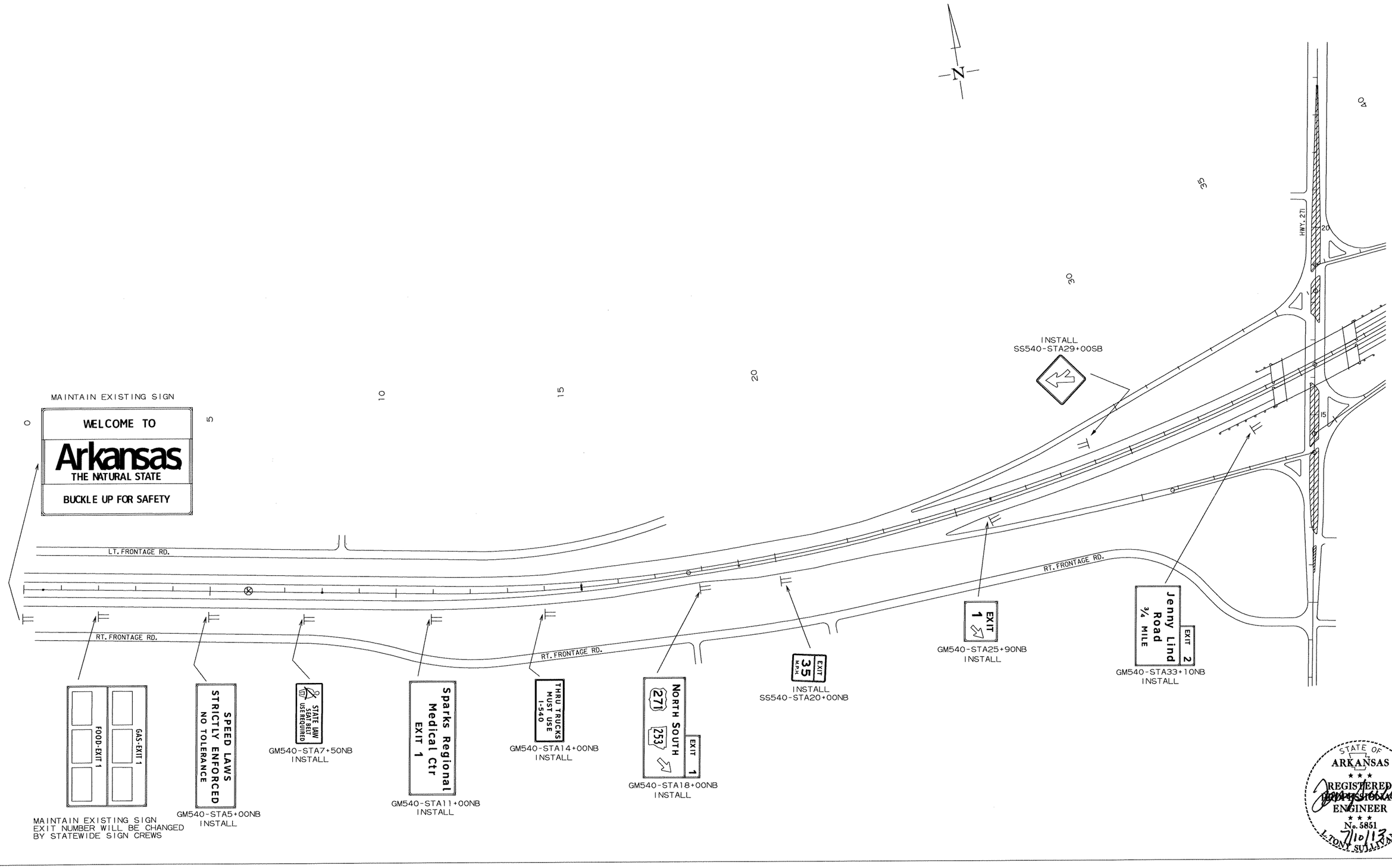
GM540-STA313+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [6] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Leigh Ave] ClearviewHwy-5-W; [E Phoenix Ave] ClearviewHwy-5-W; [½] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	19	56

(2) SIGN PLACEMENT SHEET

STA. 0+00 TO STA. 40+00



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	20	56
				(2)	SIGN PLACEMENT SHEET			

STA. 40+00 TO STA. 75+00

40 45 50 55 60 65 70

INSTALL
GM540-STA43+50SB

EXIT 1

INSTALL
GM540-STA50+20SB

EXIT 1

NORTH SOUTH
271 253 71

INSTALL
SS540-STA48+50SB

EXIT 35 MPH

MAINTAIN EXISTING SIGN
EXIT NUMBER WILL BE CHANGED
BY STATEWIDE SIGN CREWS
EXIT #14 TO EXIT #1

Port of
Fort Smith
EXIT 1

300' TAPER

600' ACCELERATION LANE

841.1' ACCELERATION LANE

300' TAPER

INSTALL
SS540-STA42+00NB

INSTALL
SS540-STA57+00NB

NORTH
INTERSTATE
540

SPEED LIMIT 65

INSTALL
SS540-STA65+00NB

MAINTAIN EXISTING SIGN
EXIT NUMBER WILL BE CHANGED
BY STATEWIDE SIGN CREWS
EXIT #13 TO EXIT #2

FOOD-EXIT 2 · LODGING · EXIT 2

STATE OF ARKANSAS
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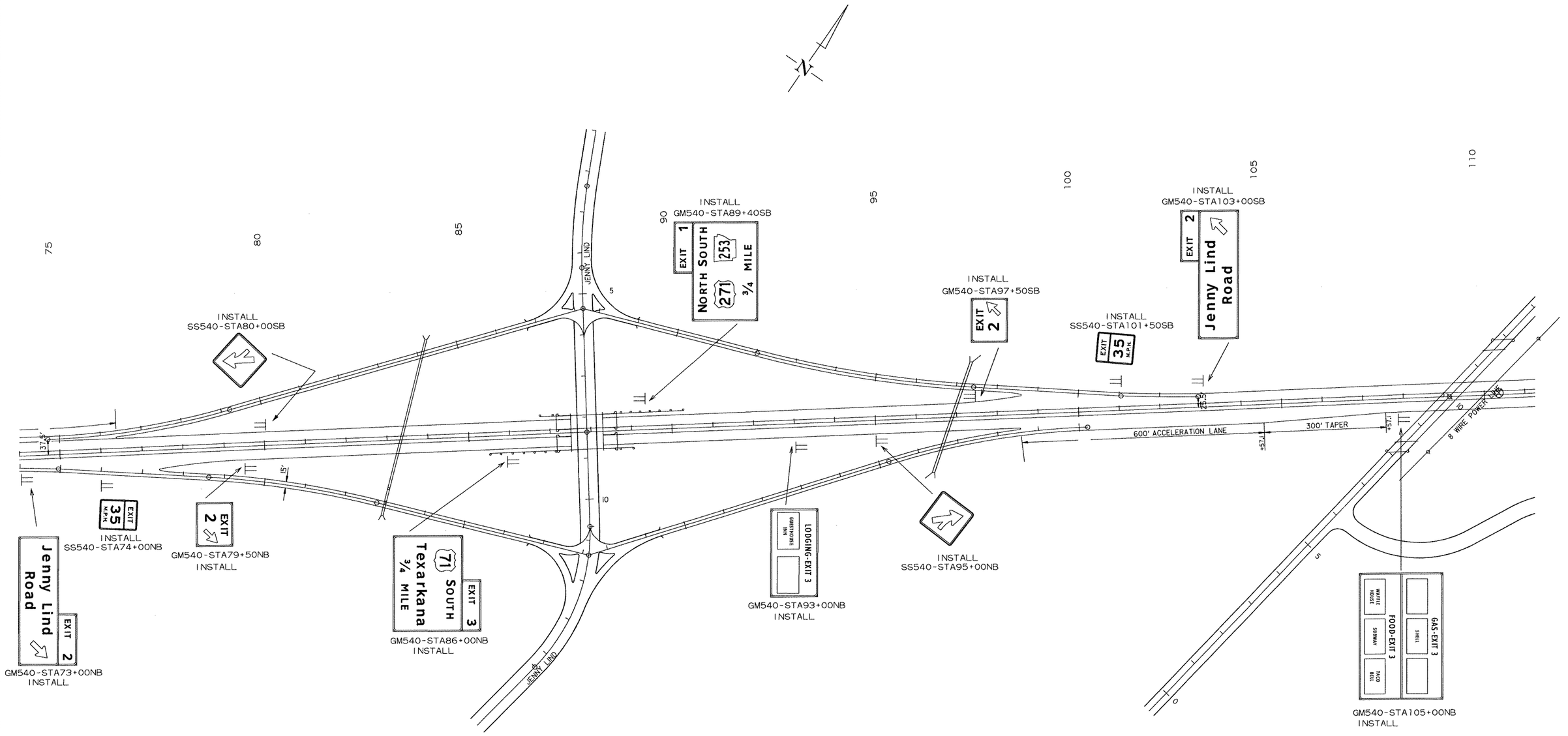
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	21	56

(2) SIGN PLACEMENT SHEET

STA. 75+00 TO STA. 110+00

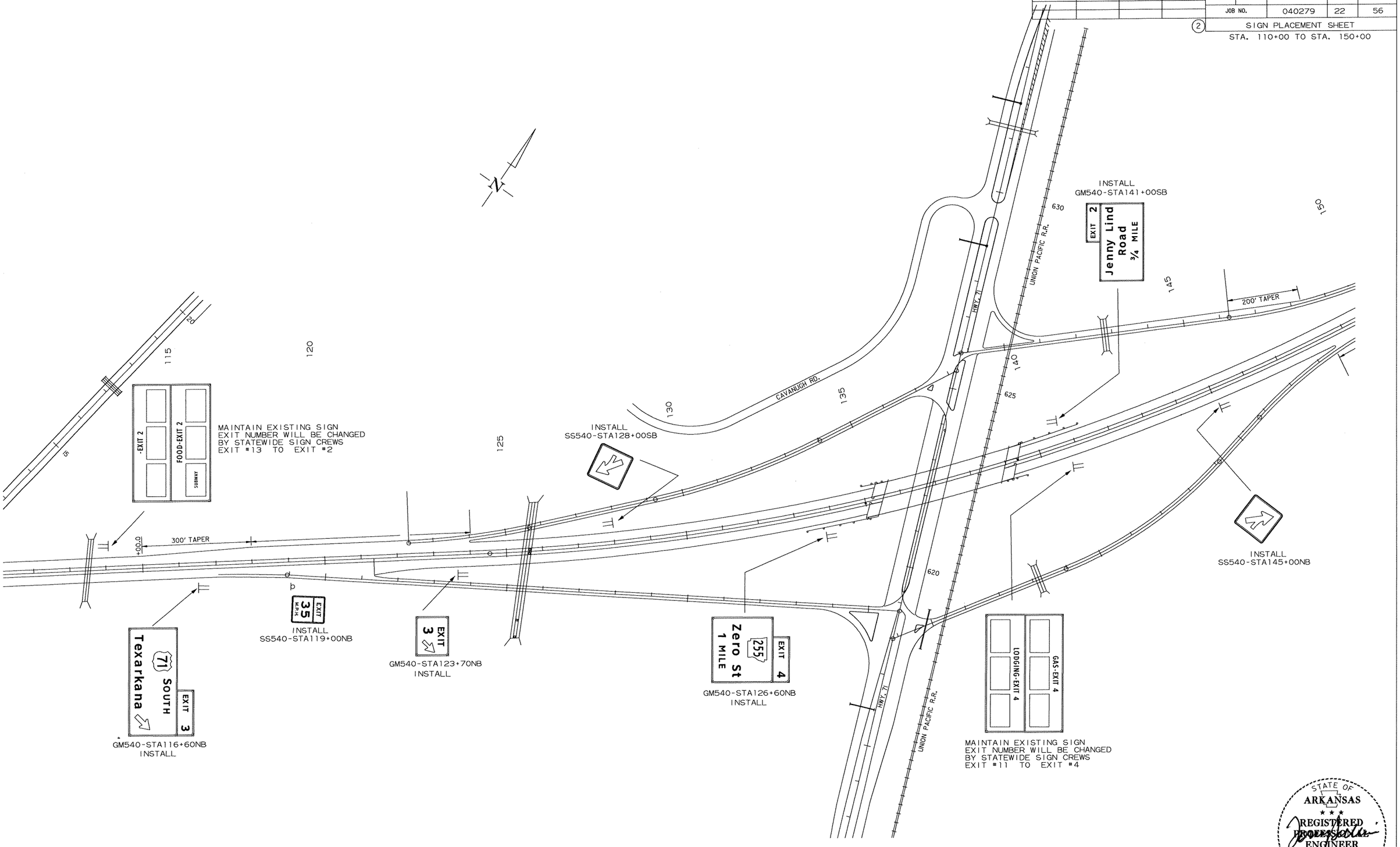


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
L. TONY SULLIVAN
7/10/13

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	22	56

(2) SIGN PLACEMENT SHEET

STA. 110+00 TO STA. 150+00

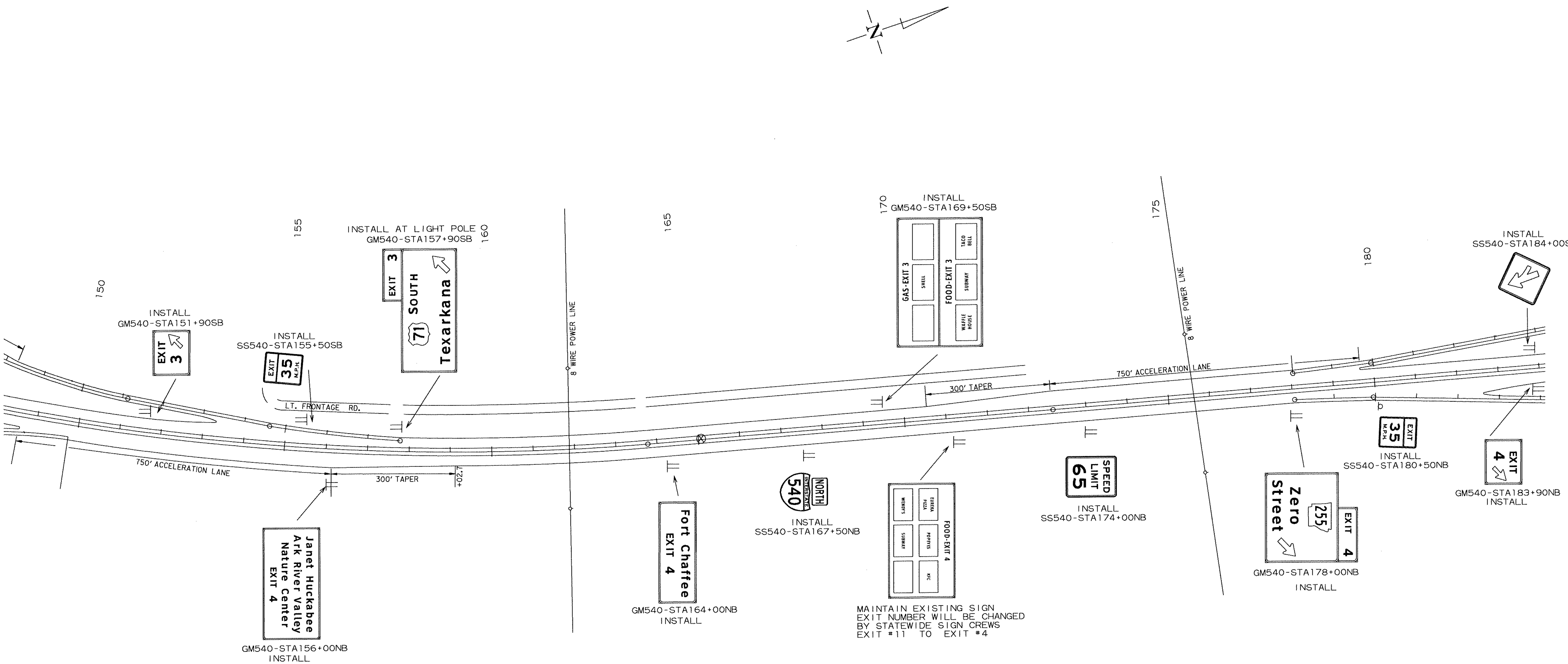


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
L. TONY SULLIVAN
7/10/13

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	23	56

(2) SIGN PLACEMENT SHEET

STA. 150+00 TO STA. 180+00


INSTALL
GM540-STA151+90SB
EXIT 3
INSTALL
SS540-STA155+50SB
EXIT 35 M.P.H.
INSTALL AT LIGHT POLE
GM540-STA157+90SB
EXIT 3
71 SOUTH Texarkana
INSTALL
GM540-STA169+50SB
GAS-EXIT 3
SHELL
FOOD-EXIT 3
TACO BELL
SUBWAY
WAFFLE HOUSE
INSTALL
SS540-STA184+00SB
LT. FRONTAGE RD.
750' ACCELERATION LANE
300' TAPER
8 WIRE POWER LINE
Janet Huckabee Ark River Valley Nature Center EXIT 4
GM540-STA156+00NB
INSTALL
Fort Chaffee EXIT 4
GM540-STA164+00NB
INSTALL
NORTH INTERSTATE 540
INSTALL
SS540-STA167+50NB
FOOD-EXIT 4
WENDY'S
EUREKA PIZZA
SUBWAY
POPEYES
KFC
MAINTAIN EXISTING SIGN
EXIT NUMBER WILL BE CHANGED
BY STATEWIDE SIGN CREWS
EXIT #11 TO EXIT #4
SPEED LIMIT 65
INSTALL
SS540-STA174+00NB
Zero Street 255
EXIT 4
GM540-STA178+00NB
INSTALL
35 M.P.H. EXIT
INSTALL
SS540-STA180+50NB
EXIT 4
GM540-STA183+90NB
INSTALL
150
155
160
165
170
175
180

STATE OF ARKANSAS
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L. TONY SULLIVAN
7/10/13

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	24	56

(2) SIGN PLACEMENT SHEET

STA. 180+00 TO STA. 215+00

INSTALL
GM540-STA186+00SB

LODGING-EXIT 3
GUESTHOUSE INN

INSTALL
EXIT 3
71 SOUTH
Texarkana
¾ MILE
OH540-STA197+85SB(A)

INSTALL
EXIT 4
255
Zero Street
OH540-STA197+85SB(B)

OH-540-65-05

INSTALL NEW OVERHEAD

EXIT 30 M.P.H.
SS540-STA197+85SB
INSTALL

7'-3" MIN. | SHOULDER | 12'-0" TRAFFIC LANE | 12'-0" TRAFFIC LANE | SHOULDER | 7'-3" MIN.

INSTALL NEW GUARDRAIL

INSTALL
GM540-STA208+00SB

Janet Huckabee
Ark River Valley
Nature Center
EXIT 4

GM540-STA194+00SB
INSTALL
EXIT 4

INSTALL
SS540-STA194+00NB

INSTALL
SS540-STA210+50NB

EXIT 35 M.P.H.

INSTALL
GM540-STA215+50NB

EXIT 5

300' TAPER
750' ACCELERATION LANE
+75.3
+01.9
300' TAPER
750' ACCELERATION LANE

WRE POWER LINE

NO. PAC. R.R.

LODGING-EXIT 5
RAMADA INN

GAS-EXIT 5
CITGO

INSTALL
GM540-STA191+90NB

Greenwood Rd
W Phoenix Ave
½ MILE
45
EXIT 5
GM540-STA188+00NB
INSTALL

INSTALL
EXIT 6
E Phoenix Avenue
½ MILE
OH540-STA209+00NB(A)

INSTALL
EXIT 5
45
Greenwood Rd
W Phoenix Ave
OH540-STA209+00NB(B)

OH-540-65-06

INSTALL NEW OVERHEAD

SHOULDER | 12'-0" TRAFFIC LANE | 12'-0" TRAFFIC LANE | SHOULDER | 7'-3" MIN.

INSTALL NEW GUARDRAIL

190 195 200 205 210 215 20

STATE OF ARKANSAS
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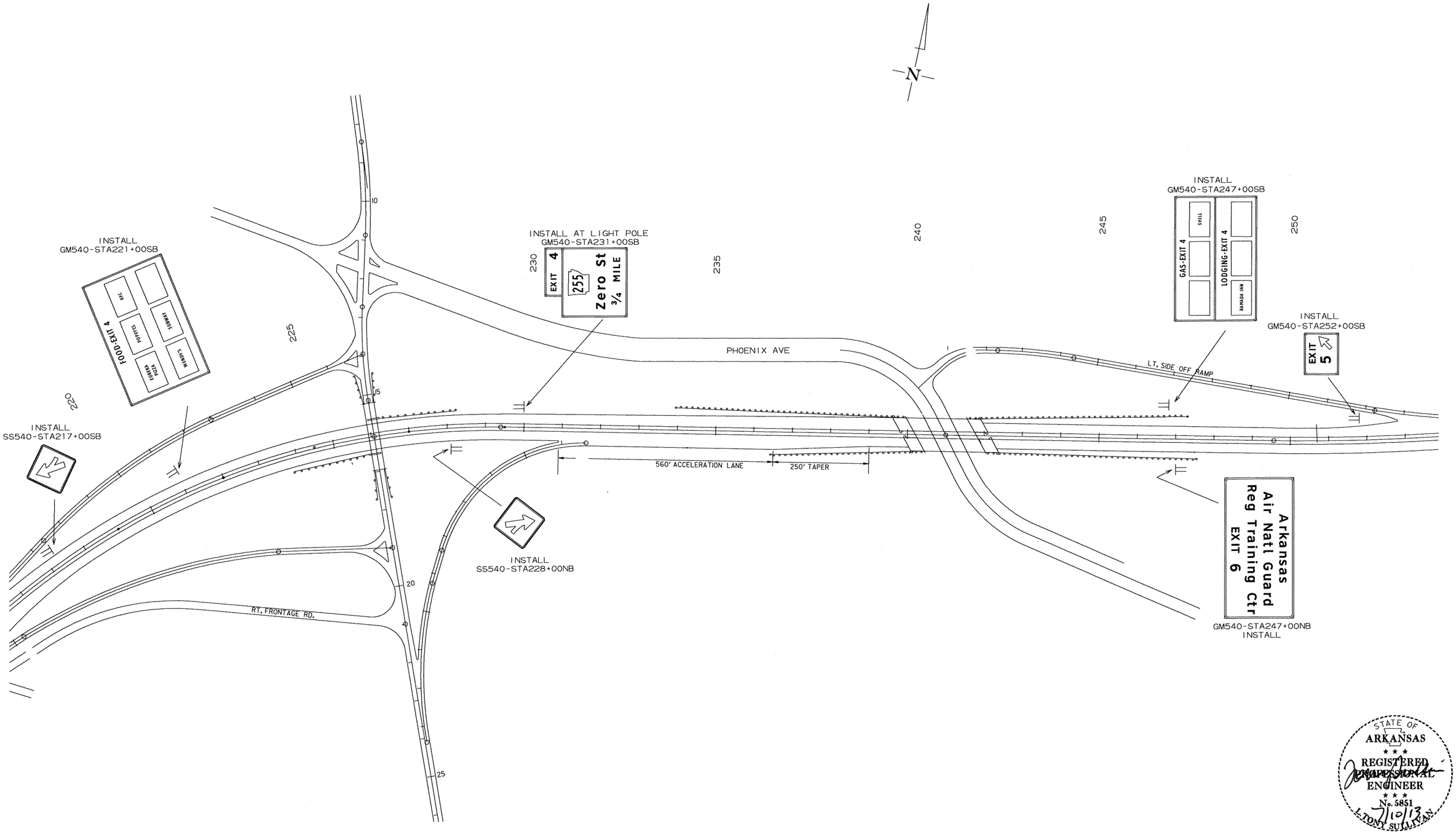
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07/10/2013			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		040279	25	56

(2) SIGN PLACEMENT SHEET

STA. 215+00 TO STA. 255+00



STATE OF ARKANSAS
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No. 5851
7/10/13
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07/10/2013				6	ARK.			
				JOB NO.		040279	26	56

(2) SIGN PLACEMENT SHEET

STA. 255+00 TO STA. 292+00

INSTALL AT LIGHT POLE
GM540-STA260+45SB

EXIT 5
45
Greenwood Rd
W Phoenix Ave

INSTALL
GM540-STA269+10SB

GAS-EXIT 5 | LODGING-EXIT 5
CITGO

INSTALL
GM540-STA276+50SB

EXIT 5
45
Greenwood Rd
W Phoenix Ave
1/4 MILE

INSTALL
GM540-STA283+00SB

EXIT 6

INSTALL
SS540-STA285+00SB

EXIT 35 M.P.H.

EXIT 6
Leigh Ave
E Phoenix Ave

INSTALL
GM540-STA287+00SB

750' ACCELERATION LANE

INSTALL
SS540-STA281+00NB

FOOD-EXIT 7
WAFFLE HOUSE | GOLDEN CORRAL | CHICK-FIL-A
VILLAGE INN | DENNY'S | PEKING PLACE
ARBY'S | | CALICO COUNTY

GM540-STA279+00NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

INSTALL
SS540-STA228+50SB

EXIT 35 M.P.H.

750' DECELERATION LANE

180' TAPER

+98.26

EXIT 30 MPH 6

GM540-STA266+00NB
INSTALL

LODGING-EXIT 7
HAMPTON INN | | HOMEWOOD
ASPEN | HOLIDAY INN |
RESIDENCE INN | | COMFORT INN

GM540-STA270+00NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

INSTALL

EXIT 6
E Phoenix Avenue

CL540-STA263+00NB

OC-540-65-07

INSTALL NEW CANTILEVER

EXIT 30 M.P.H.

SS540-STA263+00NB
INSTALL

12'-0" TRAFFIC LANE | 12'-0" TRAFFIC LANE | 12'-0" DECELERATION LANE | SHOULDER

INSTALL GUARDRAIL

STATE OF ARKANSAS
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07/10/2013				6	ARK.			
				JOB NO.		040279	27	56

(2) SIGN PLACEMENT SHEET

STA. 292+00 TO STA. 380+00

295 300 305 310 315 320 325 330 377 380

INSTALL
GM540-STA301+00SB

Arkansas Air Natl Guard Reg Training Ctr EXIT 6

INSTALL
GM540-STA313+00SB

EXIT 6 Leigh Ave E Phoenix Ave ½ MILE

SS540-STA327+00SB MAINTAIN
SIGN INSTALLED BY JOB BB0407

SOUTH 540 TRUCK ROUTE

300' TAPER

SPEED LIMIT 65

EXIT 7 Rogers Ave 1 MILE 22

GM540-STA296+00NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

NORTH 540 TRUCK ROUTE

INSTALL
SS540-STA300+00NB

GAS-EXIT 7 WATER

GM540-STA304+00NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

Fort Smith Nat Historic Site National Cemetery EXIT 7

GM540-STA312+00NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

SPEED LIMIT 65

INSTALL
SS540-STA316+50NB

Downtown Ft Smith NEXT 2 EXITS

GM540-STA321+10NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

St Edward Medical Ctr EXIT 7
Airport EXIT 7

GM540-STA326+00NB MAINTAIN
SIGN INSTALLED BY JOB BB0407

STATE OF ARKANSAS
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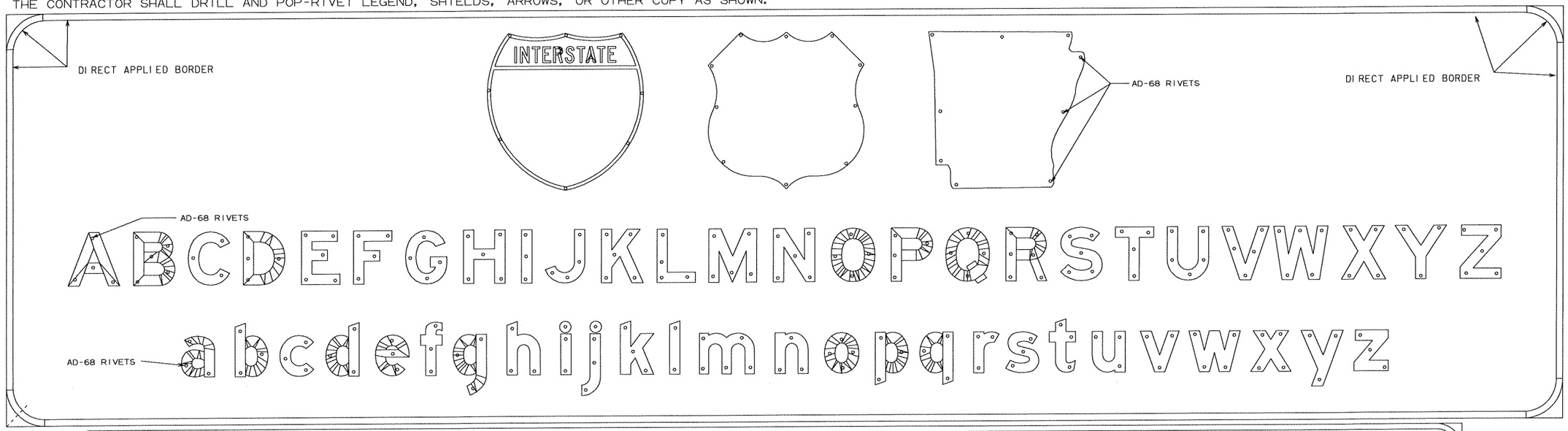
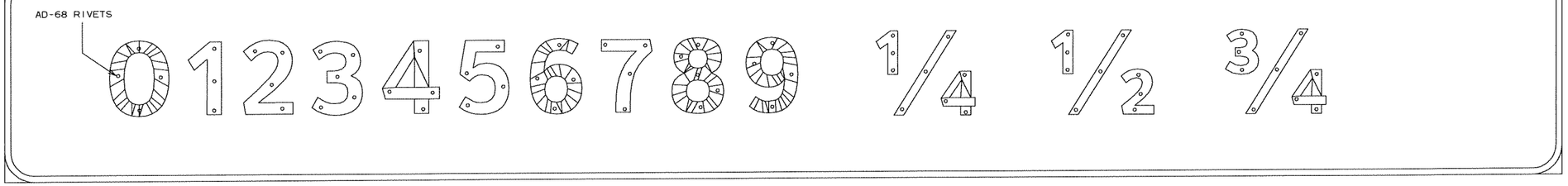
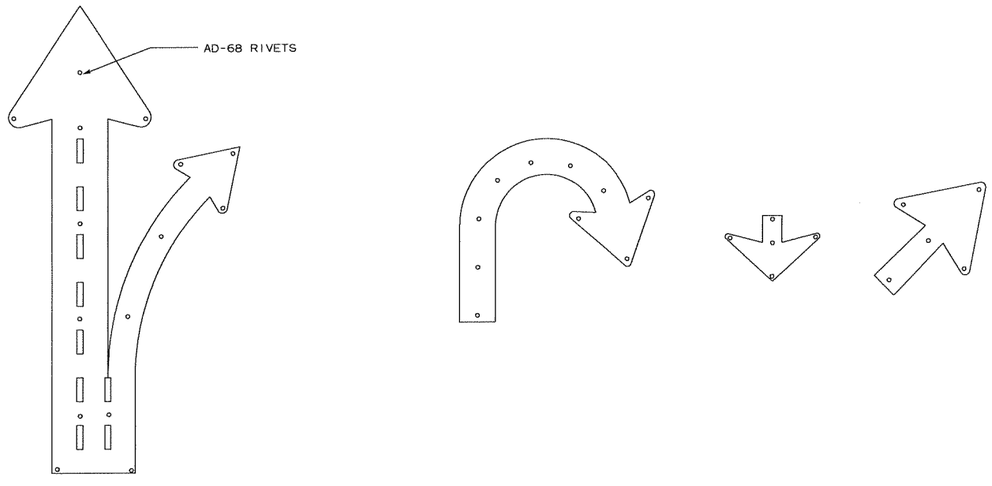
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	28	56

(2) MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS

THE CONTRACTOR SHALL DRILL AND POP-RIVET LEGEND, SHIELDS, ARROWS, OR OTHER COPY AS SHOWN.







NOTE:

LEGEND ON GUIDE SIGNS ON THE MAIN LANES SHALL BE DEMOUNTABLE LEGEND.
LEGEND ON GUIDE SIGNS ON CROSS ROADS AND RAMPS SHALL BE DIRECT APPLIED.
THE DEMOUNTABLE AND DIRECT APPLIED LEGENDS SHALL BE TYPE IX SHEETING.

THE BACKGROUND ON ALL GUIDE SIGNS AND STANDARD SIGNS SHALL BE CONSTRUCTED USING TYPE III SHEETING.
TYPE IX SHEETING FOR BORDER, LEGEND, SHIELDS, ARROWS, OR OTHER COPY SHALL BE ORIENTED VERTICALLY AS PER MANUFACTURERS' DATUM MARKS, ORIENTATION MARKS, OR OTHER RECOMMENDATIONS.

SIGN LEGEND, SHIELDS, ARROWS OR OTHER COPY SHALL BE APPLIED WITH RIVETS ONLY.
NO OTHER METHOD OF APPLYING CHARACTERS IS ALLOWED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
ANTONY SUMMERS

DATE	REVISION	FILMED

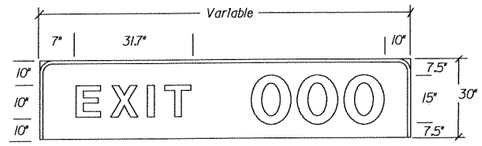
MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	29	56

(2) DETAILS OF GUIDE SIGN PANELS

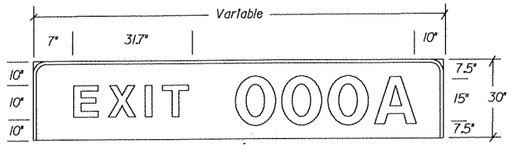
TYPICAL DETAIL

TYPE A



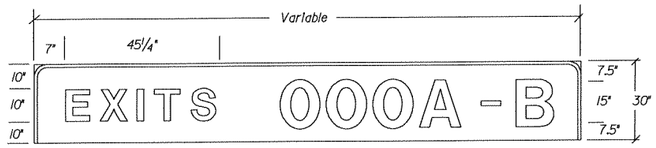
EXIT WITH 1 DIGIT 84"X30"=17.50 SF
EXIT WITH 2 DIGITS 96"X30"=20.0 SF
EXIT WITH 3 DIGITS 114"X30"=23.57 SF

TYPE B



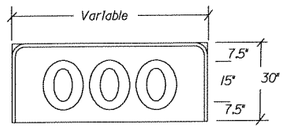
EXIT WITH 1 DIGIT PLUS "A"OR"B" 96"X30"=20.0 SF
EXIT WITH 2 DIGITS PLUS "A"OR"B" 114"X30"=23.57 SF
EXIT WITH 3 DIGITS PLUS "A"OR"B" 126"X30"=26.25 SF

TYPE C



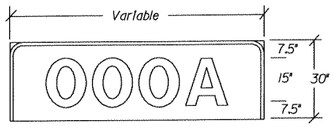
EXITS WITH 1 DIGIT PLUS "A"&"B" 132"X30"=27.50 SF
EXITS WITH 2 DIGITS PLUS "A"&"B" 150"X30"=31.25 SF
EXITS WITH 3 DIGITS PLUS "A"&"B" 168"X30"=35.00 SF

TYPE D



1 DIGIT 24"X30" =5.0 SF
2 DIGITS 42"X30" =8.75 SF
3 DIGITS 60"X30" =12.50 SF

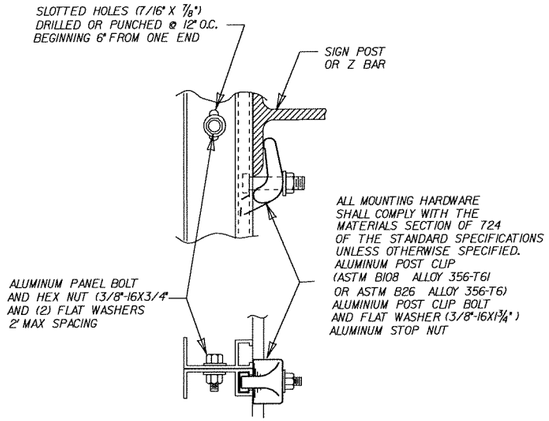
TYPE E

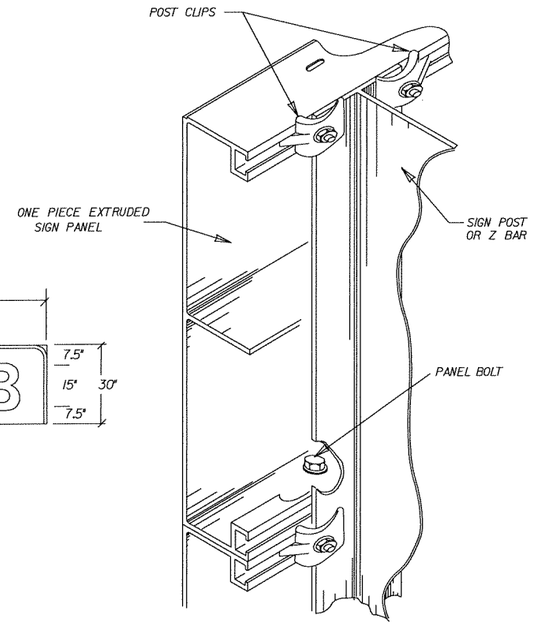


1 DIGIT PLUS "A"OR"B" 42"X30"=8.75 SF
2 DIGITS PLUS "A"OR"B" 60"X30"=12.50 SF
3 DIGITS PLUS "A"OR"B" 78"X30"=16.25 SF

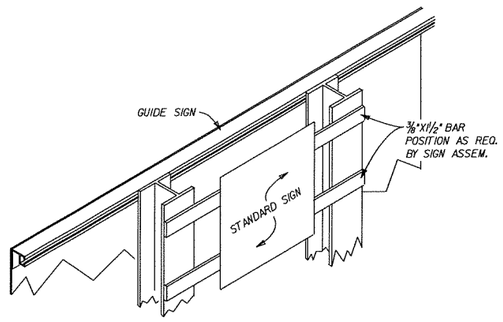
EXIT PANEL DETAILS

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BORDERS. THE BACK GROUND COLOR WILL BE AS USE SPECIFIES. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED OR AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBSIDIARY TO THE ITEM "EXIT NUMBER PANEL"

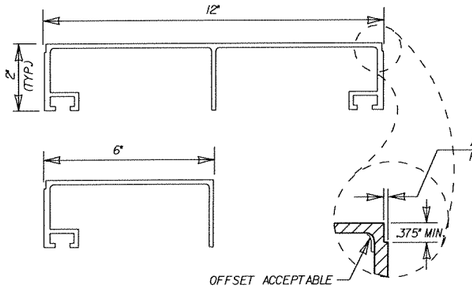




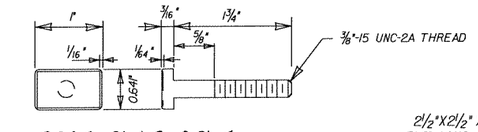
MOUNTING HARDWARE



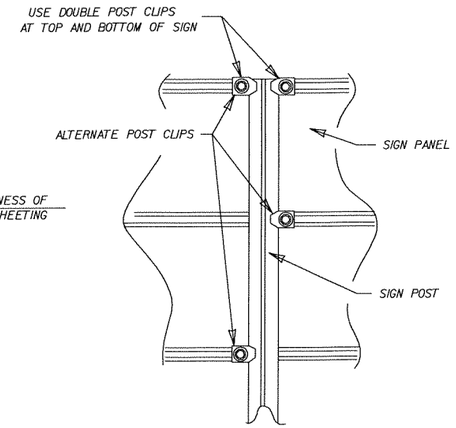
SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN



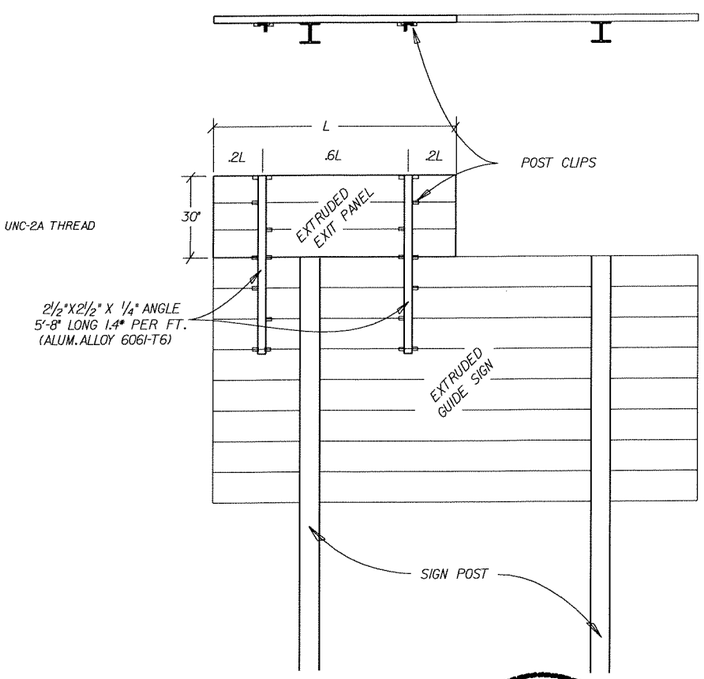
ONE PIECE EXTRUDED SIGN PANELS



POST CLIP BOLT



POST CLIP PLACEMENT



DATE	REVISION	FILMED

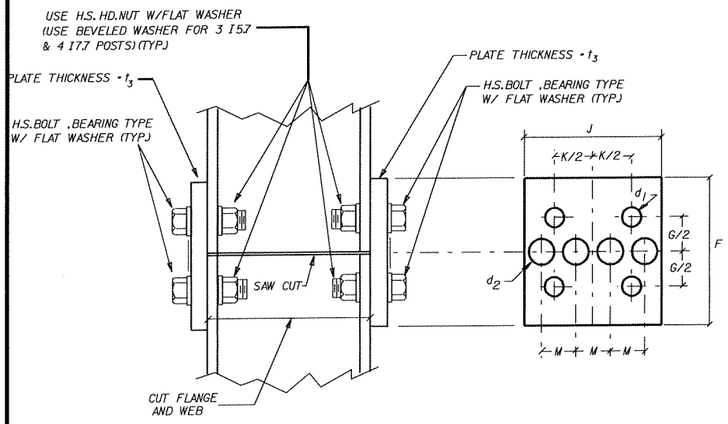
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
TONY SULLIVAN

DETAILS OF GUIDE SIGN PANELS

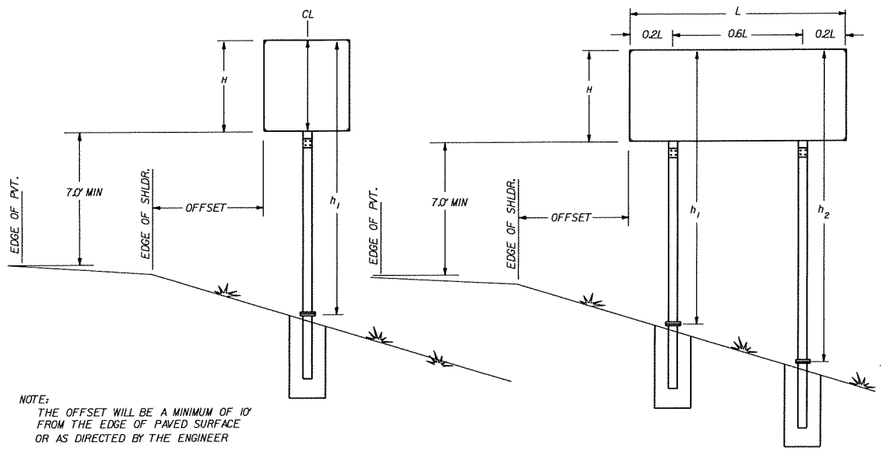
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	30	56

(2) DETAILS OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

POST SIZE	BASE CONNECTION DATA										FUSE PLATE DATA									
	BOLT SIZE	BOLT TORQUE (INCH/LBS)	A	B	C	D	E	t_1	t_2	W	R	F	G		J	K	M	d_1	d_2	t_3	BOLT SIZE	WT.OF EACH FUSE PLATE LBS.
W 6X9	5/8" x 2 3/4"	450"-680"	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	11/32"	4 1/4"	2"		4"	2 1/4"	1"	9/16"	3/4"	1/4"	1/2" x 1 1/2"	1.01
W 6X12												5"	2 1/2"		6"	3 1/2"	1 1/2"	11/16"	1 1/4"	3/8"	5/8" x 2 1/4"	2.51
W 6X15												5"	2 1/2"		5 1/4"	2 3/4"	1 1/4"	13/16"	1 1/16"	3/8"	3/4" x 2 1/4"	2.26
W 8X18												5 1/2"	2 1/2"		5 1/4"	2 3/4"	1 1/4"	13/16"	1"	1/2"	3/4" x 2 1/4"	3.35
W 8X21	3/4" x 3 1/2"	750"-1050"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	13/32"	6"	3"		5 3/4"	2 3/4"	1 7/8"	13/16"	1 1/8"	1/2"	3/4" x 2 1/4"	4.03
W 10X22																						
W 10X26												6"	3"		6 1/2"	3 1/2"	1 7/8"	13/16"	1 5/16"	1/2"	3/4" x 2 1/4"	4.47
W 12X26																						



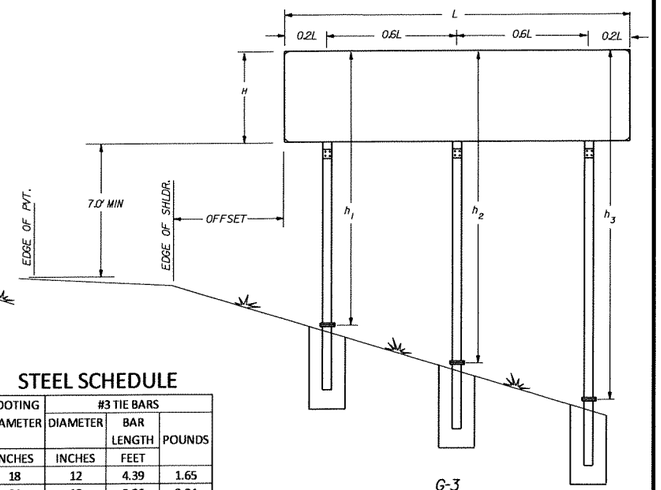
NOTE: USE H.S.HEX HEAD BOLTS, HEX HEAD NUTS AND BEVEL OR FLAT WASHERS (WHERE REQ.) UNDER NUTS. ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS, HOWEVER FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM-A36, ASTM-A441, ASTM-572 GRADE 50, OR ASTM-A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.



NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER

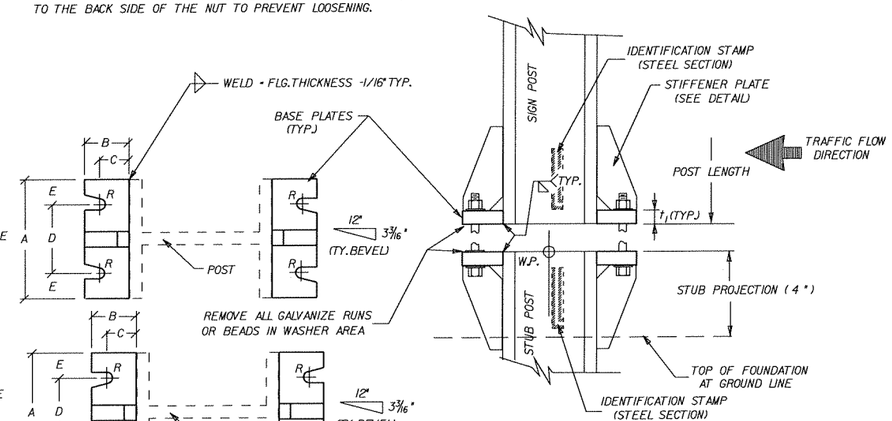
G-1

G-2

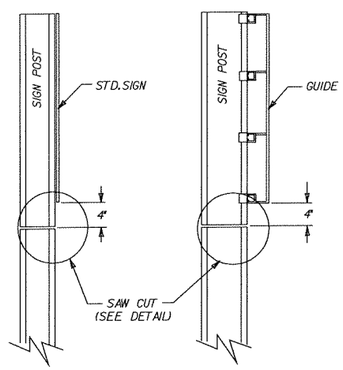


G-3

NOTE: SECTIONS SHOWN ARE FOR INSTALLATION ON THE RIGHT SHOULDER AND IN THE GORE. BOLT HOLES IN BASE PLATE ARE SLOTTED AND BEVELED AS SHOWN. USE H.S.BOLTS WITH HEX HD., HEX NUT AND THREE FLAT WASHERS FOR EACH BOLT. SEE TABLE FOR BOLT DIA. AND TORQUE.
NOTE: ASSEMBLE SIGN POST TO STUB POST USING THE BOLTS SPEC. IN THE TABLE AND AS SHOWN IN THE ELEVATION DETAILS. THERE SHALL BE THREE FLAT WASHERS ON EACH BOLT LOCATED AS SHOWN IN THE ELEVATIONS. USE A SHIM TO PLUMB THE SIGN POST, THEN TIGHTEN THE BOLTS USING A 12" TO 15" WRENCH UNTIL THE WASHERS AND SHIMS ARE SEATED AND THE BOLT THREADS ARE CLEAR, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE), THE BURR THREADS ADJACENT TO THE BACK SIDE OF THE NUT TO PREVENT LOOSENING.



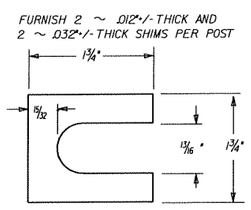
NOTE: BOLT HOLES, USED IN THE MOUNTING OF STANDARD SIGNS SHALL BE LOCATED IN THE FLANGE ADJACENT TO THE NEAR EDGE OF PAVEMENT FOR SINGLE POST ASSEMBLIES AND IN THE OUTSIDE FLANGES FOR MULTIPLE POST ASSEMBLIES.



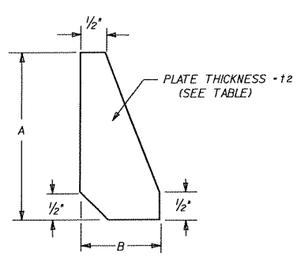
NOTE: POST SHALL BE SAW CUT AFTER GALVANIZING AND THE CUT SURFACE TREATED, AFTER PLATE IS INSTALLED AND ALL BOLTS FULLY TIGHTENED, WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPEC. O-G-93 (STICK ONLY).

Standard Signs | Guide Signs

FUSE PLATE DETAILS



SHIM DETAIL

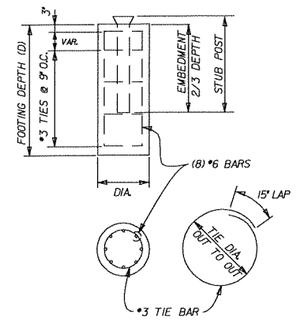


STIFFENER PLATE DETAIL

STEEL SCHEDULE

FOOTING DIAMETER	#3 TIE BARS		
	DIAMETER	BAR LENGTH	POUNDS
INCHES	INCHES	FEET	
18	12	4.39	1.65
24	18	5.96	2.24
30	24	7.53	2.83
36	30	9.1	3.42

FOOTINIG DEPTH	#6 STRAIGHT BARS		
	BAR LENGTH	NUMBER REQ'D.	POUNDS
FEET	FEET		
2.50	2.00	8	24.03
3.00	2.50	8	30.04
3.50	3.00	8	36.05
4.00	3.50	8	42.06
4.50	4.00	8	48.06
5.00	4.50	8	54.07
5.50	5.00	8	60.08
6.00	5.50	8	66.09
6.50	6.00	8	72.10
7.00	6.50	8	78.10
7.50	7.00	8	84.11
8.00	7.50	8	90.12



FOOTING QUANTITIES

FOOTINIG DEPTH	NUMBER TIE BARS REQ'D	18" DIAMETER		24" DIAMETER		30" DIAMETER		36" DIAMETER	
		CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL
FEET		CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)
2.50	4	0.16	31						
3.00	4	0.20	37						
3.50	5	0.23	44						
4.00	6	0.26	52	0.47	56				
4.50	6	0.29	58	0.52	62				
5.00	7	0.33	66	0.58	70	0.91	74		
5.50	8			0.64	78	1.00	83		
6.00	8			0.70	84	1.09	89	1.57	93
6.50	9					1.18	98	1.70	103
7.00	10					1.27	106	1.83	112
7.50	10							1.96	118
8.00	11							2.09	128

GENERAL NOTES

TIGHTEN THE HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.

BASE PLATES AND STIFFENER PLATES SHALL BE OF THE SAME MATERIAL AS THE PRIMARY SUPPORT POSTS WHICH THEY ARE WELDED.

REFER TO THE PLANS FOR FOOTING DIMENSIONS.

EACH STUB POST AND SIGN POST SHALL HAVE A PERMANENT IDENTIFYING STAMP WHICH SPECIFIES THE STEEL SECTION USED. IF THE CONTRACTOR ELECTS TO SHIP THE STUB POST SEPARATE FROM THE SIGN POST A MATCH MARK SYSTEM WILL BE REQUIRED.

SIGN POST AND STUB POST

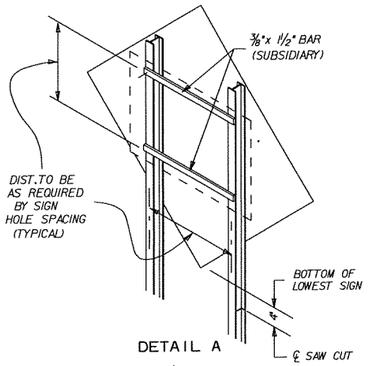
DATE	REVISION	FILMED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/16/13
J. TONY SULLIVAN

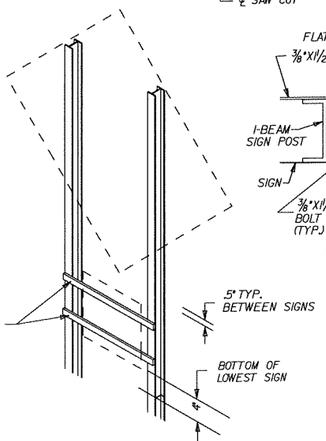
DETAILS OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1-10-13				6	ARK.			
				JOB NO.		040279	31	56

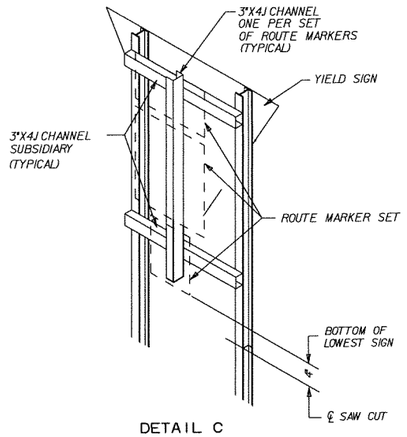
(2) DETAILS OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS



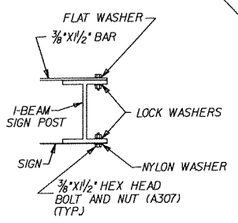
DETAIL A



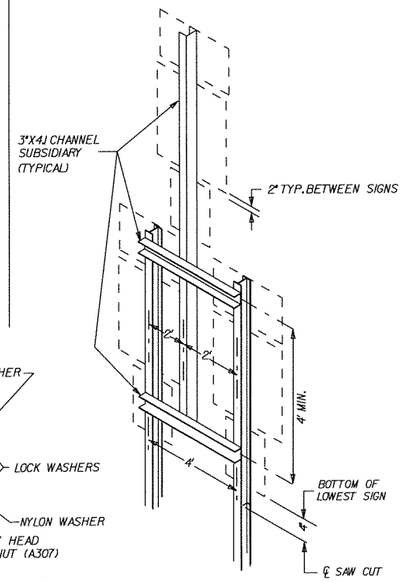
DETAIL B



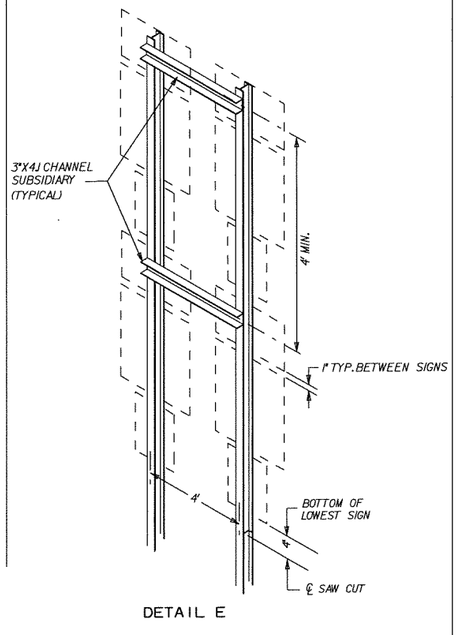
DETAIL C



DETAIL F



DETAIL D



DETAIL E

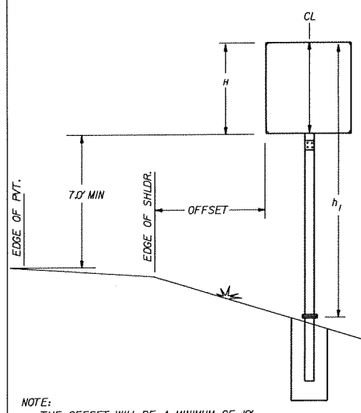
NOTE

ALL ADDITIONAL MOUNTING HARDWARE, BOLTS, NUTS, CHANNELS AND BAR STRAPS REQUIRED TO MOUNT SECONDARY SIGNS WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN SIGN SUPPORT SPECIFIED. PAYMENT WILL BE CONSIDERED SUBSIDIARY TO THE MAIN SUPPORT .

THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS MAY BE ASTM A-36.

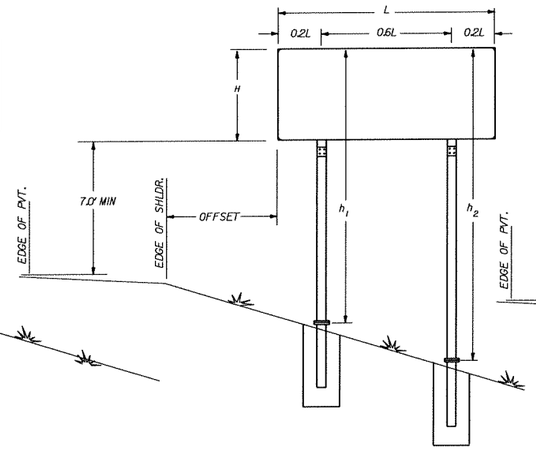
REFER TO THE P.C.RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE 1/8" DIA. UNLESS OTHERWISE SHOWN.

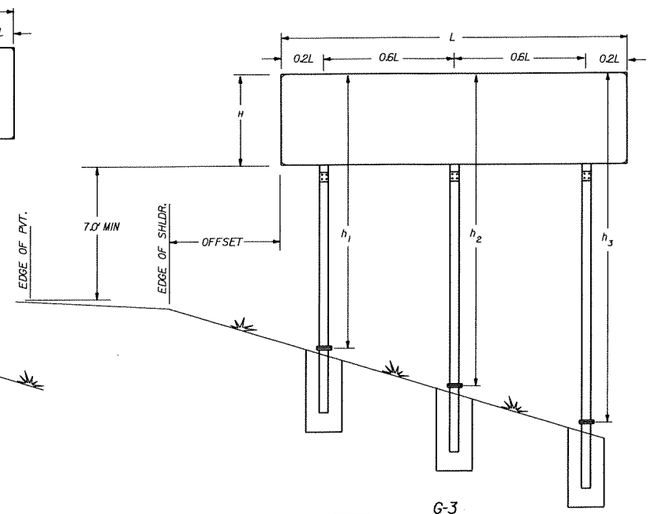


G-1

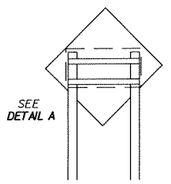
NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER



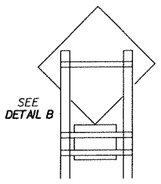
G-2



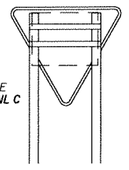
G-3



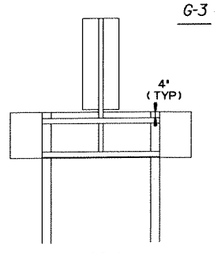
G2-1



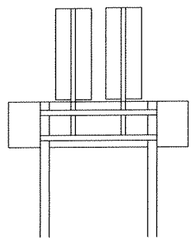
G2-2



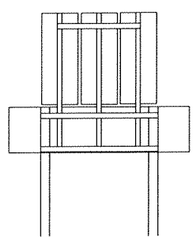
G2-3



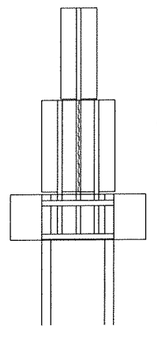
G2-4



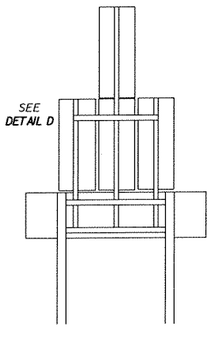
G2-5



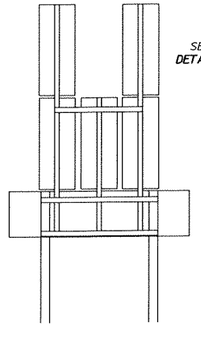
G2-6



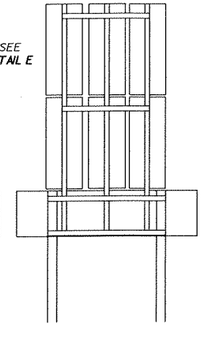
G2-7



G2-8



G2-9



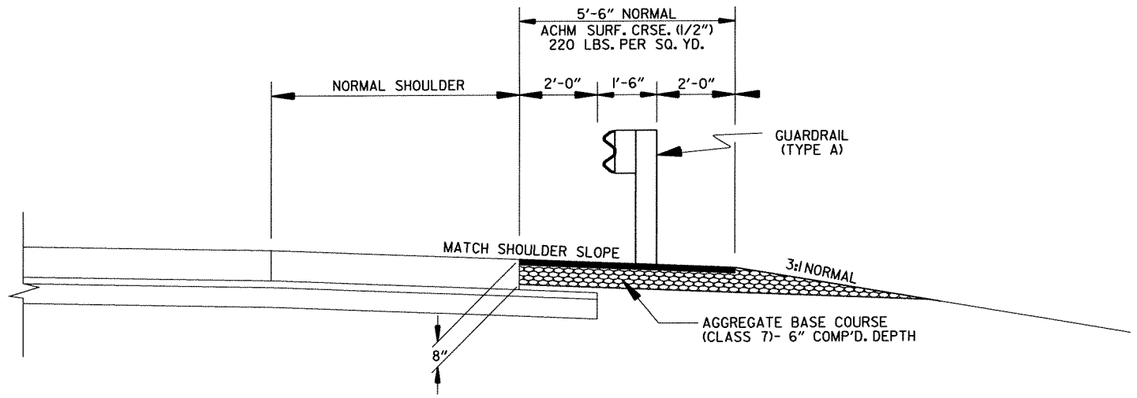
G2-10

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
JOHN SULLIVAN

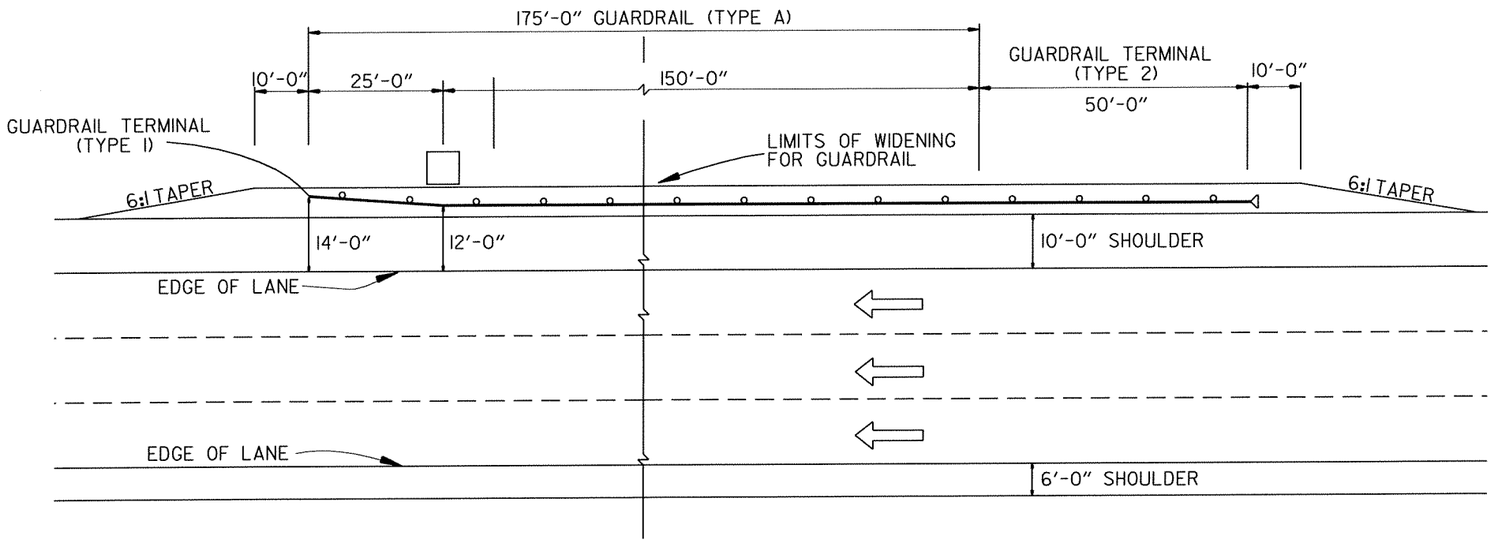
DATE	REVISION	FILMED

DETAILS OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	32	56
				(2)	TYPICAL GUARDRAIL WIDENING (SIGN)			



TYPICAL SECTION OF WIDENING FOR GUARDRAIL

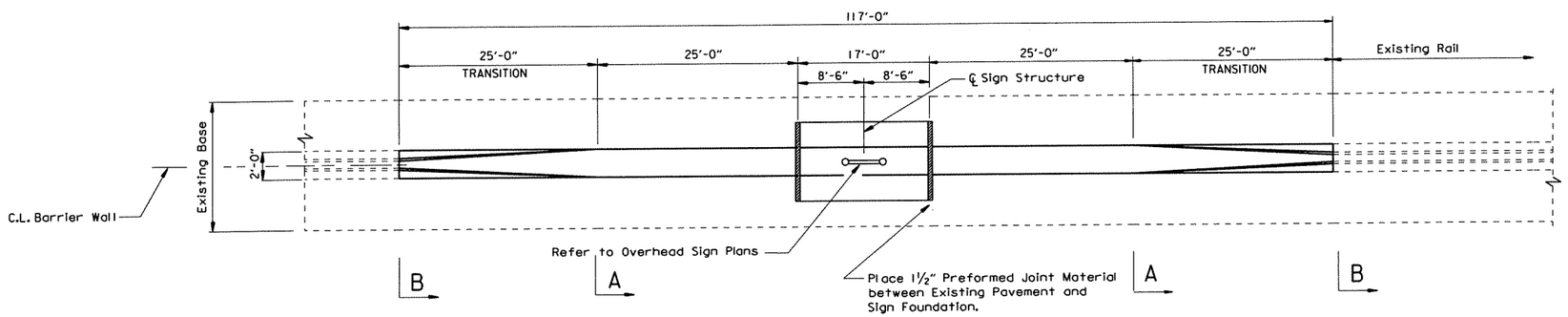


TYPICAL LAYOUT OF GUARDRAIL ALONG ROADWAY

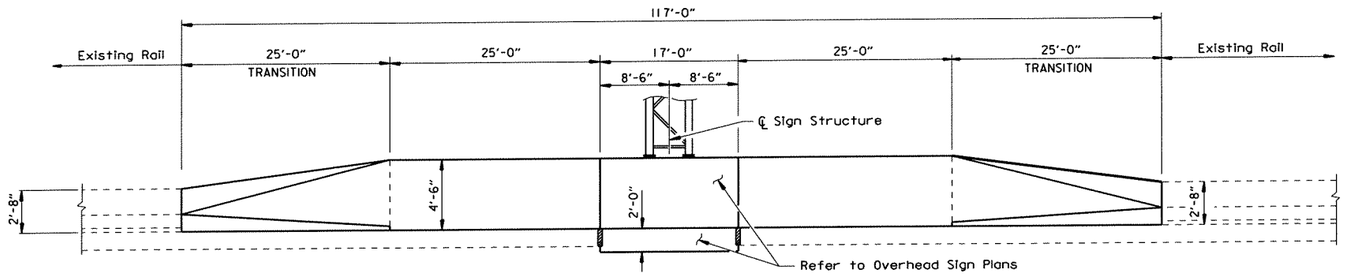
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
7/10/13
LARRY SULLIVAN

TYPICAL GUARDRAIL WIDENING (SIGN)

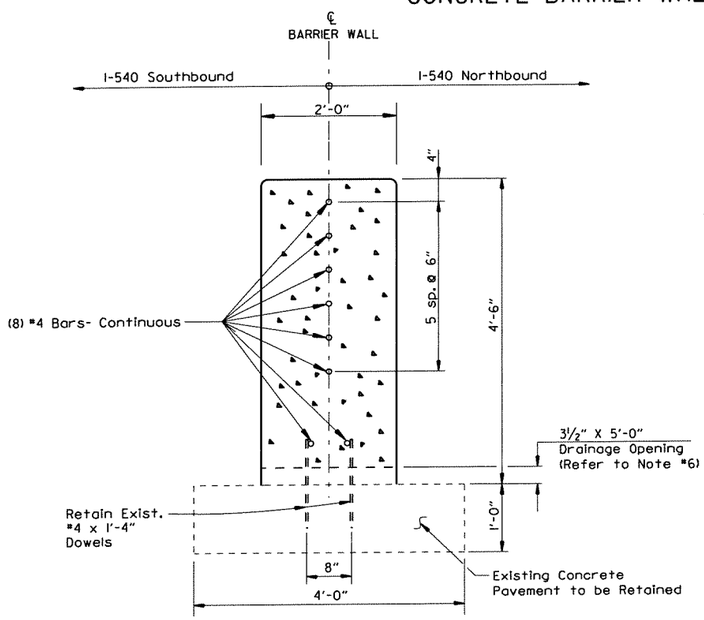
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	33	56
				(2)	SPECIAL DETAILS			



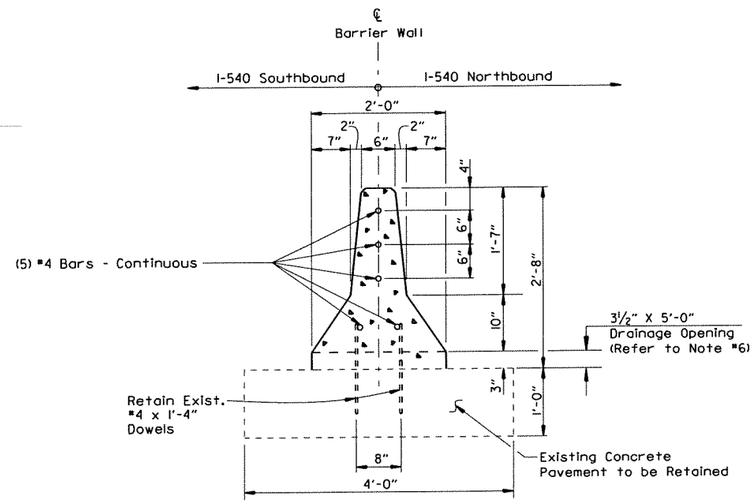
PLAN VIEW
CONCRETE BARRIER WALL TRANSITION (MEDIAN TYPE SP-I)



ELEVATION VIEW
CONCRETE BARRIER WALL TRANSITION (MEDIAN TYPE SP-I)

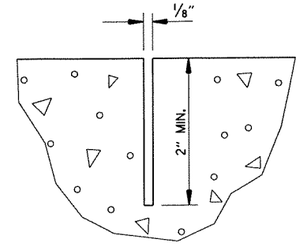


CONCRETE BARRIER WALL (MEDIAN TYPE SP-I)
(SECTION A-A)
STA. 197+51.50 TO STA. 198+18.50



CONCRETE BARRIER WALL (MEDIAN TYPE SP-I)
(SECTION B-B)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL T. FUSELIER
5/21/13



CONTRACTION JOINT DETAIL

Notes for Concrete Barrier Wall:

Concrete Barrier Walls shall be constructed in accordance with Section 631 of the Standard Specifications and these details.

All exposed edges shall have a ¾" chamfer.

Contraction joints shall be constructed at 30'-0" maximum spacing in top and sides of median barrier and shall be formed in fresh concrete.

All reinforcing bars shall have 2" minimum cover.

Existing dowel bars which are to be incorporated into new construction and are damaged by the Contractor shall be replaced at his expense to the satisfaction of the Engineer.

Drainage openings shall be constructed adjacent to drop inlets as directed by the Engineer. No additional payment will be made for this work.

Preformed joint material, and removal and disposal of existing pavement for construction of the overhead sign foundation shall be included in the price bid for "Steel Overhead Sign Structure".

Removal of the existing median barrier shall be paid for under the price bid for "Removal & Disposal of Concrete Median Barrier".

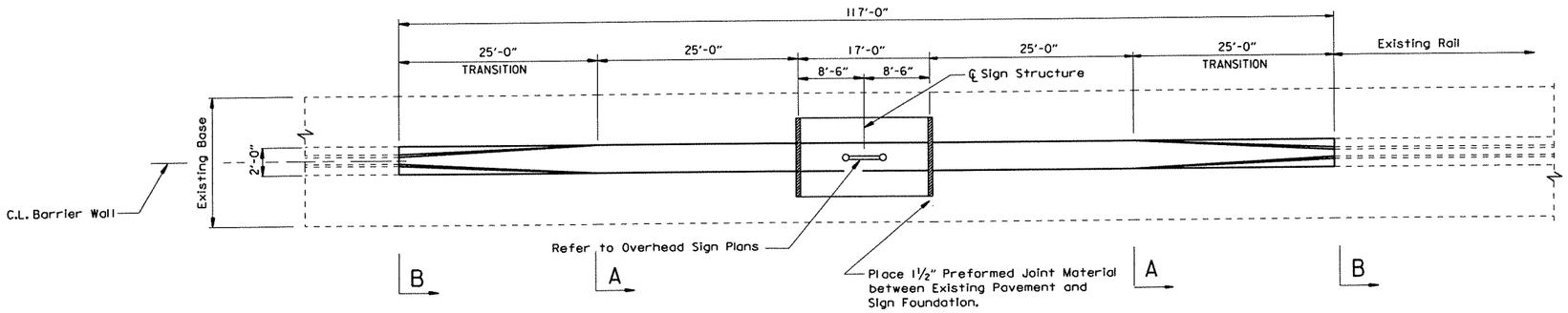
CONCRETE BARRIER WALL TRANSITION (MEDIAN TYPE SP-I) FOR OVERHEAD SIGN STRUCTURE OH-540-65-05

SPECIAL DETAILS

5/20/13

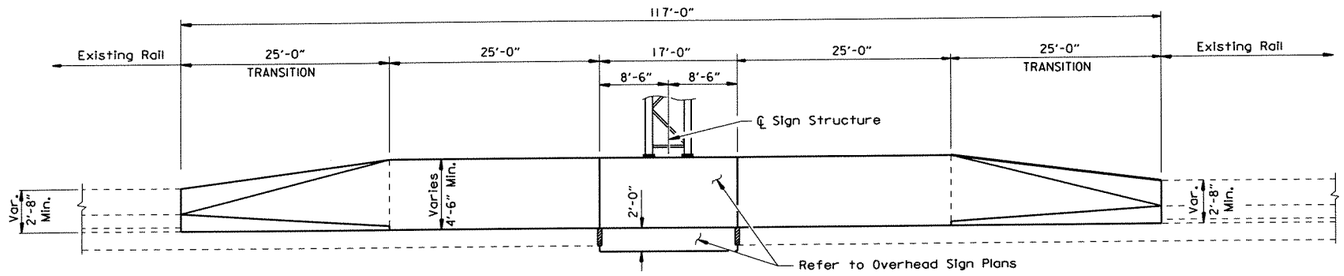
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	34	56

② SPECIAL DETAILS



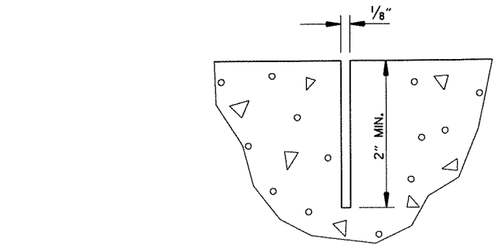
PLAN VIEW

CONCRETE BARRIER WALL TRANSITION (MEDIAN TYPE SP-2)

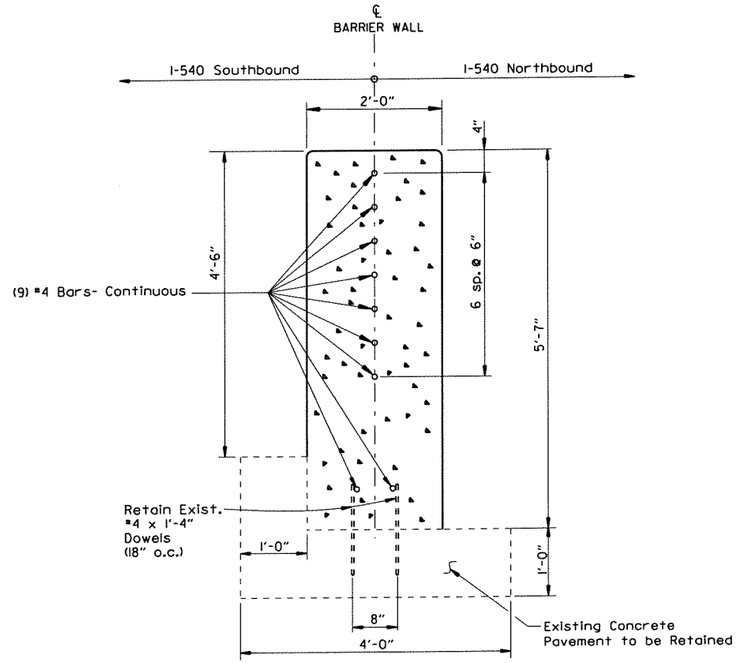


ELEVATION VIEW

CONCRETE BARRIER WALL TRANSITION (MEDIAN TYPE SP-2)



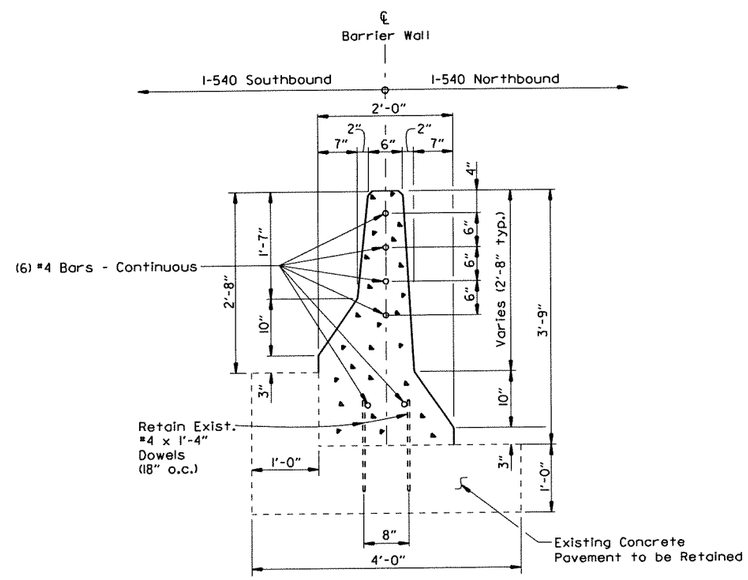
CONTRACTION JOINT DETAIL



CONCRETE BARRIER WALL (MEDIAN TYPE SP-2)

(SECTION A-A)

STA. 208+66.50 TO STA. 209+33.50



CONCRETE BARRIER WALL (MEDIAN TYPE SP-2)

(SECTION B-B)

Notes for Concrete Barrier Wall:

Concrete Barrier Walls shall be constructed in accordance with Section 631 of the Standard Specifications and these details.

All exposed edges shall have a ¾" chamfer.

Contraction joints shall be constructed at 30'-0" maximum spacing in top and sides of median barrier and shall be formed in fresh concrete.

All reinforcing bars shall have 2" minimum cover.

Existing dowel bars which are to be incorporated into new construction and are damaged by the Contractor shall be replaced at his expense to the satisfaction of the Engineer.

Drainage openings shall be constructed adjacent to drop inlets as directed by the Engineer. No additional payment will be made for this work.

Preformed joint material, and removal and disposal of existing pavement for construction of the overhead sign foundation shall be included in the price bid for "Steel Overhead Sign Structure".

Removal of the existing median barrier shall be paid for under the price bid for "Removal & Disposal of Concrete Median Barrier".

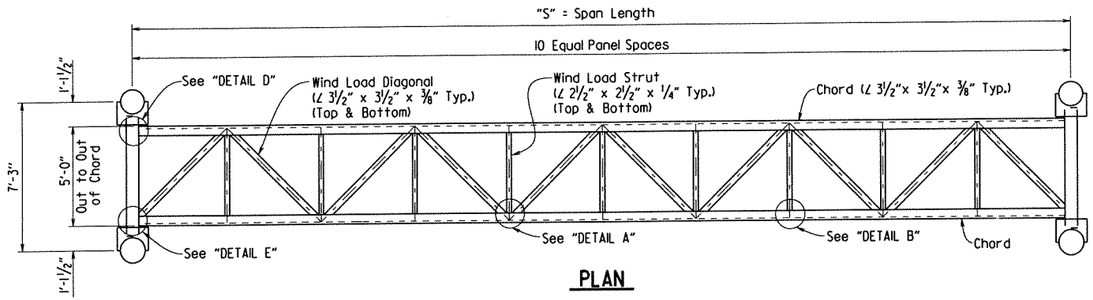
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13

CONCRETE BARRIER WALL TRANSITION
(MEDIAN TYPE SP-2)
FOR OVERHEAD SIGN STRUCTURE
OH-540-65-06

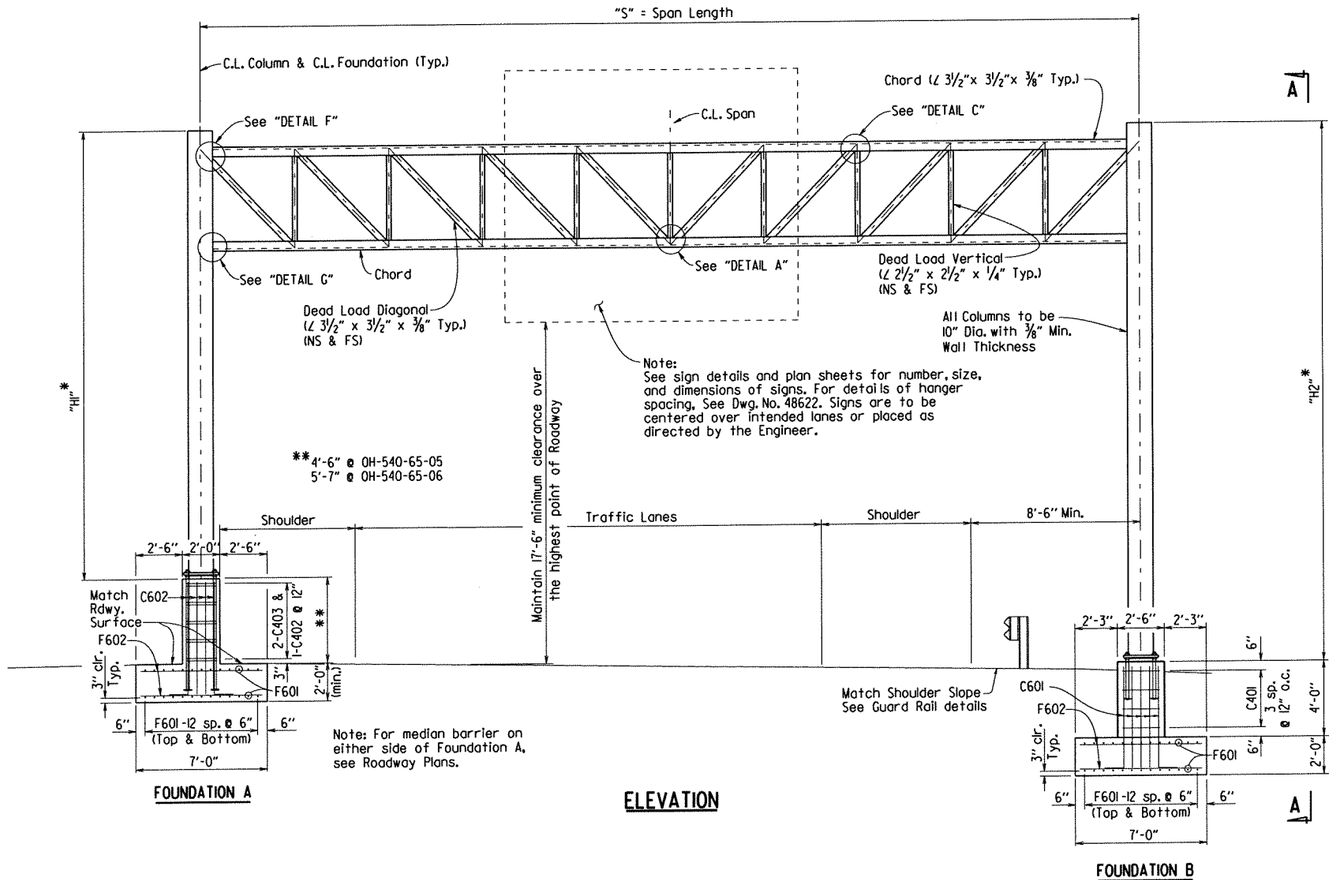
SPECIAL DETAILS

5/20/13

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	35	56
				① OH-540-65-05 OH-540-65-06		OVERHEAD SIGN STR.		48618



PLAN



FOUNDATION A

ELEVATION

FOUNDATION B

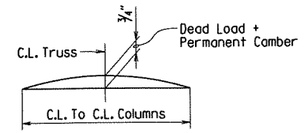
* Note: The Contractor shall make field measurements to determine the column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (40'-0" to 54'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.

SPAN LENGTH TABLE

STRUCTURE NO.	"S"
OH-540-65-05	51'-0"
OH-540-65-06	51'-0"

Notes:
For "Detail A" thru "Detail G" and "View A-A-Foundation B", See Dwg. No. 48619.

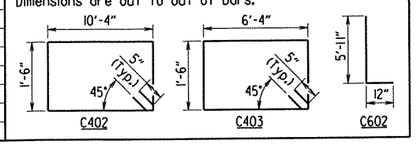
For "View A-A-Foundation A", See Dwg. No. 48620.



TRUSS CAMBER DIAGRAM

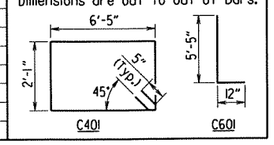
BAR LIST-FOUNDATION A

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C402	5	24'-2"	3"	
C403	10	16'-2"	3"	
C602	70	6'-9"	4½"	
F601	26	16'-6"	Str.	
F602	66	6'-6"	Str.	



BAR LIST-FOUNDATION B

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C401	8	17'-6"	3"	
C601	48	6'-3"	4½"	
F601	26	16'-6"	Str.	
F602	66	6'-6"	Str.	



APPROXIMATE QUANTITIES (FOR INFORMATION ONLY)

STRUCTURE	CLASS S CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)
FOUNDATION A	14.48	2,187	9
FOUNDATION B	12.52	1,833	41

Note: Bar List and Quantities for Foundation A based on 4'-6" column height.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13

BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 40' TO 54' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION

ROUTE SEC.

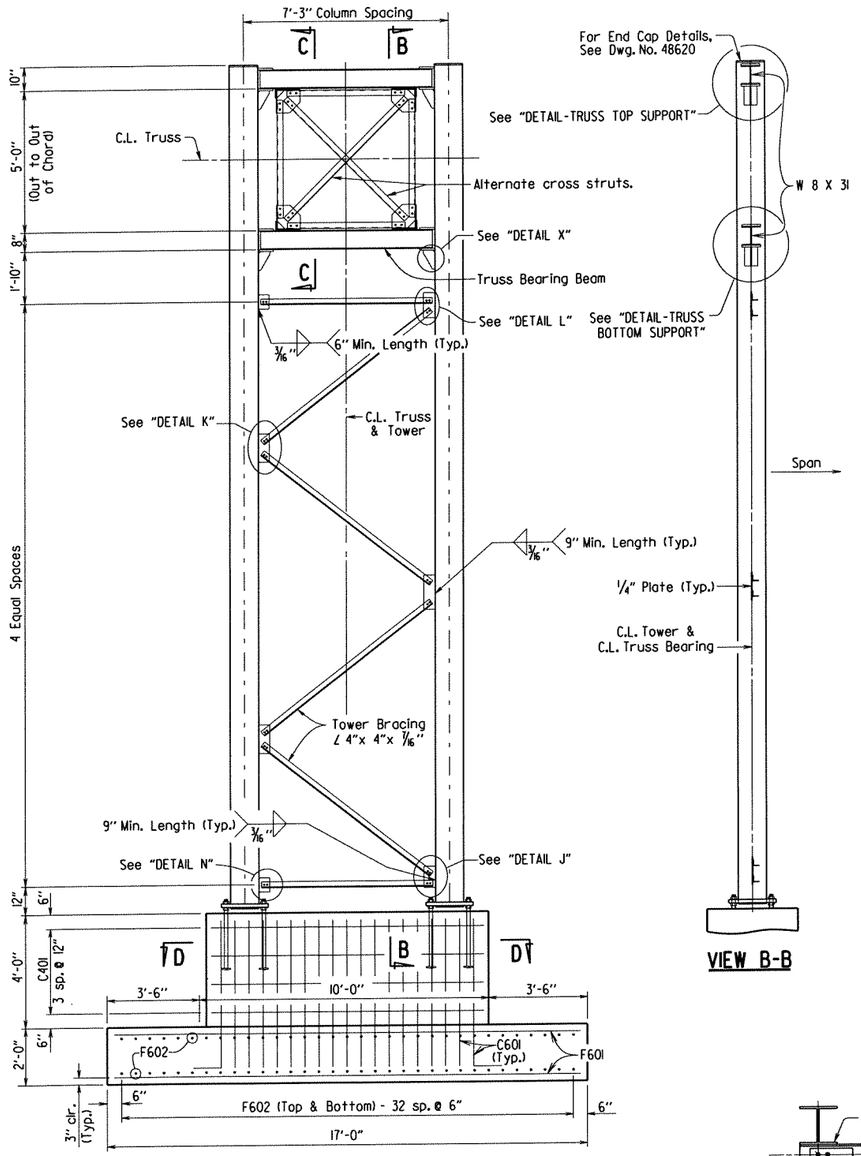
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 5/14/13 FILENAME: b040279_ohsign.dgn
CHECKED BY: KWJ DATE: 5/20/13 SCALE: Not to Scale
DESIGNED BY: ACP DATE: 4-13
STR. NO. OH-540-65-05 OH-540-65-06 DRAWING NO. 48618

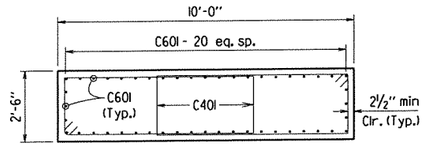
PRINT DATE: 5/20/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	36	56
				① OH-540-65-05 OH-540-65-06		OVERHEAD SIGN STR.		48619



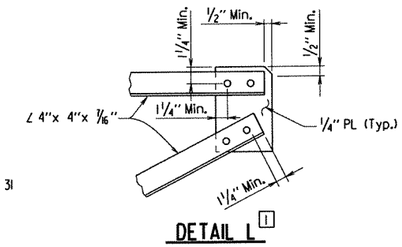
VIEW A-A - FOUNDATION B

Note: For FOUNDATION A, See Dwg. No. 48620.

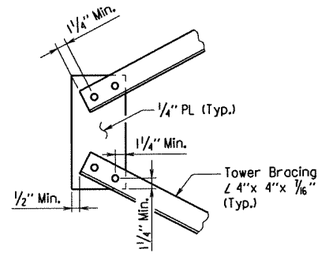


SECTION D-D

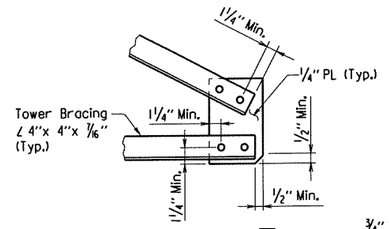
VIEW B-B



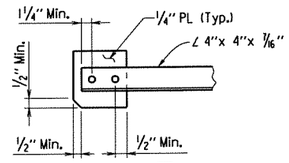
DETAIL L [1]



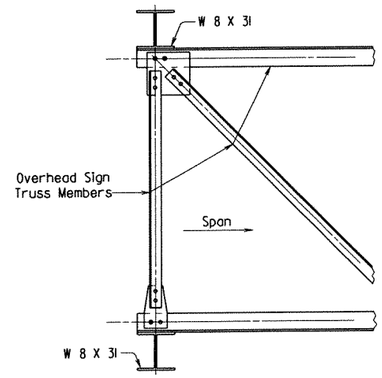
DETAIL K [1]



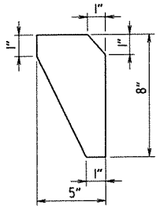
DETAIL J [1]



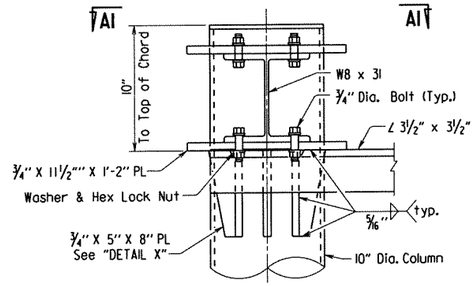
DETAIL L [1]



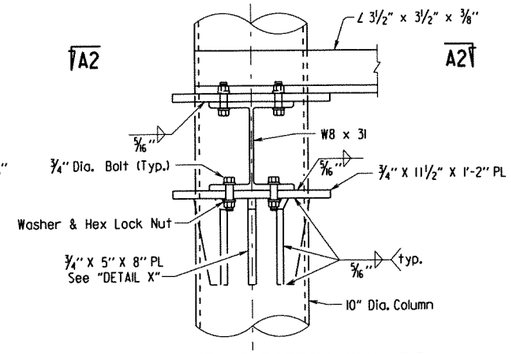
SECTION C-C



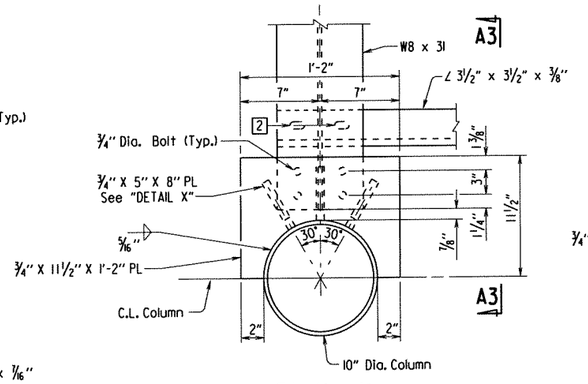
DETAIL X



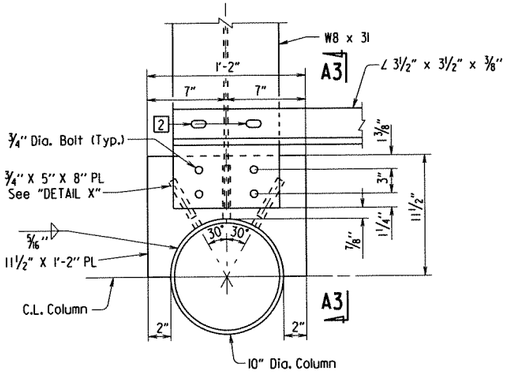
DETAIL - TRUSS TOP SUPPORT



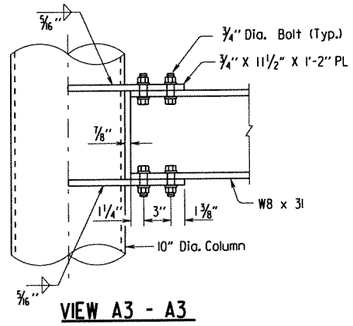
DETAIL - TRUSS BOTTOM SUPPORT



VIEW A1 - A1



VIEW A2 - A2



VIEW A3 - A3

¾" X 5" X 8" Plate not shown for clarity

1 Bolts shall be ¾" Dia. and open holes shall be 1⅛". Minimum center to center bolt spacing shall be 2½".

2 Slotted Hole in Chord Angle 7/16" X 2". Use plate washer on Chord Angle side.

STATE OF ARKANSAS
CARL E. RUSSELL
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13

BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 40' TO 54' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

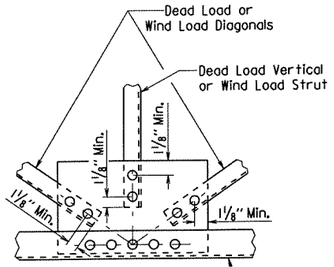
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 3/12/12
CHECKED BY: CWY DATE: 5/10/13
DESIGNED BY: ACP DATE: 4-13
FILENAME: b040279_ohsign.dgn
SCALE: Not to Scale
STR. NO. OH-540-65-05 OH-540-65-06
DRAWING NO. 48619

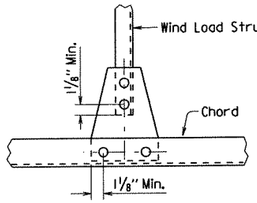
PRINT DATE: 5/16/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	39	56
				① OH-540-65-05 OH-540-65-06		OVERHEAD SIGN STR.		48620

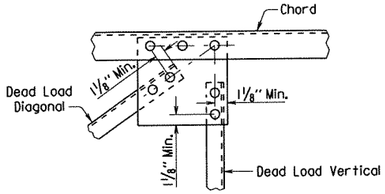
Note: Thickness of all Gusset Plates shall be 3/8".



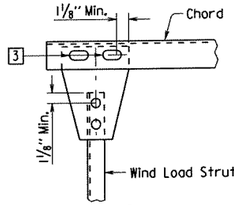
DETAIL "A"



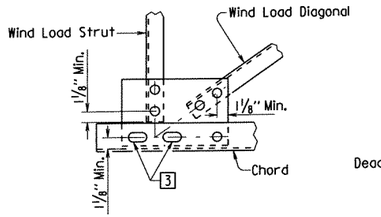
DETAIL "B"



DETAIL "C"



DETAIL "D"



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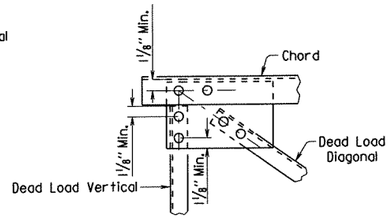
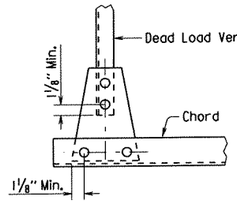


DETAIL "F"



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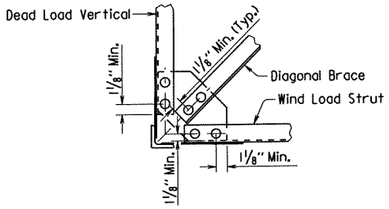
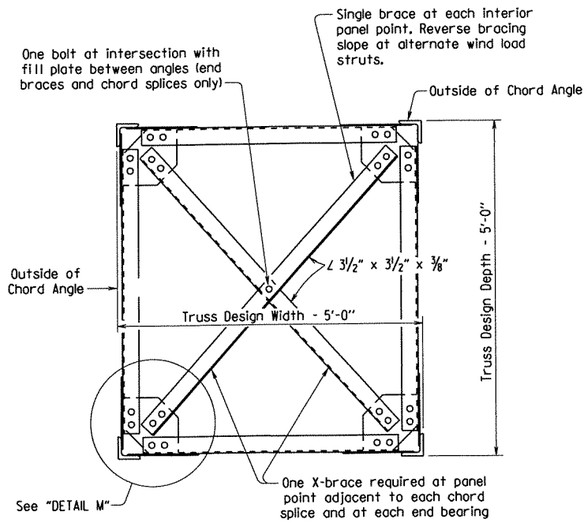
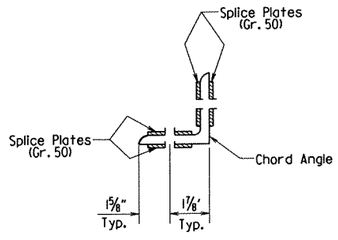
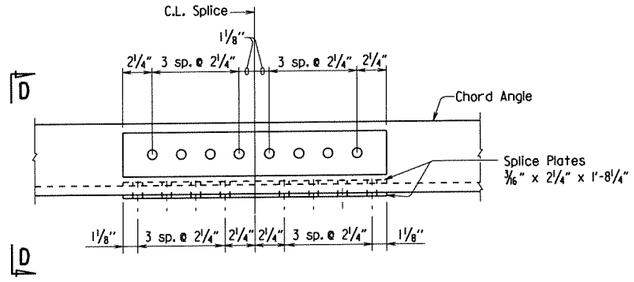


DETAIL "M"



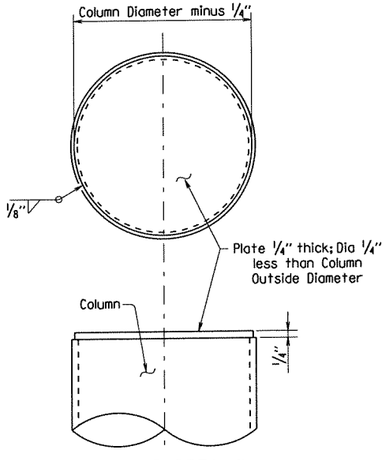


VIEW D-D

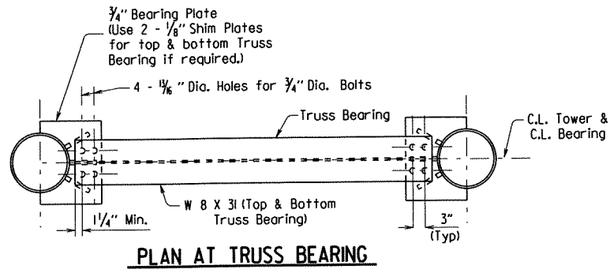


Note: Chord angles may be spliced in convenient lengths for galvanizing and sign placement.

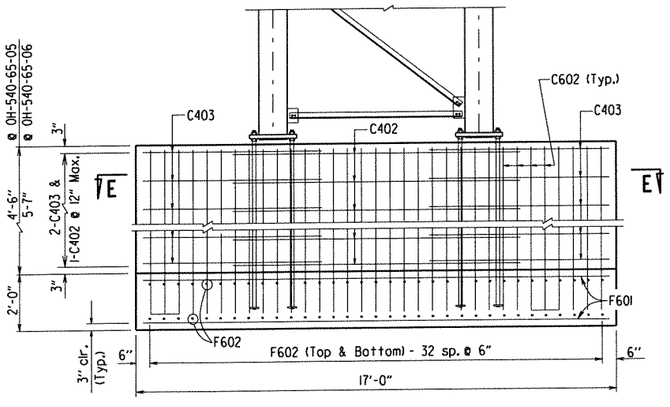
CHORD SPLICE



END CAP DETAILS

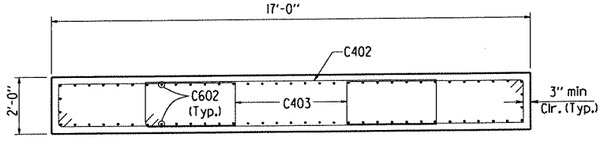


PLAN AT TRUSS BEARING



VIEW A-A - FOUNDATION A

Note:
For details of column not shown, See "View A-A-Foundation B" on Dwg. No. 48619.



SECTION E-E

3 11/16" x 2" Slotted Holes in Gusset Plate and Chord Angle Use plate washer on Gusset Plate side.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 7519 CARL F. FUSELIER 5/21/13

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 40' TO 54'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION

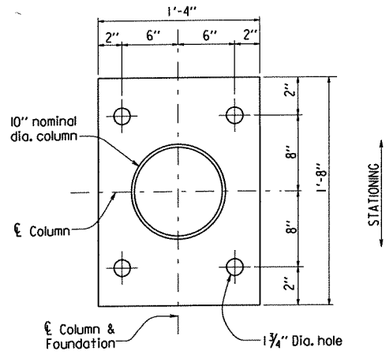
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

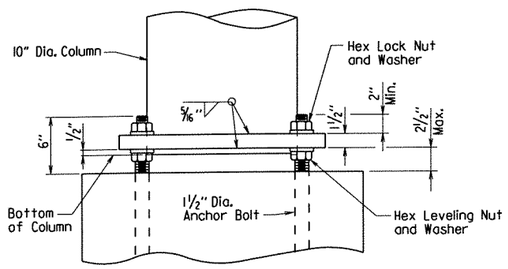
DRAWN BY: A.M.S. DATE: 3/12/12 FILENAME: b040279_ohsign.dgn
CHECKED BY: CWY DATE: 5/20/13 SCALE: Not to Scale
DESIGNED BY: ACP DATE: 4-13
STR. NO. OH-540-65-05 OH-540-65-06 DRAWING NO. 48620

PRINT DATE: 5/20/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	38	56
				① OH-540-65-05 OH-540-65-06		OVERHEAD SIGN STR.		48621

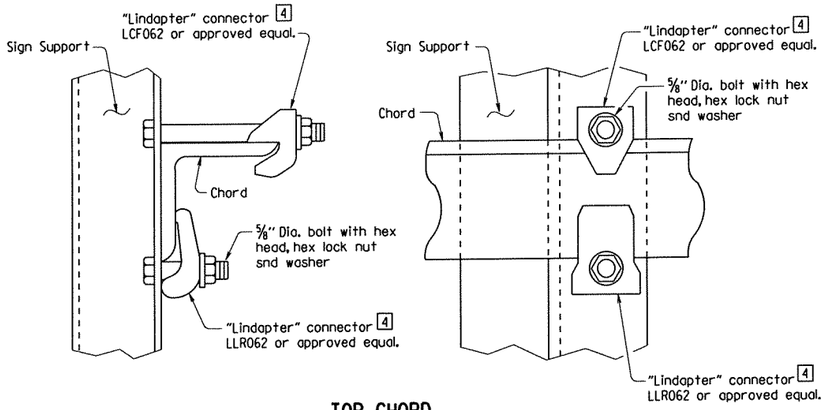


PLAN - COLUMN BASE

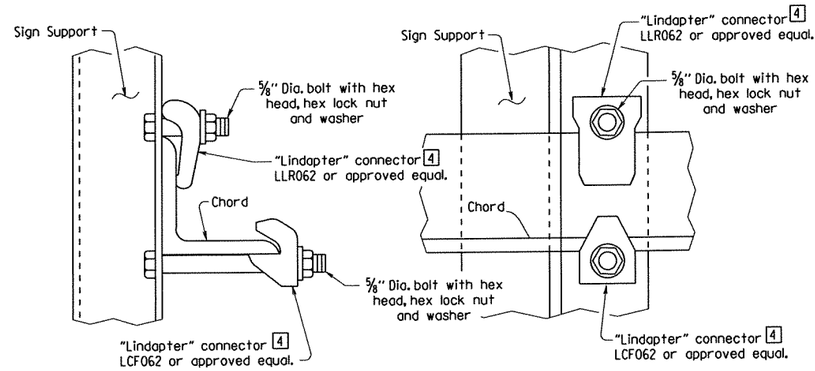


Note: Diameter of hole in base plate to be ⅛" larger than column diameter.

ELEVATION - COLUMN BASE



TOP CHORD

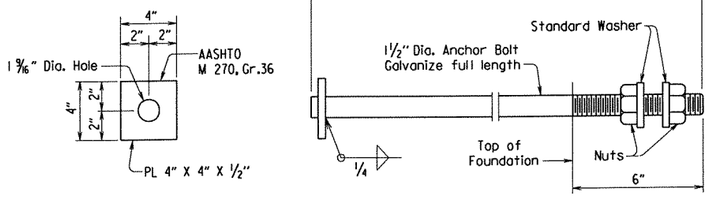


BOTTOM CHORD

4 All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

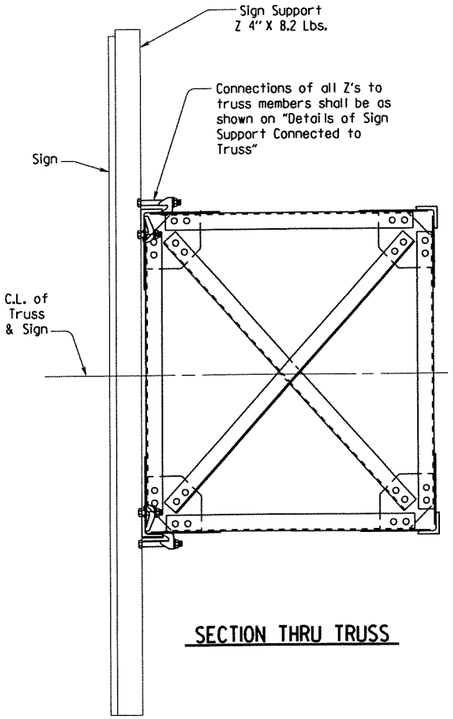
Note: Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTED TO TRUSS

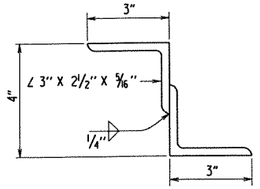


Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to subsection 807.07. Nuts for bolts shall be as specified in subsection 807.07.

ANCHOR BOLT DETAIL



SECTION THRU TRUSS



NOTE: Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13

BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 40' TO 54'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 3/12/12 FILENAME: b040279_ohsign.dgn
CHECKED BY: KWY DATE: 5/20/13 SCALE: Not to Scale
DESIGNED BY: ACP DATE: 4-13
STR. NO. OH-540-65-05 OH-540-65-06 DRAWING NO. 48621

PRINT DATE: 5/16/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	39	56
				① OH-540-65-05 OH-540-65-06		OVERHEAD SIGN STR.		48622

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2003 Edition, with applicable supplemental specifications and special provisions. Section and subsection refer to the Standard Construction Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Fifth Edition, 2009.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet. Use of additional sign area must be approved by the Engineer. If the structure height ("H1"or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:
Class S Concrete f'c = 3,500 psi
Reinforcing Steel(Gr. 60, AASHTO M 31or M 322, Type A) fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	AASHTO M 270, Grade 36 (Fy = 36,000 psi)
Plate, W-Section:	AASHTO M 270, Grade 50 (Fy = 50,000 psi)
[5] Pipe:	ASTM A 139, Gr. C, straight-seam welded (Fy = 42,000 psi), ASTM A 500, Gr. B (Fy = 42, 000 psi), ASTM A 501, Gr. B (Fy = 50,000 psi), ASTM A 714, Class 2, Grade 11, Type E or S (Fy = 50,000 psi)
Z-Shapes:	AASHTO M 270, Grade 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A 1011, SS, Grade 36, Type 2, or Grade 40
Bolts:	ASTM A325 Type 1
Locknuts - Approved Type:	Meeting or exceeding AASHTO M 292
Washers:	ASTM F436
Nuts:	ASTM A563 or AASHTO M 292, Grade DH or Grade 2H

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted, and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All steel shall be galvanized according to subsection 807.19. Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15 feet apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to subsection 807.26.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

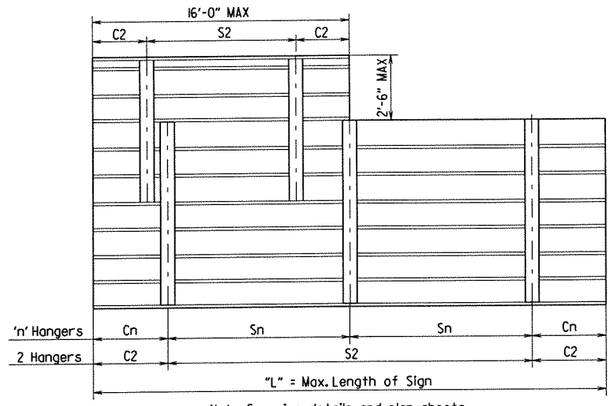
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ⅝" diameter and open holes shall be 1/16". Bolt spacing shall be 2¼" for ⅝" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM A325 Type 1, galvanized according to subsection 807.06. Nuts and washers for ASTM A325 Type 1 bolts shall be furnished and galvanized in accordance with subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with subsection 807.07.

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Overhead Sign Structure". The excavations for the footings shall be backfilled before the structure is attached to the foundations.



Note: See sign details and plan sheets for number, size and dimensions of signs.

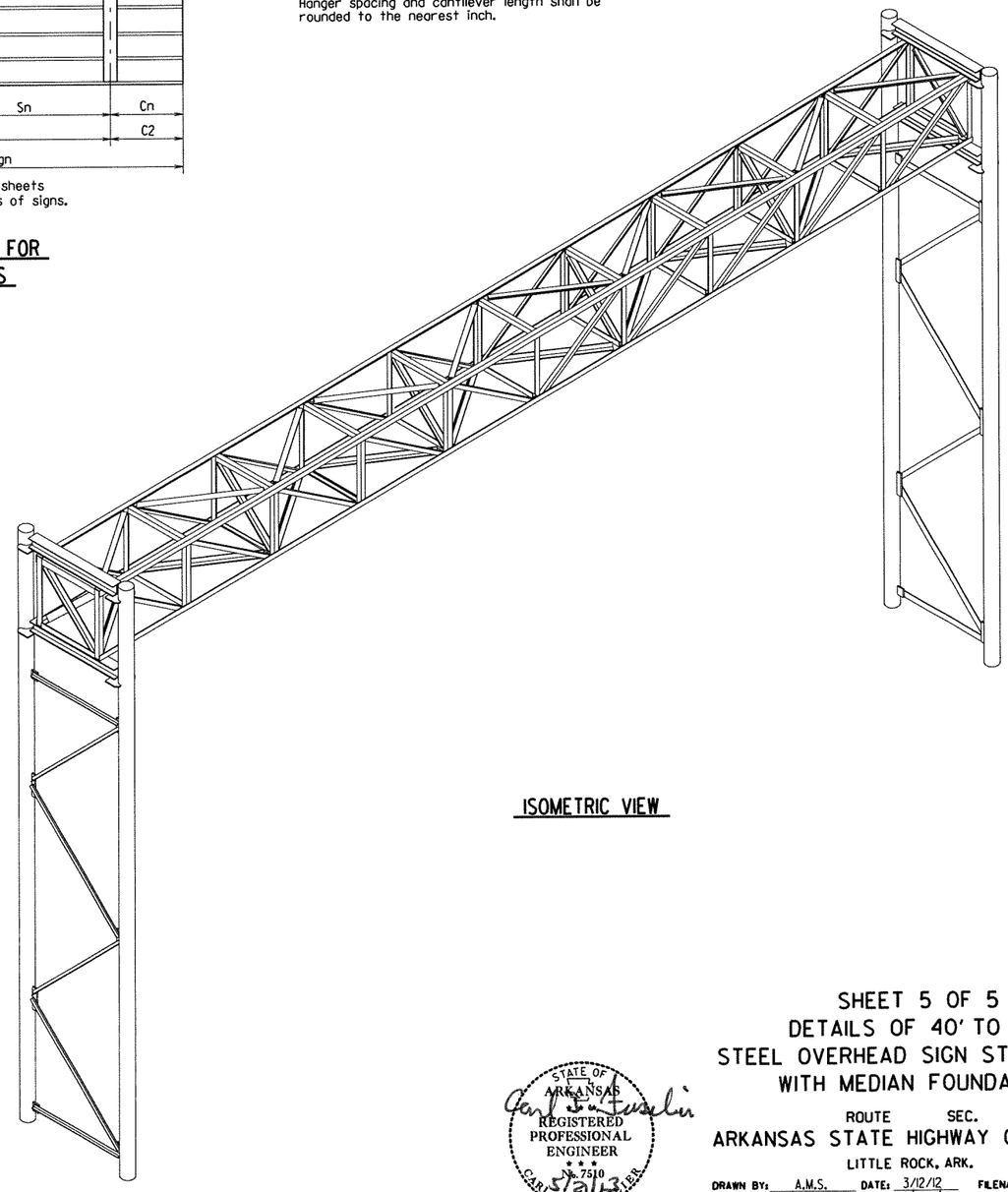
HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

[5] In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation: CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing 'Sn'
15'-0"	2 Hangers	0.21 x 'L'	0.58 x 'L'
30'-0"	3 Hangers	0.145 x 'L'	0.355 x 'L'
45'-0"	4 Hangers	0.107 x 'L'	0.262 x 'L'

Hanger spacing and cantilever length shall be rounded to the nearest inch.



ISOMETRIC VIEW

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
5/21/13
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 40' TO 54'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 3/12/12
CHECKED BY: CWY DATE: 5/21/13
DESIGNED BY: ACP DATE: 4-13
FILENAME: b040279_ohsign.dgn
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STR. NO. OH-540-65-05 OH-540-65-06
DRAWING NO. 48622

PRINT DATE: 5/21/2013

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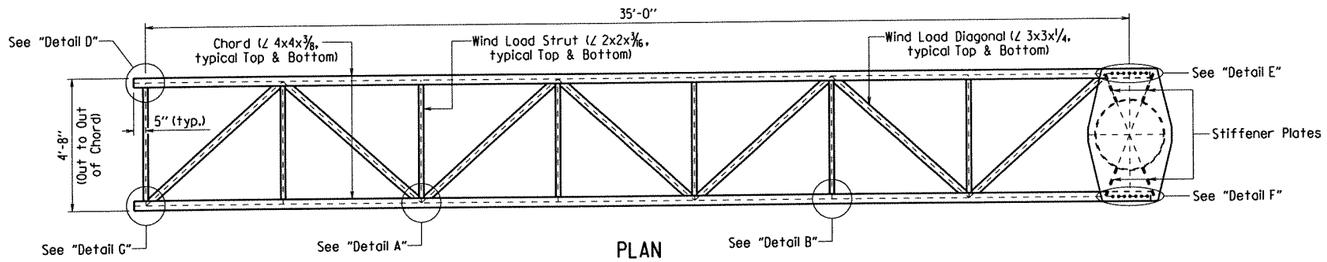
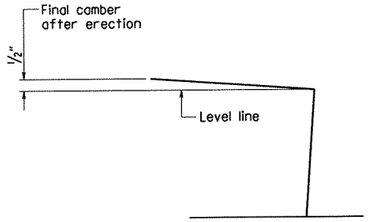
7-10-13				6	ARK.			
				JOB NO.		040279	40	56
				①		OC-540-65-07 - SIGN STR. - 48623		

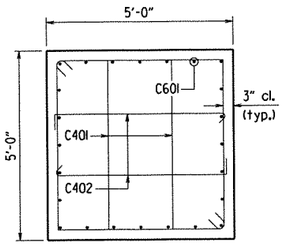


PLAN
3/8" = 1'-0"

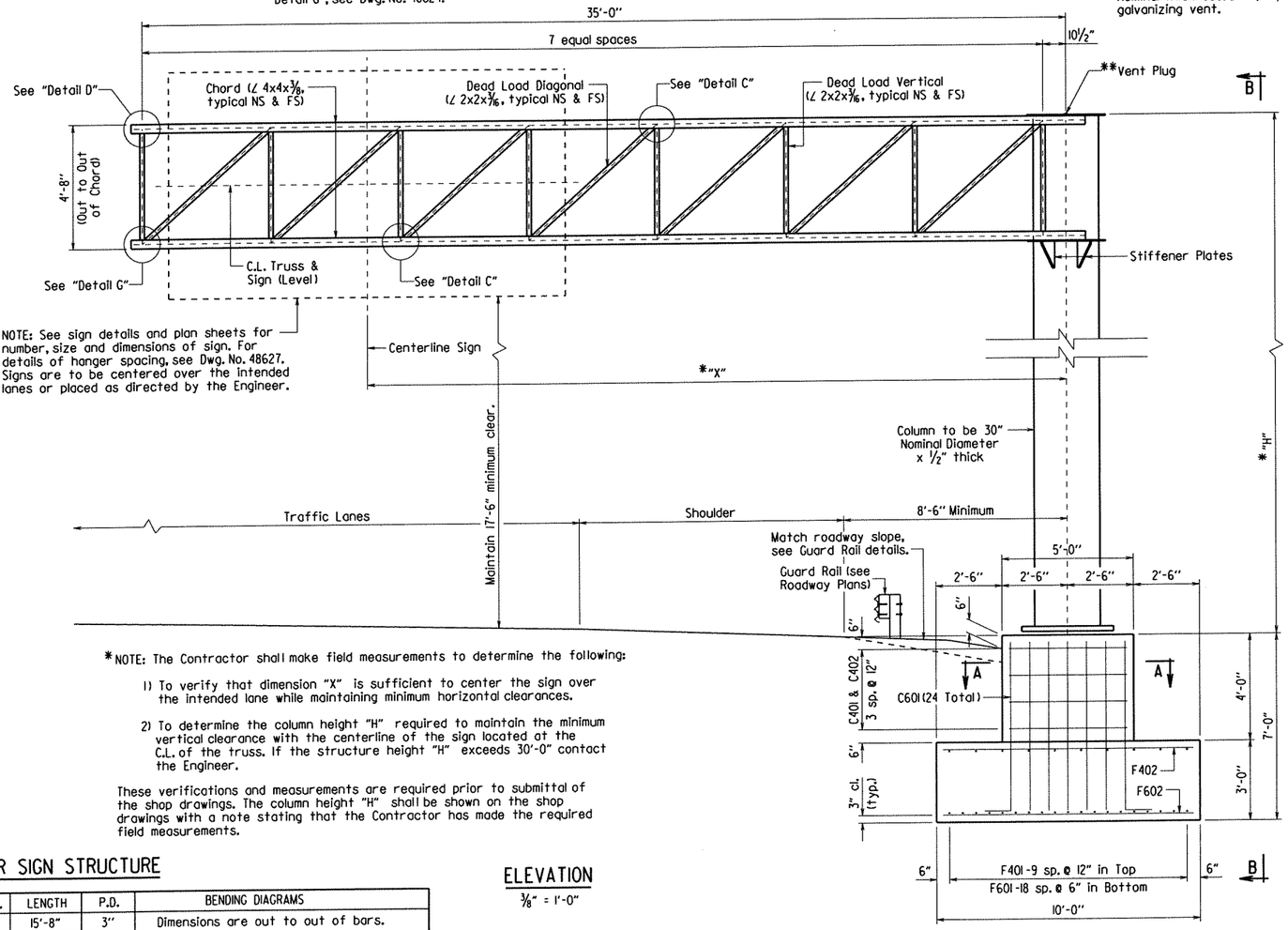
NOTE: For "Detail A" thru "Detail G", see Dwg. No. 48624.



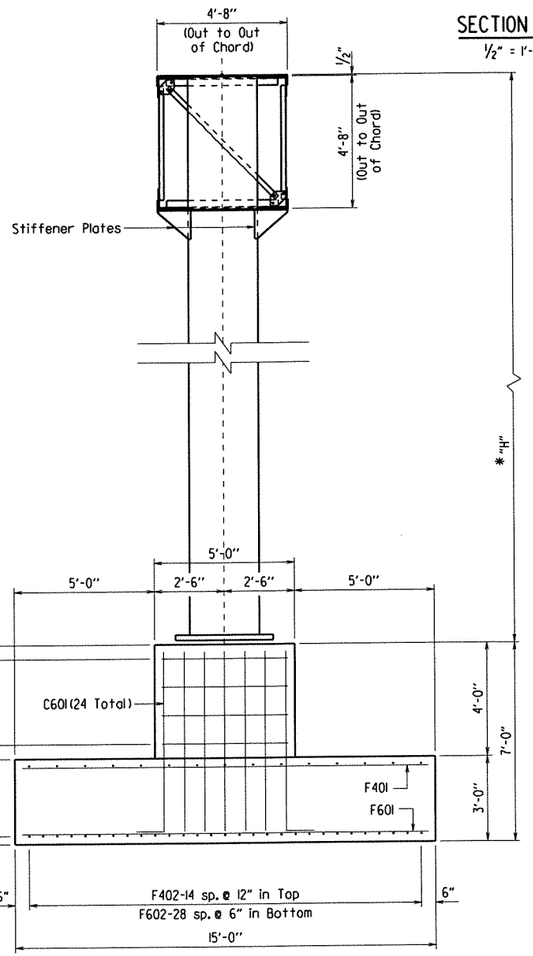
TRUSS CAMBER DIAGRAM



SECTION A-A
1/2" = 1'-0"



**Cap shall be solid steel sheet 1/2" nominal thickness. Drill, tap and plug galvanizing vent.



VIEW B-B
3/8" = 1'-0"

* NOTE: The Contractor shall make field measurements to determine the following:

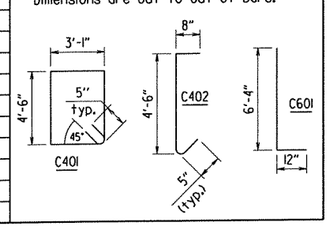
1) To verify that dimension "X" is sufficient to center the sign over the intended lane while maintaining minimum horizontal clearances.

2) To determine the column height "H" required to maintain the minimum vertical clearance with the centerline of the sign located at the C.L. of the truss. If the structure height "H" exceeds 30'-0" contact the Engineer.

These verifications and measurements are required prior to submittal of the shop drawings. The column height "H" shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements.

BAR LIST-PER SIGN STRUCTURE

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
C401	8	15'-8"	3"	Dimensions are out to out of bars.
C402	8	5'-5"	3"	
C601	24	7'-2"	4 1/2"	
F401	10	14'-6"	Str.	
F402	15	9'-6"	Str.	
F601	19	14'-6"	Str.	
F602	29	9'-6"	Str.	



ELEVATION
3/8" = 1'-0"

APPROXIMATE QUANTITIES (FOR INFORMATION ONLY)

STRUCTURE NUMBER	CLASS S CONCRETE (cu. yd.)	REINFORCING STEEL (pounds)	EXCAVATION (cu. yd.)
EACH STRUCTURE	20.37	1,391	56

TABLE OF VARIABLES

STRUCTURE NUMBER	"X"
OC-540-65-07	20'-6"

STATE OF ARKANSAS
Carl L. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/21/13
CARL L. FUSSELIER
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 5/2/2013 FILENAME: b040279xocsign.dgn
CHECKED BY: AMS DATE: 5/15/13 SCALE: as noted
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STR. NO. OC-540-65-07 DRAWING NO. 48623

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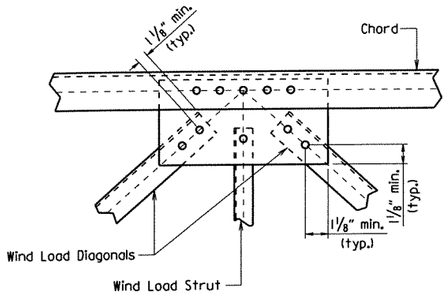
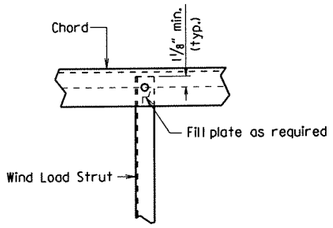
7-10-13				6	ARK.			
				JOB NO.		040279	41	56
				①		OC-540-65-07 - SIGN STR. - 48624		

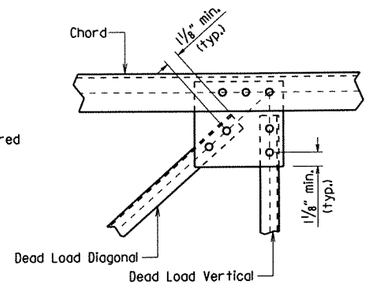
NOTE: All gussets shall be 3/8" thick.



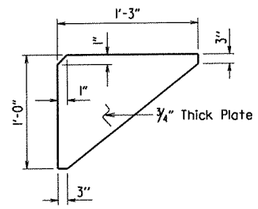
DETAIL A
1 1/2" = 1'-0"



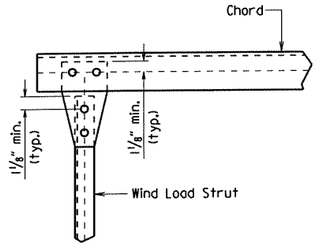
DETAIL B
1 1/2" = 1'-0"



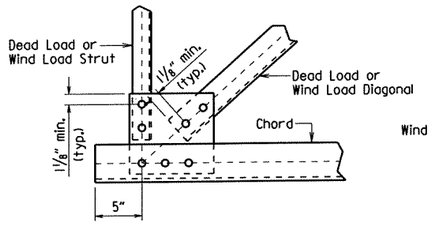
DETAIL C
1 1/2" = 1'-0"



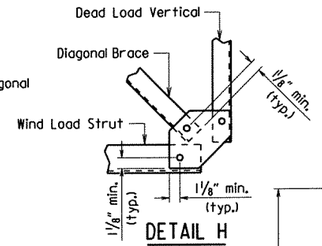
STIFFENER DETAIL
1 1/2" = 1'-0"



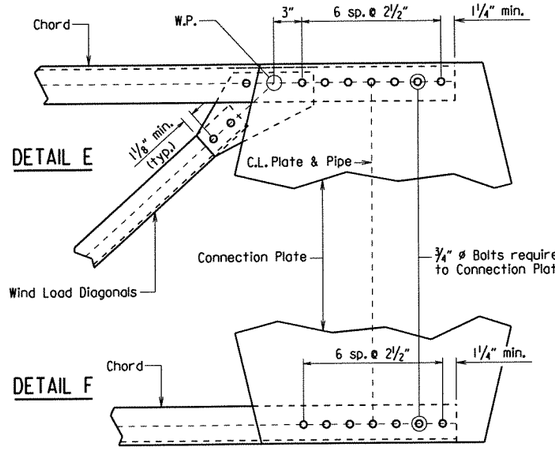
DETAIL D
1 1/2" = 1'-0"



DETAIL G
1 1/2" = 1'-0"



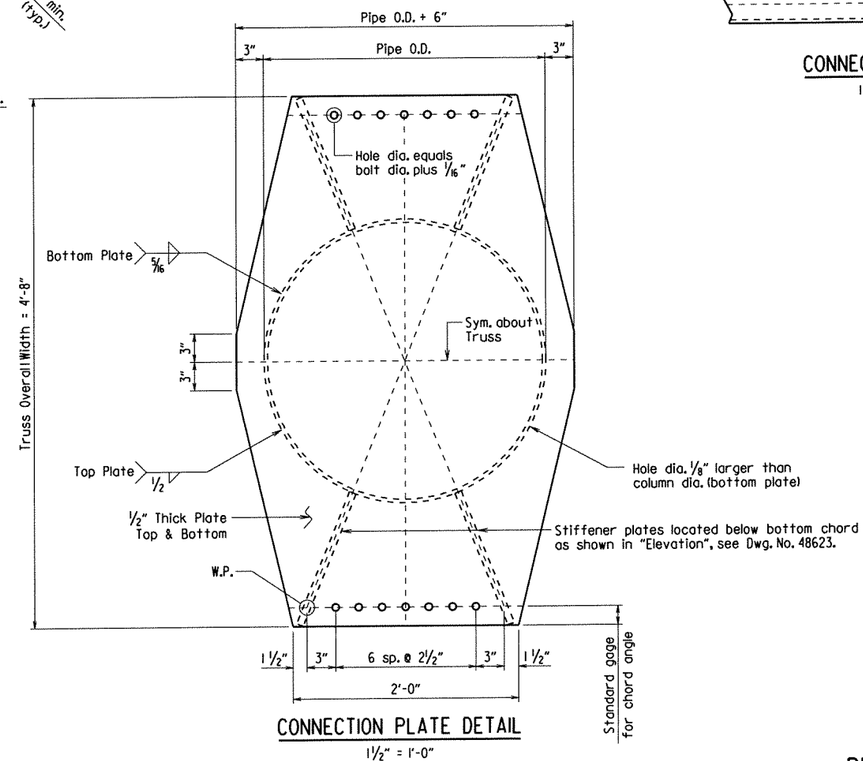
DETAIL H
1 1/2" = 1'-0"



DETAIL E

DETAIL F

CONNECTION DETAIL
1 1/2" = 1'-0"



CONNECTION PLATE DETAIL
1 1/2" = 1'-0"

STATE OF ARKANSAS
Carl S. Fussilier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/2/13
CARL S. FUSSILIER

BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF STANDARD 35' STEEL CANTILEVER SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 5/2/2013 FILENAME: b040279xocsign.dgn
CHECKED BY: AMS DATE: 5/15/13 SCALE: as noted
DESIGNED BY: KWY DATE: 4/13

STR. NO. OC-540-65-07 DRAWING NO. 48624

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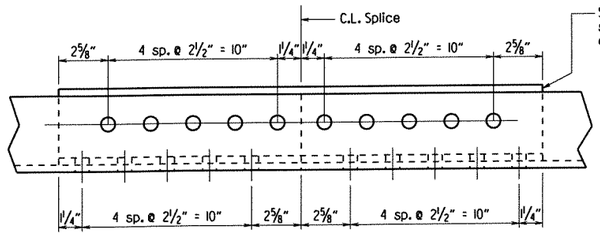
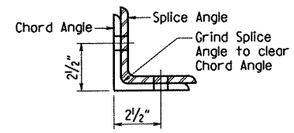
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	42	56
				①		OC-540-65-07 - SIGN STR. - 48625		

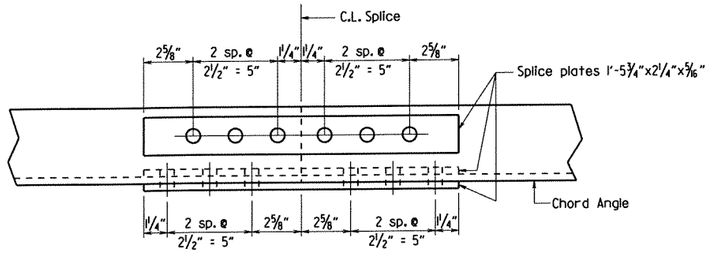


NOTE: Place splice angles on inside of truss. Bolts shall be ¾" ø and open holes shall be 13/16" ø. Minimum center to center of bolt spacing shall be 2½".

OPTIONAL CHORD SPLICE USING ANGLES

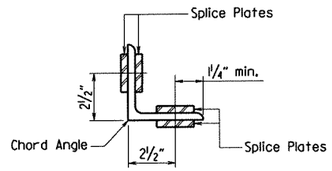


SECTION AT C.L. SPLICE



NOTE: Bolts shall be ¾" ø and open holes shall be 13/16" ø. Minimum center to center of bolt spacing shall be 2½".

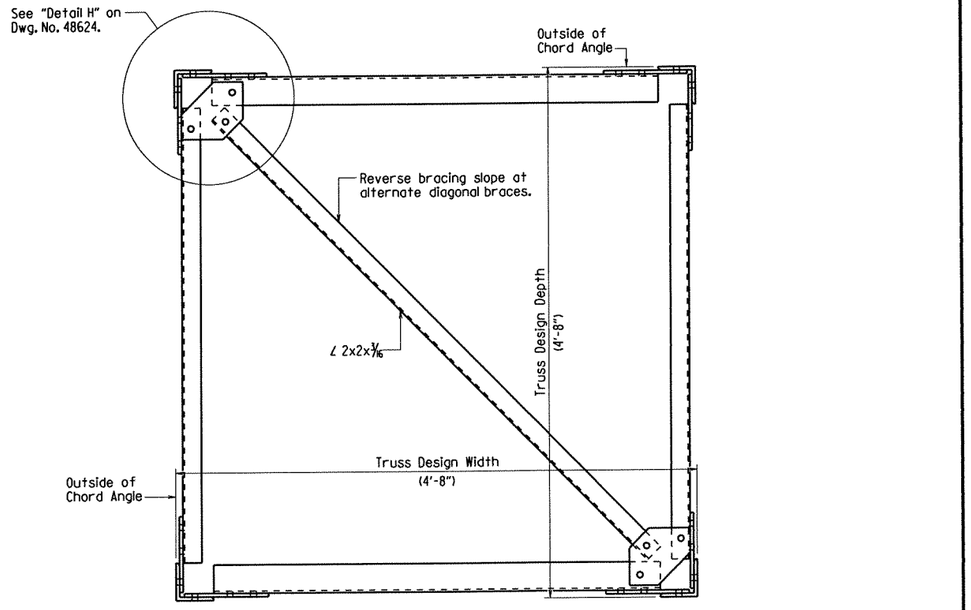
OPTIONAL CHORD SPLICE USING PLATES



SECTION AT C.L. SPLICE

SPLICE DETAILS

No Scale



TRUSS SECTION

1½" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL E. FUSSELLER
5/21/13

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

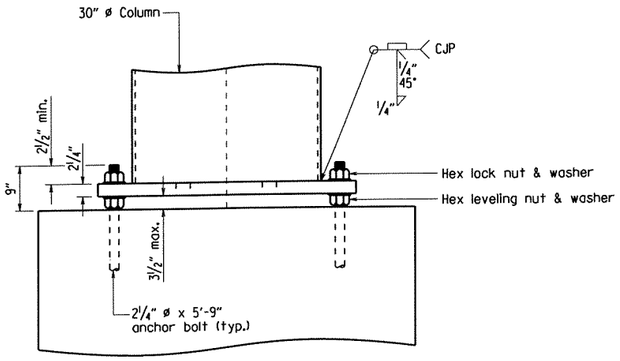
LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 5/6/2013 FILENAME: b040279xocsign.dgn
CHECKED BY: AMS DATE: 5/15/13 SCALE: as noted
DESIGNED BY: KWY DATE: 4/13

STR. NO. OC-540-65-07 DRAWING NO. 48625

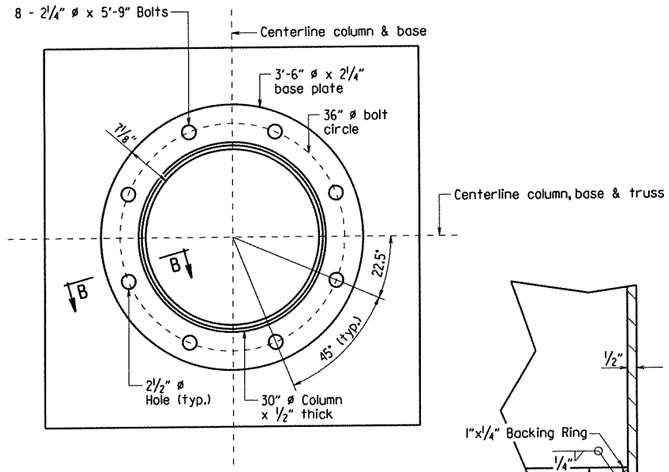
PRINT DATE: 5/20/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-10-13				6	ARK.			
				JOB NO.		040279	43	56
				1		OC-540-65-07 - SIGN STR. - 48626		



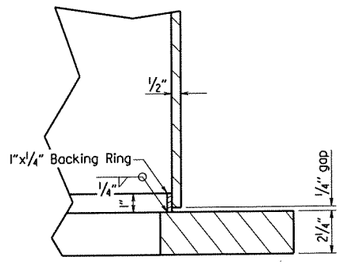
ELEVATION - COLUMN BASE

No Scale



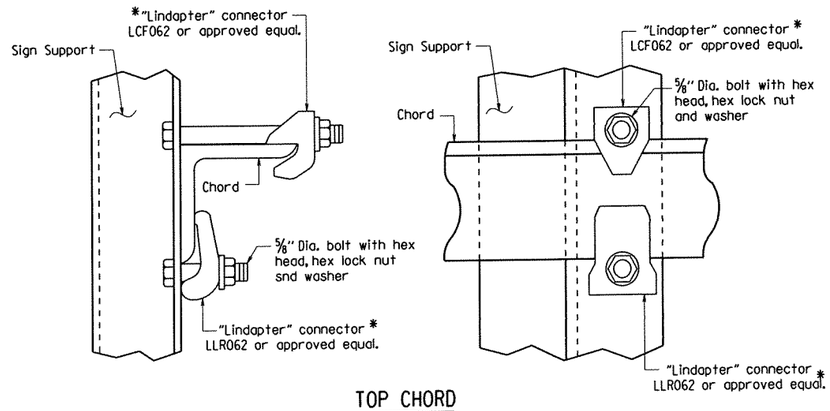
PLAN - COLUMN BASE

No Scale

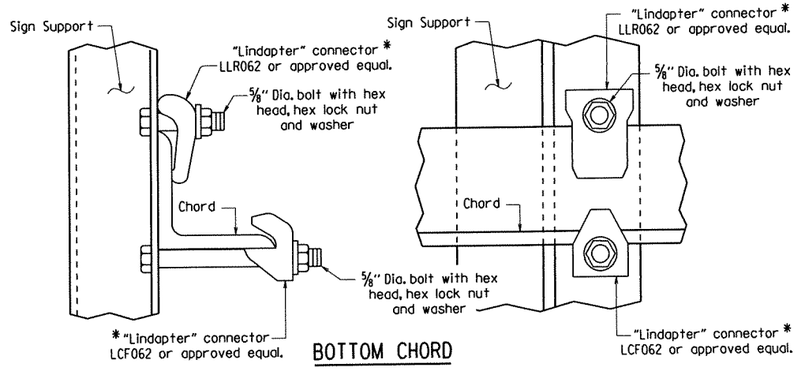


SECTION B-B

No Scale



TOP CHORD



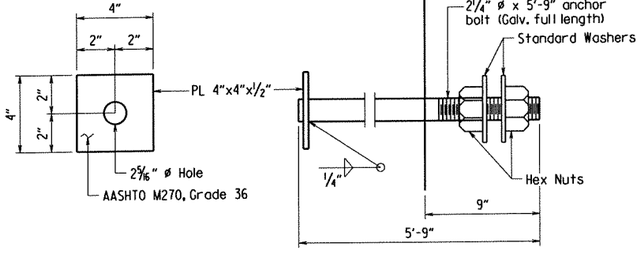
BOTTOM CHORD

*All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

NOTE: Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTION TO TRUSS

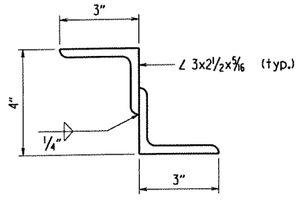
No Scale



Anchor bolts shall comply with AASHTO M314, Grade 55, with Supplementary Requirement S1, and galvanized according to subsection 807.07. Nuts and washers for bolts shall be as specified in subsection 807.07.

ANCHOR BOLT DETAIL

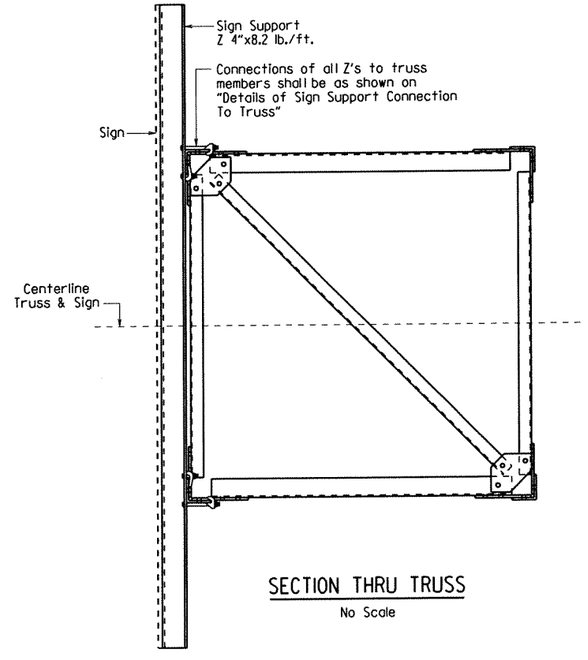
No Scale



NOTE: Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

No Scale



SECTION THRU TRUSS

No Scale

STATE OF ARKANSAS
CARL F. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
5/21/13

BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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7-1073				6	ARK.			
				JOB NO.		040279	49	56
				①	OC-540-65-07 - SIGN STR. - 48627			

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS:

Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2003 edition, with applicable supplemental specifications and special provisions. Section and subsection refer to the Standard Construction Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS:

Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, AASHTO 2009 (Fifth Edition).

Basic Wind Speed = 90 m.p.h.

Fatigue Category: I

This structure is approved for 235 square feet of sign area. Use of additional area must be approved by the Engineer.

If the structure height ("H") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

Class S Concrete	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	AASHTO M270, Grade 36 (Fy = 36,000 psi)
Plate:	AASHTO M270, Grade 50 (Fy = 50,000 psi)
*Pipe:	ASTM A139, Grade C (Fy = 42,000 psi), ASTM A500, Grade B (Fy = 42,000 psi), ASTM A501, Grade B (Fy = 50,000 psi) or ASTM A714, Class 2, Grade II, Type E or S (Fy = 50,000 psi)
Z-shapes:	AASHTO M270, Grade 36 (Fy = 36,000 psi)
Bolts:	ASTM A325, Type I
Locknuts:	Approved Type - Meeting or exceeding AASHTO M292
Washers:	ASTM F436
Nuts:	ASTM A563 or AASHTO M 292, Grade DH or Grade 2H

All steel shall be galvanized according to subsection 807.19. Steel completely encased in concrete may not be galvanized.

Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Connections shall be bolted with high-strength bolts. Unless noted otherwise, bolts shall be 5/8" ø and open holes shall be 11/16" ø. Bolt spacing shall be 2 1/4" for 5/8" ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to subsection 807.26.

Anchor bolts shall comply with AASHTO M314, Grade 55, with Supplementary Requirement S1, and galvanized according to subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with subsection 807.07.

All truss frame bolts shall comply with ASTM A325, Type 1, and galvanized according to subsection 807.06. Nuts and washers for ASTM A325, Type 1, bolts shall be furnished and galvanized in accordance with subsection 807.06.

Field splices shall be located in order to avoid sign panel connections. Only one chord splice is permitted with a minimum section length of 15 feet.

All main load carrying tension members greater than 1/2" in thickness shall conform to the requirements of the Longitudinal Charpy V-notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code-Steel, using the magnetic particle method. Critical welds shall include: column to truss connection plate welds.

All CJP groove welds shall be tested according to AWS D1.1 Structural Welding Code-Steel.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit onto the support. All truss member connections shall be bolted connections.

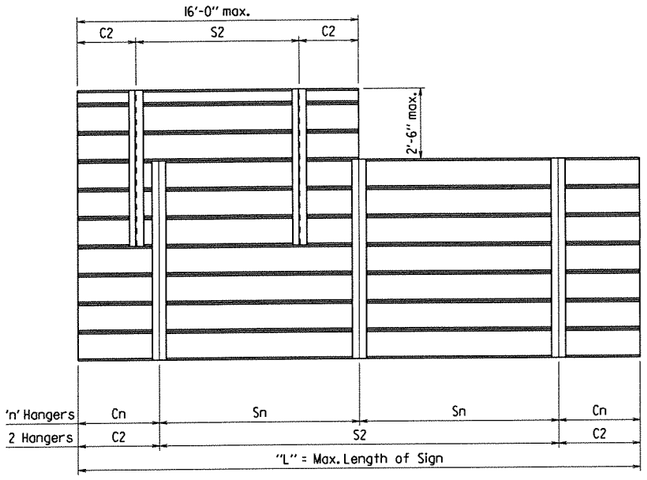
All truss member connections shall be bolted.

Locknuts to be equipped with nylon locking inserts or other approved type locking system. Locknuts to be installed according to manufacturer's recommendations.

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Cantilever Sign Structure". The excavations for the footings shall be backfilled before the structure is attached to the foundation.

Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with subsection 807.88.

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structures to the existing conditions.



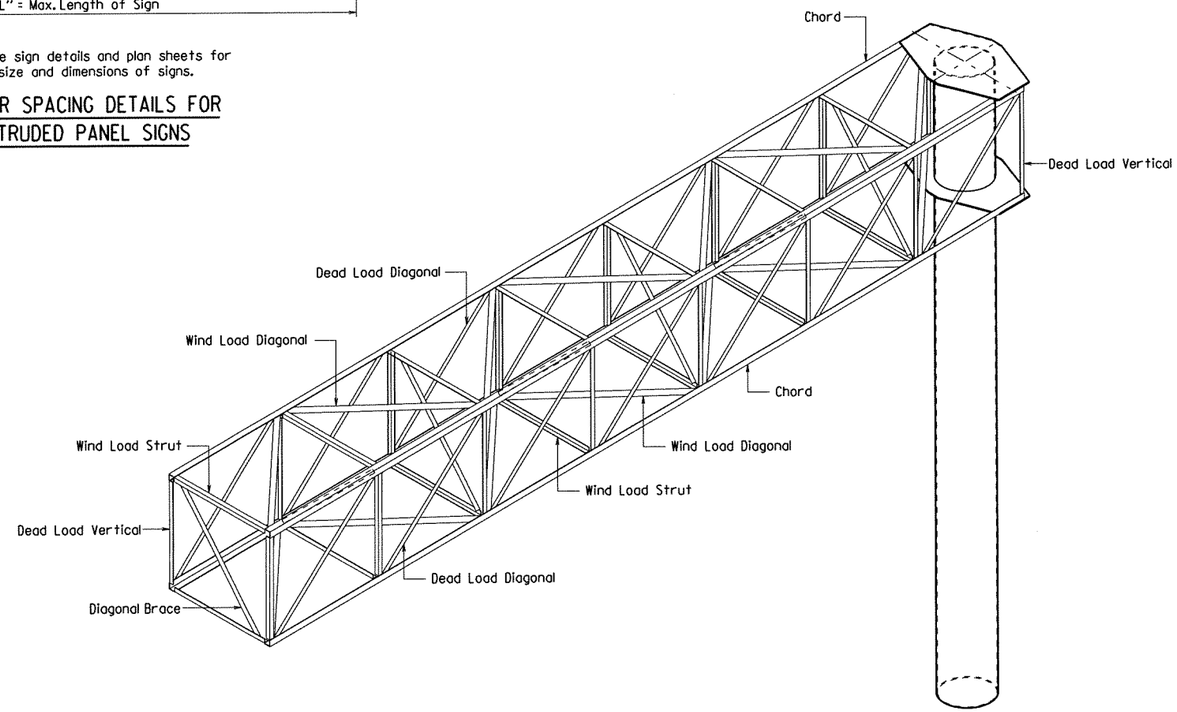
NOTE: See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing "Sn"
15'-0"	2 Hangers	0.21 x "L"	0.58 x "L"
30'-0"	3 Hangers	0.145 x "L"	0.355 x "L"

Hanger spacing and cantilever length shall be rounded to the nearest inch.



ISOMETRIC VIEW

No Scale

*In addition to material requirements, all pipe used for welding applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation:
CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

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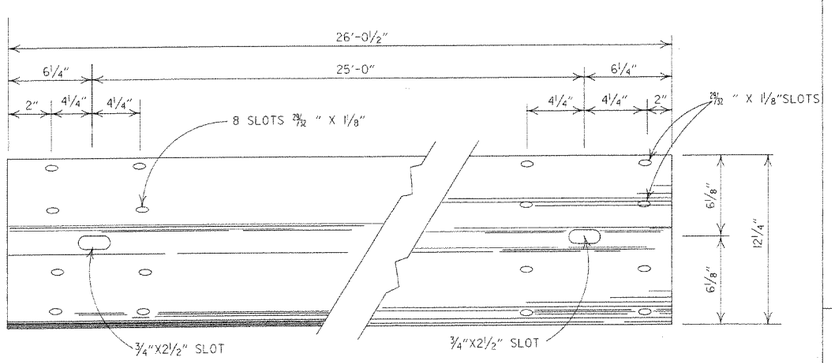
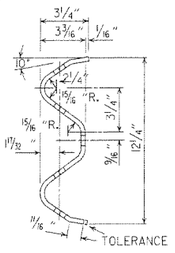
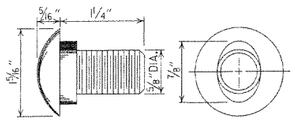


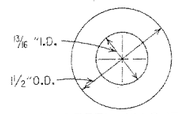


DETAILS OF W-BEAM GUARD RAIL

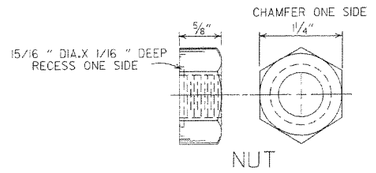
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



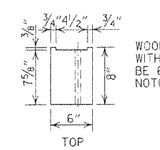
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

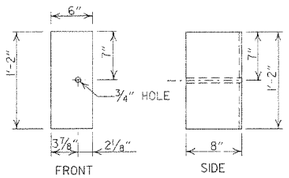


NUT

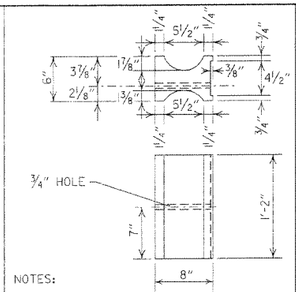


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



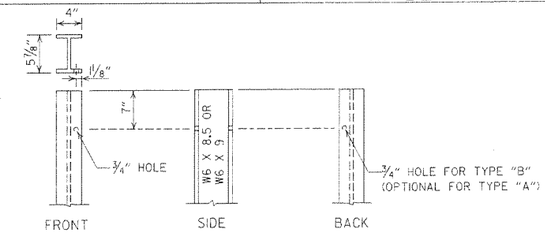
WOOD BLOCKOUT (W-BEAM)



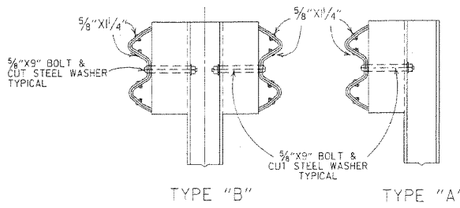
NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)



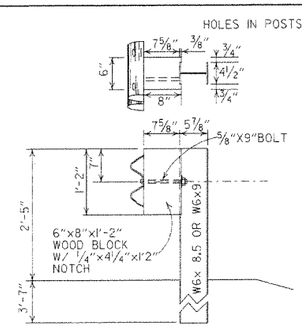
STEEL POST



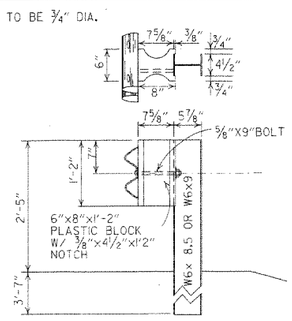
TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.



WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO.1 STRUCTURAL OR BETTER 9.7# ((400 f) OR NO.1 1350 f SOUTHERN PINE.

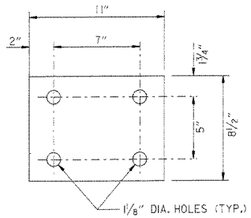
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-2-00	ADDED PLASTIC BLOCKOUT	
8-2-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & WOOD DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	602-10-9-87

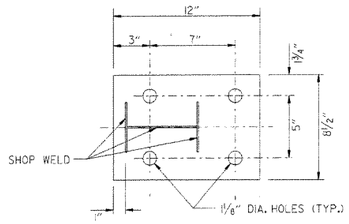
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8

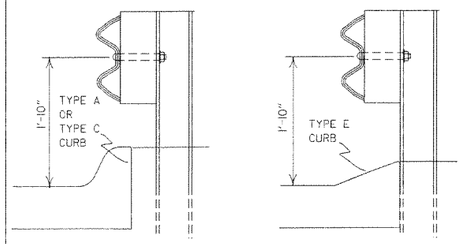


WASHER PLATE



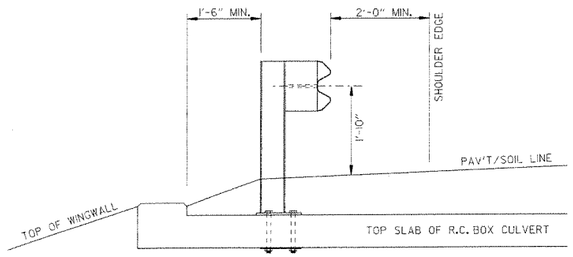
BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

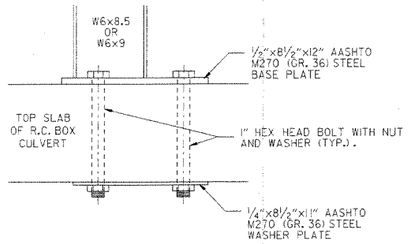


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

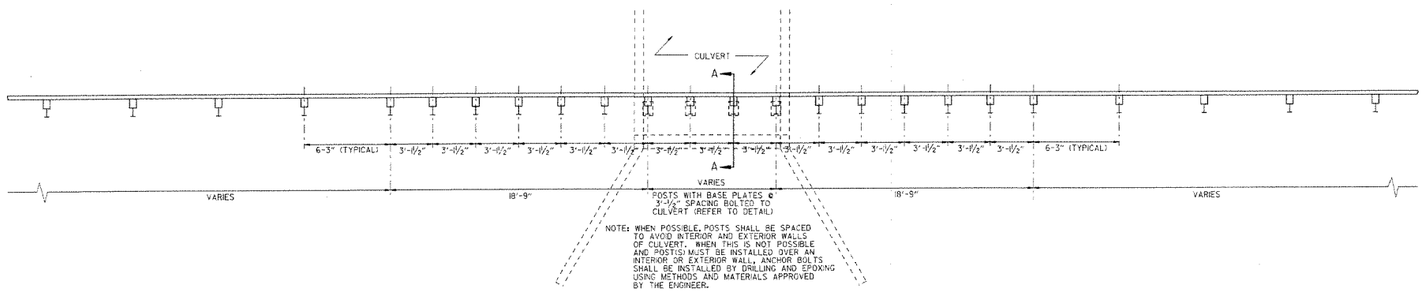
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



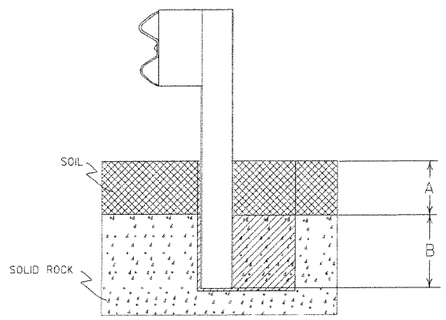
DETAIL OF CONNECTION



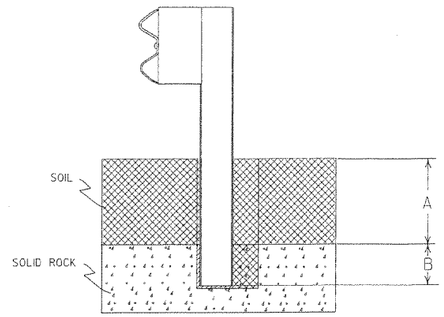
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

Case 1

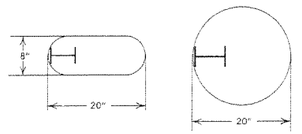


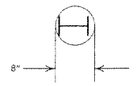
Case 2



Plan View Steel Posts

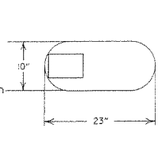
Either hole configuration acceptable

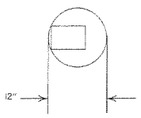




Plan View Wood Posts

Either hole configuration acceptable





Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

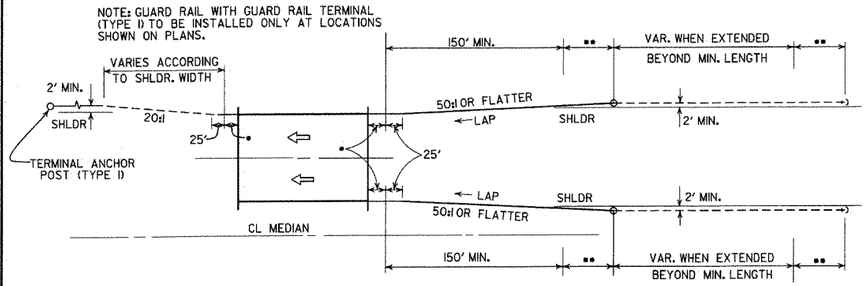
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11 22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	541-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

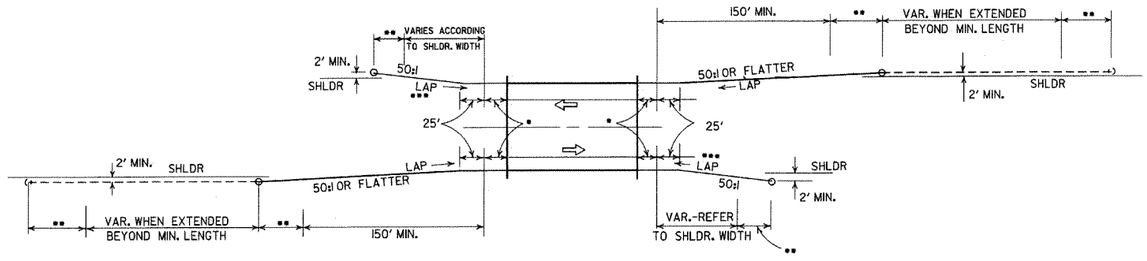
STANDARD DRAWING GR-8A

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

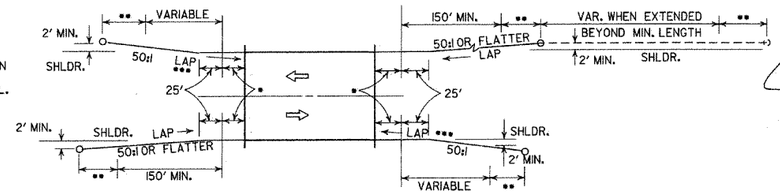
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

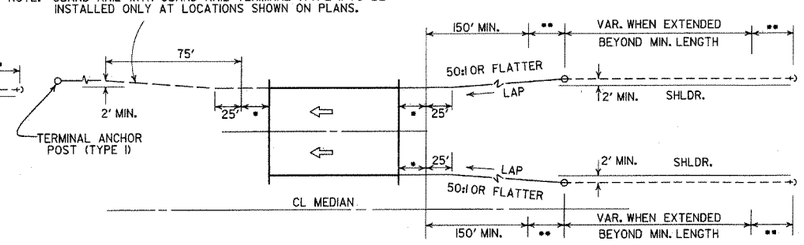
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

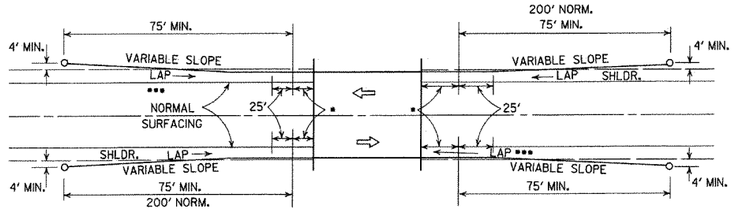
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



LEGEND

- ▪ THRIE BEAM GUARD RAIL TERMINAL
- ▪▪ GUARD RAIL TERMINAL (TYPE 2)

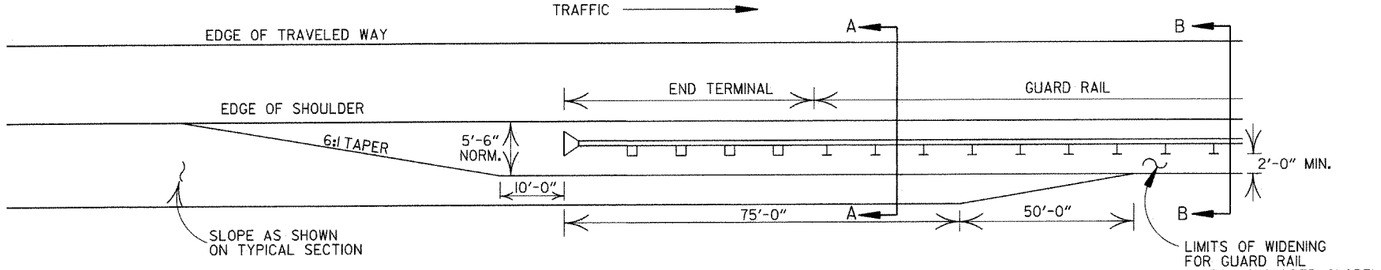
METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

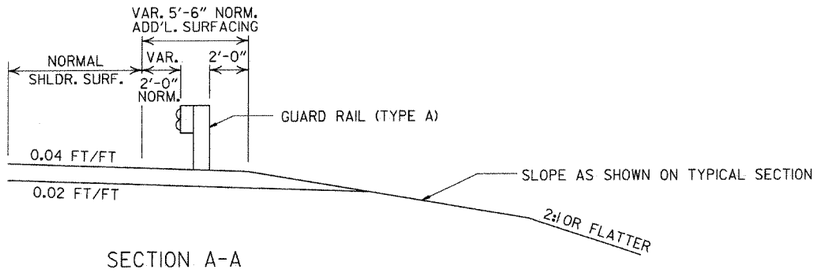
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

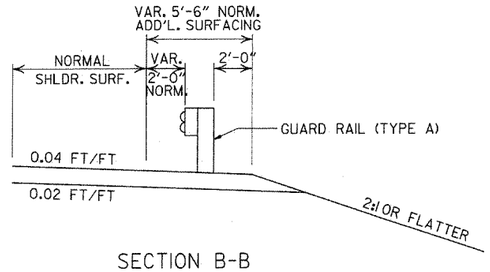
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





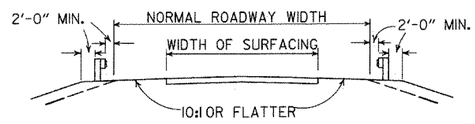
SECTION A-A



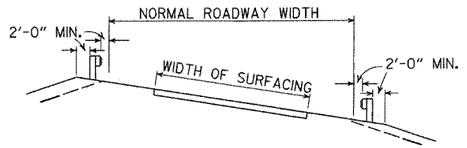
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

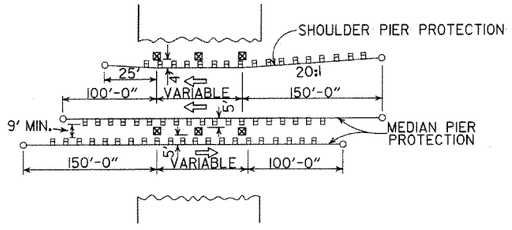


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



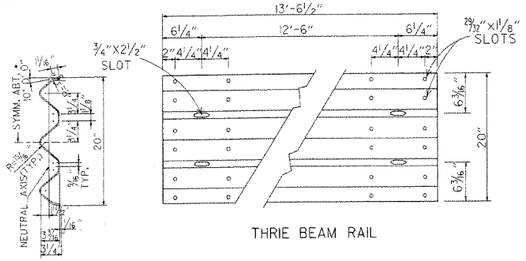
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

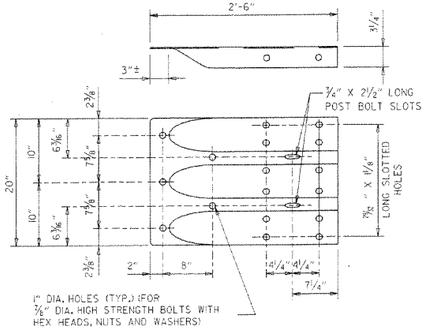
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

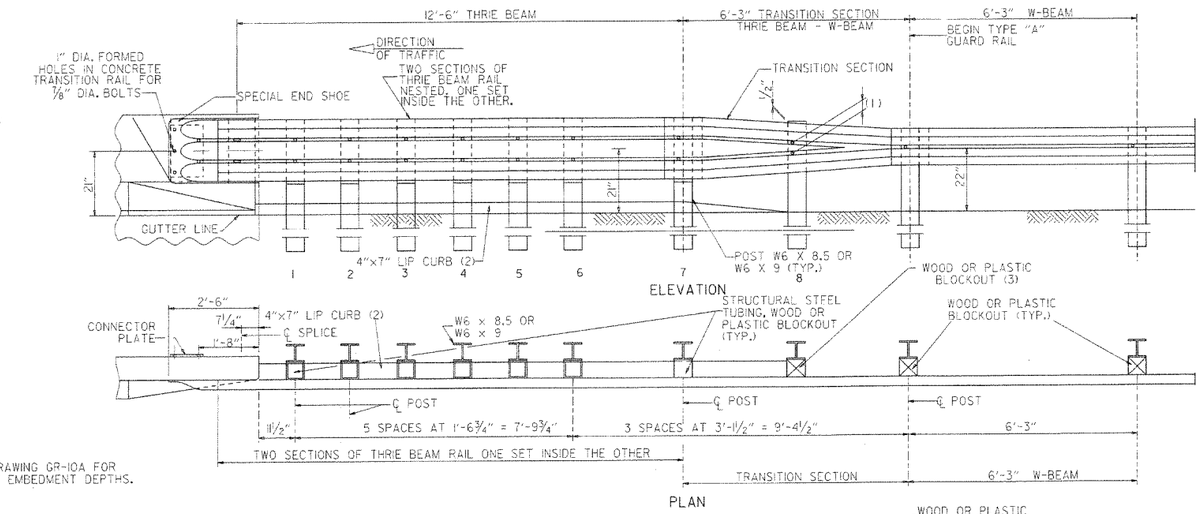


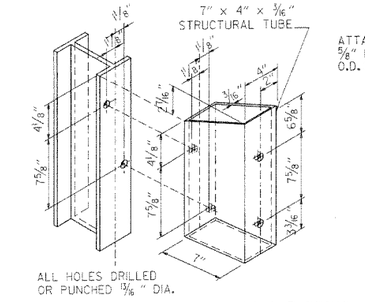
THRIE BEAM RAIL

SECTION THRU THRIE BEAM RAIL



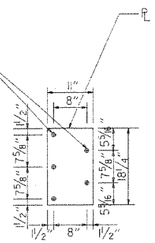
SPECIAL END SHOE





STRUCTURAL STEEL TUBING BLOCKOUT DETAIL

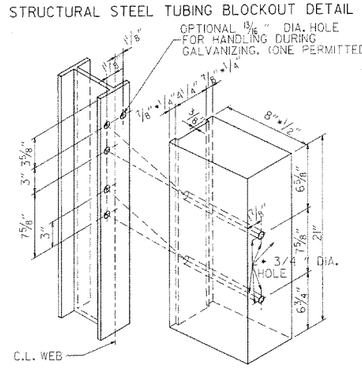
ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.



CONNECTOR PLATE

NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.

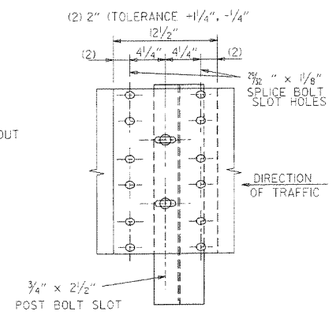
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



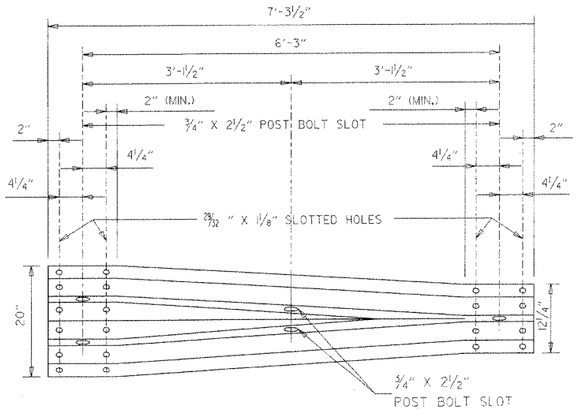
ALL HOLES 13/16 " DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



THRIE BEAM RAIL SPLICE AT POST



TRANSITION SECTION

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE, ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-11.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

REFER TO STD. DRWG. GR-10A FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

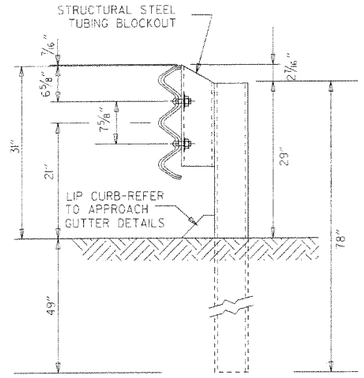
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED NOTE (2)	
6-29-00	MOVED DIMENSION LINES	
5-18-00	ADDED NOTE	
3-30-00	DRAWN & ISSUED	

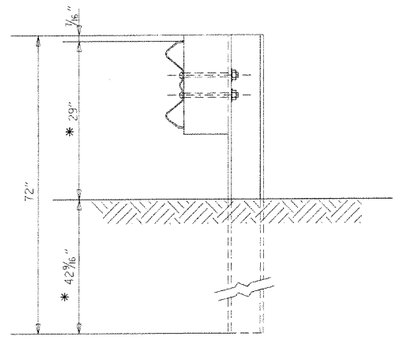
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

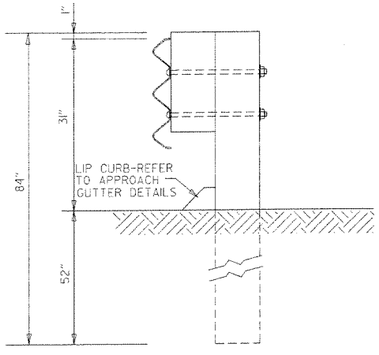


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

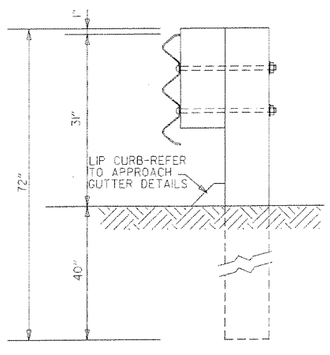


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

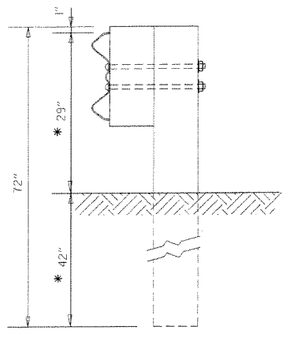
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

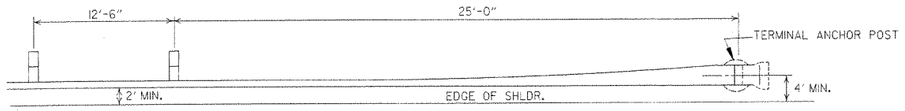
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
6-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

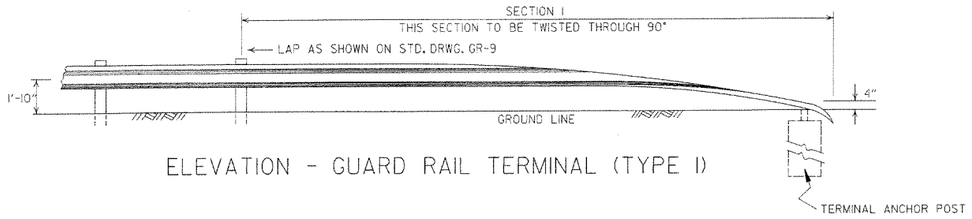
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

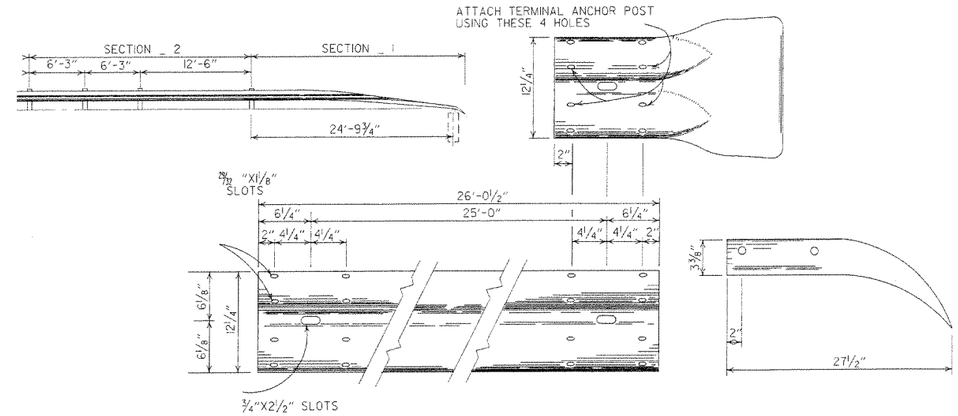


PLAN - GUARD RAIL TERMINAL (TYPE I)



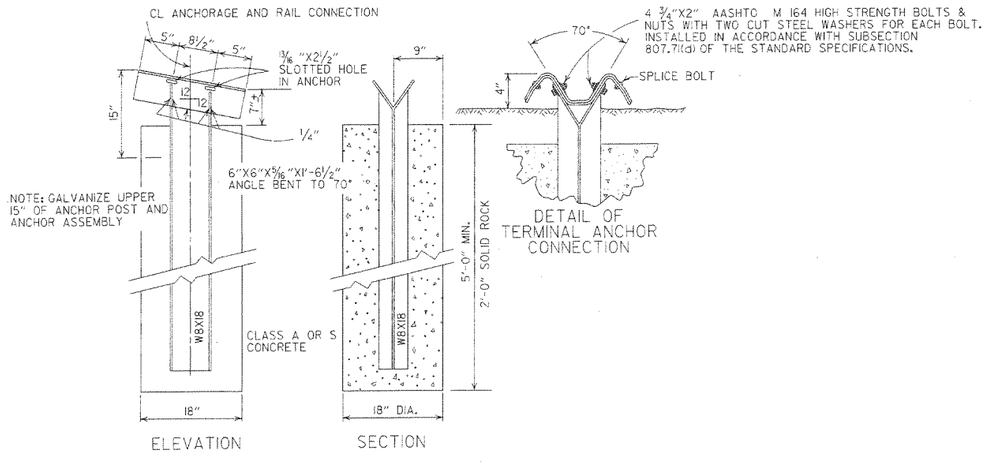
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

TERMINAL SECTION



NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
6-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-3-94	DIMENSION TERMINAL DETAIL	
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92
10-1-92	DRAWN & ISSUED	10-1-92

ARKANSAS STATE HIGHWAY COMMISSION

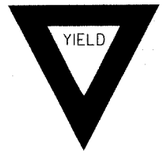
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1

R1-1

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

R1-2



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

R2-1

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

R2-5A

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

R2-5C

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

R4-1

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

R4-2

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

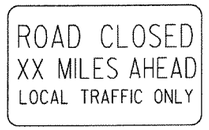
R5-1

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

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

RSP-1

48"X30"

W1-1

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

W1-2

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

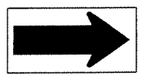
W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

W1-6

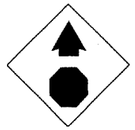


STD. 48"X24"
SPECIAL 60"X30"

W1-8

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

W3-1

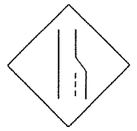


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

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

W9-2

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

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

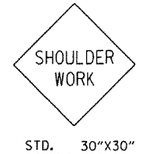
W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

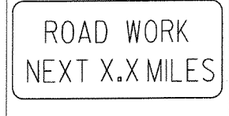
W8-11

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

W8-9

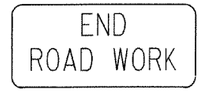
STD. 36"X36"
FWY. 48"X48"

G20-1



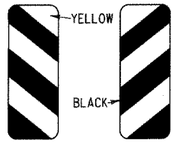
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

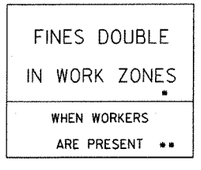
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

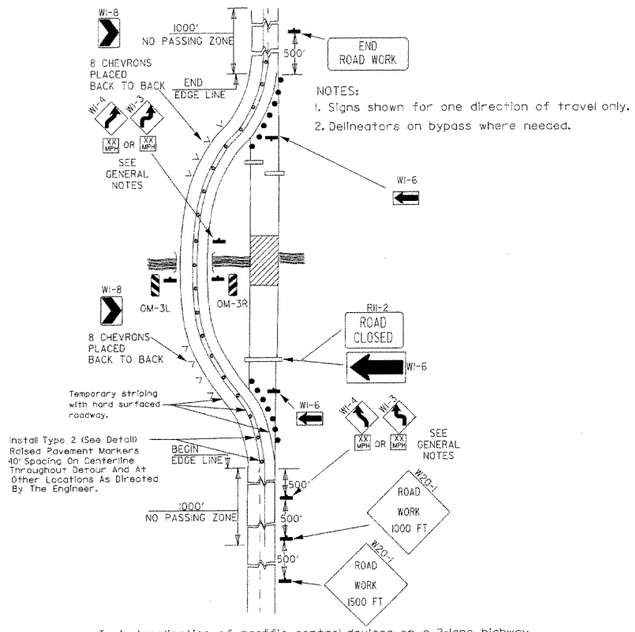
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

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

ARKANSAS STATE HIGHWAY COMMISSION

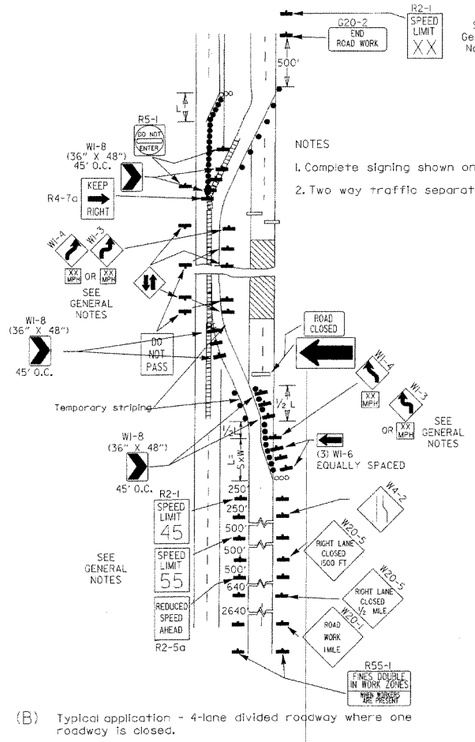
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



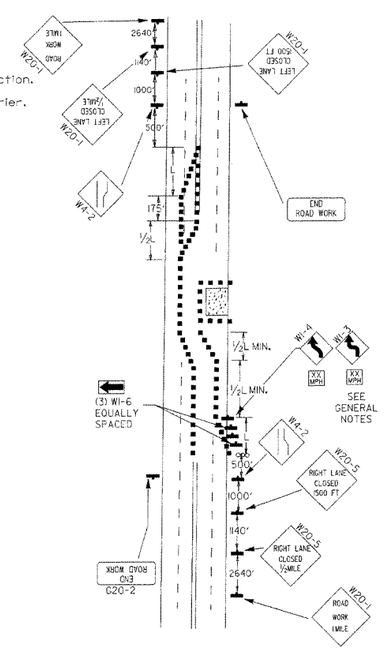
NOTES:
1. Signs shown for one direction of travel only.
2. Delineators on bypass where needed.

(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.

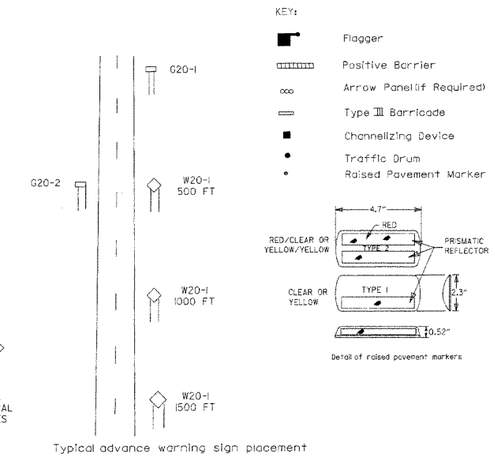


NOTES
1. Complete signing shown only in crossover direction.
2. Two way traffic separated with positive barrier.

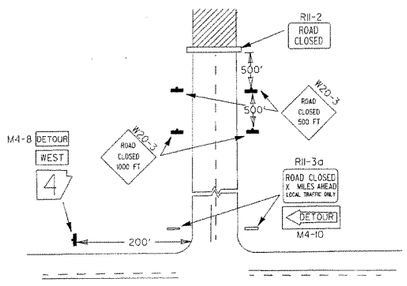
(B) Typical application - 4-lane divided roadway where one roadway is closed.

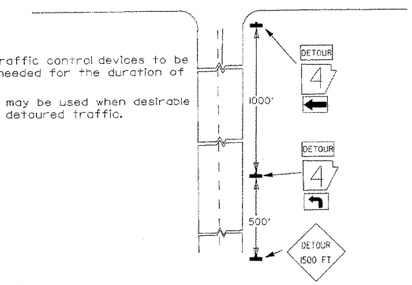


(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.



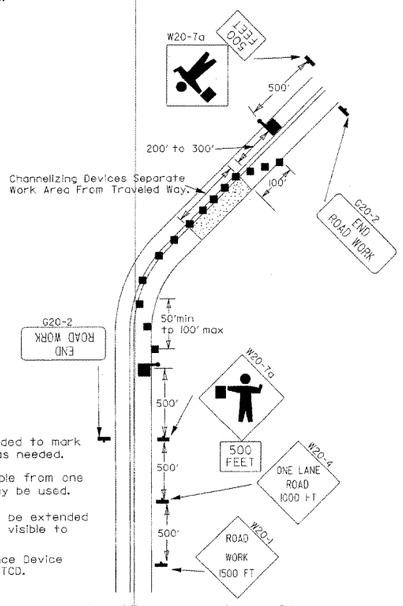
Typical advance warning sign placement





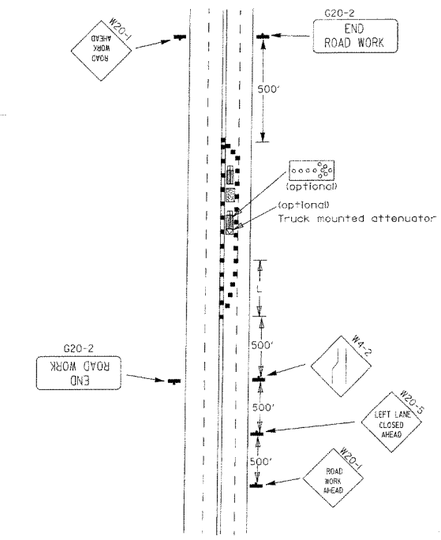
NOTES:
1. Regulatory traffic control devices to be modified as needed for the duration of the detour.
2. Street names may be used when desirable for directing detoured traffic.

(D) Typical application - roadway closed beyond detour point.



NOTES:
1. Flood lights should be provided to mark flagger stations at night as needed.
2. If entire work area is visible from one station, a single flagger may be used.
3. Channelizing devices are to be extended to a point where they are visible to approaching traffic.
4. Automated Flagger Assistance Device (AFAD) optional. Refer to MUTCD.

(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.



(F) Typical application - 4-lane undivided roadway with inside lane closed.

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:

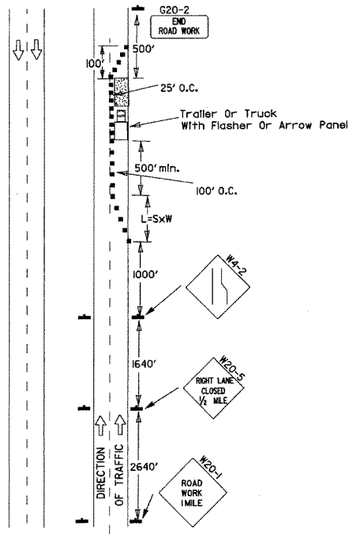
1. Advisory speed posted on WI-3 or WI-4 curve warning signs to be determined at site. Use WI-4 when speed is greater than 30mph and WI-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit, or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

DATE	REVISION	FILMED
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON WI-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

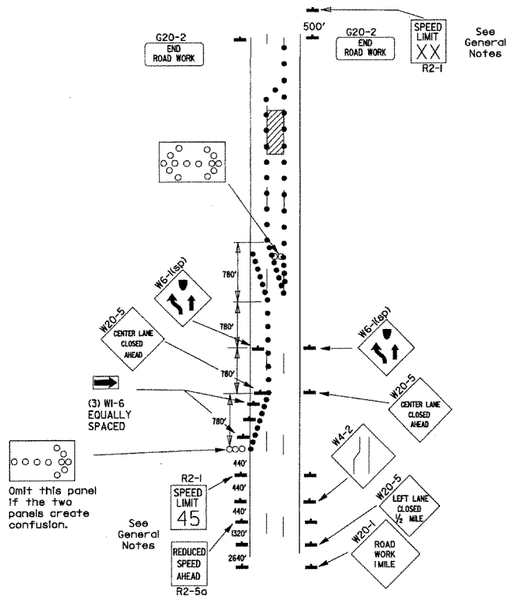
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

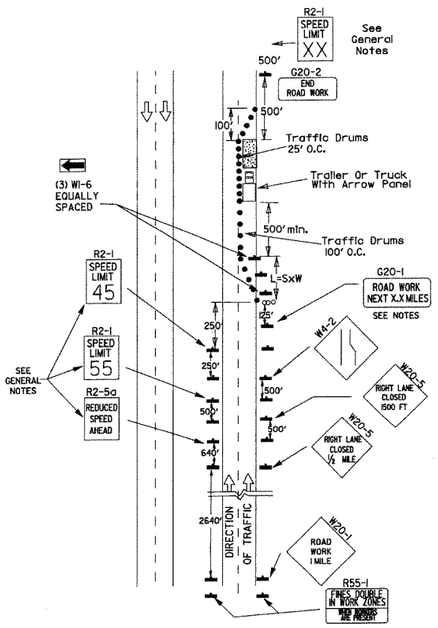
STANDARD DRAWING TC-2



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



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



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

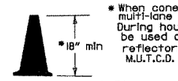
KEY:

- ○○○ Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

GENERAL NOTES:

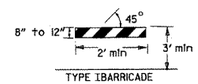
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional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

Channelizing devices

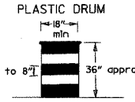


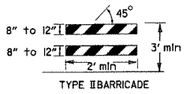
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

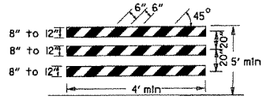
CONES



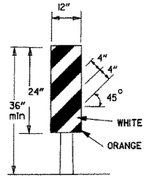
PLASTIC DRUM



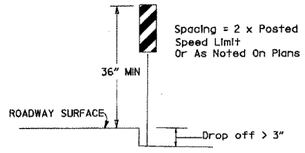




NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL PLACEMENT



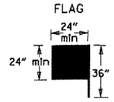
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

* When shown on the plans concrete barrier will be used.

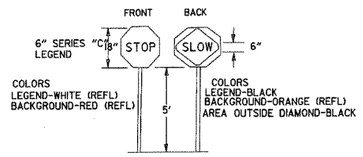
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

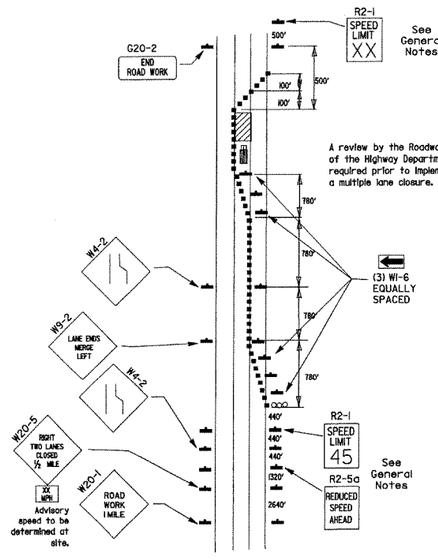
FLAG



Flag shall be of good grade red material

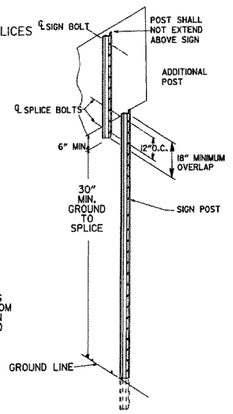
STOP SLOW PADDLE





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

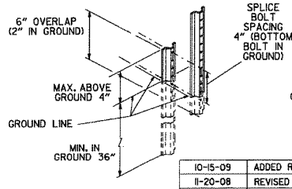
DETAIL OF SPLICES



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

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

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



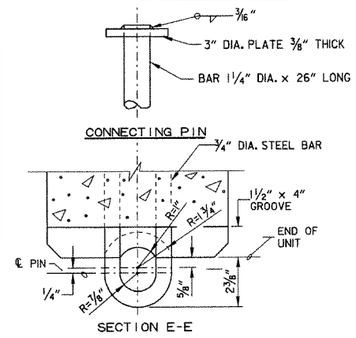
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED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

ARKANSAS STATE HIGHWAY COMMISSION

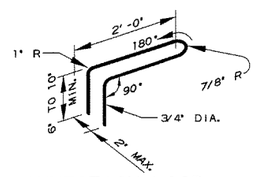
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

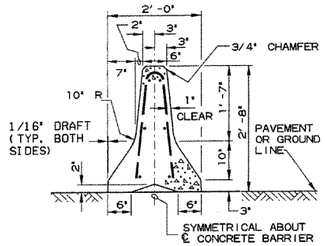
REINFORCING BAR TABLE PER BARRIER UNIT				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5" LIFTING HOLE 90° 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R SLOTS 7" 1'-6" 1' MIN. CLEAR TO BAR 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9" 2 3/16" R 12° 1 1/2" 2'-1 3/8" 4 3/8"



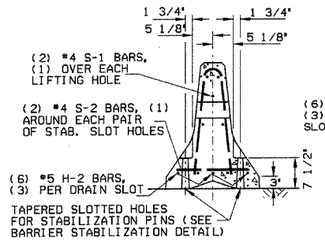
CONNECTION DETAILS



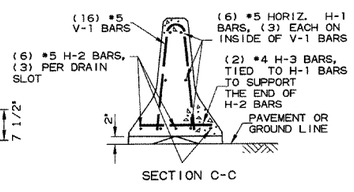
CONNECTION LOOP



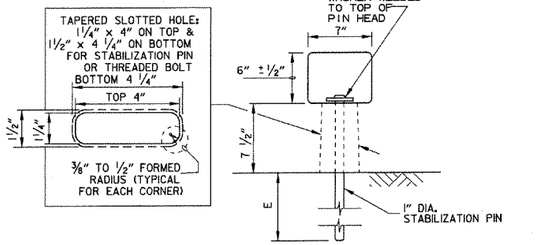
SECTION A-A



SECTION B-B



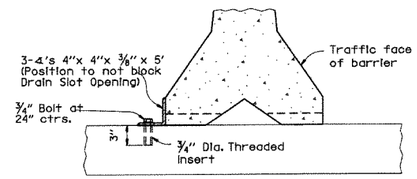
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

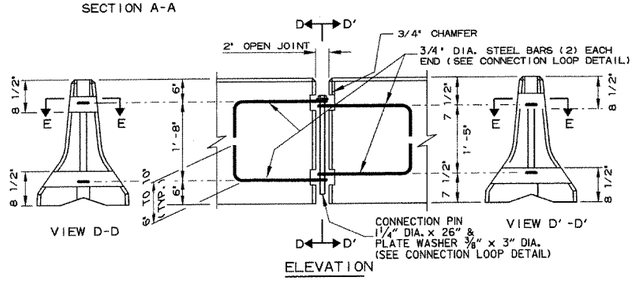
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks to be retained. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL

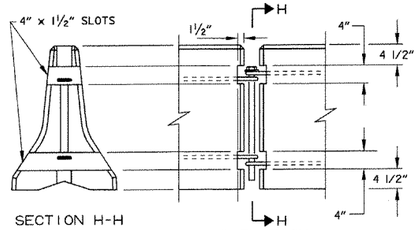
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

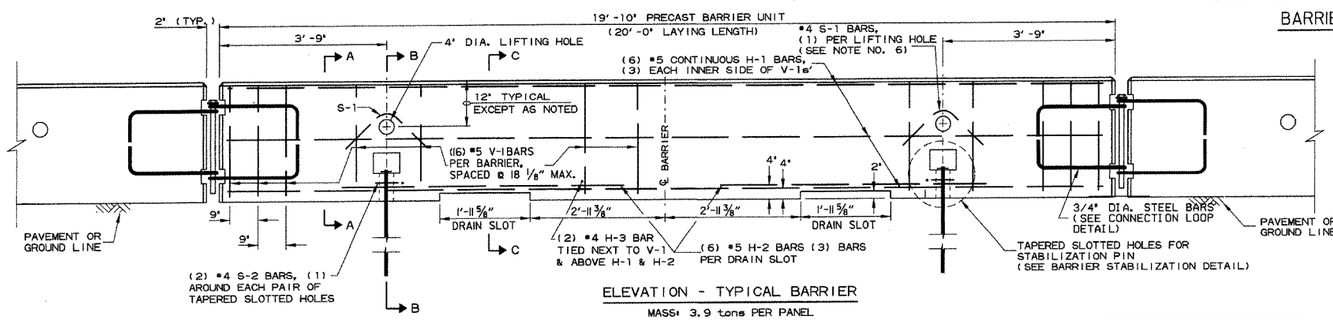
ELEVATION



SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier wall is within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

(3) Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

(4) Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

(5) Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

(6) A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

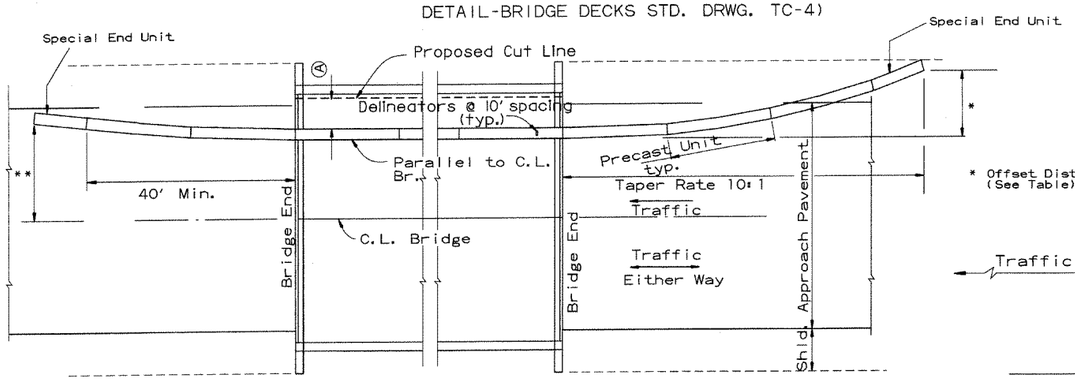
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

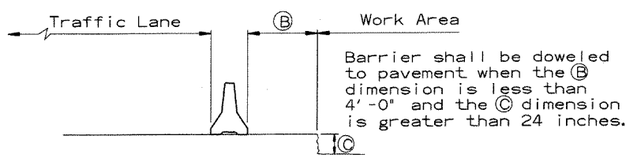
STANDARD DRAWING TC-4

Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

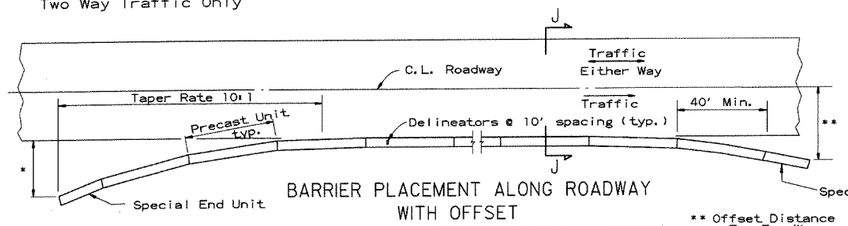


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

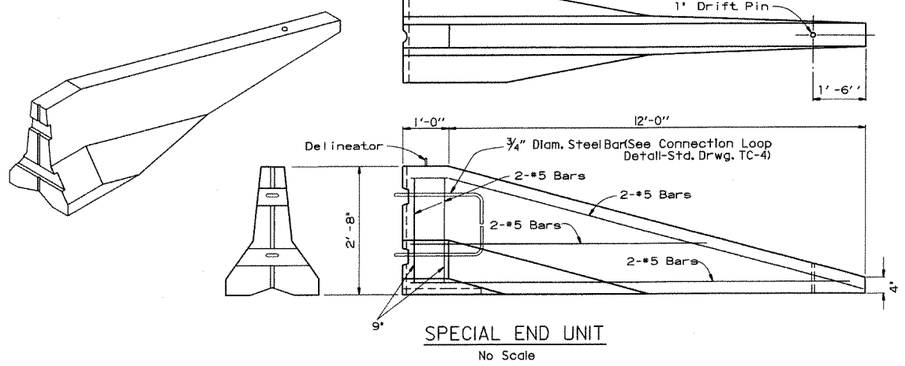
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

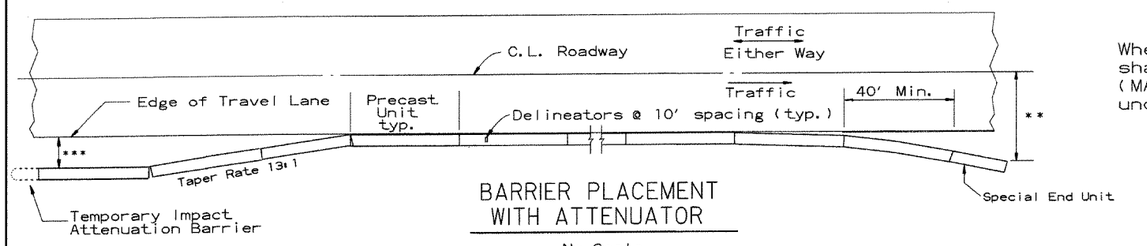
Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.



SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-5