GRE JULY 2014

PROJECT ID: 1227-13-60

COUNTY: BROWN

ORDER OF SHEETS

TOTAL SHEETS = 108

N

DESIGN DESIGNATION

A.A.D.T.	2014	= 22100
A.A.D.T.	2034	= 28400
D.H.V.		= 2800
D.D.		= .56
T.		= 8.9%
DESIGN SPEED		= 70 MPH
ESALS		= ---

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MANITOWOC-GREEN BAY

STH 172-CTH JJ

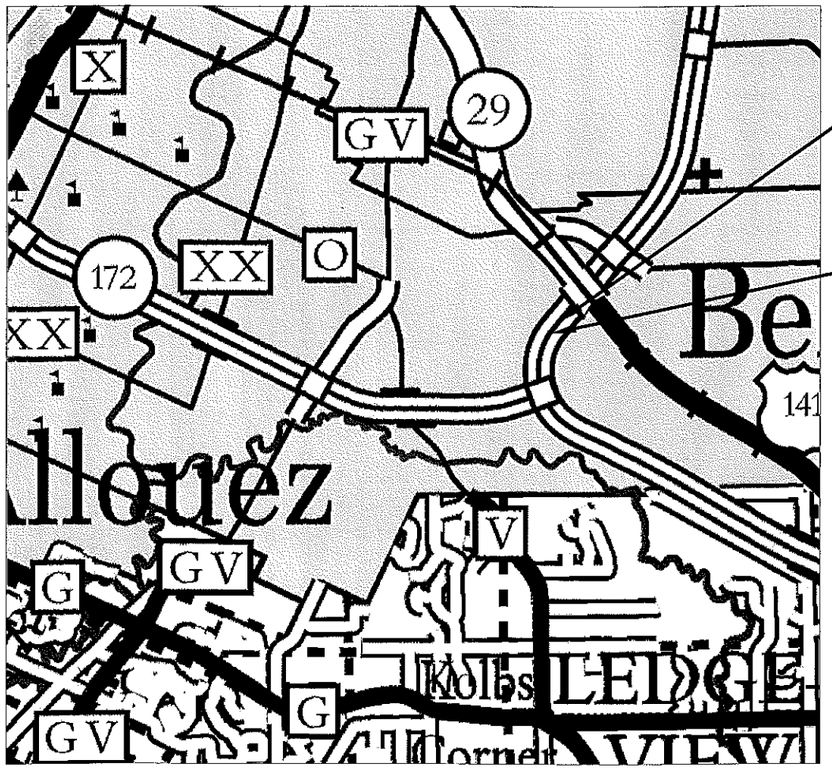
IH 43

BROWN

STATE PROJECT NUMBER
1227-13-60

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1227-13-60	———	—

R-21-E



END PROJECT
STA. 3342+53.50

BEGIN PROJECT
STA. 3333+93.50

Y = 548027.5065
X = 114434.2464

R-21-E

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.163MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, COUNTY COUNTY, NAD83 (YEAR), IN U.S. SURVEY FEET. VALUES ARE GRIO COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CORMAC MCINNIS
Designer	BRYAN SWANSON
Project Manager	PAUL VRANEY
Regional Examiner	TOM BUCHHOLZ
Regional Supervisor	CHAD DEGRAVE

APPROVED FOR THE DEPARTMENT
DATE: 3/7/2014 Tom Buchholz (Signature)

E

UTILITIES

KIM HACKELBERG
ATC MANAGEMENT, INC. - ELECTRICITY
801 O'KEEFE RD
P.O. BOX 6113
DE PERE, WI 54115-6113
(920) 338-6556
KHACKELBERG@ATCLLC.COM

VINCE ALBIN
TIME WARNER CABLE, A DELAWARE LIMITED PARTNERSHIP - COMMUNICATION LINE
3520 DESTINATION DR
APPLETON, WI 54915
(920) 831-9249
VINCE.ALBIN@TWCABLE.COM

BILL BALKE
VILLAGE OF BELLEVUE - SEWER
2828 ALLOUEZ AVE
GREEN BAY, WI 54311-6644
(920) 468-5225
BILLB@VILLAGEOFBELLEVUE.ORG
a
BILL BALKE
VILLAGE OF BELLEVUE - WATER
2828 ALLOUEZ AVE
GREEN BAY, WI 54311-6644
(920) 468-5225
BILLB@VILLAGEOFBELLEVUE.ORG

JEFF MADSON
WISCONSIN DEPARTMENT OF TRANSPORTATION - COMMUNICATION LINE
STE. 300
433 W. ST. PAUL AVE.
MILWAUKEE, WI 53203-3007
(414) 225-3723
JEFFREY.MADSON@DOT.WI.GOV

KAREN WELLS
AT&T WISCONSIN - COMMUNICATION LINE
205 S JEFFERSON ST
GREEN BAY, WI 54301
(920) 433-4226
KW9272@ATT.COM

LORI BUTRY
WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
700 N ADAMS ST
P.O. BOX 19001
GREEN BAY, WI 54307-9001
(920) 433-1703
LABUTRY@INTEGRYSGROUP.COM

LORI BUTRY
WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
700 N ADAMS ST
P.O. BOX 19001
GREEN BAY, WI 54307-9001
(920) 433-1703
LABUTRY@INTEGRYSGROUP.COM

DNR AREA LIAISON

JIM DOPERALSKI
DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVE
GREEN BAY, WI 54303
PHONE: 920-662-5119
EMAIL: JAMES.DOPERALSKI@WISCONSIN.GOV

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

GENERAL NOTES

THE LOCATIONS OF EXISTING MANHOLES AS SHOWN ON THE PLANS ARE APPROXIMATE.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

EXISTING PERMANENT SIGNS ARE TO REMAIN IN PLACE UNLESS SPECIFICALLY CALLED FOR REMOVAL ON MISCELLANEOUS QUANTITY TABLE.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND ALL UTILITIES IN THE VICINITY OF THE PROJECT TO LOCATE THEIR FACILITIES AT LEAST THREE WORKING DAYS PRIOR TO BEGINNING WORK.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER. ALL DISTURBED AREAS, NOT OTHERWISE SURFACED, ARE TO BE TOPSOILED, FERTILIZED, SEEDED AND COVERED WITH MULCH OR EROSION MAT, AS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER.

EMERGENCY CONTACT NUMBERS FOR WISCONSIN PUBLIC SERVICE

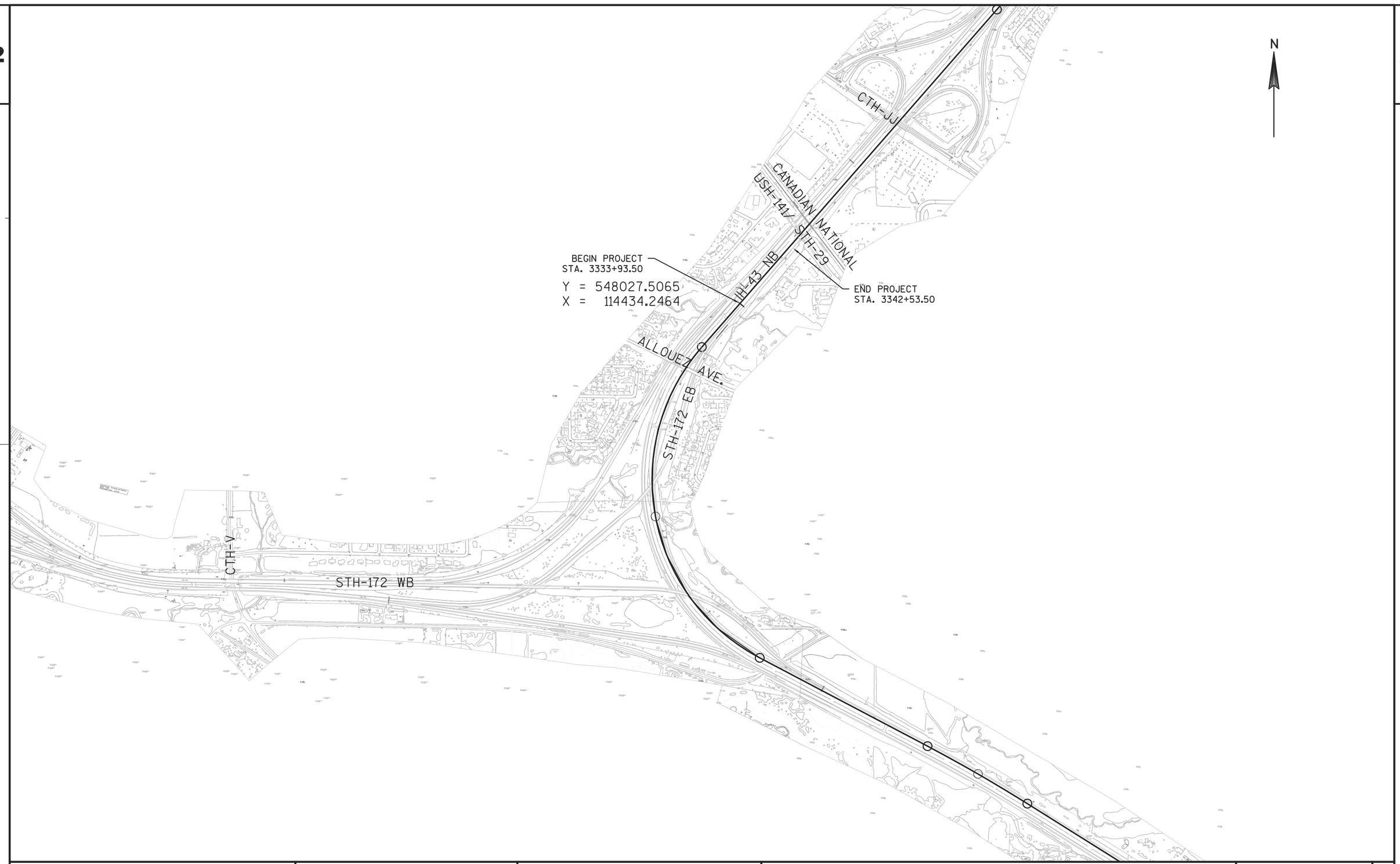
ELECTRIC 24 HOUR EMERGENCY SERVICE 1-800-450-7240
GAS 24 HOUR EMERGENCY SERVICE: 1-800-450-7280

COUNTY SURVEYOR OR SURVEYS CONTACT PERSON

PAT FORD
P.O. BOX 23600
GREEN BAY, WI 54301-3600
PHONE: 920-448-4493(O), 920-448-4487(F)
EMAIL: FORD_PJ@CO.BROWN.WI.US

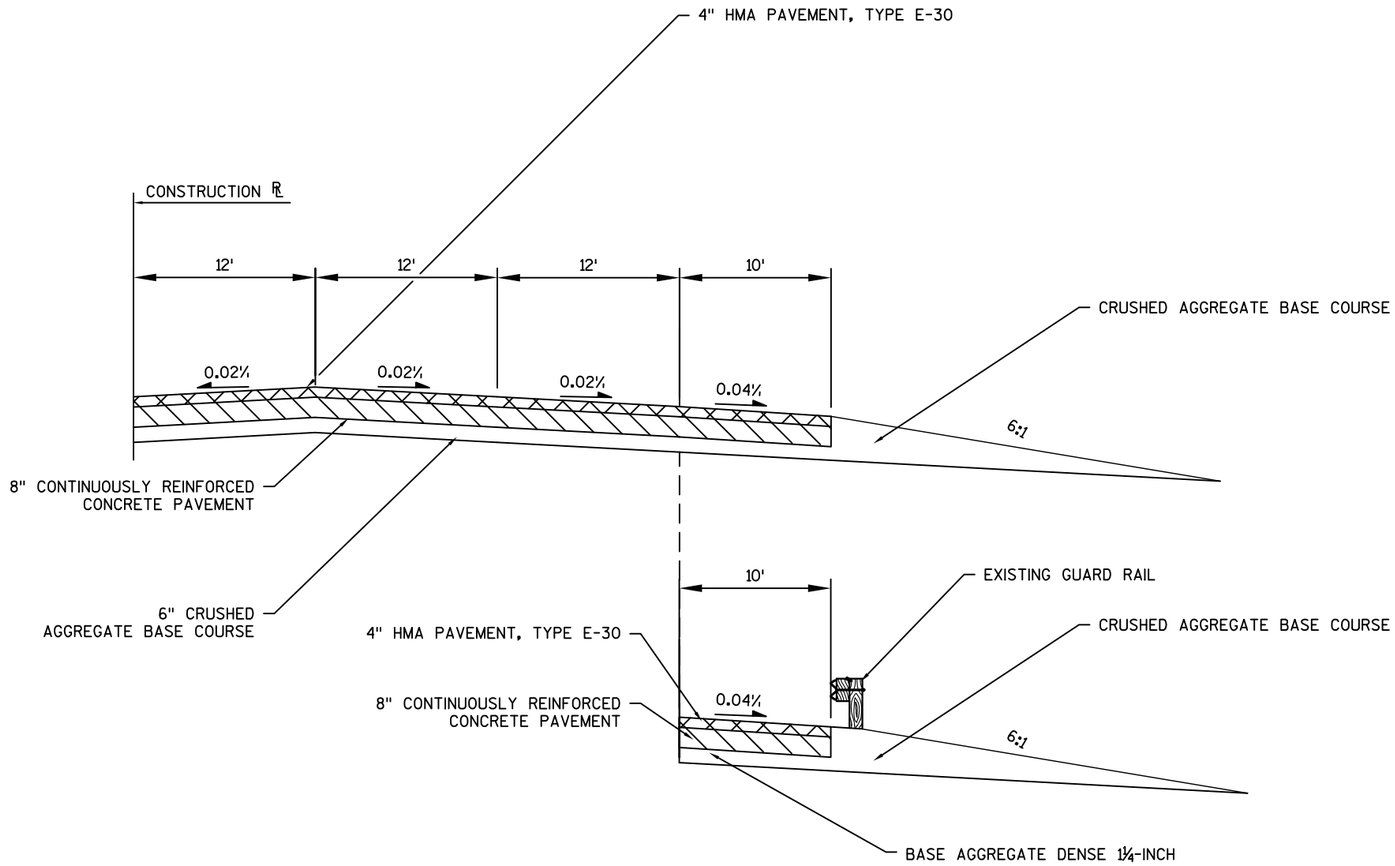
PROJECT NO:1227-13-60	HWY: IH 43	COUNTY:BROWN	UTILITIES & GENERAL NOTES	SHEET	E

2



PROJECT NO:1227-13-60	HWY: IH 43	COUNTY: BROWN	PROJECT OVERVIEW	SHEET	E

2

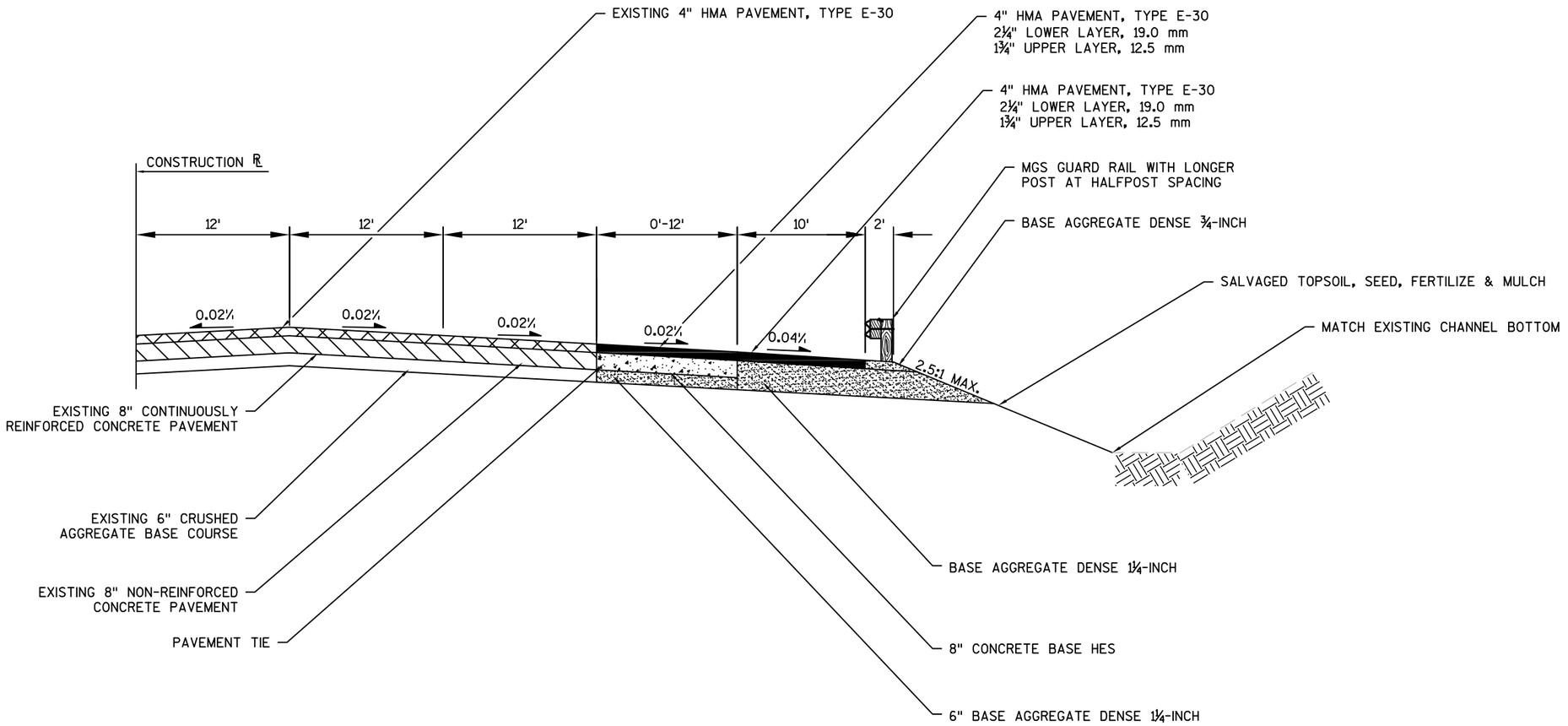


STA. 3333+93.50 TO STA. 3334+19.37
STA. 3441+96.00 TO STA. 3442+93.50

EXISTING TYPICAL CROSS SECTION

STA. 3333+93.50 TO STA. 3442+93.50

2

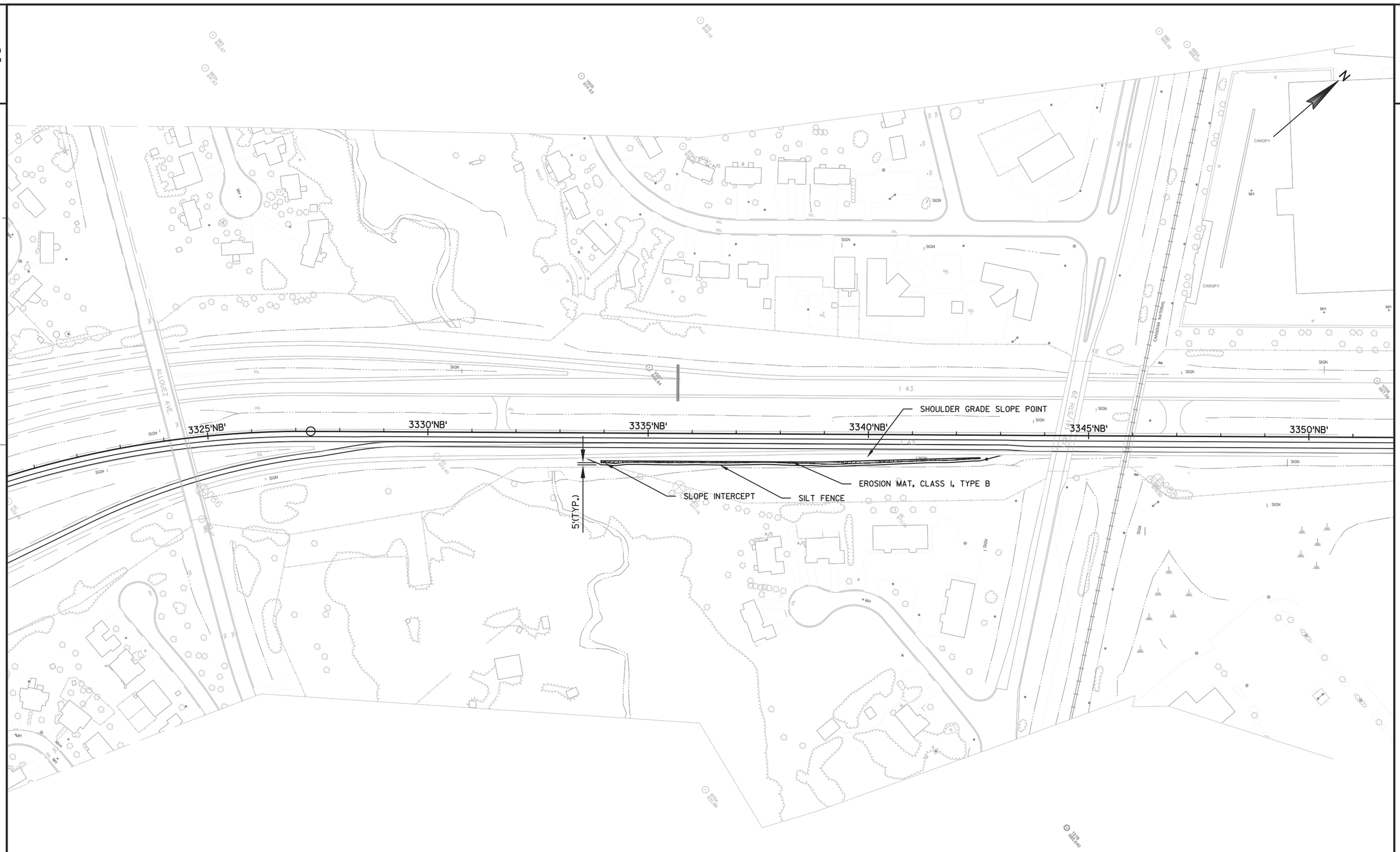


PROPOSED TYPICAL CROSS SECTION

STA. 3333+93.50 TO STA. 3442+93.50

PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	TYPICAL SECTIONS	SHEET	E

2

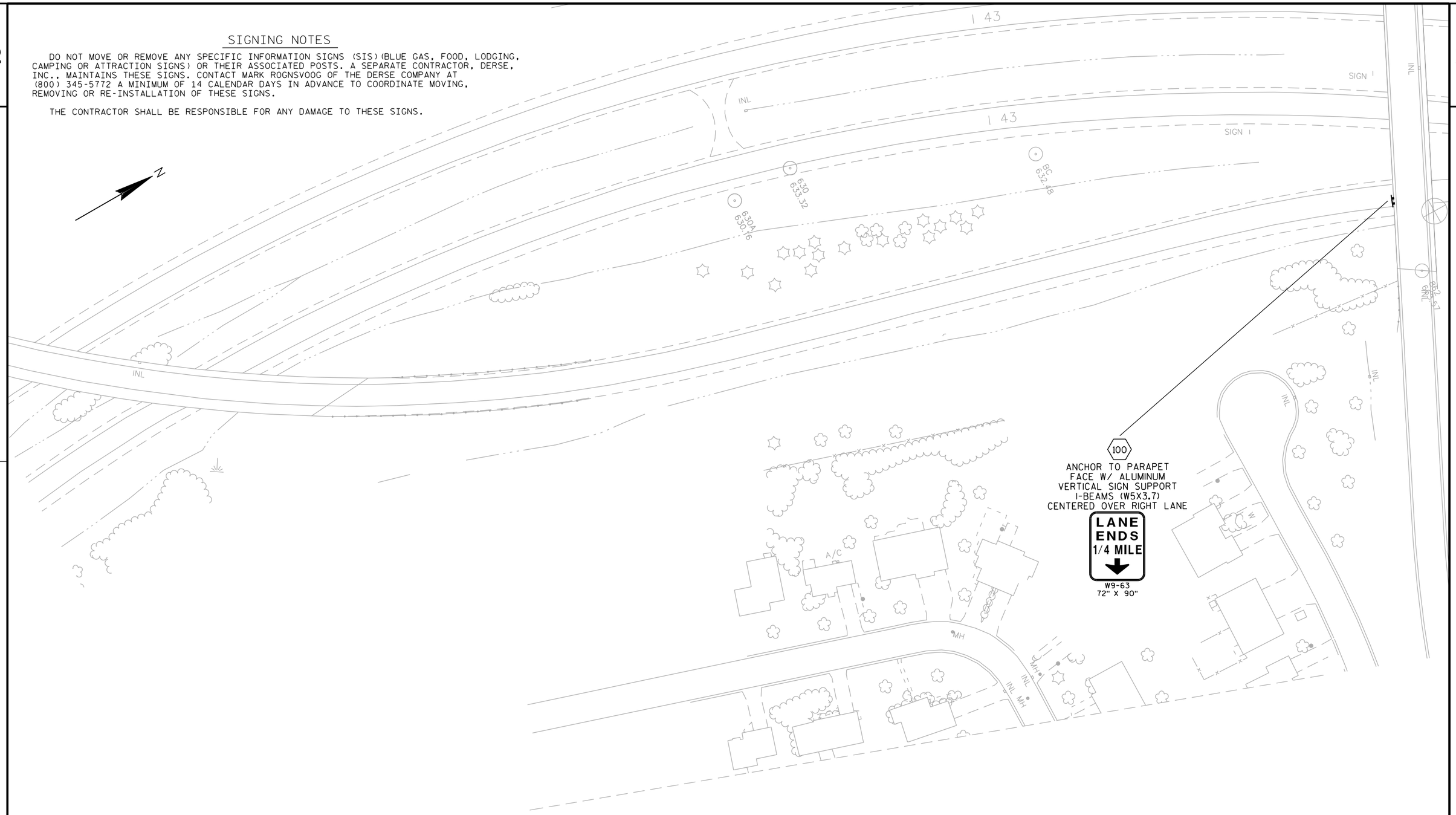


PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	EROSION CONTROL	SHEET	E

SIGNING NOTES

DO NOT MOVE OR REMOVE ANY SPECIFIC INFORMATION SIGNS (SIS)(BLUE GAS, FOOD, LODGING, CAMPING OR ATTRACTION SIGNS) OR THEIR ASSOCIATED POSTS. A SEPARATE CONTRACTOR, DERSE, INC., MAINTAINS THESE SIGNS. CONTACT MARK ROGNSVOOG OF THE DERSE COMPANY AT (800) 345-5772 A MINIMUM OF 14 CALENDAR DAYS IN ADVANCE TO COORDINATE MOVING, REMOVING OR RE-INSTALLATION OF THESE SIGNS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THESE SIGNS.



SIGN-PLACE NEW

SIGN-REMOVE EXISTING

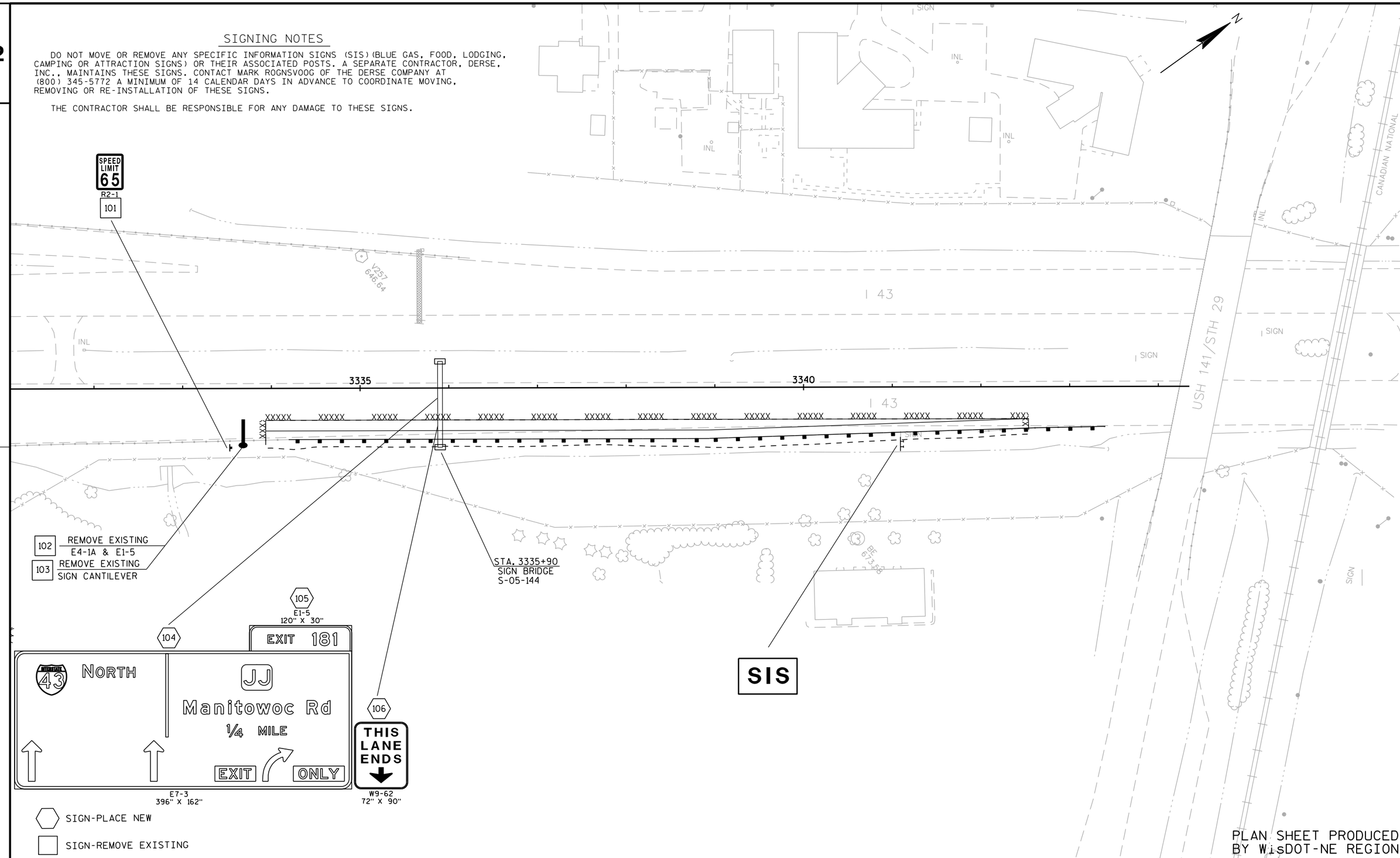
PLAN SHEET PRODUCED
BY WisDOT-NE REGION

PROJECT NO: 1227-13-60	HWY: IH-43	COUNTY: BROWN	PERMANENT SIGNING PLAN	SHEET 7	E

SIGNING NOTES

DO NOT MOVE OR REMOVE ANY SPECIFIC INFORMATION SIGNS (SIS)(BLUE GAS, FOOD, LODGING, CAMPING OR ATTRACTION SIGNS) OR THEIR ASSOCIATED POSTS. A SEPARATE CONTRACTOR, DERSE, INC., MAINTAINS THESE SIGNS. CONTACT MARK ROGNSVOOG OF THE DERSE COMPANY AT (800) 345-5772 A MINIMUM OF 14 CALENDAR DAYS IN ADVANCE TO COORDINATE MOVING, REMOVING OR RE-INSTALLATION OF THESE SIGNS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THESE SIGNS.



PROJECT NO: 1227-13-60	HWY: IH-43	COUNTY: BROWN	PERMANENT SIGNING PLAN	SHEET 8 E

FILE NAME : N:\spo\traffic\SIGNING\Projects\1227-13-60 I-43 & STH 172\023212_ps.dgn PLOT DATE : 03-MAR-2014 07:31 PLOT BY : dotj1f PLOT NAME : PLOT SCALE : 100:1

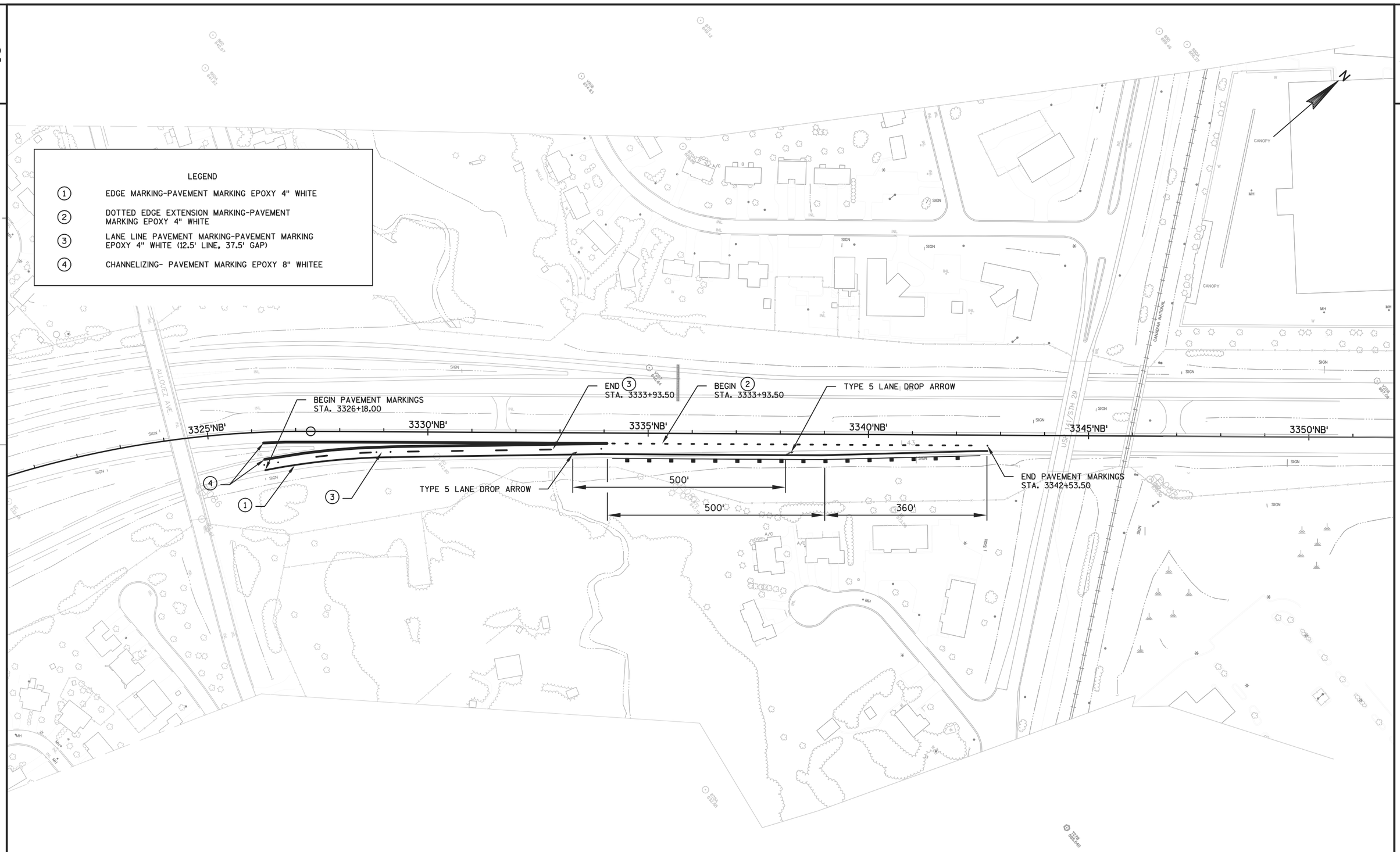
WISDOT/CADDS SHEET 42

2

2

LEGEND

1. EDGE MARKING-PAVEMENT MARKING EPOXY 4" WHITE
2. DOTTED EDGE EXTENSION MARKING-PAVEMENT MARKING EPOXY 4" WHITE
3. LANE LINE PAVEMENT MARKING-PAVEMENT MARKING EPOXY 4" WHITE (12.5' LINE, 37.5' GAP)
4. CHANNELIZING- PAVEMENT MARKING EPOXY 8" WHITEE



PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	PAVEMENT MARKING	SHEET	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\024501_PM.DWG PLOT DATE : 4/17/2014 1:25 PM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:200 FT

2

LEGEND

- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- (1) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH
- WORK AREA
- CONCRETE BARRIER TEMPORARY PRECAST

BEGIN TAPER TO 11' LANE
STA. 3326+18.00

END TAPER TO 11' LANE
STA. 3328+93.50

(1) (TYPICAL)

BEGIN TAPER TO 12' LANE
STA. 3343+43.50

END TAPER TO 12' LANE
STA. 3343+93.50

3330'NB'

3335'NB'

3340'NB'

SPEED LIMIT 55
W3-5
48"x48"

SPEED LIMIT 55
R2-1
24"X30"

W1-4BL
48"X48"

LANES NARROW
W05-1(MOD)
SIZE

500'

500'

500'

600'

1000'

500'

100'

500'

500'

RIGHT SHOULDER CLOSED
W21-5A

RIGHT SHOULDER CLOSED AHEAD
W21-5B

ROAD WORK AHEAD
W20-1

W5-52L
12"X36"

TEMPORARY CRASH CUSHION

END ROAD WORK
G20-2A
48" X 24"

SPEED LIMIT 65
R2-1
24"X30"

USH 141 / TH 29

CANOPY

CANADIAN NATIONAL

NOTE: COVER CONFLICTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (BLACK).

PROJECT NO:1227-13-60	HWY: IH 43	COUNTY: BROWN	TRAFFIC CONTROL	SHEET 10	E

2

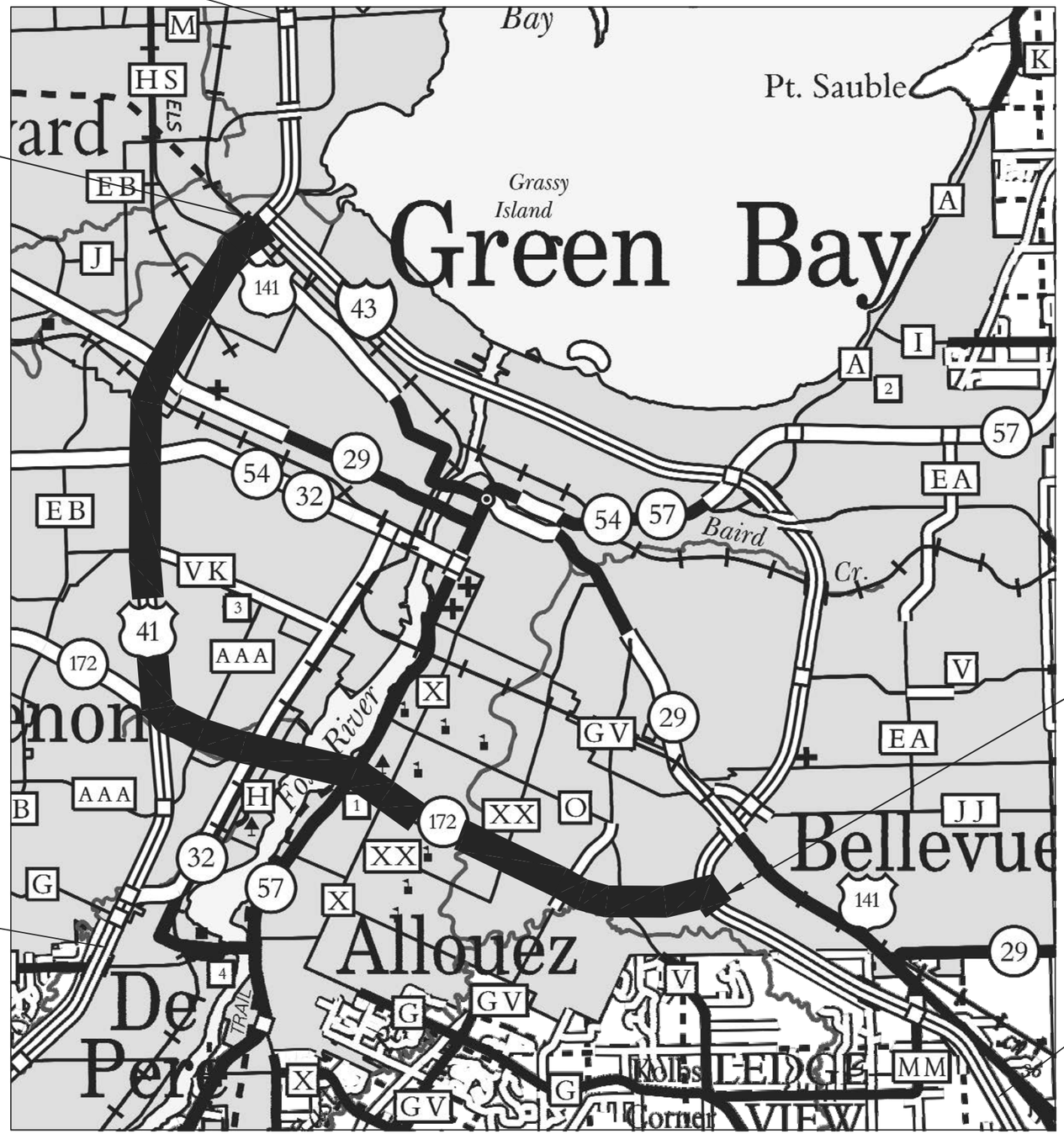
N

LEGEND

(1) - (6) LOCATIONS OF PCMS

(6)(5)

END DETOUR



(4)(3)

(1)(2)

BEGIN DETOUR
IH 43NB TO STH 172WB
STH 172WB TO US 41NB

PROJECT NO:1227-13-60	HWY:IH 43	COUNTY:BROWN	DETOUR	SHEET	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\027001_DT.DWG PLOT DATE : 4/17/2014 1:32 PM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 0.000277

DATE 23APR14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1227-13-60 QUANTITY
0010	203.0200	REMOVING OLD STRUCTURE (STATION) 02. 3334+12	LS	1.000	1.000
0020	204.0100	REMOVING PAVEMENT	SY	960.000	960.000
0030	204.0165	REMOVING GUARDRAIL	LF	210.000	210.000
0040	205.0100	EXCAVATION COMMON	CY	685.000	685.000
0050	208.0100	BORROW	CY	79.000	79.000
0060	211.0300	PREPARE FOUNDATION FOR CONCRETE BASE (PROJECT) 01. 1227-13-60	LS	1.000	1.000
0070	213.0100	FINISHING ROADWAY (PROJECT) 01. 1227-13-60	EACH	1.000	1.000
0080	305.0115	BASE AGGREGATE DENSE 3/4-INCH	CY	24.000	24.000
0090	305.0125	BASE AGGREGATE DENSE 1 1/4-INCH	CY	660.000	660.000
0100	305.0500	SHAPING SHOULDERS	STA	10.000	10.000
0110	320.0345	CONCRETE BASE HES 8-INCH	SY	910.000	910.000
0120	440.4410.S	INCENTIVE IRI RIDE	DOL	1,000.000	1,000.000
0130	455.0105	ASPHALTIC MATERIAL PG58-28	TON	25.000	25.000
0140	455.0605	TACK COAT	GAL	105.000	105.000
0150	460.1130	HMA PAVEMENT TYPE E-30	TON	410.000	410.000
0160	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	246.000	246.000
0170	465.0400	ASPHALTIC SHOULDER RUMBLE STRIP	LF	860.000	860.000
0180	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	1,555.000	1,555.000
0190	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	1,555.000	1,555.000
0200	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	2.000	2.000
0210	614.0220	STEEL THRIE BEAM BULLNOSE TERMINAL	EACH	2.000	2.000
0220	614.0230	STEEL THRIE BEAM	LF	75.000	75.000
0230	614.0905	CRASH CUSHIONS TEMPORARY	EACH	1.000	1.000
0240	614.2300	MGS GUARDRAIL 3	LF	950.000	950.000
0250	614.2620	MGS GUARDRAIL TERMINAL TYPE 2	EACH	1.000	1.000
0260	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1227-13-60	EACH	1.000	1.000
0270	619.1000	MOBILIZATION	EACH	1.000	1.000
0280	624.0100	WATER	MGAL	10.000	10.000
0290	625.0500	SALVAGED TOPSOIL	SY	311.000	311.000
0300	627.0200	MULCHING	SY	311.000	311.000
0310	628.1504	SILT FENCE	LF	1,000.000	1,000.000
0320	628.1520	SILT FENCE MAINTENANCE	LF	1,000.000	1,000.000
0330	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0340	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000
0350	628.2004	EROSION MAT CLASS I TYPE B	SY	315.000	315.000
0360	629.0210	FERTILIZER TYPE B	CWT	1.000	1.000
0370	630.0120	SEEDING MIXTURE NO. 20	LB	8.000	8.000
0380	633.5200	MARKERS CULVERT END	EACH	1.000	1.000
0390	636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	87.000	87.000
0400	636.1000	SIGN SUPPORTS STEEL REINFORCEMENT HS	LB	6,340.000	6,340.000
0410	636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	2,180.000	2,180.000
0420	637.1220	SIGNS TYPE I REFLECTIVE SH	SF	470.500	470.500
0430	637.2230	SIGNS TYPE II REFLECTIVE F	SF	90.000	90.000
0440	638.2601	REMOVING SIGNS TYPE I	EACH	2.000	2.000
0450	638.2602	REMOVING SIGNS TYPE II	EACH	1.000	1.000
0460	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	1.000	1.000
0470	641.6600	SIGN BRIDGE (STRUCTURE) 04. S-5-144	LS	1.000	1.000
0480	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000

3

DATE 23APR14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1227-13-60 QUANTITY
0490	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1227-13-60	EACH	1.000	1.000
0500	643.0300	TRAFFIC CONTROL DRUMS	DAY	765.000	765.000
0510	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	16.000	16.000
0520	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	340.000	340.000
0530	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	57.000	57.000
0540	643.0900	TRAFFIC CONTROL SIGNS	DAY	685.000	685.000
0550	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	33.000	33.000
0560	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 1227-13-60	EACH	1.000	1.000
0570	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	2,400.000	2,400.000
0580	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	1,540.000	1,540.000
0590	646.0600	REMOVING PAVEMENT MARKINGS	LF	1,000.000	1,000.000
0600	647.0196	PAVEMENT MARKING ARROWS EPOXY TYPE 5	EACH	2.000	2.000
0610	647.0955	REMOVING PAVEMENT MARKINGS ARROWS	EACH	2.000	2.000
0620	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	8,340.000	8,340.000
0630	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	860.000	860.000
0640	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	860.000	860.000
0650	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1227-13-60	LS	1.000	1.000
0660	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	860.000	860.000
0670	690.0250	SAWING CONCRETE	LF	1,755.000	1,755.000
0680	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	272.000	272.000

REMOVING PAVEMENT QUANTITIES

STA.	TO	STA.	DIRECTION	LOCATION	204.0100 REMOVING PAVEMENT SY
CATEGORY 0010					
3333+93.50	-	3336+43.50	RT	IH 43	280
333643.50	-	3338+93.50	RT	IH 43	280
3338+93.50	-	3342+53.50	RT	IH 43	400
				TOTAL	**960**

CULVERT END MARKER

STA.	DIRECTION	LOCATION	633.5200 MARKERS CULVERT END EACH
CATEGORY 0010			
3339+20	RT	IH 43	1
		TOTAL	**1**

FINISHING ROADWAY (PROJECT)

STA.	TO	STA.	LOCATION	213.0100 FINISHING ROADWAY PROJECT EACH
CATEGORY 0010				
PROJECT			IH 43	1
			TOTAL	**1**

CONCRETE QUANTITIES

STA.	TO	STA.	DIRECTION	320.0345 CONCRETE BASE HES 8-INCH SY	690.0250 SAWING CONCRETE LF
CATEGORY 0010					
3333+93.50	-	3336+43.50	RT	335	525
3336+43.50	-	3338+93.50	RT	335	500
3338+93.50	-	3342+53.50	RT	240	730
			Total	**910**	**1755**

WATER QUANTITIES

STA.	TO	STA.	LOCATION	624.0100 WATER MGAL
CATEGORY 0010				
BASE AGGREGATE			IH 43	10
			TOTAL	**10**

EARTHWORK QUANTITIES

STA.	TO	STA.	DIRECTION	LOCATION	205.0100 EXCAVATION COMMON CY	208.0100 BORROW CY
CATEGORY 0010						
3333+93.50	-	3336+43.50	RT	IH 43	269	10
3336+43.50	-	3338+93.50	RT	IH 43	226	19
3338+93.50	-	3342+53.50	RT	IH 43	190	50
				TOTAL	**685**	**79**

3

3

AGGREGATE QUANTITIES

STA.	TO	STA.	DIRECTION	LOCATION	LENGTH (FT)	305.0500 SHAPING SHOULDERS STA	305.0115 BASE AGGREGATE DENSE 3/4-INCH CY	305.0125 BASE AGGREGATE DENSE 1 1/4-INCH CY
CATEGORY 0010								
3333+93.50	-	3336+43.50	RT	IH 43	250	3	7	190
333643.5	-	3338+93.50	RT	IH 43	250	3	7	190
3338+94	-	3342+54	RT	IH 43	360	4	10	280
					TOTAL	**10**	**24**	**660**

ASPHALT QUANTITIES

STA.	TO	STA.	DIRECTION	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1130 HMA PAVEMENT TYPE E-30 TON	465.0400 ASPHALTIC SHOULDER RUMBLE STRIPS LF
CATEGORY 0010							
3333+93.50	-	3336+43.50	RT	8	30	134	250
3336+43.50	-	3338+93.50	RT	8	31	135	250
3338+93.50	-	3342+53.50	RT	9	44	141	360
			Total	**25**	**105**	**410**	**860**

3

GUARDRAIL QUANTITIES

STA.	TO	STA.	204.0165 REMOVING GUARDRAIL LF	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING Each	614.0220 STEEL THRIE BEAM BULLNOSE TERMINAL Each	614.0230 STEEL THRIE BEAM LF	614.2300 MGS GUARDRAIL 3 LF	614.2620 MGS GUARDRAIL TERMINAL TYPE 2 Each
CATEGORY 0010								
3333+93.50	-	3336+93.50	--	1	2	75	300	--
3336+93.50	-	3339+43.50	--	--	--	--	250	--
3339+43.50	-	3343+40.00	210	1	--	--	400	1
		Total	**210**	**2**	**2**	**75**	**950**	**1**

3

TEMPORARY TRAFFIC BARRIER QUANTITIES

STA.	TO	STA.	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8215 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	614.0905 CRASH CUSHION TEMPORARY EACH
CATEGORY 0010						
3326+98.50	-	3333+93.50	IH 43	695	695	1
3333+93.50	-	3336+43.50	IH 43	250	250	--
3336+43.50	-	3338+93.50	IH 43	250	250	--
3338+93.50	-	3342+53.50	IH 43	360	360	--
			TOTAL	**1,555**	**1,555**	**1**

3

3

EROSION CONTROL QUANTITIES

STA.	TO	STA.	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2004 EROSION MAT CLASS I TYPE B SY
CATEGORY 0010								
3333+93.50	-	3338+93.50	IH 43	560	560	--	--	175
3338+93.50	-	3342+53.50	IH 43	440	440	2	4	140
			TOTAL	**1,000**	**1,000**	**2**	**4**	**315**

LANDSCAPING QUANTITIES

STA.	TO	STA.	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	REMARKS
CATEGORY 0010								
3333+93.50	-	3342+53.50	IH 43	311	311	1.00	8	
			TOTAL	**311**	**311**	**1.00**	**8**	

3

TRAFFIC CONTROL QUANTITIES

LOCATION	643.0300 TRAFFIC CONTROL DRUMS EACH*	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH*	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH*	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH*	643.0800 TRAFFIC CONTROL ARROW BOARDS DAYS	643.0900 TRAFFIC CONTROL SIGN EACH*	643.0900 TRAFFIC CONTROL SIGN DAYS	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH*	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
CATEGORY 0010													
DAYS: 45													
ADVANCE WARNING													
PROJECT LIMITS, NB	5	--	--	--	--	--	--	--	20	400	3	21	ADVANCE WARNING
NIGHT CLOSURE IH 43	90	180	4	8	40	80	3	6	15	30	--	--	NIGHT CLOSURE
NIGHT CLOSURE STH 172	90	180	4	8	40	80	3	6	15	30	--	--	NIGHT CLOSURE
PROJECT TRAFFIC CONTROL													
3333+93.50 - 3342+53.50	9	405	--	--	4	180	1	45	5	225	--	--	
TOTALS		**765**		**16**		**340**		**57**		**685**		**21**	

* - FOR INFORMATION ONLY

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	APPROX. SERVICE PERIOD 2 DAYS	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	REMARKS
1	1/2 MILE SOUTH OF CTH MM, RIGHT SIDE OF ROAD		2	
2	1/2 MILE SOUTH OF CTH MM, LEFT SIDE OF ROAD		2	
3	1/2 MILE SOUTH OF CTH G (MAIN AVE), RIGHT SIDE OF ROAD		2	
4	1/2 MILE SOUTH OF CTH G (MAIN AVE), LEFT SIDE OF ROAD		2	
5	AT CTH M (LINEVILLE RD), RIGHT SIDE OF ROAD		2	
6	AT CTH M (LINEVILLE RD), LEFT SIDE OF ROAD		2	
TOTALS			**12**	

3

PAVEMENT MARKING QUANTITIES

STA.	TO	STA.	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0126 PAVEMENT MARKING EPOXY 8-INCH WHITE LF	646.0600 REMOVING PAVEMENT MARKINGS LF	647.0196 PAVEMENT MARKING ARROWS EPOXY TYPE 5 WHITE EACH	647.0955 REMOVING PAVEMENT MARKING ARROWS EACH	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH WHITE LF	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH BLACK LF
CATEGORY 0010										
3326+18.00	-	3333+93.50	STH 172 & IH 43	1300	1540	1000	1	2	3100	1740
3333+93.50	-	3336+43.50	IH 43	315	--	--	--	--	750	125
3336+43.50	-	3338+93.50	IH 43	315	--	--	1	--	750	125
3338+93.50	-	3342+53.50	IH 43	470	--	--	--	--	1080	180
3342+53.50	-	3343+93.50	IH 43	--	--	--	--	--	420	70
			TOTAL	**2,400**	**1,540**	**1,000**	**2**	**2**	**6,100**	**2,240**

3

CONSTRUCTION STAKING QUANTITIES

STA.	TO	STA.	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
CATEGORY 0010						
3333+93.50	-	3336+43.50	IH 43	250	250	250
33336+43.50	-	3338+93.50	IH 43	250	250	250
3338+93.50	-	3342+53.50	IH 43	360	360	360
			TOTAL	**860**	**860**	**860**

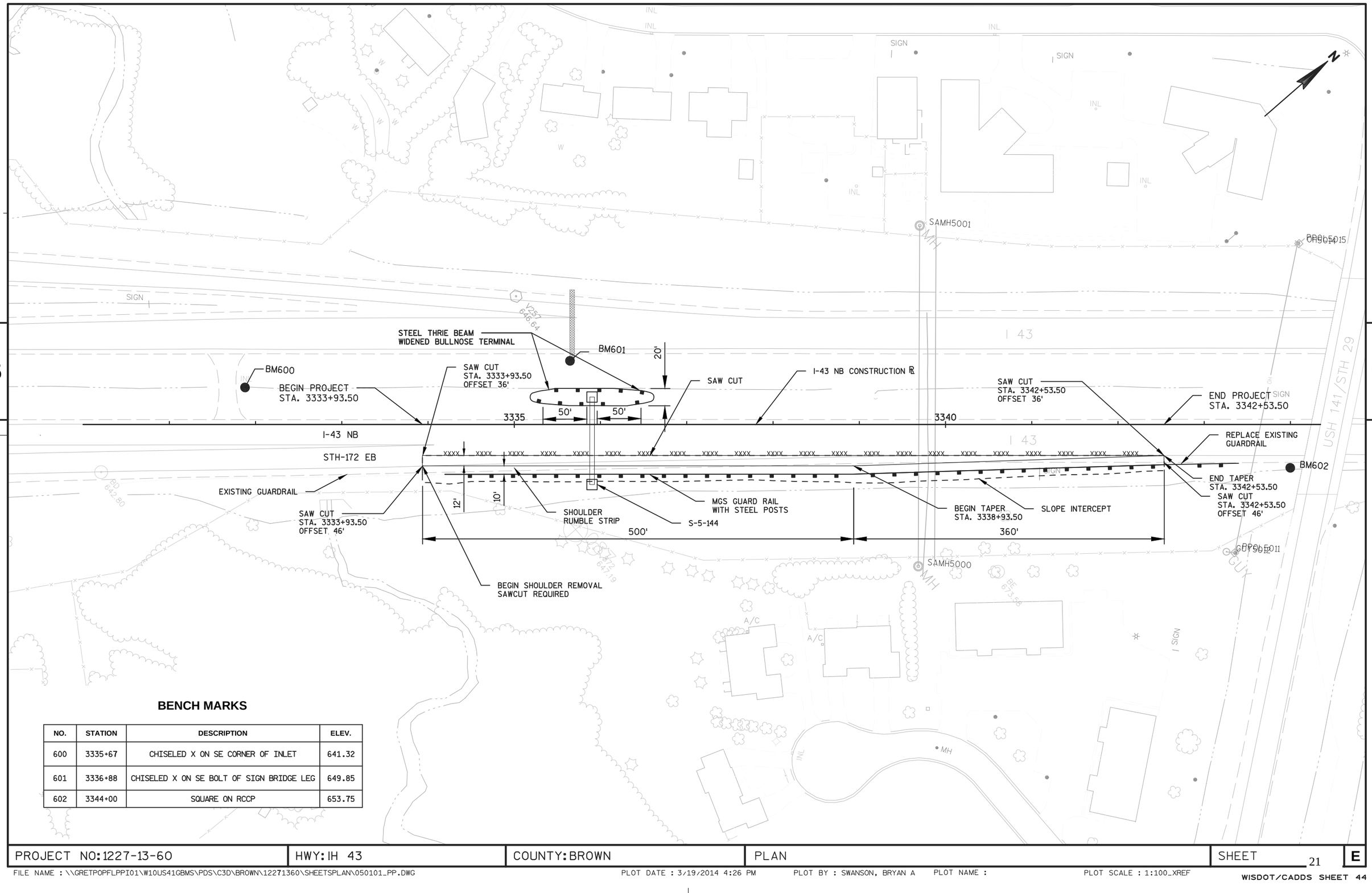
3

ERECTION & REMOVAL OF TYPE I & II SIGNS AND SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	W X H	637.1220 SIGNS TYPE I REFLECTIVE SH S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.2601 REMOVING SIGNS TYPE I EACH	REMARKS
100	STH 172 EB RAMP TO I-43 NB	W9-63	72" X 90"		45.00				1/4 MILE, MOUNT TO ALUMINUM STEEL I-BEAMS (W5X3.7) ANCHORED TO FACE OF PARAPET WALL OF ALLOUEZ AVE BRIDGE
101	I-43 NB, S. OF USH 141/STH 29 OVERPASS	R2-1				1	1		
102	"	E4-1A						2	ALSO REMOVE E1-5
103	"								
104	"	E7-3	396" X 162"	445.50					MOUNT TO SIGN BRIDGE S-05-144 OVER LEFT 3 LANES, FOLLOW SIGN PLATE A4-7 FOR INSTALLATION
105	"	E1-5	120" X 30"	25.00					EXIT 181, MOUNT ABOVE SIGN #107 IN UPPER RIGHT CORNER
106	"	W9-62	72" X 90"		45.00				MOUNT TO SIGN BRIDGE S-05-144 CENTERED OVER RIGHT LANE DROP, FOLLOW SIGN PLATE A4-7 FOR INSTALLATION
	PROJECT TOTALS			**470.50**	**90.00**	**1**	**1**	**2**	

PLAN SHEET PRODUCED

BY WisDOT - NE REGION



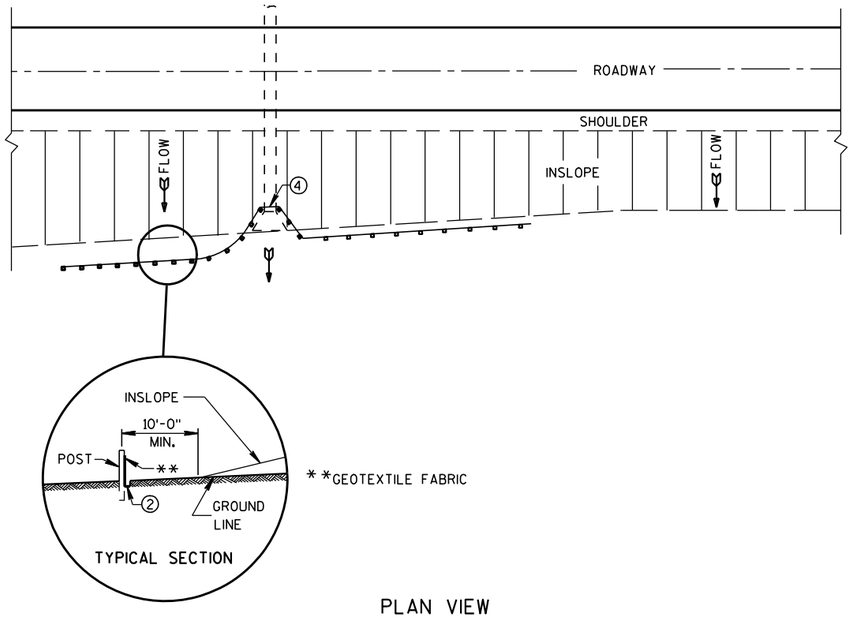
BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
600	3335+67	CHISELED X ON SE CORNER OF INLET	641.32
601	3336+88	CHISELED X ON SE BOLT OF SIGN BRIDGE LEG	649.85
602	3344+00	SQUARE ON RCCP	653.75

Standard Detail Drawing List

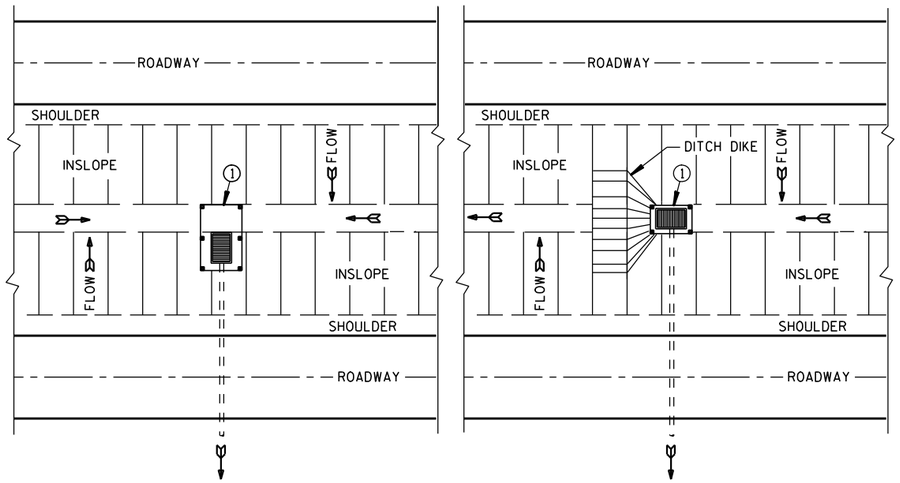
08E09-06	SILT FENCE
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C15-05A	CONCRETE BASE
13C15-05B	CONCRETE BASE
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B26-02A	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02B	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02C	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02D	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02E	STEEL THRIE BEAM BULLNOSE TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B47-01A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-01B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-01C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C10-10	PAVEMENT MARKINGS FOR DROP LANES FREEWAY/EXPRESSWAY
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-01B	LANE DROP PAVEMENT MARKING
15C31-01D	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D04-01	TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-02	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D29-03	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD

6



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



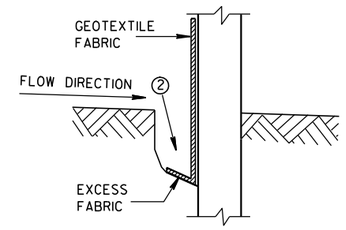
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

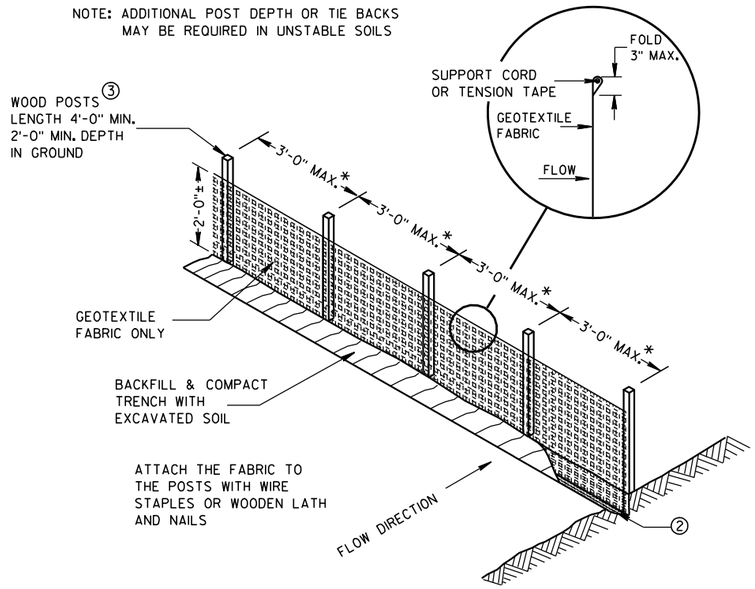
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

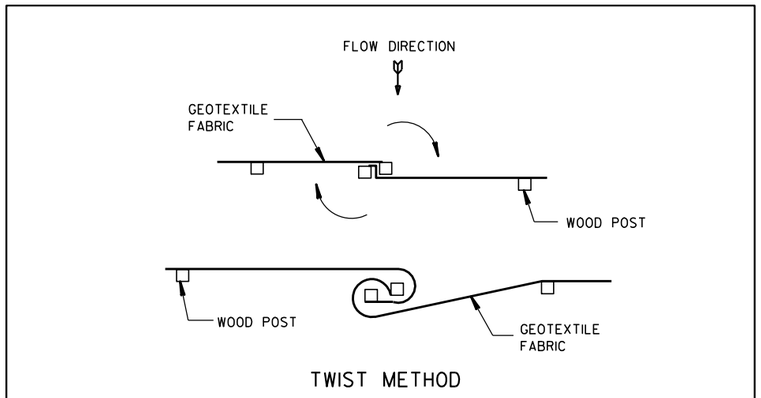
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



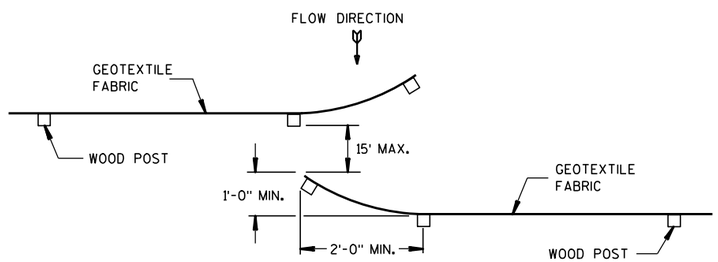
TRENCH DETAIL



SILT FENCE

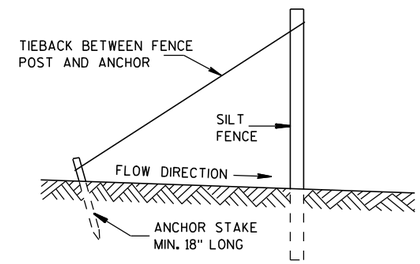


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

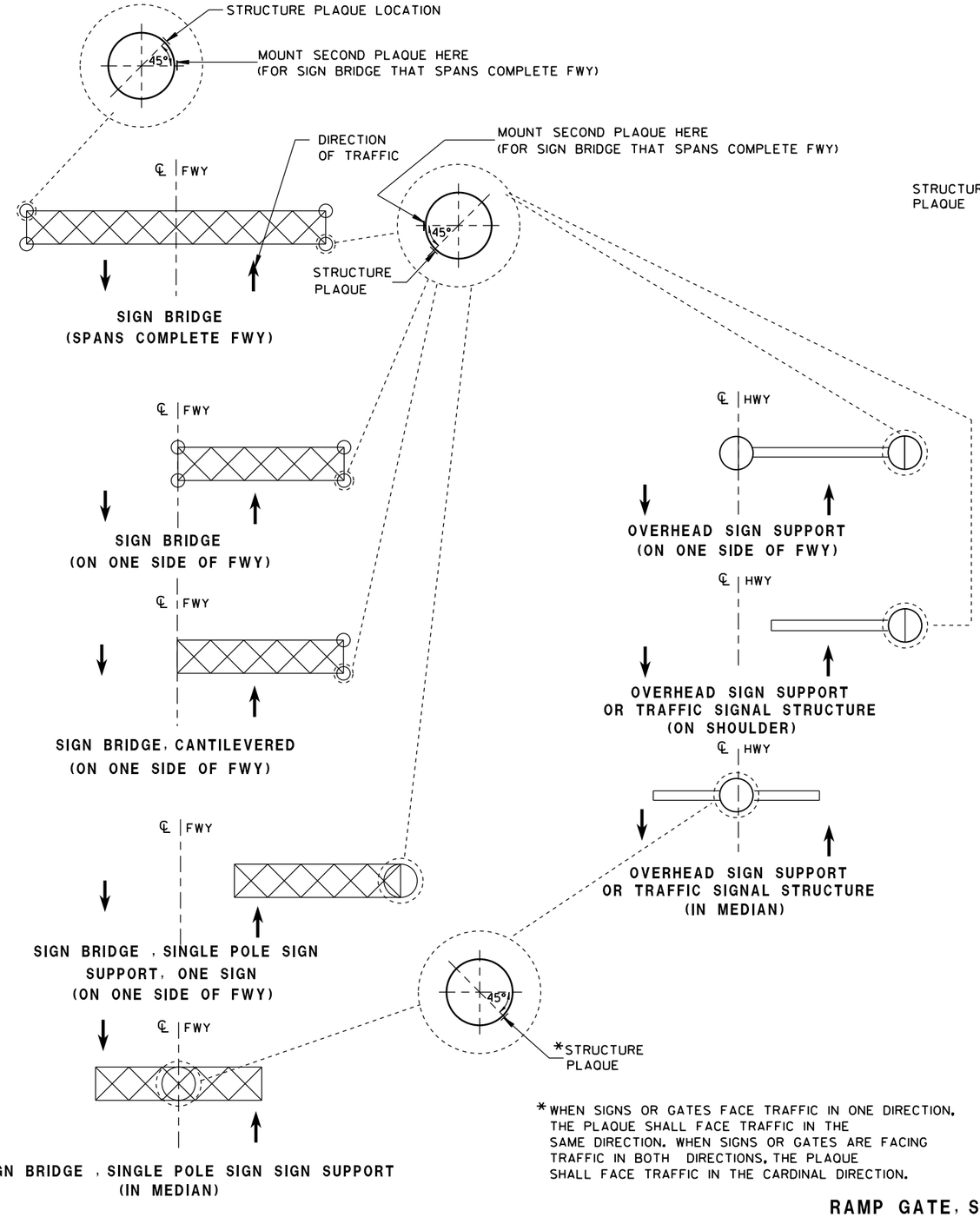
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

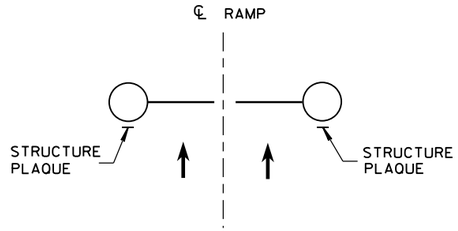
6

S.D.D. 8 E 9-6

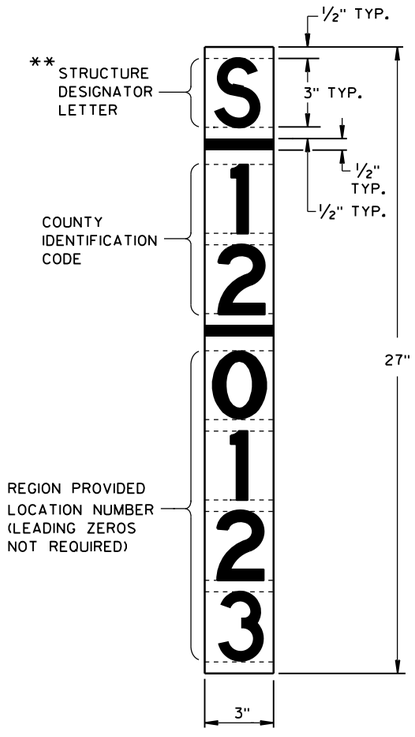


*WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.

LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES



**RAMP GATE
(ACROSS FWY ON-RAMP)**



RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

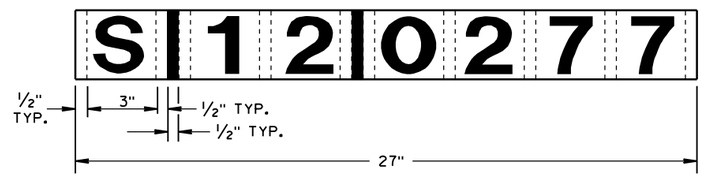
FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, ½" WIDE, SELF-ADHESIVE

CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.



IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

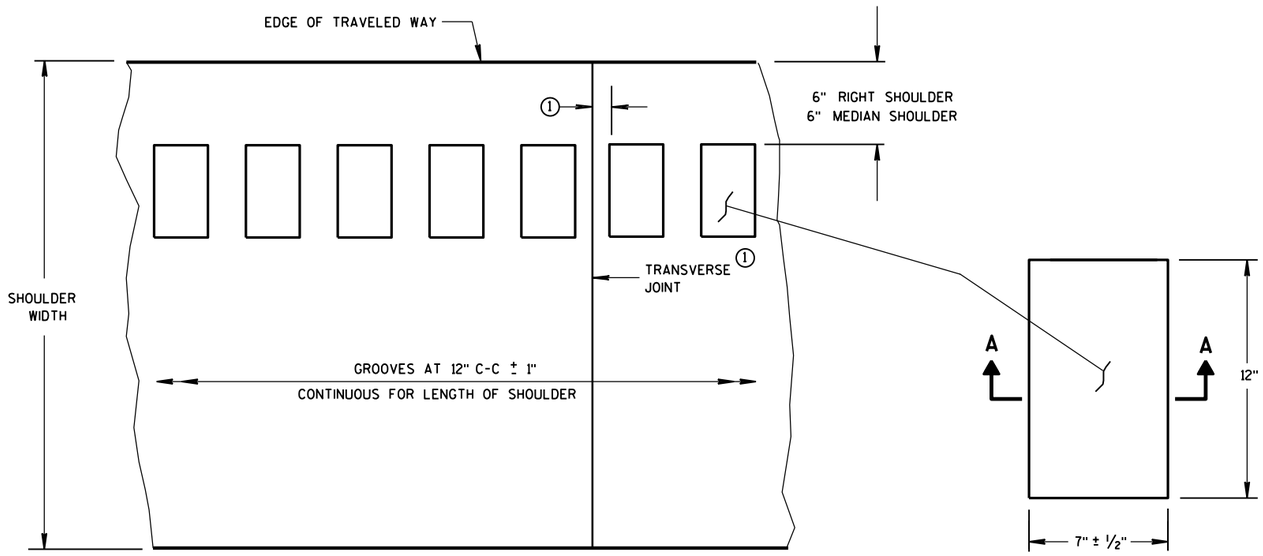
STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/4/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 12 A 4-3



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

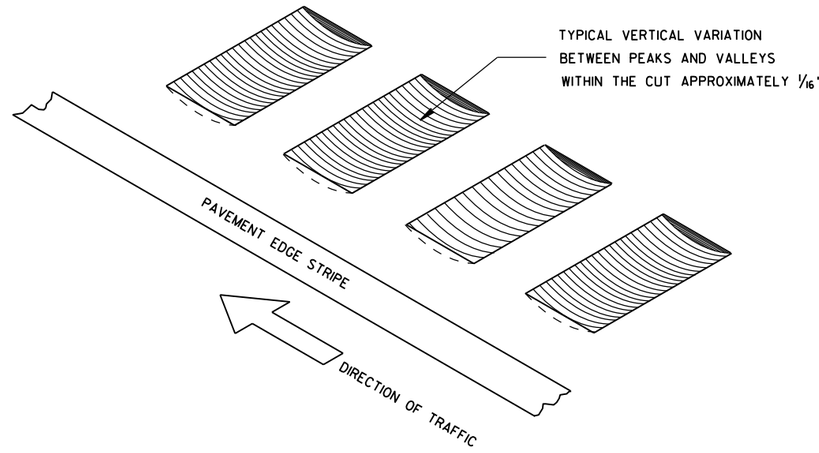
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

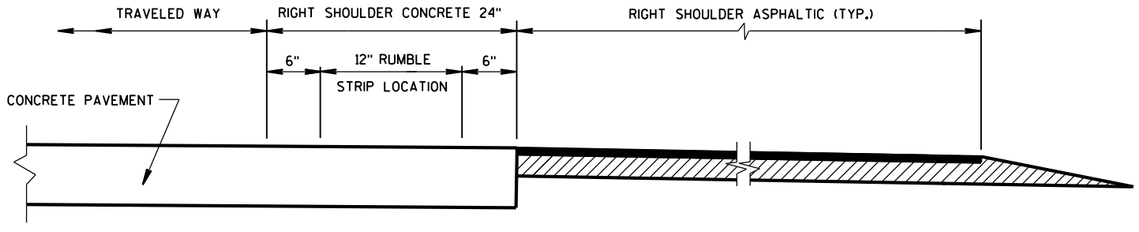
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

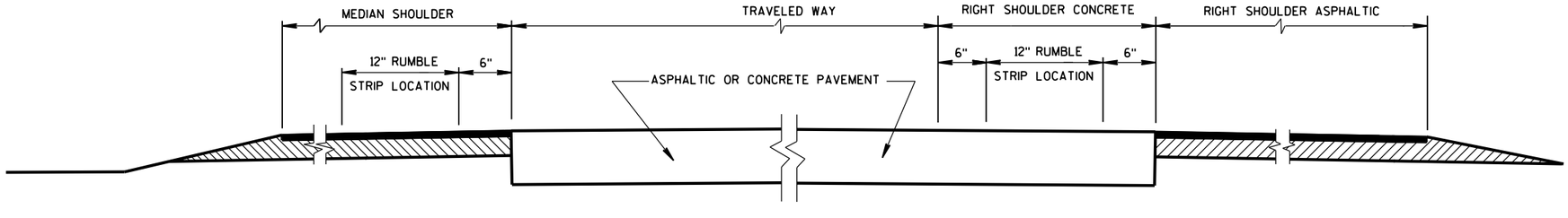
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



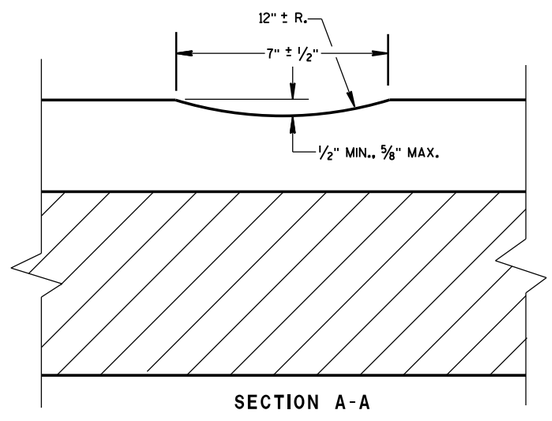
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

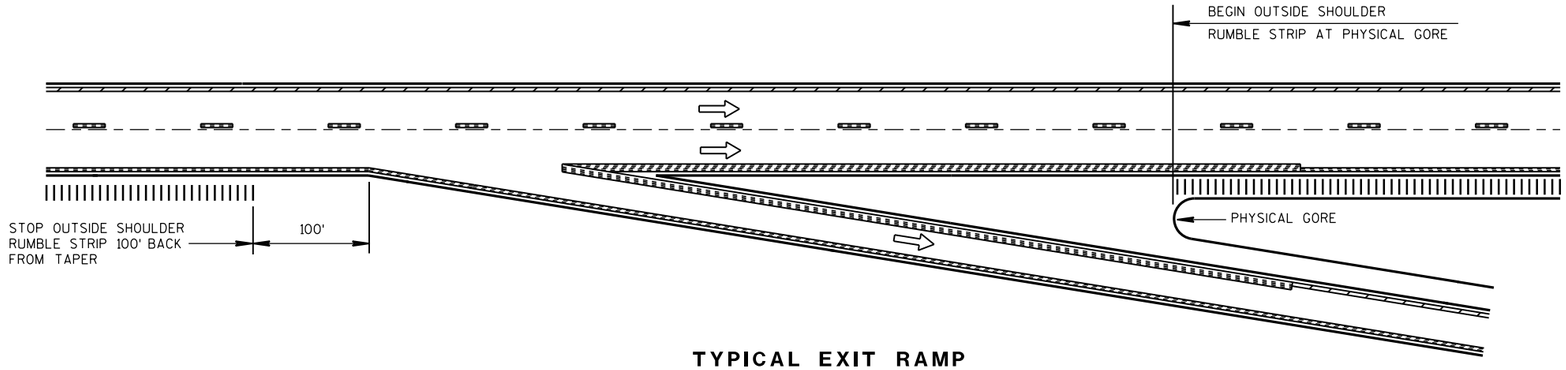
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 A 5-5a

6

S.D.D. 13 A 5-5a



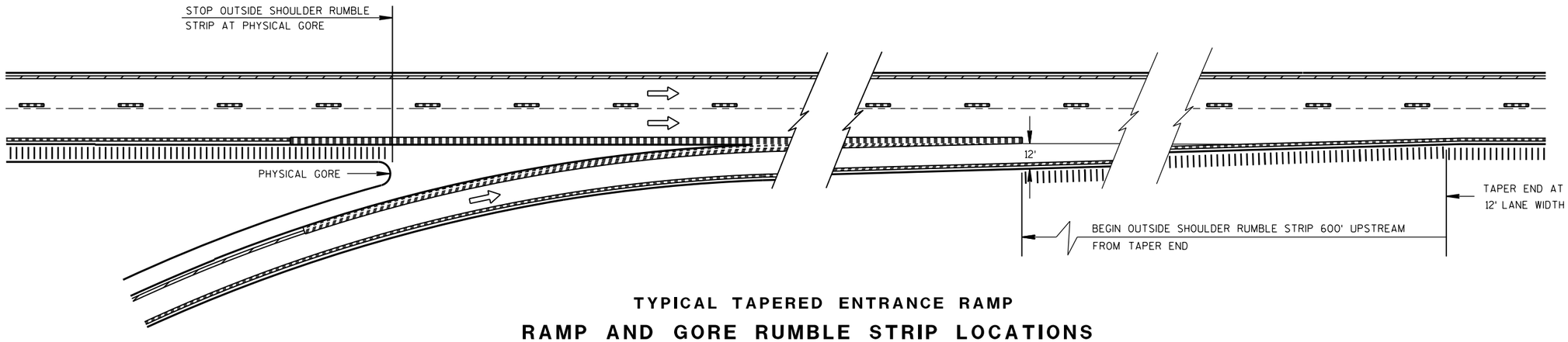
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

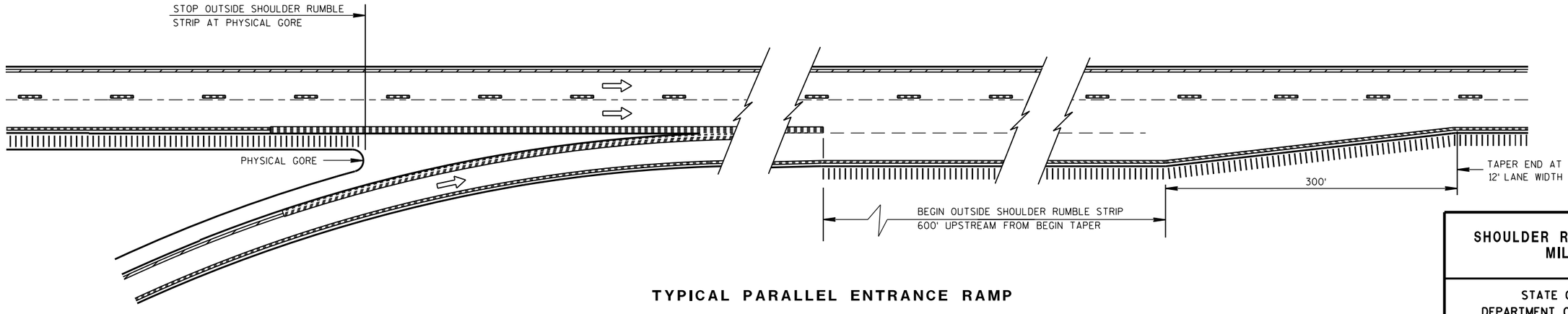
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

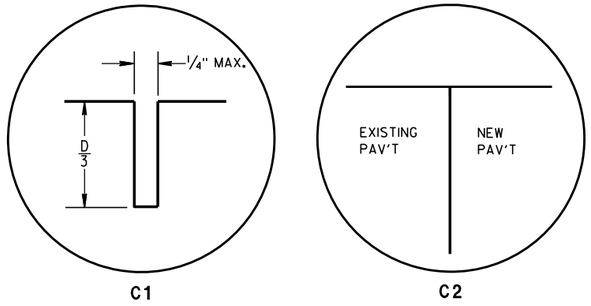
FHWA

6

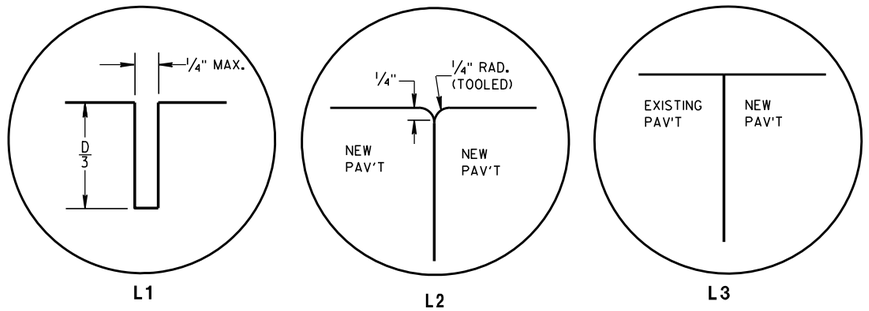
S.D.D. 13 A 5-5b

6

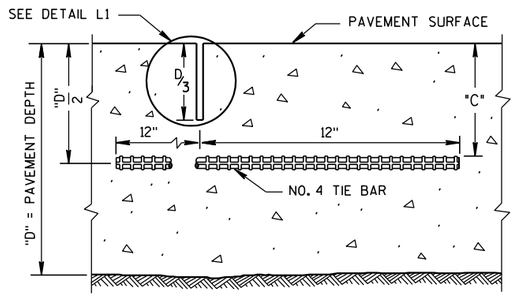
S.D.D. 13 A 5-5b



TRANSVERSE JOINTS

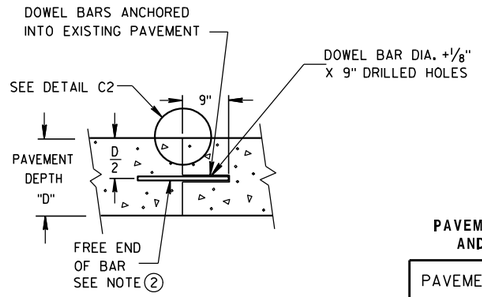


LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

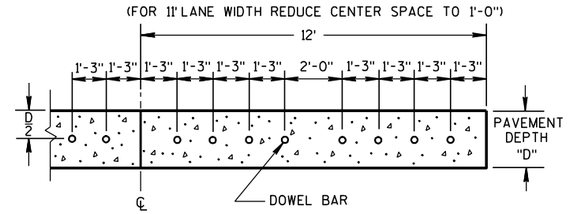
GENERAL NOTES

ANCHOR TIE BARS AND DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 24 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

(2) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION E-E

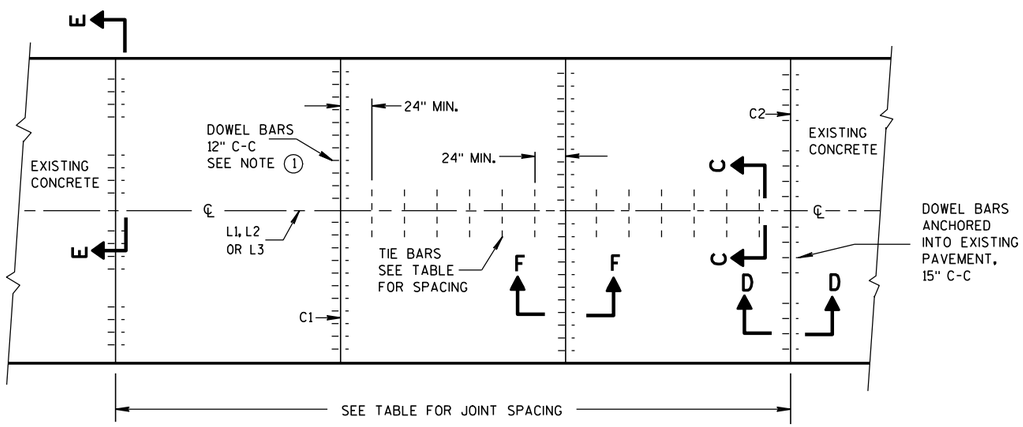
SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH "D"	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5½", 6, 6 ½"	NONE	12'
7, 7 ½"	1"	14'
8, 8 ½"	1 ¼"	15'
9, 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

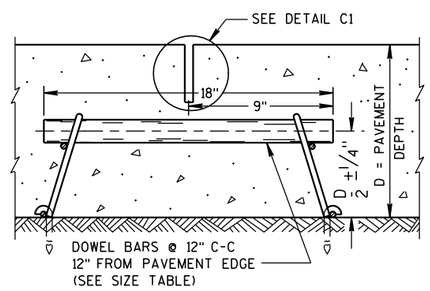
TIE BAR LOCATION TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING C-C	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 ½"	3"±½"	48"	42"
7, 7 ½"	3 ¼"±1"	45"	36"
8, 8 ½"	3 ¾"±1"	39"	30"
9, 9 ½"	4 ¼"±1"	33"	27"
10, 10 ½"	4 ¾"±1"	30"	24"
11, 11 ½"	5 ¼"±1"	27"	21"
12"	5 ¾"±1"	24"	21"



PLAN VIEW

CONCRETE BASE CONTRACTION JOINT LOCATIONS



SECTION F-F

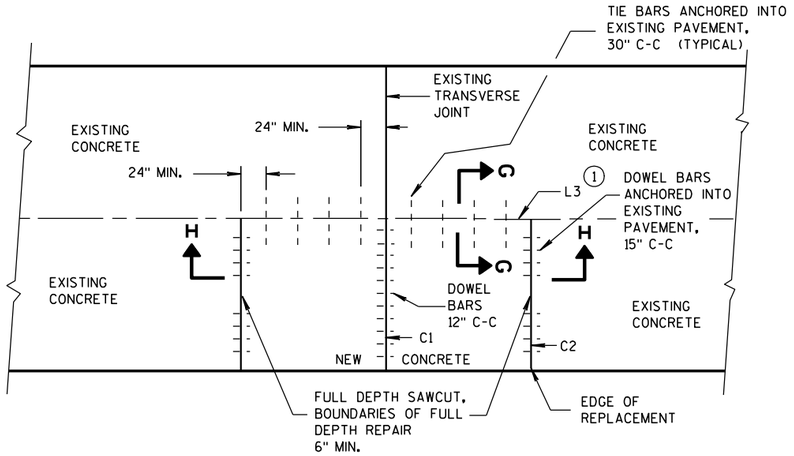
CONTRACTION JOINT

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 15-5a

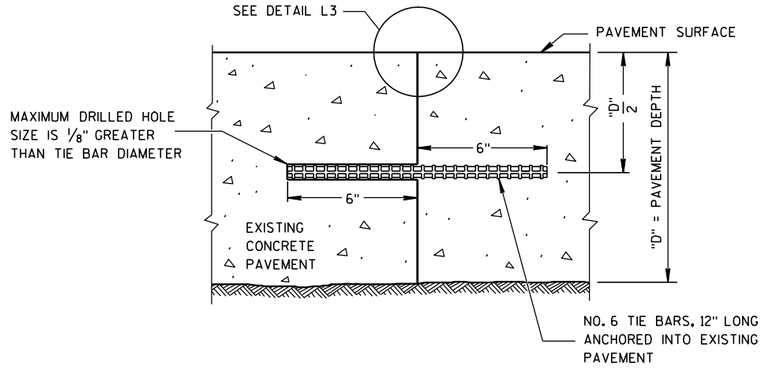


PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR

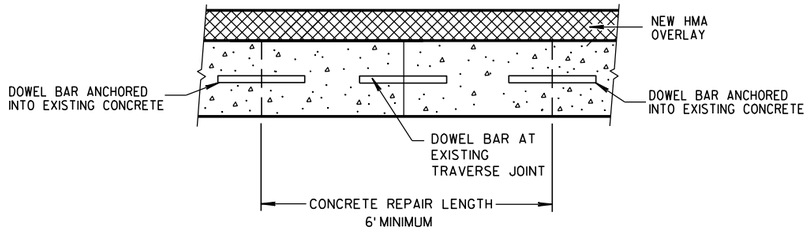
GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

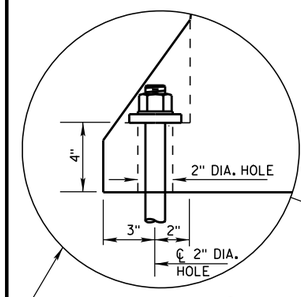
12-11-2009
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & D ENGINEER

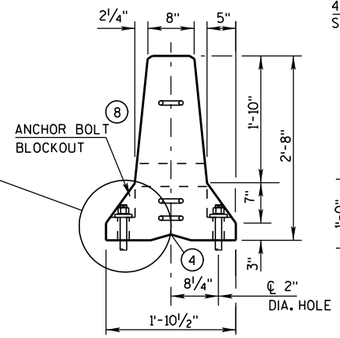
FHWA

6

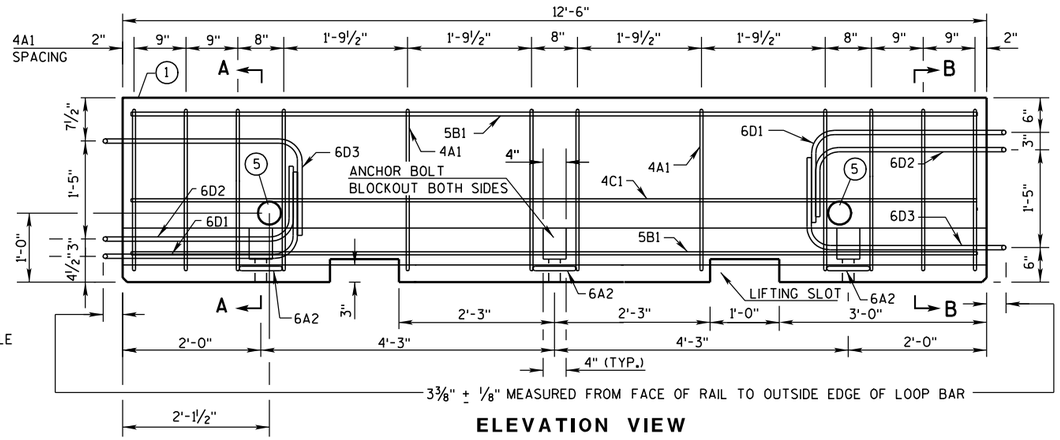
S.D.D. 13 C 15-5b



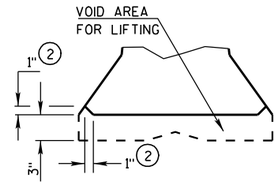
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



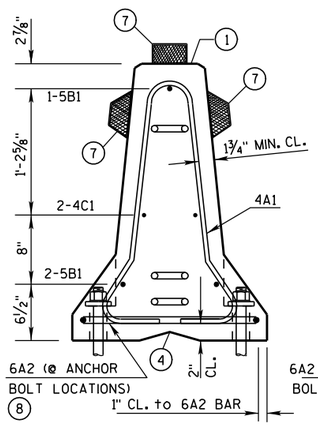
END VIEW



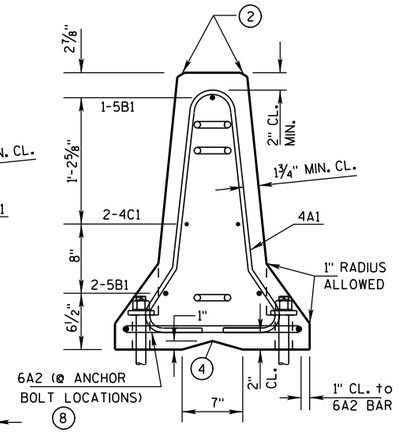
ELEVATION VIEW



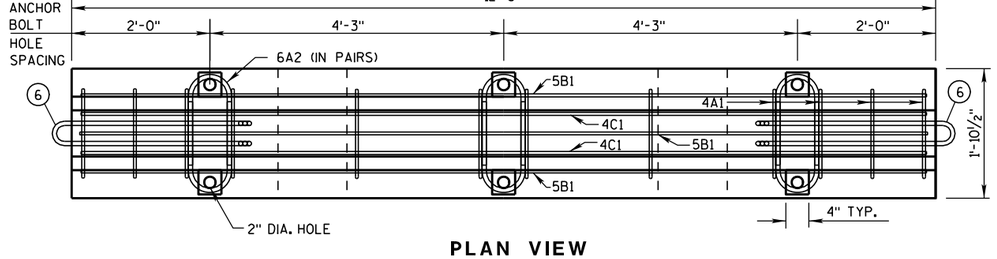
DETAIL "B" LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

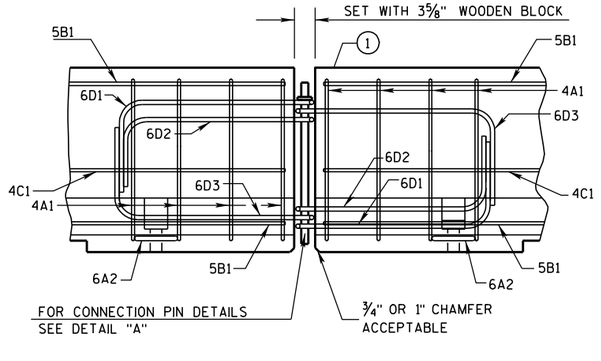


SECTION B-B
(STIRRUP PLACEMENT)

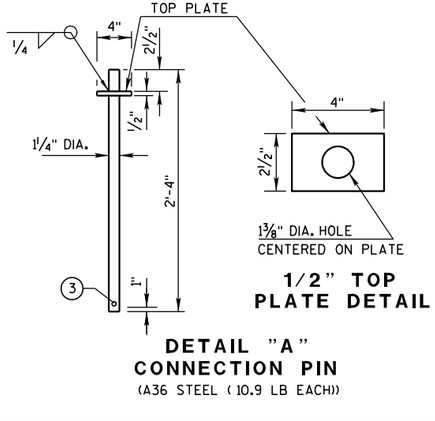


PLAN VIEW

DETAILS OF BARRIER SECTION

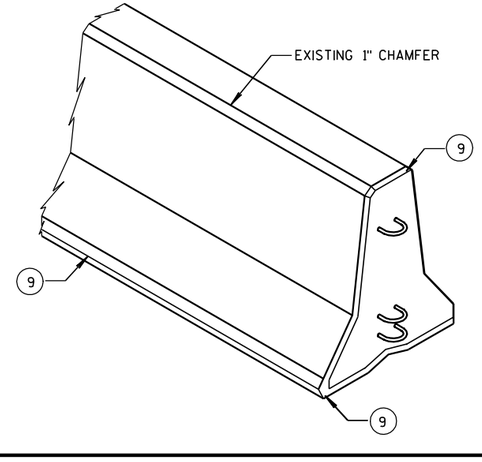


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A" CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WICBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

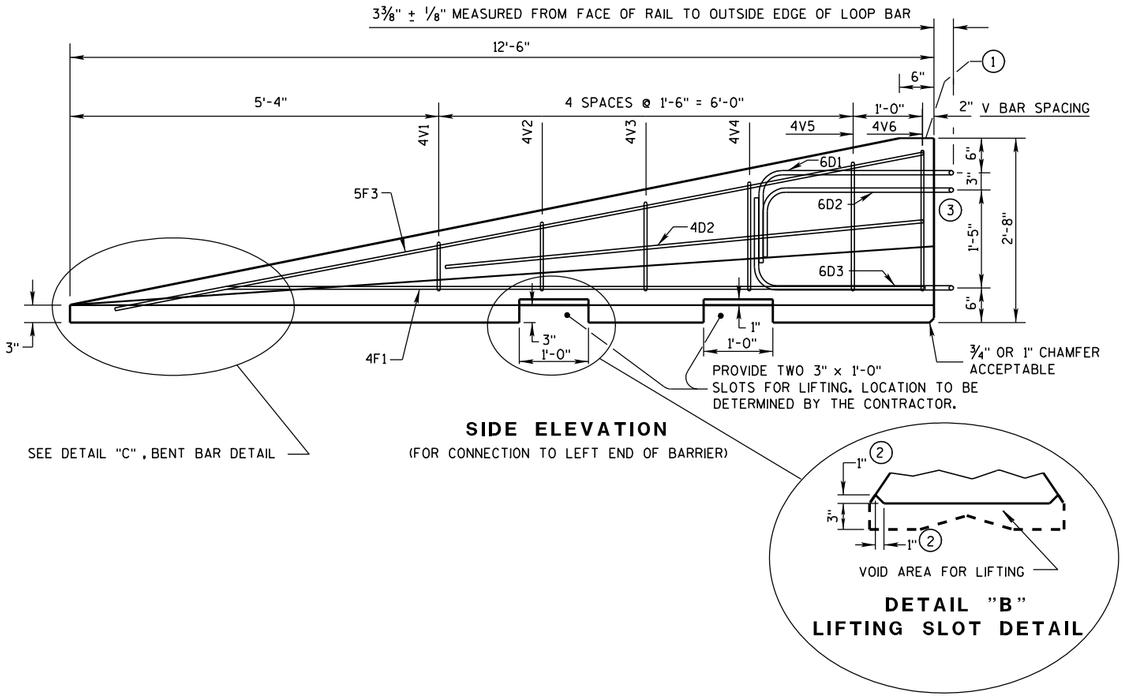
(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....T

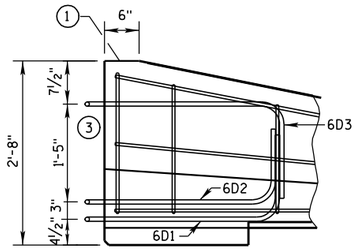
6
S.D.D. 14 B 7-13a



SIDE ELEVATION

(FOR CONNECTION TO LEFT END OF BARRIER)

DETAIL "B"
LIFTING SLOT DETAIL

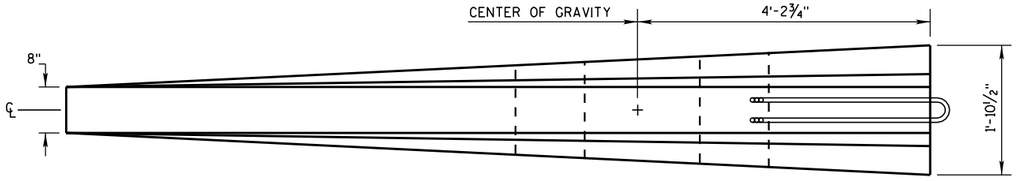


SIDE ELEVATION

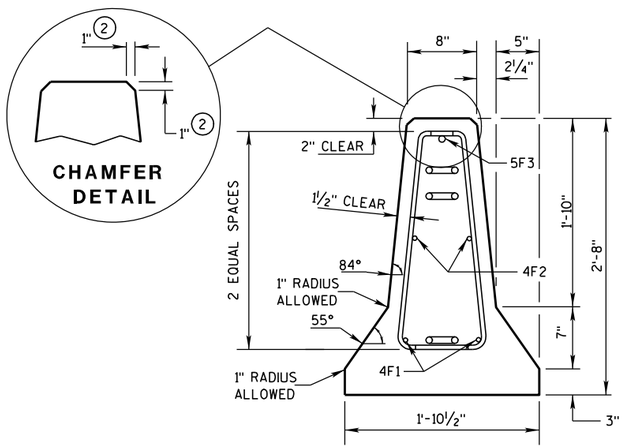
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

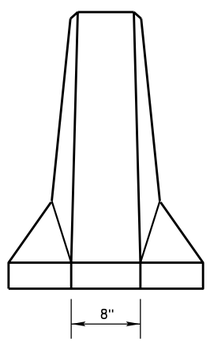
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



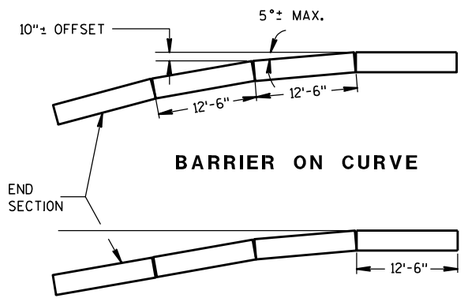
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 7-13b

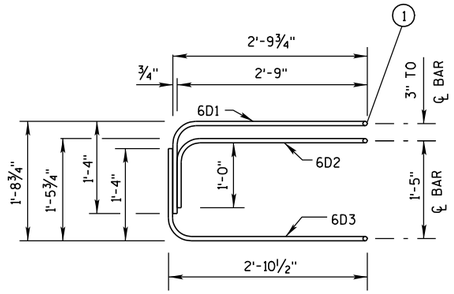
6

S.D.D. 14 B 7-13b

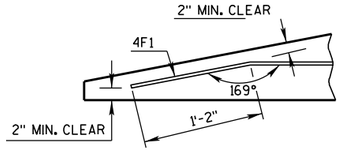
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

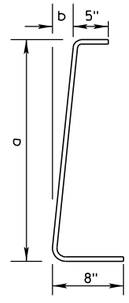
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

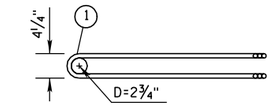
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

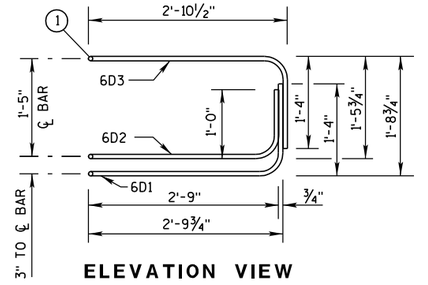
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

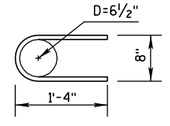
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



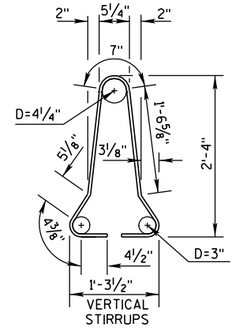
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



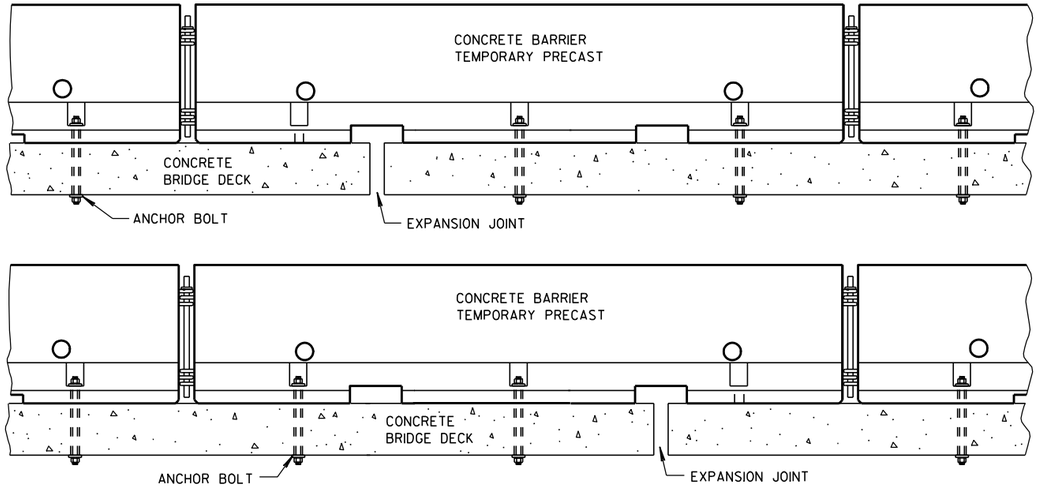
4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

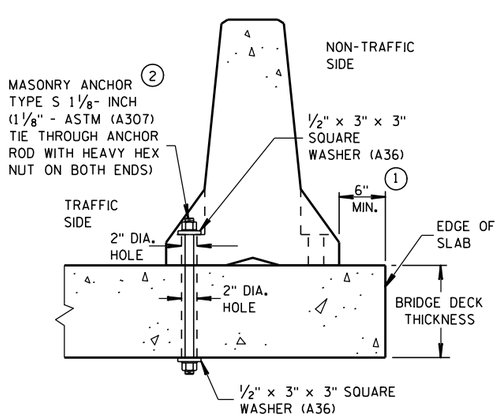
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 7-13c



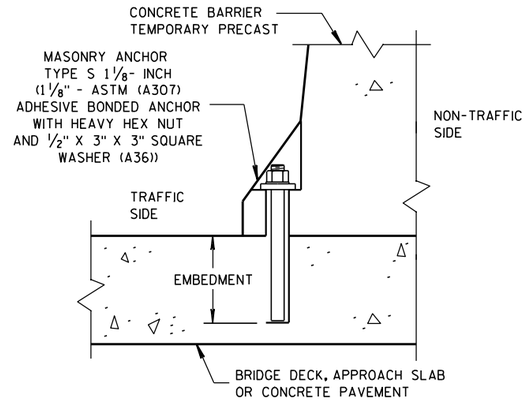
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

2

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

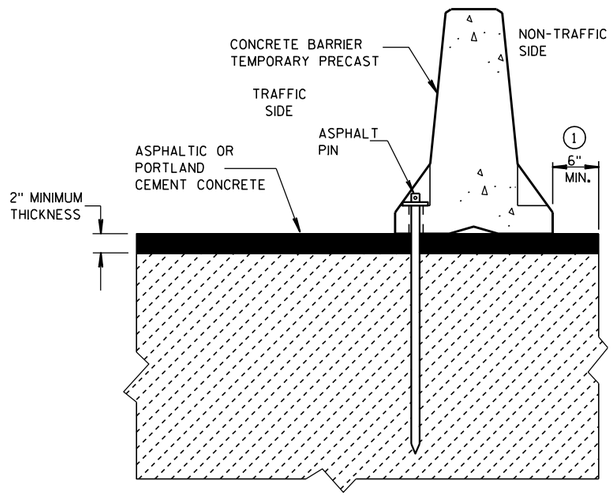
1. CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

2. ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

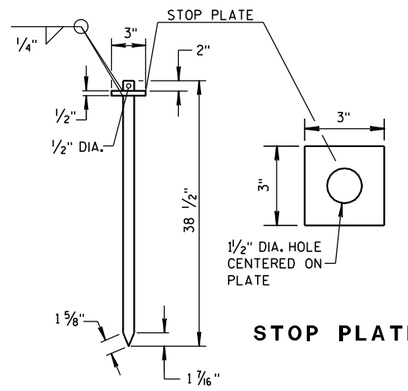
   WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

   UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALLANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

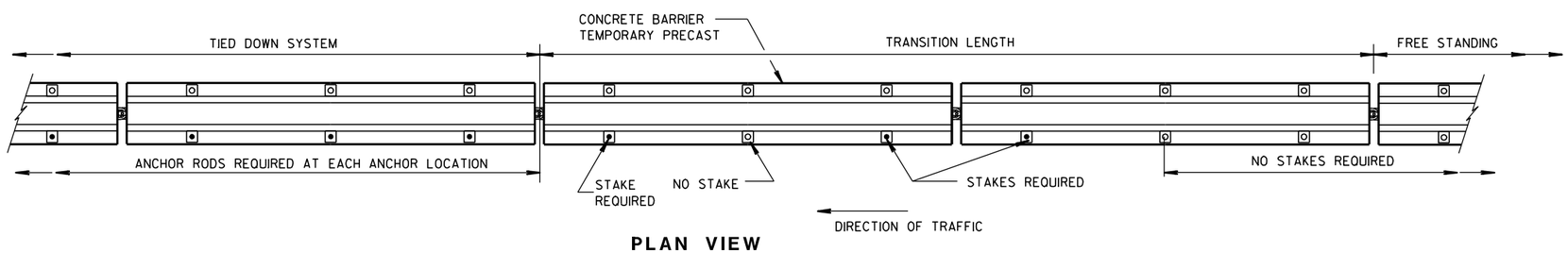
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



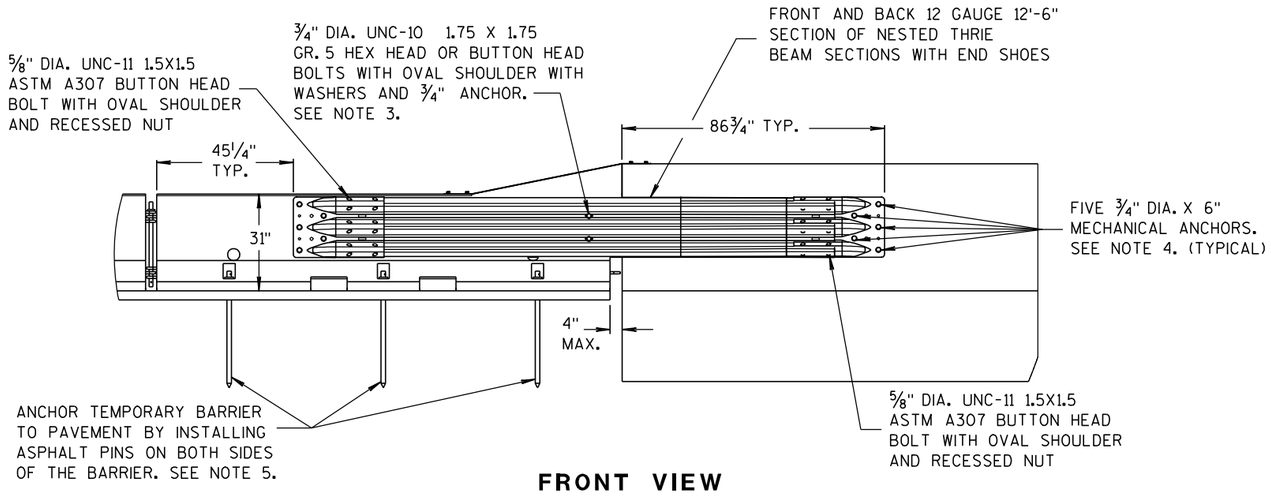
PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

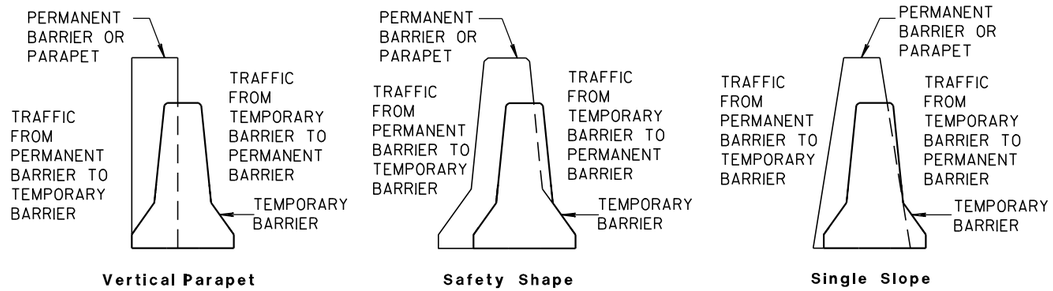
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

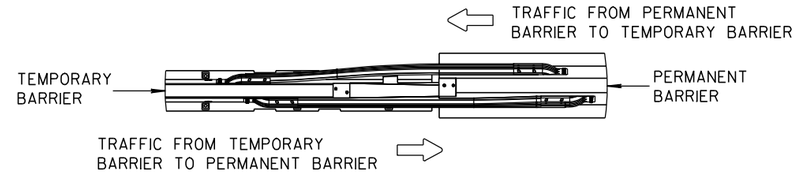


FRONT VIEW

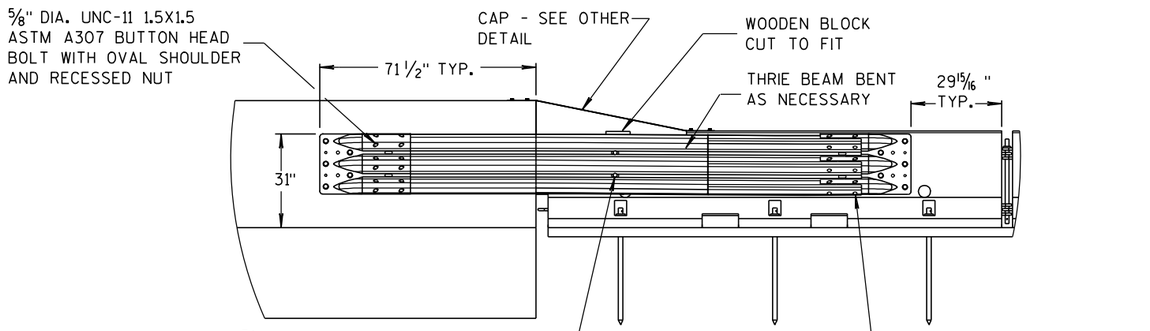
NOTES

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

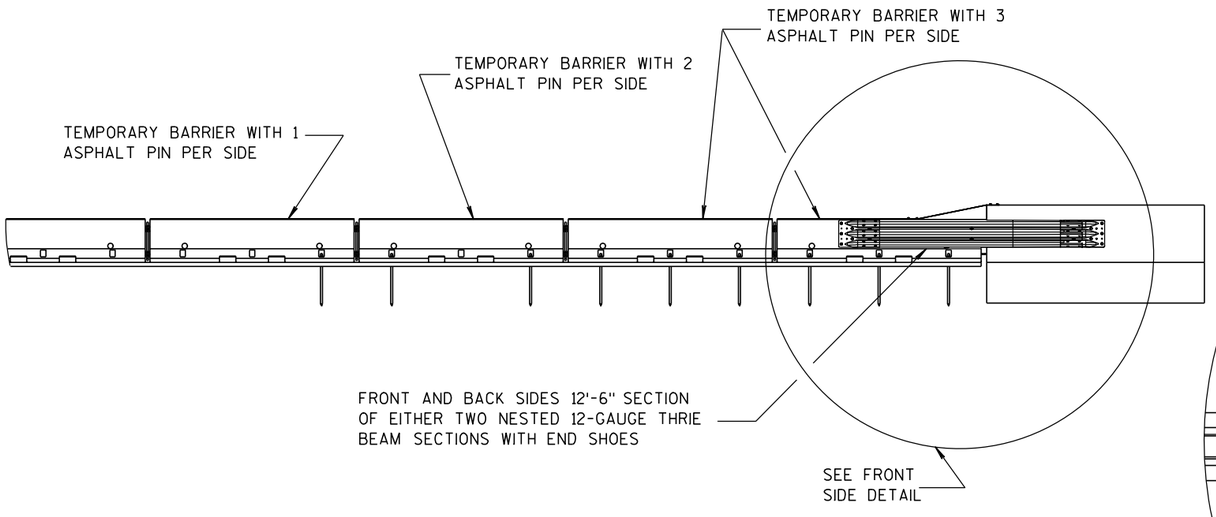




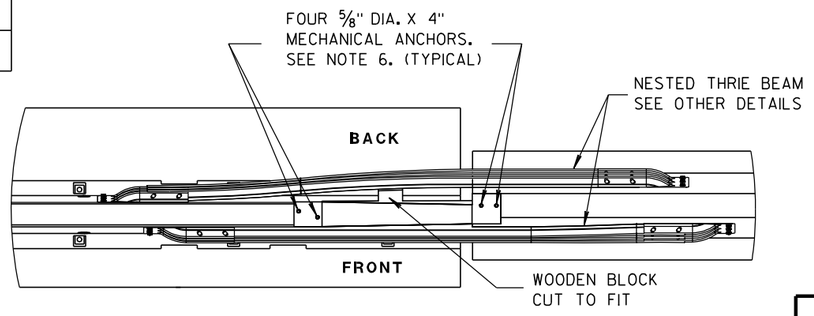
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



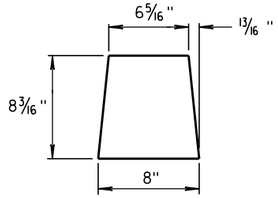
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

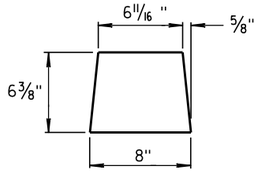
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

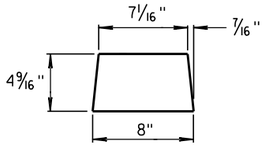
6
S.D.D. 14 B 7-13e



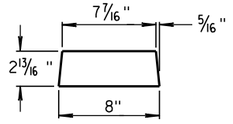
GUSSET 1



GUSSET 2

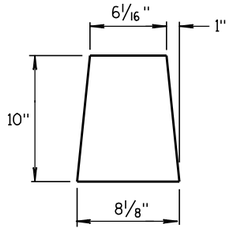


GUSSET 3

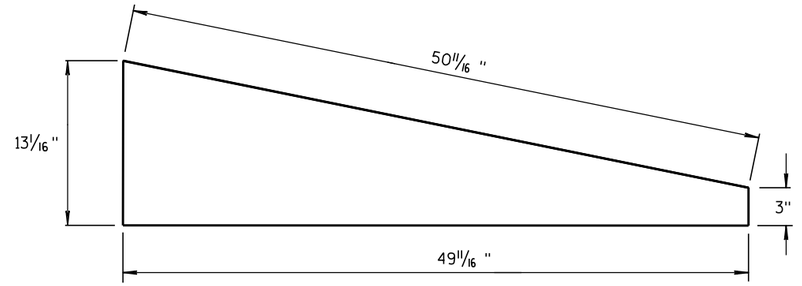


GUSSET 4

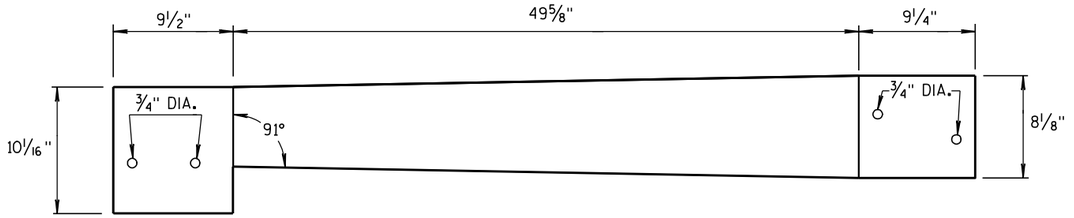
GUSSETS

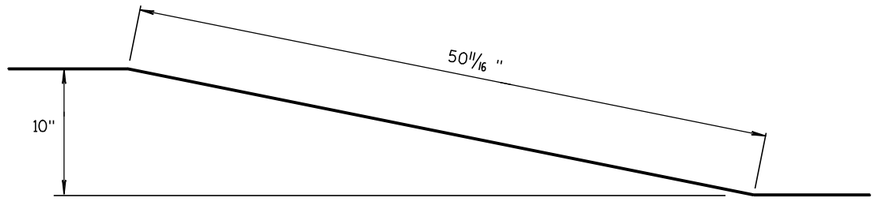


END PLATE

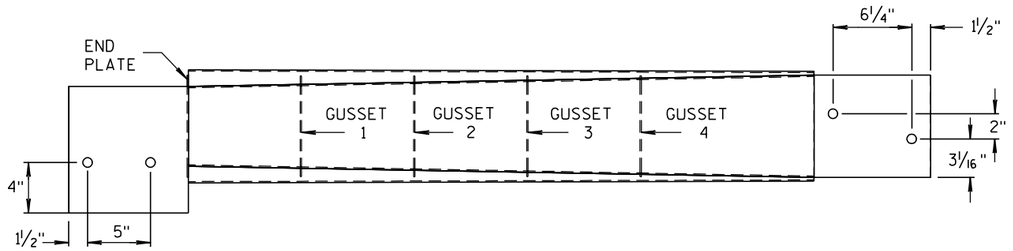


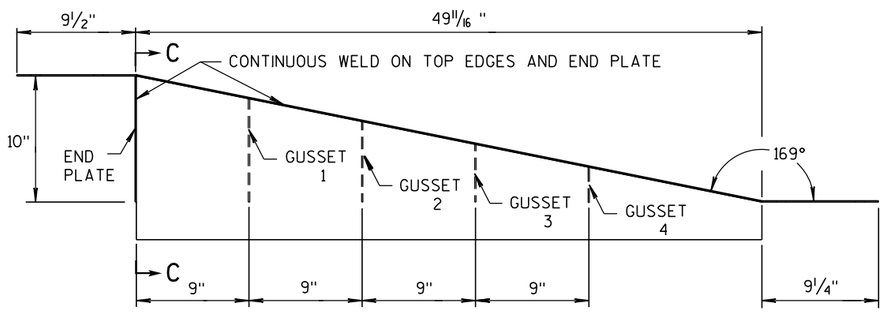
SIDE PLATE

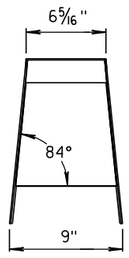




TOP PLATE







SECTION C-C

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

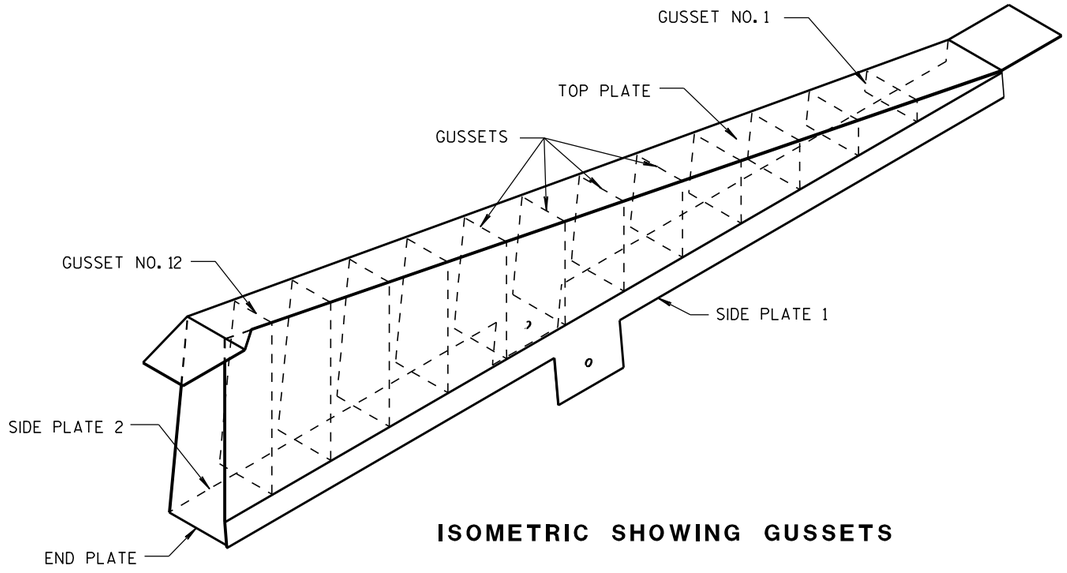
SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

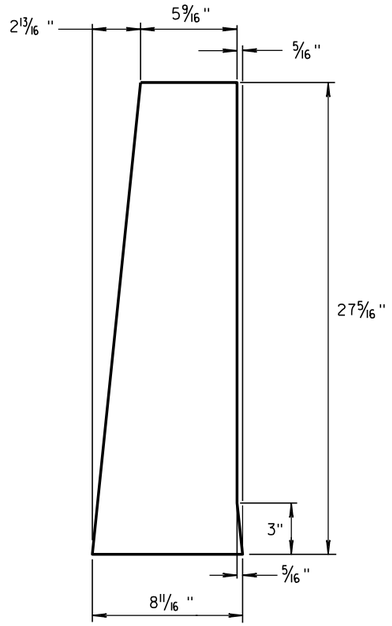
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 7-13f

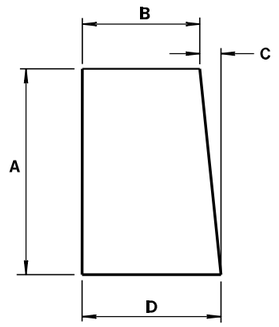


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

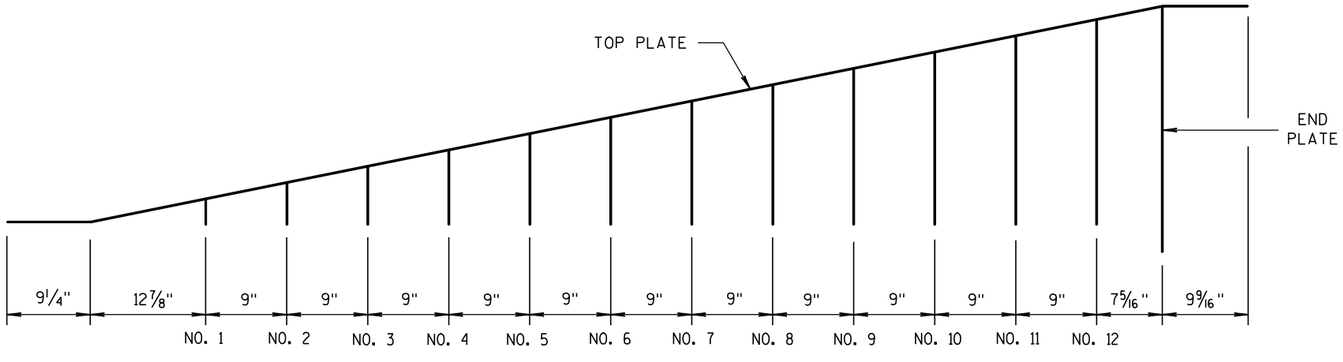
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

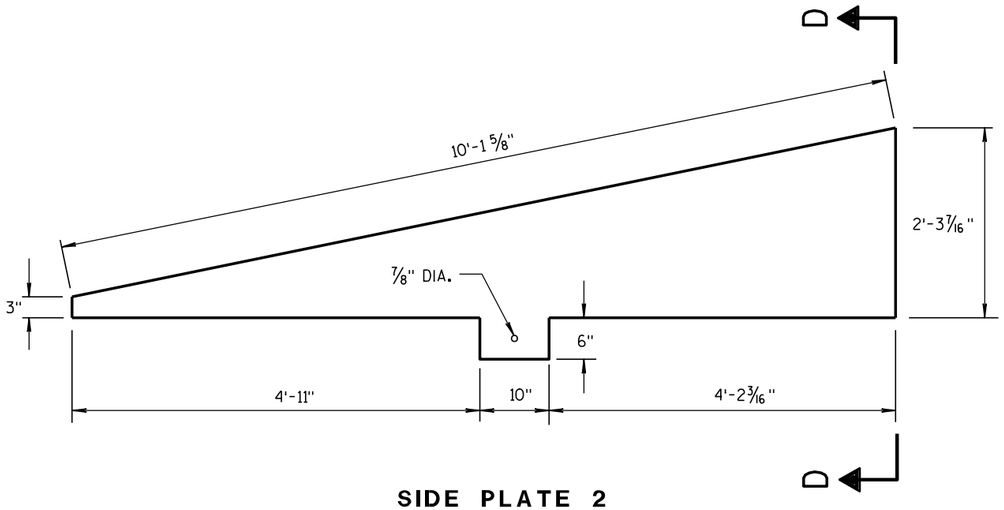
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

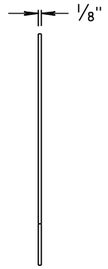
S.D.D. 14 B 7-13g

6

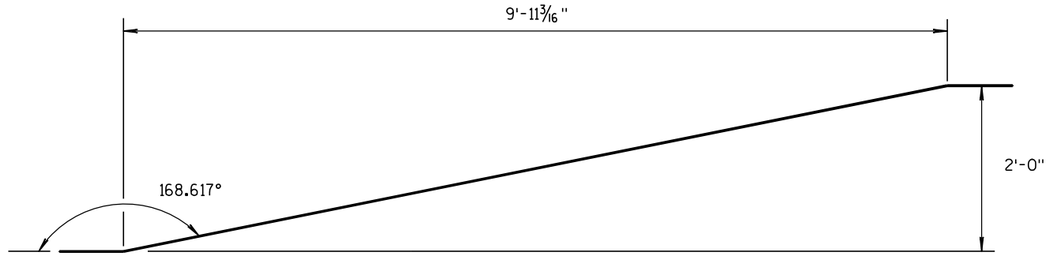
S.D.D. 14 B 7-13g



SIDE PLATE 2

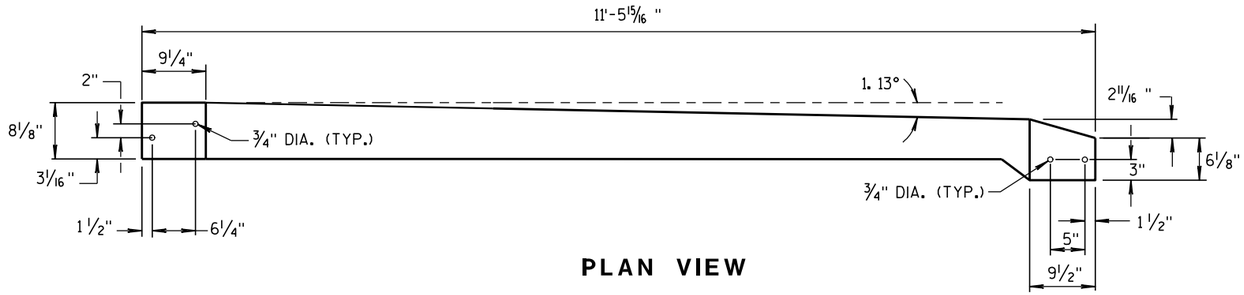


END VIEW



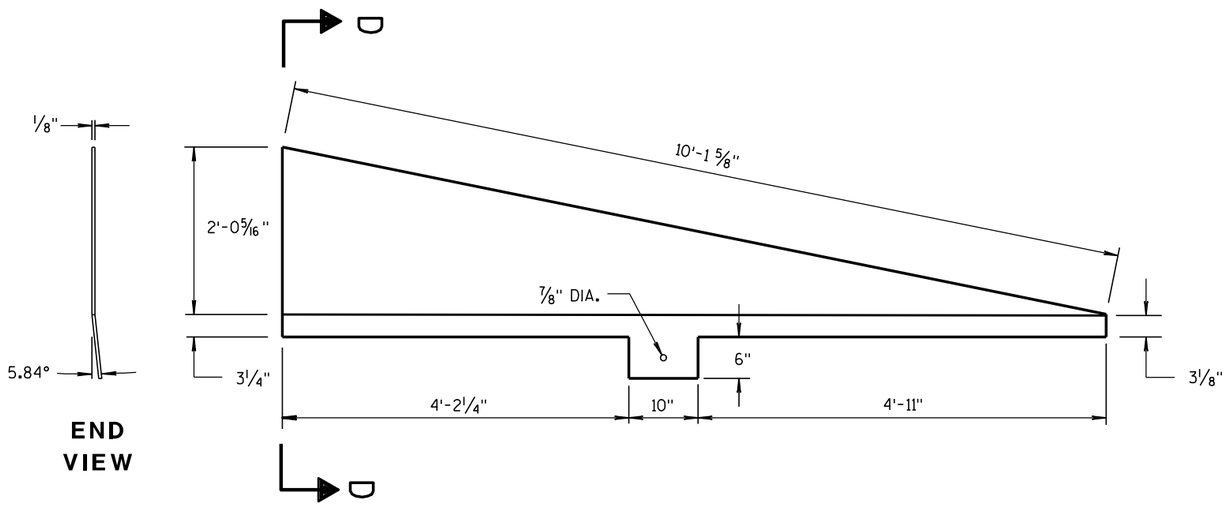
SIDE VIEW

TOP PLATE



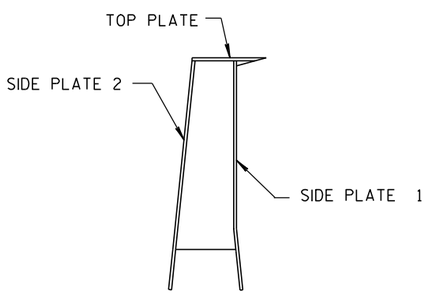
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

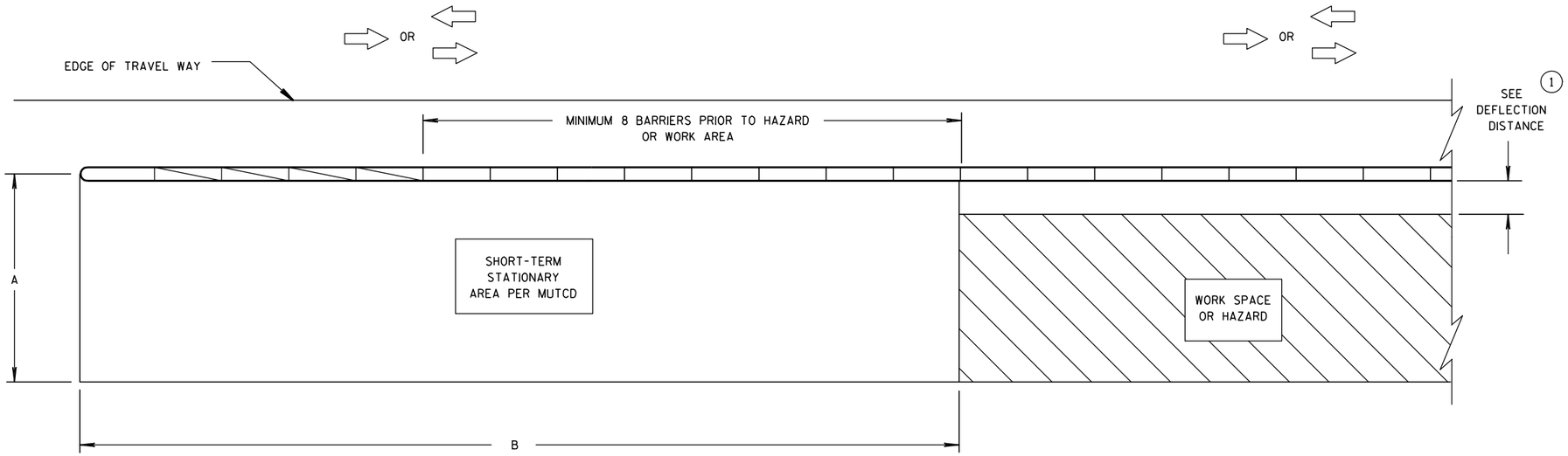
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

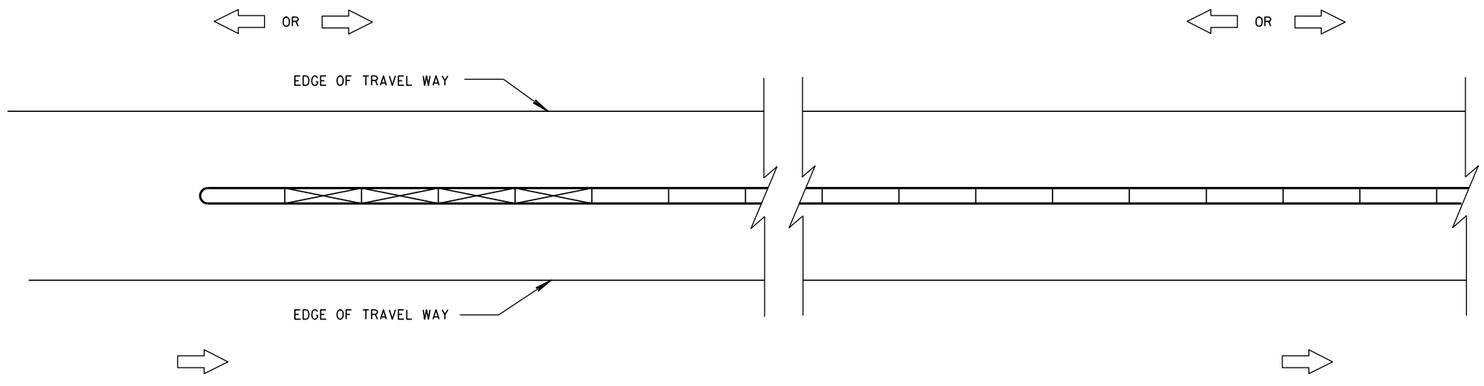
APPROVED
8/31/2012 DATE
/S/ Jerry H. ---- ROADWAY STANDARDS ENGINEER
ENT
FHWA

6

S.D.D. 14 B 7-13h



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

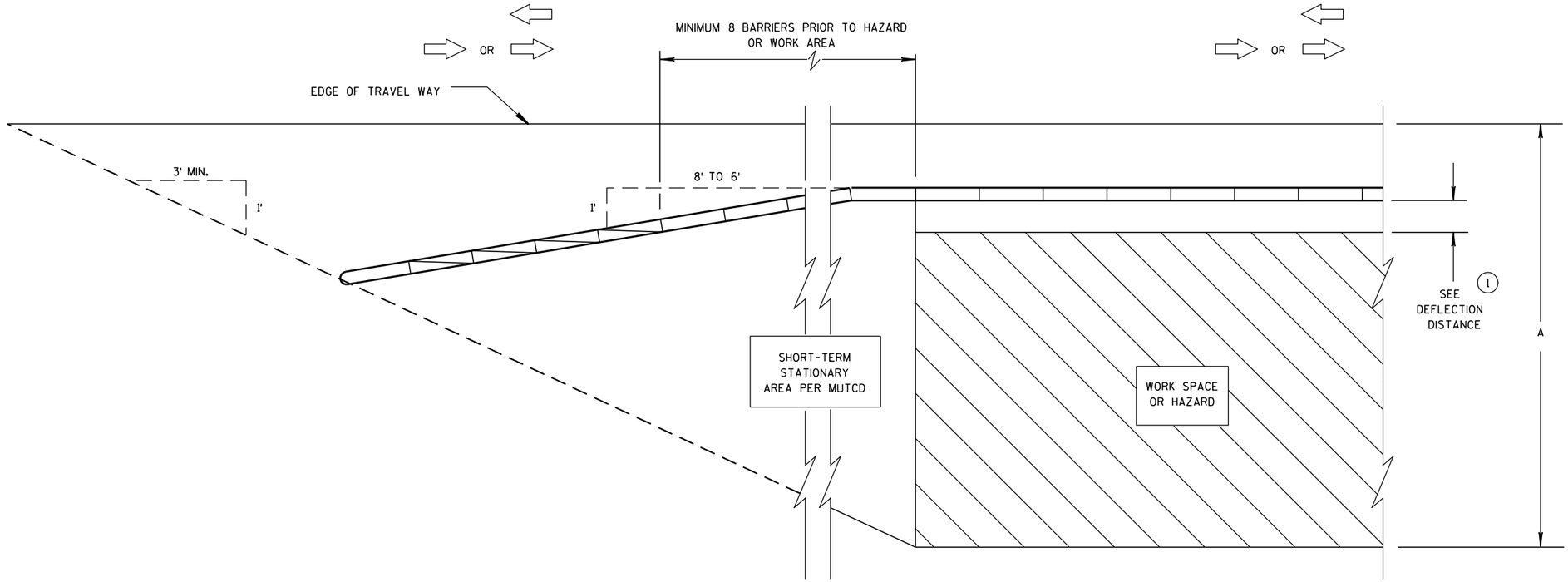
(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

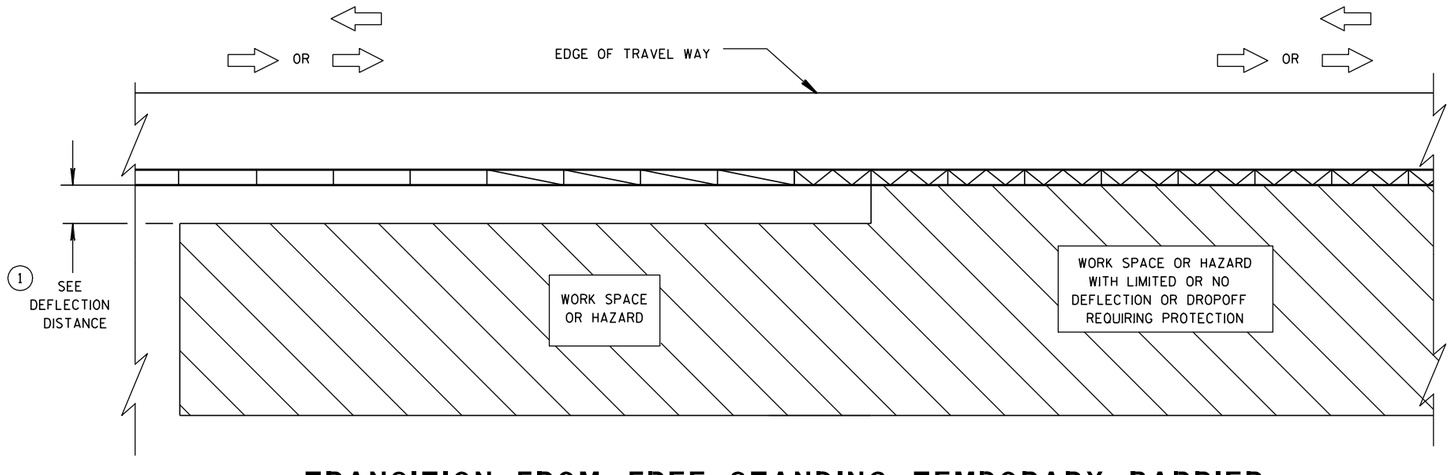
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

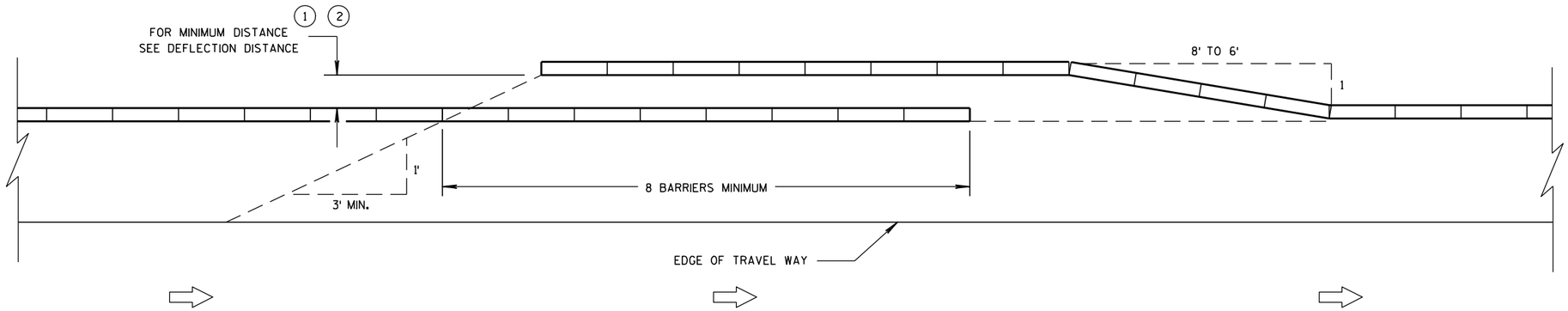
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

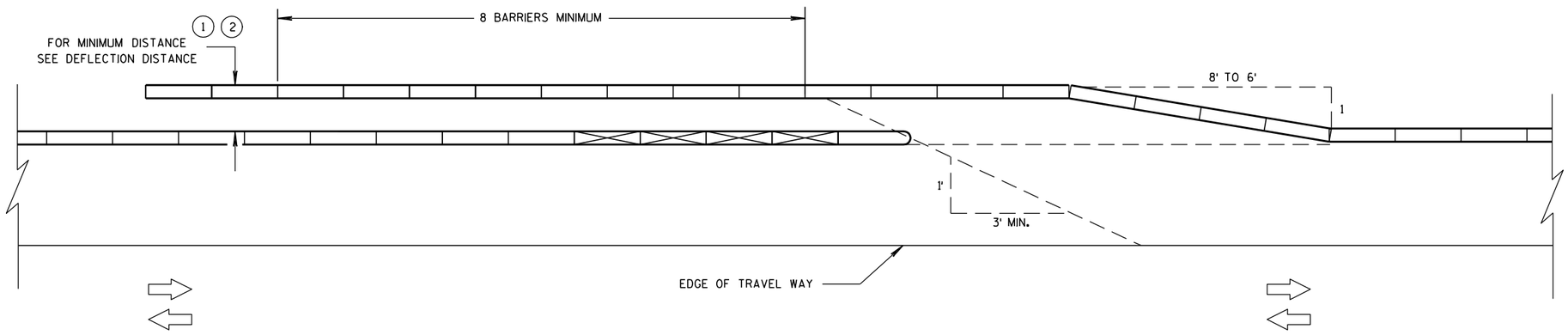
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

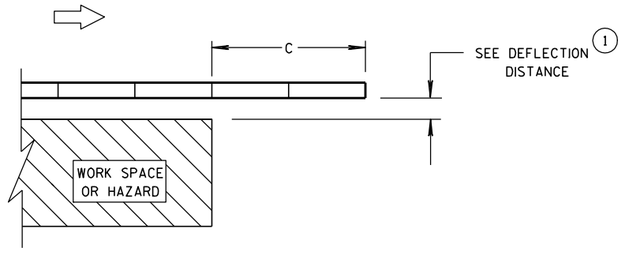
S.D.D. 14 B 8-1b



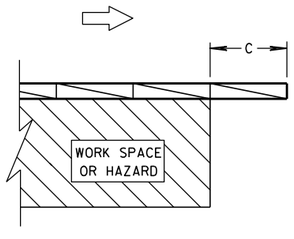
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

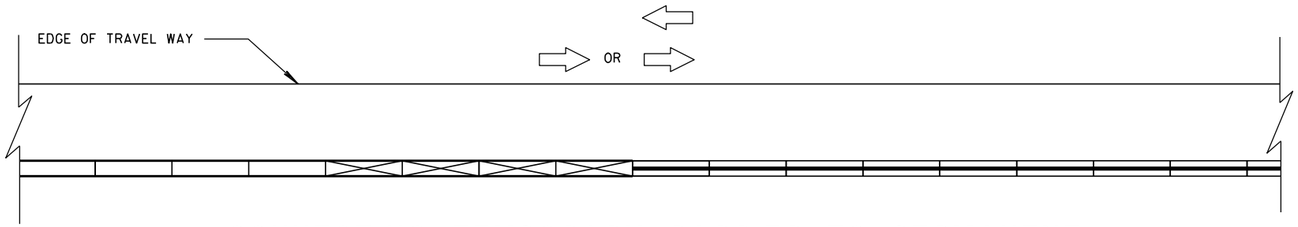
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

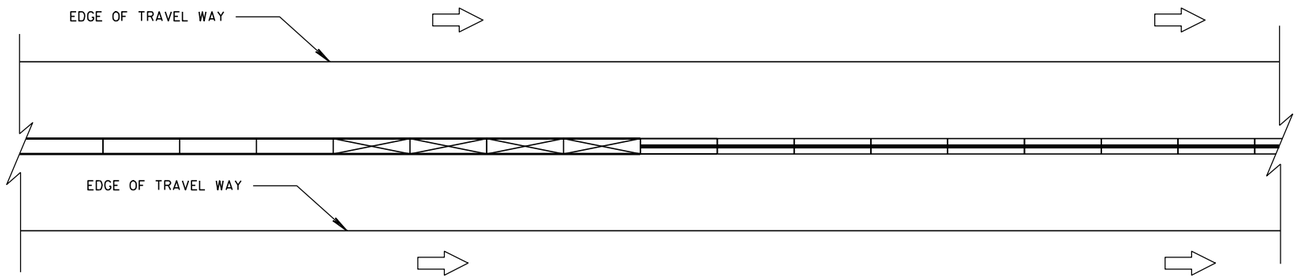
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1c



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

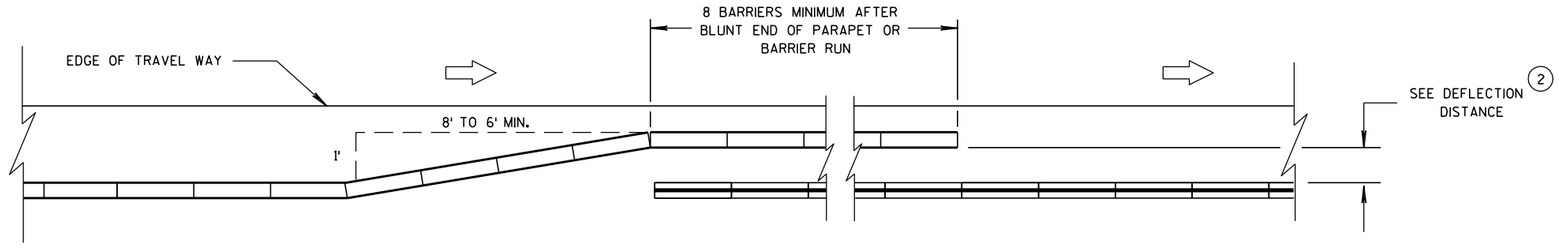
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

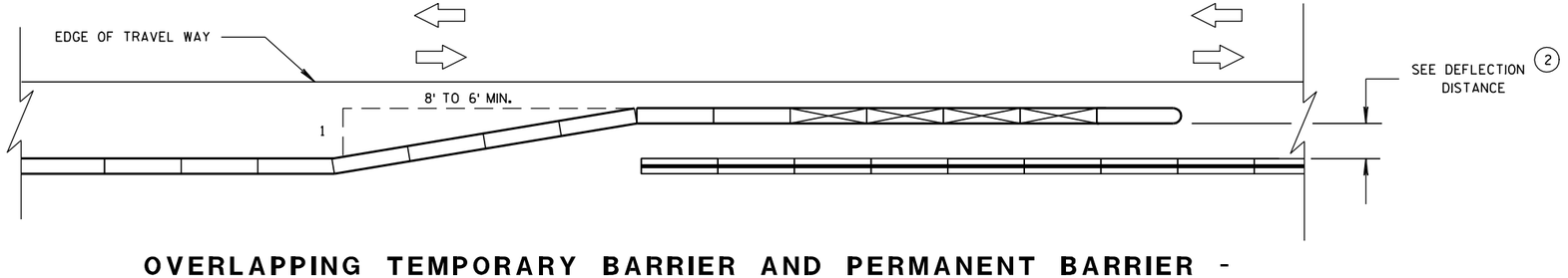
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....T

6

S.D.D. 14 B 8-1d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

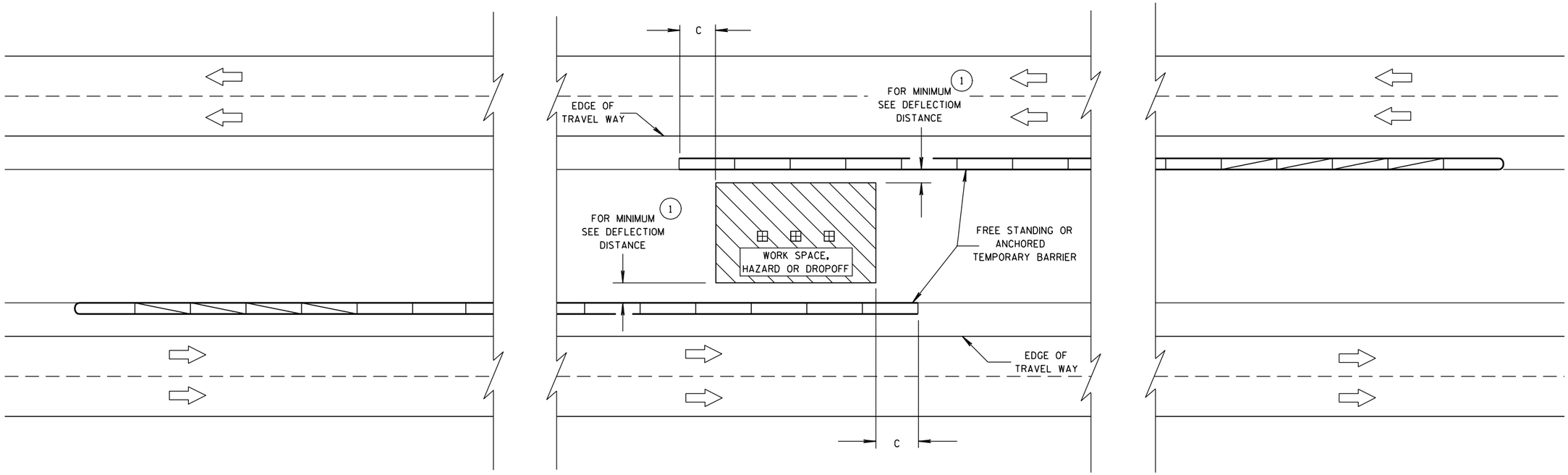
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

41

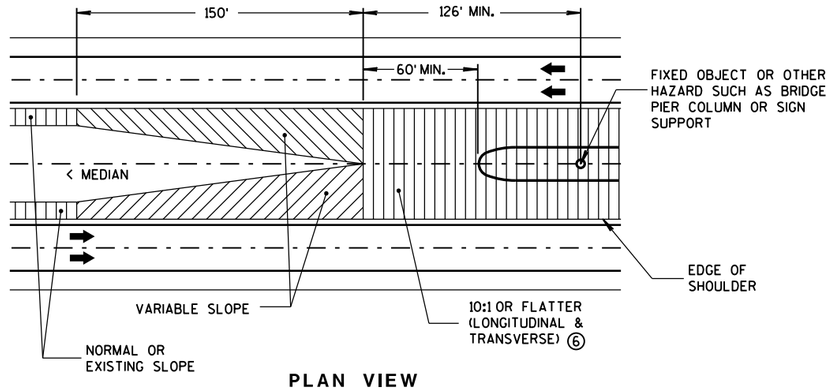
FHWA

6

S.D.D. 14 B 8-1e

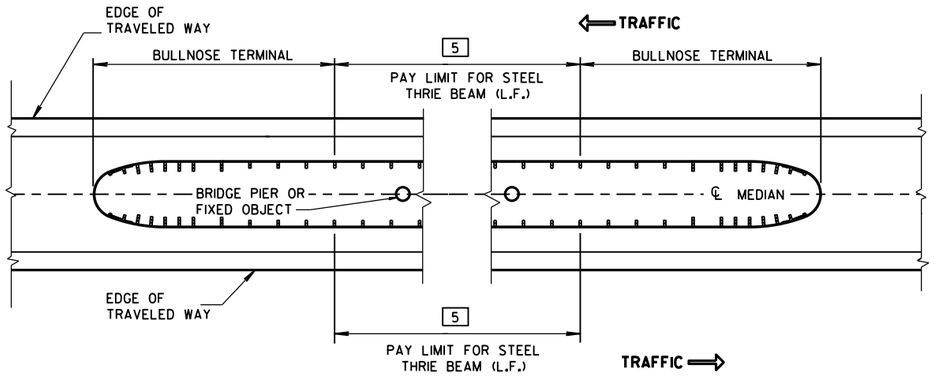
6

S.D.D. 14 B 8-1e

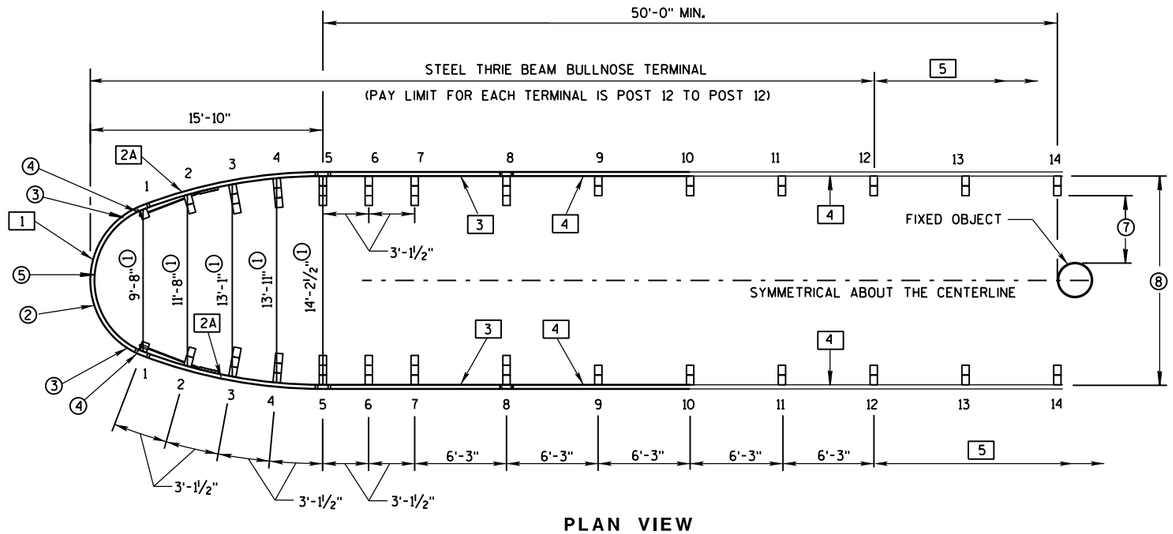


PLAN VIEW

GRADING AT BULLNOSE
(ALL INSTALLATIONS)

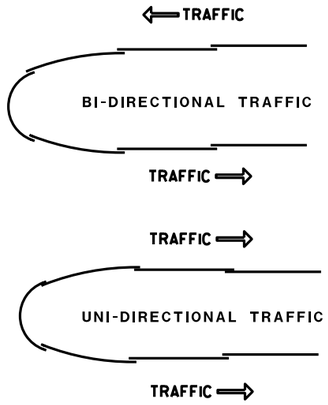


MEDIAN HAZARD PROTECTION PAY LIMITS



PLAN VIEW

TYPICAL BULLNOSE LAYOUT



LAPPING DETAIL
(ALL INSTALLATIONS)

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

PUNCHING, DRILLING, CUTTING OR WELDING IS NOT PERMITTED ON ANY GALVANIZED THRIE BEAM ACCESSORY OR TERMINAL ACCESSORY.

OTHER ANCHOR CABLE ASSEMBLIES HAVING 40,000 LBS. MIN. BREAKING STRENGTH MAY BE USED.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

THE USE OF STEEL POSTS ON THE BULLNOSE IS NOT ALLOWED.

BOLTS AND ALL NECESSARY HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

ALL THRIE BEAM SHALL BE 12-GAUGE.

[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2A] SLOTTED THRIE BEAM RAIL NO. 2A. (POST 1 TO POST 5)

[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

[4] UNBENT STANDARD THRIE-BEAM RAIL NO.4. (POST 8 TO POST 10 & POST 10 TO POST 12)

[5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST OR BLOCK.

② U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.

③ NOSE CABLE W/SWAGGED END BUTTONS.

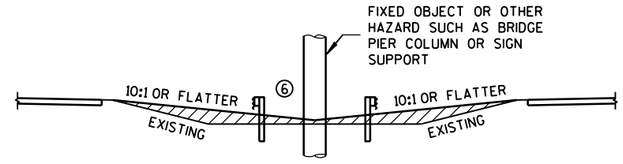
④ NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).

⑤ THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

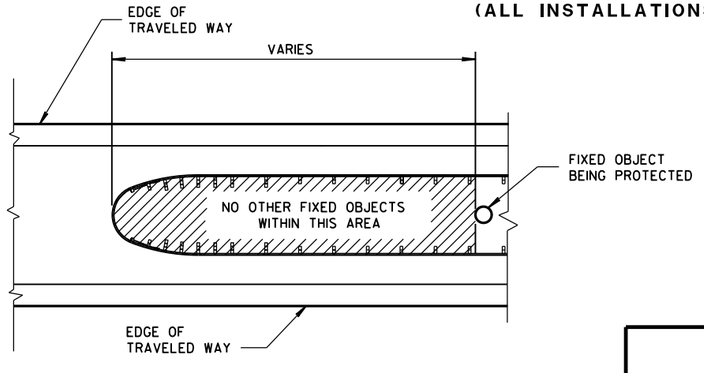
⑥ PROVIDE SUITABLE DRAINAGE WHEN MEDIAN GRADING IMPEDES NORMAL FLOW.

⑦ 2'-6" MINIMUM LATERAL DISTANCE BETWEEN BACK OF POST AND FACE OF FIXED OBJECT.

⑧ MAXIMUM WIDTH OF SYSTEM IS 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



MEDIAN GRADING SECTION
(ALL INSTALLATIONS)



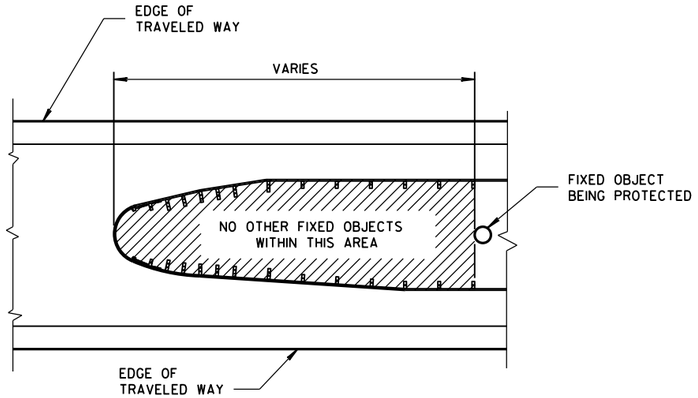
HAZARD FREE AREA INSIDE BULLNOSE

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 26-2a



HAZARD FREE
AREA INSIDE BULLNOSE

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2A] SLOTTED THRIE BEAM RAIL NO. 2A, (POST 1 TO POST 5)

[2B] SLOTTED THRIE BEAM RAIL NO. 2B, (POST 1 TO POST 5)

[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

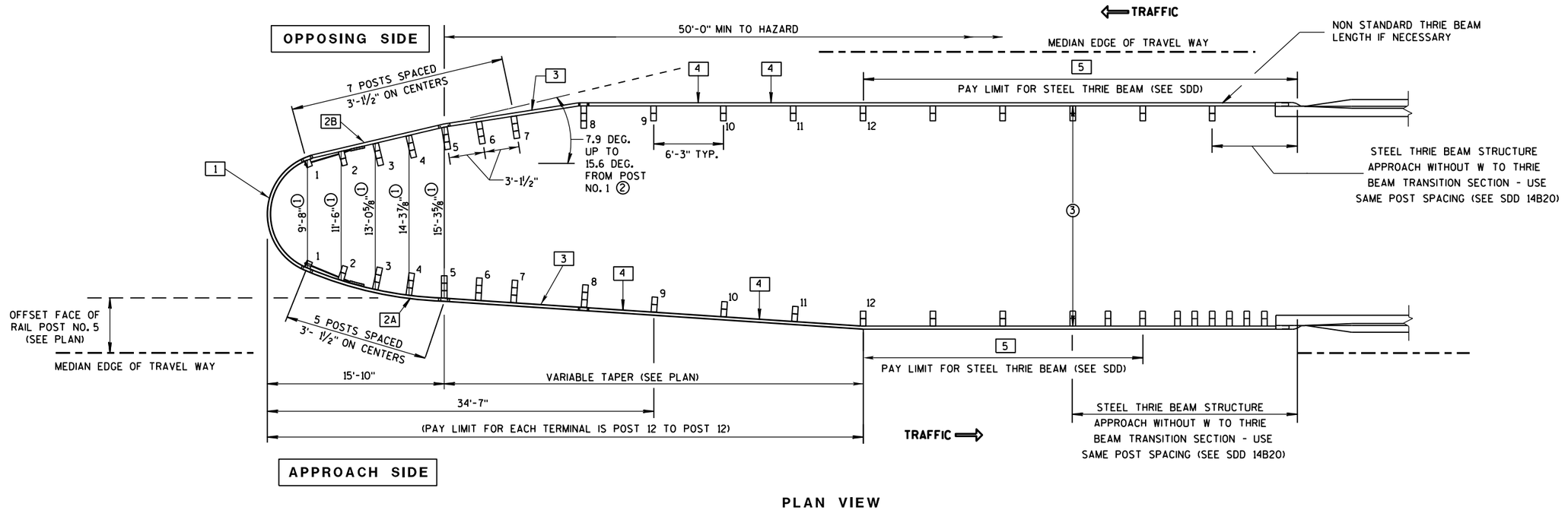
[4] UNBENT STANDARD THRIE-BEAM RAIL NO. 4, (POST 8 TO POST 10 & POST 10 TO POST 12)

[5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST.

② TAPER BEGINNING AT POST NO. 1 MUST CONTINUE TO POST NO. 5. PAST POST NO. 5 TAPER MAY END OR BE EXTENDED UP TO 15.6 DEGREES TO FIT VARIABLE MEDIAN WIDTHS. (SEE PLAN)

③ FOR MEDIANS WIDER THAN 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



PLAN VIEW

WIDENED BULLNOSE DESIGN

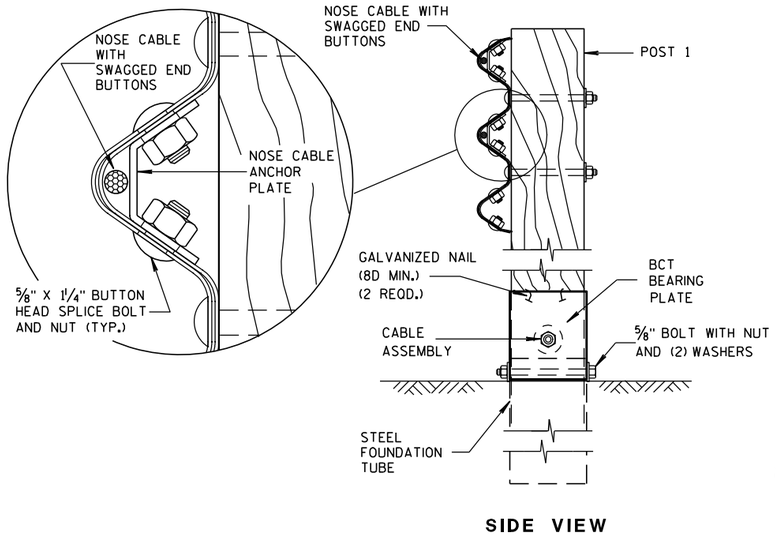
(INSTALLATION AT TWIN BRIDGES WITH BI-DIRECTIONAL TRAFFIC SHOWN)

STEEL THRIE BEAM
BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

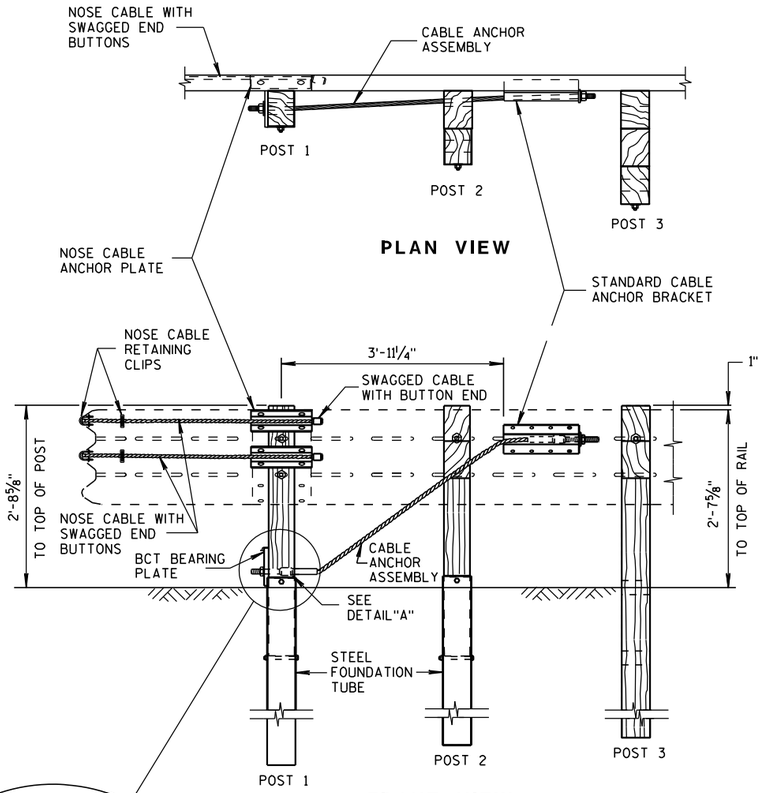
6

S.D.D. 14 B 26-2b



SIDE VIEW

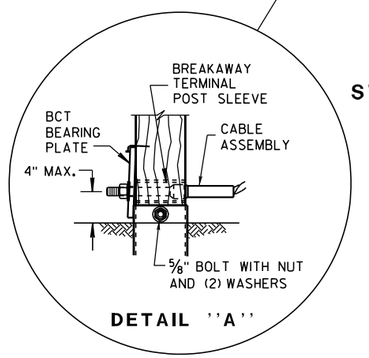
NOSE CABLE ASSEMBLY AT POST NO. 1



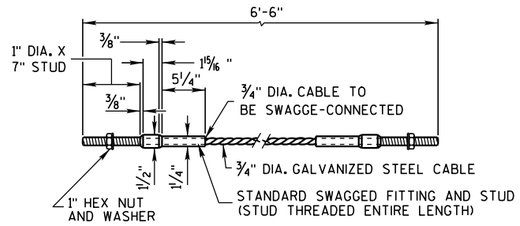
PLAN VIEW

FRONT VIEW

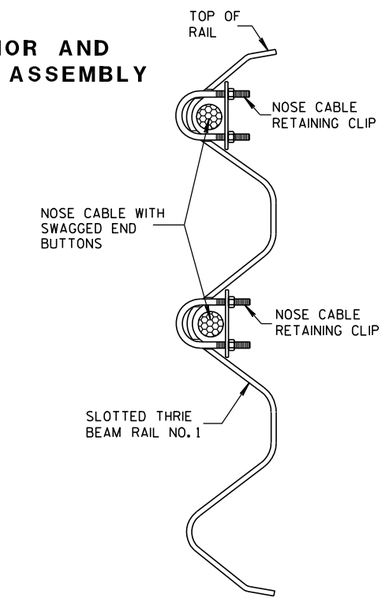
NOSE CABLE ANCHOR AND STANDARD BRACKET ASSEMBLY



DETAIL ''A''



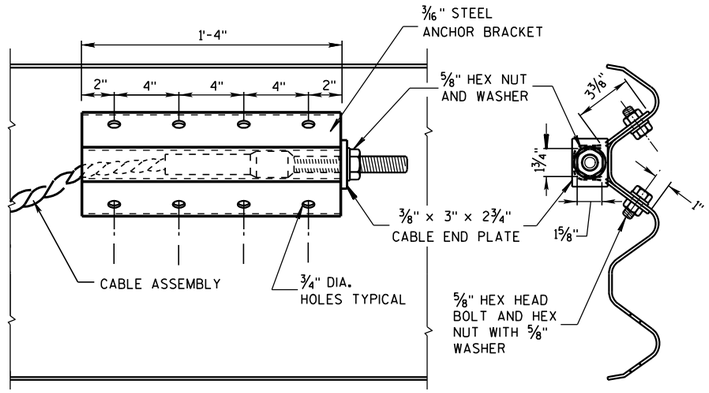
DETAILS OF CABLE ANCHOR ASSEMBLY



PLACEMENT OF NOSE CABLE RETAINING CLIP

GENERAL NOTES

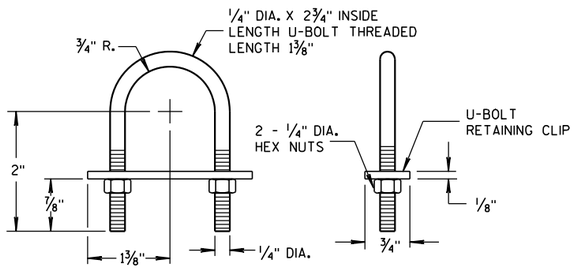
SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



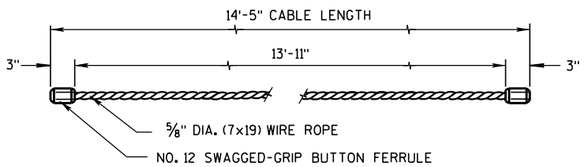
FRONT VIEW

END VIEW

DETAILS OF CABLE ANCHOR BRACKET

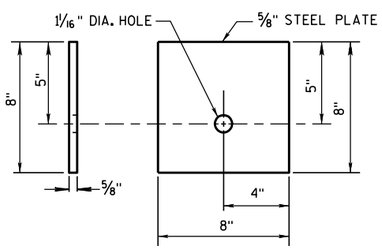


NOSE CABLE RETAINING CLIP

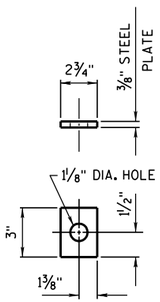


NOSE CABLE WITH SWAGGED END BUTTONS

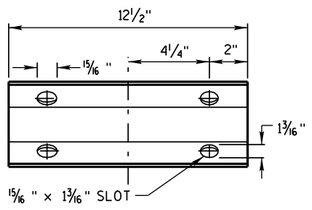
TO PULL OFF SWAGGED GRIP BUTTON FERRULE FROM WIRE ROPE REQUIRES A FORCE EQUAL TO 98% OF THE WIRE ROPE'S BREAKING STRENGHT.



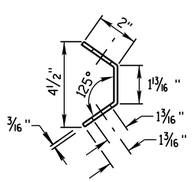
BCT BEARING PLATE



CABLE END PLATE



ELEVATION VIEW



END VIEW

NOSE CABLE ANCHOR PLATE

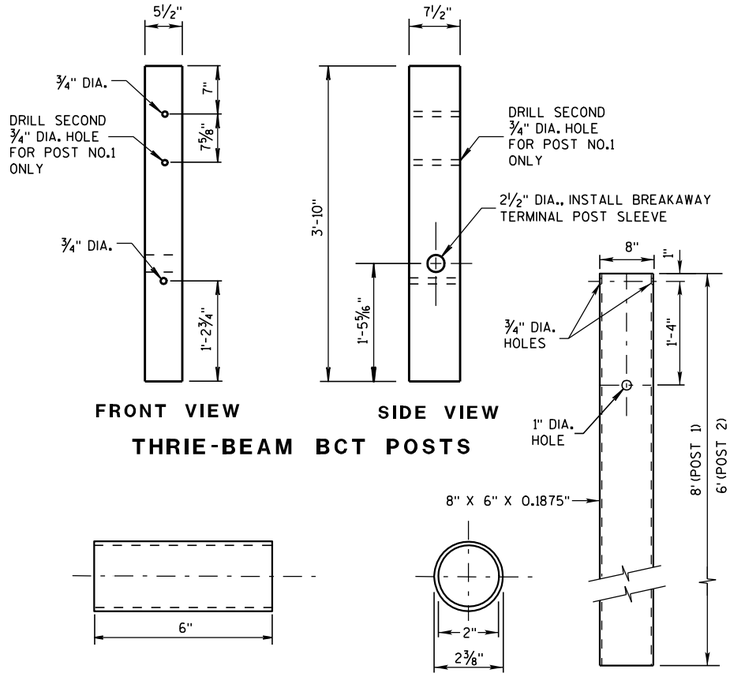
NOTE: 12 1/2" x 5 13/16" x 3/16" STEEL PLATE (A306)

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 26-2c

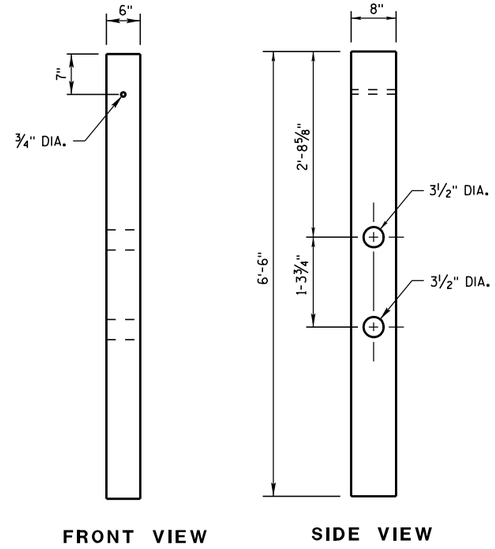


FRONT VIEW SIDE VIEW

THRIE-BEAM BCT POSTS

BREAKAWAY TERMINAL POST SLEEVE

STEEL FOUNDATION TUBE

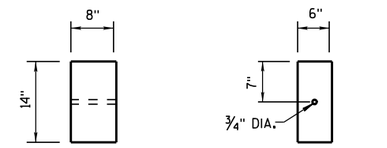


FRONT VIEW SIDE VIEW

THRIE-BEAM CRT WOOD POSTS

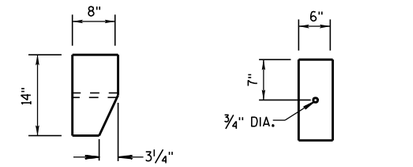
GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



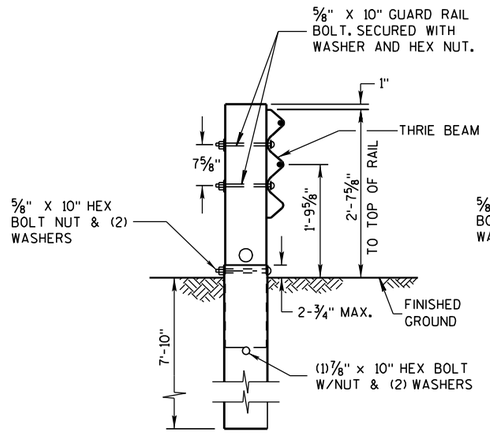
SIDE VIEW FRONT VIEW

STANDARD WOOD BLOCK



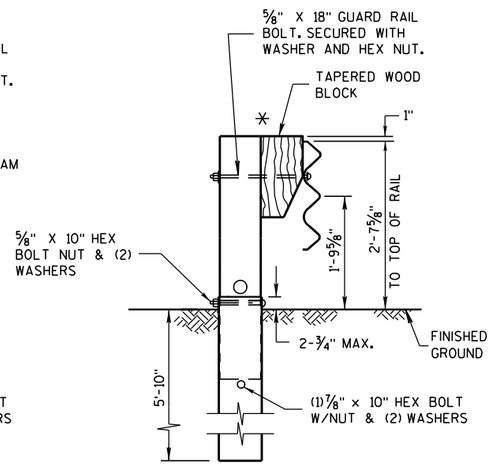
SIDE VIEW FRONT VIEW

TAPERED WOOD BLOCK



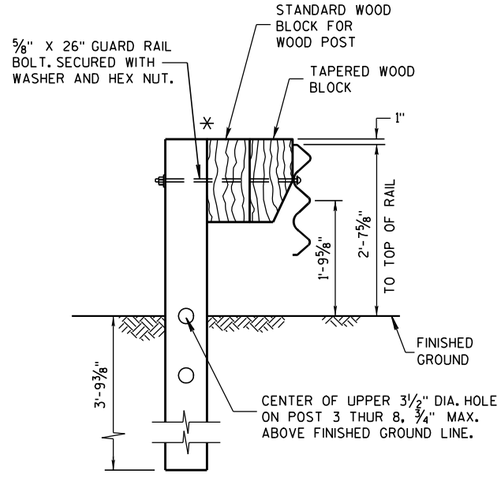
THRIE-BEAM BCT POST
(WITH 8'-0" FOUNDATION TUBE)

POST NO. 1



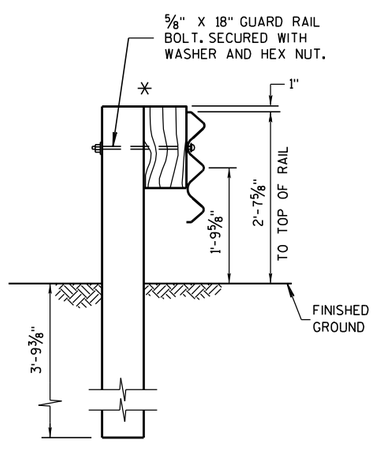
THRIE-BEAM BCT POST
(WITH 6'-0" FOUNDATION TUBE AND 1'-2" TAPERED BLOCK)

POST NO. 2



THRIE-BEAM CRT POST
(6'-6" LONG POST WITH 1'-2" BLOCK AND 1'-2" TAPERED BLOCK)

POST NO. 3,4,5,6,7, & 8



THRIE-BEAM POST
(6'-6" LONG POST WITH 1'-2" BLOCK)

POST NO. 9,10,11,& 12
(ALSO USE FOR STEEL THRIE BEAM BEYOND POST 12)

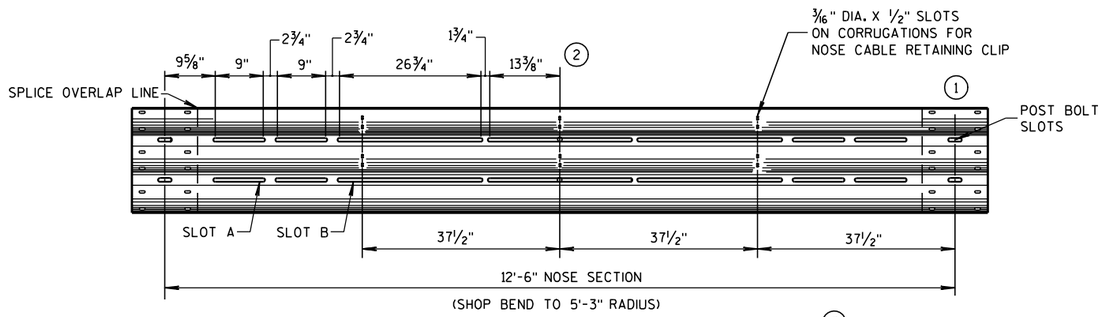
* IF NEEDED DUE TO AN UNDERGROUND OBSTACLE ADD 1 ADDITIONAL STANDARD BLOCKOUT TO POST.

STEEL THRIE BEAM BULLNOSE TERMINAL

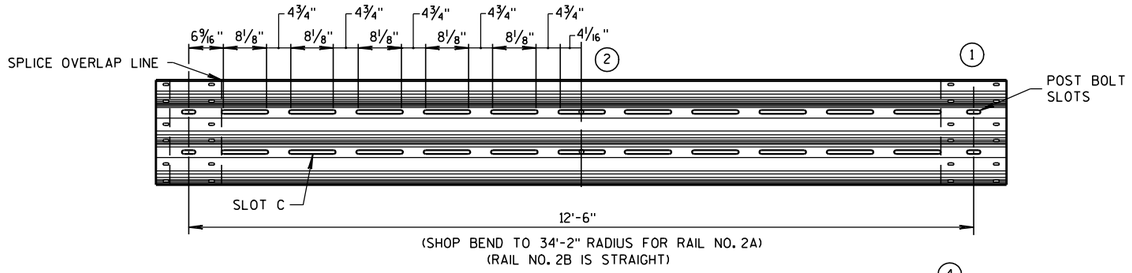
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

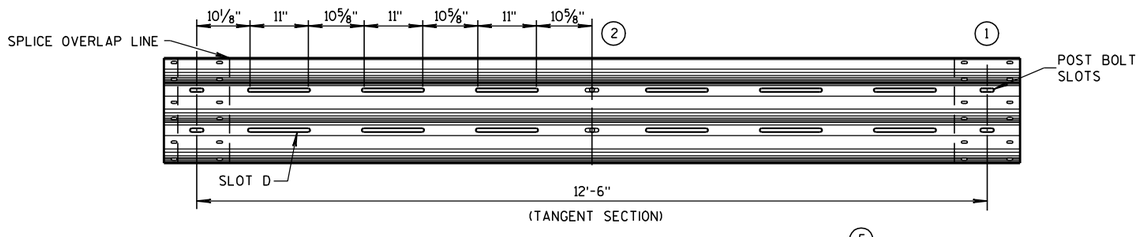
S.D.D. 14 B 26-2d



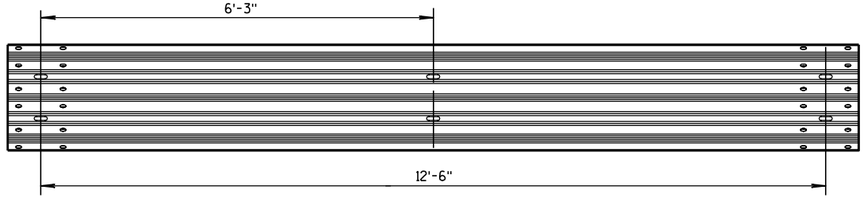
SLOTTED THRIE BEAM RAIL NO. 1 (3)



SLOTTED THRIE BEAM RAILS NO. 2A AND NO. 2B (4)



SLOTTED THRIE BEAM RAIL NO. 3 (5)



UNBENT STANDARD THRIE BEAM RAIL NO. 4 AND NO. 5

GENERAL NOTES

SEE STANADRD DETAIL DRAWINGS 14 B 26a-e.

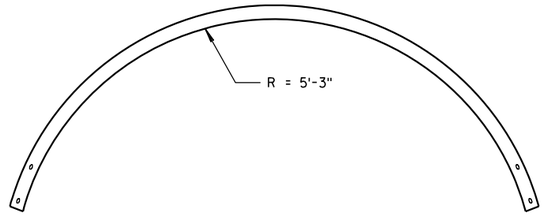
(1) SLOTTED THRIE BEAM RAIL DIMENSIONS SHOWN ARE BEFORE BENDING TO THE RADIUS SHOWN.

(2) SLOT SIZE AND SPACING SYMMETRIC.

(3) SLOTTED THRIE BEAM RAIL NO. 1, 12'-6", SHOP BEND TO R=5'-3".

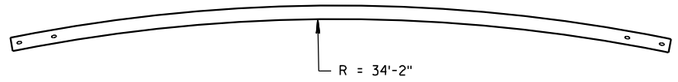
(4) SLOTTED THRIE BEAM RAIL NO. 2A, 12'-6", SHOP BEND TO R=34'-2".
SLOTTED THRIE BEAM RAIL NO. 2B, 12'-6", RAIL IS STRAIGHT.

(5) SLOTTED THRIE BEAM RAIL NO. 3, 12'-6", TANGENT.



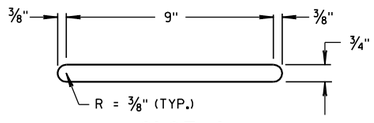
PLAN VIEW

SLOTTED THRIE BEAM RAIL NO. 1

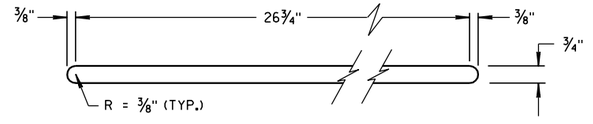


PLAN VIEW

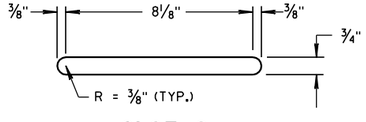
SLOTTED THRIE BEAM RAIL NO. 2A



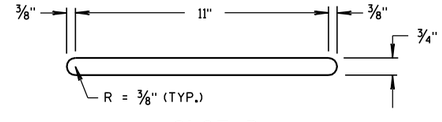
SLOT A



SLOT B



SLOT C



SLOT D

SLOT DETAILS

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-16-2010
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 26-2e

6

S.D.D. 14 B 26-2e

GENERAL NOTES

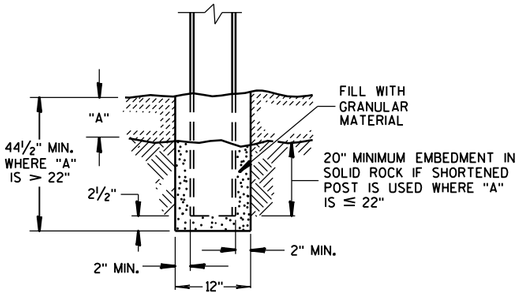
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

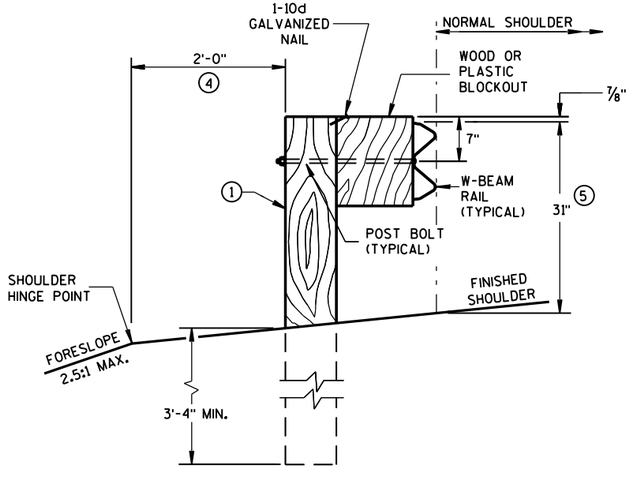
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

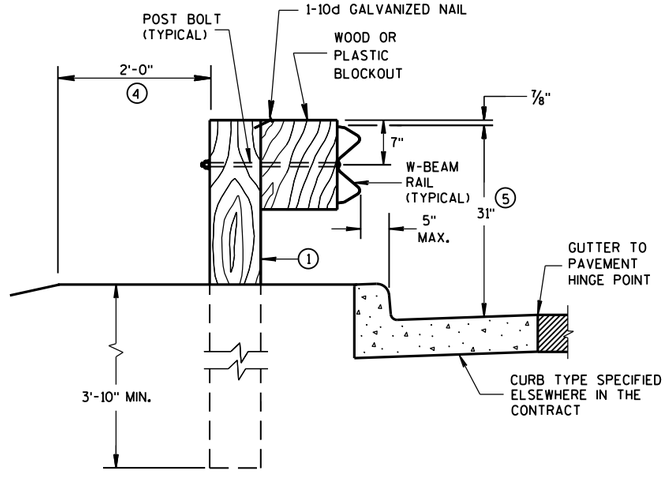
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



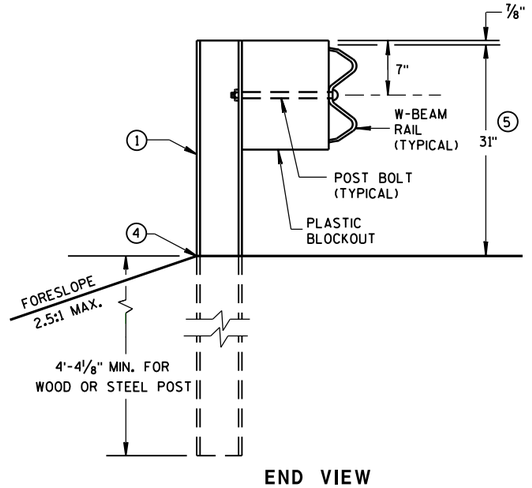
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



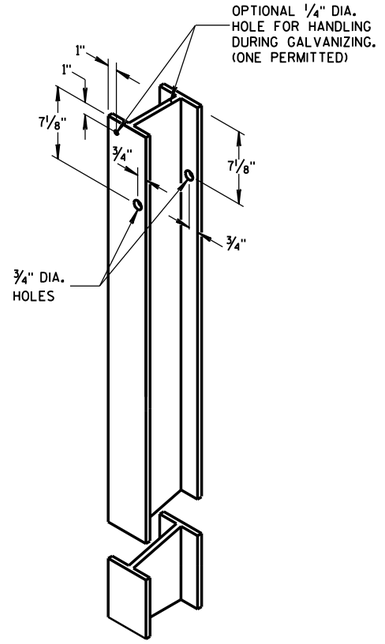
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



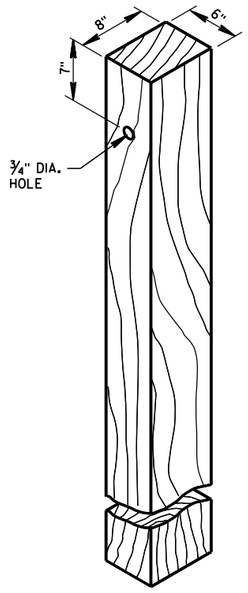
END VIEW
LOCATED ALONG A CURBED ROADWAY



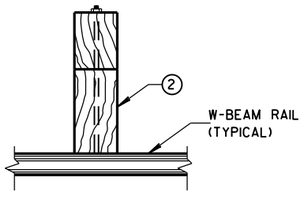
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



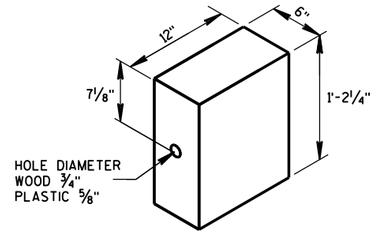
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



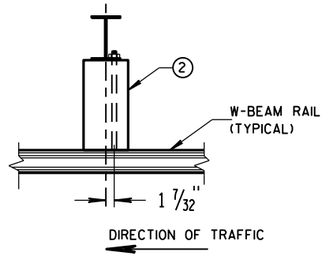
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

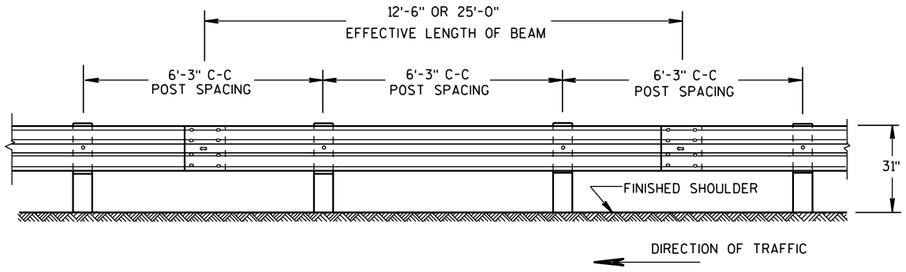


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

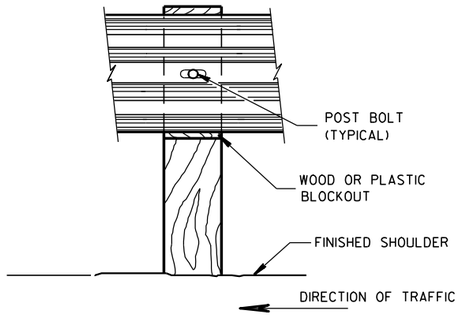
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 42-2a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



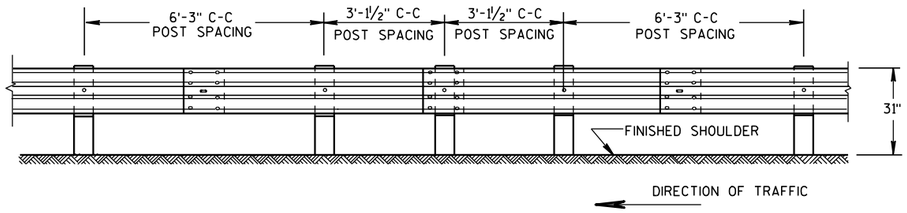
FRONT VIEW AT WOOD POST

GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

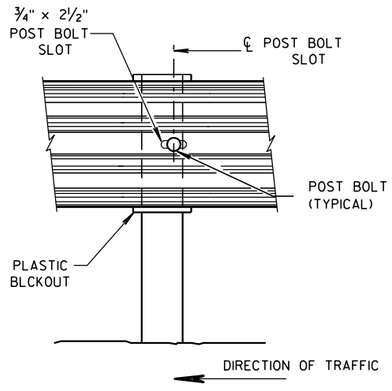
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

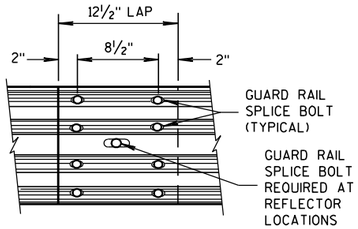


FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

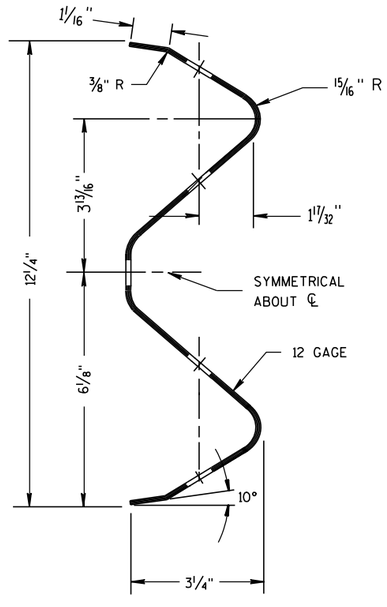


FRONT VIEW AT STEEL POST

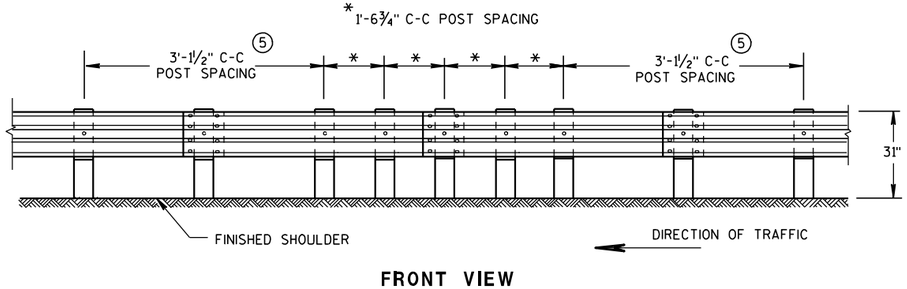


FRONT VIEW

MID-SPAN BEAM SPLICE

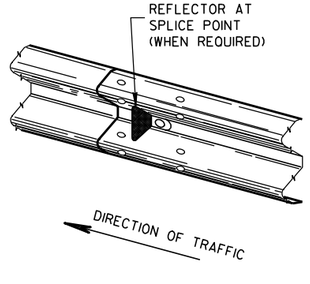


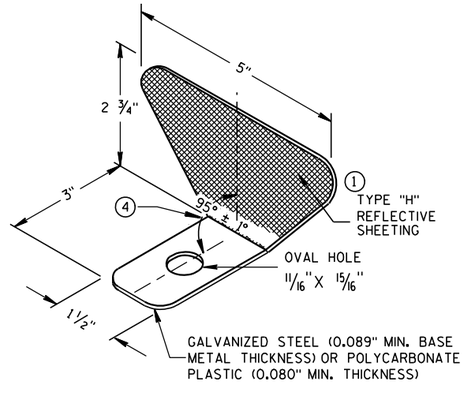
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

REFLECTOR SPACING ②

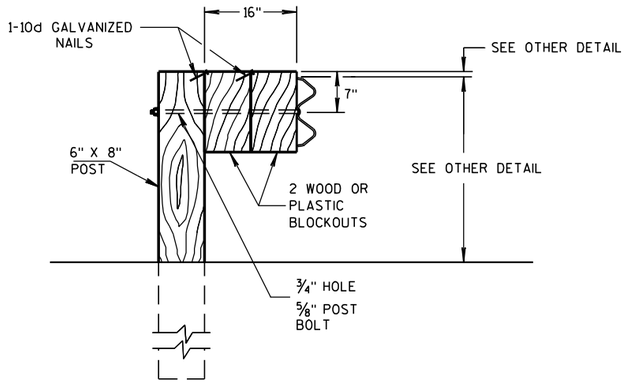
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1 ③	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ④	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

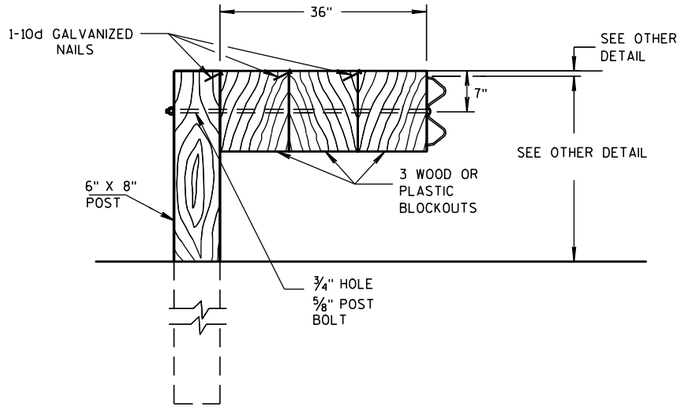
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

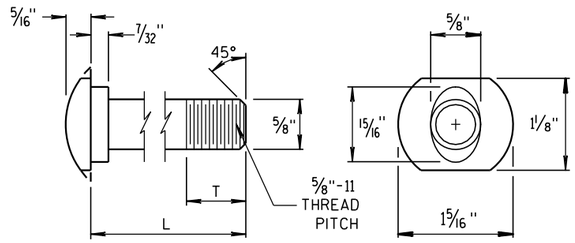


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

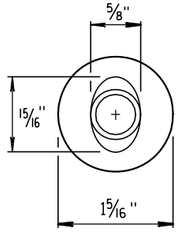
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

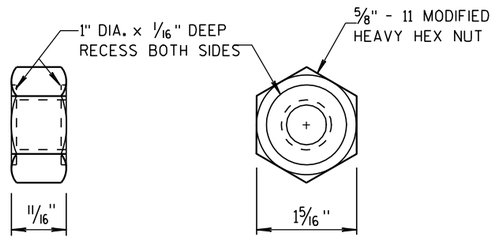


POST BOLT TABLE

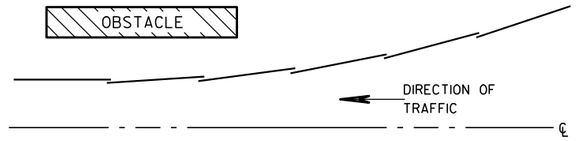
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

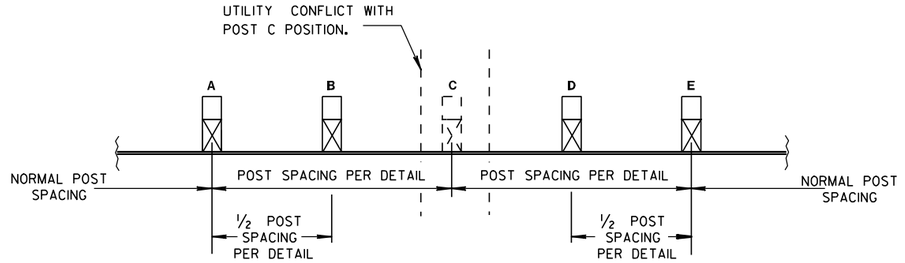


POST BOLT AND RECESS NUT

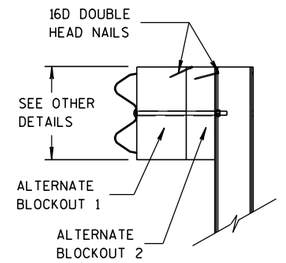


PLAN VIEW

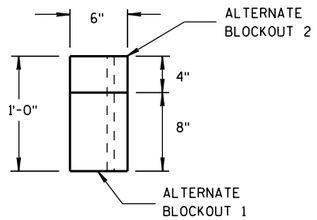
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

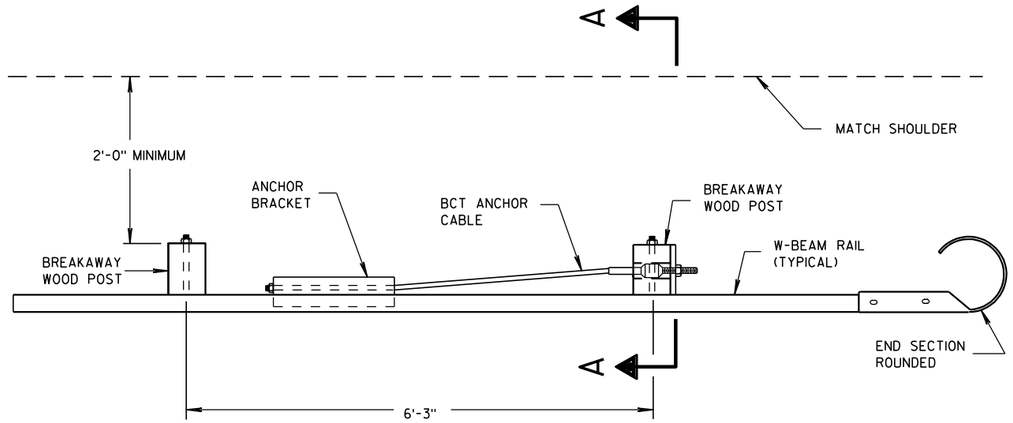
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

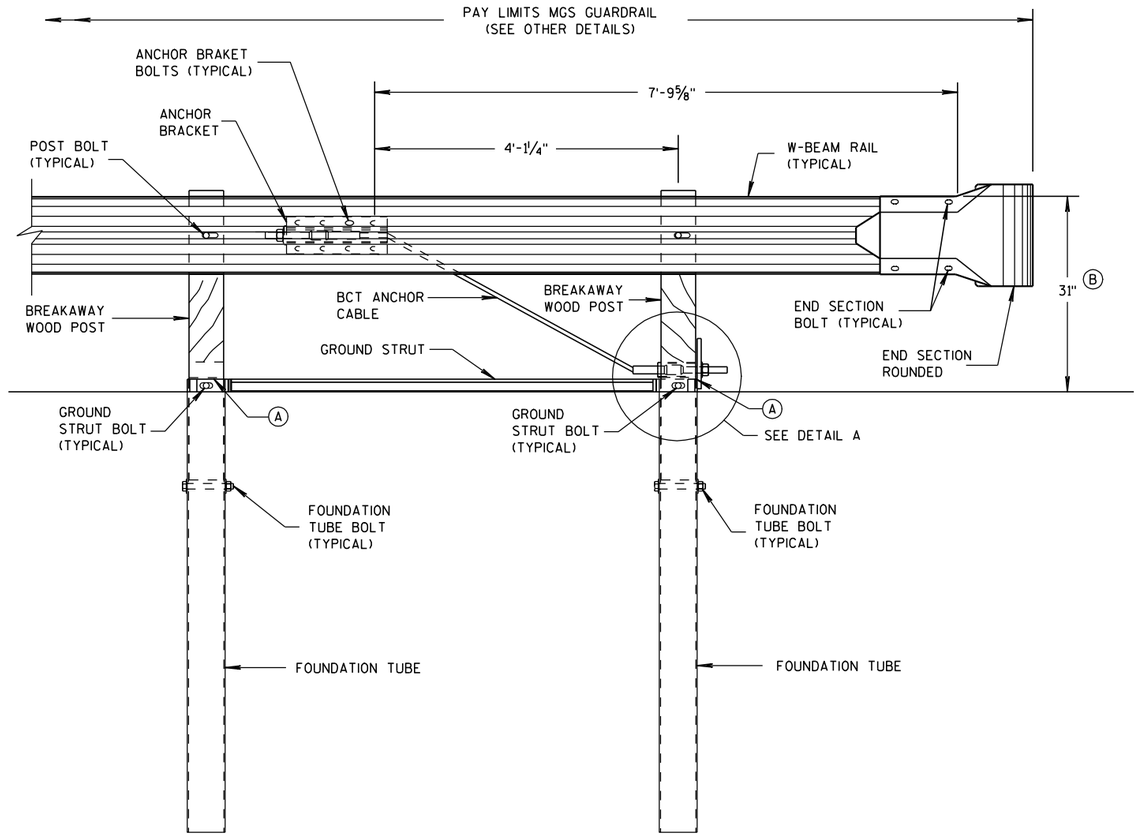
ENT

6

S.D.D. 14 B 42-2c

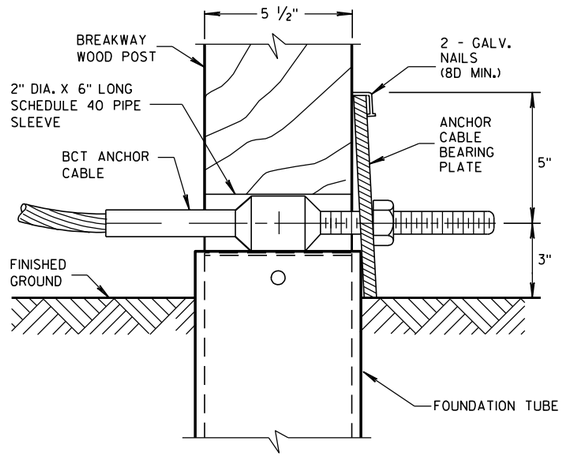


PLAN VIEW



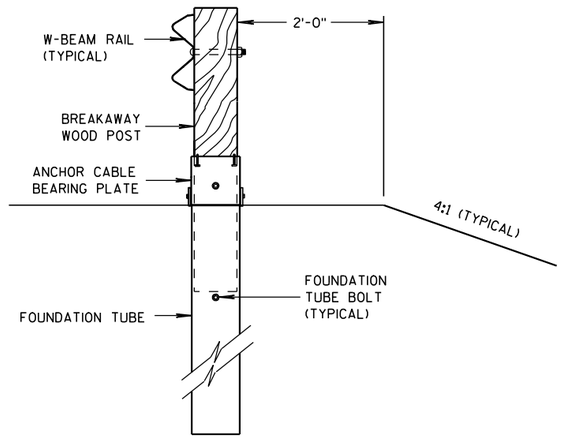
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

POST BOLTS ARE A ⅝" DIAMETER X 10" LONG GUARDRAIL BOLT. A POST BOLT REQUIRES A ⅝" DIAMETER DH MODIFIED (RECESSED) HEAVY HEX NUT AND ⅝" DIAMETER FLAT WASHER.

FOUNDATION TUBE BOLTS ARE A ⅞" DIAMETER X 7½" LONG HEAVY HEX HEAD BOLT. A FOUNDATION TUBE BOLT REQUIRES A ⅞" DIAMETER DH HEAVY HEX NUT AND A ⅝" DIAMETER FLAT WASHER.

GROUND STRUT BOLTS ARE A ⅝" DIAMETER X 10" LONG HEAVY HEX HEAD BOLT. A GROUND STRUT BOLT REQUIRES A ⅝" DIAMETER DH HEAVY HEX NUT AND A ⅝" DIAMETER FLAT WASHER.

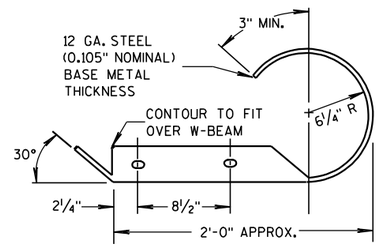
ANCHOR BRAKET BOLTS ARE A ⅝" DIAMETER X 1½" LONG HEAVY HEX HEAD BOLT. AN ANCHOR BRAKET BOLT REQUIRES A ⅝" DIAMETER DH HEAVY HEX NUT AND A FLAT WASHER.

END SECTION BOLTS ARE A ⅝" DIAMETER X 1½" HEAVY HEX HEAD BOLT. AN END SECTION BOLT REQUIRES ⅝" DIAMETER DH HEAVY HEX NUT AND A ⅝" DIAMETER FLAT WASHER.

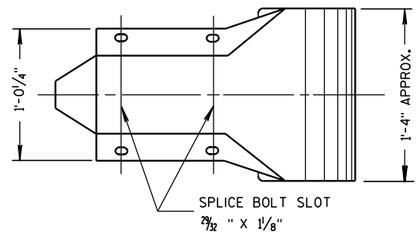
W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".



PLAN VIEW



FRONT VIEW

W BEAM END SECTION ROUNDED

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

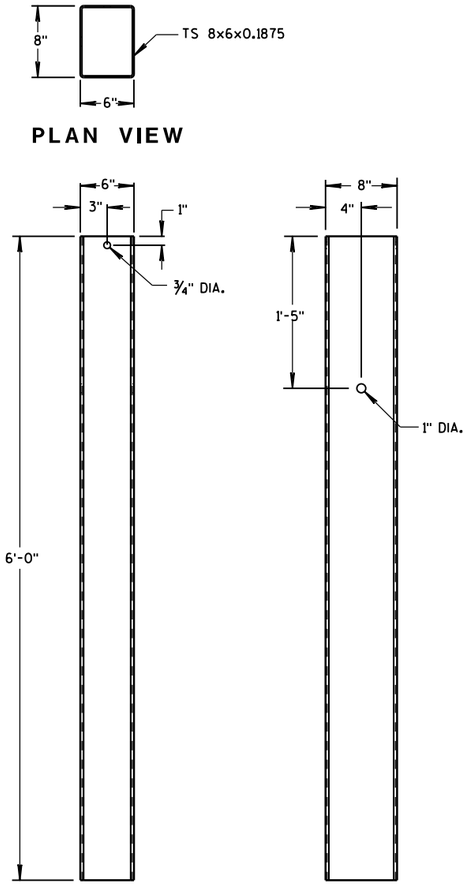
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

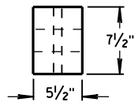
S.D.D. 14 B 47-1a

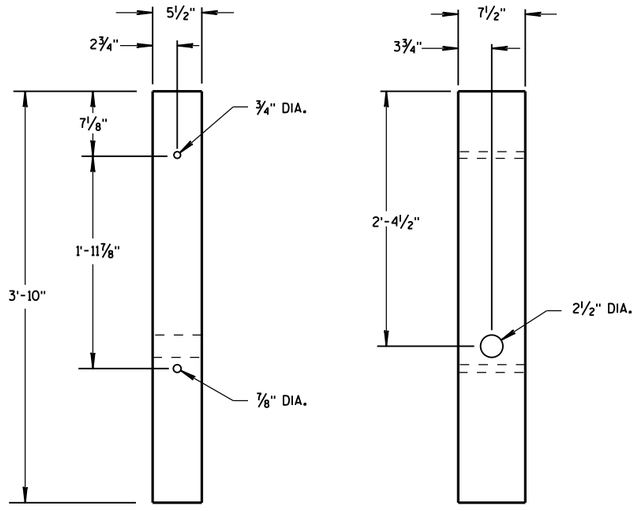
6

S.D.D. 14 B 47-1a



FOUNDATION TUBE



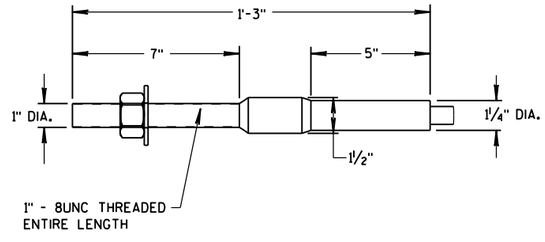


BREAKAWAY WOOD POST

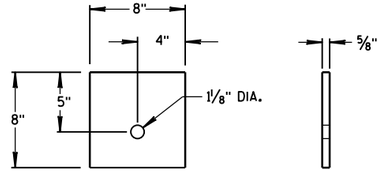
GENERAL NOTES

BCT ANCHOR CABLE IS A ⅜" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. THE END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. THE TREADED STUD SHOULD CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

BCT ANCHOR CABLE



DETAIL B



ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

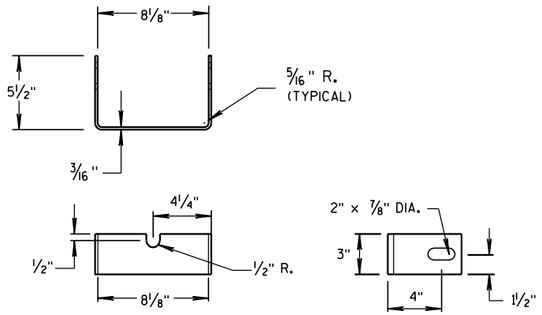
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

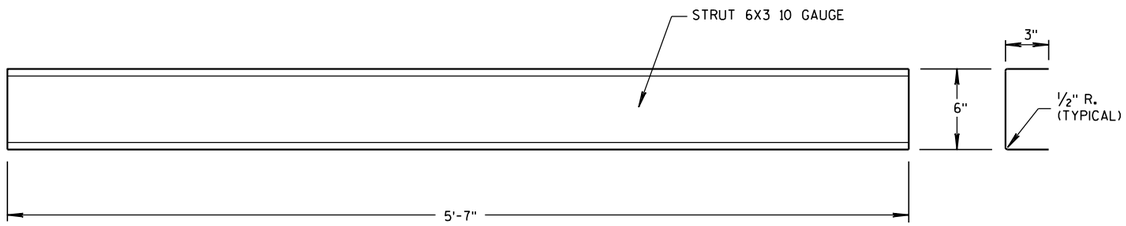
S.D.D. 14 B 47-1b

6

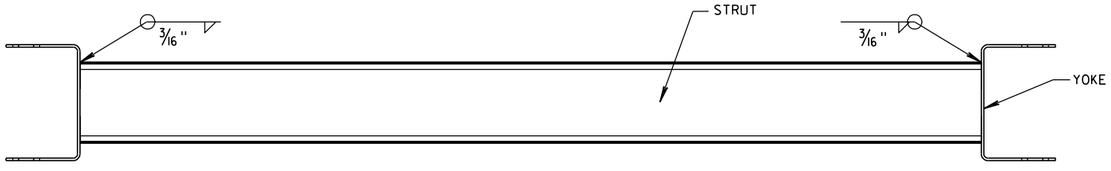
S.D.D. 14 B 47-1b



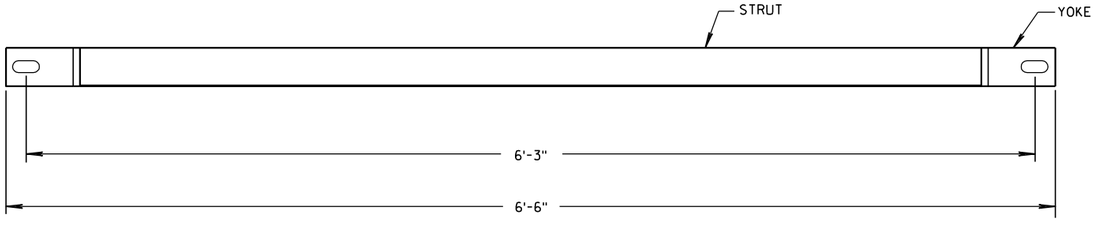
YOKE DETAIL



STRUT DETAIL

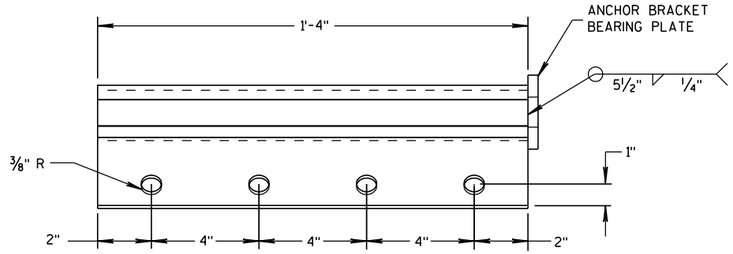


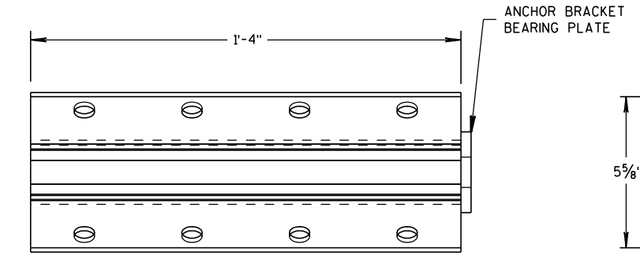
PLAN VIEW

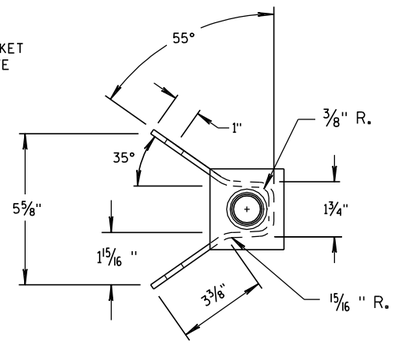


FRONT VIEW

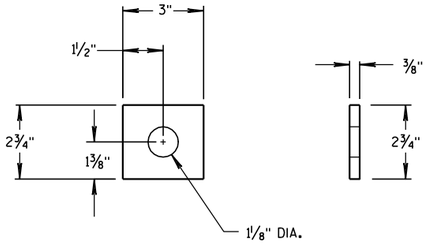
GROUND STRUT DETAIL





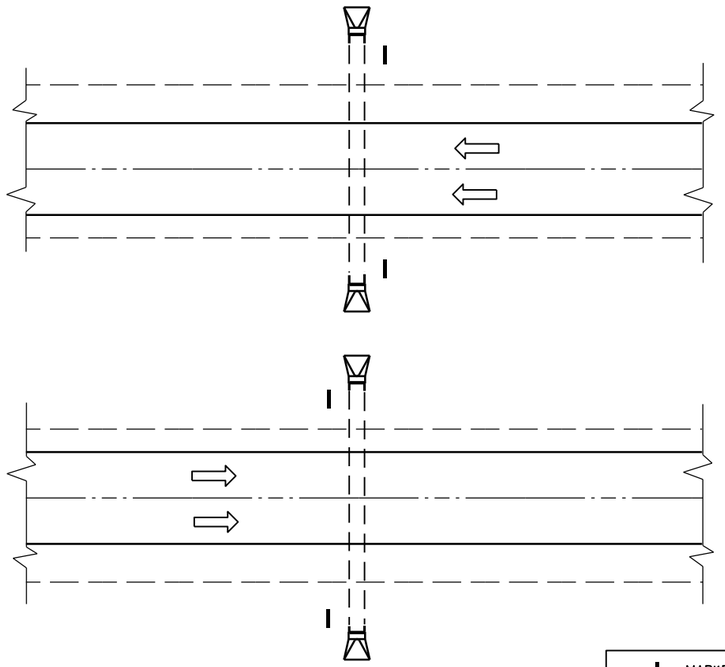


ANCHOR BRACKET



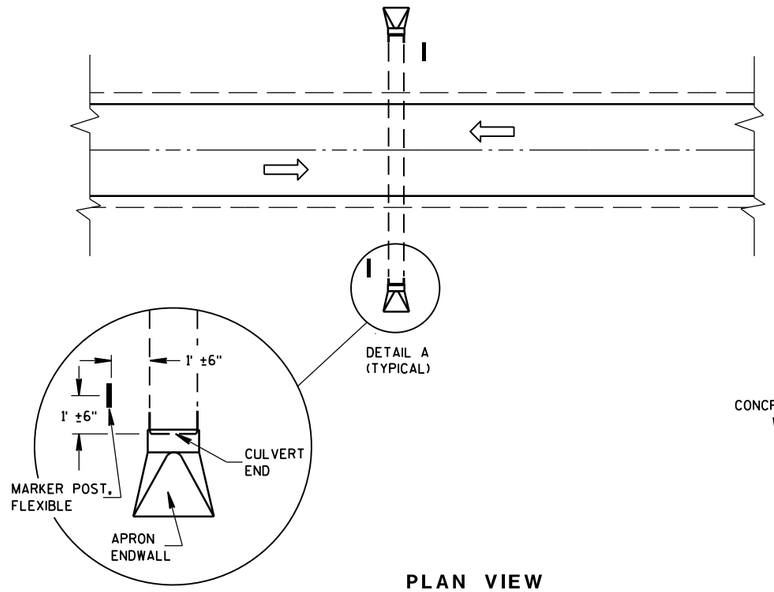
ANCHOR BRACKET BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
5/23/2011 DATE	/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA	[illegible]



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

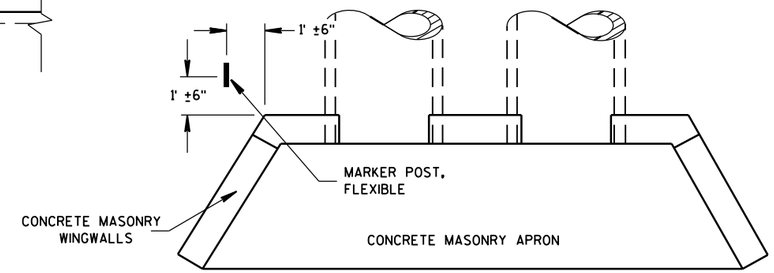
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

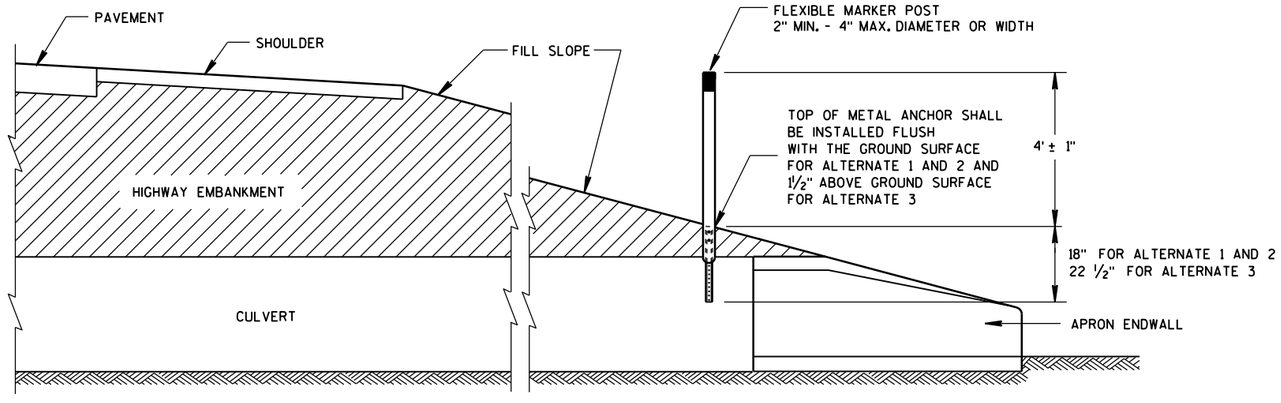
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

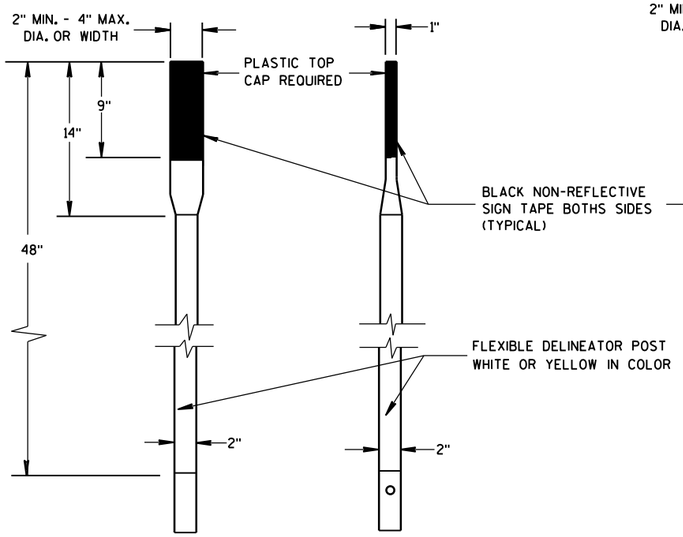
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

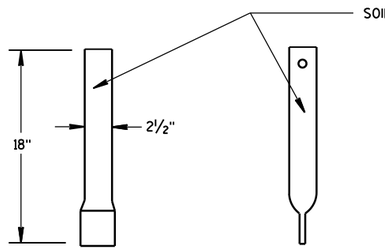
6

S.D.D. 15 A 3-2a

6

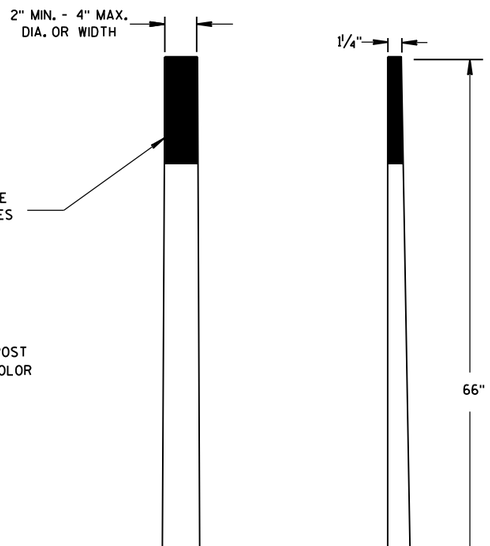
S.D.D. 15 A 3-2a





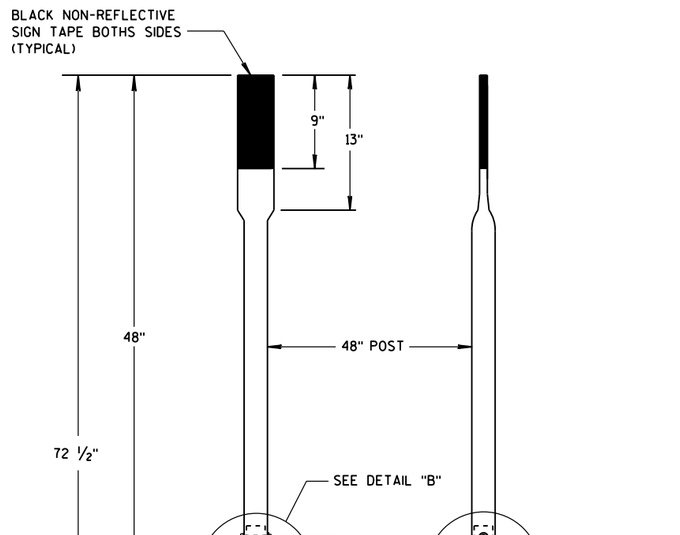
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

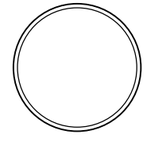
ALTERNATE 2



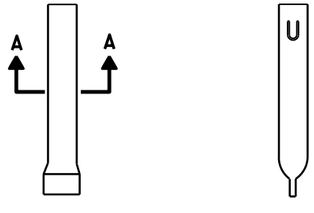
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

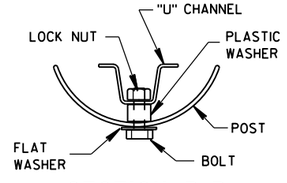


SECTION A-A

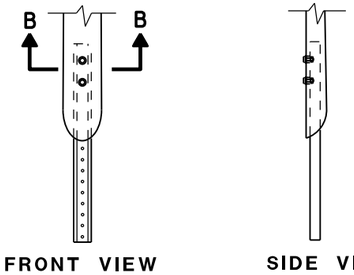


FRONT VIEW SIDE VIEW

ALTERNATE 1

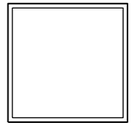


SECTION B-B

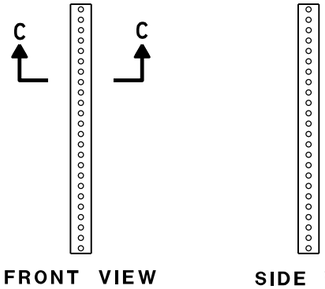


FRONT VIEW SIDE VIEW

ALTERNATE 2



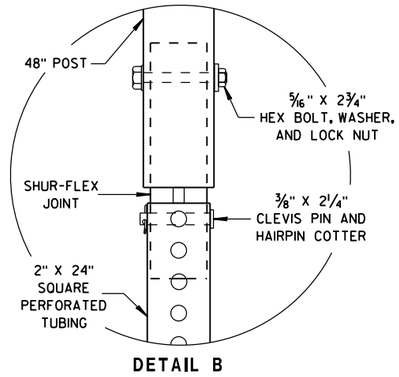
SECTION C-C



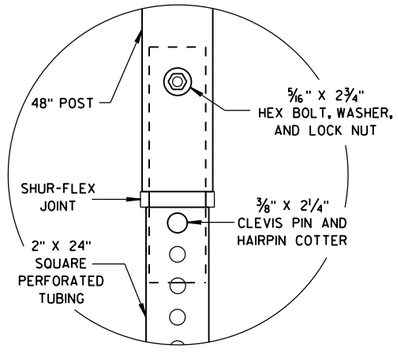
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

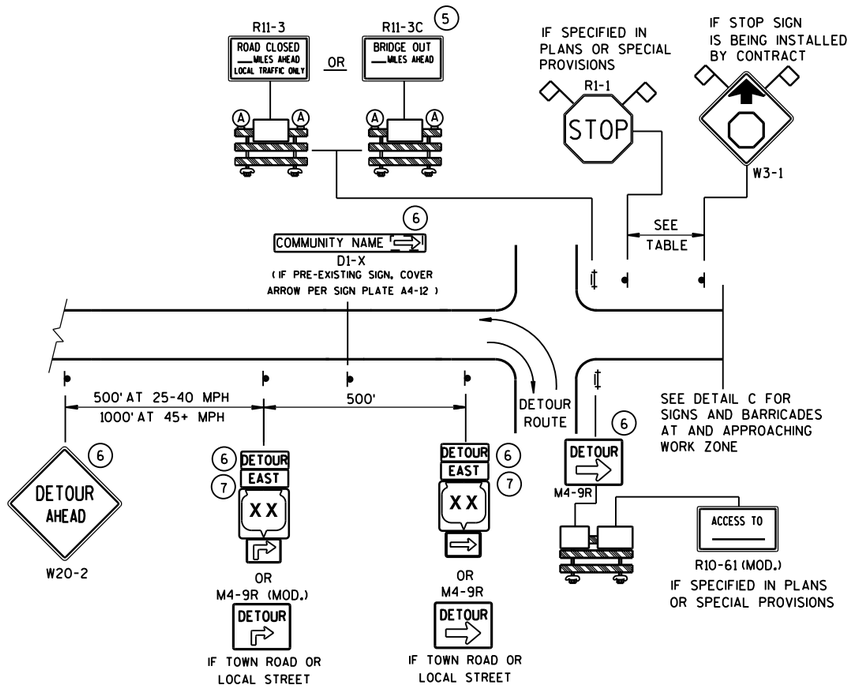
APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER
IGN
FHWA

6

S.D.D. 15 A 3-2b

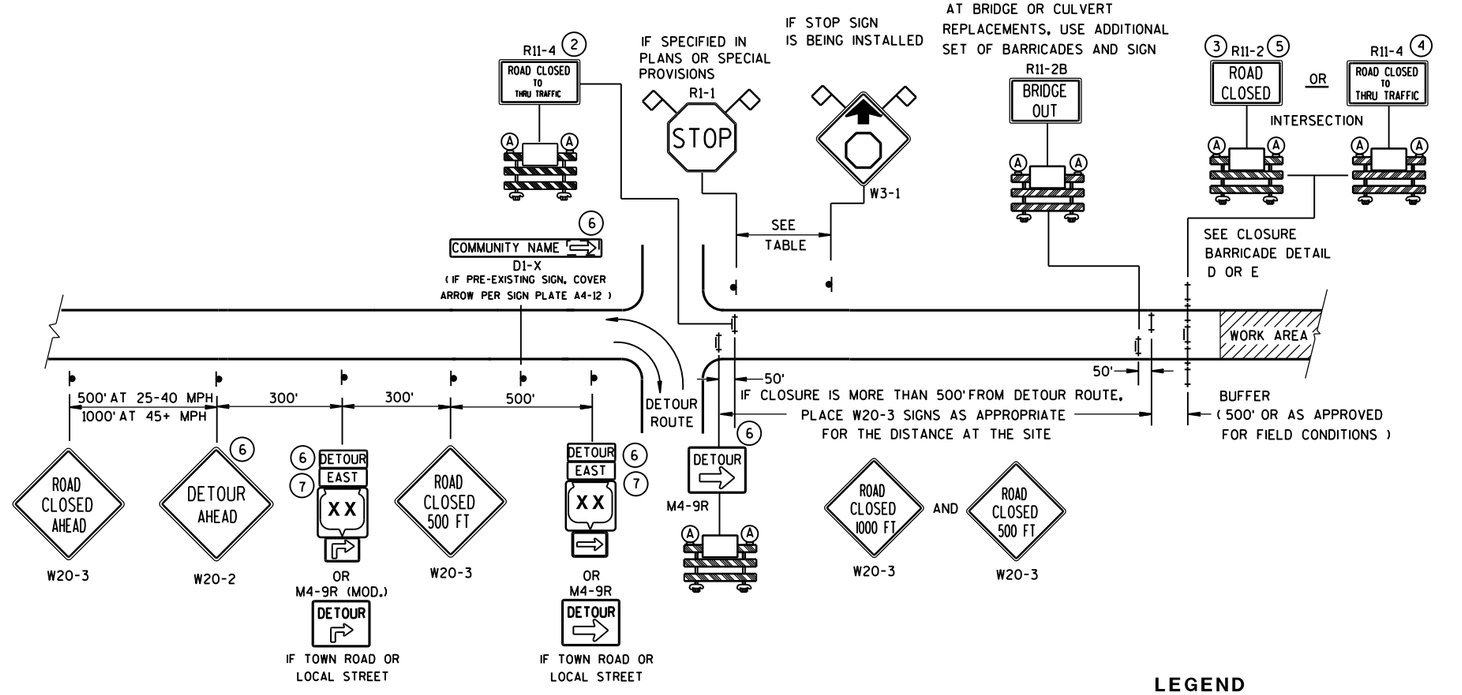
6

S.D.D. 15 A 3-2b



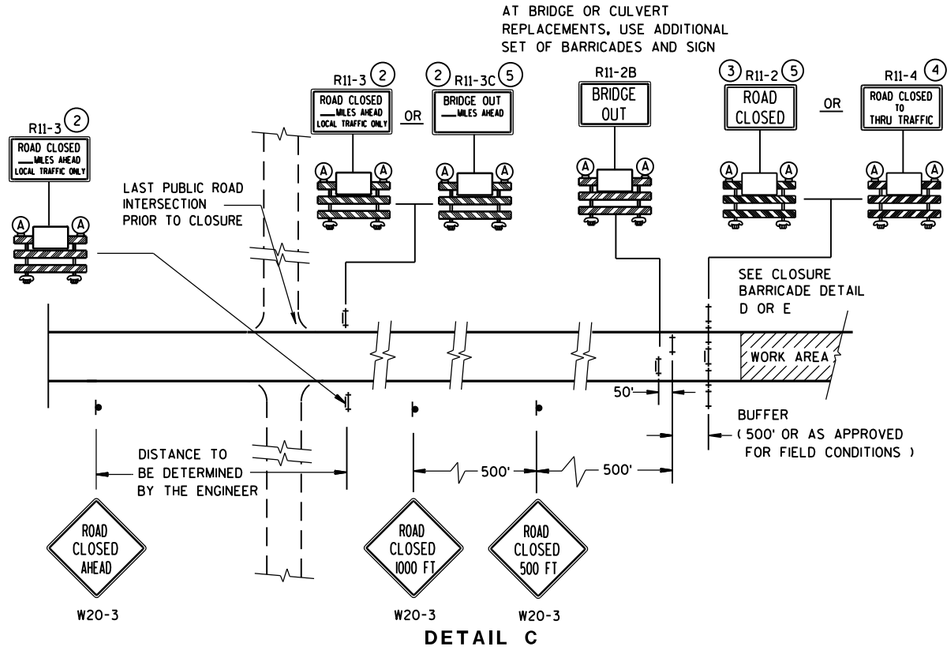
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

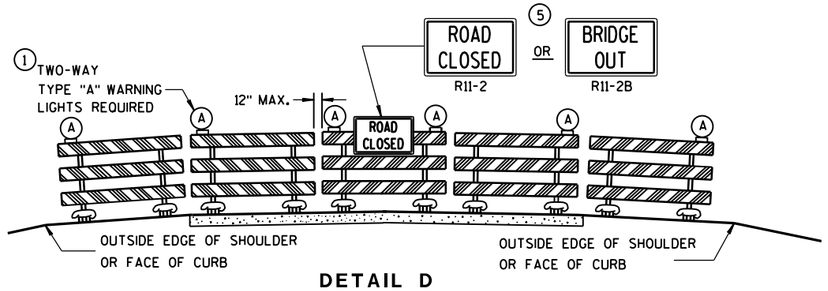
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

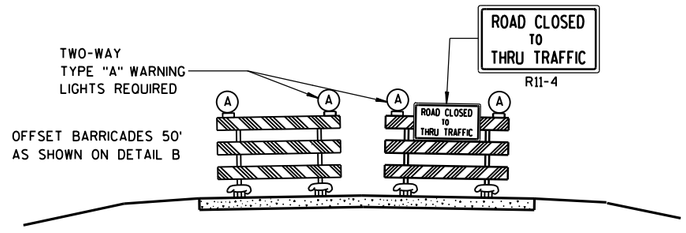
6
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 2-5b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

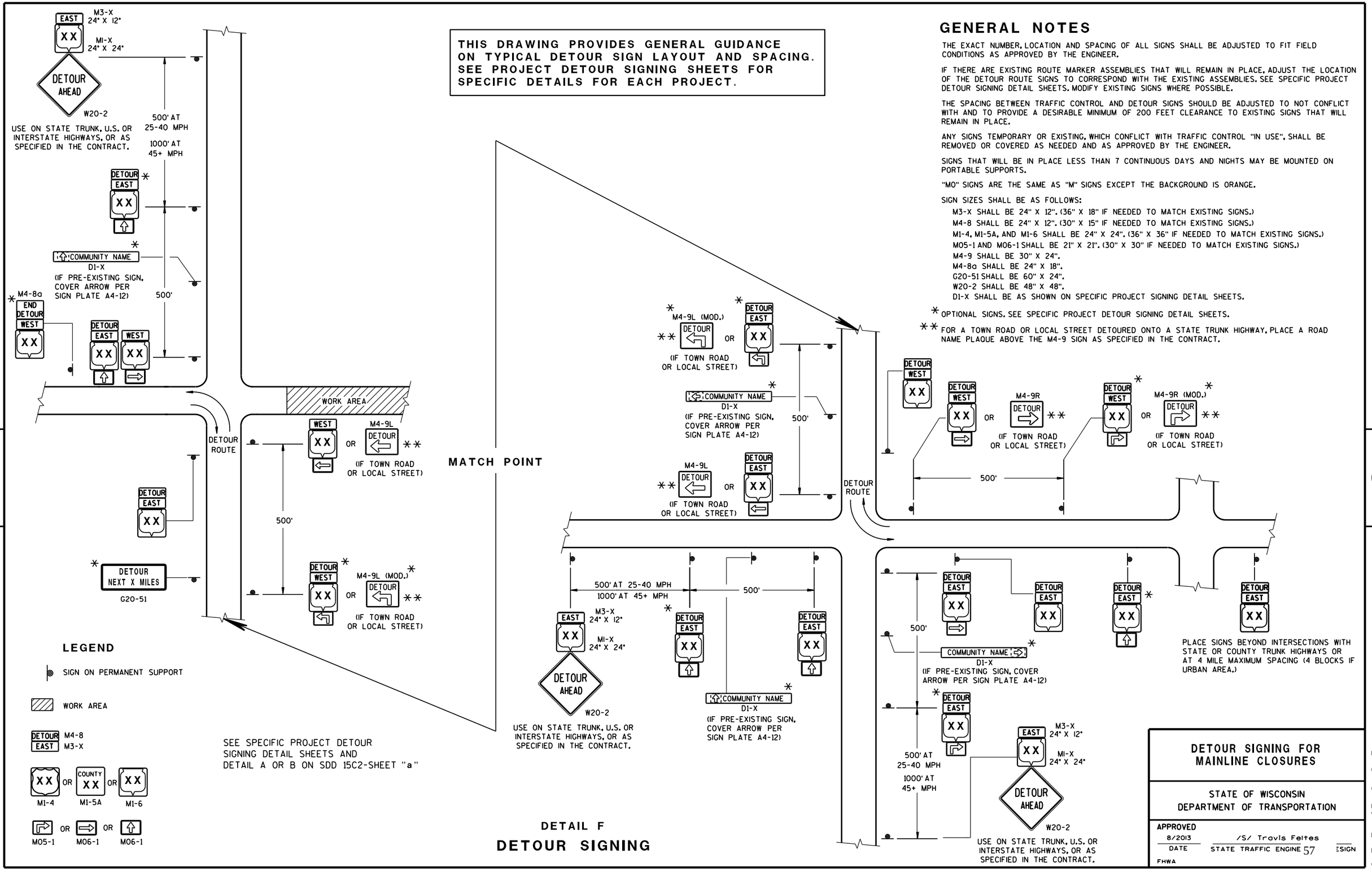
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

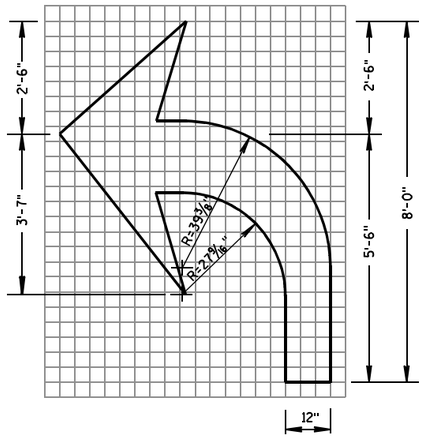
S.D.D. 15 C 2-5c

S.D.D. 15 C 2-5c

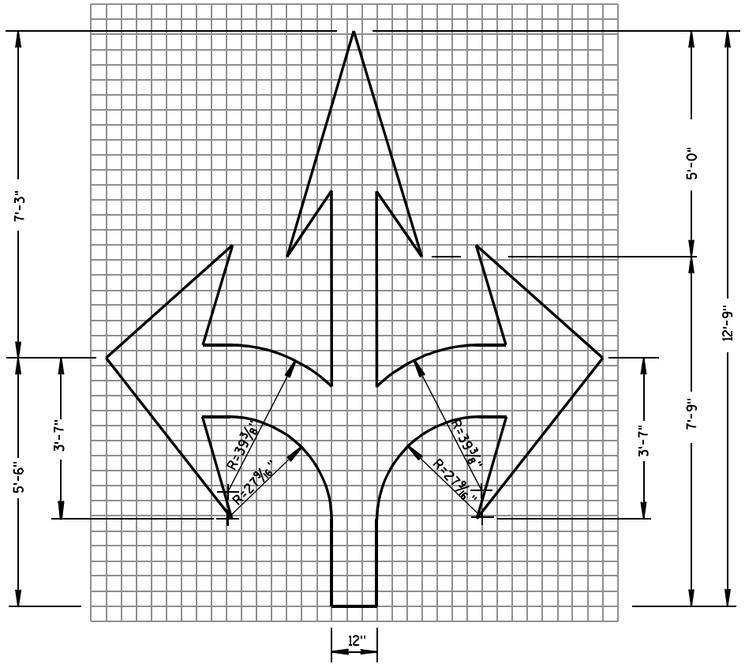
GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

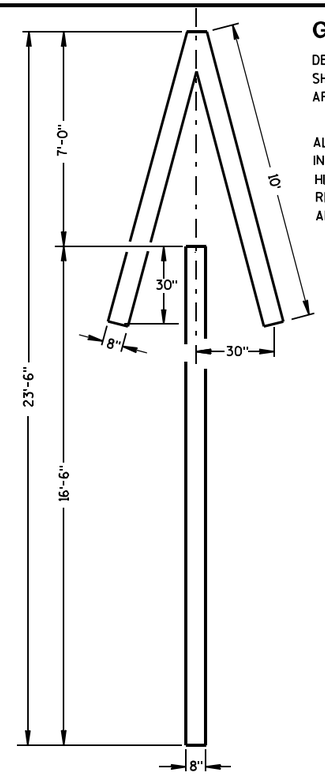
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



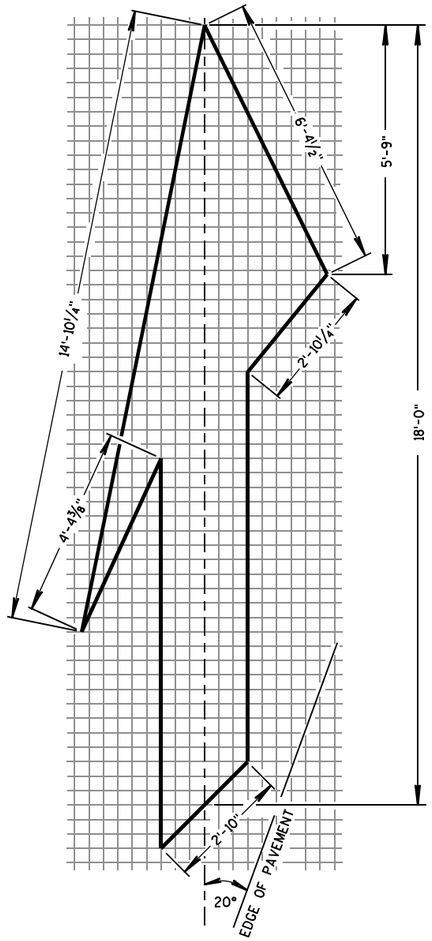
TYPE 2



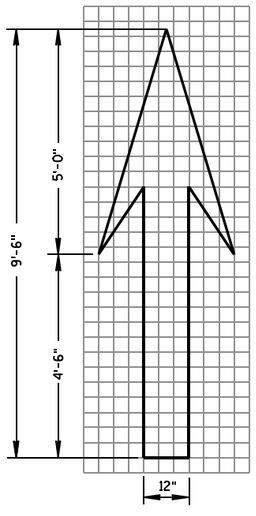
TYPE 6



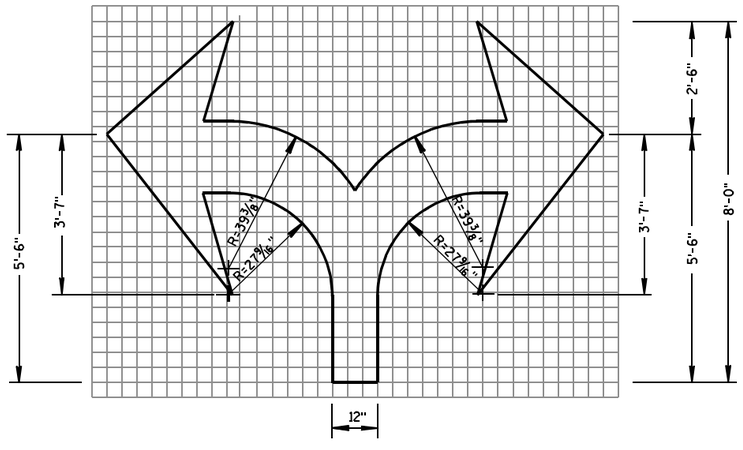
TYPE 4



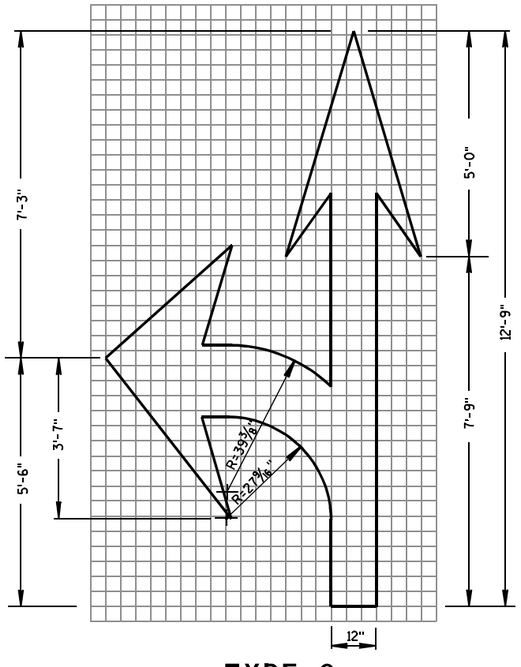
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

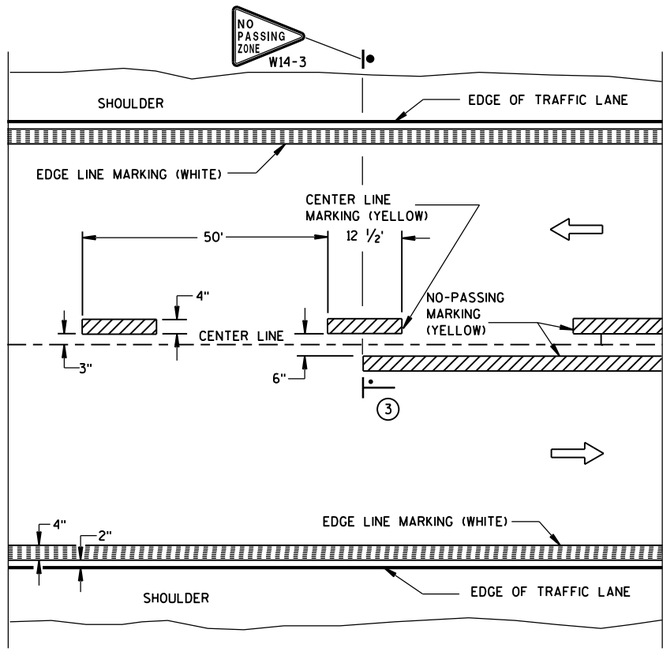
PAVEMENT MARKING ARROWS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/1/11 DATE	/S/ Thomas N. Nothdurm STATE TRAFFIC ENGINEER
FHWA	

6

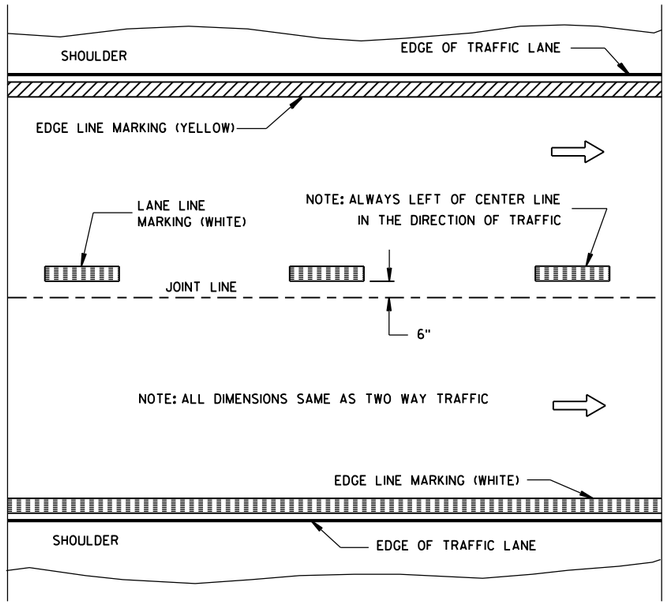
S.D.D. 15 C 7-12c

6

S.D.D. 15 C 7-12c

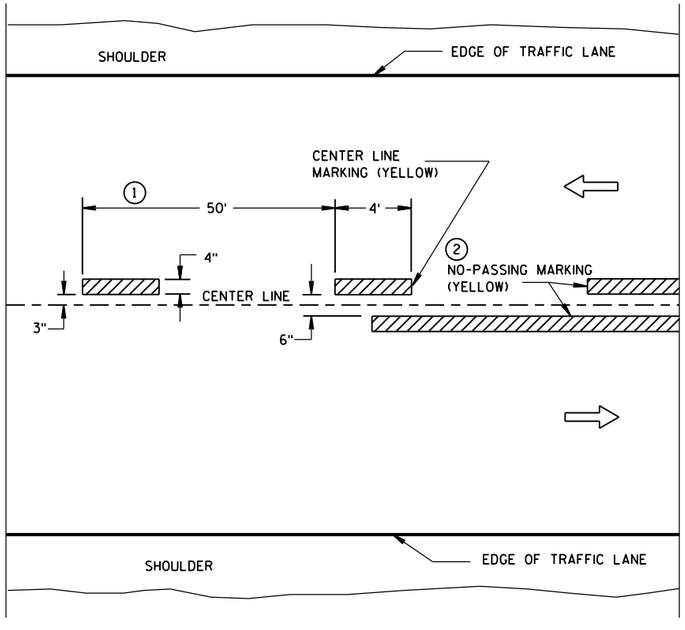


TWO WAY TRAFFIC

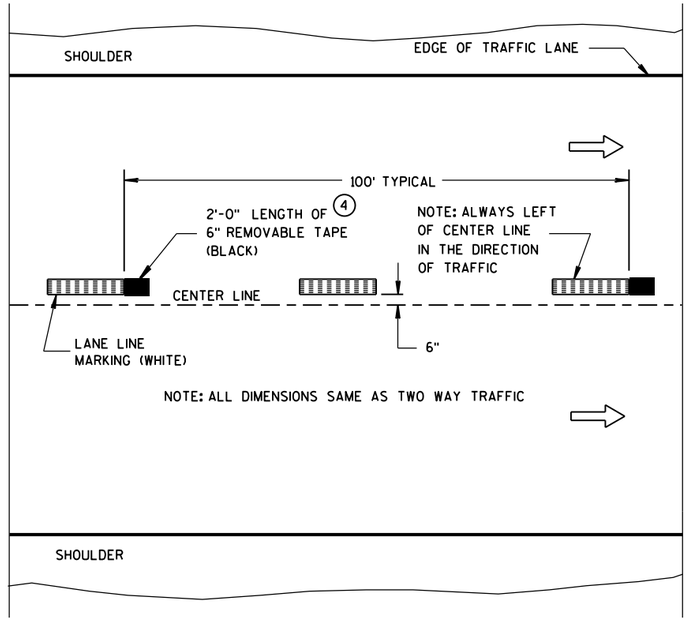


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

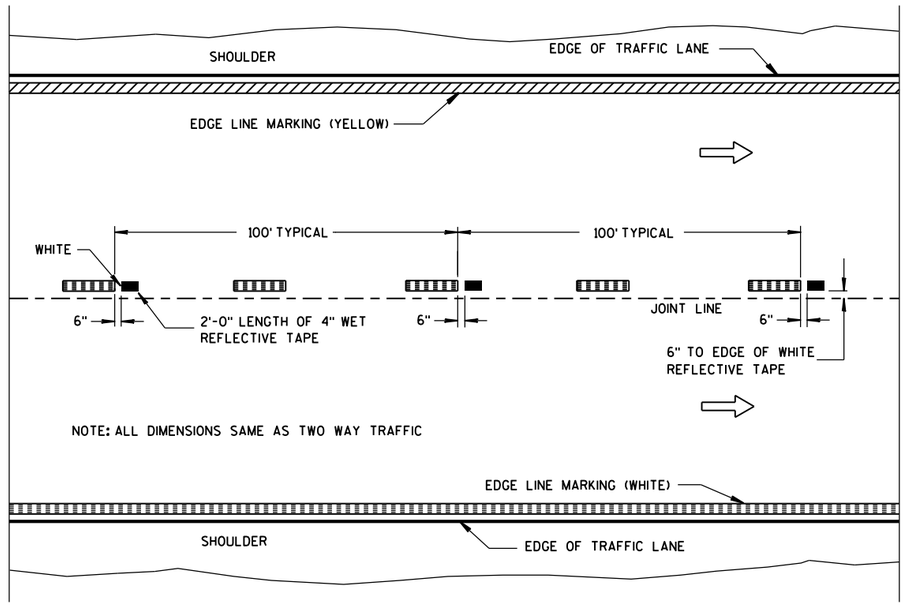
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

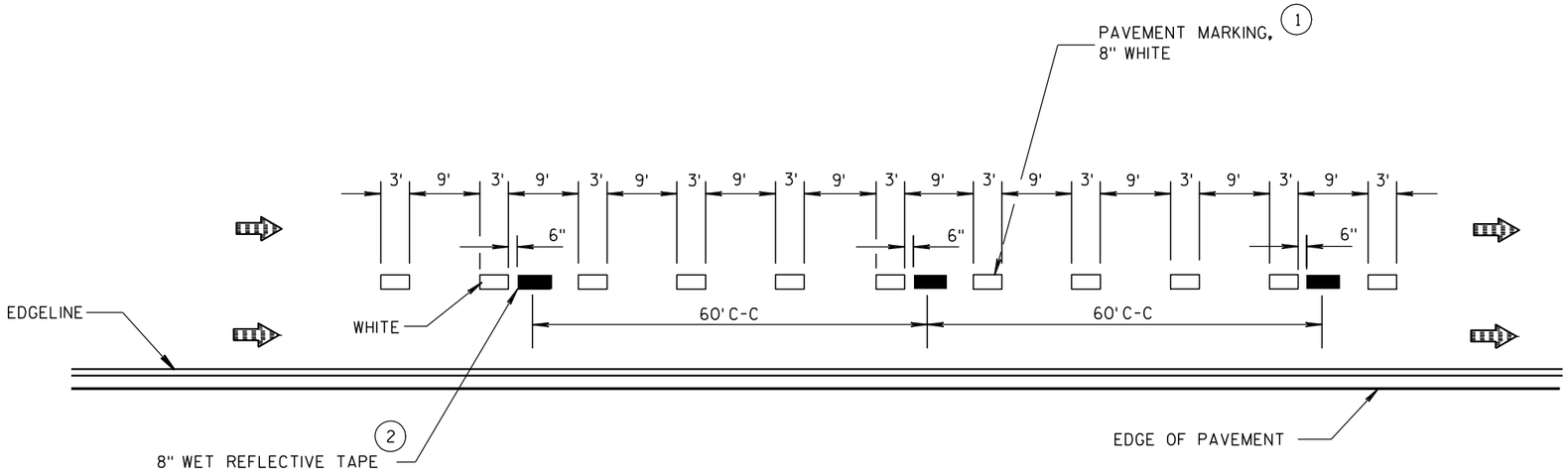
FHWA

6

S.D.D. 15 C 8-16a

6

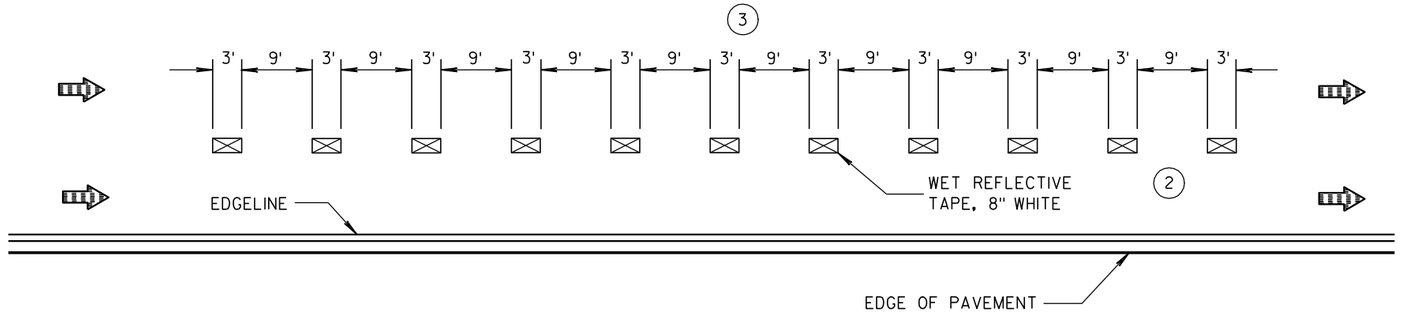
S.D.D. 15 C 8-16a



SPRAYED OR NON WET REFLECTIVE DROP LANE LINE SUPPLEMENTED BY WET REFLECTIVE TAPE SEGMENT

GENERAL NOTES

1. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE. RETRACE EXISTING 4" MARKING WITH 8" MARKING.
2. REPLACE SAME 4" WET REFLECTIVE TAPE WHERE EXISTING 4" TAPE IS IN PLACE.
3. 3' LINE 9' GAP, EXCEPT REPLACE THE EXISTING LINE - GAP PATTERN AND WIDTH OF TAPE WHERE EXISTING TAPE IS IN PLACE.



DROP LANE DETAIL FOR NEW WET REFLECTIVE TAPE INSTALLATIONS

LEGEND

- 2.0' LENGTH OF WET REFLECTIVE TAPE
- 3.0' LENGTH OF WET REFLECTIVE TAPE
- DROP LANE MARKING SPRAYED OR NON WET REFLECTIVE TAPE
- DIRECTION OF TRAFFIC

PAVEMENT MARKINGS FOR DROP LANES FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/13/10 DATE — /S/ Thomas N. Nothnagel STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 10-10

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

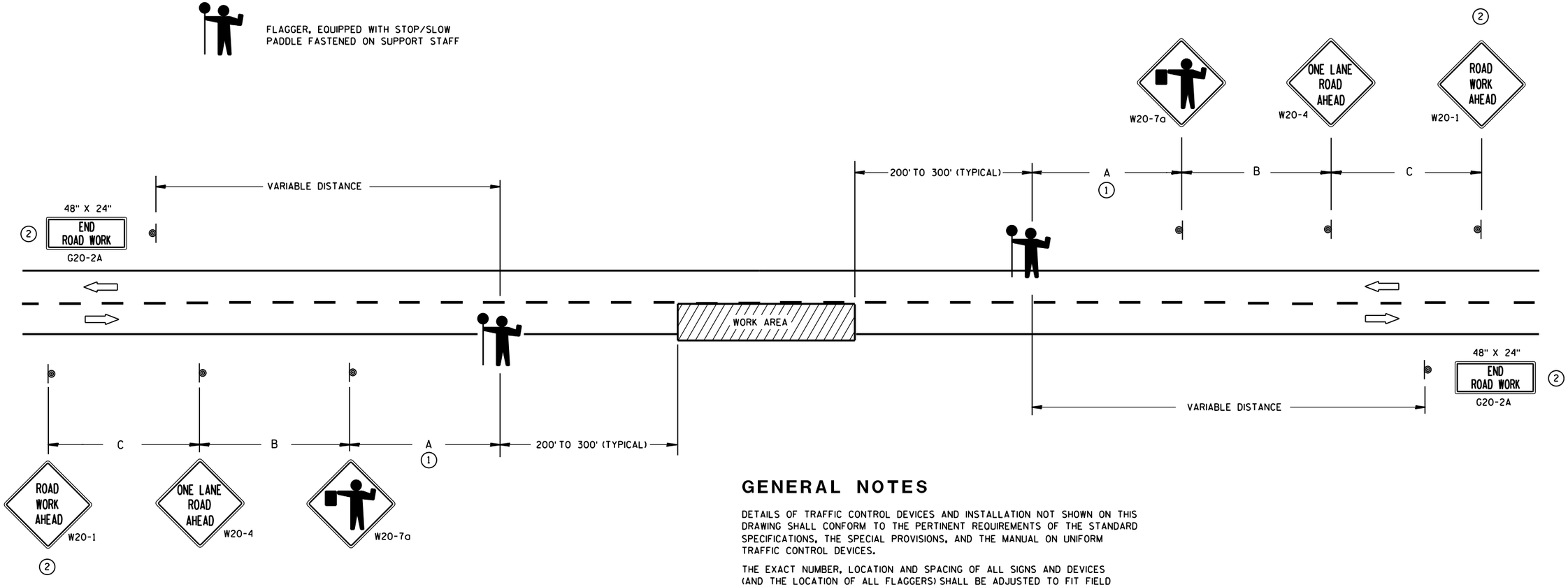
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

W3-4

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE LOCATION OF ALL FLAGGERS) SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

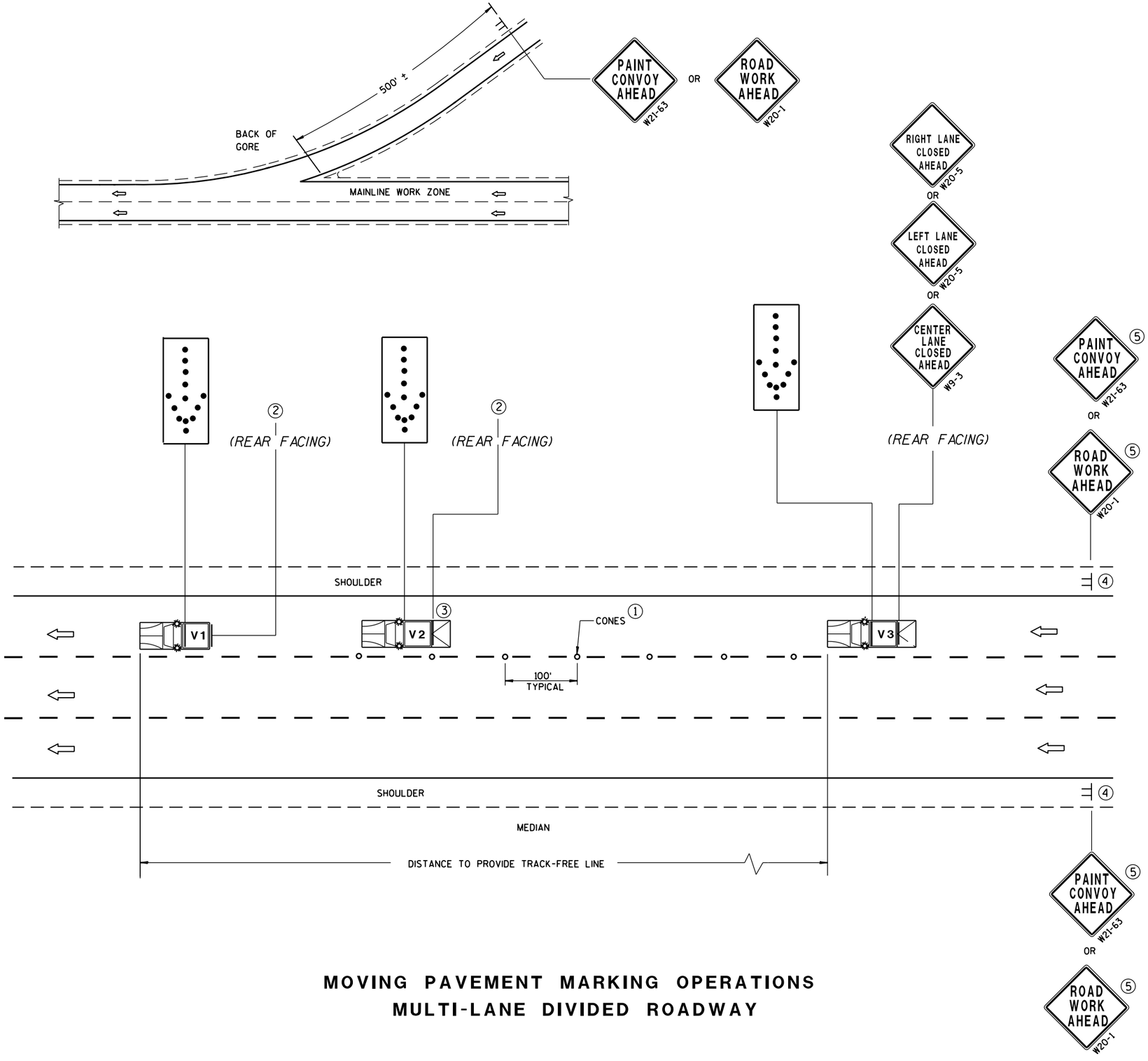
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
DESIGN
FHWA

6

S.D.D. 15 C 12-4

6

S.D.D. 15 C 12-4



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.

⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1	LEAD VEHICLE
V2	SHADOW VEHICLE
V3	TRAIL VEHICLE WITH TMA
TMA	TRUCK-MOUNTED ATTENUATOR
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	CONES
	FLASHING ARROW PANEL (MERGE)

MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/3/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC EN

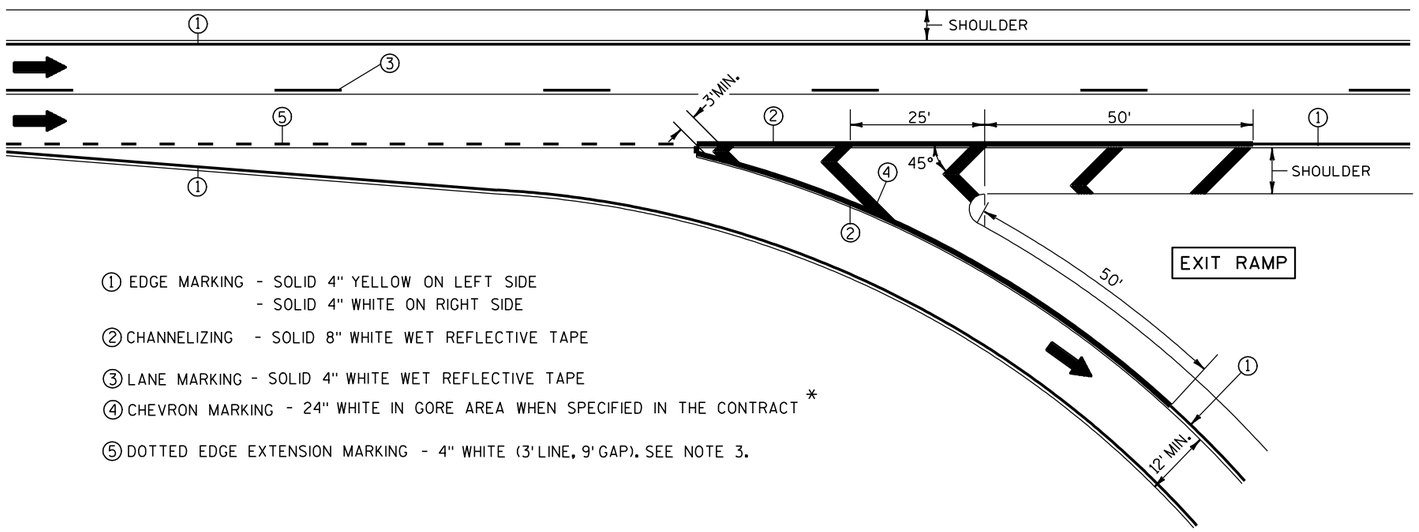
FHWA

6

S.D.D. 15 C 19-2c

6

S.D.D. 15 C 19-2c



① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE

② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE

③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE

④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *

⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

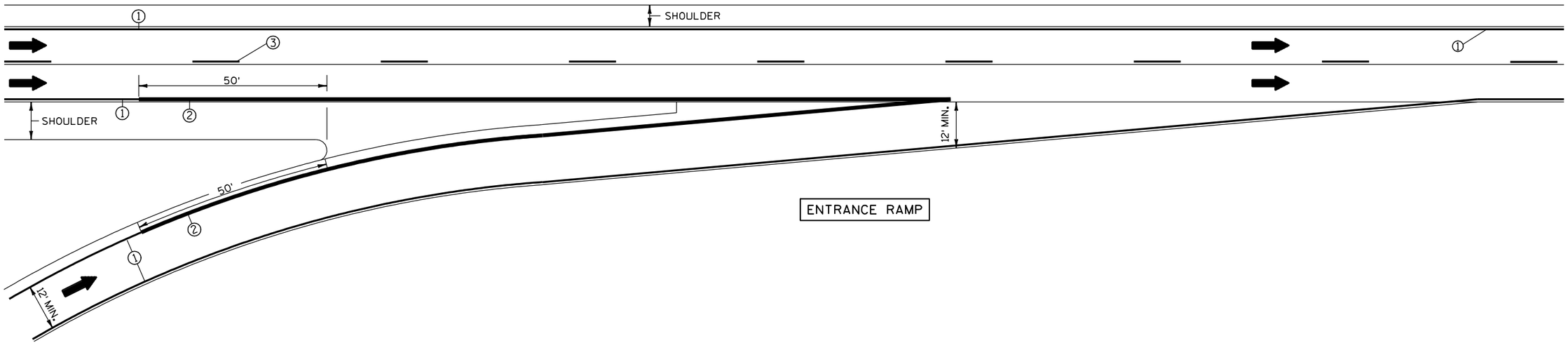
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



6

S.D.D. 15 C 31-1a

PAVEMENT MARKING
(RAMPS AND GORES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 31-1a

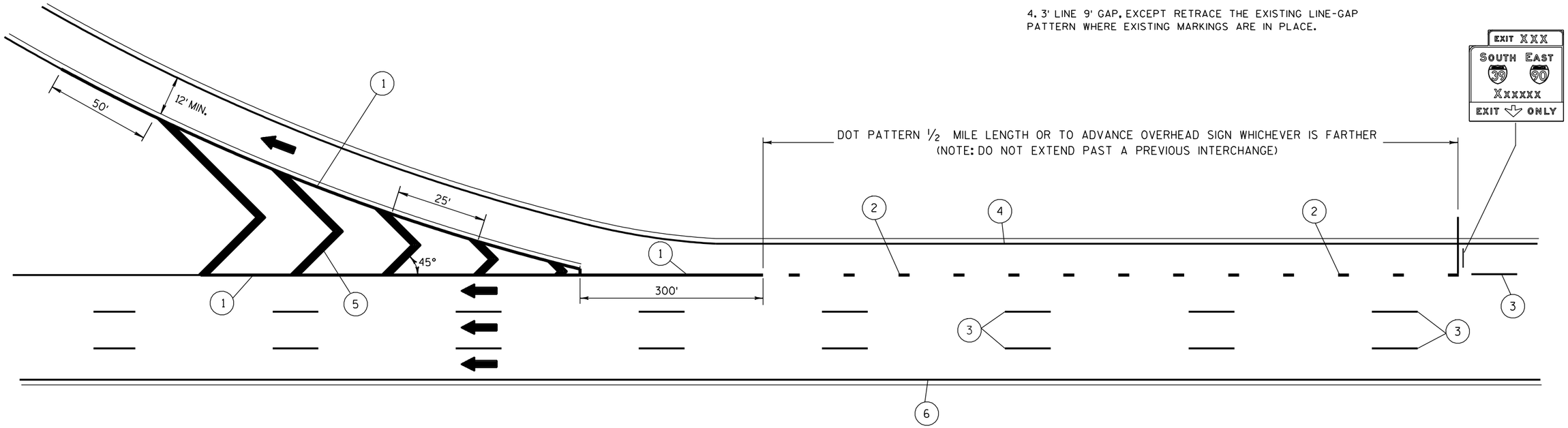
NOTES:

1. SEE STANDARD DETAIL DRAWING 15 C 10 FOR SPRAYED OR NON WET REFLECTIVE LINE SEGMENTS.

2. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

3. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

4. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.



1. CHANNELIZING - SOLID 8" WHITE WET RELECTIVE TAPE
2. 3' LINE, 9' GAP SOLID 8" WHITE WET REFLECTIVE TAPE. SEE NOTE 4.
3. SOLID 4" WHITE WET REFLECTIVE TAPE
4. 4" WHITE EDGELINE
5. CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT
6. 4" YELLOW EDGELINE

LANE DROP
PAVEMENT MARKING

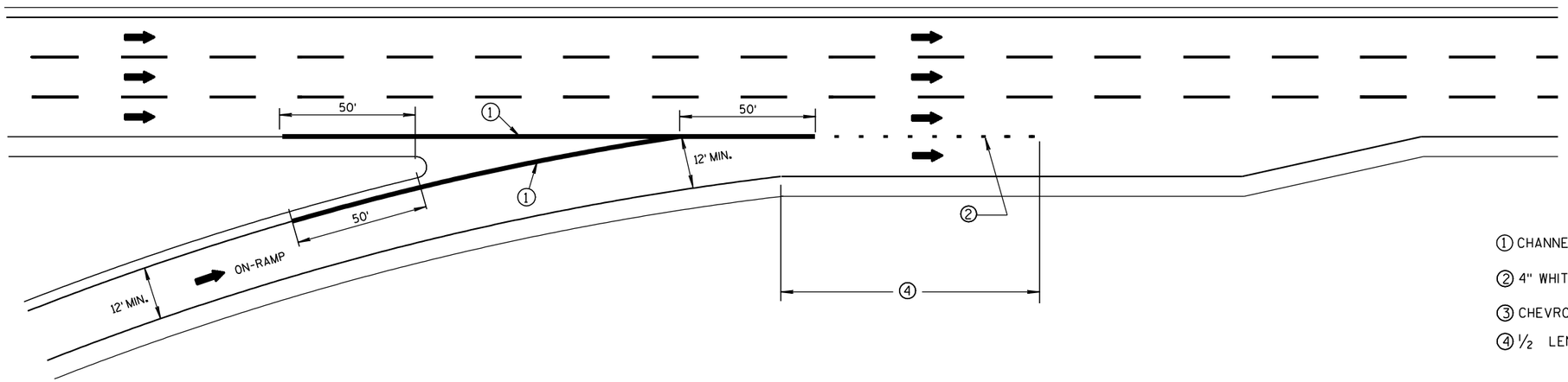
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 31-1b
S.D.D. 15 C 31-1b

NOTES:

1. AHEAD ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
3. RETRACE EXISTING DIAGONAL MARKINGS.



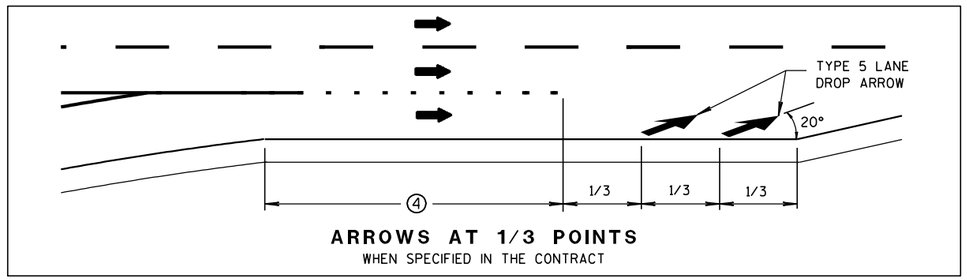
① CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE IN GORE AREA.

② 4" WHITE (3' LINE, 9' GAP).

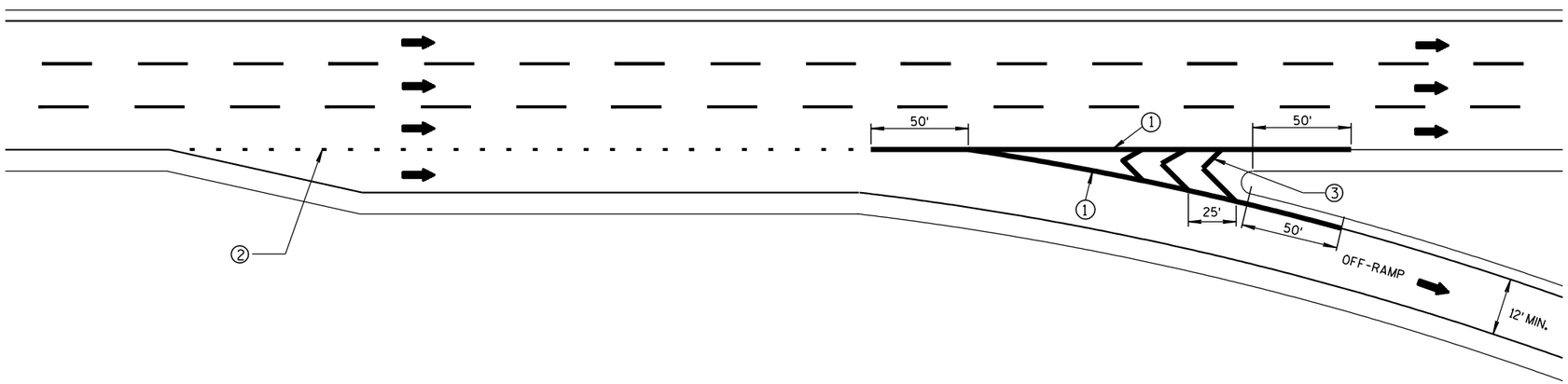
③ CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT.

④ ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP



ARROWS AT 1/3 POINTS
WHEN SPECIFIED IN THE CONTRACT



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/23/2011 DATE
/S/ Thomas N. Nothem
STATE TRAFFIC ENGINEER SIGN

FHWA

6

S.D.D. 15 C 31-1d

6

S.D.D. 15 C 31-1d

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).

LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

R2-1
48"x60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER.

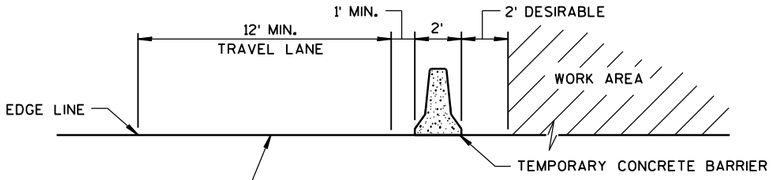
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

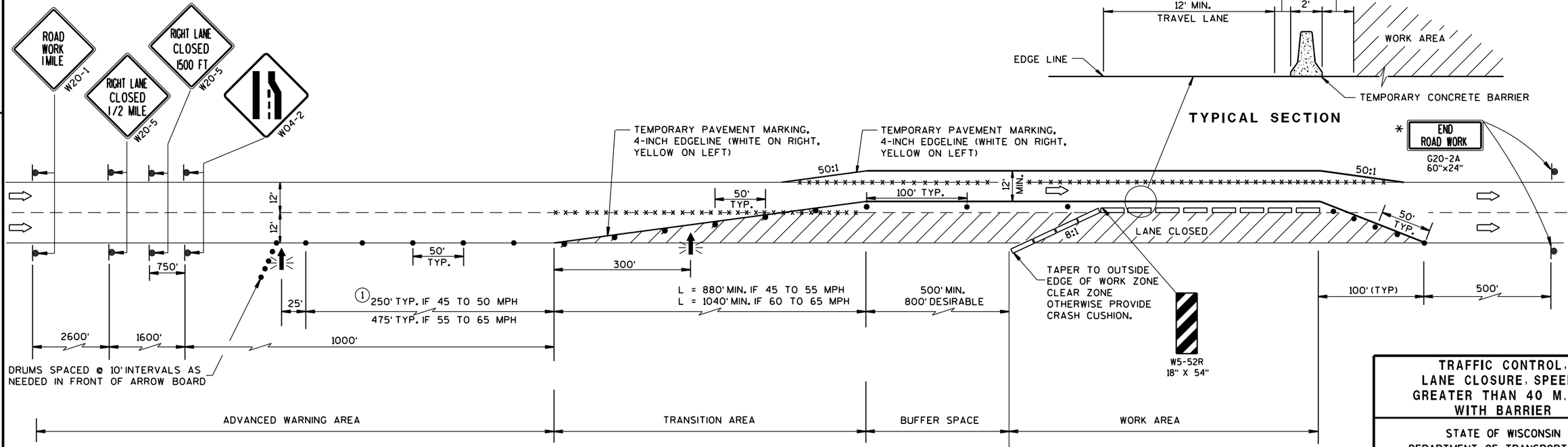
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.



TYPICAL SECTION



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

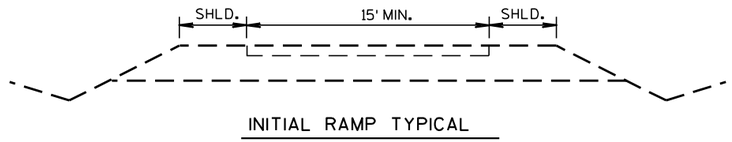
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER — SIGN
FHWA

6

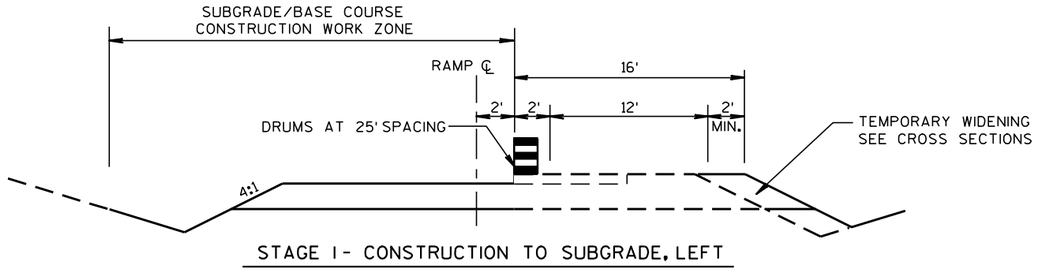
S.D.D. 15 D 3-2

6

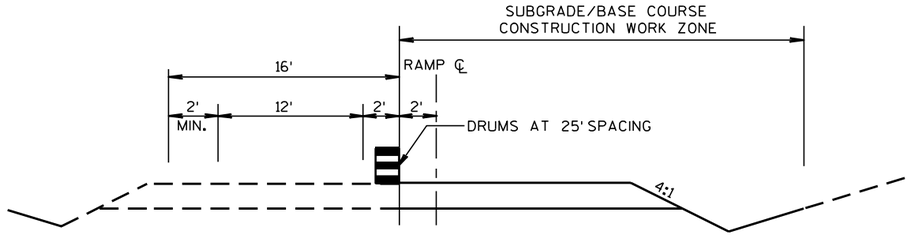
S.D.D. 15 D 3-2



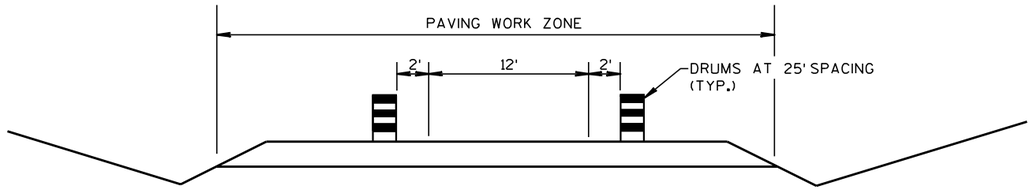
INITIAL RAMP TYPICAL



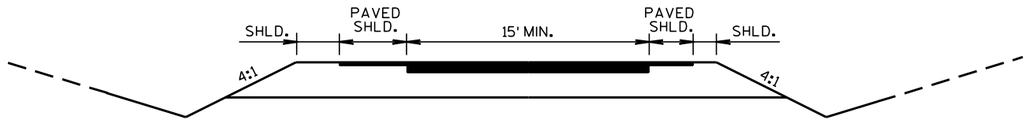
STAGE I - CONSTRUCTION TO SUBGRADE, LEFT



STAGE II - CONSTRUCTION TO SUBGRADE, RIGHT



STAGE III - TRAFFIC ON BASE COURSE



STAGE IV - PAVING

GENERAL NOTES :

WORK SHALL BE SCHEDULED FOR ALL STAGES TO MINIMIZE INCONVENIENCE TO THE TRAFFIC USING THE RAMP WHILE IT IS ONLY BASE COURSE.

IN STAGE III, A MINIMUM 12' LANE WIDTH SHALL BE DELINEATED WITH DRUMS ALONG BOTH EDGES AT ALL TIMES UNTIL PAVED AND PAVEMENT MARKINGS ARE PLACED.

TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

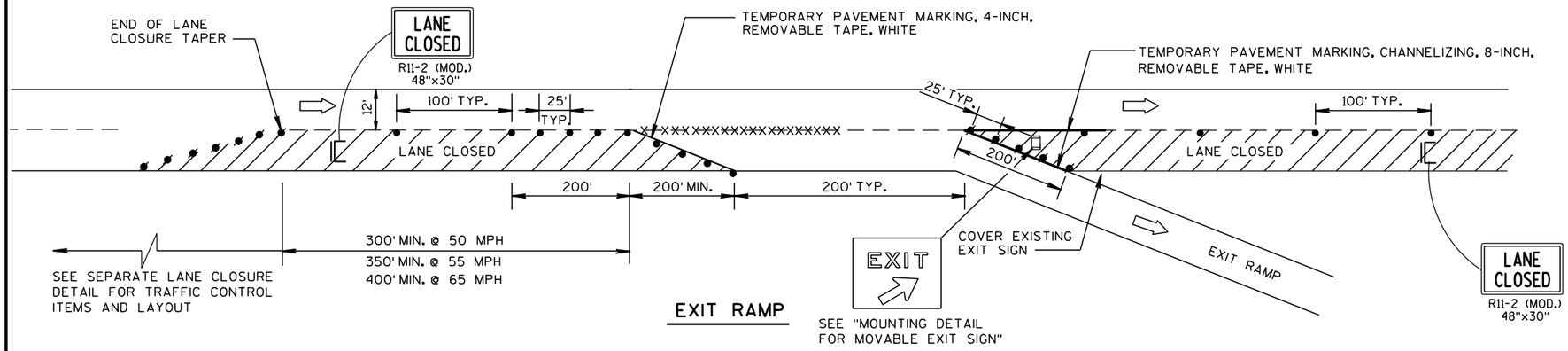
7-14-94
DATE

/S/ Chester J. [illegible]
DIRECTOR, OFFICE [illegible]

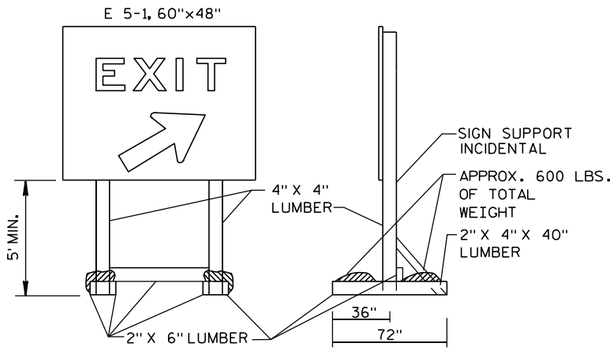
FHWA

6

S.D.D. 15 D 4-1

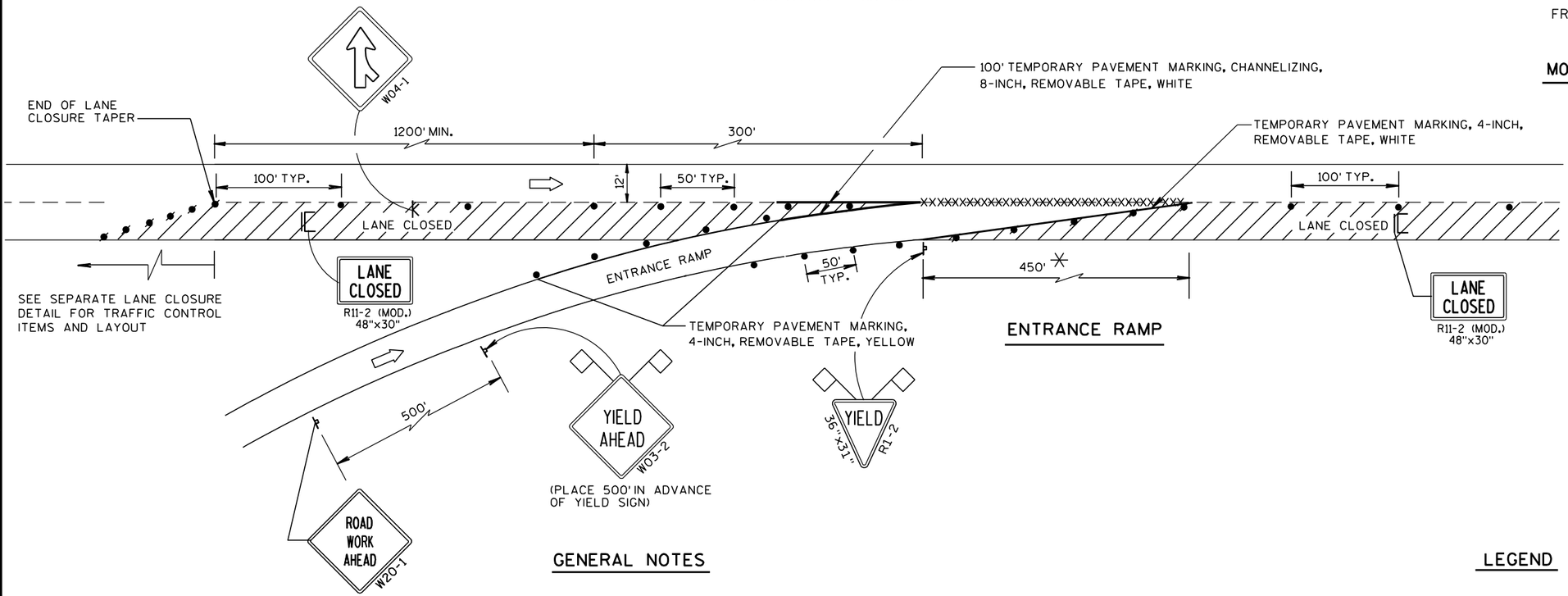


EXIT RAMP



NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL

MOUNTING DETAIL FOR MOVABLE EXIT SIGN



ENTRANCE RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

✳ LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

S.D.D. 15 D 15-1

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE WITH ATTACHED SIGN

TRAFFIC CONTROL DRUM

SIGN ON PERMANENT SUPPORT

TYPE "A" WARNING LIGHT (FLASHING)

DIRECTION OF TRAFFIC

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

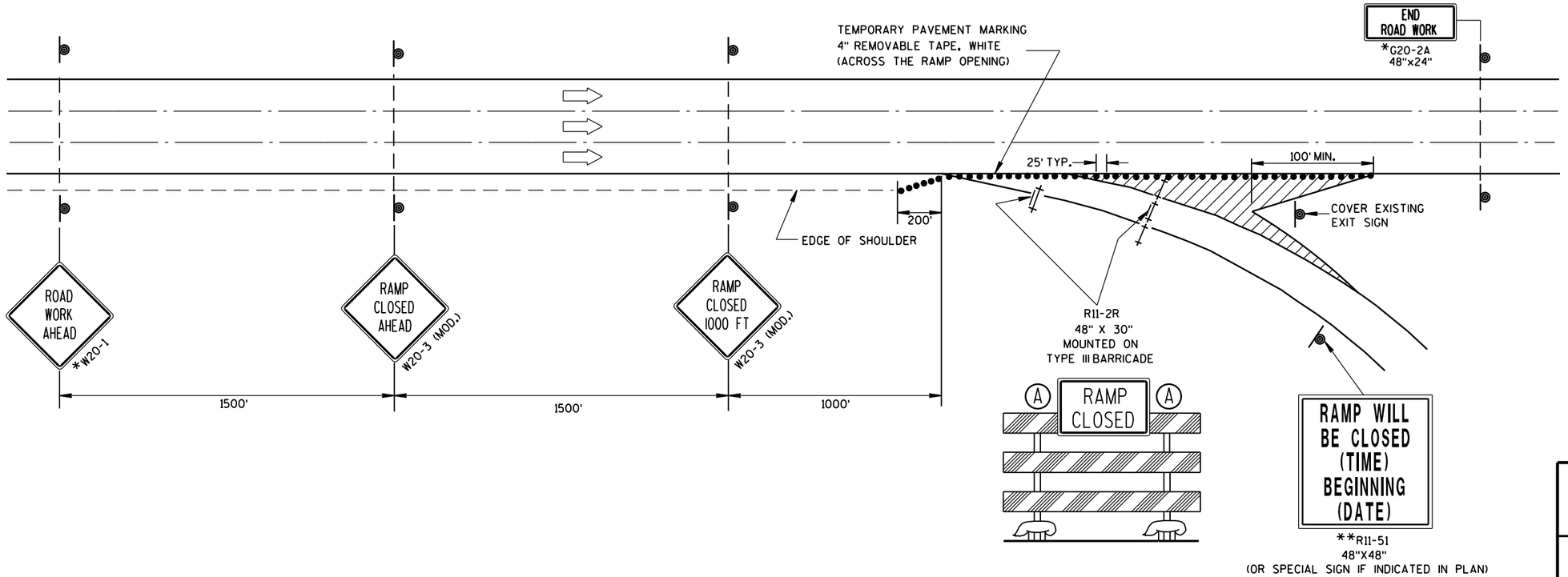
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

*W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP WILL BE CLOSED" SIGN 10 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



TRAFFIC CONTROL,
EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

DESIGN

FHWA

6

S.D.D. 15 D 16-2

6

S.D.D. 15 D 16-2

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

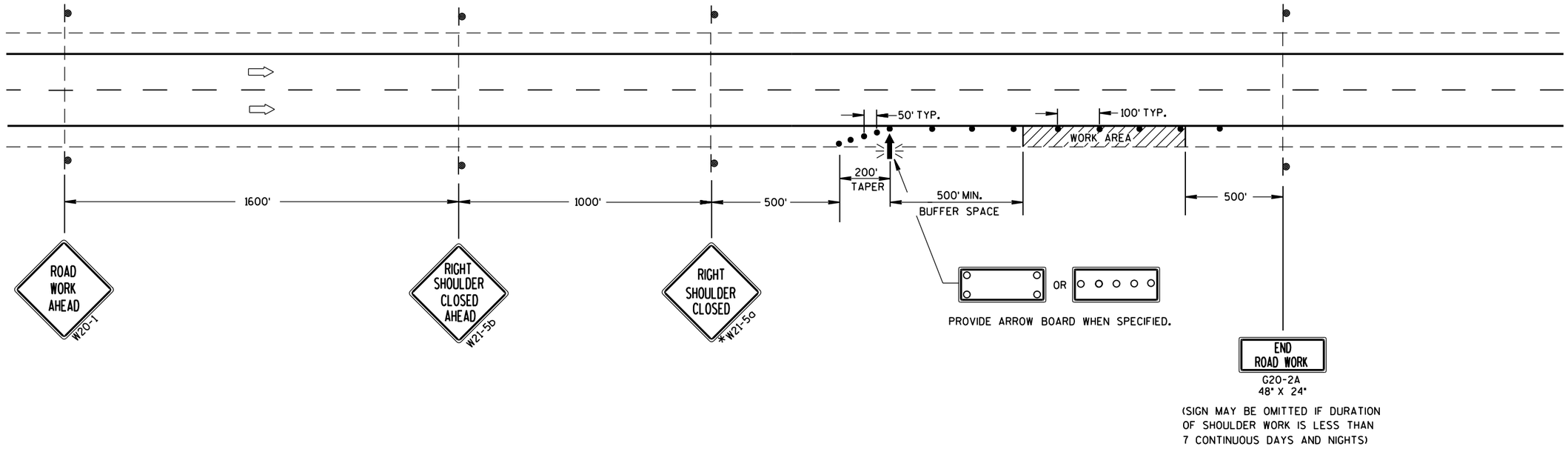
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

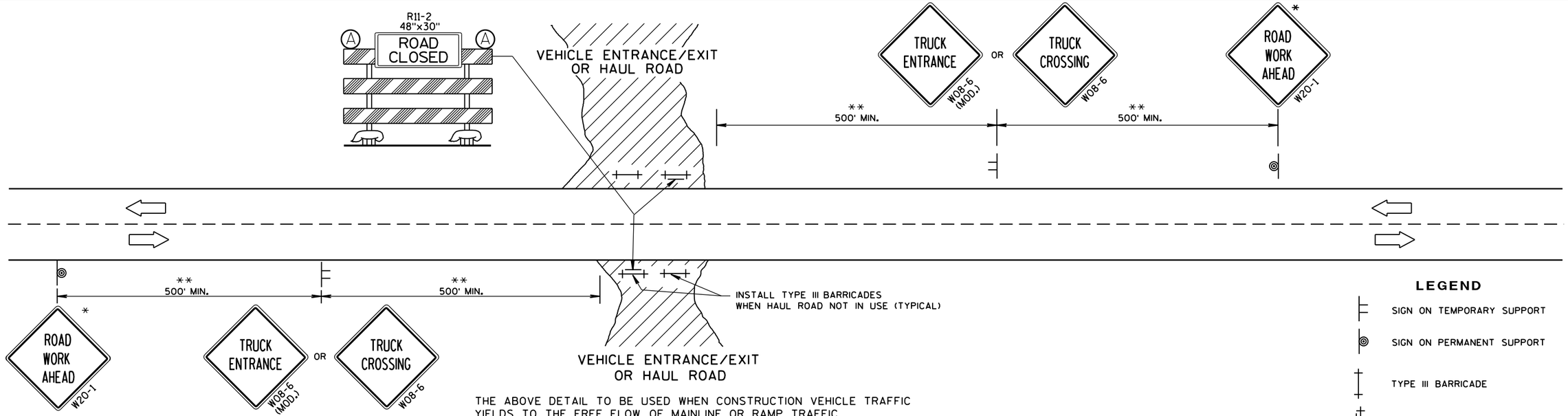
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 27-2



THE ABOVE DETAIL TO BE USED WHEN CONSTRUCTION VEHICLE TRAFFIC YIELDS TO THE FREE FLOW OF MAINLINE OR RAMP TRAFFIC

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS, DEVICES AND FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.

WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

* THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE ENTRANCE/EXIT CONDITIONS ARE SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.

** 500 FEET SHOWN IS FOR ROADWAYS WITH A NON-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FEET. FOR 25-30 MPH, USE 200 FEET. USE 1000 FEET/1500 FEET FOR EXPRESSWAY/FREEWAY.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

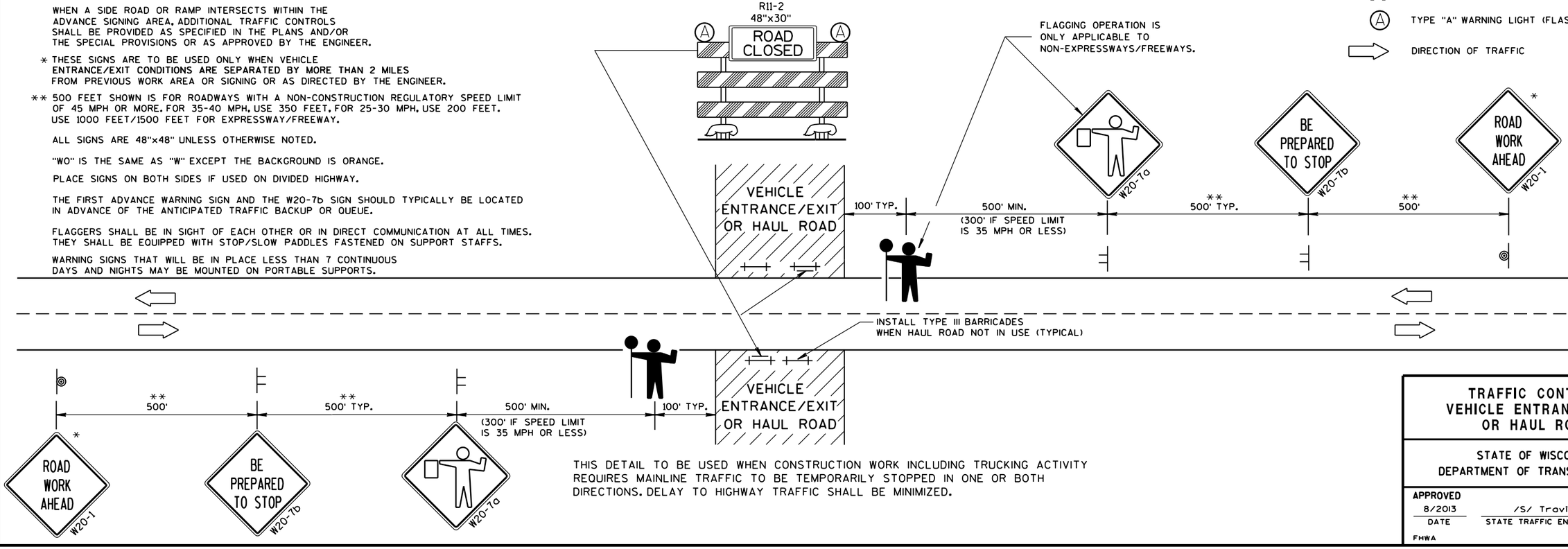
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.

THE FIRST ADVANCE WARNING SIGN AND THE W20-7b SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS.

WARNING SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.



THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINEER	IGN

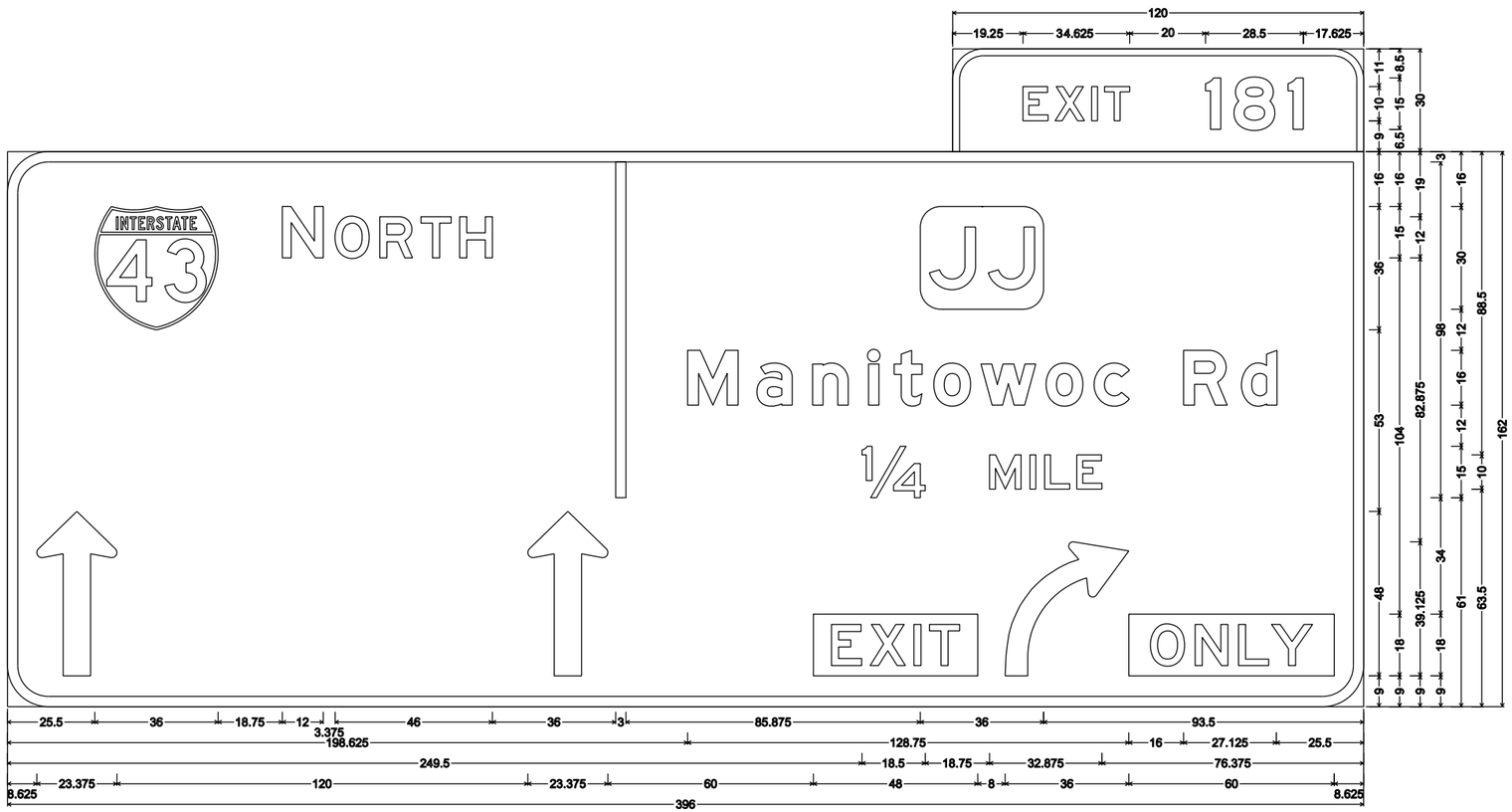
FHWA

6

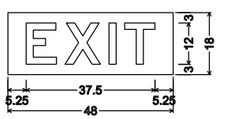
S.D.D. 15 D 29-3

NOTES

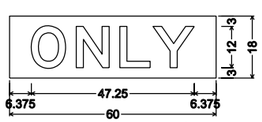
1. All Signs are Type I - Type SH Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White
3. Message Series - E Modified except all CAPS words Series E



9.000" Radius, 2.000" Border, White on Green;
"EXIT" E; "181" E Mod;
12.000" Radius, 3.000" Border, White on Green;
"NORTH" E; Square County JJ M1-55-2; "Manitowoc" E Mod; "Rd" E Mod; "1/4" E; "MILE" E; Arrow Custom - 48.000" 90°; Arrow Custom - 48.000" 90°; Rectangle Fluorescent yellow;
R3-6L left double headed arrow ir=14.5, s=3.5; Rectangle Fluorescent yellow;

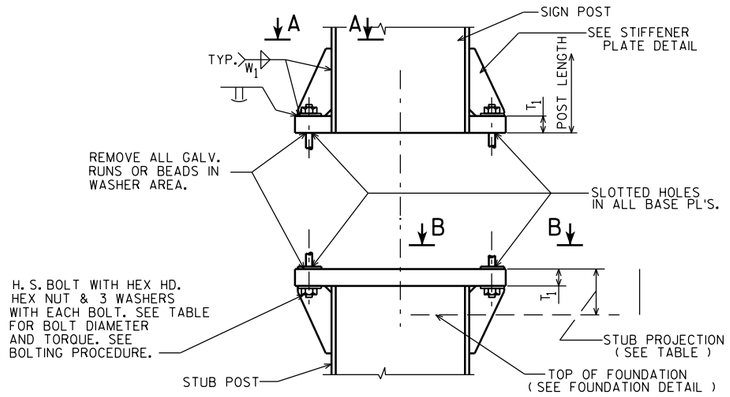


No border, Black on Fluorescent yellow;
"EXIT" E;

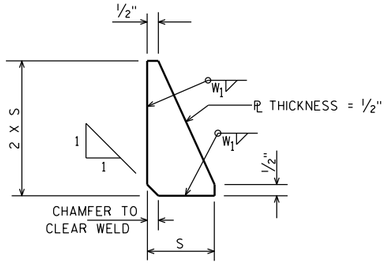


No border, Black on Fluorescent yellow;
"ONLY" E;

PROJECT NO: 1227-13-60	HWY: IH-43	COUNTY: BROWN	SIGN DETAILS	SHEET NO: E

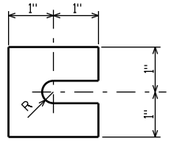


SIGN POST AND STUB POST ELEVATION



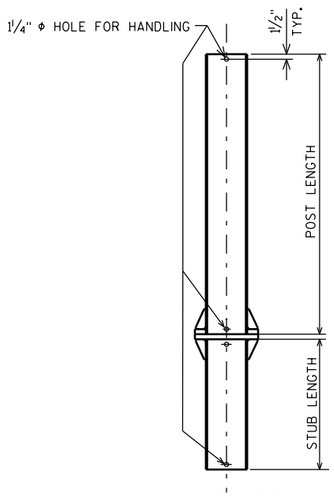
STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

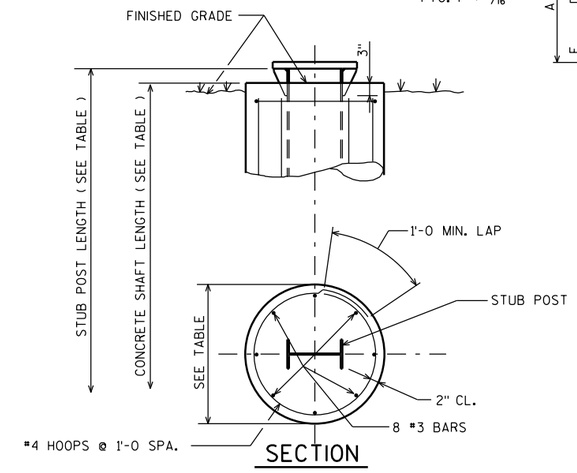


FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M.- B36.

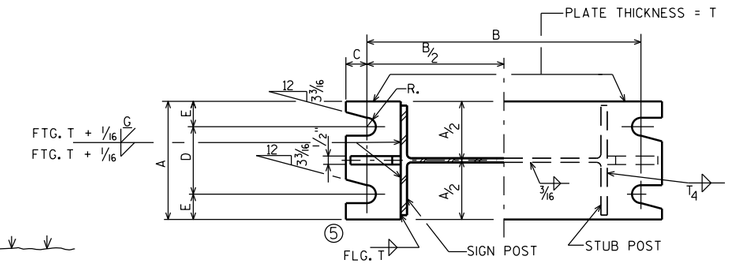
SHIM DETAIL



POST DETAIL

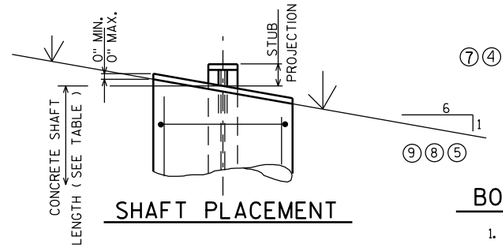


SECTION



SECTION A-A

SECTION B-B



SHAFT PLACEMENT

DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

GROUP LOADS	PERCENT OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & ½ WIND[4]	140 [4]25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1½T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50.
(9) THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
H.S. BOLTS, WASHERS & NUTS SHALL BE A325 GALVANIZED WHEN POSTS, POST STUBS AND ATTACHMENTS ARE A709 GRADE 50 AND GALVANIZED.

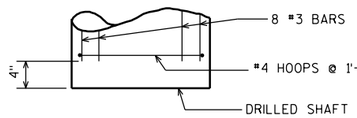
BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
5. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

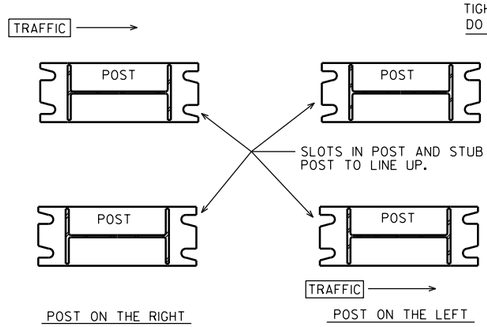
NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.

QUANTITIES FOR 1 FOOTING	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
(7) E	1.0	62

REINF. TYPE	#3	#4
A	8 @ 4'-5	5 @ 6'-3
B	8 @ 6'-5	7 @ 6'-3
C	8 @ 6'-11	7 @ 6'-3
D	8 @ 7'-5	8 @ 6'-3
(7) E	8 @ 7'-11	9 @ 6'-3



FOUNDATION DETAIL



POST SLOT ORIENTATION (7)

TYPE	POST SIZE \ DIMENSION	BOLT SIZE & TORQUE	A	B	C	D	E	T_1	T_4	W_1	R	S	STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	K (2)
(4) A	W10"X12.0 #/FT.	¾" Φ @ 75#-FT.	5¼"	1'-0⅜"	⅞"	3½"	⅞"	1"	3/16"	5/16"	13/32"	2⅛"	3'-6	3"	2'-0 Φ	5'-0	76.0# (4)
(4) B	W12"X16.0 #/FT.	⅞" Φ @ 85#-FT.	5½"	1'-4¼"	1"	3½"	1"	1¼"	¼"	5/16"	15/32"	3"	5'-6	3"	2'-0 Φ	7'-0	146.5# (4)
C	W12"X19.0 #/FT.	⅞" Φ @ 85#-FT.	5½"	1'-4¼"	1"	3½"	1"	1½"	5/16"	5/16"	15/32"	3"	6'-0	3"	2'-0 Φ	7'-6	182.1#
D	W12"X22.0 #/FT.	⅞" Φ @ 85#-FT.	5½"	1'-4¼"	1"	3½"	1"	1½"	3/8"	5/16"	15/32"	3"	6'-6	3"	2'-0 Φ	8'-0	210.5#
(3) E	W12"X26.0 #/FT.	1" Φ @ 90#-FT.	7"	1'-4¼"	1¼"	4"	1½"	1½"	3/8"	5/16"	17/32"	3"	7'-0	3"	2'-0 Φ	8'-6	293.0# (3)

BASE CONNECTION DATA TABLE — FOUNDATION DATA

(1) (6) (1)

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K+ (POST LENGTH X POST WT.)
" K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION
APPROVED Matthew R Rauch for State Traffic Engineer
DATE 2/06/14 PLATE NO. A3-1.14

NO.	DATE	REVISION
(10)	1-21-14	LUBRICATION OF BASE BOLTS
(9)	4-26-11	REMOVE NON-GALVANIZED
(8)	10-30-96	NOT GALVANIZED/GALVANIZED
(7)	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW
(6)	8-24-87	BASE CONN. WELD
(5)	10-13-81	BASE CONN. WELD & FUSE ℄ WASHERS
(4)	10-19-79	POST A & B, A572 GR. 50, & K
(2)	11-28-78	"K" (3) 4-23-79 TYPE "E"
(1)	5-4-78	T_1 , T_2 & W_1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TYPE A, B, C, D, & E

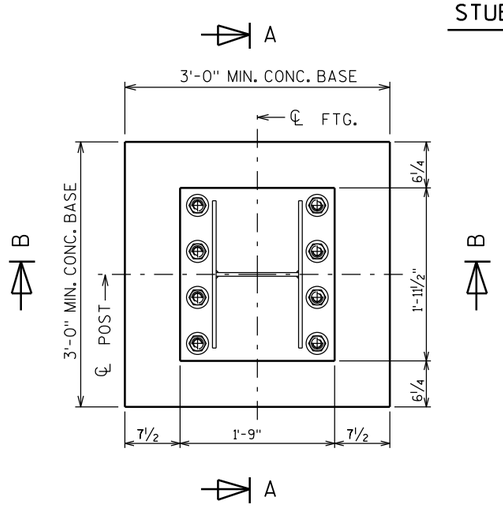
CONST. SPEC.	DRAWN BY	PLANS CK'D.
2011	JPH	

FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS

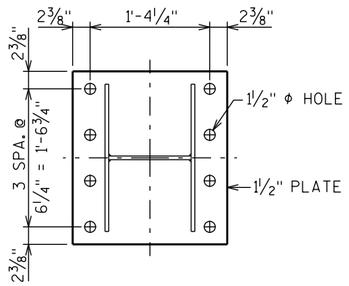
SHEET 73

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

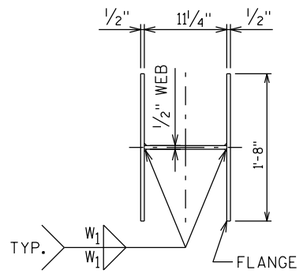
STUB AND MASONRY ANCHOR DETAILS



STUB SECTION



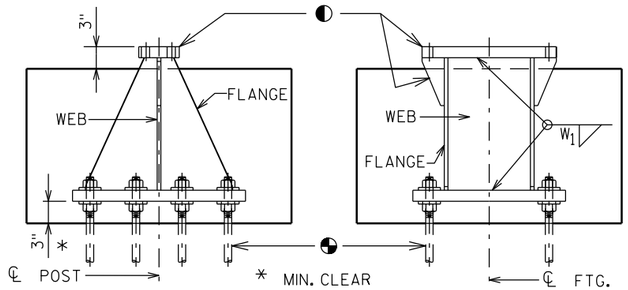
BASE PLATE



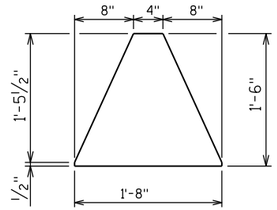
STUB

◐ SEE PLATE NO. A3-1 FOR DETAILS

◒ MASONRY ANCHORS TYPE S 1¼-INCHES (ADHESIVE). ALLOWABLE PULL OUT CAPACITY 14,995 KIPS. EMBED 1'-3" IN ROCK.



SECTION A SECTION B



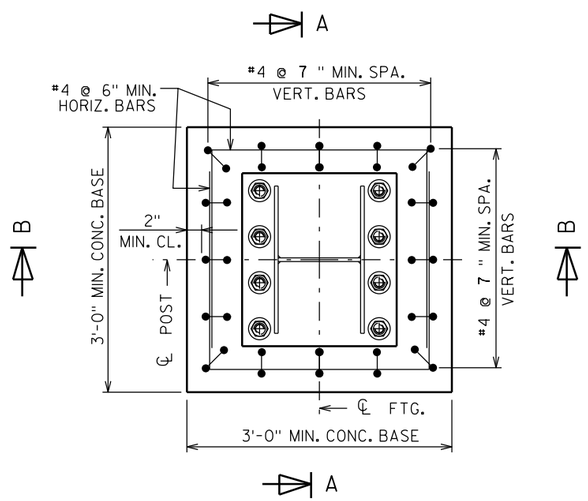
FLANGE

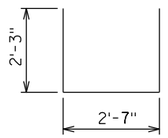
GENERAL NOTES

1. Quantities per Base:
   - REINFORCING BAR STEEL = 62 LBS
   - CONCRETE = 0.6 C.Y.
   - STEEL WEIGHT = 335 LBS
2. All materials, except anchor rod, nuts and washers, are to be A.S.T.M. A709 grade 50. All materials to be galvanized after fabrication.
3. If the contractor encounters rock before reaching the footing depth, per the A3-1 Sign Detail, determine the pull-out capacity of a test adhesive anchor installed in the rock. If the test result equals or exceeds the pull-out capacity of 14,995 KIPS, the contractor may install the breakaway stub for rock, according to this detail.

CONCRETE BASE AND REINFORCING STEEL DETAILS

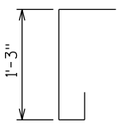
CONCRETE BASE SECTION





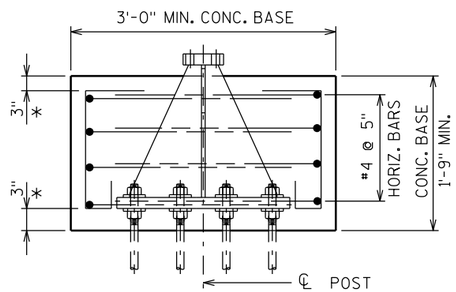
HORIZONTAL BAR

8 BARS @ 6'-11" LENGTH



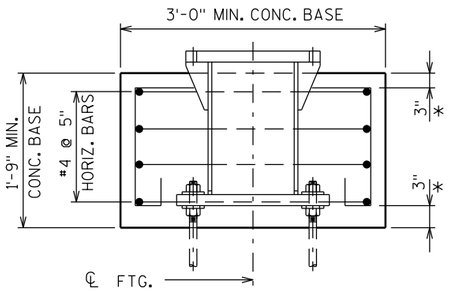
VERTICAL BARS

16 BARS @ 2'-4" LENGTH
MAY BE PLACED IN SKEW
FOR CLEARANCE NEED



SECTION A

* MIN. CLEAR



SECTION B

ALTERNATE BREAK-AWAY BASE ON ROCK
A3-1M

WISCONSIN DEPT OF TRANSPORTATION

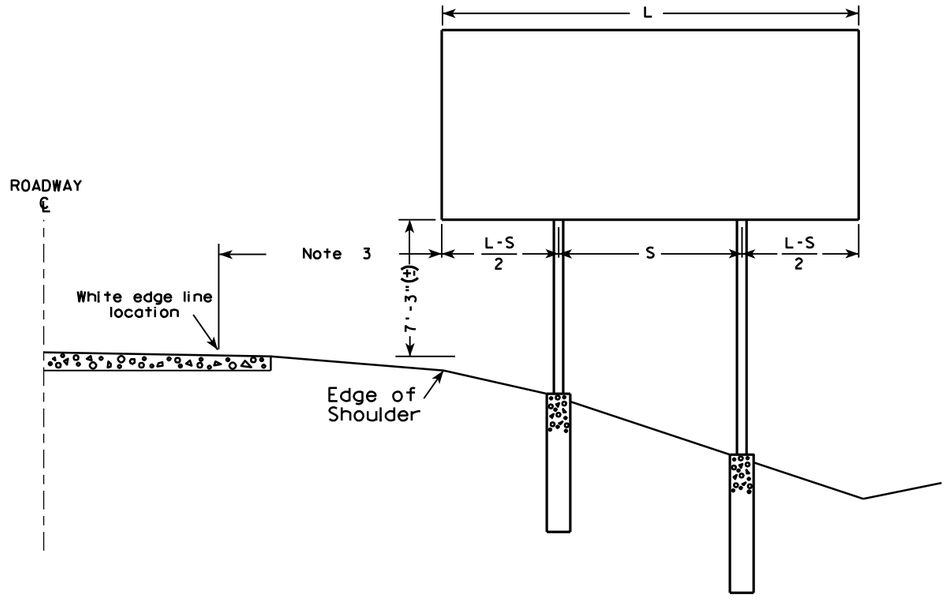
APPROVED Matthew R Rauch for State Traffic Engineer

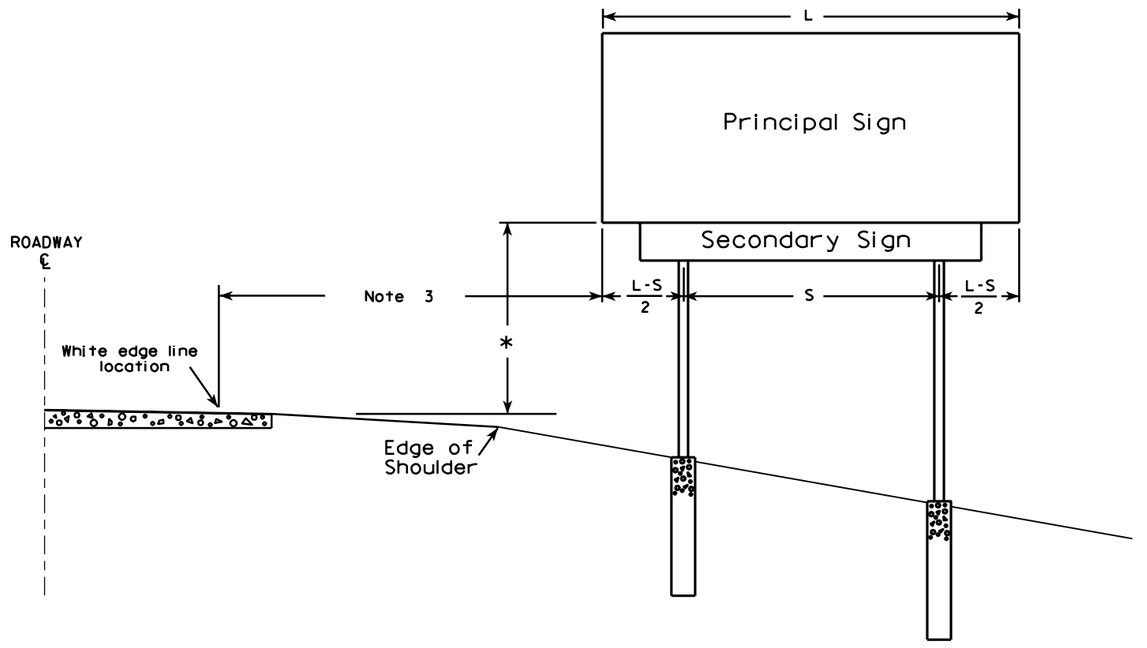
DATE 2/06/2014 PLATE A3-1M.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A31M.DGN PLOT DATE : 10-MAR-2014 15:16 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 1.556674:1.000000

WISDOT/CADDS SHEET 42





GENERAL NOTES

1. For a 2 post installation, S equals 3L/5, but shall not be less than 9 ft.
2. For a 3 post installation, S equals 5L/7, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3"(±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3"(±).

7

7

TYPICAL INSTALLATION OF TYPE I SIGNS

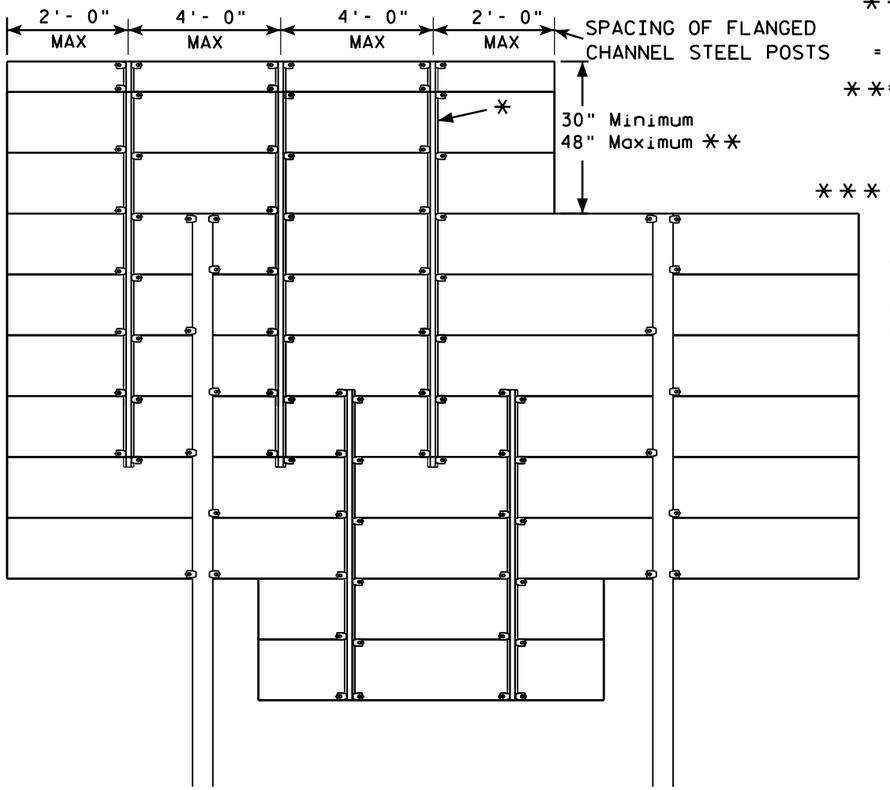
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/02/08 PLATE NO. A4-1.9

PROJECT NO:				SHEET NO: 75	E

GROUND MOUNTED SIGN

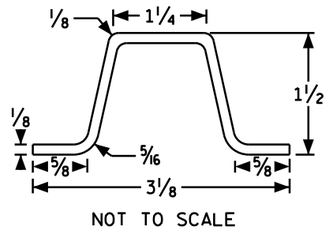


* =2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

** =FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

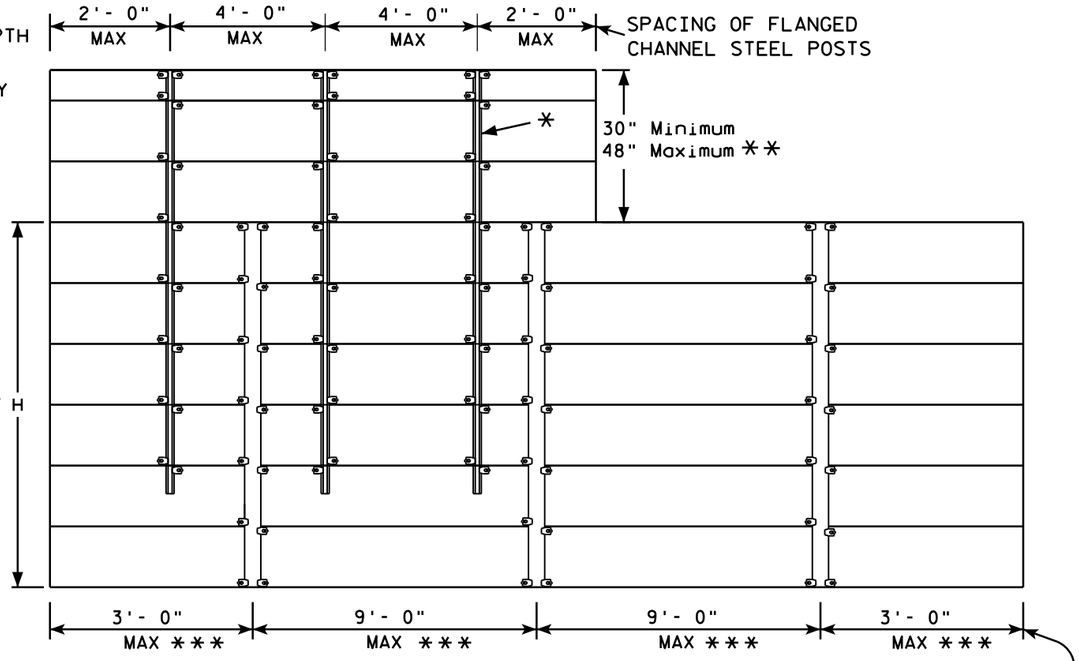
*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAIL



NOT TO SCALE

SIGN BRIDGE MOUNTED SIGN



SPACING OF ALUMINUM SIGN SUPPORTS
5" X 3.5" X 3.7 LBS./ft.

GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:

   PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
   PANEL LENGTH 9'- 0" - 12'- 0" = 3 CHANNELS
   PANEL LENGTH 13'- 0" OR MORE = 4 CHANNELS

   If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

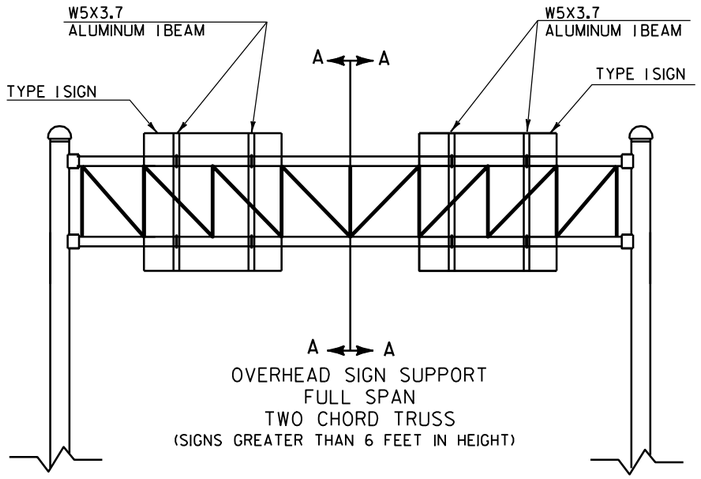
ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

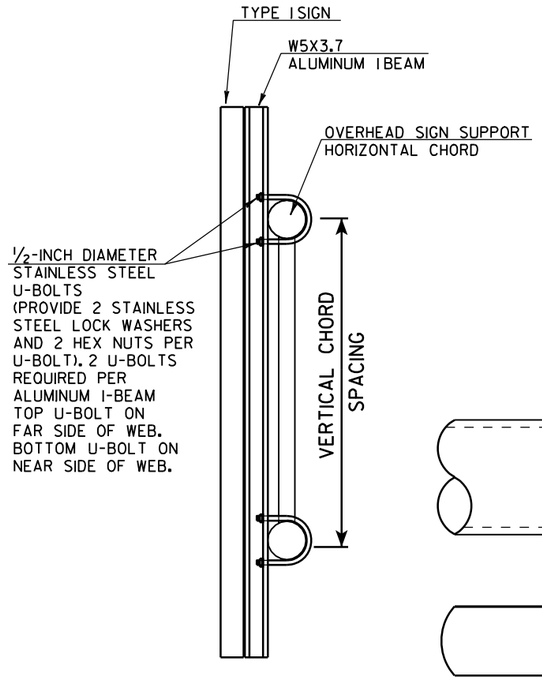
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/05/13 PLAT 76 A4-6.12

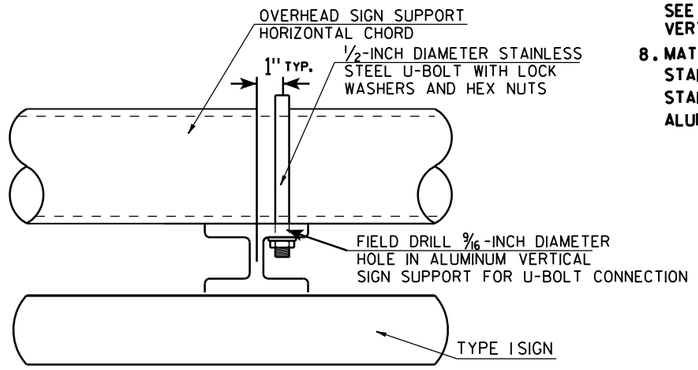
PROJECT NO: | SHEET NO: E



OVERHEAD SIGN SUPPORT
FULL SPAN
TWO CHORD TRUSS
(SIGNS GREATER THAN 6 FEET IN HEIGHT)



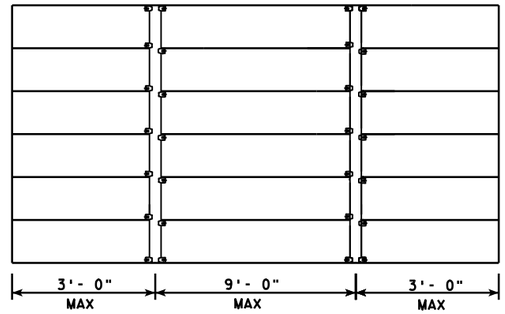
CUT SECTION A-A



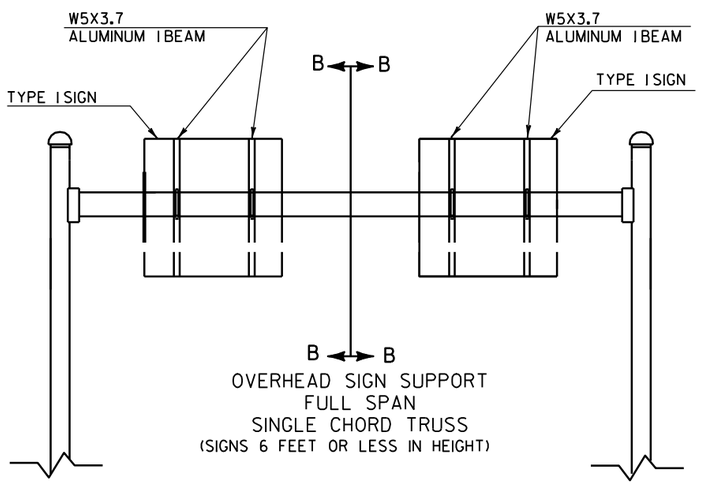
TYPICAL SIGN CONNECTION FOR
TWO CHORD TRUSS
PLAN VIEW

GENERAL NOTES

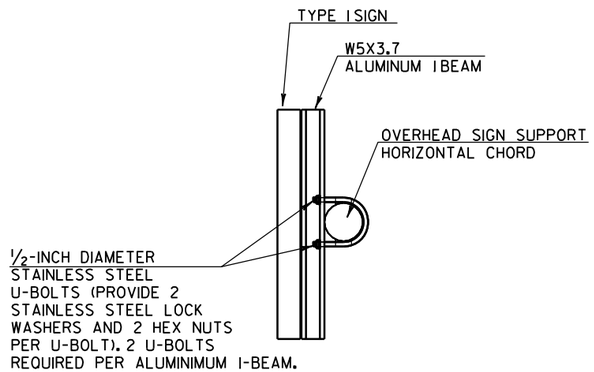
1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE CLIPS ON EVERY EXTRUDED PANEL JOINT PER SIGN PLATE A4-6.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. MINIMUM NUMBER OF BRACKETS PER SIGN IS TWO. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
   STAINLESS STEEL U-BOLTS AND LOCKWASHERS ASTM 304.
   STAINLESS STEEL HEX NUTS ASTM A276.
   ALUMINUM I-BEAMS ARE 6061-T6.



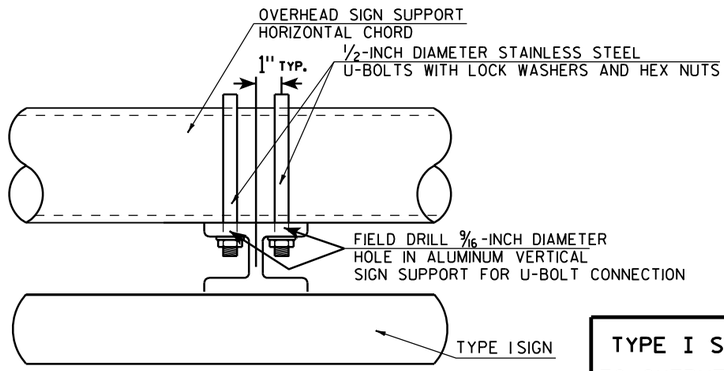
SPACING OF W5X3.7 ALUMINUM
VERTICAL SIGN SUPPORT



OVERHEAD SIGN SUPPORT
FULL SPAN
SINGLE CHORD TRUSS
(SIGNS 6 FEET OR LESS IN HEIGHT)



CUT SECTION B-B



TYPICAL SIGN CONNECTION FOR
SINGLE CHORD TRUSS
PLAN VIEW

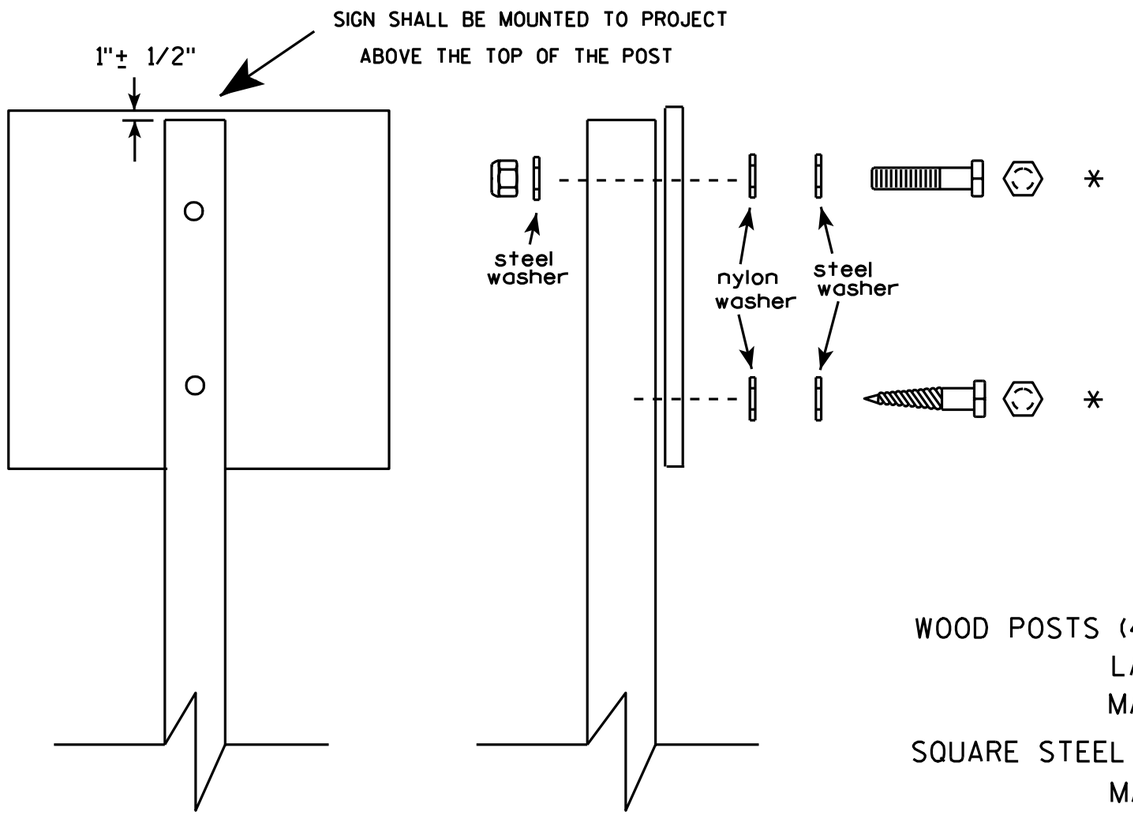
TYPE I SIGN CONNECTION TO OVERHEAD SIGN SUPPORT

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/12/12 PLATE NO. A4-7.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 77	E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

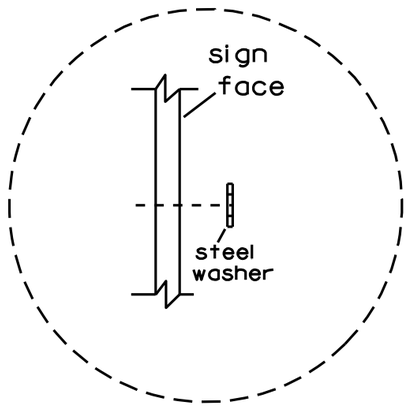
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

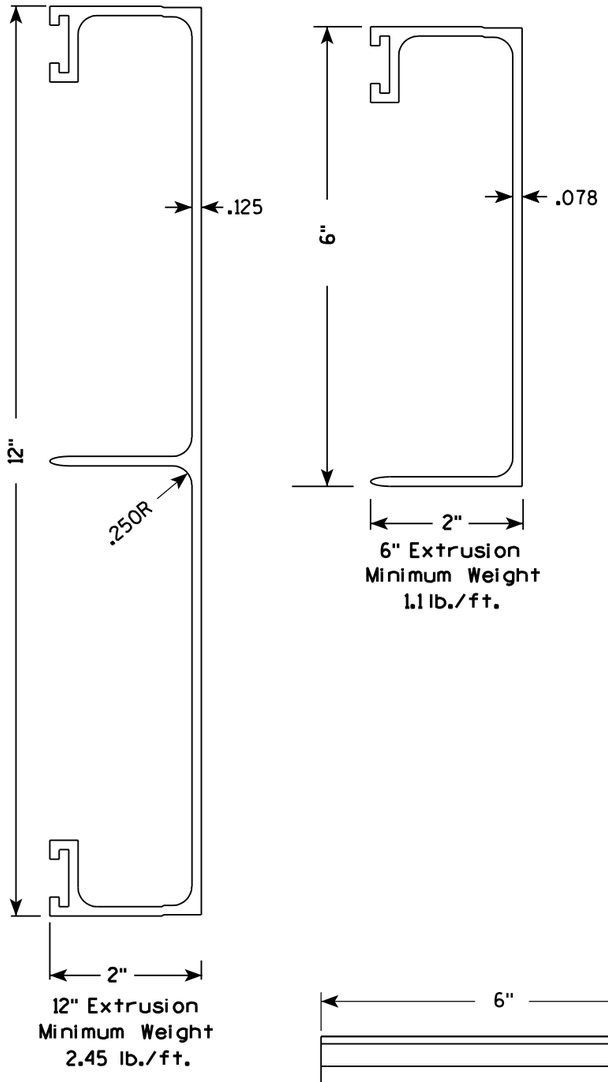
7

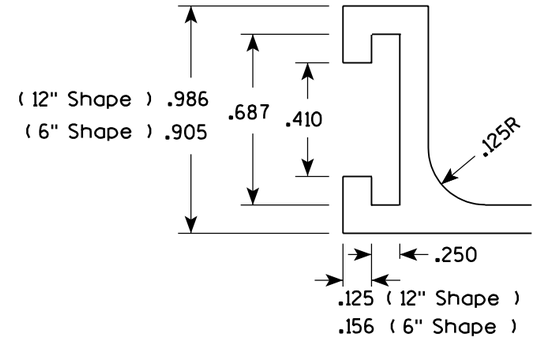
7

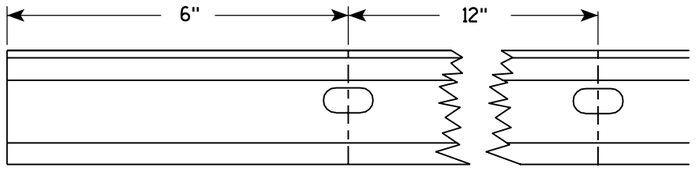
PROJECT NO:

SHEET NO: 78 E

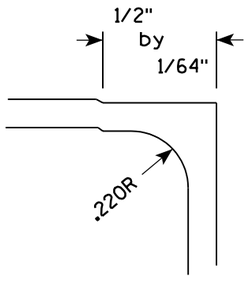
Extruded Shape







Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

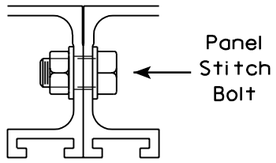


Hardware

STITCH BOLT, WASHER & NUT

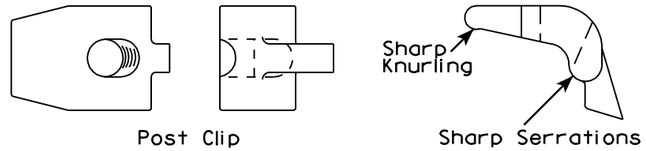
The hardware includes:

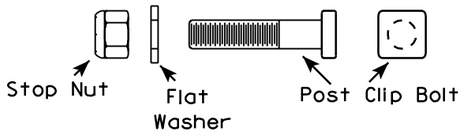
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.





NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

ALUMINUM EXTRUSIONS FOR TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

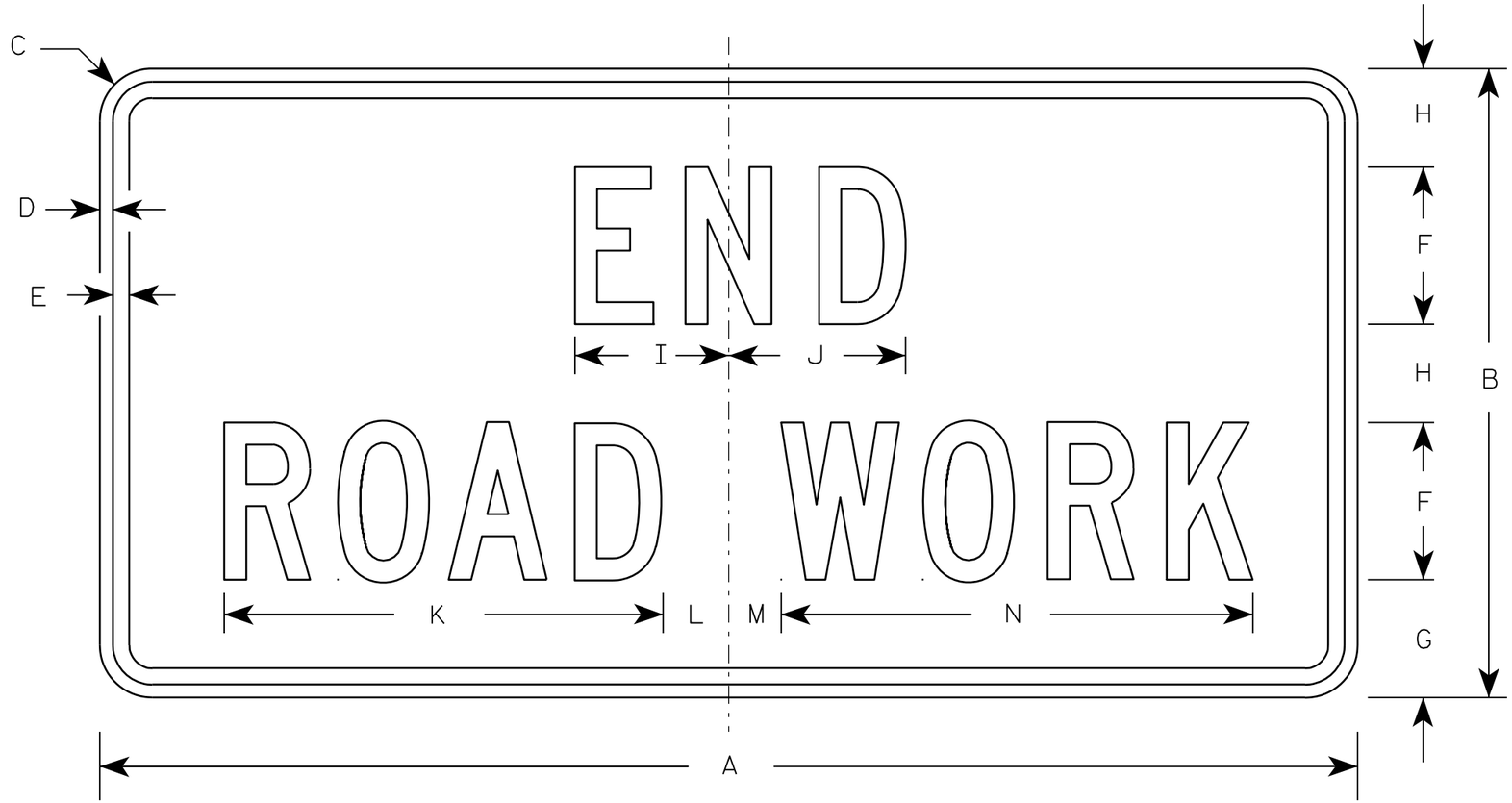
DATE 11/18/99 PLATE NO. A5-2.9

7

7

PROJECT NO:

SHEET NO: 79 E



G20-2A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

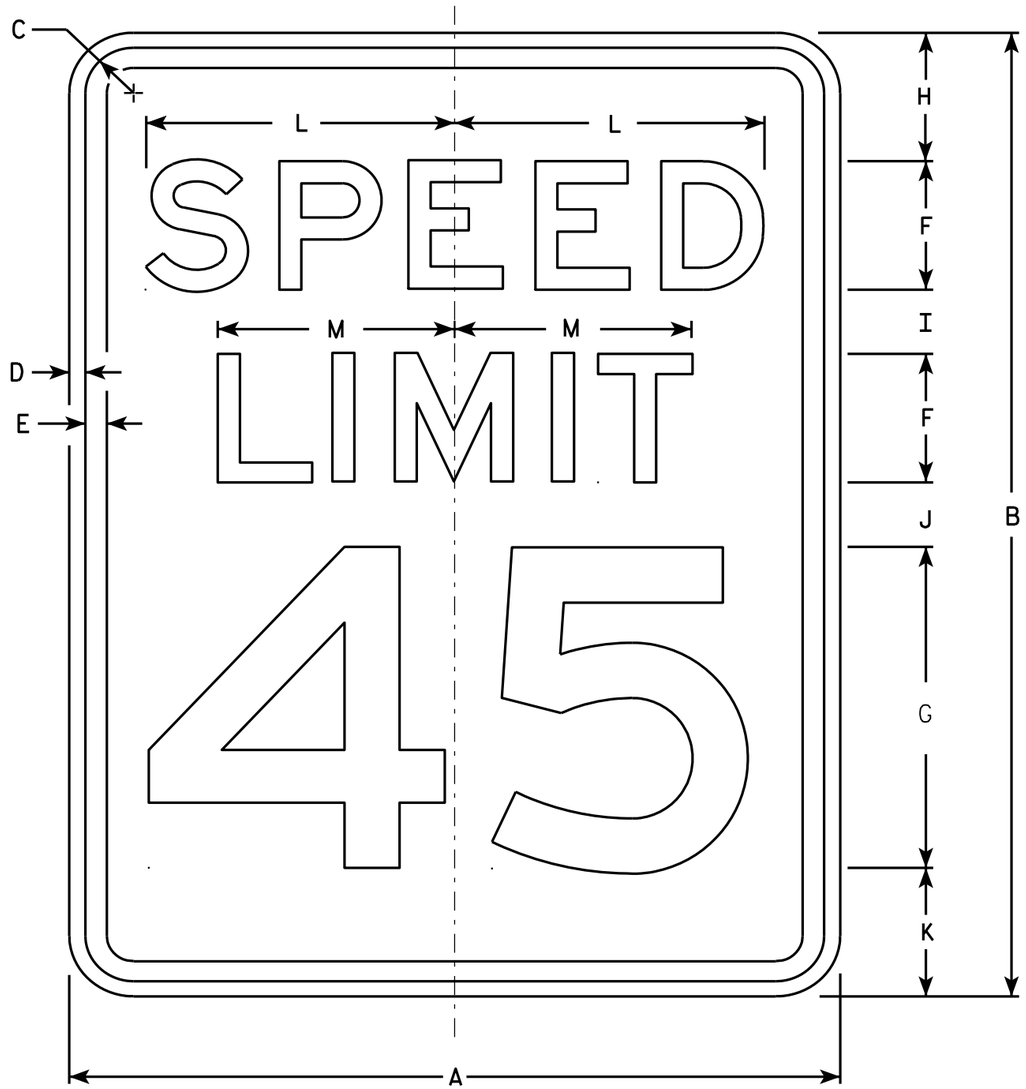
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 80	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

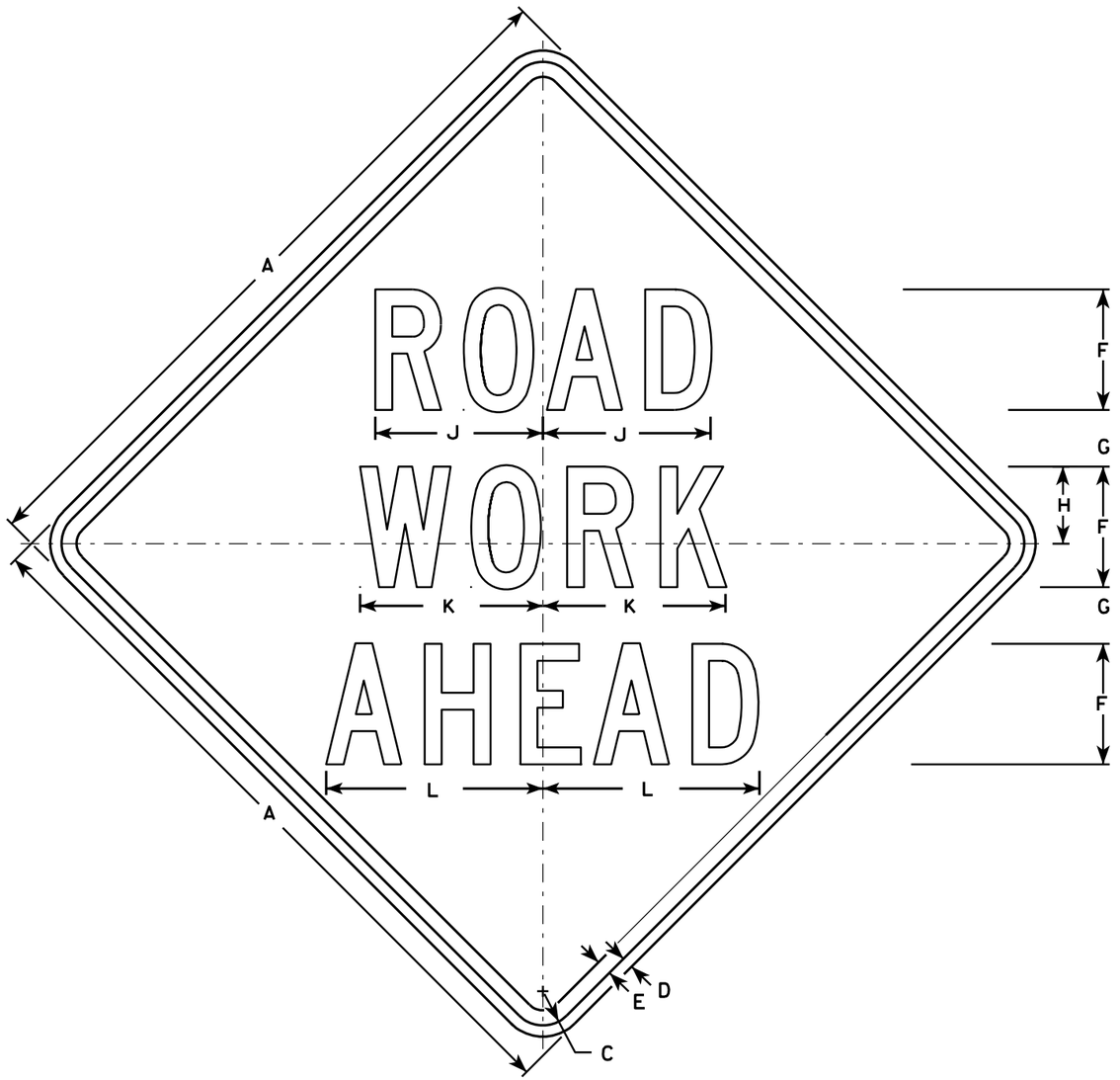
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

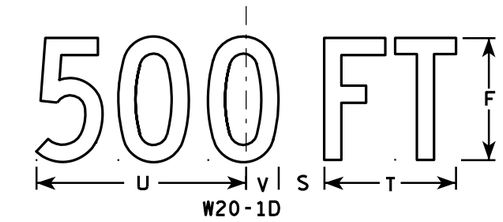
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

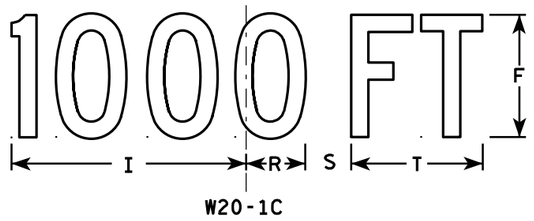
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 81 | E



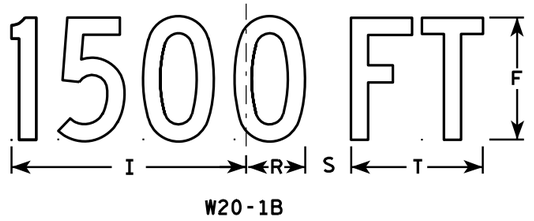
W20-1A



W20-1D

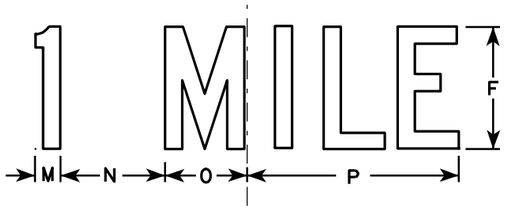


W20-1C



W20-1B

W20-1G



W20-1F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	1 7/8	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-1.9

PROJECT NO:

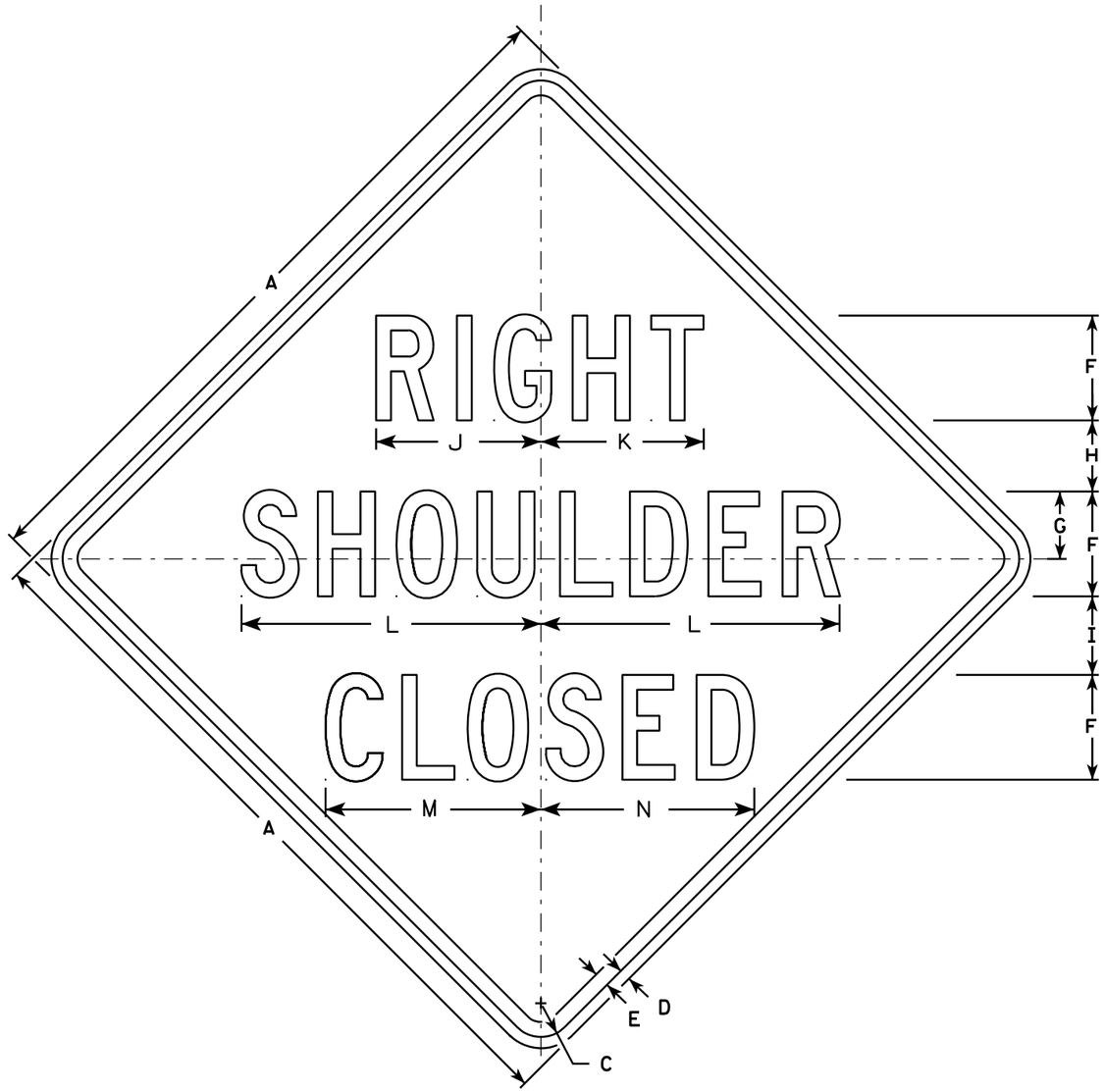
SHEET NO: 82 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W201.DGN PLOT DATE : 18-MAR-2011 09:56 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42

7

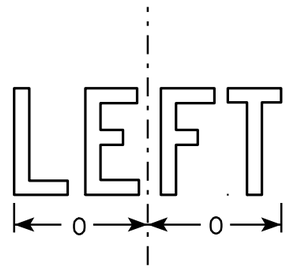
7



W21-5A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W21-5AL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	4	7 7/8	7 3/4	14 1/4	10 1/4	10 1/8	6 1/4												9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0

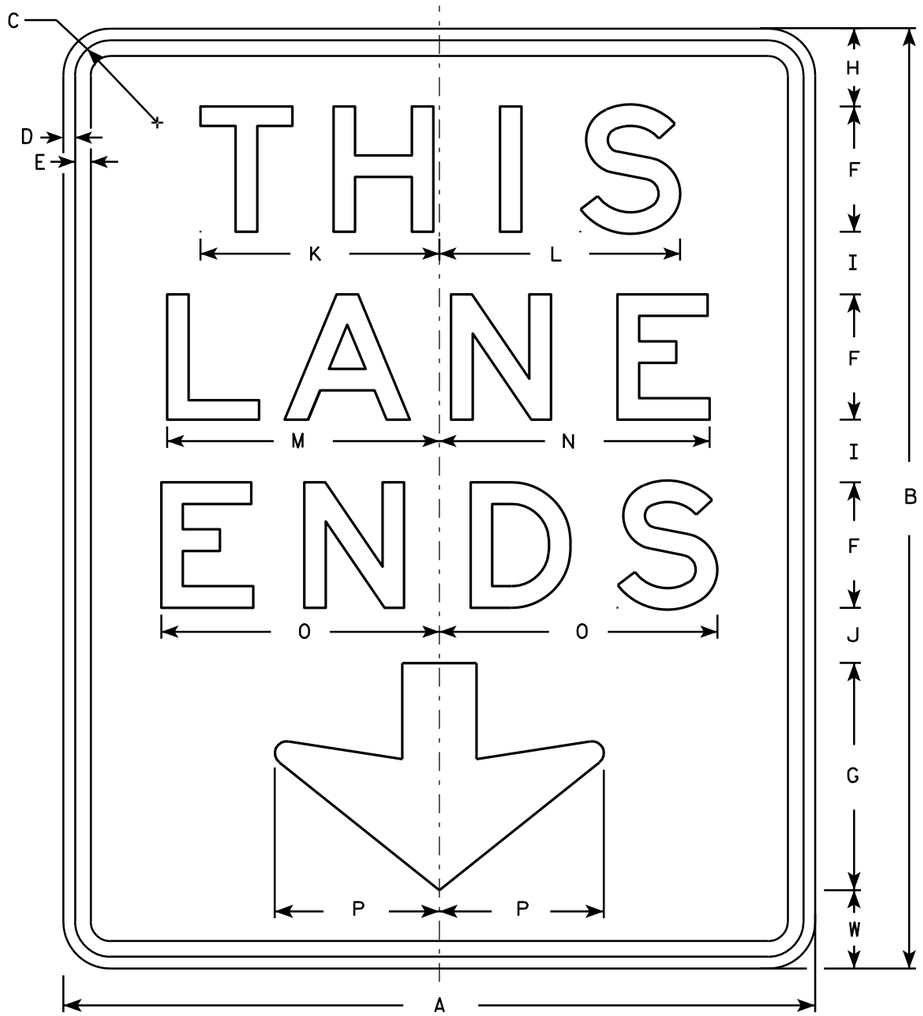
STANDARD SIGN
W21-5A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5A.3

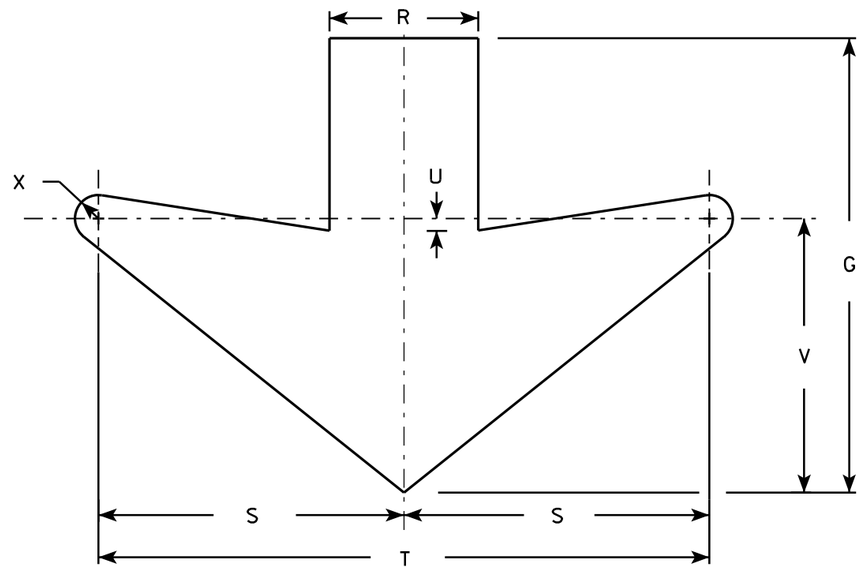
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 83 | E



W9-62

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	48	60	2 1/4	3/4	1	8	14 1/2	5	4	3 1/2	15 1/4	15 3/8	17 3/8	17 1/4	17 3/4	10 1/2		4 3/4	9 3/4	19 1/2	3/4	8 3/4	5	3/4			20.0
2S	48	60	2 1/4	3/4	1	8	14 1/2	5	4	3 1/2	15 1/4	15 3/8	17 3/8	17 1/4	17 3/4	10 1/2		4 3/4	9 3/4	19 1/2	3/4	8 3/4	5	3/4			20.0
2M	48	60	2 1/4	3/4	1	8	14 1/2	5	4	3 1/2	15 1/4	15 3/8	17 3/8	17 1/4	17 3/4	10 1/2		4 3/4	9 3/4	19 1/2	3/4	8 3/4	5	3/4			20.0
3																											
4	72	90	6	1	1 1/2	12	22	8	6	5	23	23	26 1/8	26 1/8	26 5/8	16		6 1/2	15	30	2	15	7	1			45.0
5	72	90	6	1	1 1/2	12	22	8	6	5	23	23	26 1/8	26 1/8	26 5/8	16		6 1/2	15	30	2	15	7	1			45.0

STANDARD SIGN
W9-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W9-62.9

PROJECT NO:

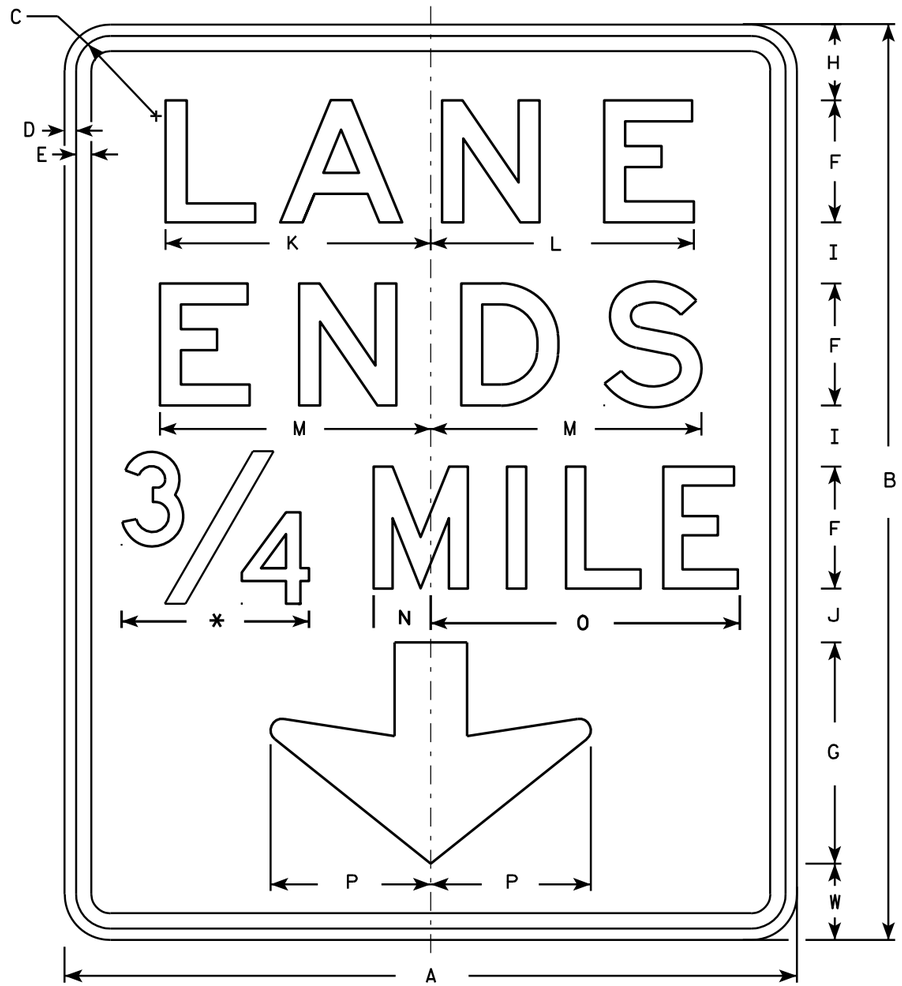
SHEET NO: 84 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W962.DGN PLOT DATE : 07-JUN-2010 10:29 PLOT BY : ditjph

WISDOT/CADDS SHEET 42

7

7

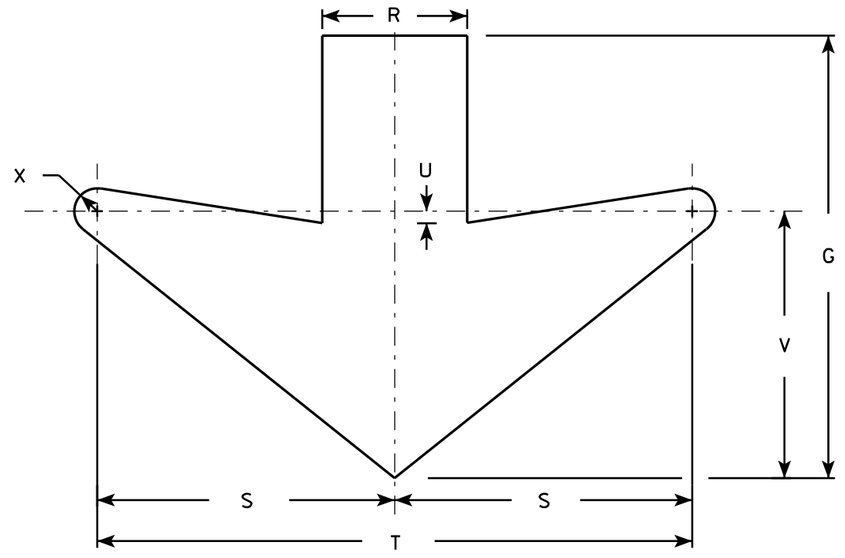


W9-63

* See Note 6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background -Yellow
   Message - Black non-reflective
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series E, Line 3 is Series D.
6. Substitute appropriate numerals and optically adjust spacing to give proper balance.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	48	60	2 1/4	3/4	1	8	14 1/2	5	4	3 1/2	17 3/8	17 1/4	17 3/4	3 3/4	20 1/4	10 1/2		4 3/4	9 3/4	19 1/2	3/4	8 3/4	5	3/4			20.0
2S	48	60	2 1/4	3/4	1	8	14 1/2	5	4	3 1/2	17 3/8	17 1/4	17 3/4	3 3/4	20 1/4	10 1/2		4 3/4	9 3/4	19 1/2	3/4	8 3/4	5	3/4			20.0
2M	48	60	2 1/4	3/4	1	8	14 1/2	5	4	3 1/2	17 3/8	17 1/4	17 3/4	3 3/4	20 1/4	10 1/2		4 3/4	9 3/4	19 1/2	3/4	8 3/4	5	3/4			20.0
3																											
4	72	90	6	1	1 1/2	12	22	8	6	5	26 1/8	26 1/8	26 5/8	5 5/8	30 3/8	16		6 1/2	15	30	2	15	7	1			45.0
5	72	90	6	1	1 1/2	12	22	8	6	5	26 1/8	26 1/8	26 5/8	5 5/8	30 3/8	16		6 1/2	15	30	2	15	7	1			45.0

STANDARD SIGN
W9-63

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W9-63.4

PROJECT NO:

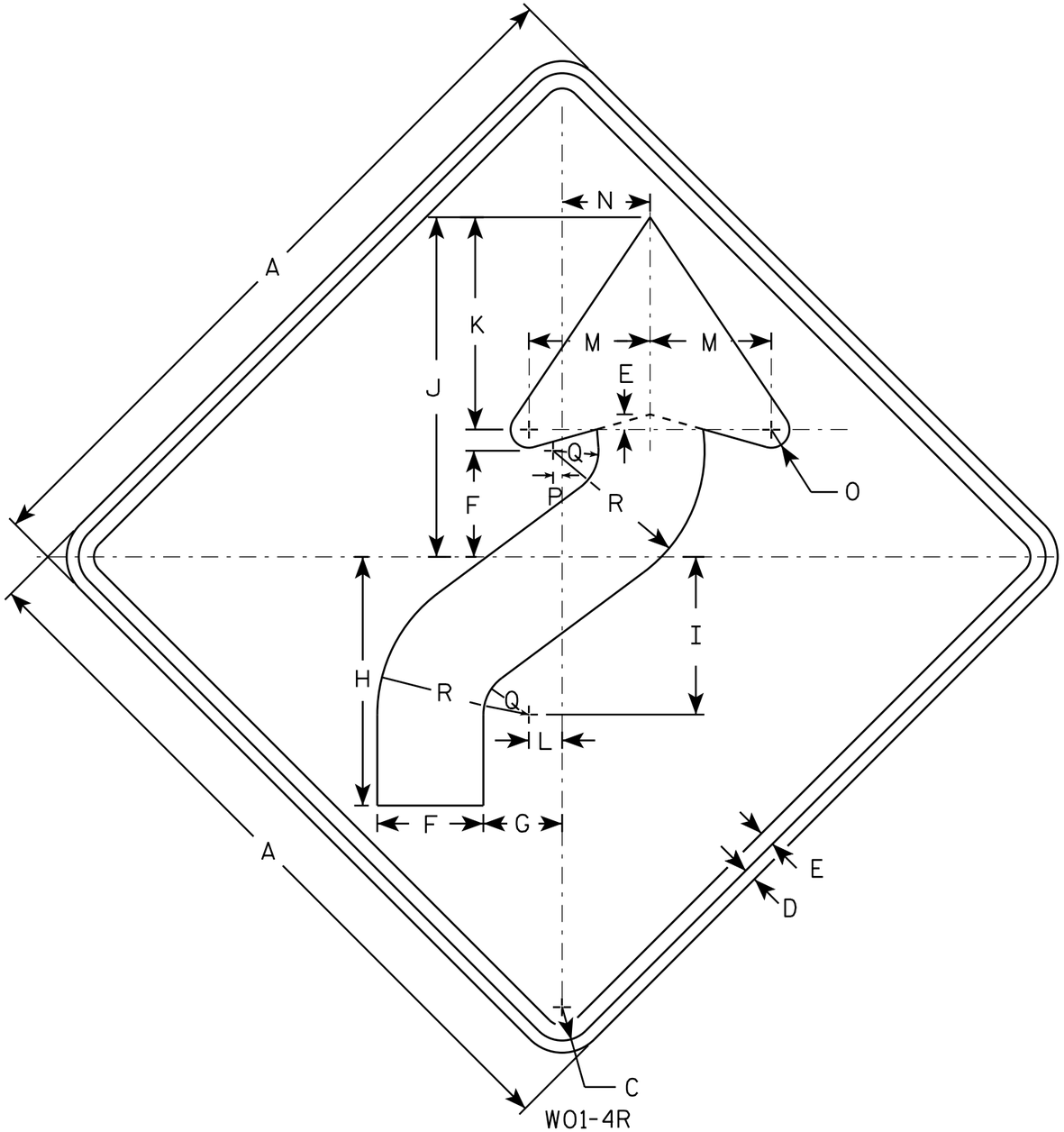
SHEET NO: 85 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W963.DGN PLOT DATE : 07-JUN-2010 09:57 PLOT BY : ditjph

WISDOT/CADDS SHEET 42

7

7



W01-4R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

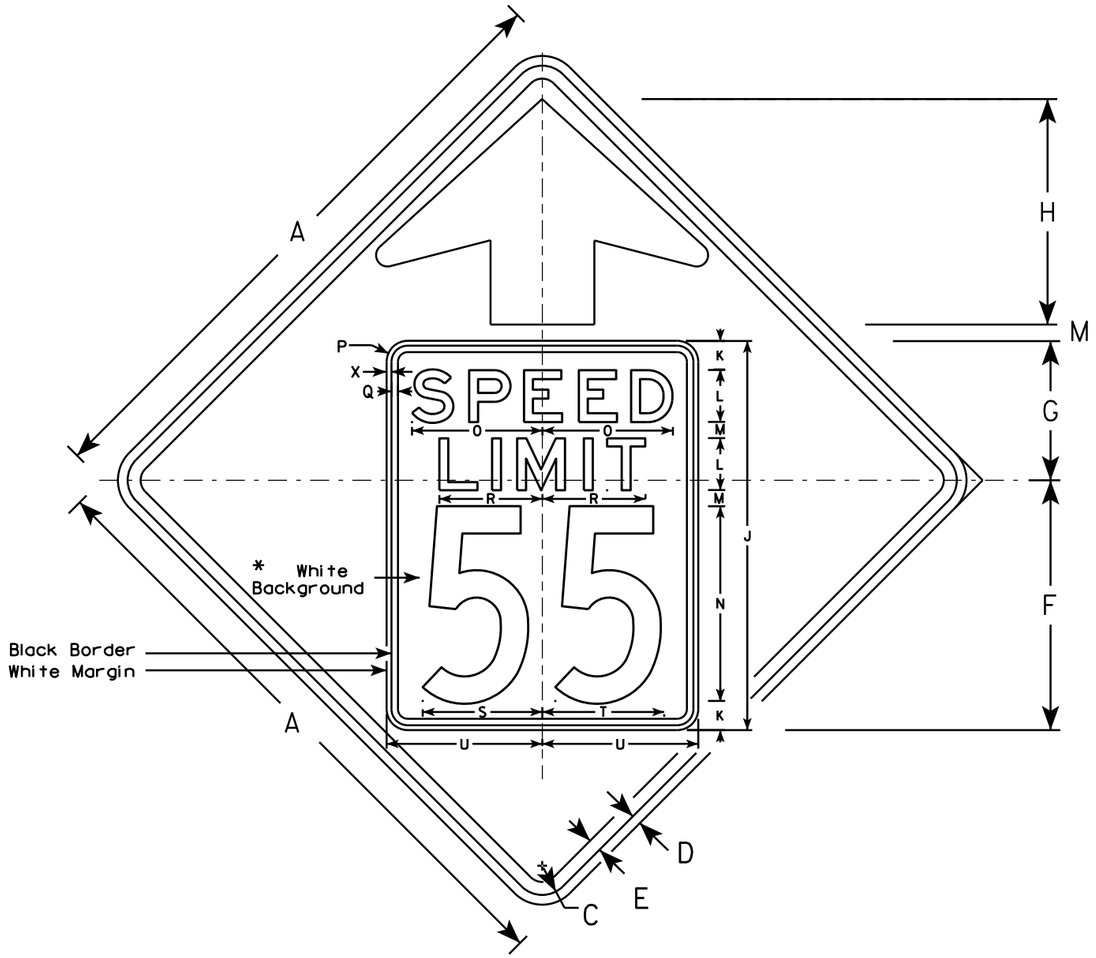
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO W01-4.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.755110:1.000000 WISDOT/CADDS SHEET 42

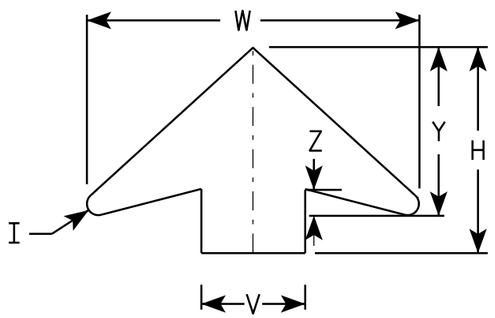


W03-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
   Background - ORANGE*
   Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
2M	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
3	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

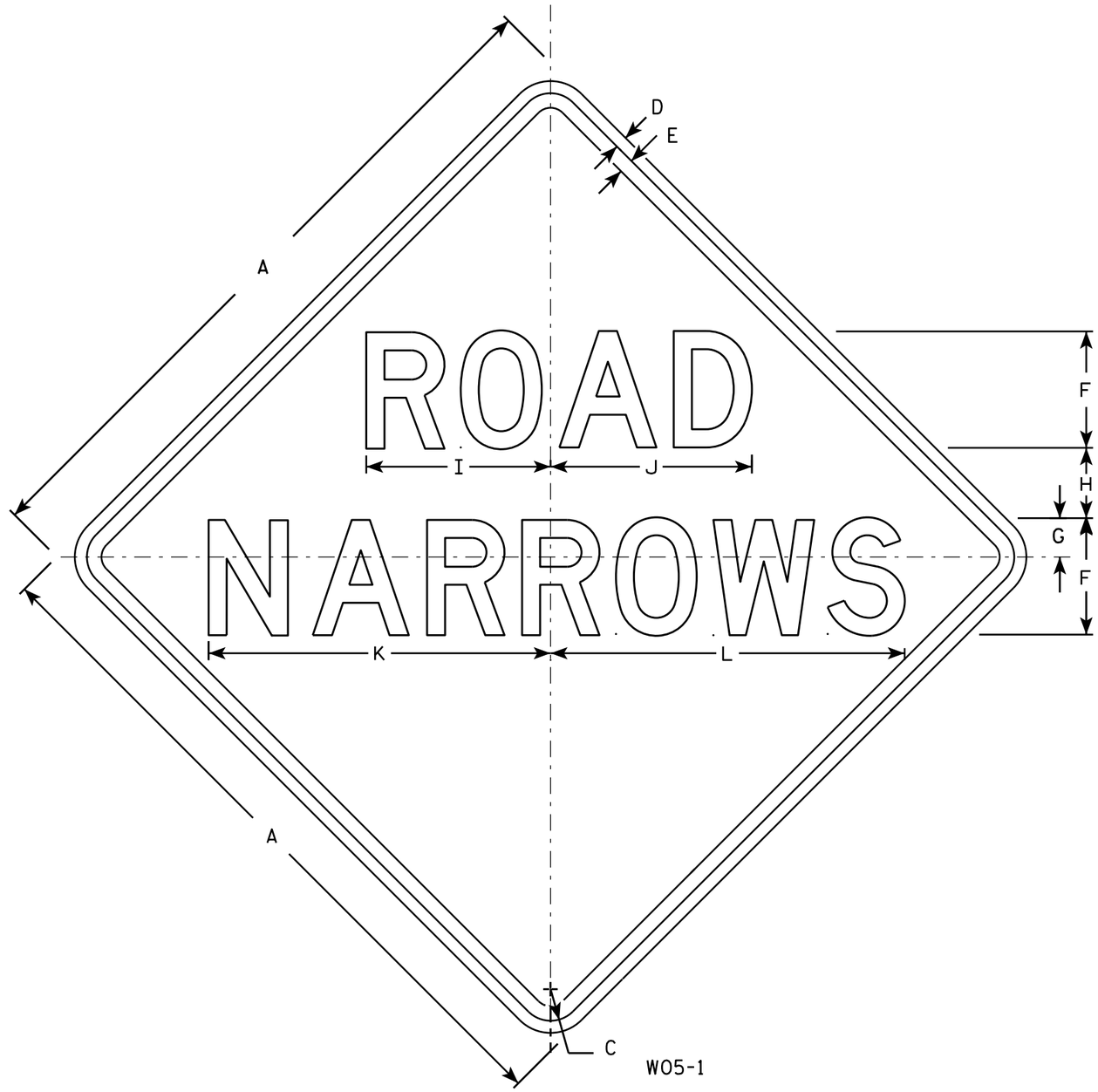
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42



W05-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	2	3 1/2	9 1/2	10 3/8	17 5/8	18 1/4															9.0
2S	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
2M	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
3	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
4	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
5	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0

STANDARD SIGN
W05-1

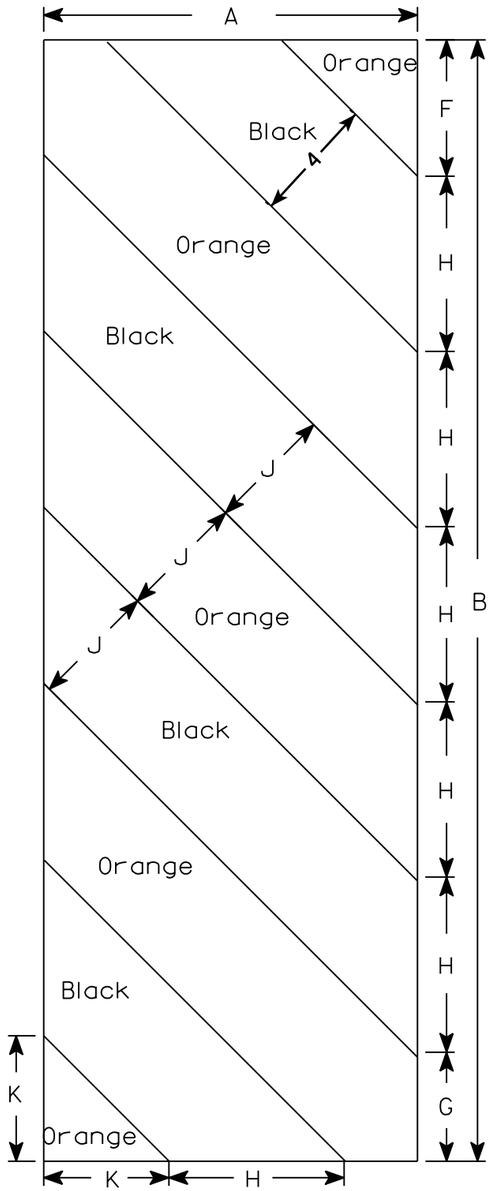
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

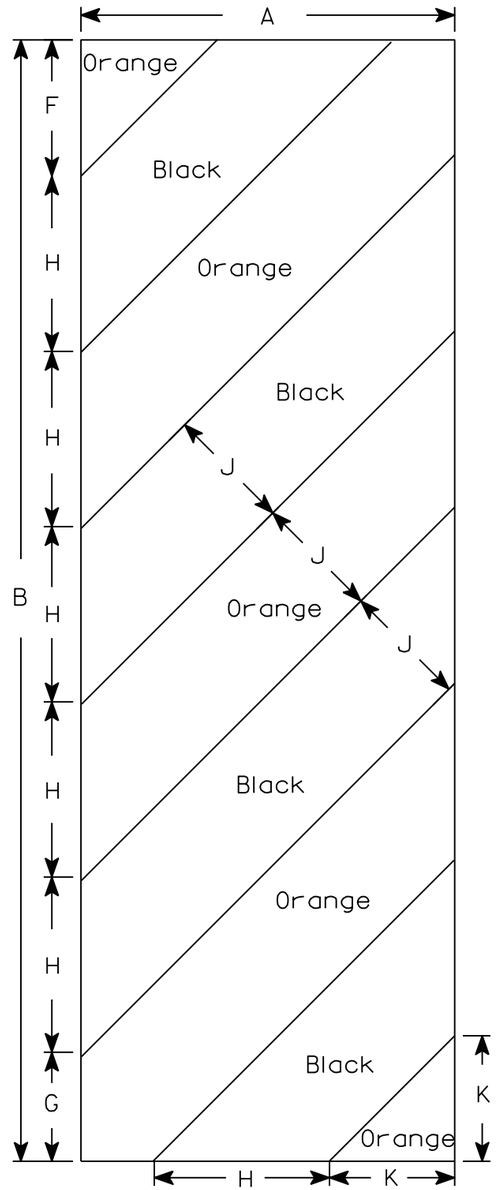
DATE 11/20/13 PLATE NO. W05-1.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W051.DGN PLOT DATE : 20-NOV-2013 11:56 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.810445:1.000000
WISDOT/CADDS SHEET 42



W05-52L



W05-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

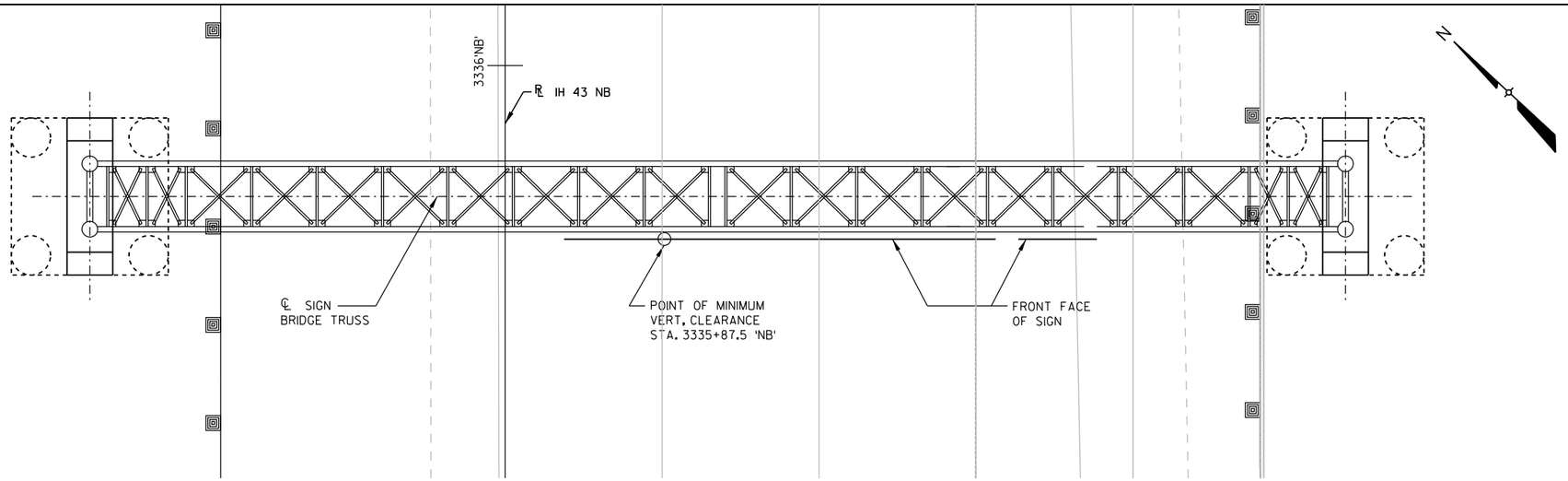
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W05-52.1

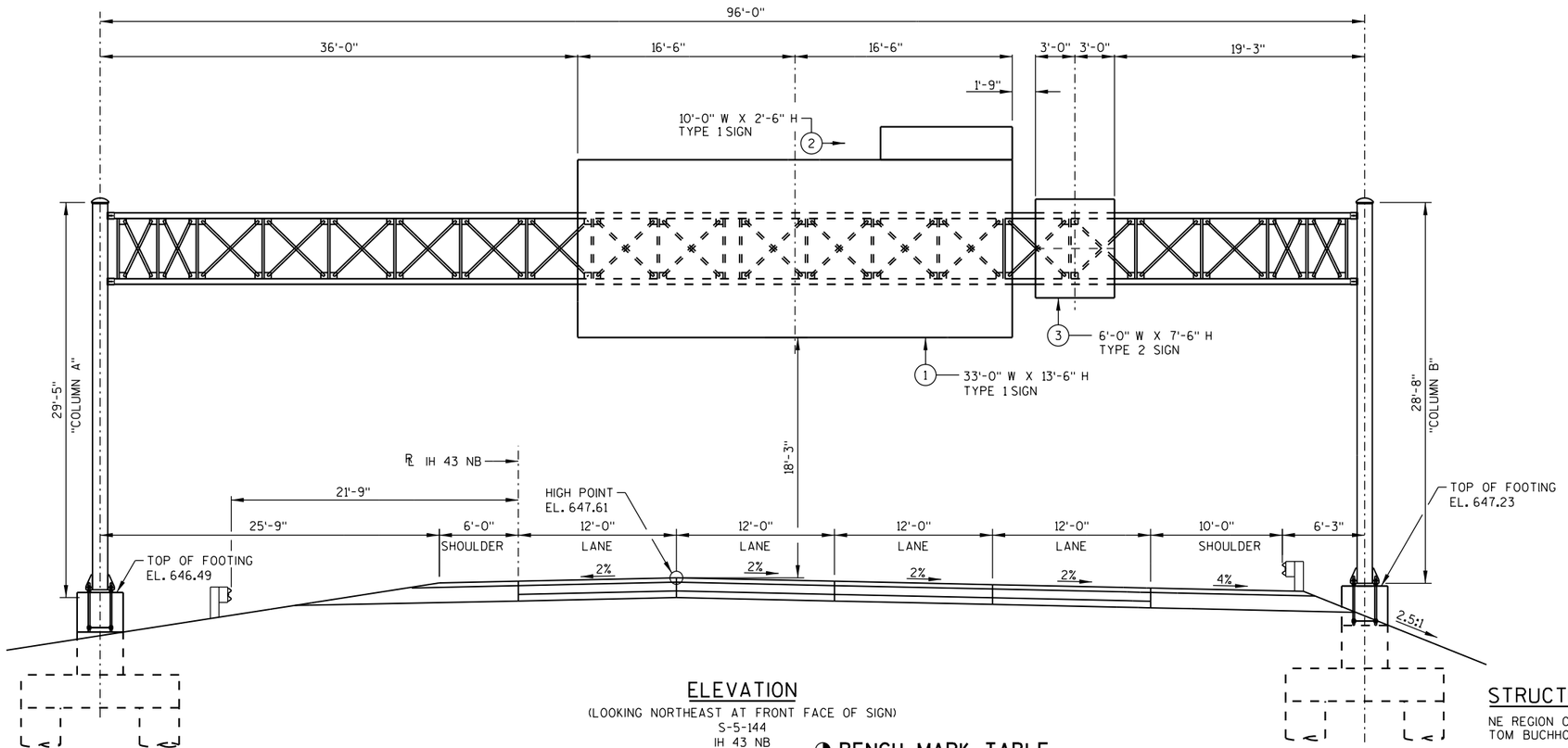
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W0552.DGN PLOT DATE : 28-FEB-2014 11:39 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 4.864607:1.000000 WISDOT/CADDS SHEET 42

PRINTER DRIVER: S:\..acm-CADstds_Libraries\WISDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ME_PDF_11 x 17.plt
PEN TABLE: S:\..acm-CADstds_Libraries\WISDOT\MicroStation\Resources\MS_Printing\pen tables\ME_WisDOT.tbl
FILE NAME: P:\60316186\900-WorkingDocs-CAD\Cadd\S-5-144\01_layout_s-5-144.dgn
PLOT DATE: 4/18/2014 PLOT TIME: 10:31:52 AM
BATCH PRINT SHEET 1 OF 6



PLAN
S-5-144



ELEVATION
(LOOKING NORTHEAST AT FRONT FACE OF SIGN)
S-5-144
IH 43 NB
STA. 3335+90

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
601	3336+88	CHISELED X ON SE BOLT OF SIGN BRIDGE LEG	649.85

DESIGN DATA

DESIGN SIGN AREA ——— 864 S.F.
MAX. SIGN DEPTH ——— 13.5 FT.

DESIGNED ACCORDING TO A.A.S.H.T.O. "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" 6TH EDITION, 2013.

DEAD LOAD - WT. OF SIGN AND SUPPORTING STRUCTURE.
ICE LOAD - 3 P.S.F. TO 1 FACE OF SIGN AND AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 90 M.P.H. (3-SECOND GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS.

WIND COMPONENTS	NORMAL	TRANSVERSE
COMBINATION 1	1.0	0.2
COMBINATION 2	0.6	0.3

GROUP LOADS	% OF ALLOWABLE STRESSES
1. DEAD	100
2. DEAD + WIND	133
3. DEAD + ICE + ½ (WIND)	133

NOTE: WIND LOAD FOR GROUP 3 LOADING SHALL NOT BE LESS THAN 25 P.S.F.

FOUNDATION DATA

A SOILS REPORT HAS BEEN PREPARED FOR THIS STRUCTURE AND IS AVAILABLE UPON REQUEST FROM WISDOT'S NE REGION OFFICE.

LIST OF DRAWINGS

LEGEND

SIGN (XX) SIGN NUMBER. SEE SIGNING PLAN.

WISCONSIN
MICHELLE A. HOWE
E-43048
MADISON
WI
PROFESSIONAL ENGINEER
Michelle Howe
4/18/2014

STRUCTURES DESIGN CONTACTS

NE REGION CONTACT:
TOM BUCHHOLZ, (920) 492-2227

BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT:
MICHELLE HOWE (608) 828-8145

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 04/18/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE S-5-144

IH 43 NB

COUNTY: BROWN
~~TOWN/CITY~~/VILLAGE: BELLEVUE
DESIGN SPEC.: AASHTO STD. SPEC. 2002

DESIGNED BY	MAH	DESIGN CK'D.	TR	DRAWN BY	MJK	PLANS CK'D.	MAH

LAYOUT

SHEET 1 OF 6
90

8

8

STATE PROJECT NUMBER

1227-13-60

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

SIGN BRIDGE IDENTIFICATION PLAQUES SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "SIGN BRIDGE S-5-144". FABRICATE IN ACCORDANCE WITH S.D.D. 12A4-3.

CENTER SIGNS VERTICALLY ON CHORD/TRUSS.

ELEVATIONS ARE IN FEET UNLESS OTHERWISE SHOWN OR NOTED.

ALTERNATE DESIGNS ARE NOT ALLOWED.

ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.

CENTER TYPE I SIGNS OVER THEIR RESPECTIVE LANES.

CASINGS FOR THE FOOTING SHAFTS ARE INCIDENTAL TO THE BID ITEM "SIGN SUPPORTS CONCRETE MASONRY" IN ACCORDANCE WITH SECTION 636.3.3 OF THE STANDARD SPECIFICATIONS. CASINGS SHALL BE REMOVED.

SIGNS OR BLANKS SHALL BE INSTALLED ON THE TRUSS AT TIME OF ERECTION. BLANKS SHALL BE 1/4 THE LENGTH OF THE BRIDGE, 2'-0" DEEPER THAN THE CENTER TO CENTER DISTANCE BETWEEN THE CHORDS AND SHALL BE CENTERED ON BRIDGE. PERMANENT SIGNS SHALL BE LOCATED AS SHOWN.

SIGN BRIDGE DESIGN DOES NOT INCLUDE ALLOWANCE FOR FUTURE CATWALK OR LOADS DUE TO LIGHTING.

PROVIDE A 3/4" CHAMFER OR 1" RADIUS ON ALL EXPOSED CONCRETE EDGES.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 3" CLEAR UNLESS OTHERWISE NOTED.

THE EXISTING STRUCTURE, S-5-100, IS A CANTILEVER SIGN BRIDGE, AND SHALL BE REMOVED.

ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" DIA. A325 BOLTS, GALVANIZED A.S.T.M. A153, CLASS C UNLESS SHOWN OTHERWISE.

A490 BOLTS SHALL BE COATED PER A.S.T.M. F1136 GRADE 3.

A.S.T.M. A490 BOLTS SHALL NOT BE COATED BY HOT DIP GALVANIZING, MECHANICAL DEPOSITION, OR ELECTROPLATING WITH ZINC.

THE UPPER 12" OF ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE A.A.S.H.T.O. SPECIFICATION AS STATED IN SECTION 641. OF THE WISDOT STANDARD SPECIFICATIONS.

WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS, IF UNIT CAN BE GALVANIZED IN ONE PIECE UNLESS OTHERWISE NOTED.

ALL TOWER WEB TO COLUMN CONNECTIONS SHALL BE BOLTED.

WELD TEST AS PER AWD D1.1.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY ——— f'c = 3,500 P.S.I.
HIGH-STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 ——— fy = 60,000 P.S.I.

SIGN BRIDGE
STEEL COLUMN PIPE: ——— fy = 42,000 P.S.I.
A.P.I. SPEC. 5L GRADE X42
STEEL PIPE MEMBERS OF TRUSS: ——— fy = 42,000 P.S.I.
A.P.I. SPEC. 5L GRADE X42
PLATES, BARS, STRUCTURAL ANGLES: ——— fy = 36,000 P.S.I.
A.S.T.M. A709 GRADE 36
STEEL ANCHOR BOLTS: ——— fy = 55,000 P.S.I.
A.A.S.H.T.O. M314-90 GRADE 55
HIGH STRENGTH BOLTS - A325 ——— fy = 92,000 P.S.I.
HIGH STRENGTH BOLTS - A490 ——— fy = 130,000 P.S.I.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
203.0200	REMOVING OLD STRUCTURE STA. 3334+12	LS	1
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	87
636.1000	SIGN SUPPORTS STEEL REINFORCEMENT HS	LB	6,340
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	2,180
◓ 641.6600	SIGN BRIDGE S-5-144	LS	1

LEGEND

◓ THIS LUMP SUM PAY ITEM INCLUDES HORIZONTAL TRUSS, VERTICAL STEEL COLUMN, AND ANCHOR ASSEMBLIES.

PRINTER DRIVER: S:_acm-CADstds_Libraries\WISDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\HE_PDF.11 x 17.plt
PEN TABLE: S:_acm-CADstds_Libraries\WISDOT\MicroStation\Resources\MS_Printing\pen tables\HE_WisDOT.tbl
FILE NAME: P:\60316186\900-Working\Docs-CAD\Cadd\S-5-144\02_notes.quants.s-5-144.dgn
PLOT DATE: 4/18/2014 PLOT TIME: 10:31:54 AM

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE S-5-144

DRAWN BY TAW | PLANS CK'D. MAH

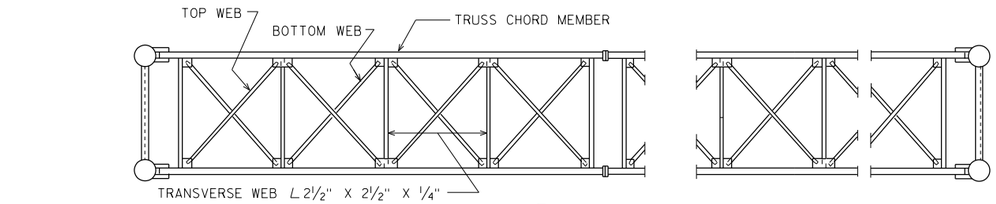
GENERAL NOTES AND QUANTITIES

SHEET 2 OF 6
91

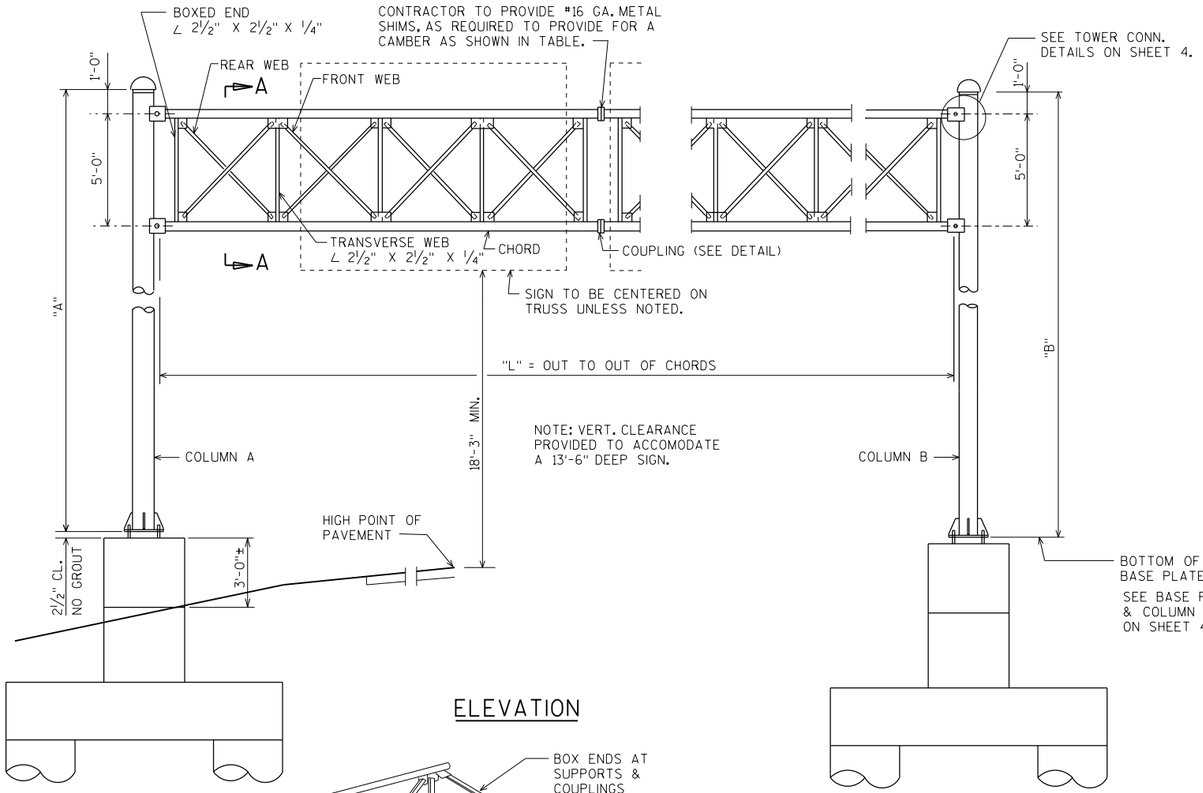
PRINTER DRIVER: S:_dcm-CADstds_Libraries\WISDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\ME_PDF.11 x 17.plt
PEN TABLE: S:_dcm-CADstds_Libraries\WISDOT\MicroStation\Resources\MS_Printing\pen tables\ME_WisDOT.tbl
FILE NAME: P:\60316186\900-WorkingDocs-CAD\Cadd\S-5-144\03_truss_s-5-144.dgn
PLOT DATE: 4/18/2014 PLOT TIME: 10:31:55 AM
BATCH PRINT SHEET 3 OF 6

STATE PROJECT NUMBER

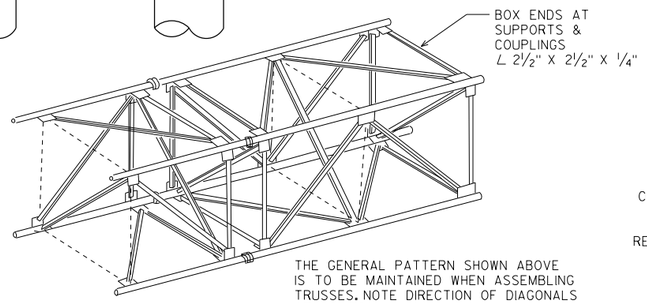
1227-13-60



PLAN

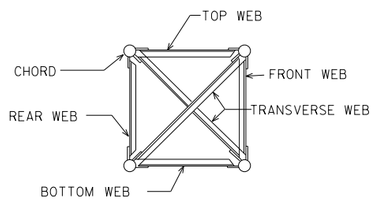


ELEVATION

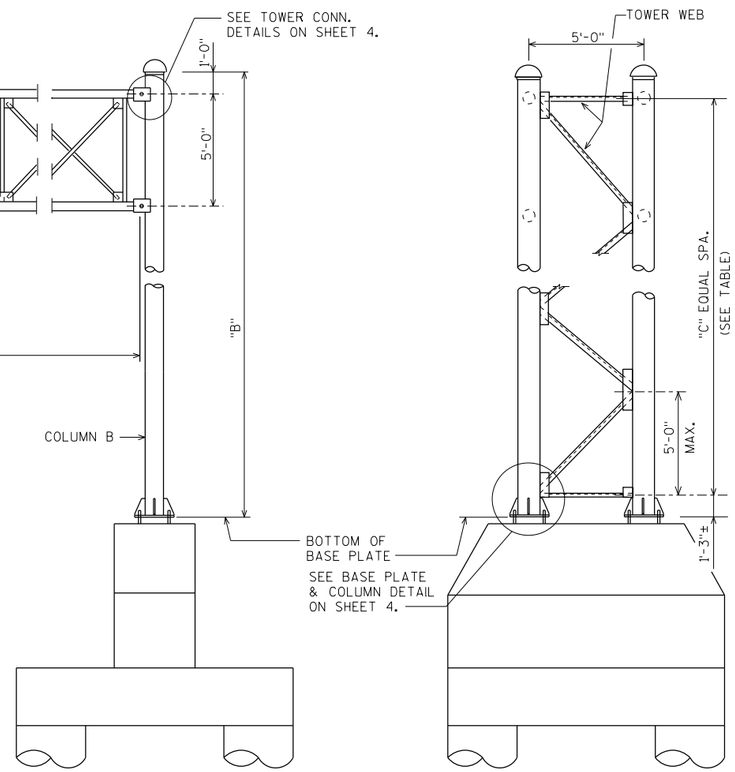


THE GENERAL PATTERN SHOWN ABOVE IS TO BE MAINTAINED WHEN ASSEMBLING TRUSSES. NOTE DIRECTION OF DIAGONALS AT JOINTS.

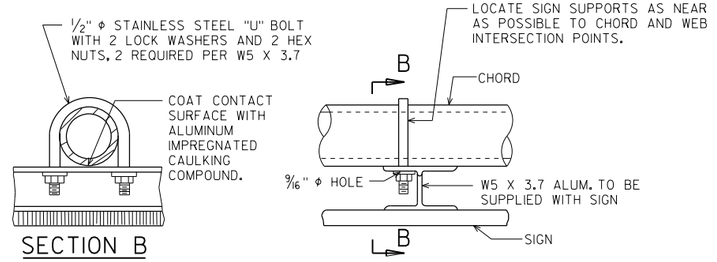
TYPICAL TRUSS SECTION



SECTION A

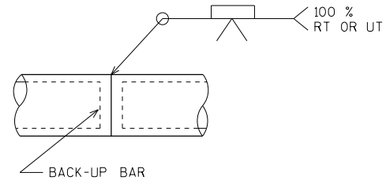


END VIEW

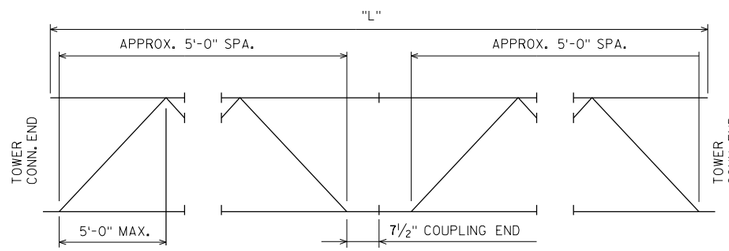


SECTION B

TYPICAL SIGN CONNECTION



CHORD SPLICE



TRUSS ARRANGEMENT

FABRICATOR MAY MAKE TRUSSES ANY LENGTH KEEPING A SECTION A MINIMUM OF 20'-0" & A MULTIPLE OF 5'-0". CHORD FIELD SPLICES SHALL BE MADE WITH COUPLINGS. CHORD SHOP SPLICE SHALL BE THE WELDED SPLICE SHOWN ABOVE.

TABLE

STRUCTURE	A	B	C	CHORDS O.D. X THK.	TOP & BOTTOM WEB	FRONT & REAR WEB	COUPLING PLATE "D1" & "T"	BOLT CIRCLE DIA. "D2"	NO. OF BOLTS IN COUPLING	SIZE AND GRADE OF BOLT IN COUPLING	CAMBER	COLUMN O.D. X THK.	TOWER WEBS	"L"
S-5-144	29'-5"	28'-8"	6	6.625" X 0.500"	∠ 4" X 4" X 5/16"	∠ 4" X 4" X 5/16"	12.625" X 1.25"	9.625"	8	7/8" (A490)	1.75"	14" X 0.875"	∠ 4" X 4" X 1/2"	94'-7"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

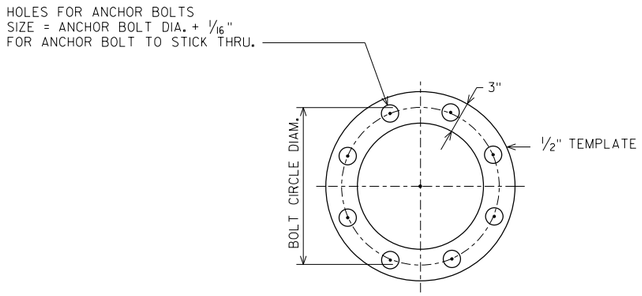
STRUCTURE S-5-144

DRAWN BY TAW | PLANS CK'D. MAH

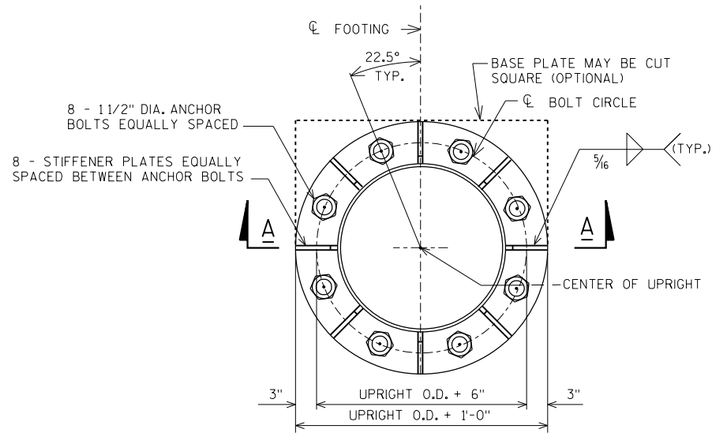
GALVANIZED STEEL FULL-SPAN SIGN TRUSS

SHEET 3 OF 6
92

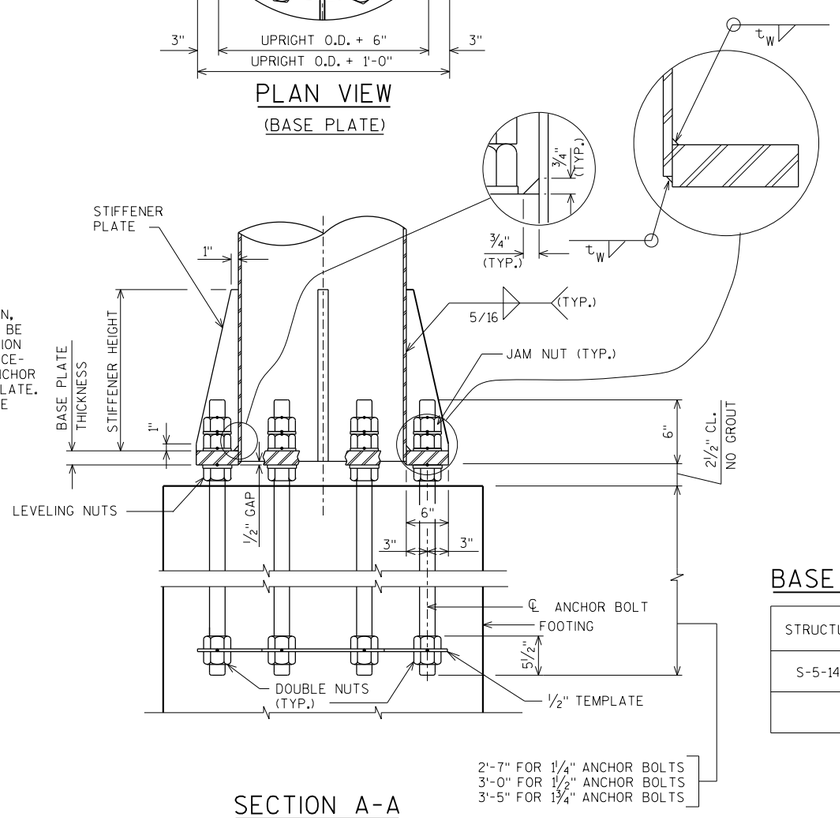
PRINTER DRIVER: S:\..acm-CADstds.Libraries\WISDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\HE_PDF.11 x 17.plt
PEN TABLE: S:\..acm-CADstds.Libraries\WISDOT\MicroStation\Resources\MS_Printing\pen tables\HE_WisDOT.tbl
FILE NAME: P:\60316186\900-WorkingDocs-CADD\CADD\S-5-144\04_trussdetails.s-5-144.dgn
PLOT DATE: 4/18/2014
PLOT TIME: 10:31:57 AM
BATCH PRINT SHEET 4 OF 6



ANCHOR PLATE/TEMPLATE PLAN



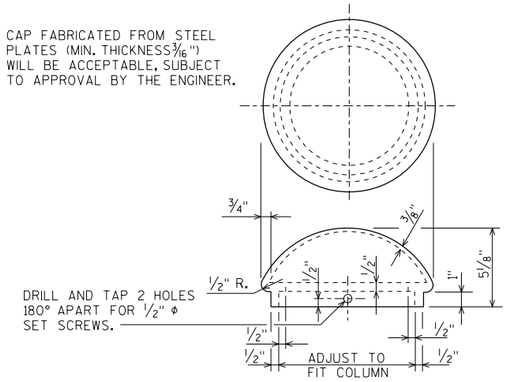
PLAN VIEW
(BASE PLATE)



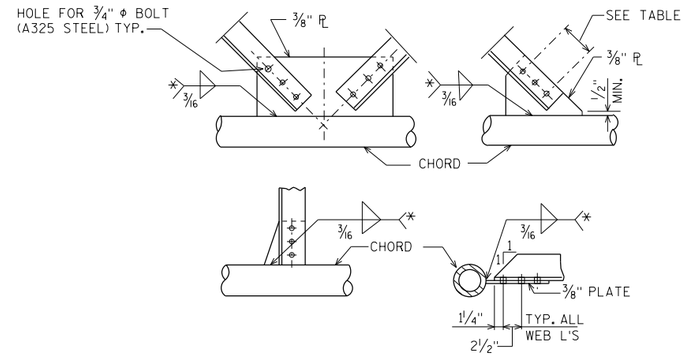
SECTION A-A

NOTE: SOME STIFFENER PLATES NOT SHOWN FOR CLARITY.

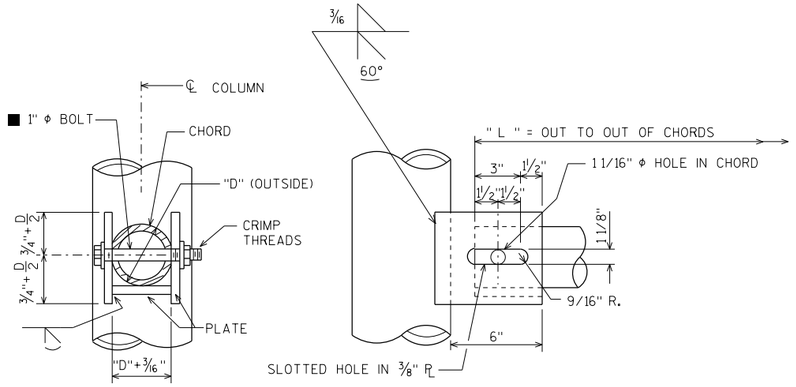
NOTE:
PRIOR TO INSTALLATION, ANCHOR BOLTS SHALL BE RIGIDLY HELD IN POSITION DURING CONCRETE PLACEMENT USING STEEL ANCHOR PLATE AND TOP TEMPLATE. REMOVE TOP TEMPLATE (NOT SHOWN) AFTER CONCRETE SETS.



TOWER CAP DETAIL

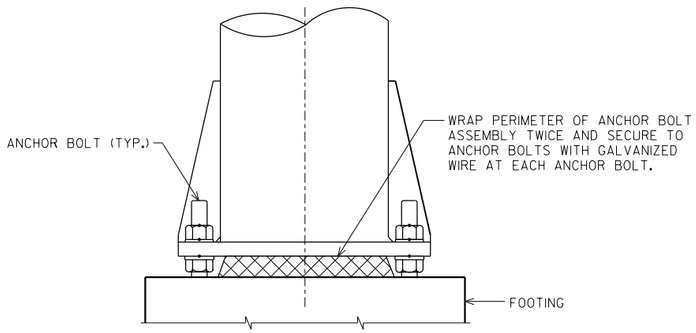


TYPICAL TRUSS CONNECTION DETAILS



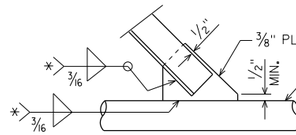
TOWER CONNECTION DETAIL

■ THIS BOLT SHALL BE AASHTO M253 (ASTM A490)



RODENT SCREEN

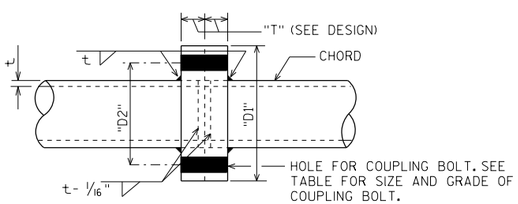
NOTE: SOME BOLTS & STIFFENER PLATES NOT SHOWN FOR CLARITY.



TYPICAL WELDED ALTERNATE

*ANGLE	WELD LENGTH	NO. OF BOLTS
● 2 1/2"×2 1/2"×1/4"	11"	3
3"×3"×3/16"	10"	3
3"×3"×1/4"	13"	4
3"×3"×5/16"	16 1/2"	5
3"×3"×3/8"	19 1/2"	6
4"×4"×1/4"	18"	5
4"×4"×5/16"	22"	6
4"×4"×3/8"	26"	8
4"×4"×7/16"	30"	9
4"×4"×1/2"	34"	10

● ONLY USED FOR BOXED END AND TRANSVERSE BRACING.



COUPLING DETAIL

BASE PLATE & UPRIGHT COLUMN DETAILS

STRUCTURE	COLUMN O.D. X THK.	ANCHOR BOLTS	BASE PLATE THICKNESS (IN.)	STIFFENER PLATE THICKNESS (IN.)	STIFFENER PLATE HEIGHT (IN.)	τ_W (IN.)
S-5-144	14" X 0.875"	8 - 1 1/2" DIA.	1 1/2"	1/2"	12"	5/16"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE S-5-144

DRAWN BY TAW | PLANS CK'D. MAH

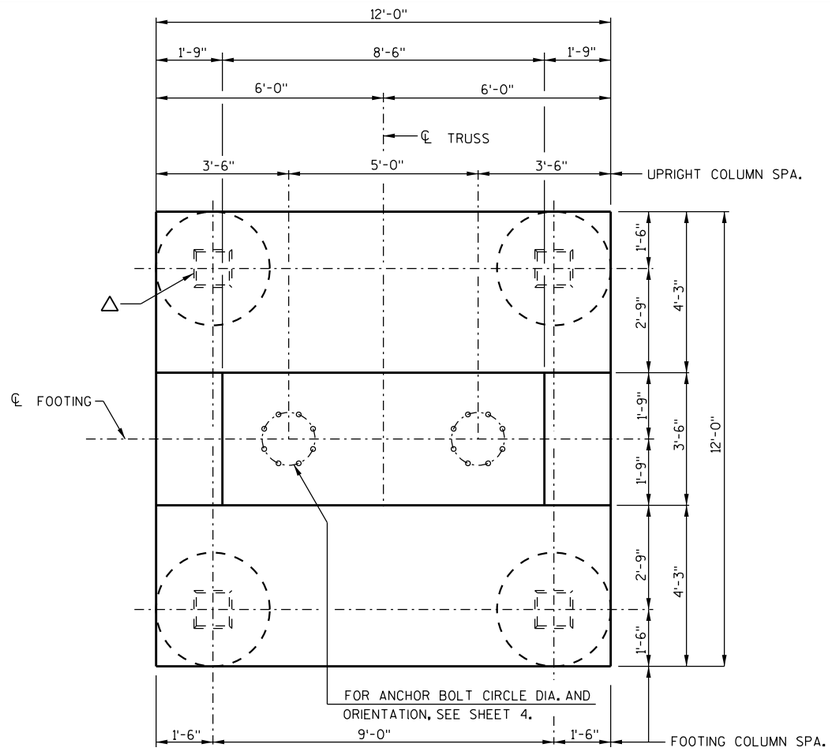
GALVANIZED STEEL FULL-SPAN SIGN TRUSS DETAILS

SHEET 4 OF 6
93

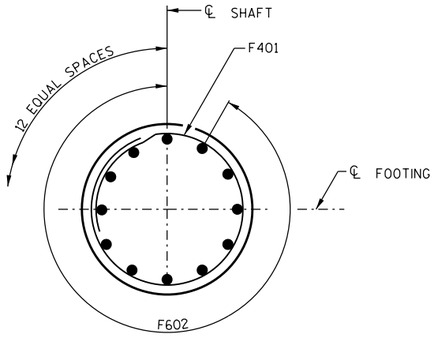
8

8

PRINTER DRIVER: S:\..acm-CADstds.Libraries\WISDOT\MicroStation\Resources\MS_Printing\Printer_Drivers\AE_PDF.11 x 17.plt
PEN TABLE: S:\..acm-CADstds.Libraries\WISDOT\MicroStation\Resources\MS_Printing\pen tables\AE_WisDOT.tbl
FILE NAME: P:\60316186\900-WorkingDocs-CADD\CaddFiles\S-5-144\005_ftg_details_s-5-144.dgn
PLOT DATE: 4/18/2014
PLOT TIME: 10:32:02 AM
BATCH PRINT SHEET 5 OF 6



PLAN

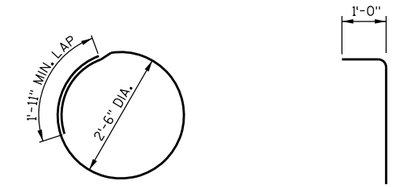


SECTION A-A

BILL OF BARS

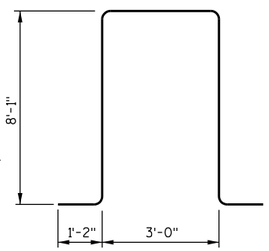
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 6,340 LBS
F401	160	9 - 10	X		FOOTING - SHAFTS - HOOPS HORIZ.
F602	96	22 - 10	X		FOOTING - SHAFTS VERT.
F803	52	11 - 6			FOOTING HORIZ.
F404	52	11 - 6			FOOTING HORIZ.
COATED BARS					TOTAL WEIGHT = 2,180 LBS
F705	34	20 - 10	X		FOOTING - TOP VERT.
F706	20	9 - 1	X		FOOTING - TOP - ENDS VERT.
F407	20	7 - 3	X		FOOTING - TOP - ENDS VERT.
F408	16	11 - 6			FOOTING - TOP HORIZ.
F409	4	11 - 3			FOOTING - TOP HORIZ.
F410	4	10 - 3			FOOTING - TOP HORIZ.
F411	4	9 - 2			FOOTING - TOP HORIZ.
F412	10	8 2			FOOTING - TOP HORIZ.

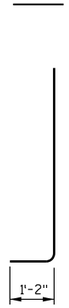


F401

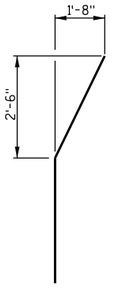
F602



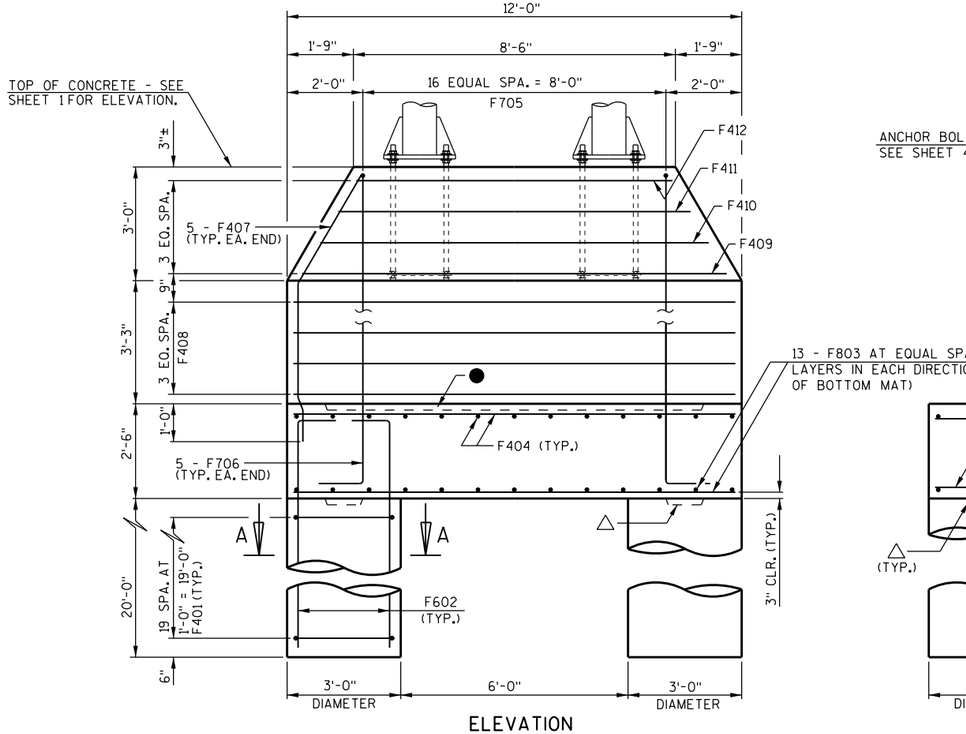
F705



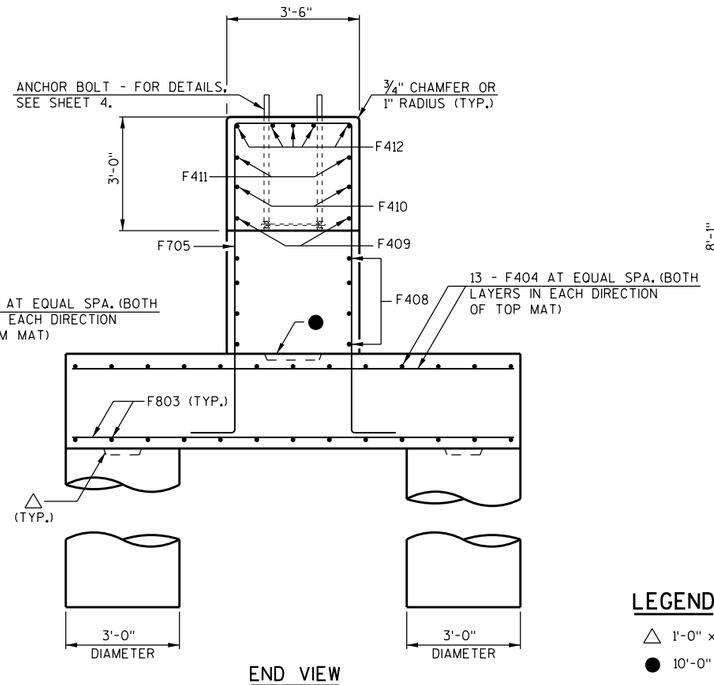
F706



F407



ELEVATION



END VIEW

NOTE: F706 & F407 BARS NOT SHOWN FOR CLARITY.

FOOTING DETAILS

NOTE: NOT ALL BOLTS SHOWN FOR CLARITY.

LEGEND

△ 1'-0" × 1'-0" × 2" BEVELED KEYWAY

● 10'-0" × 1'-6" × 2" BEVELED KEYWAY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE S-5-144

DRAWN BY TAW | PLANS CK'D. MAH

FOOTING DETAILS

SHEET 5 OF 6
94

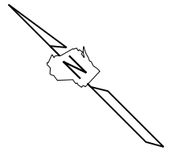
8

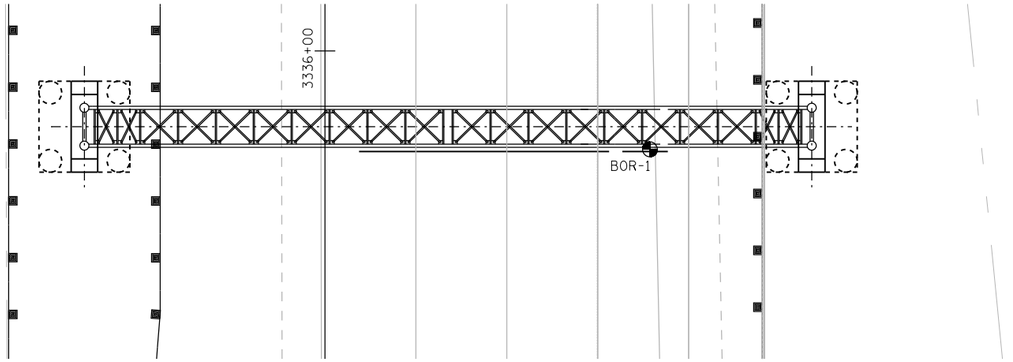
8

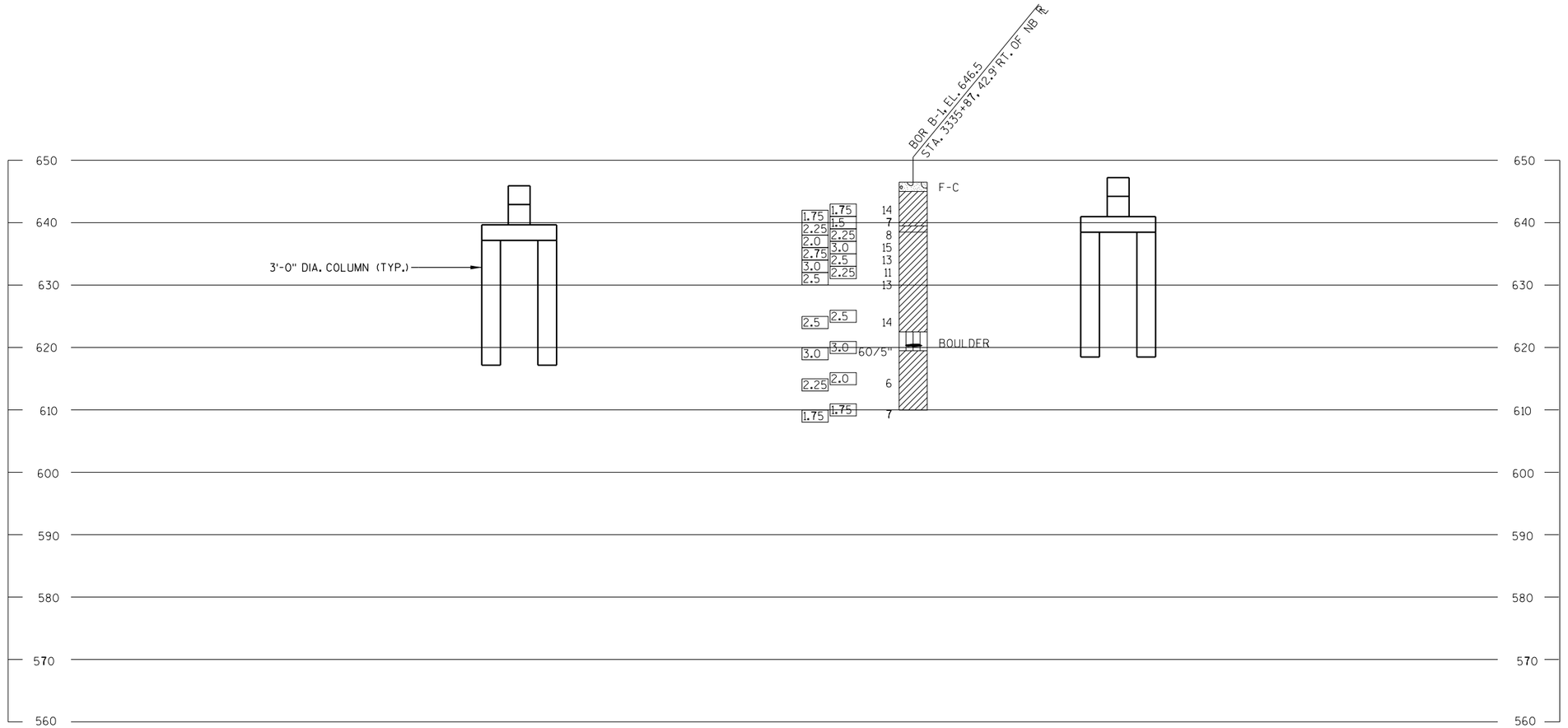
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	3/6/2014	548141	114601
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) BROWN COUNTY			

S-5-144 SOIL DESIGN PARAMETERS

ELEVATION (FEET)	LAYER DESCRIPTION	TOTAL UNIT WEIGHT (LB/FT 3)	UNDRAINED STRENGTH PARAMETERS		ALLOWABLE END BEARING PRESSURE (LB/FT 2)	ALLOWABLE SKIN FRICTION (LB/FT 2)
			TOTAL COHESION, C (LB/FT 3)	TOTAL FRICTION ANGLE, F (DEGREES)		
646.5 - 645.0	SAND AND GRAVEL, BROWN, FINE TO COURSE	125.0	0	32	0	0
645.0 - 639.5	CLAY, BROWN, LITTLE SILT	118.0	1,750	0	6,300	385
639.5 - 638.5	CLAY, BROWN, WITH GRAY CLAY SEAMS	123.0	2,250	0	8,100	495
638.5 - 622.5	CLAY, BROWN, LITTLE SILT, TRACE GRAVEL	125.0	2,750	0	9,900	605
622.5 - 619.5	SILT, BROWN, SOME CLAY, TRACE SAND/ GRAVEL	128.0	3,000	0	10,800	660
619.5 - 610.0	CLAY, BROWN, WITH GRAY SILT SEAMS	120.0	2,000	0	7,200	440







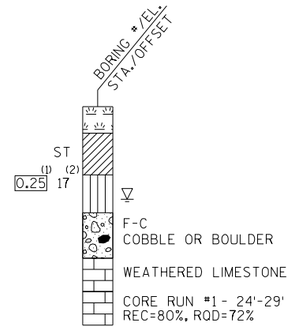
STATE PROJECT NUMBER

1227-13-60

MATERIAL SYMBOLS

ASPHALT · TOPSOIL · PEAT
CONCRETE · FILL · GRAVEL
SAND · CLAY · SILT
BOULDERS OR COBBLES · LIMESTONE · BEDROCK (UNKNOWN)
SHALE · SANDSTONE · IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE S-5-144

DRAWN BY PR | PLANS CK'D. MAH

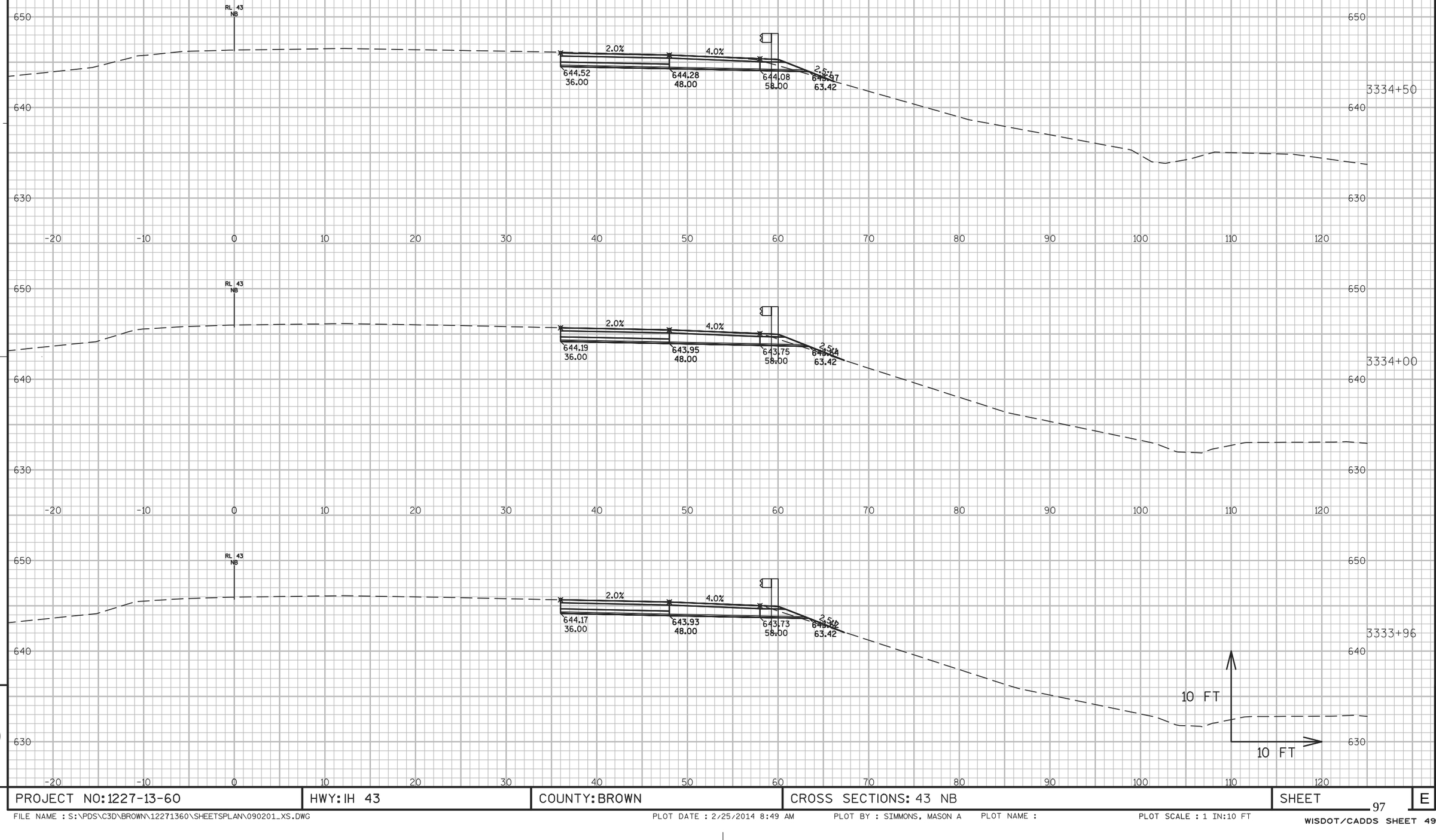
SUBSURFACE EXPLORATION

SHEET 6 OF 6

SCALE =

EARTHWORK QUANTITIES

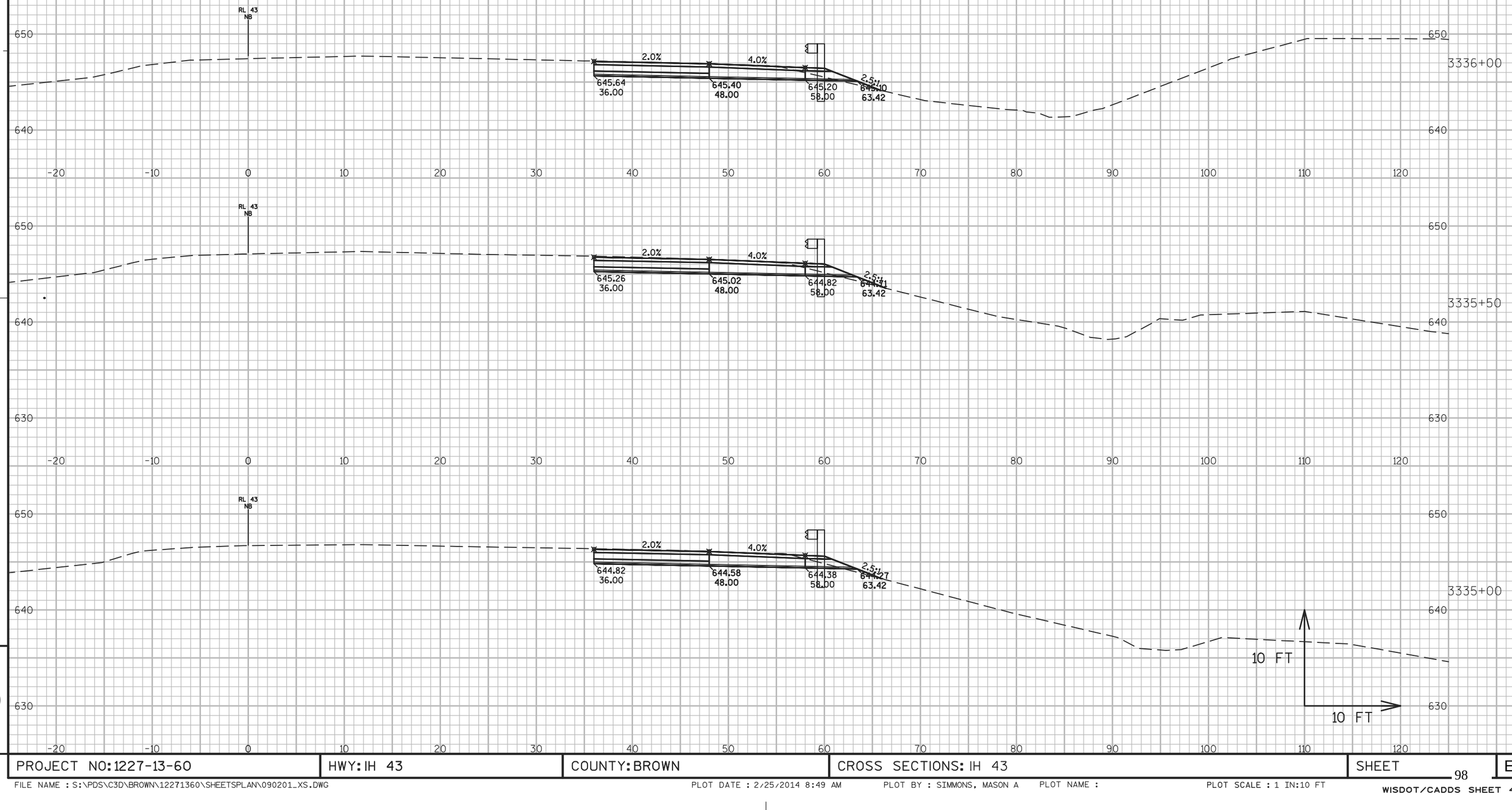
Sta.	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)
3333+93.500	30	0	1	0	0	0	0
3334+00.000	30	4	1	0	4	0	4
3334+50.000	30	55	1	2	59	2	57
3335+00.000	30	55	1	2	114	4	110
3335+50.000	30	55	1	2	169	6	164
3336+00.000	30	55	1	2	224	8	216
3336+50.000	30	55	2	2	279	10	269
3337+00.000	30	50	2	3	329	13	316
3337+50.000	30	50	1	2	379	15	364
3338+00.000	25	50	1	2	429	17	412
3338+50.000	25	50	3	4	479	21	458
3339+00.000	25	45	6	8	524	29	495
3339+50.000	20	40	8	10	564	39	525
3339+69.085	20	15	7	5	579	44	535
3339+79.300	20	8	7	3	587	47	540
3339+88.085	20	7	7	2	594	49	545
3340+00.000	20	9	7	3	602	52	550
3340+50.000	20	40	4	10	642	62	580
3341+00.000	20	35	3	7	678	69	609
3341+50.000	20	35	2	5	713	74	639
3342+00.000	15	30	1	3	743	77	666
3342+50.000	15	20	0	2	763	79	684
3342+53.000	0	1	0	0	764	79	685
TOTAL		**764**		**80**	**764**	**79**	**685**



PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: 43 NB	SHEET	E

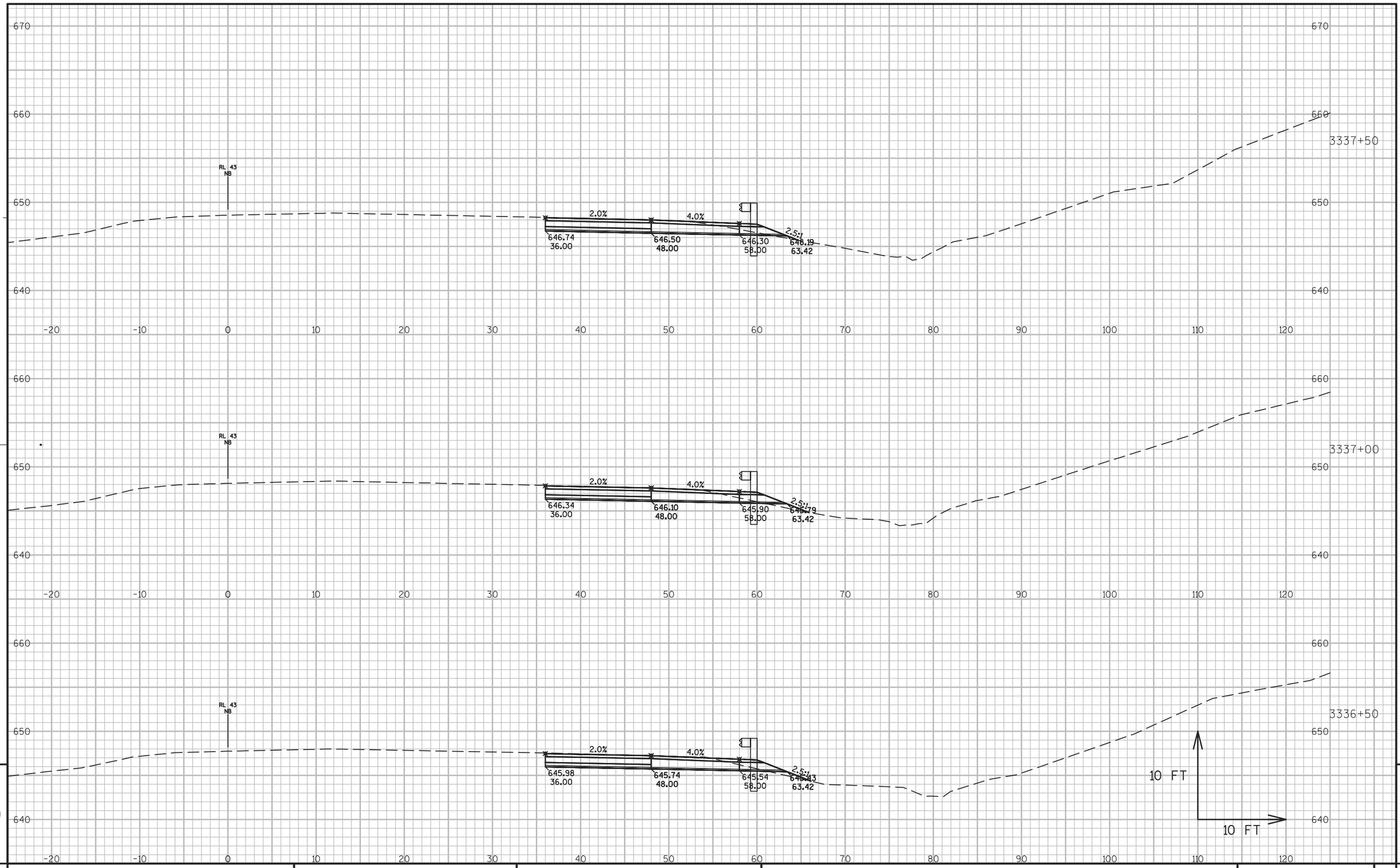
FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

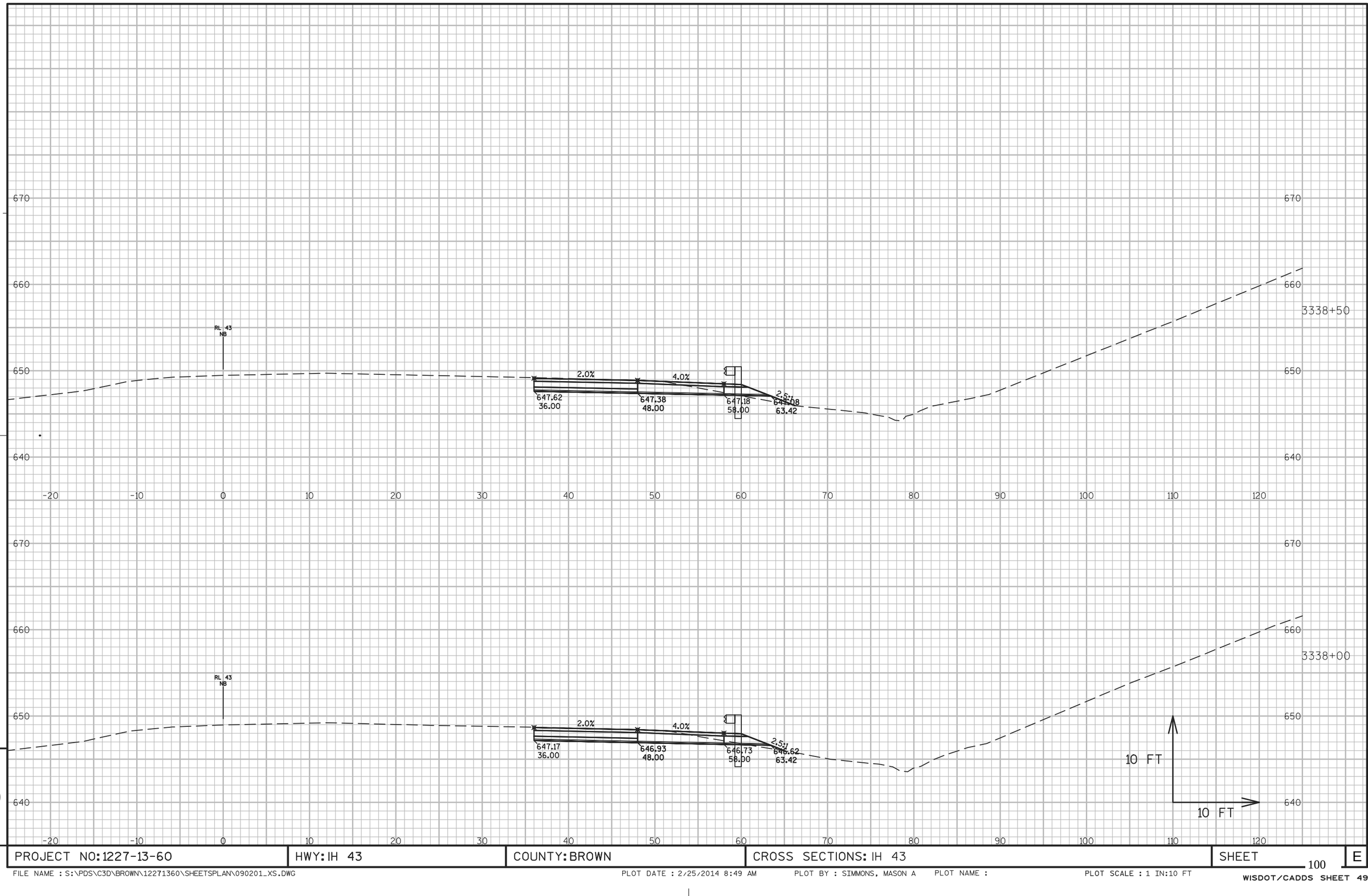


PROJECT NO:1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E



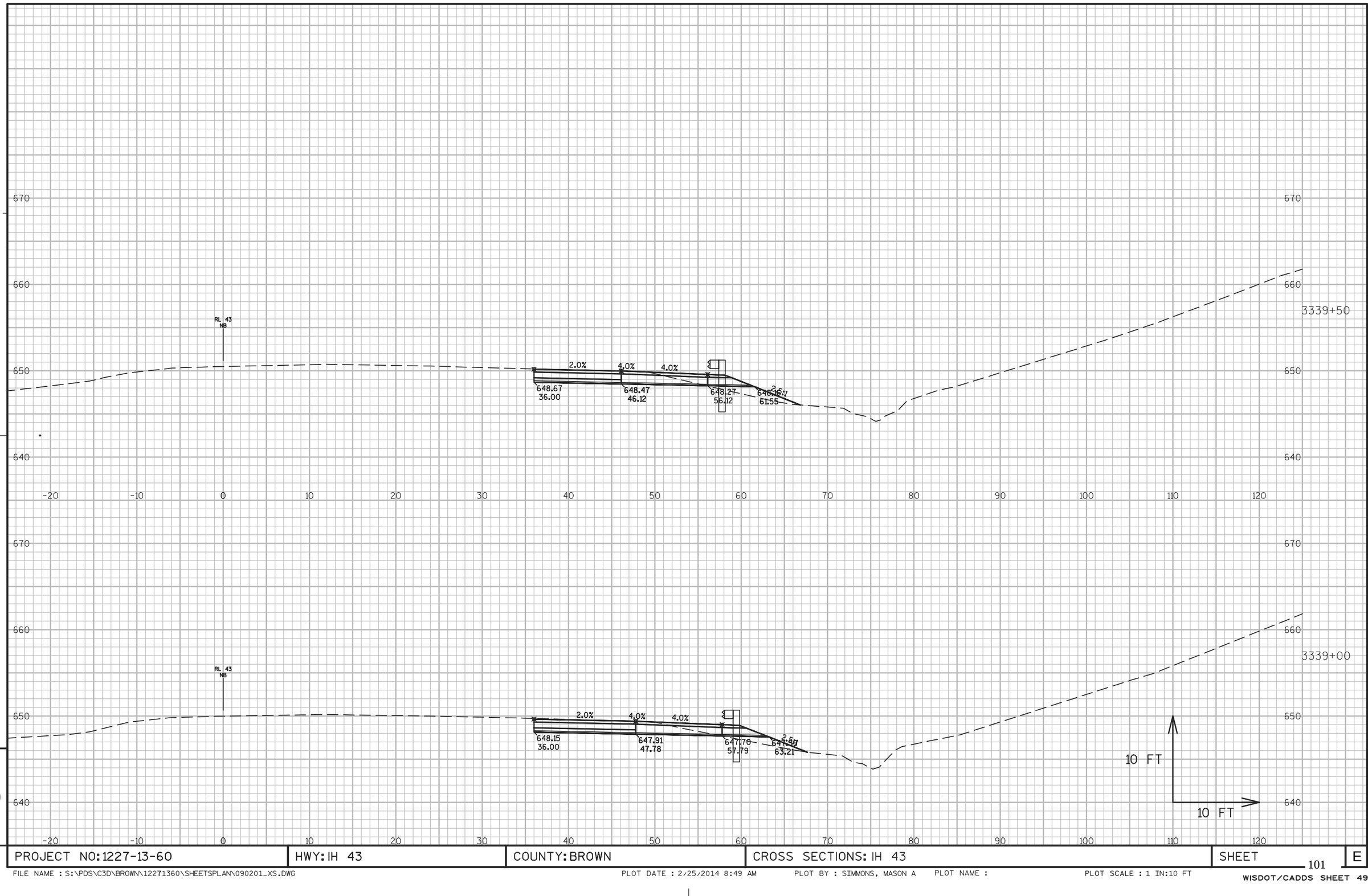
9

9

PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET 100	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

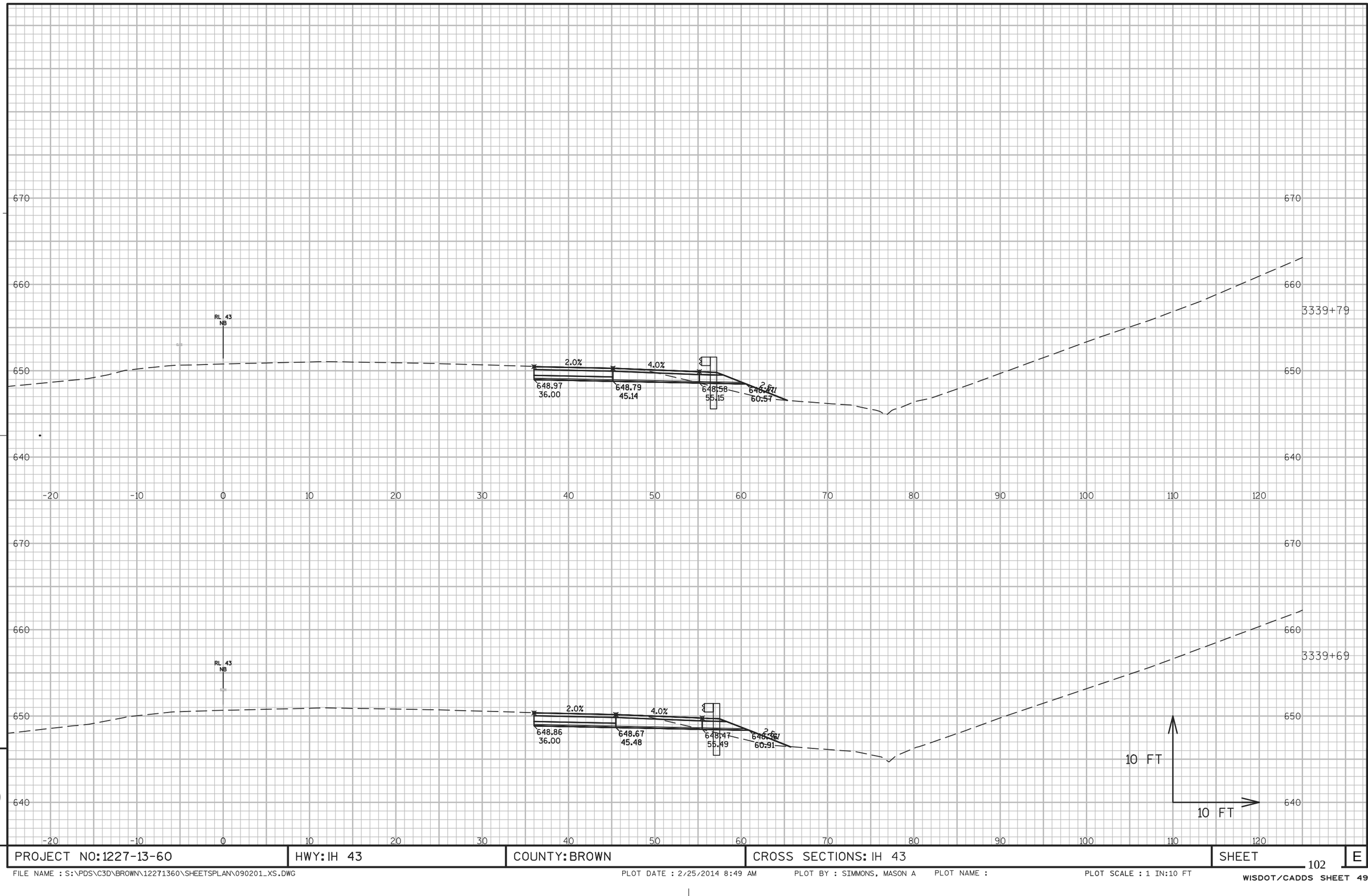
WISDOT/CADDS SHEET 49



PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET 101	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

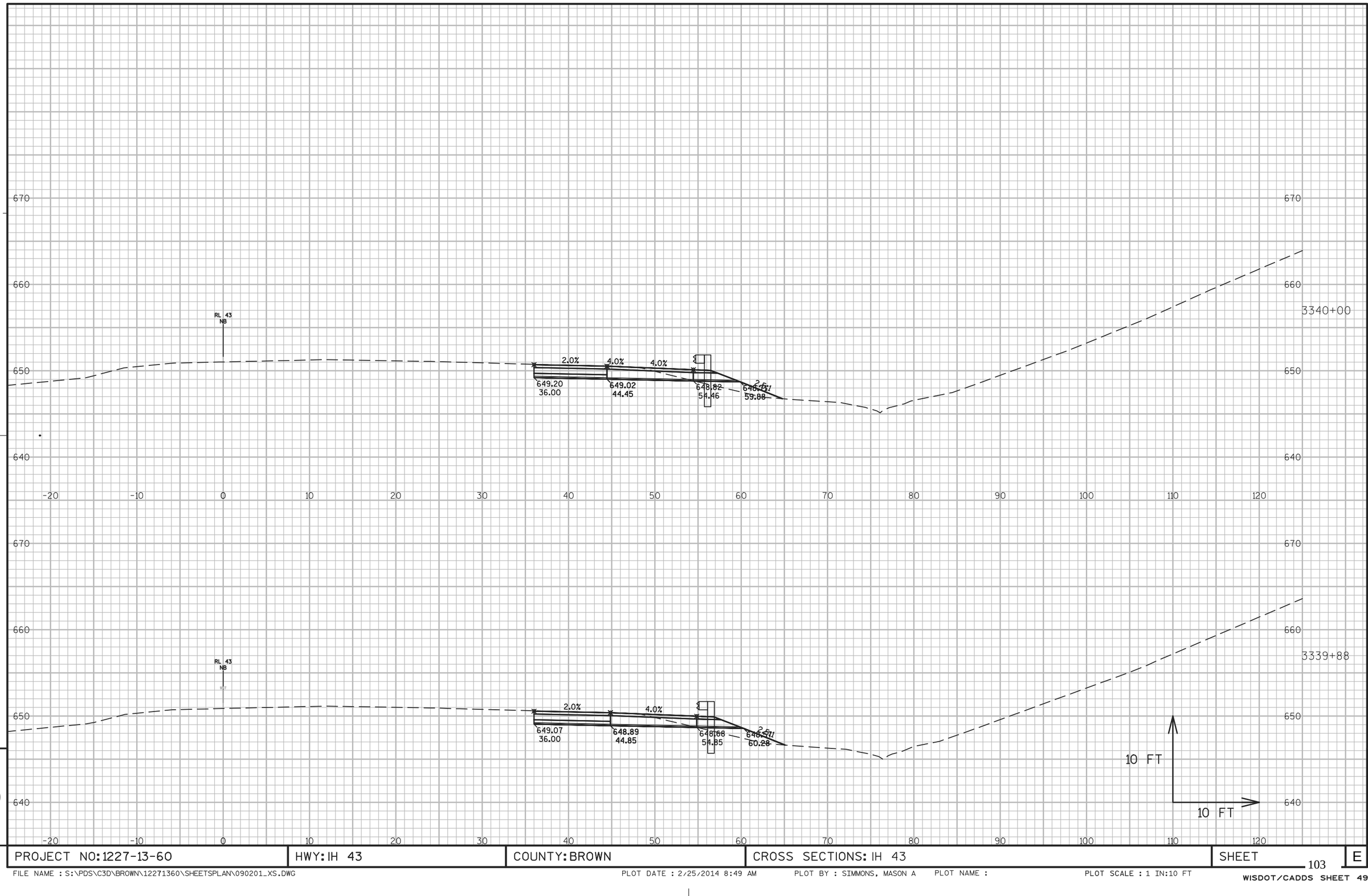
WISDOT/CADDS SHEET 49



PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

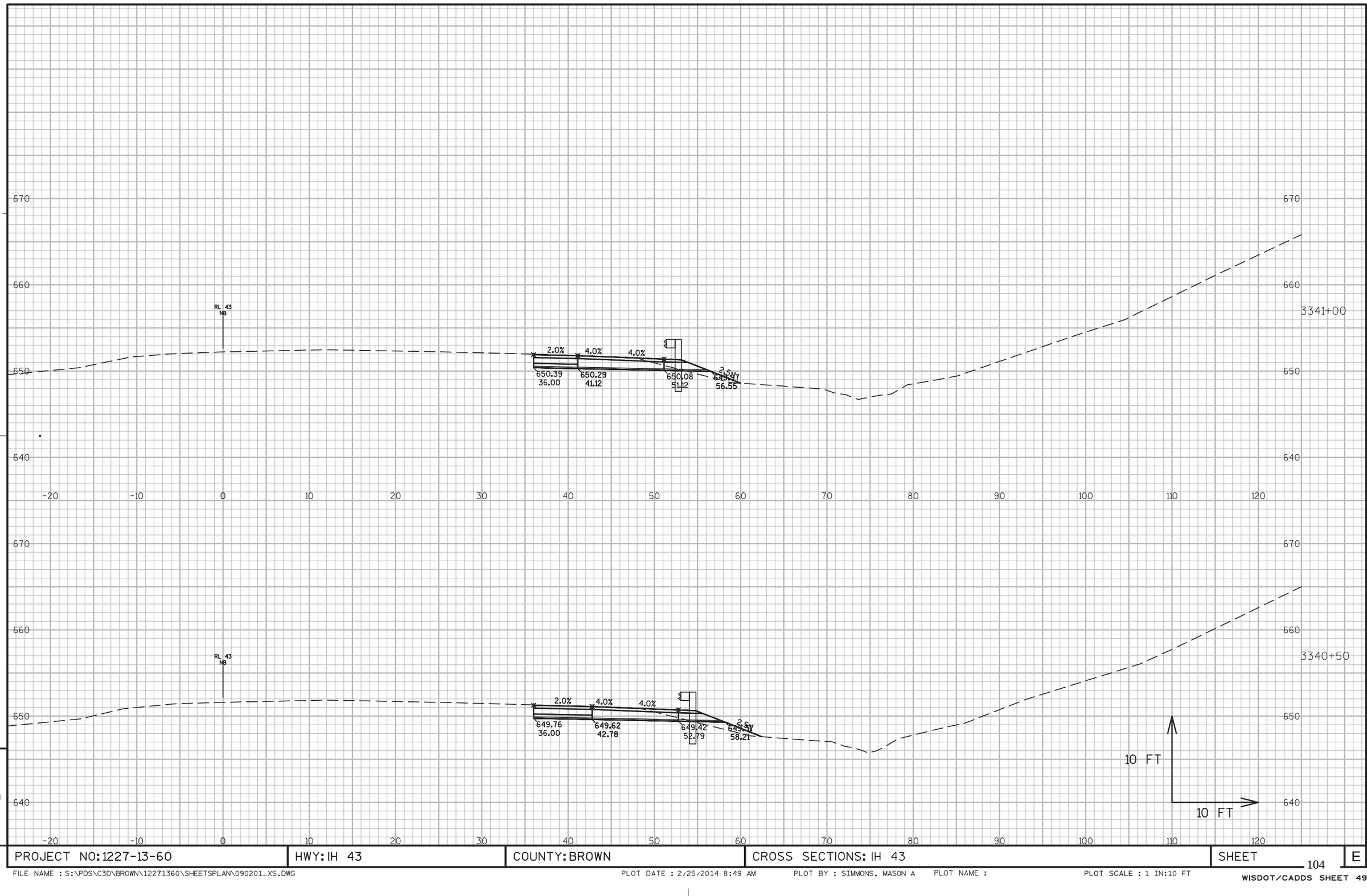
WISDOT/CADDS SHEET 49



PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



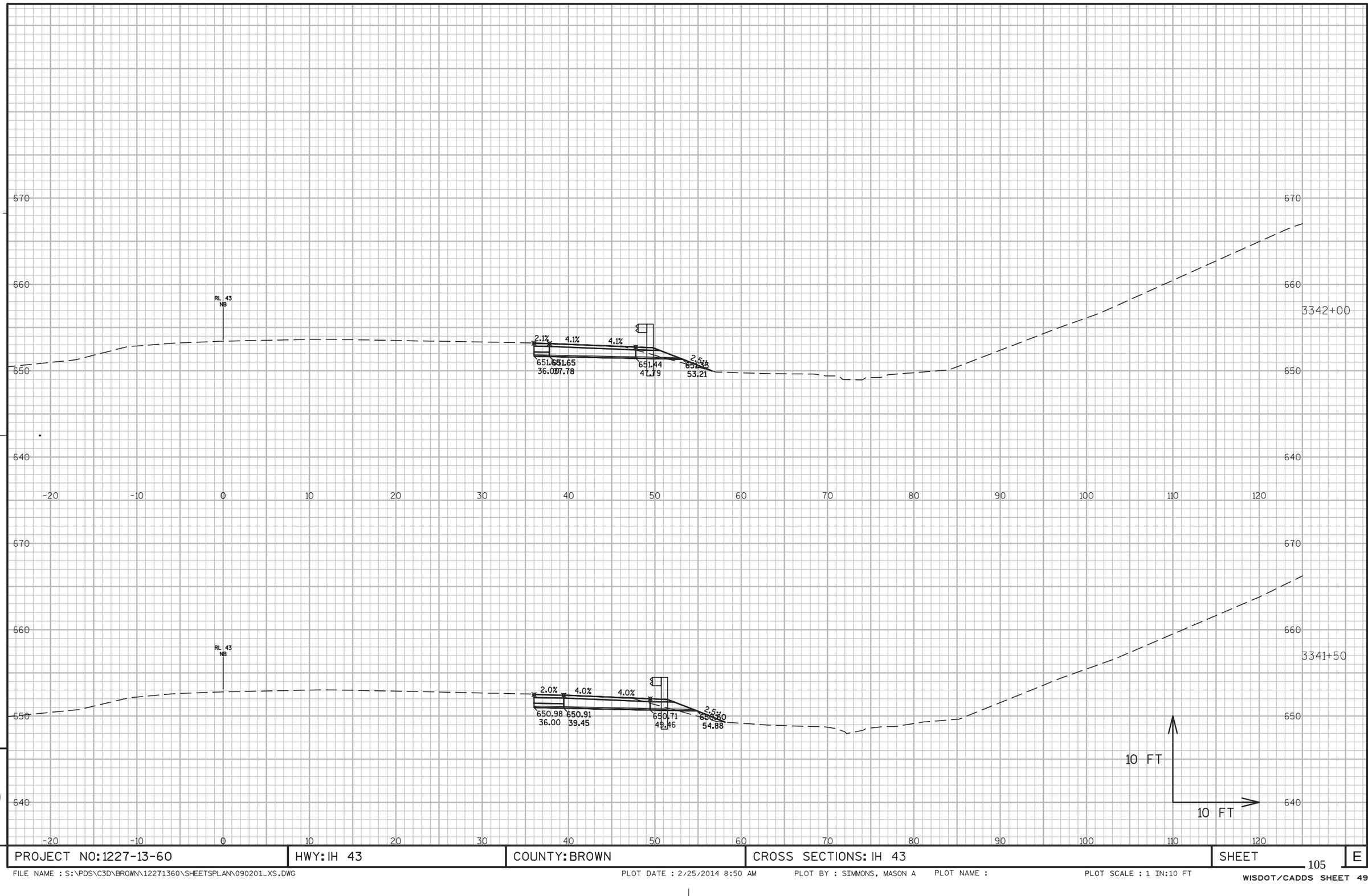
9

PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E

9

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:49 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



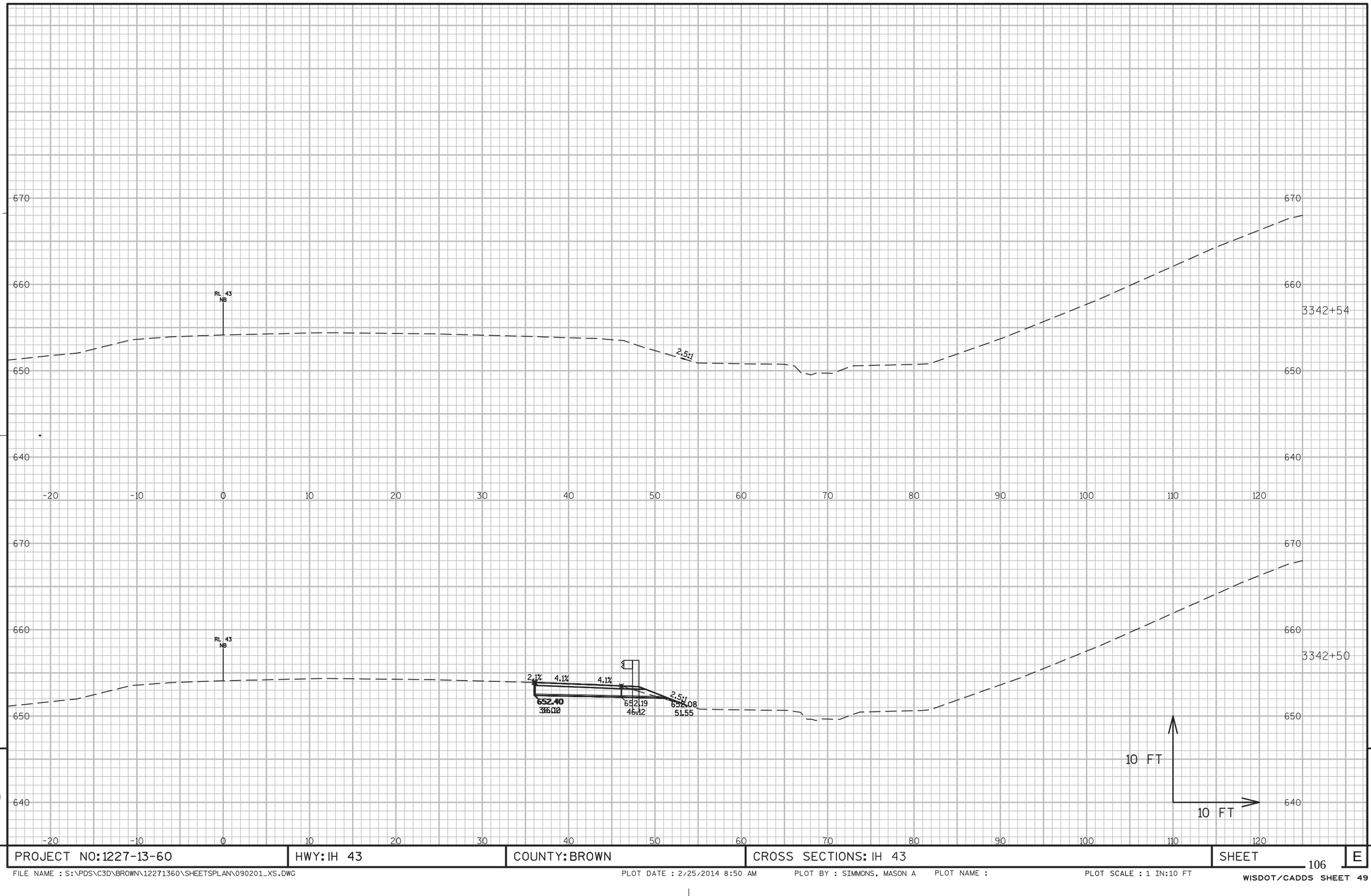
9

9

PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:50 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



9

PROJECT NO: 1227-13-60	HWY: IH 43	COUNTY: BROWN	CROSS SECTIONS: IH 43	SHEET	E

9

FILE NAME : S:\PDS\C3D\BROWN\12271360\SHEETSPLAN\090201_XS.DWG PLOT DATE : 2/25/2014 8:50 AM PLOT BY : SIMMONS, MASON A PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov