

MAD JULY 2015

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

**MADISON - PORTAGE**

HOEPKER ROAD BRIDGE B-13-0100

**I-39**

**DANE COUNTY**

STATE PROJECT NUMBER

1011-04-78

STATE PROJECT

FEDERAL PROJECT

PROJECT

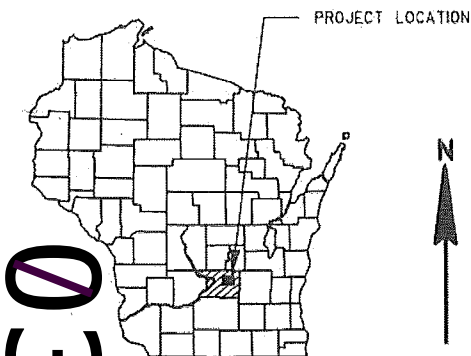
CONTRACT

1011-04-78

ORDER OF SHEETS

- Section No. 1 Title  
Section No. 2 Typical Sections and Details  
Section No. 3 Estimate of Quantities  
Section No. 3 Miscellaneous Quantities  
~~Section No. 4 Right of Way Plot~~  
Section No. 5 Plan and Profile  
Section No. 6 Standard Detail Drawings  
Section No. 7 Sign Plates  
Section No. 8 Structure Plans  
~~Section No. 9 Computer Earthwork Data~~  
~~Section No. 9 Cross Sections~~

TOTAL SHEETS = 70



DESIGN DESIGNATION

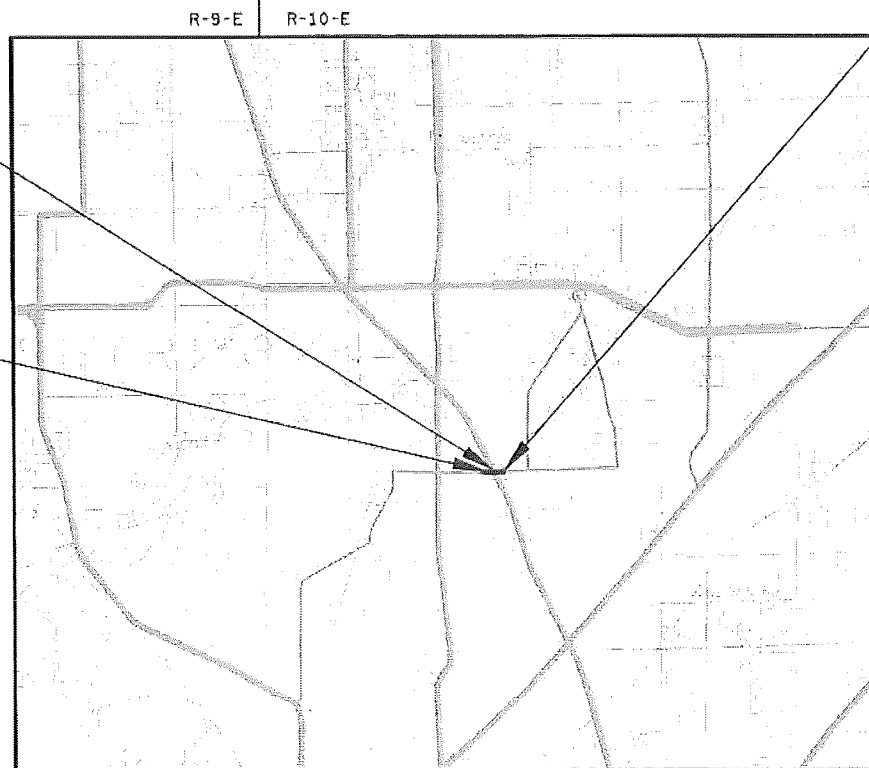
	IH 39		HOEPKER RD
A.A.D.T. (2015)	= 60,900		= 8,600
A.A.D.T. (2025)	= 68,700		= 12,000
D.H.V.	= 60,900		= N/A
D.D.	= 58,142		= N/A
T.	= 37.4%		= 5%
DESIGN SPEED	= 70 MPH		= 50 MPH
ESALS	= N/A		= N/A

BEGIN PROJECT

STA 15+30.00  
Y=515625.232  
X=840241.635

END PROJECT

STA 18+10.00  
Y=515627.391  
X=840521.627



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  
MARSH AREA  
WOODED OR SHRUB AREA

PROFILE

- GRADE LINE  
ORIGINAL GROUND  
MARSH OR ROCK PROFILE (To be noted as such)  
SPECIAL DITCH  
GRADE ELEVATION  
CULVERT (Profile View)  
UTILITIES  
ELECTRIC  
FIBER OPTIC  
GAS  
SANITARY SEWER  
STORM SEWER  
TELEPHONE  
WATER  
UTILITY PEDESTAL  
POWER POLE  
TELEPHONE POLE

LAYOUT  
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.053

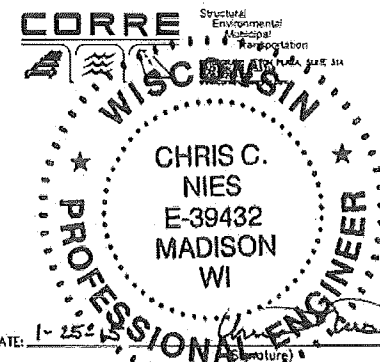
HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DANE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

APPROVED FOR DANE COUNTY

DATE:

(Signature)

ORIGINAL PLANS PREPARED BY



DATE: 1-25-

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WISDOT  
Designer WISDOT/CORRE, INC.  
Project Manager ROBERT LEX, PE  
Regional Examiner  
Regional Supervisor

APPROVED FOR THE DEPARTMENT

DATE: 04/07/2015  
Signature: Robert Lex

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AGG	AGGREGATE
ASPH	ASPHALTIC
AVG	AVERAGE
AADT	ANNUAL AVERAGE DAILY TRAFFIC
BK	BACK
BF	BACK FACE
BL or B/L	BASE LINE
BM	BENCH MARK
BLK	BLOCK
BR	BRIDGE
CL or C/L	CENTER LINE
CC	CENTER TO CENTER
CH	CHORD
CH BRG	CHORD BEARING
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR	CREEK
CR	CRUSHED
CABC	CRUSHED AGGREGATE BASE COURSE
CY or CUYD	CUBIC YARD
CP	CULVERT PIPE
C&G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
DWY	DRIVEWAY
E	EAST
EB	EASTBOUND
ELEC	ELECTRIC
EL or ELEV	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXP	EXPANSION
FF	FACE TO FACE OR FRONT FACE
FE	FIELD ENTRANCE
FG	FINISH GRADE
FAB	FLASHING ARROW BOARD
FL or F/L Flow	FLOW LINE
FT	FOOT
FTG	FOOTING
FTMS	FREEWAY TRAFFIC MANAGEMENT SYSTEM
HT	HEIGHT
HES	HIGH EARLY STRENGTH
CWT	HUNDREDWEIGHT
IP	IRON PIPE OR PIN
LT	LEFT
LIN FT or LF	LINEAR FOOT
LS	LUMP SUM
MH	MANHOLE
ML or M/L	MATCH LINE
MB	MESSAGE BOARD
NOM	NOMINAL
N	NORTH
NB	NORTHBOUND
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
PE	PRIVATE ENTRANCE
R	RADIUS
RL or R/L	REFERENCE LINE
RT	RIGHT
R/W	RIGHT-OF-WAY
RD	ROAD
SHLDR	SHOULDER
SW	SIDEWALK
S	SOUTH
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SF or SQ FT	SQUARE FEET
SY or SQ YD	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAYS
STA	STATION
SE	SUPERELEVATION
TEL	TELEPHONE
UG	UNDERGROUND
VC	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
W	WEST
WB	WESTBOUND

UTILITY CONTACTS

CARL DONAHUE  
AT&T LEGACY - COMMUNICATION LINE  
866 ROCK CREEK RD  
PLANO, IL 60545  
(847) 420-9115  
cdonahue@att.com

MIKE OLSEN  
ATC MANAGEMENT, INC. - ELECTRICITY  
801 O'KEEFE RD  
P.O. BOX 6113  
DE PERE, WI 54115-6113  
(920) 660-2390  
molsen@atcinc.com

DAVID DRYER  
CITY OF MADISON ENGINEERING - STREET LIGHTING  
215 MARTIN LUTHER KING JR BLVD  
P.O. BOX 2986  
MADISON, WI 53701-2986  
(608) 266-6546  
traffic@cityofmadison.com

JEFF ERTL  
KOCHS TELECOMMUNICATIONS SERVICE INC - COMMUNICATION LINE  
918 WALSH RD.  
MADISON, WI 53714  
(608) 243-9702  
j.ertl@kochtelecom.com

JASON HOGAN  
ALLIANT ENERGY - ELECTRICITY  
SUITE 1000  
4902 N BILTMORE LANE  
MADISON, WI 53718  
(608) 395-7395  
jasonhogan@alliantenergy.com

BRANDON STORM  
CHARTER COMMUNICATIONS - COMMUNICATION LINE  
2701 DANIELS ST.  
MADISON, WI 53718  
(608) 274-3822  
brandon.storm@charter.com.com

ROB PHILLIPS  
CITY OF MADISON ENGINEERING - SEWER  
210 MARTIN LUTHER KING JR BLVD, RM 115  
MADISON, WI 53703  
(608) 266-4751  
engineering@cityofmadison.com

TIM STATZ  
MADISON GAS AND ELECTRIC COMPANY - ELECTRICITY  
P.O. BOX 1231  
MADISON, WI 53701-1231  
(608) 252-4708  
tstatz@mge.com

DENNIS CAWLEY  
MADISON WATER UTILITY - WATER  
119 E OLIN AVE  
MADISON, WI 53713-1431  
(608) 266-4651  
dcawley@cityofmadison.com

TIM STATZ  
MADISON GAS AND ELECTRIC COMPANY - GAS/PETROLEUM  
P.O. BOX 1231  
MADISON, WI 53701-1231  
(608) 252-4708  
tstatz@mge.com

DONALD SCHELL  
WISCONSIN DEPARTMENT OF TRANSPORTATION - COMMUNICATION LINE  
433 W. ST. PAUL AVE STE 300  
MILWAUKEE, WI 53203-3007  
(414) 227-2148  
donald.schell@dot.wi.gov

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE APPROXIMATE USGS DATUM.

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED AND SEEDED AND COVERED WITH EROSION MAT.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARINGS TO THE NEAREST SECOND.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

IF REQUIRED TO MATCH THE EXISTING THICKNESS OF PAVEMENT, A LOWER LIFT OR LEVELING COURSE OF PAVEMENT WILL BE PAID AS ASPHALTIC SURFACE.

ASPHALTIC SURFACE QUANTITIES WERE ESTIMATED BASED ON A UNIT WEIGHT OF 112 LB/SY IN.

ADJUSTMENTS TO PLAN HEIGHTS OF PROPOSED BEARINGS OR PERMANENT CRIBBING SHALL BE THE CONTRACTORS RESPONSIBILITY AND CONSIDERED INCIDENTAL TO THE RESPECTIVE BID ITEMS.



CONSULTANT CONTACT

CORRE, INC.  
6510 GRAND TETON PLAZA, SUITE 314  
MADISON, WI 53719  
CHRIS NIES, P.E.  
608-828-1011  
cnies@correinc.com

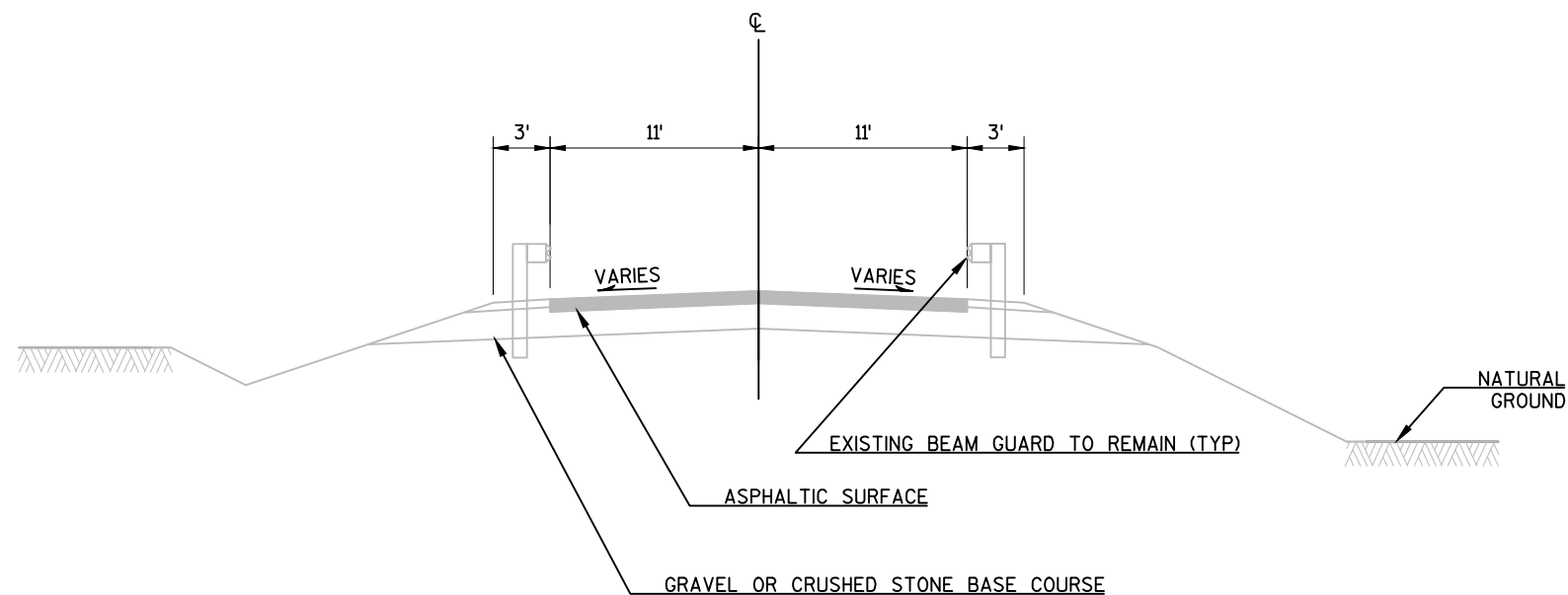
DNR CONTACT

WISCONSIN DNR, SOUTH CENTRAL REGION  
ERIC HEGGELUND  
3911 FISH HATCHERY ROAD  
FITCHBURG, WI 53711  
OFFICE: (608) 275-3301  
Eric.Heggelund@Wisconsin.gov

RUNOFF COEFFICIENT TABLE

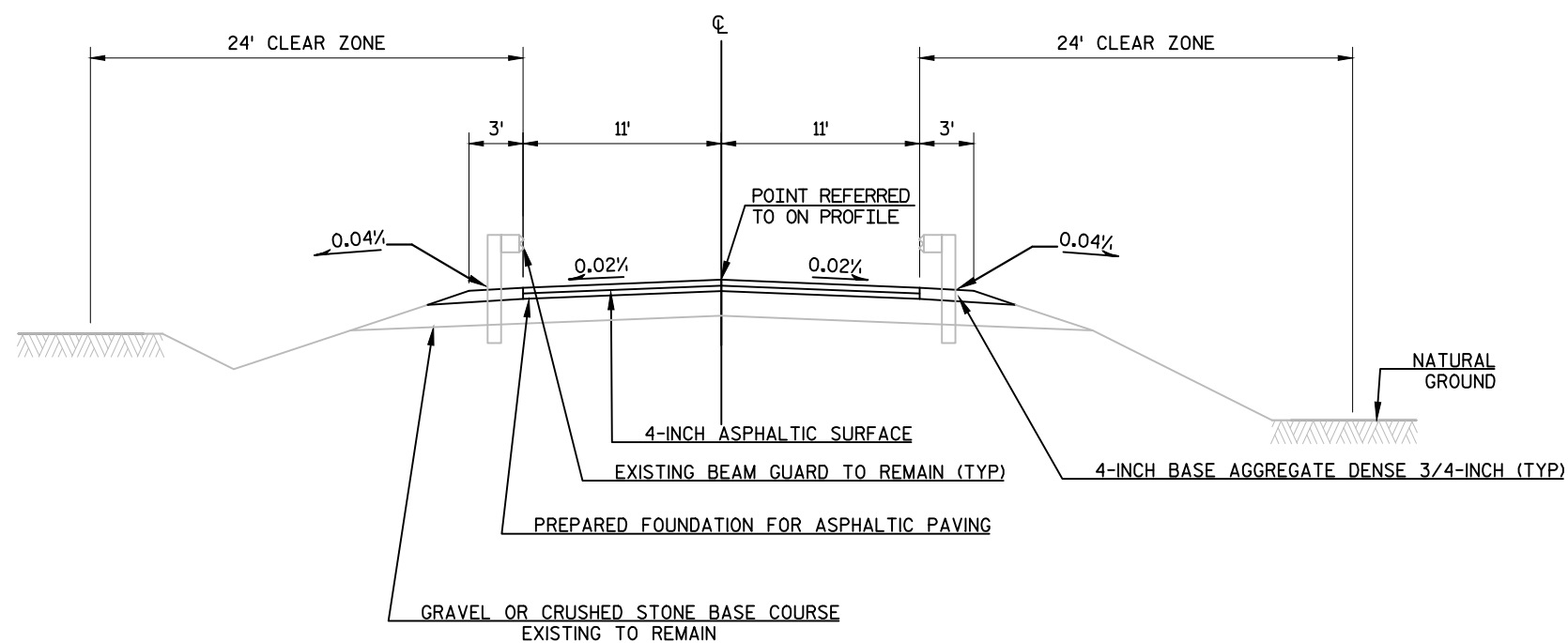
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT						.70 - .95						
CONCRETE						.80 - .95						
BRICK						.70 - .80						
DRIVES, WALKS						.75 - .85						
ROOFS						.75 - .95						
GRAVEL ROADS, SHOULDERS						.40 - .60						

TOTAL PROJECT AREA = 0.03 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.10 ACRES



TYPICAL EXISTING SECTION - HOEPKER ROAD

STA 15+30.00 - STA 18+10.00



TYPICAL FINISHED SECTION - HOEPKER ROAD

STA 15+30.00 - STA 18+10.00

## GENERAL NOTES:

FOR OTHER PERTINENT DETAILS, SEE THE FOLLOWING SDD'S:

- TRAFFIC CONTROL LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
- TRAFFIC CONTROL, SHOULDER CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
- BARRICADES AND SIGNS FOR MAINLINE CLOSURES

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED, OR AS PROVIDED FOR IN SDD'S.

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

THE R11-2, R11-3 AND R11-4 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.

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

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.

## LEGEND



WORK ZONE



POST WITH ATTACHED SIGN



TYPE III BARRICADE WITH TYPE A LIGHTS



TYPE III BARRICADE WITH TYPE A LIGHTS WITH SIGN



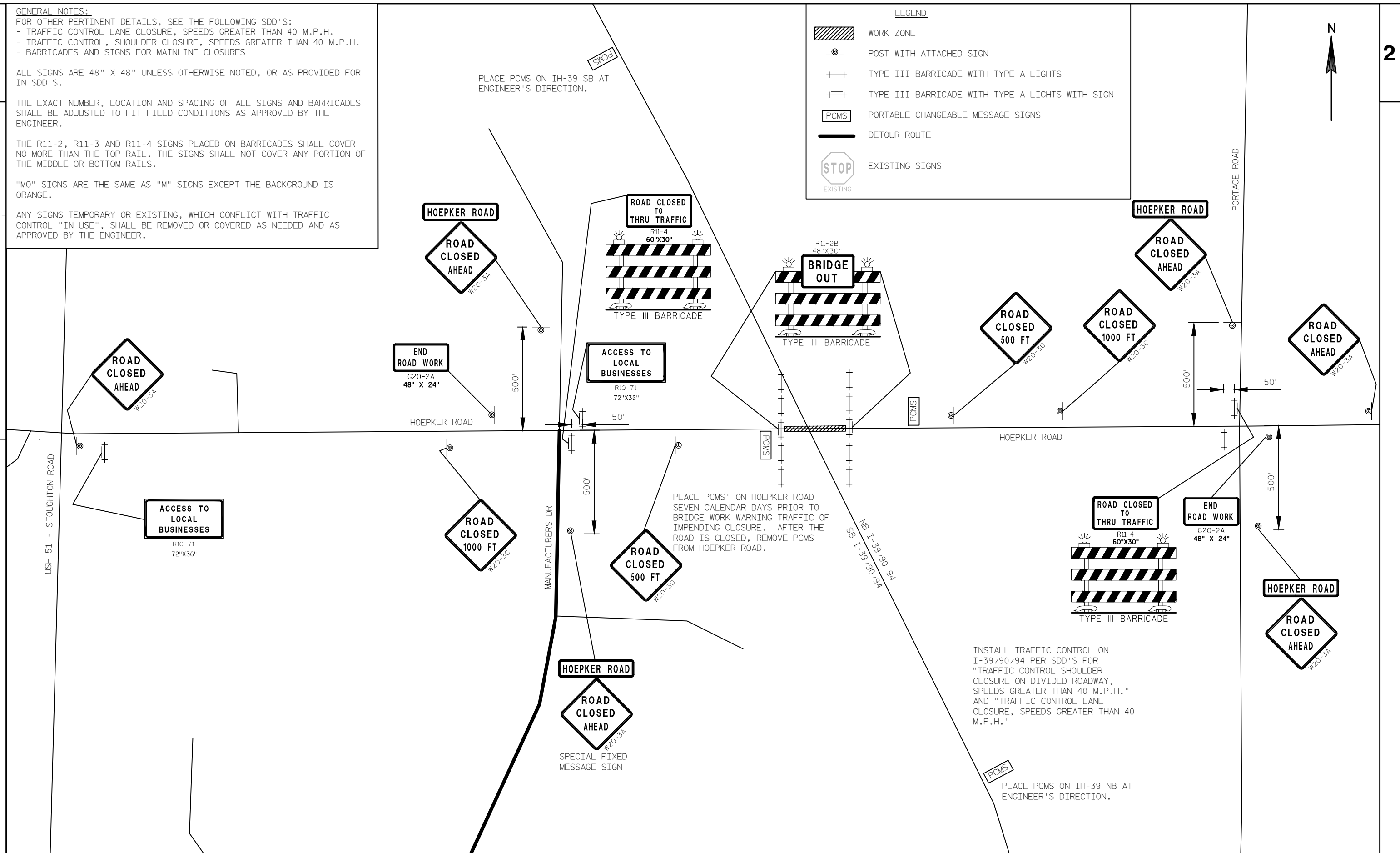
PORTABLE CHANGEABLE MESSAGE SIGNS

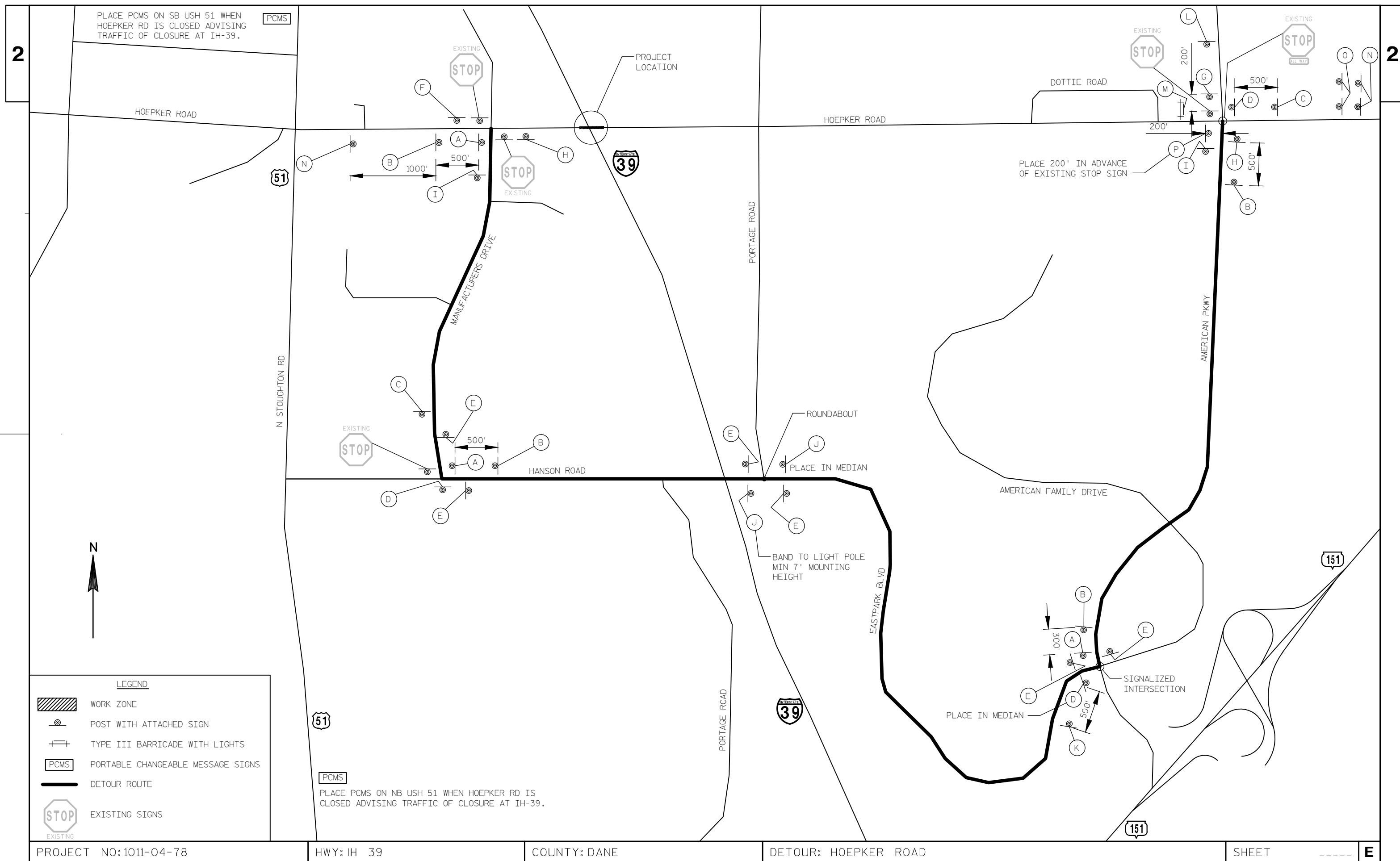


DETOUR ROUTE



EXISTING SIGNS





GENERAL NOTES:  
FOR OTHER PERTINENT DETAILS, SEE THE FOLLOWING SDD'S:  
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"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

LEGEND:

A

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

→

M06-1(R)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

B

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

↗

M05-1(R)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

C

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

↖

M05-1(L)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

D

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

←

M06-1(L)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

E

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

SPECIAL FIXED MESSAGE SIGN

F

DETOUR

M4-8  
24" X 12"

EAST

M3-2  
24"X12"

HOEPKER ROAD

↑

M06-1(A)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

G

DETOUR

M4-8  
24" X 12"

WEST

M3-4  
24"X12"

HOEPKER ROAD

↑

M06-1(A)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

H

END  
DETOUR

M4-8A  
24" X 18"

HOEPKER ROAD

SPECIAL FIXED MESSAGE SIGN

I

HOEPKER ROAD

DETOUR  
NEXT 4 MILES

G20-51  
60" X 24"

SPECIAL FIXED MESSAGE SIGN

J

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

↑

M06-1(A)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

K

DETOUR

M4-8  
24" X 12"

HOEPKER ROAD

USE  
LEFT  
LANE

M04-20-L  
24"X24"

SPECIAL FIXED MESSAGE SIGN

L

HOEPKER ROAD

DETOUR  
AHEAD

W20-2A

SPECIAL FIXED MESSAGE SIGN

M

ROAD CLOSED  
1.3MILES AHEAD  
LOCAL TRAFFIC ONLY

R11-3  
60"X30"

TYPE III BARRICADE

N

DETOUR  
AHEAD

W20-2A

O

DETOUR  
1000 FT

W20-2C

P

DETOUR

M4-8  
24" X 12"

WEST

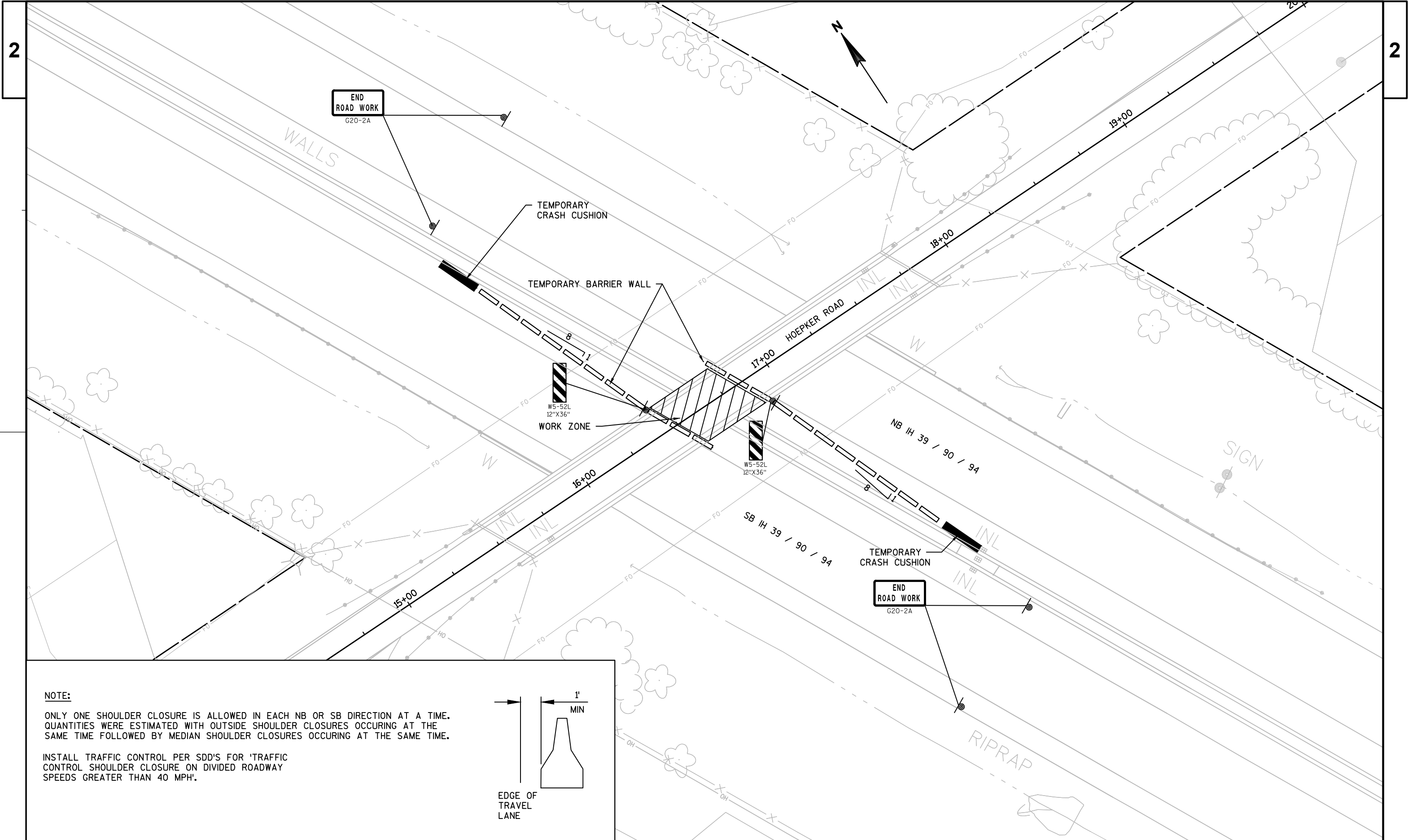
M3-4  
24"X12"

HOEPKER ROAD

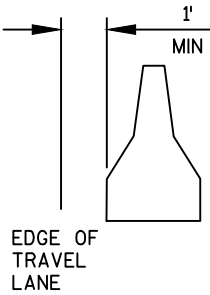
→

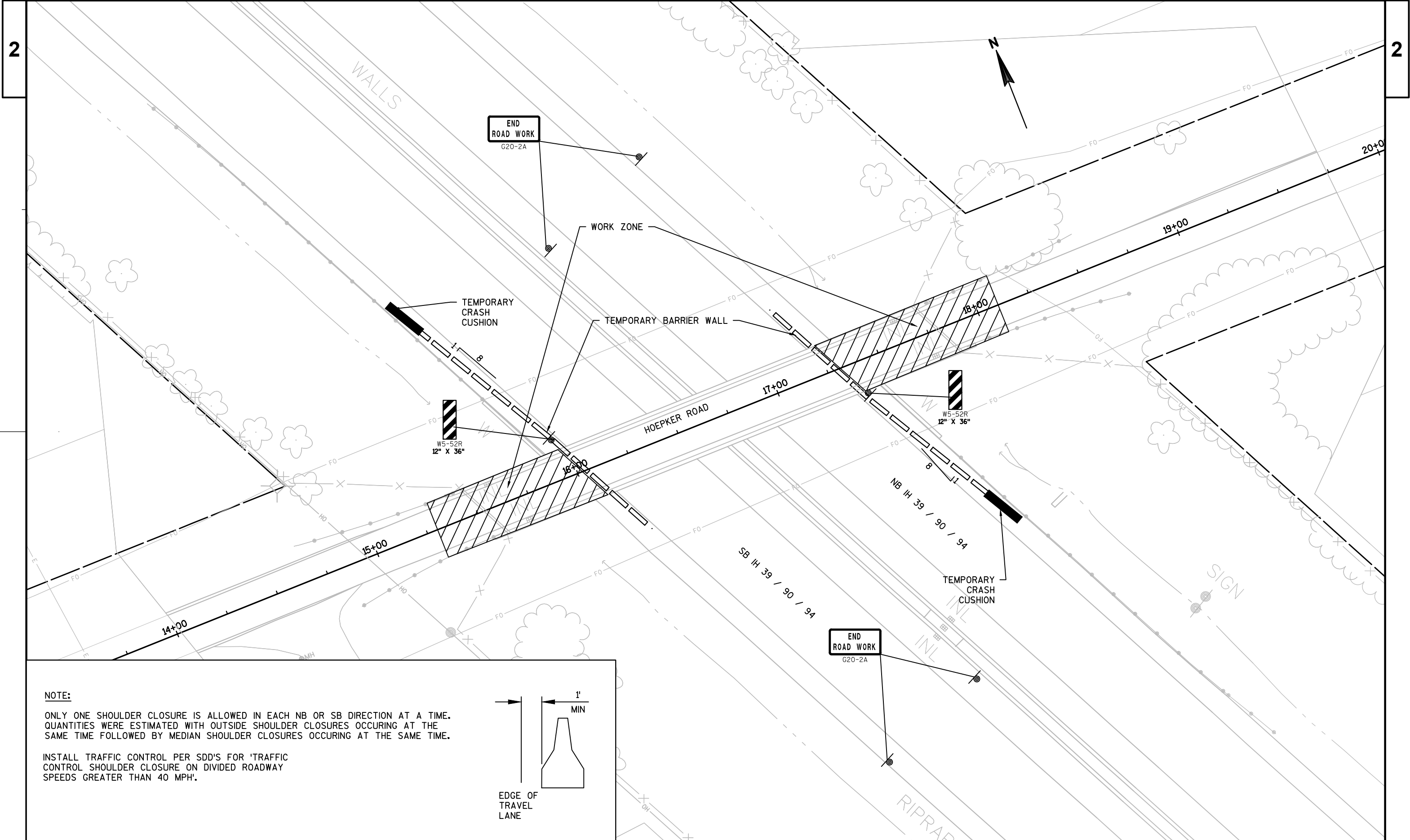
M06-1(R)  
21"X21"

SPECIAL FIXED MESSAGE SIGN

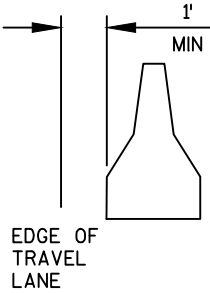


**NOTE:**  
ONLY ONE SHOULDER CLOSURE IS ALLOWED IN EACH NB OR SB DIRECTION AT A TIME. QUANTITIES WERE ESTIMATED WITH OUTSIDE SHOULDER CLOSURES OCCURING AT THE SAME TIME FOLLOWED BY MEDIAN SHOULDER CLOSURES OCCURING AT THE SAME TIME.  
  
INSTALL TRAFFIC CONTROL PER SDD'S FOR 'TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY SPEEDS GREATER THAN 40 MPH'.

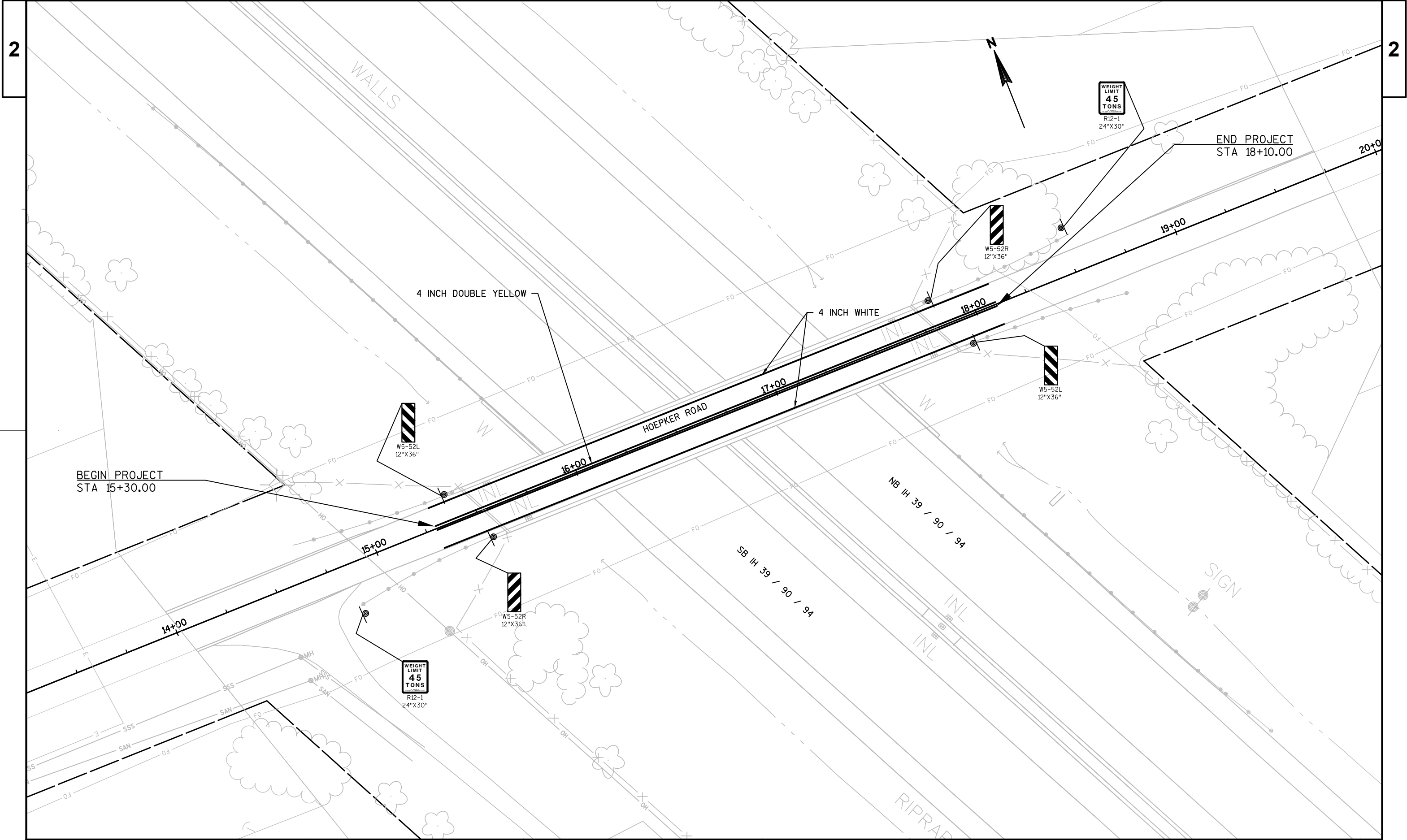




**NOTE:**  
ONLY ONE SHOULDER CLOSURE IS ALLOWED IN EACH NB OR SB DIRECTION AT A TIME. QUANTITIES WERE ESTIMATED WITH OUTSIDE SHOULDER CLOSURES OCCURRING AT THE SAME TIME FOLLOWED BY MEDIAN SHOULDER CLOSURES OCCURING AT THE SAME TIME.  
INSTALL TRAFFIC CONTROL PER SDD'S FOR 'TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY SPEEDS GREATER THAN 40 MPH'.







DATE 27APR15		E S T I M A T E O F Q U A N T I T I E S			
LINE					1011-04-78
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0110	Removing Asphaltic Surface	SY	134.000	134.000
0020	204.0170	Removing Fence	LF	100.000	100.000
0030	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1011-04-78	LS	1.000	1.000
0040	213.0100	Finishing Roadway (project) 01. 1011-04-78	EACH	1.000	1.000
0050	305.0110	Base Aggregate Dense 3/4-Inch	TON	10.000	10.000
0060	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	10.000	10.000
0070	455.0605	Tack Coat	GAL	4.000	4.000
0080	465.0105	Asphaltic Surface	TON	36.000	36.000
0090	502.2000	Compression Joint Sealer Preformed Elastomeric (width) 01. 3-INCH	LF	62.000	62.000
0100	502.3100	Expansion Device (structure) 01. B-13-100	LS	1.000	1.000
0110	502.3200	Protective Surface Treatment	SY	760.000	760.000
0120	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	58.000	58.000
0130	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	1,440.000	1,440.000
0140	506.2610	Bearing Pads Elastomeric Laminated	EACH	16.000	16.000
0150	506.7050.S	Removing Bearings (structure) 01. B-13-100	EACH	16.000	16.000
0160	509.0301	Preparation Decks Type 1	SY	205.000	205.000
0170	509.0302	Preparation Decks Type 2	SY	100.000	100.000
0180	509.1000	Joint Repair	SY	17.000	17.000
0190	509.1200	Curb Repair	LF	60.000	60.000
0200	509.1500	Concrete Surface Repair	SF	320.000	320.000
0210	509.2000	Full-Depth Deck Repair	SY	10.000	10.000
0220	509.2500	Concrete Masonry Overlay Decks	CY	72.000	72.000
0230	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 01. B-13-100	SY	610.000	610.000
0240	517.3000.S	Structure Overcoating Cleaning and Priming (structure) 01. B-13-100	LS	1.000	1.000
0250	517.4000.S	Containment and Collection of Waste Materials (structure) 01. B-13-100	LS	1.000	1.000
0260	603.8000	Concrete Barrier Temporary Precast Delivered	LF	600.000	600.000
0270	603.8125	Concrete Barrier Temporary Precast Installed	LF	600.000	600.000
0280	614.0905	Crash Cushions Temporary	EACH	4.000	4.000
0290	616.0100	Fence Woven Wire (height) 01. 4-FT	LF	100.000	100.000
0300	619.1000	Mobilization	EACH	1.000	1.000
0310	625.0500	Salvaged Topsoil	SY	700.000	700.000
0320	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0330	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0340	628.2004	Erosion Mat Class I Type B	SY	700.000	700.000
0350	630.0120	Seeding Mixture No. 20	LB	20.000	20.000
0360	630.0200	Seeding Temporary	LB	40.000	40.000
0370	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	6.000	6.000
0380	637.2210	Signs Type II Reflective H	SF	22.000	22.000
0390	638.2602	Removing Signs Type II	EACH	6.000	6.000
0400	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0410	642.5001	Field Office Type B	EACH	1.000	1.000
0420	643.0100	Traffic Control (project) 01. 1011-04-78	EACH	1.000	1.000
0430	643.0300	Traffic Control Drums	DAY	908.000	908.000
0440	643.0420	Traffic Control Barricades Type III	DAY	906.000	906.000
0450	643.0705	Traffic Control Warning Lights Type A	DAY	1,059.000	1,059.000

DATE 27APR15		E S T I M A T E O F Q U A N T I T I E S				
LINE					1011-04-78	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0460	643.0715	Traffic Control Warning Lights Type C	DAY	210.000	210.000	
0470	643.0800	Traffic Control Arrow Boards	DAY	114.000	114.000	
0480	643.0900	Traffic Control Signs	DAY	2,630.000	2,630.000	
0490	643.1000	Traffic Control Signs Fixed Message	SF	96.000	96.000	
0500	643.1050	Traffic Control Signs PCMS	DAY	251.000	251.000	
0510	643.2000	Traffic Control Detour (project) 01. 1011-04-78	EACH	1.000	1.000	
0520	643.3000	Traffic Control Detour Signs	DAY	2,805.000	2,805.000	
0530	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,120.000	1,120.000	
0540	690.0150	Sawing Asphalt	LF	44.000	44.000	
0550	SPV.0060	Special 01. Cleaning and Painting Bearings	EACH	4.000	4.000	
0560	SPV.0060	Special 02. Masonry Anchors Type L No. 8 Bars Special	EACH	8.000	8.000	
0570	SPV.0060	Special 03. Pin Replacement	EACH	1.000	1.000	
0580	SPV.0060	Special 04. Railing Repair	EACH	1.000	1.000	
0590	SPV.0105	Special 01. Permanent Cribbing	LS	1.000	1.000	

REMOVING ASPHALTIC SURFACE

STATION - STATION		204.0110	COMMENTS
CATEGORY CODE 0010		SY	
15+30	- 15+55	61	
17+80	- 18+10	73	
TOTAL		134	

REMOVING FENCE

STATION		LOCATION	204.0170	COMMENTS
CATEGORY CODE 0010			LF	
15+55		RT	50	R/W FENCE TO ACCESS PIERS
18+25		LT	50	R/W FENCE TO ACCESS PIERS
TOTAL			100	

BASE AGGREGATE DENSE ITEMS

STATION - STATION		LOCATION	305.0110	305.0120	COMMENTS
CATEGORY CODE 0010			BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	
15+30	- 15+40	LT	1		SHOULDER
15+30	- 15+58	RT	2		SHOULDER
17+80	- 18+10	LT	2		SHOULDER
17+95	- 18+10	RT	1		SHOULDER
UNDISTRIBUTED			5	10	
			10	10	

ASPHALTIC ITEMS

STATION - STATION		LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
CATEGORY CODE 0010				
15+30	- 15+25	MAINLINE	2	16
17+80	- 18+10	MAINLINE	2	20
TOTALS			4	36

TEMPORARY CONCRETE BARRIER WALL AND CRASH CUSHIONS

LOCATION	603.8000	603.8125	614.0905
	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	CRASH CUSHIONS TEMPORARY EACH
CATEGORY CODE 0010			
NB MEDIAN	150	150	1
NB OUTSIDE	150	150	1
SB MEDIAN	150	150	1
SB OUTSIDE	150	150	1
TOTALS	600	600	4

FENCE ITEMS

STATION		LOCATION	606.0100	COMMENTS
CATEGORY CODE 0010			FENCE WOVEN WIRE (4-FT) LF	
15+55		RT	50	R/W FENCE ACCESS TO PIERS
18+25		LT	50	R/W FENCE ACCESS TO PIERS
TOTAL			100	

LANDSCAPING ITEMS

		625.0500 SALVAGED TOPSOIL	628.2004 EROSION MAT CLASS I TYPE B	630.0120 SEED MIX NO. 20	630.0200 SEED TEMPORARY
STATION	LOCATION	SY	SY	LBS	LBS
CATEGORY CODE 0010					
15+50	RT	350	350	10	20
17+75	LT	350	350	10	20
TOTALS		700	700	20	40

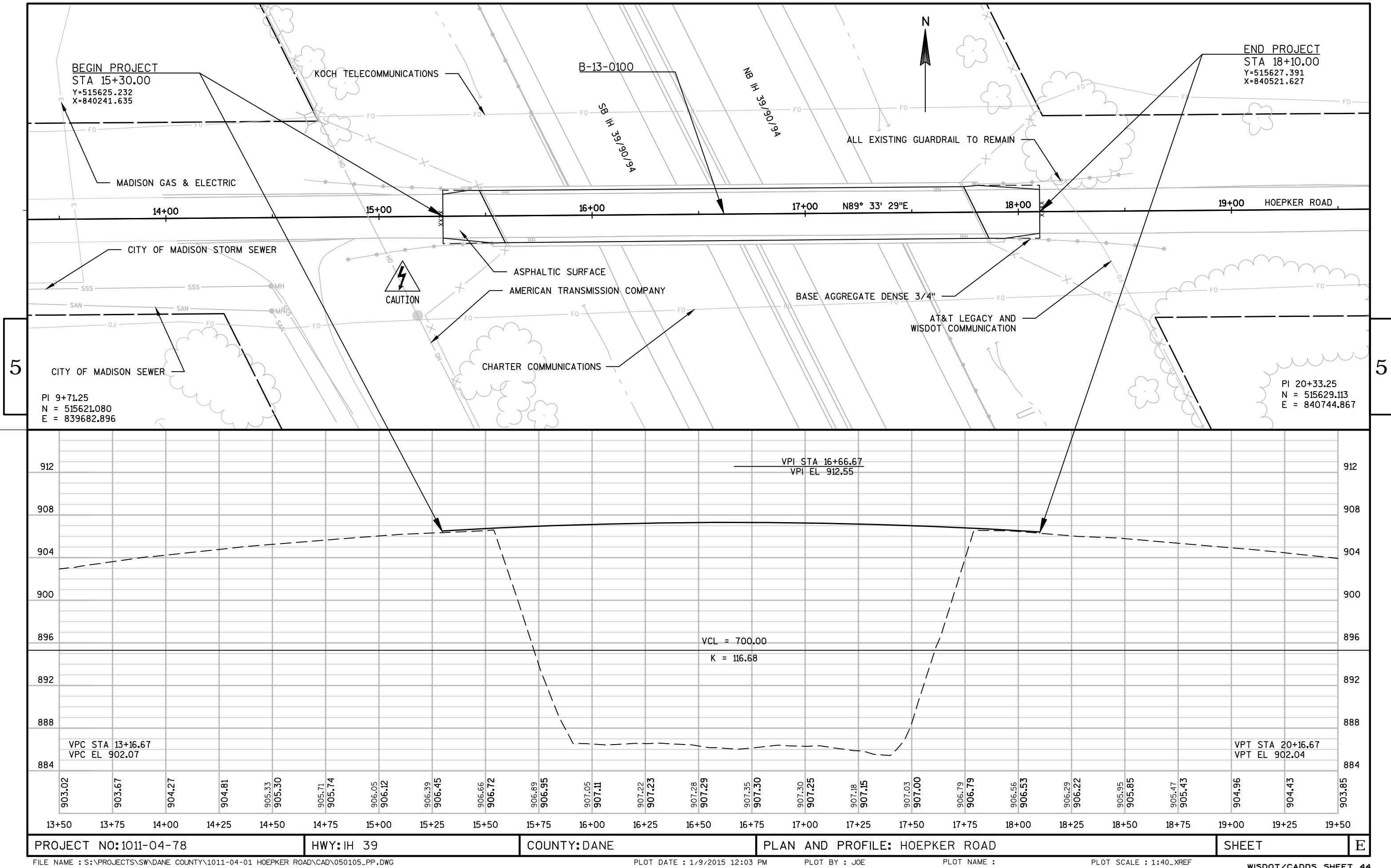
SIGNAGE						
LOCATION	638.2602 REMOVING SIGNS TYPE II	638.3000 REMOVING SMALL SIGN SUPPORTS	634.0616 POSTS WOOD 4x6- INCH x 16-FT	637.2210 SIGN TYPE II REFLECTIVE H SF	DESIGNATION	REMARKS
CATEGORY CODE 0010	EA	EA	EA			
WEST APPROACH	2	2	2	6	W5-52	CHEVRONS 12'
EAST APPROACH	2	2	2	6	W5-52	CHEVRONS 12'
WEST APPROACH	1	1	1	5	R12-1	WEIGHT LIMIT
EAST APPROACH	1	1	1	5	R12-1	WEIGHT LIMIT
TOTAL	6	6	6	22		

DETOUR ITEMS	
LOCATION	643.3000 DETOUR SIGN DAYS
CATEGORY CODE 0010	
PORTAGE RD / HOEPKER RD	306
MANUFACTURERS DR / HOEPKER RD	306
MANUFACTURERS DR / HANSON RD	510
PORTAGE RD / HANSON DR	306
AMERICAN PKWY / EASTPARK BLVD	510
AMERICAN PKWY / HOEPKER RD	867
TOTAL	2,805

TRAFFIC CONTROL ITEMS									
LOCATION	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.0715 WARNING LIGHTS TYPE C DAYS	643.0800 ARROW BOARDS DAYS	643.0900 SIGNS DAYS	643.1000 SIGNS FIXED MESSAGE SF	643.1050 SIGNS PCMS DAYS	REMARKS
CATEGORY CODE 0010									
WEST OF I-39	--	--	--	--	--	--	--	--	--
EAST OF I-39	--	--	--	--	--	--	--	--	--
HOEPKER RD	32	816	969	--	--	1,224	--	14	--
USH 51	306	--	--	--	--	--	--	102	--
I-39	18	--	--	--	--	--	--	14	--
UNDISTRIBUTED	90	90	90	--	--	150	--	15	--
I-39 NB OUTSIDE LANE CLOSURE	42	--	--	30	2	8	--	1	--
I-39 NB INSIDE LANE CLOSURE	42	--	--	30	2	8	--	1	--
I-39 SB OUTSIDE LANE CLOSURE	42	--	--	30	2	8	--	1	--
I-39 SB INSIDE LANE CLOSURE	42	--	--	30	2	8	--	1	--
I-39 NB LANE CLOSURE TO REMOVE BARRIER	42	--	--	30	2	8	--	1	--
I-39 SB LANE CLOSURE TO REMOVE BARRIER	42	--	--	30	2	8	--	1	--
UNDISTRIBUTED	42			30	2	8			
I-39 NB OUTSIDE SHOULDER CLOSURE	--	--	--	--	25	300	--	25	--
I-39 NB INSIDE SHOULDER CLOSURE	--	--	--	--	25	300	--	25	--
I-39 SB OUTSIDE SHOULDER CLOSURE	--	--	--	--	25	300	--	25	--
I-39 SB INSIDE SHOULDER CLOSURE	--	--	--	--	25	300	--	25	--
PORTAGE RD / HOEPKER RD	--	--	--	--	--	--	6	--	2 SIGNS @ 3 SF EACH
MANUFACTURERS DR / HOEPKER RD	--	--	--	--	--	--	18	--	6 SIGNS @ 3 SF EACH
MANUFACTURERS DR / HANSON RD	42	--	--	--	--	--	18	--	6 SIGNS @ 3 SF EACH
PORTAGE RD / HANSON DR	42	--	--	--	--	--	12	--	4 SIGNS @ 3 SF EACH
AMERICAN PKWY / EASTPARK BLVD	42	--	--	--	--	--	18	--	6 SIGNS @ 3 SF EACH
AMERICAN PKWY / HOEPKER RD	42	--	--	--	--	--	24	--	8 SIGNS @ 3 SF EACH
TOTALS	908	906	1,059	210	114	2,630	96	251	

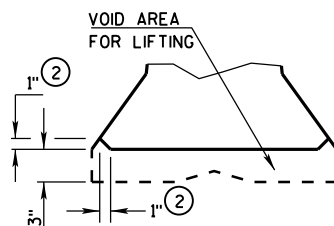
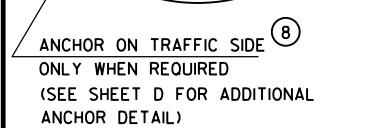
PAVEMENT MARKING ITEMS		
LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH LF	REMARKS
CATEGORY CODE 0010		
15+30 to 18+10, CL	560	DOUBLE YELLOW
15+30 to 18+10, Rt	280	WHITE EDGE LINE
15+30 to 18+10, Lt	280	WHITE EDGE LINE
TOTAL	1,120	

SAWING PAVEMENT ITEMS		
STATION - STATION	LOCATION	690.0150 ASPHALT LF
CATEGORY CODE 0010		
15+30	MAINLINE	22
18+10	MAINLINE	22
TOTALS		44

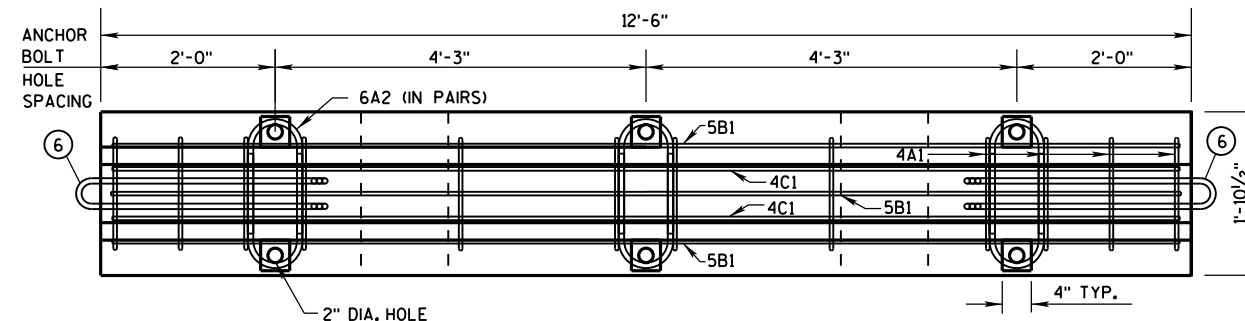


Standard Detail Drawing List

14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14H	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
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M. P. H. OR LESS
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M. P. H. WITH BARRIER
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

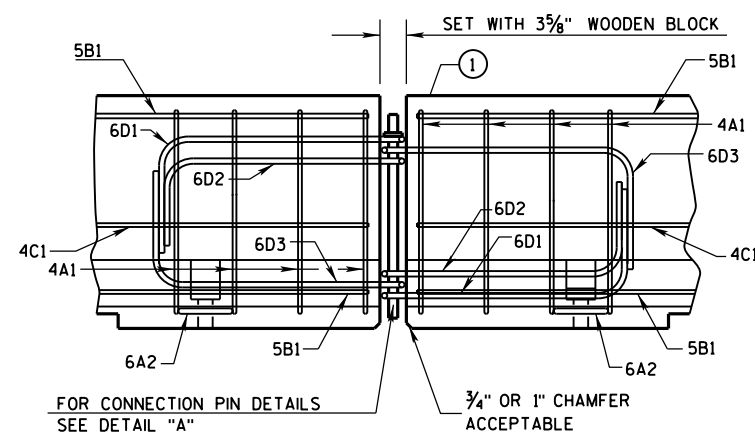


**DETAIL "B"**  
**LIFTING SLOT DETAIL**

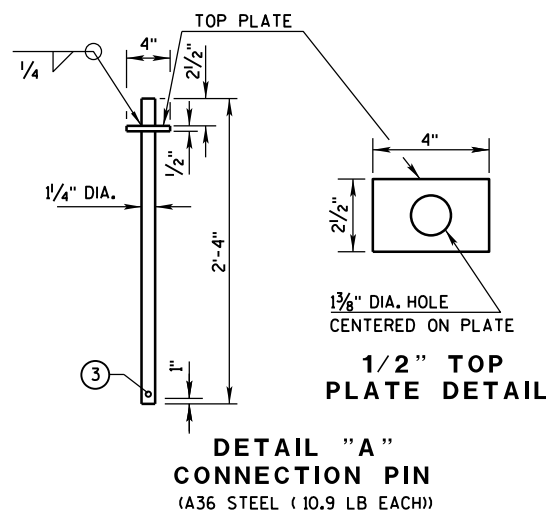


### PLAN VIEW

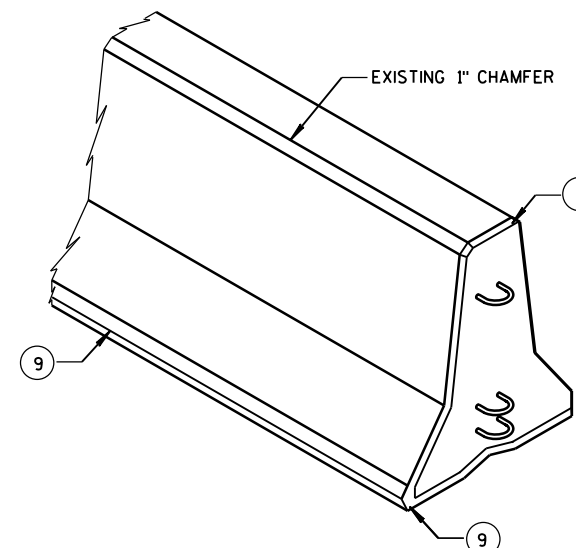
## DETAILS OF BARRIER SECTION



## DETAILS OF BARRIER CONNECTION



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



## GENERAL NOTES

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

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 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  $\frac{3}{4}$ " 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- $\frac{1}{2}$ " PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN  $\frac{1}{8}$ " 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.

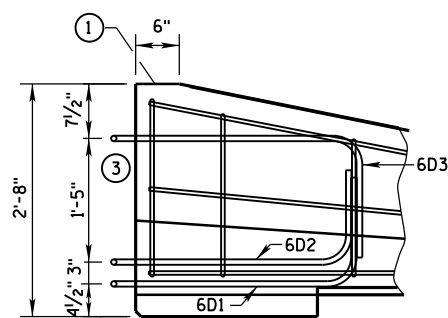
INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.  
PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- 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  $\frac{3}{8}$ " 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 MANUFACTURER'S 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"

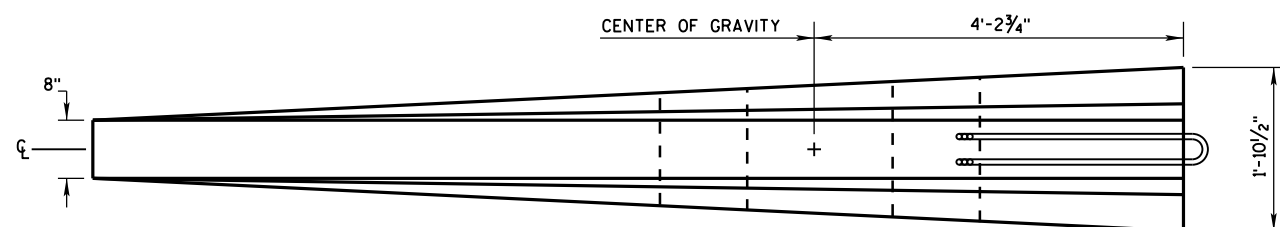
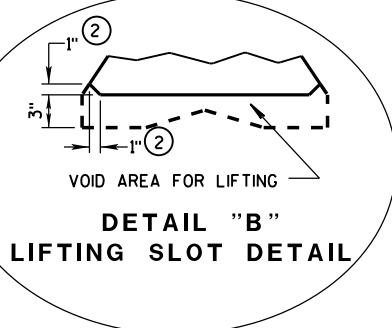
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





- 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.

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



**CHAMFER  
DETAIL**

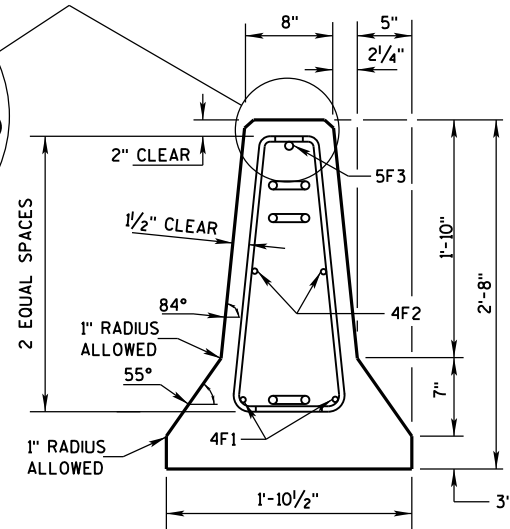


Diagram illustrating the barrier on a curve. The diagram shows a cross-section of a barrier with a 10"± OFFSET and a 5°± MAX. angle. The barrier is divided into sections with dimensions of 12'-6" and 12'-6". The text "BARRIER ON CURVE" is prominently displayed. The "END SECTION" is also indicated.

## FLARE AT BARRIER END

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

CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

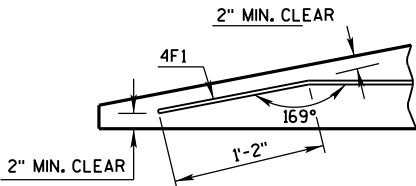
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

### DETAILS OF BARRIER TAPER SECTION

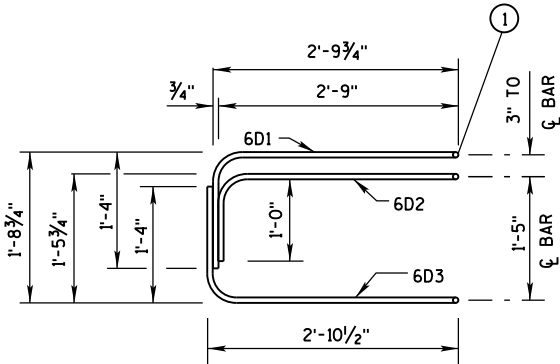
BARRIER TAPER SECTION  
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

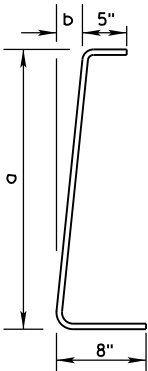
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"  
BENT BAR DETAIL



ELEVATION  
LOOP BAR ASSEMBLY



4V BARS  
2 AT EACH SIZE REQUIRED  
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

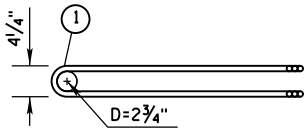
GENERAL NOTES

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

BARRIER SECTION  
BILL OF MATERIALS

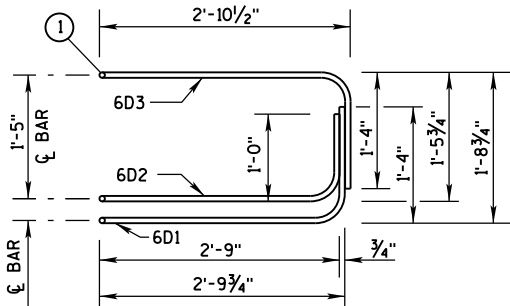
(PER 12'-6" BARRIER SECTION)

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"

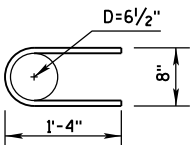


PLAN VIEW  
LOOP BAR ASSEMBLY

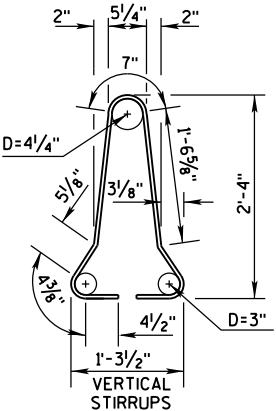
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

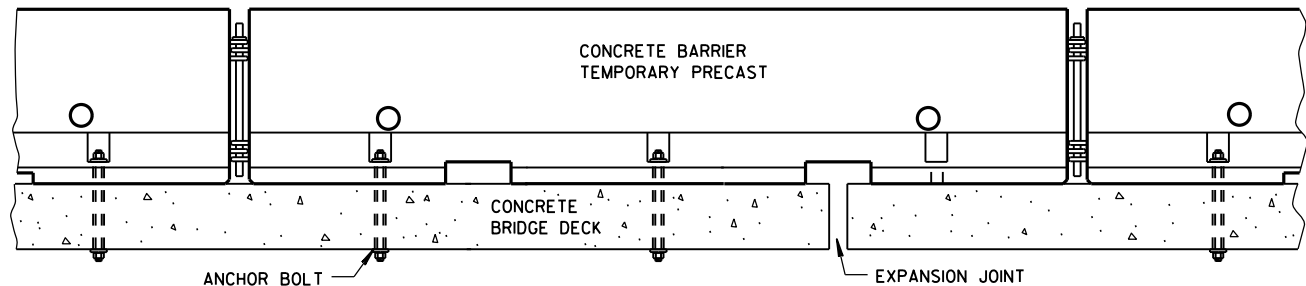
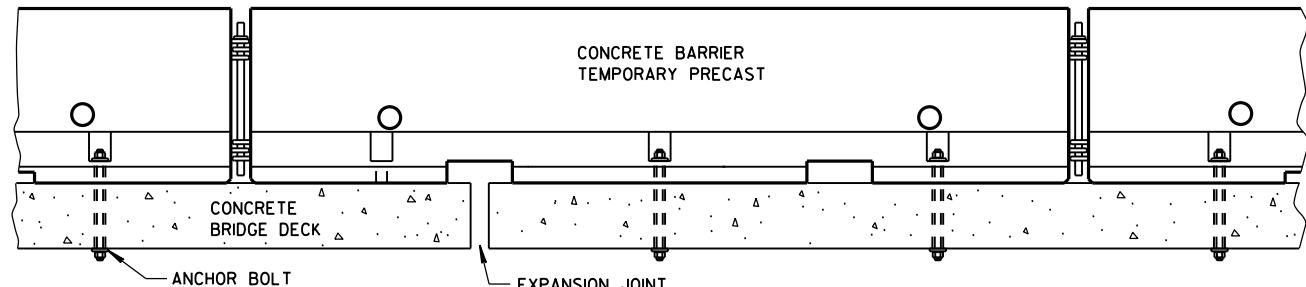


4A1

BARRIER SECTION

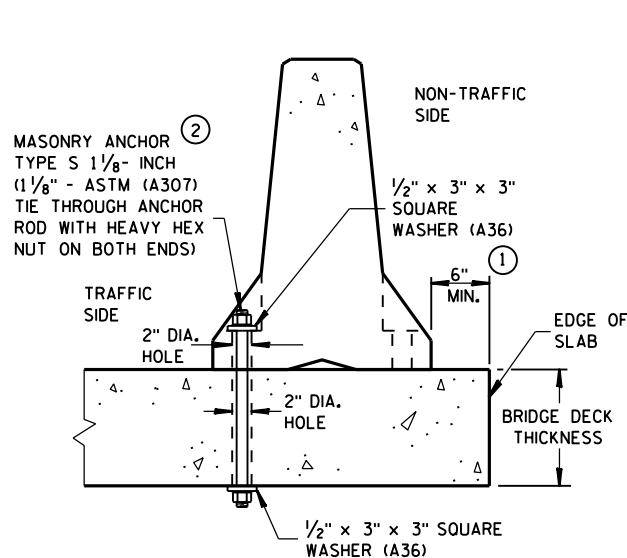
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



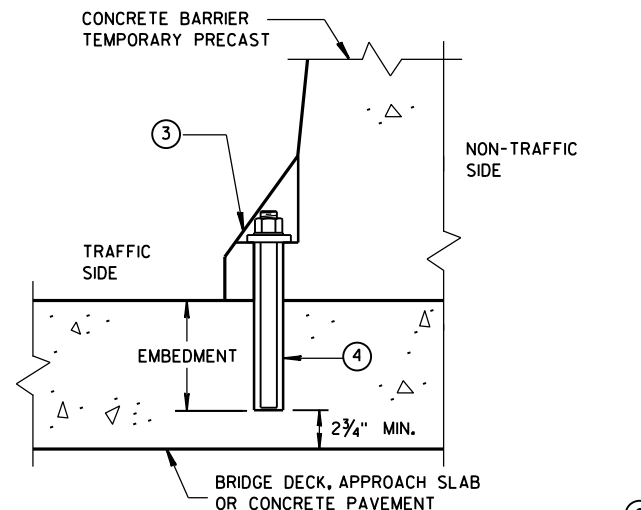
### TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



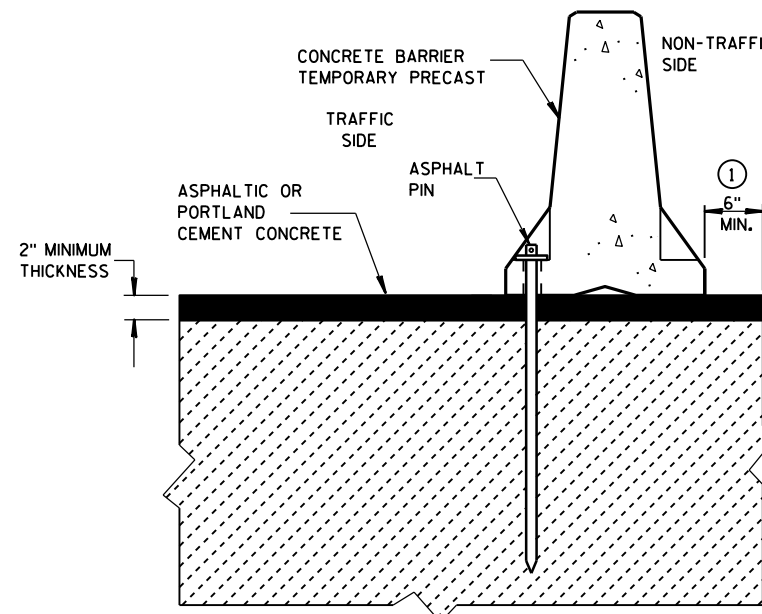
### THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



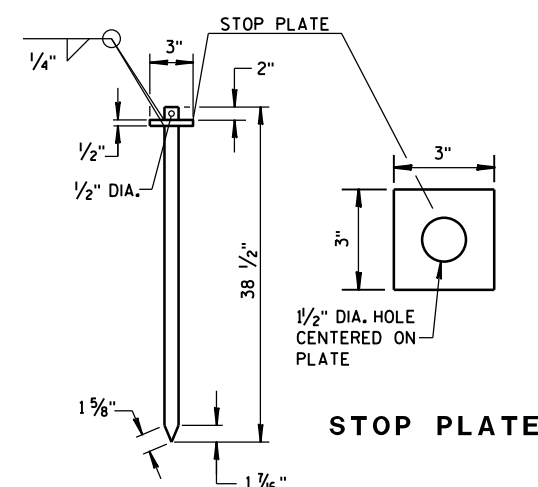
### REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

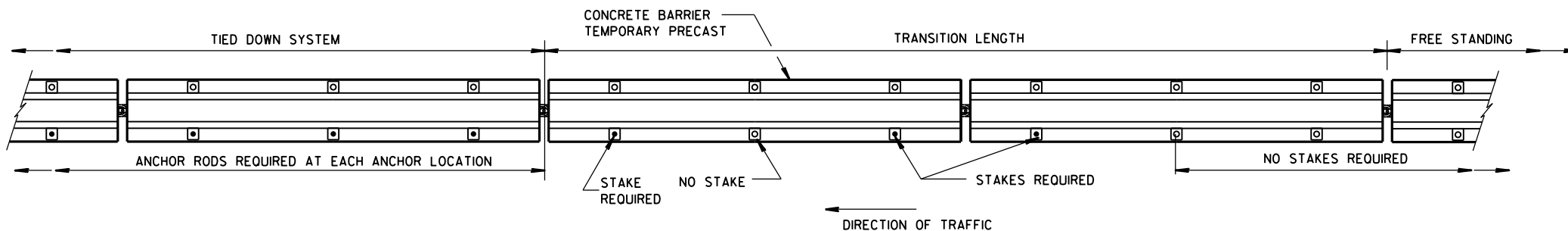


### STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN  
(ASTM A36 STEEL)



PLAN VIEW

### FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

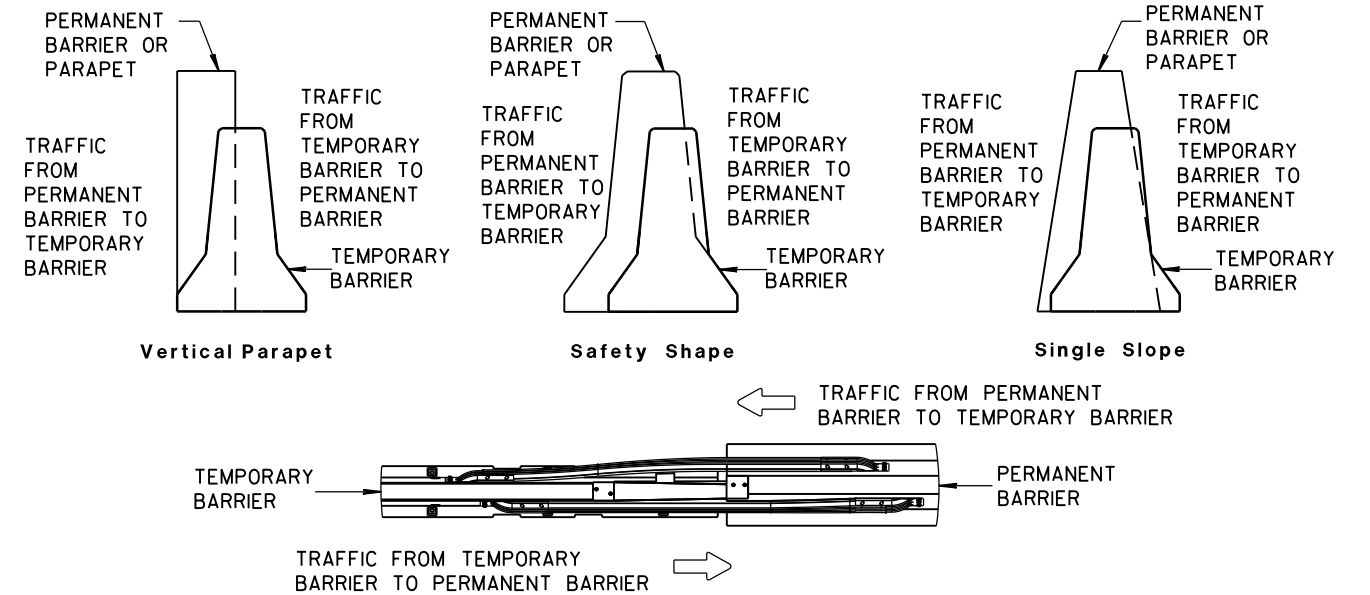
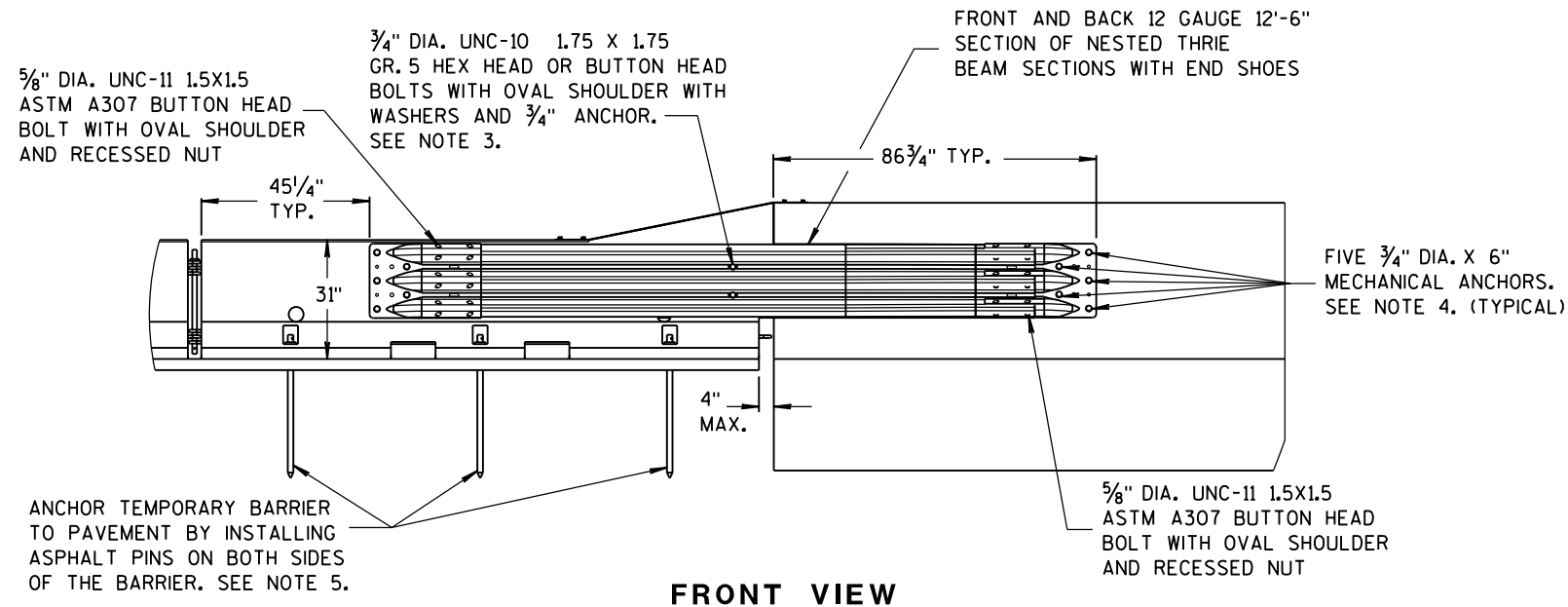
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

### GENERAL NOTES

- 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.
- 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 1 1/8-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 ALL ANCHOR 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 COMMERCIAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

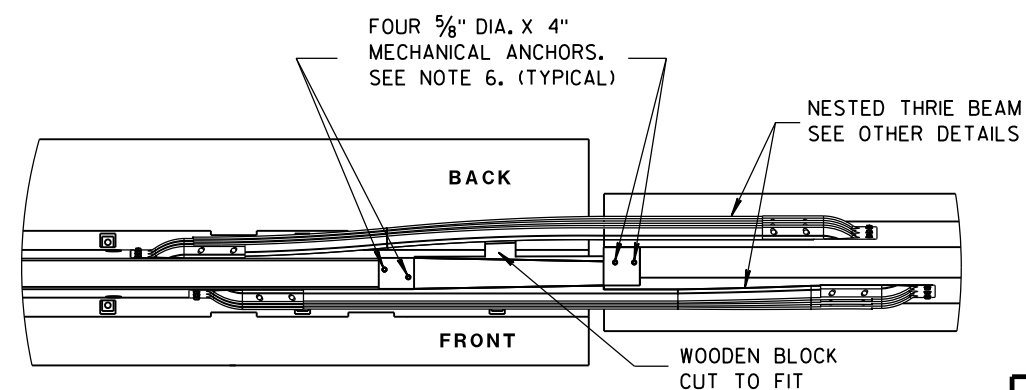
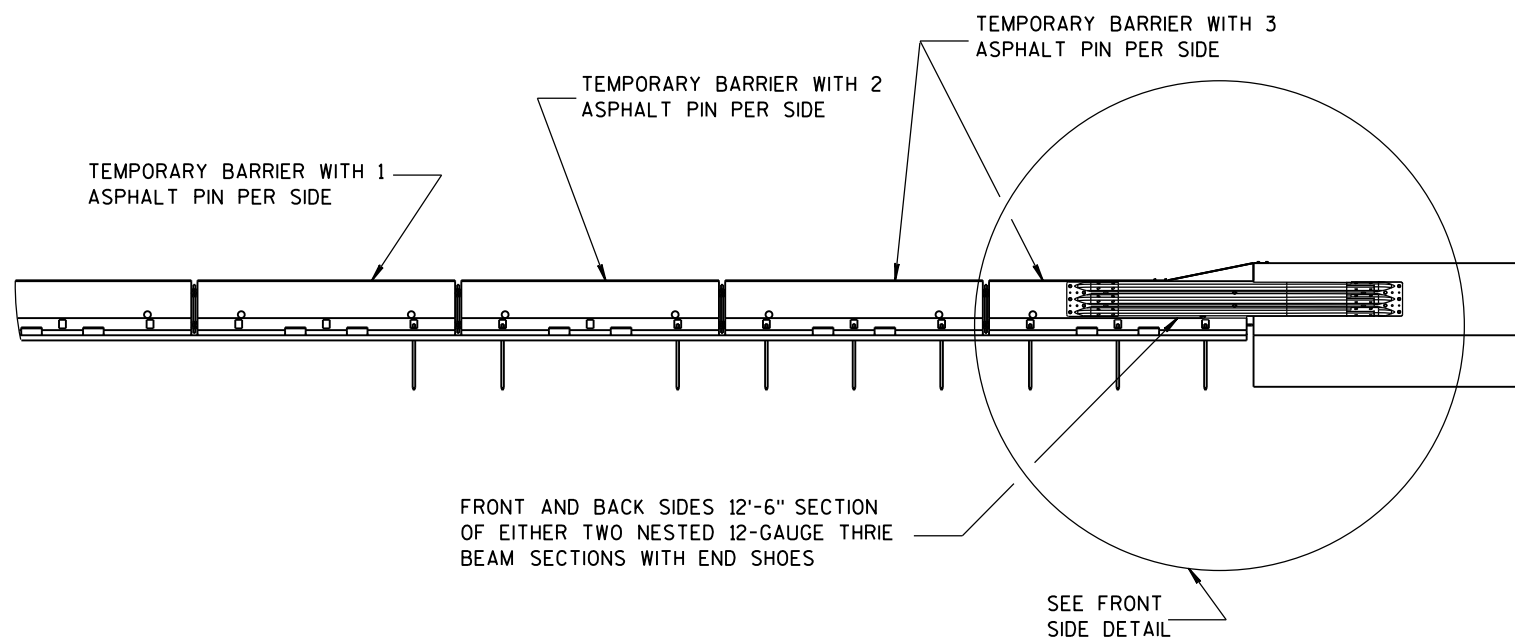
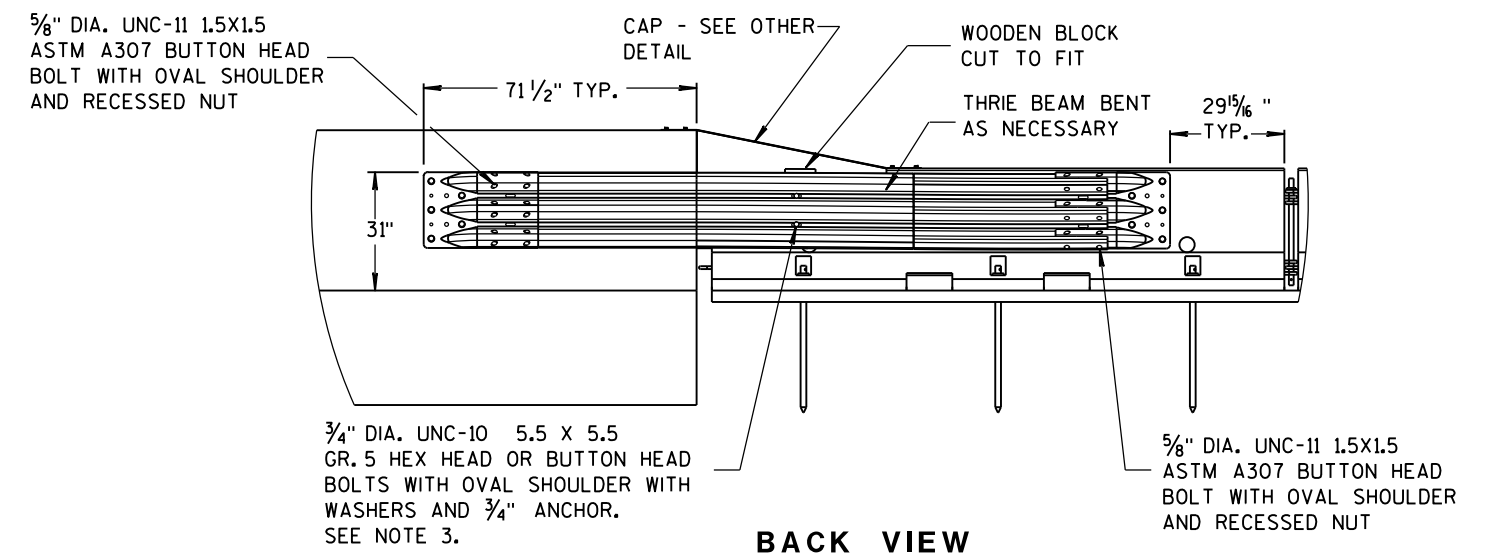
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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

#### NOTES

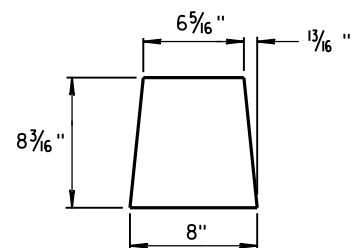
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 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.



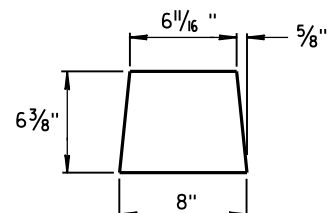
### BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

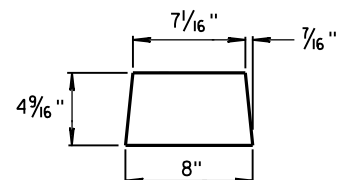
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



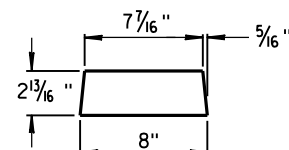
**GUSSET 1**



**GUSSET 2**

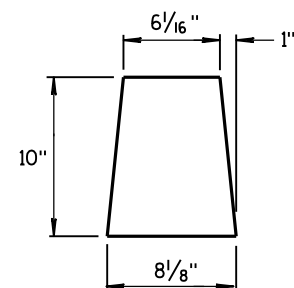


**GUSSET 3**

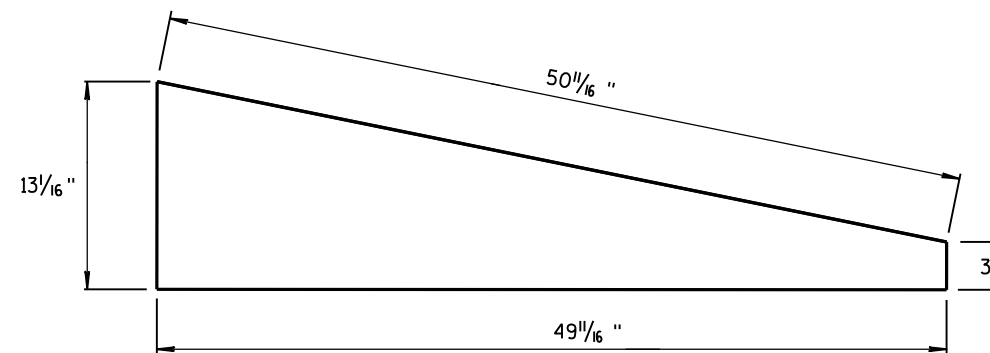


**GUSSET 4**

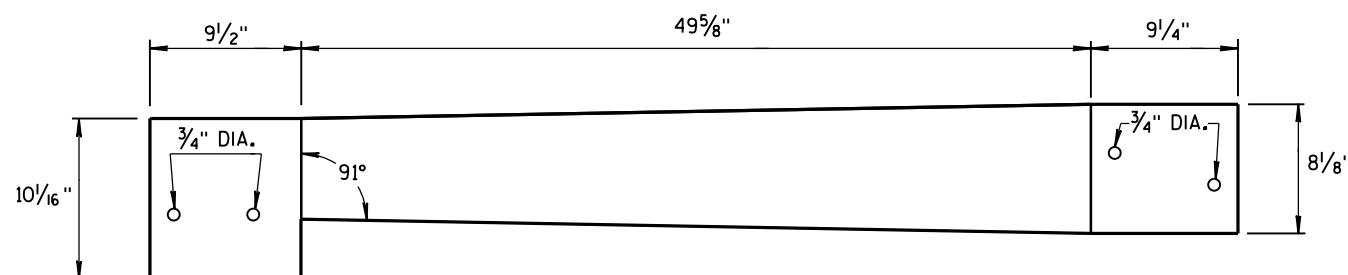
**GUSSETS**



**END PLATE**



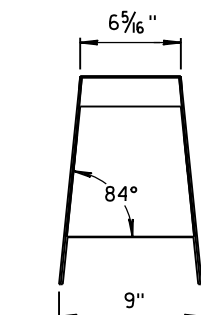
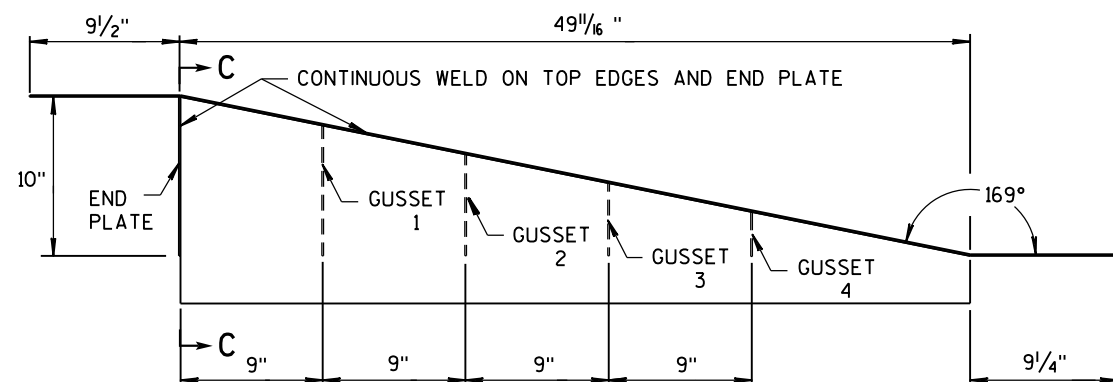
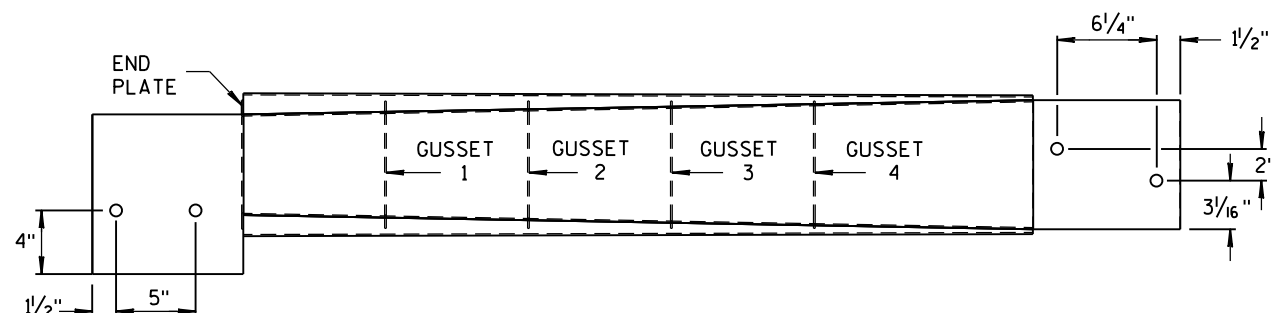
**SIDE PLATE**



**TOP PLATE**

**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.



**SECTION C-C**

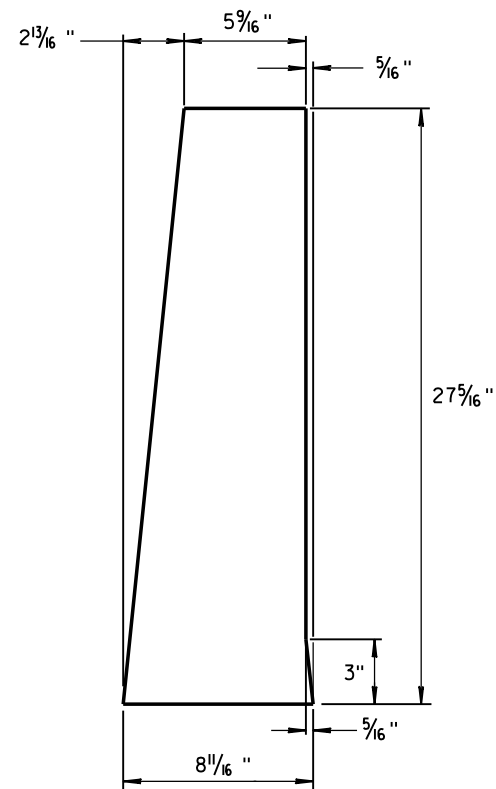
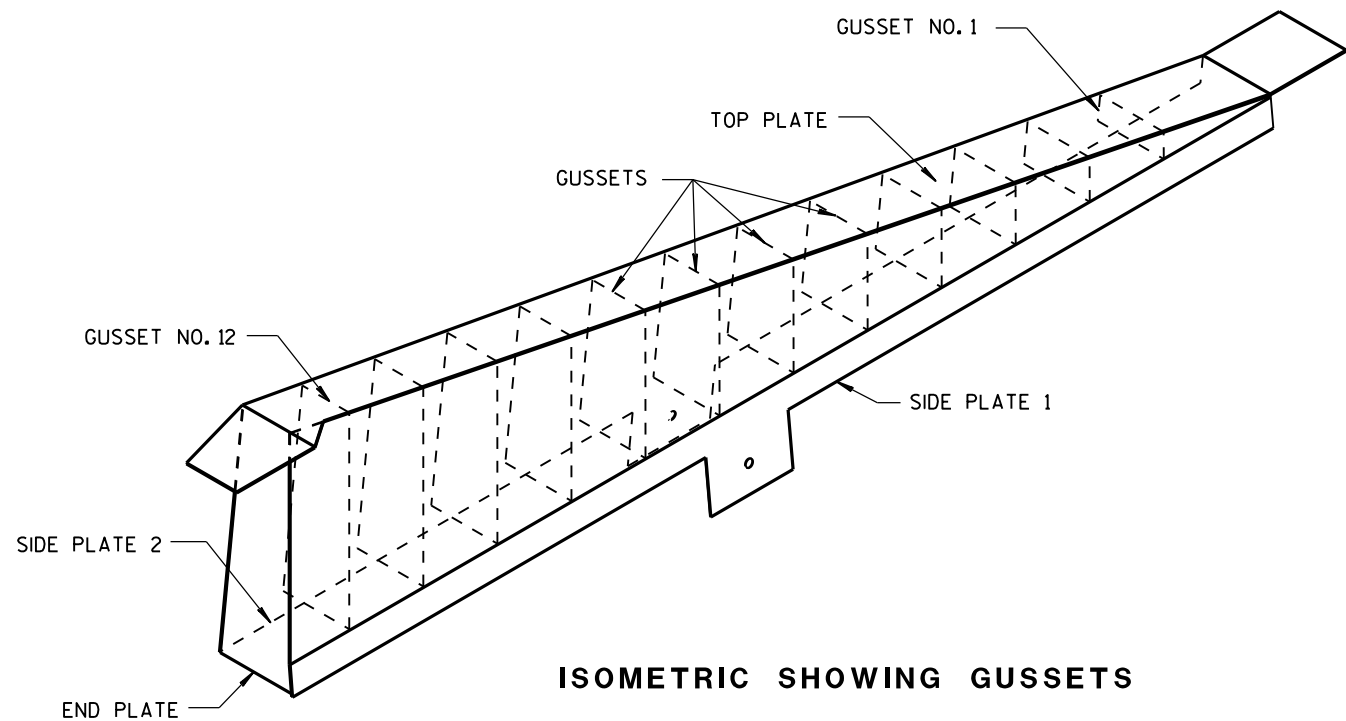
**NOTES**

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.

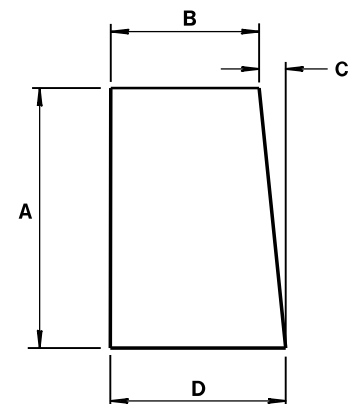
**CAP DETAILS FOR TEMPORARY CONCRETE  
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

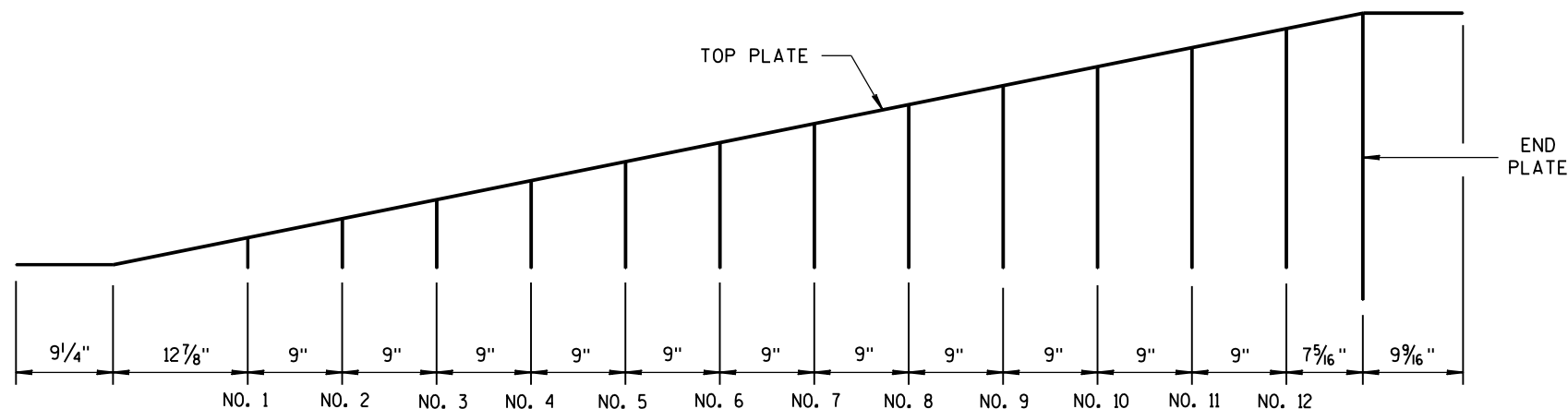


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	1 1/16 "	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 5/16 "	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.

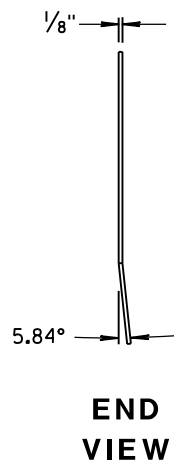
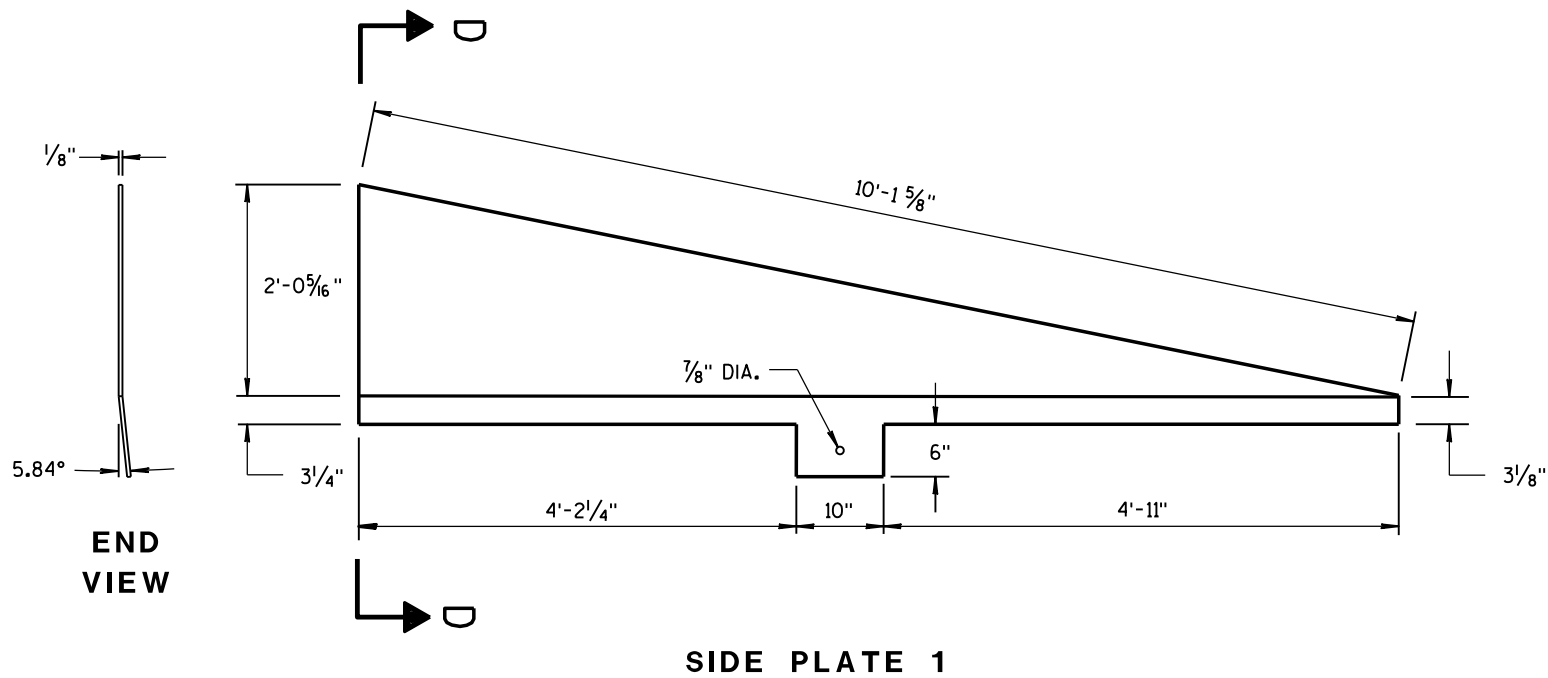
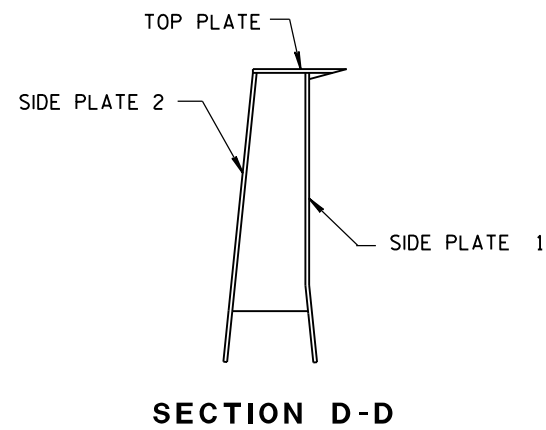
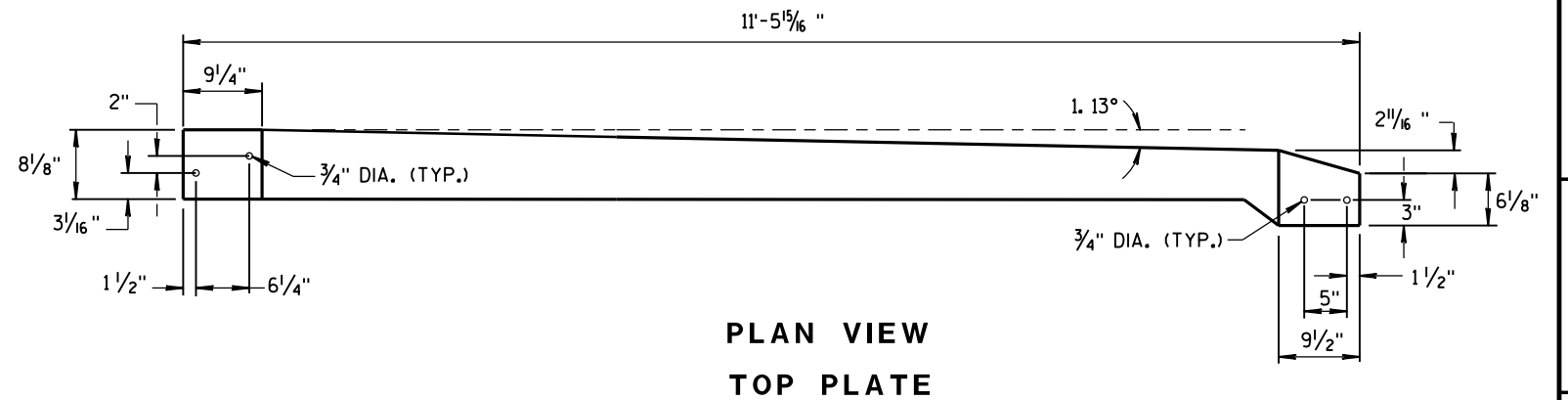
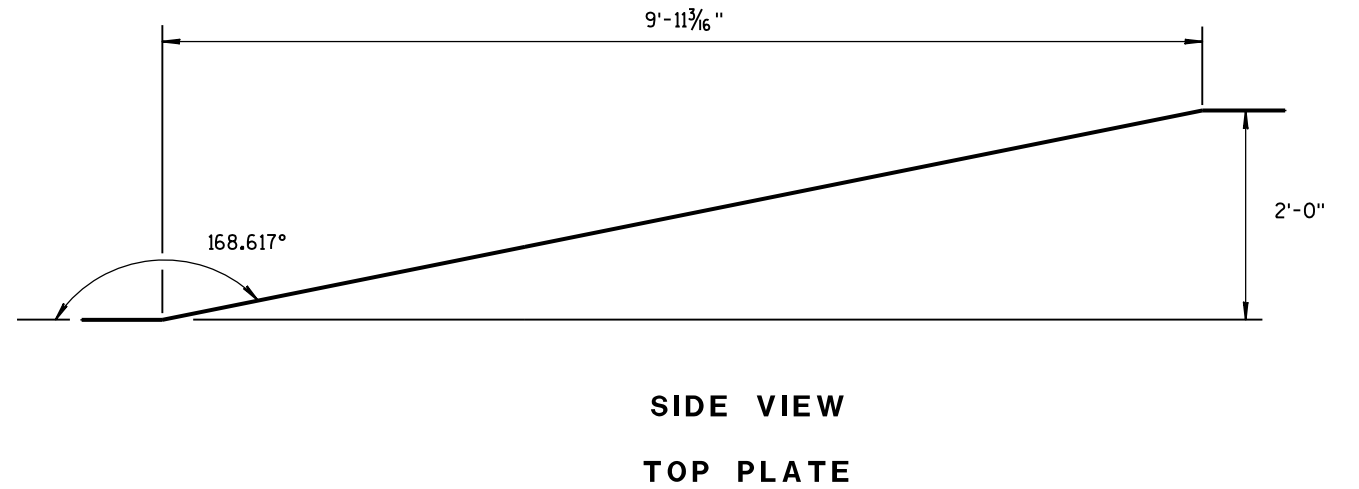
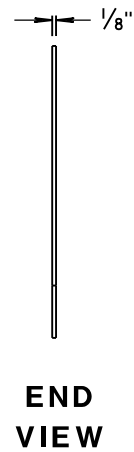
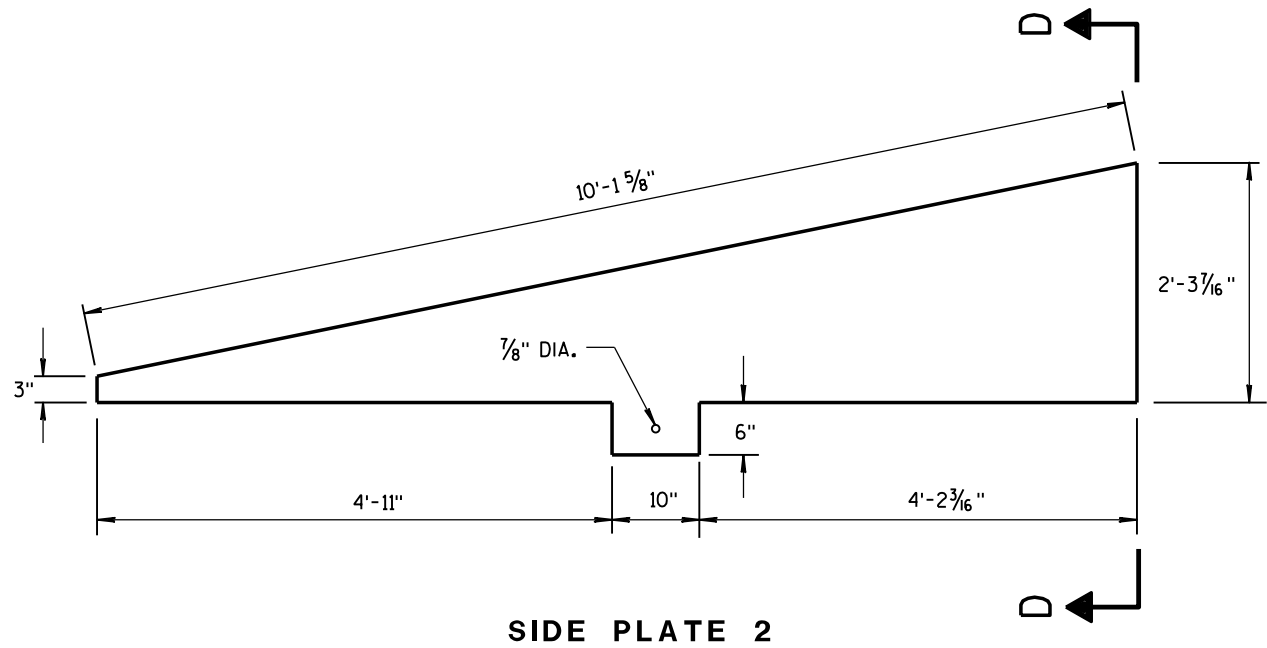
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



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

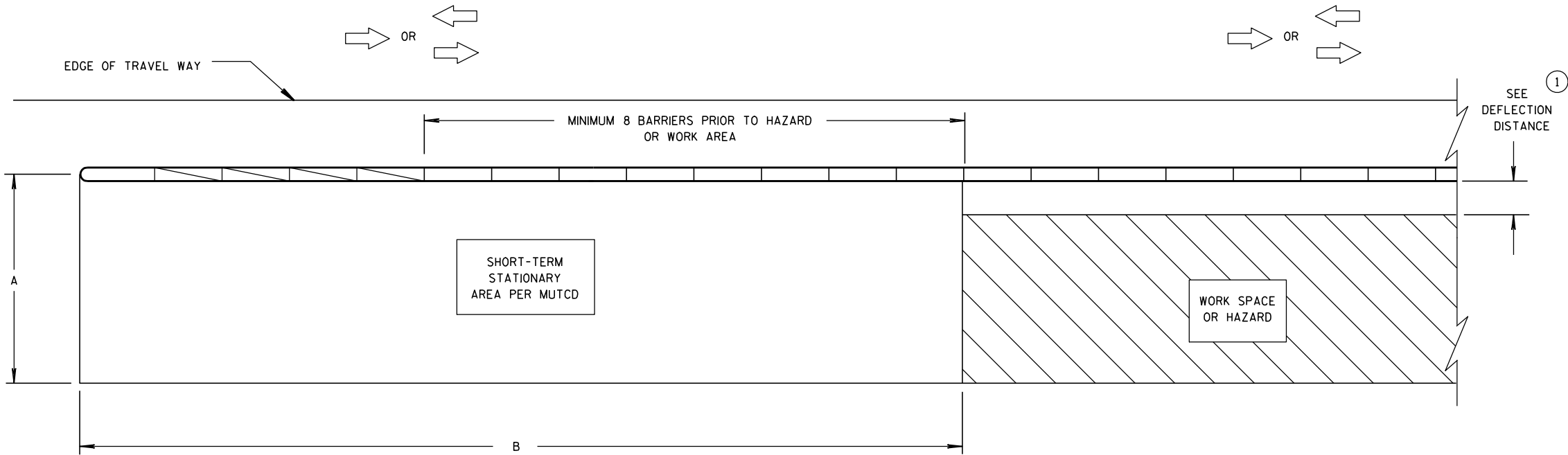
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014 DATE	/S/ Jerry H. Zogg ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA	



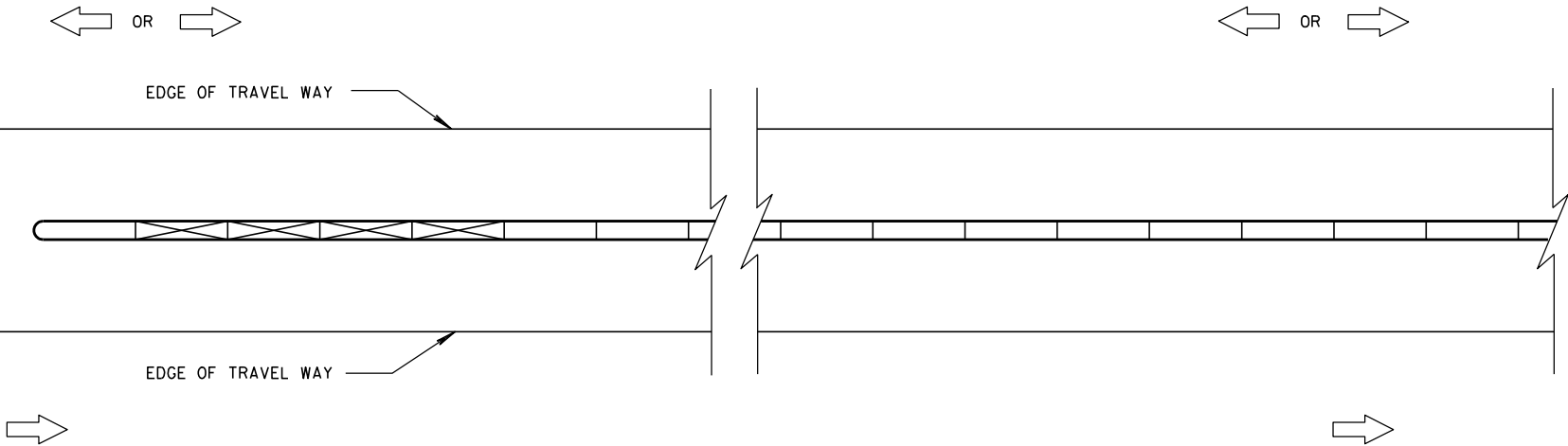
**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER  
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**

**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



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

**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.

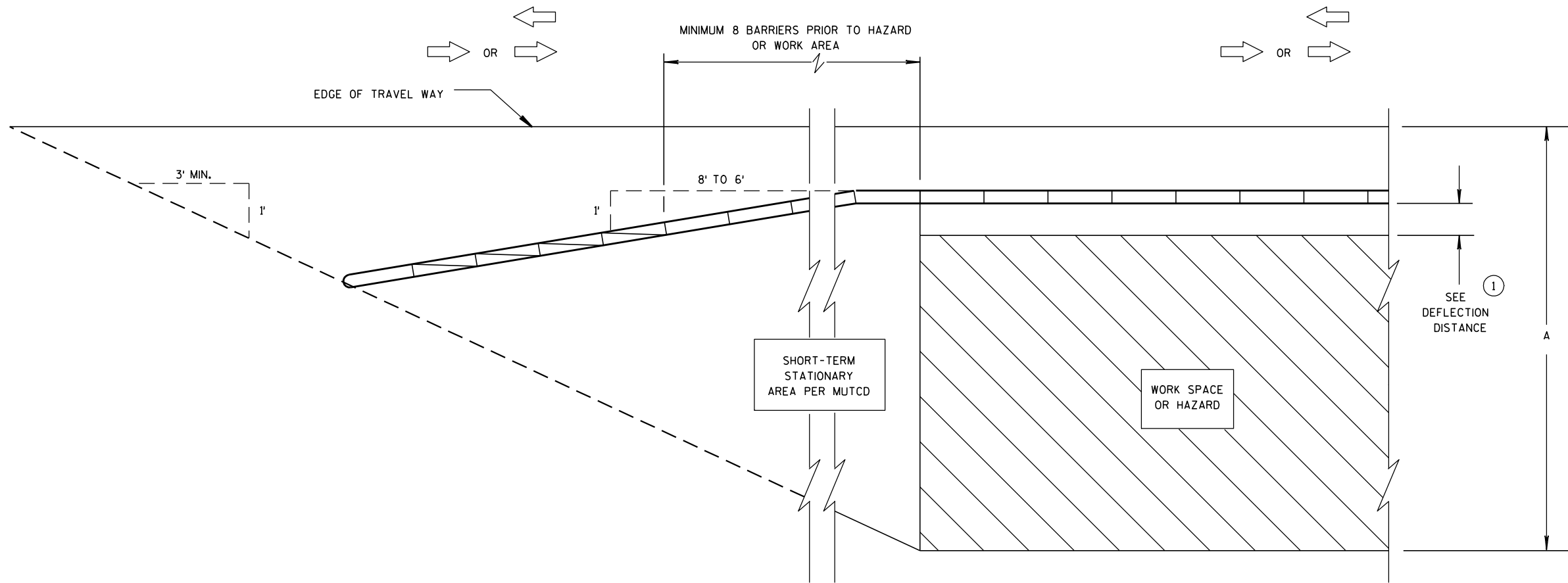
SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

- 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.

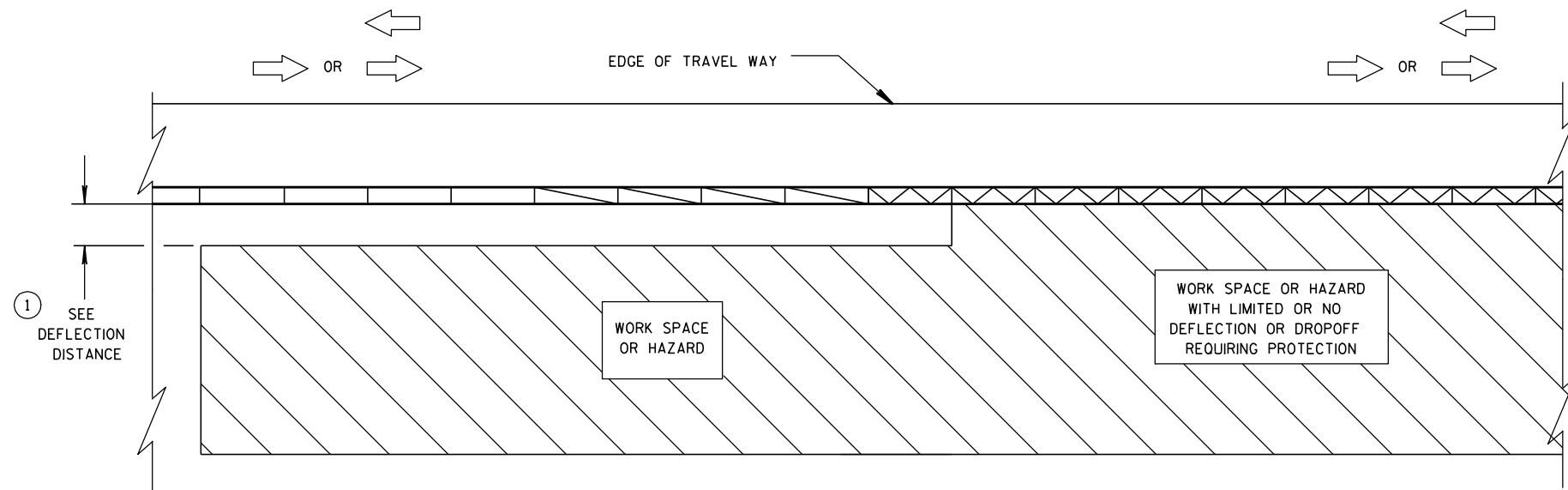
**CRASH CUSHION/SAND BARREL  
ARRAY AND OTHER TEMPORARY  
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





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

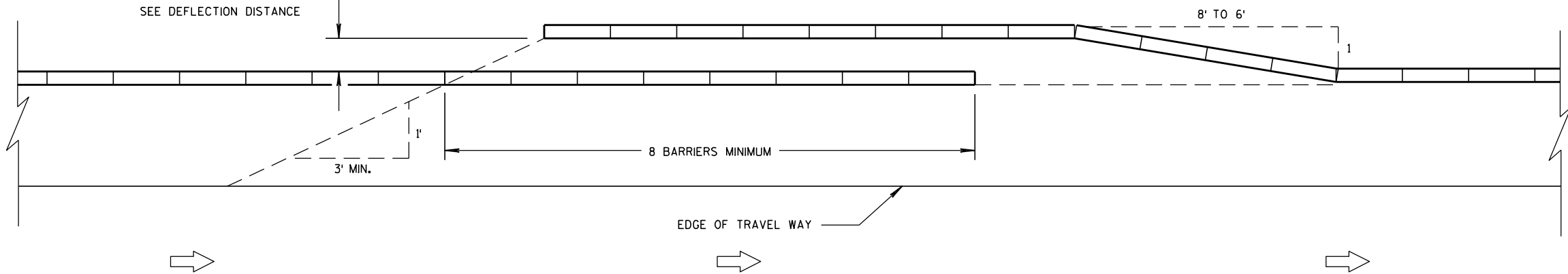


**TRANSITION FROM FREE STANDING TEMPORARY BARRIER  
TO ANCHORED BARRIER**

**LEGEND**

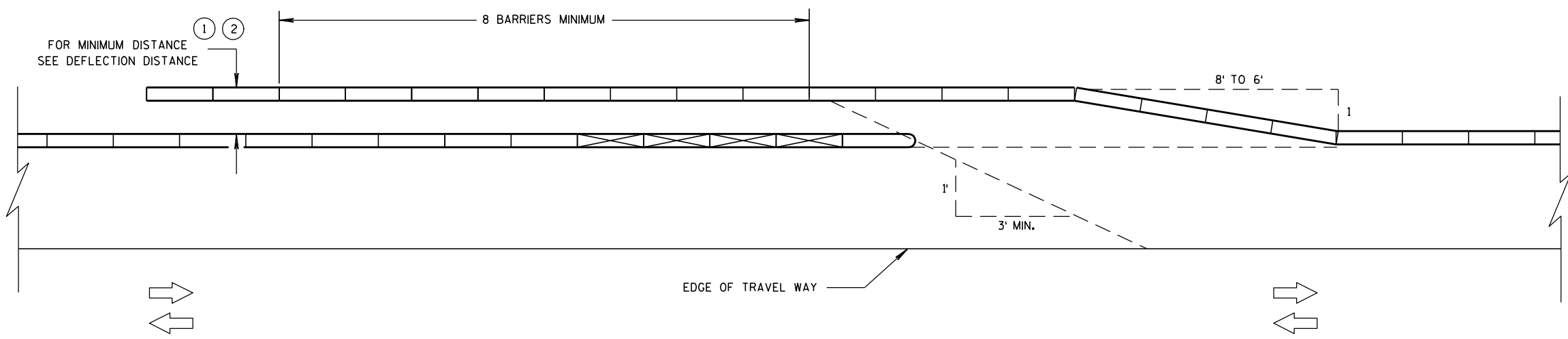
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

FOR MINIMUM DISTANCE  
SEE DEFLECTION DISTANCE

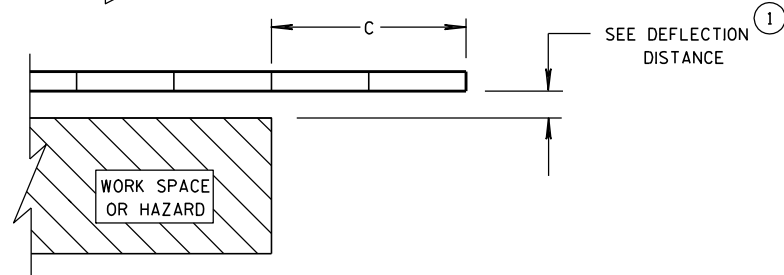


**TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC**

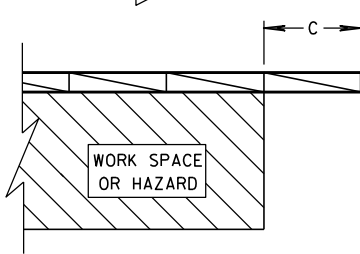
FOR MINIMUM DISTANCE  
SEE DEFLECTION DISTANCE



**TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC**



**ENDING TEMPORARY BARRIER  
DOWNSTREAM - UNANCHORED**



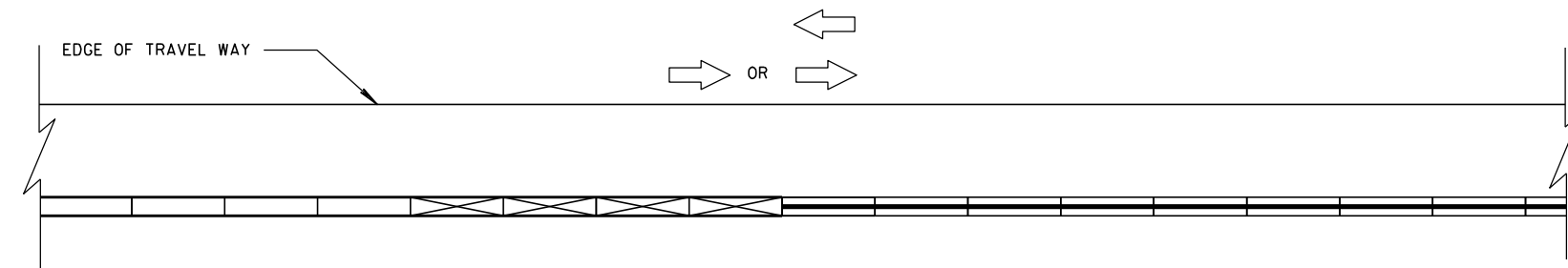
**ENDING TEMPORARY BARRIER  
DOWNSTREAM - ANCHORED**

**LEGEND**

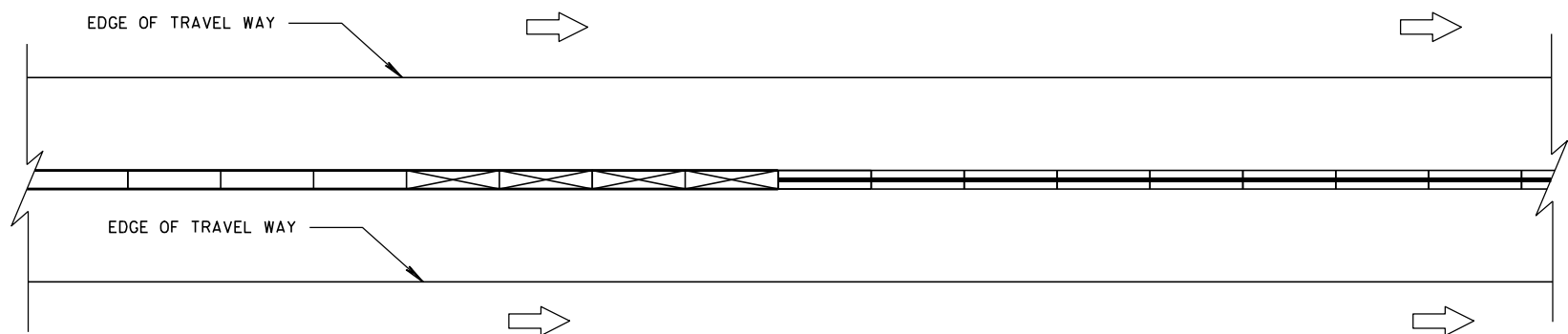
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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



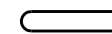
**CONNECTING TEMPORARY BARRIER TO PERMANENT  
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES**

### LEGEND

DIRECTION OF TRAVEL



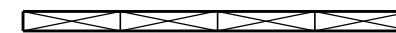
CRASH CUSHION OR  
SAND BARREL ARRAY



SEE FREE STANDING TRANSITION  
TO TIED-DOWN SYSTEM DETAILS



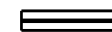
SEE BI-DIRECTIONAL TRANSITION  
TO TIED-DOWN SYSTEM DETAILS



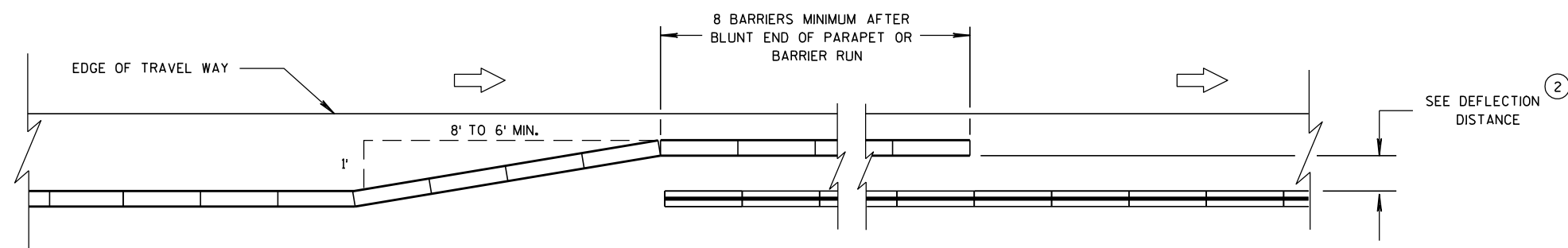
3 PINS PLACED ON  
TRAFFIC SIDE OF BARRIER



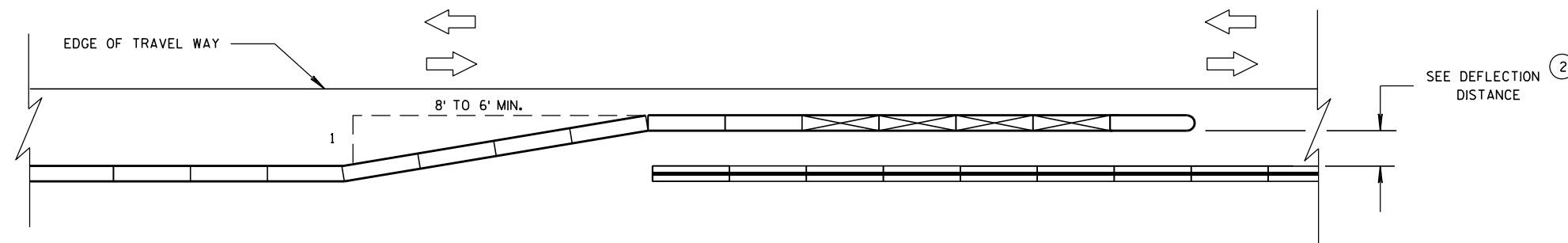
PERMANENT CONCRETE BARRIER  
OR CONCRETE PARAPET



FREE STANDING TEMPORARY  
BARRIER



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -  
ONE WAY TRAFFIC**


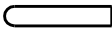
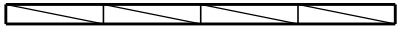

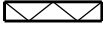

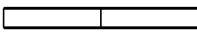


**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -  
TWO WAY TRAFFIC**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**LEGEND**

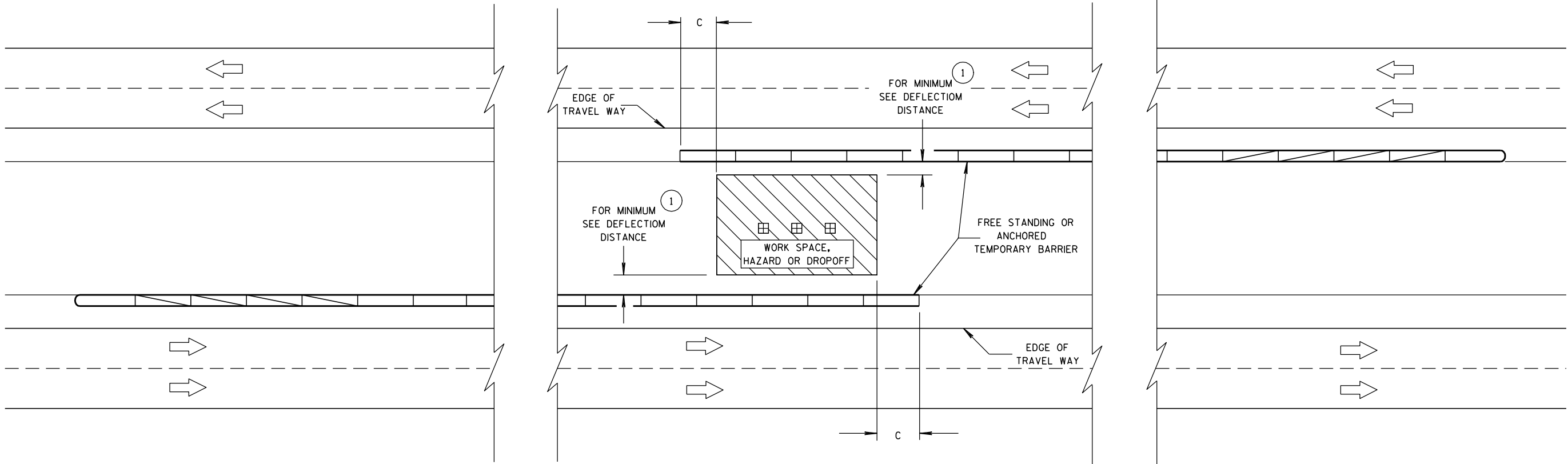
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

**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

6



6

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

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

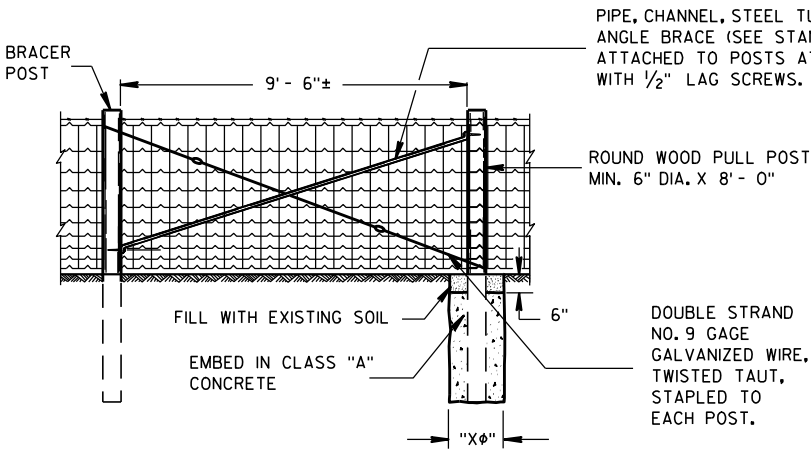
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Jerry H. Zogg
8/31/2012	ROADWAY STANDARDS DEVELOPMENT
DATE	ENGINEER
FHWA	

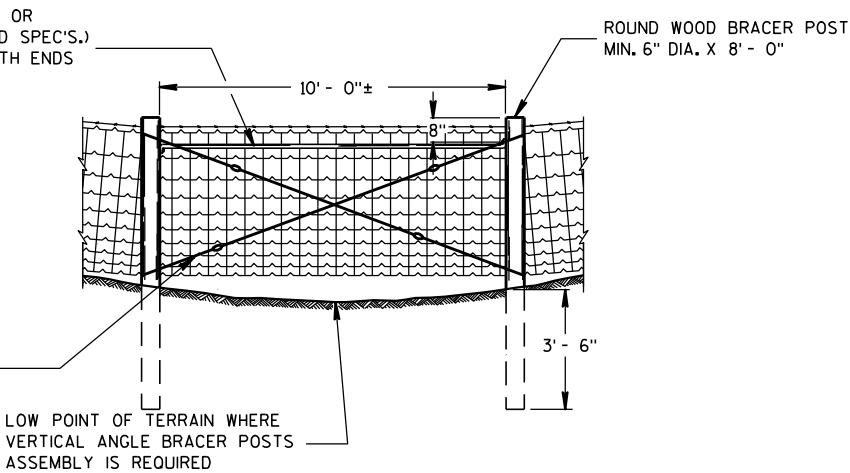
S.D.D. 14 B 8-1e

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

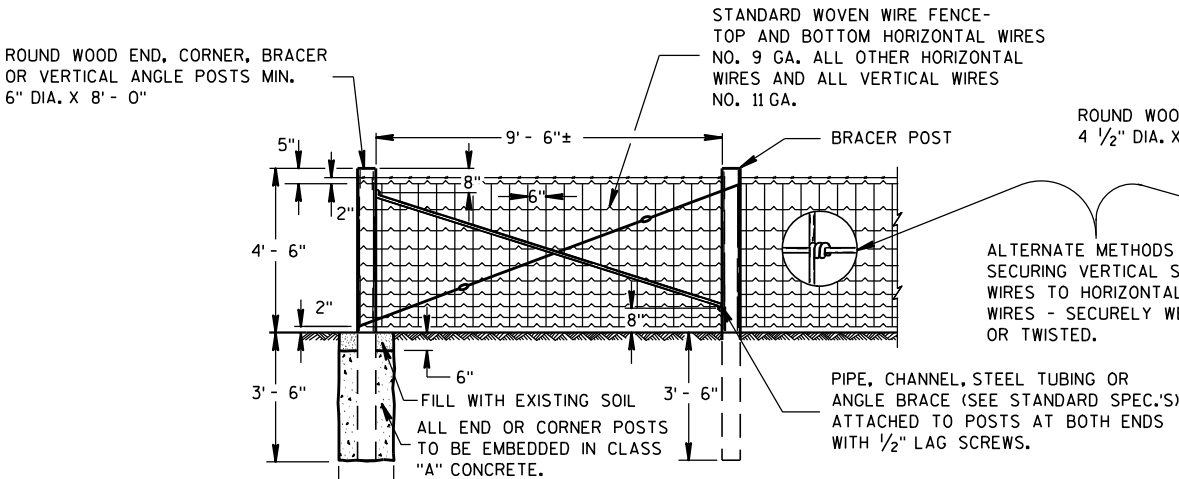
GENERAL NOTES

"Xφ" = DIAMETER OF THE POST PLUS 12".

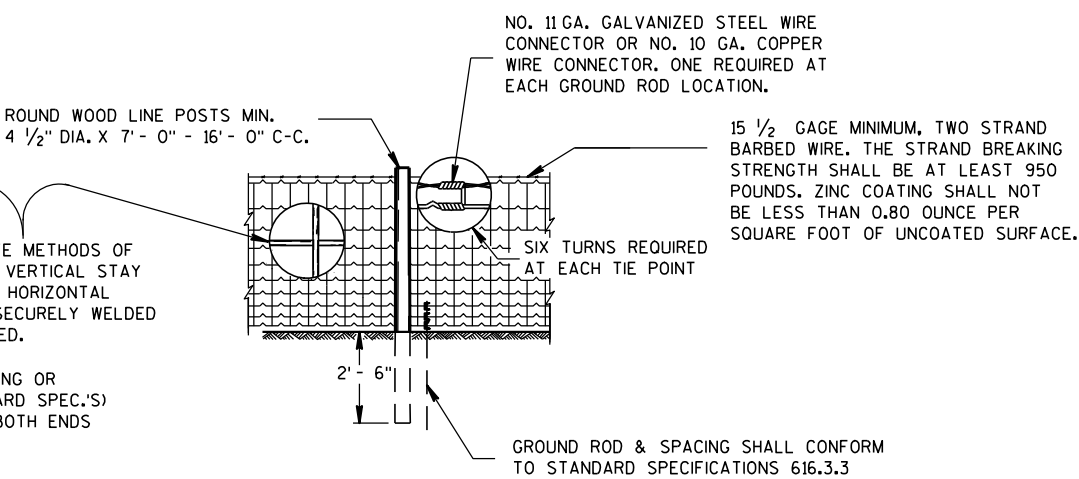
FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.

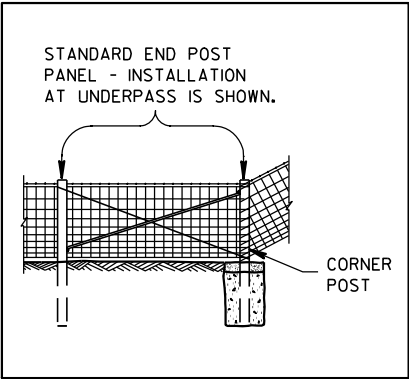


END OR CORNER POSTS ASSEMBLY

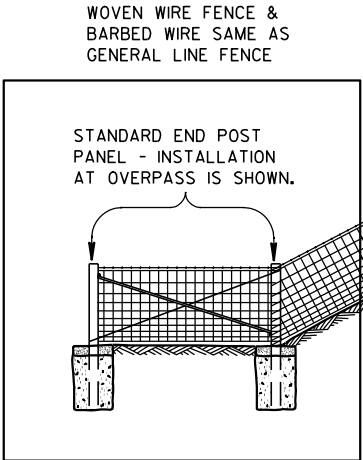


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



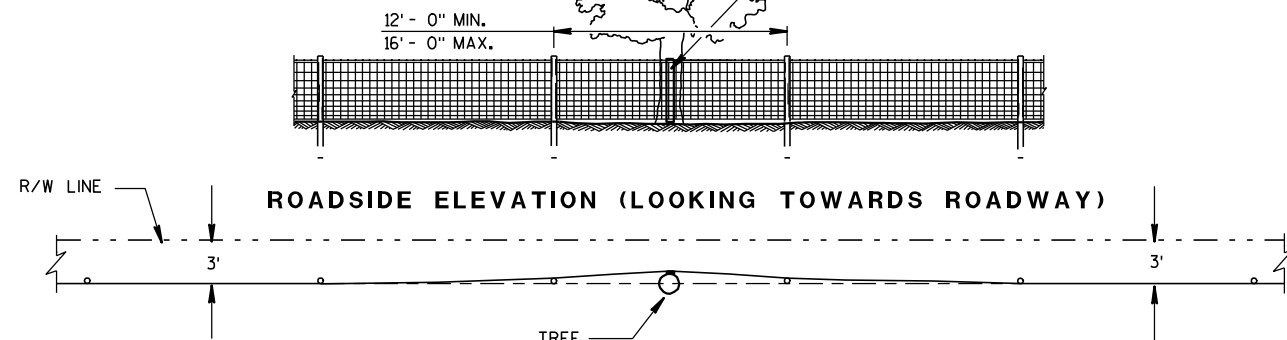
FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

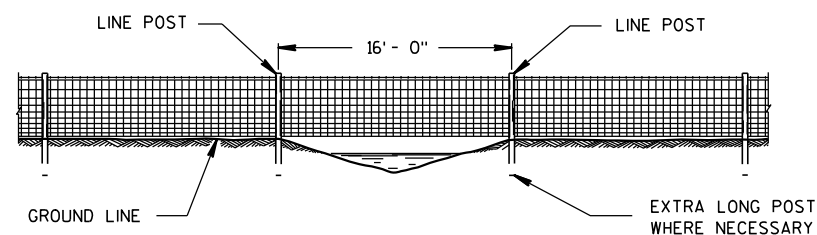
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

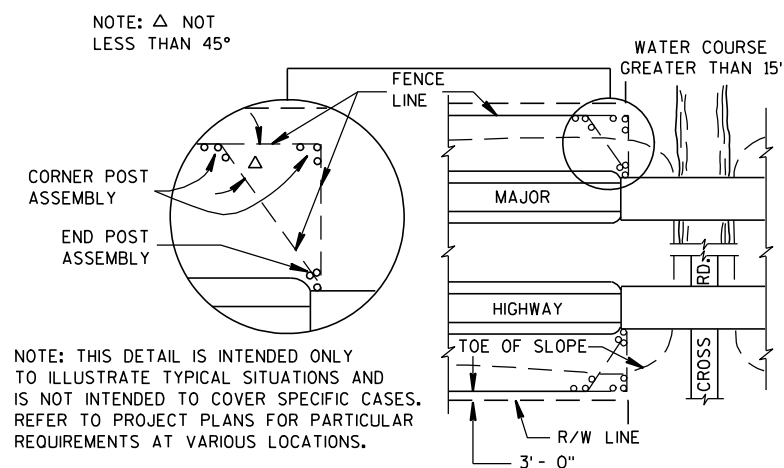
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW  
FENCE DESIGN AT TREES REMAINING  
IN NORMAL FENCE LINE

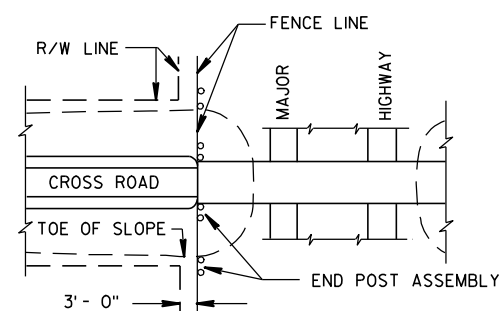


FENCE CONSTRUCTION OVER STREAM  
COURSES OF 15 FT. OR LESS IN WIDTH

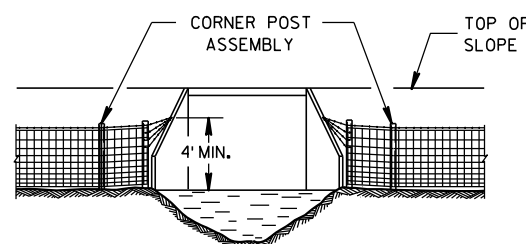


PLAN VIEW  
MAJOR HIGHWAY OVERPASS OR STREAM COURSE  
CROSSING OF GREATER THAN 15 FT. IN WIDTH

FENCE LOCATION AT STRUCTURES

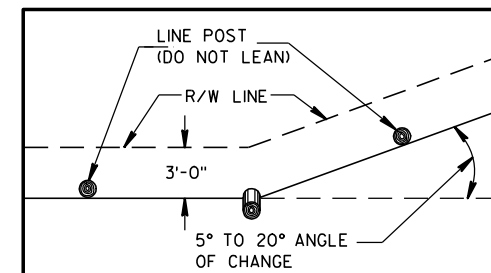
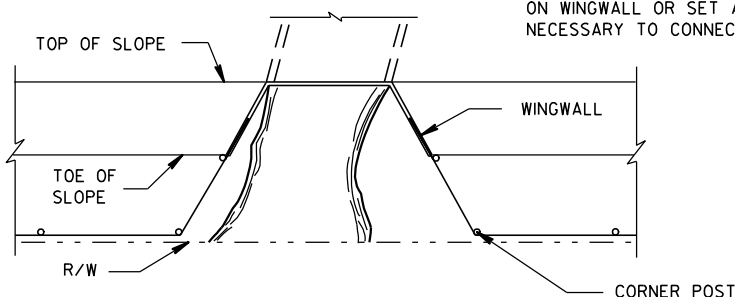


PLAN VIEW  
MAJOR HIGHWAY UNDERPASS

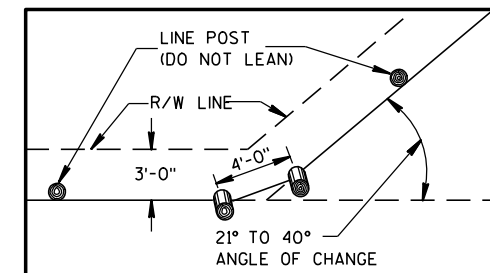


FENCE INSTALLATION TO WINGWALLS

NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



PLAN VIEW  
SINGLE POST CORNER

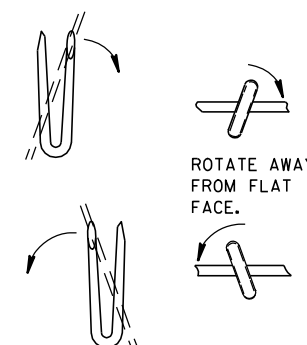


PLAN VIEW  
DOUBLE POST CORNER

## RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



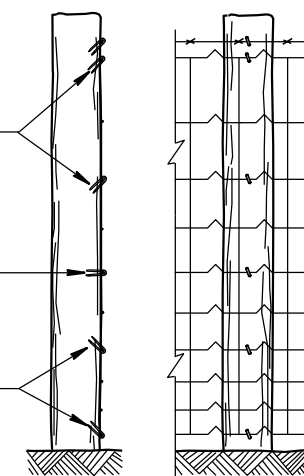
LINE POST

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.

STAPLES SLOPED DOWNWARD FOR SUSTAINED GRADES AND OVER KNOLLS.

STAPLES LEVEL FOR LEVEL GROUND.

SLOPE UPWARDS WHEN FENCE TENDS TO LIFT.



END ELEVATION  
FARM SIDE ELEVATION  
FENCE MOUNTING DETAIL

## FENCE WOVEN WIRE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

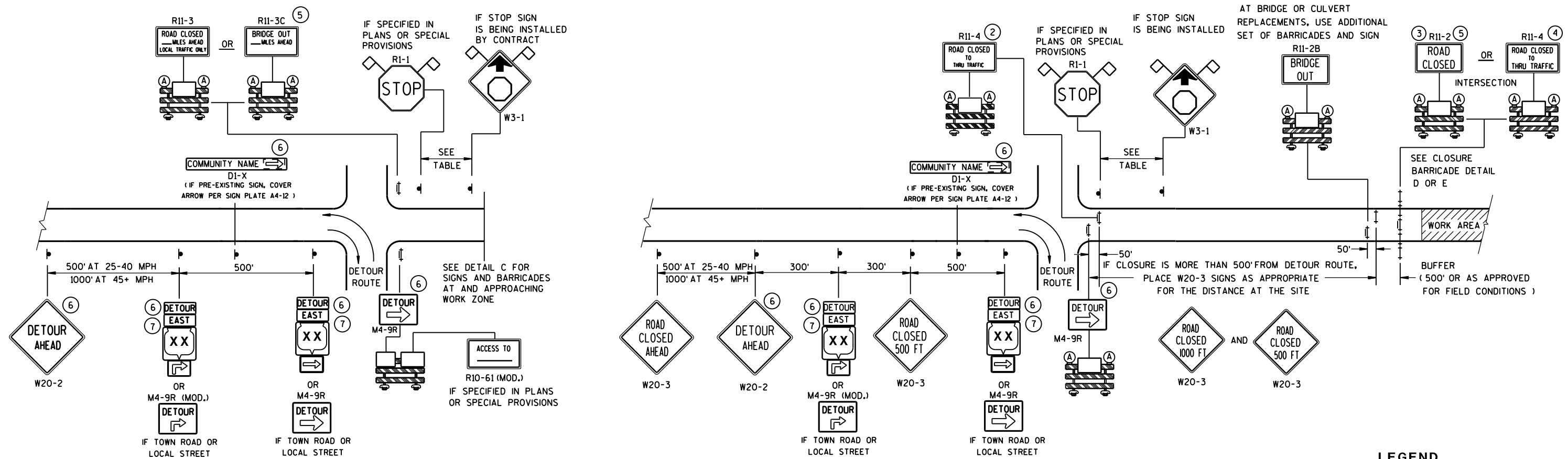
APPROVED

4/4/2008

DATE

FHWA

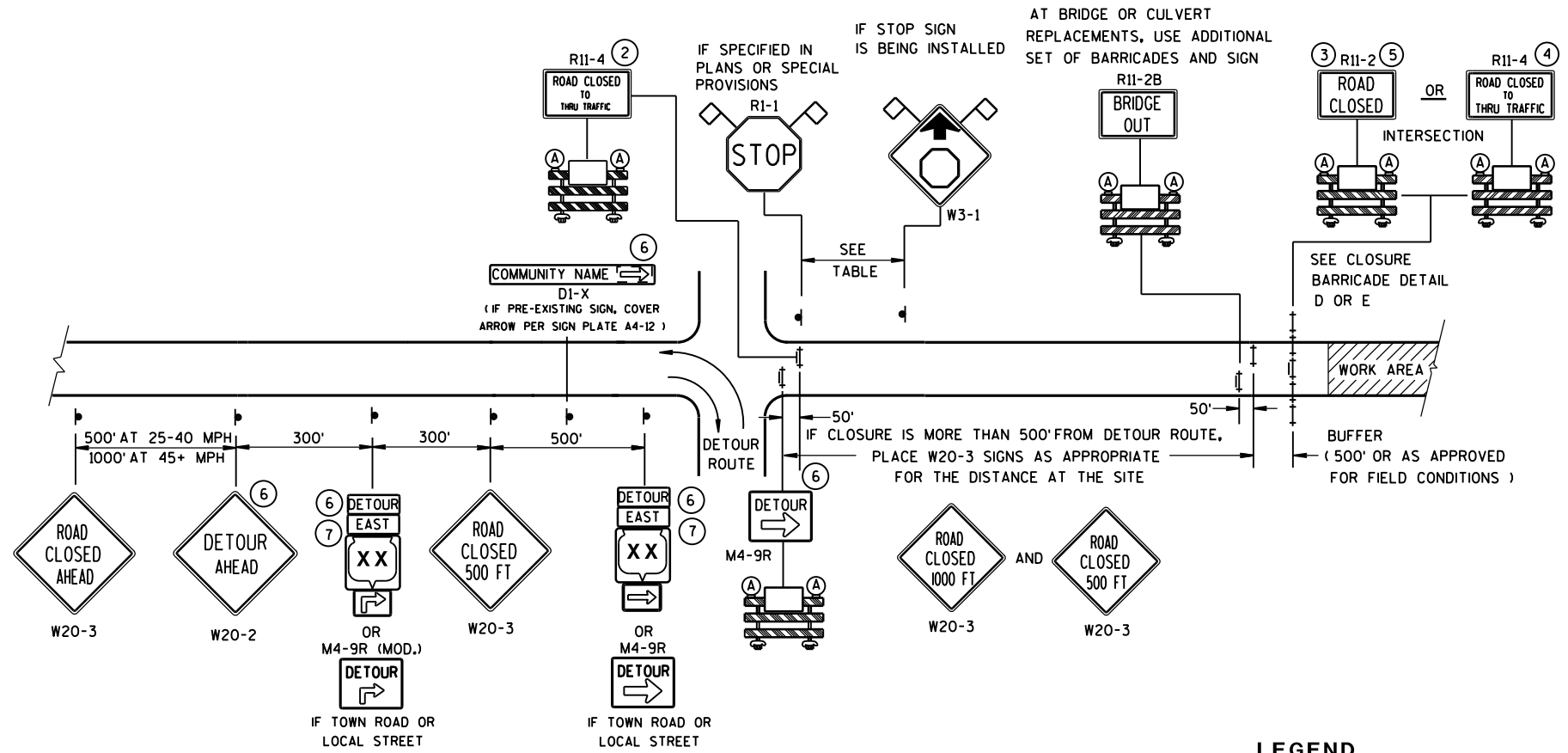
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



DETAIL A

**MAINLINE CLOSURE WITH POSTED DETOUR**

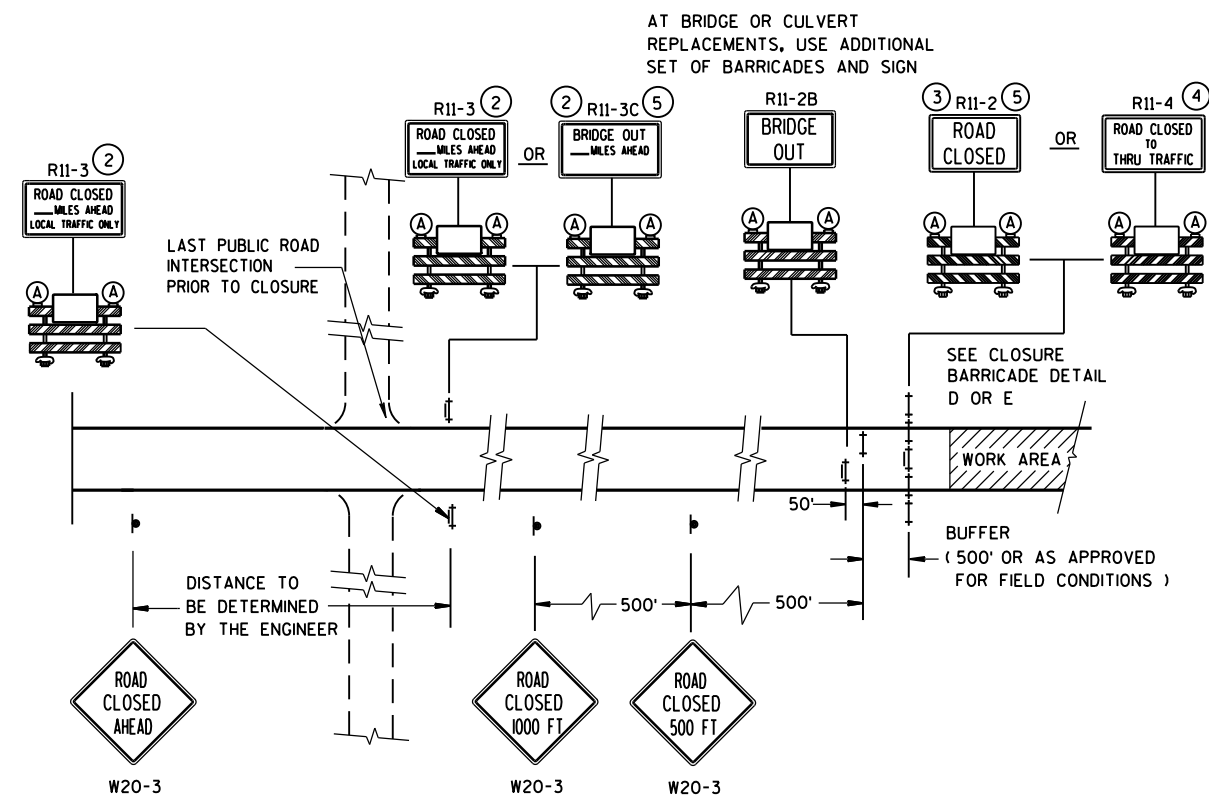
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN )



DETAIL B





**MAINLINE CLOSURE WITH POSTED DETOUR**


WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )









**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

### LEGEND


- |   |  |
|---|--|
|  | SIGN ON PERMANENT SUPPORT                |
|  | TYPE III BARRICADE                       |
|  | TYPE III BARRICADE WITH<br>ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING)        |

 WORK AREA

 M4-8  
 M1-5A  
 M1-4  
 M1-6

 OR 

M05-1 M06-1

 FLAGS, 16" X 16" MIN., (ORANGE)

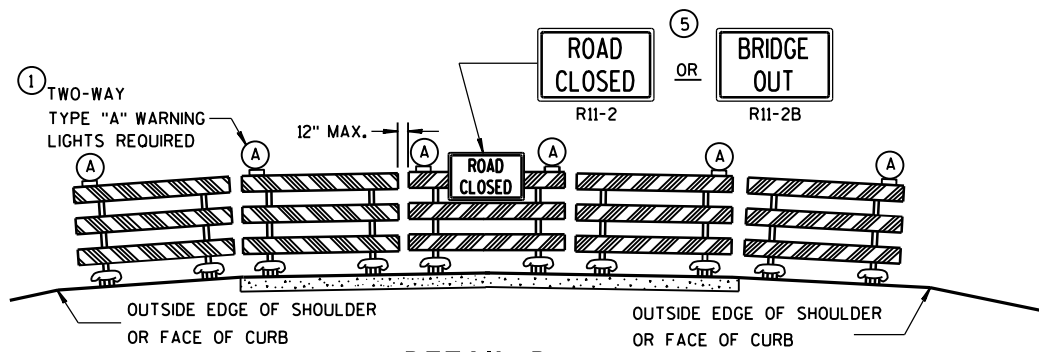
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

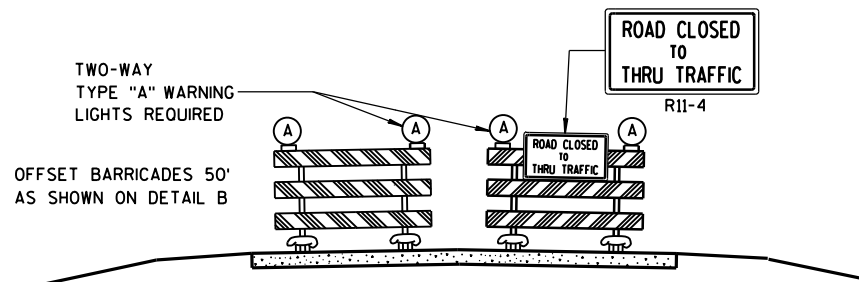
## BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**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".

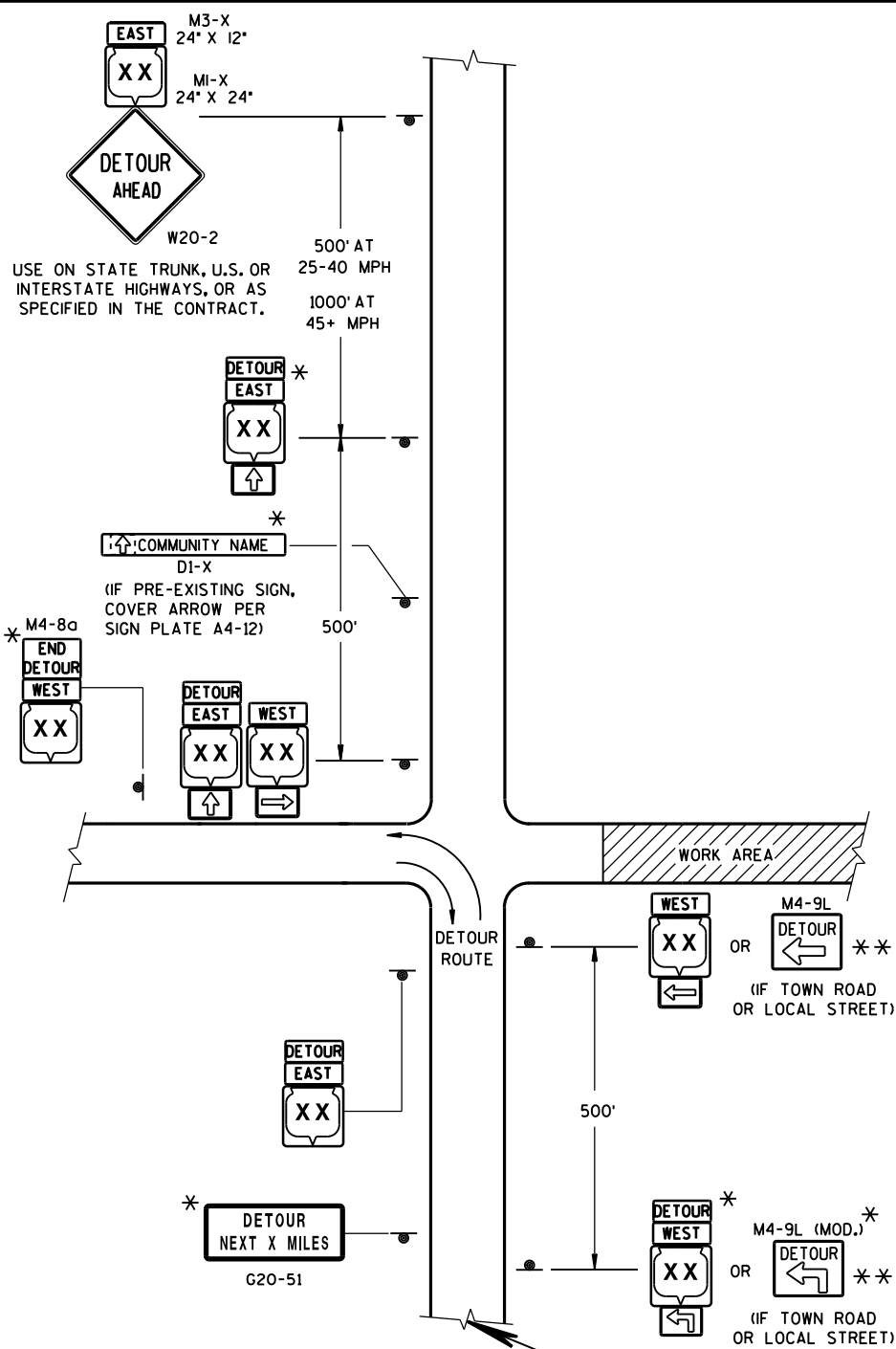
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS 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 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA





**LEGEND**

● SIGN ON PERMANENT SUPPORT

▨ WORK AREA

DETOUR EAST M4-8 M3-X

MI-4 OR COUNTY MI-5A OR MI-6

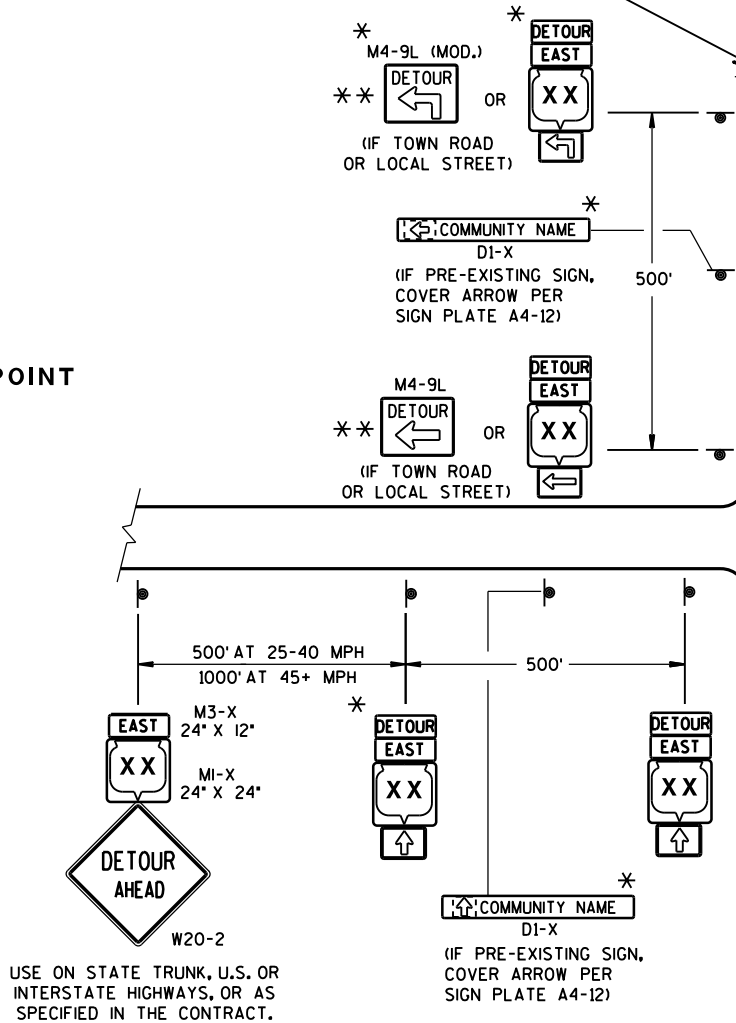
M05-1 OR M06-1 OR M06-1

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

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

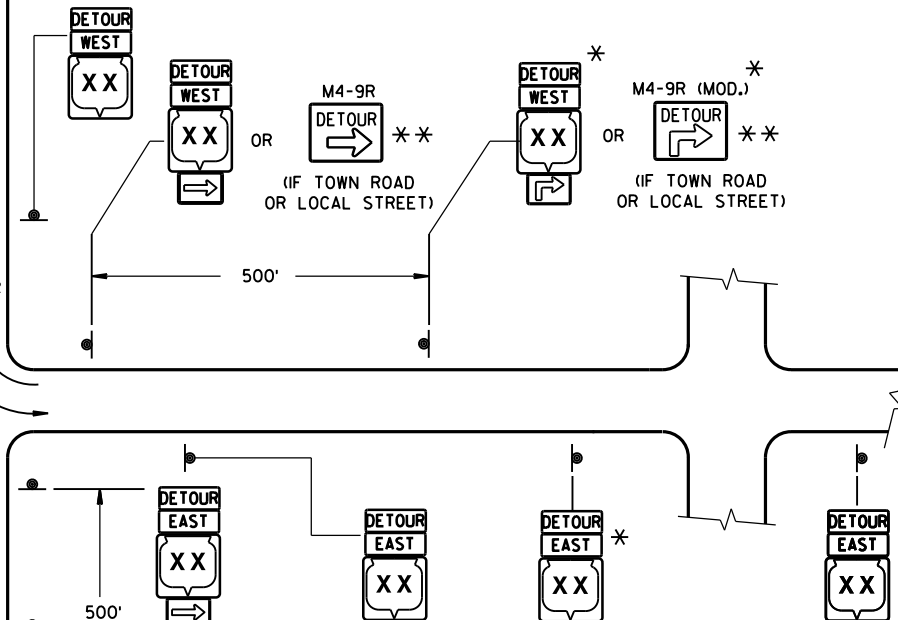
MATCH POINT

DETAIL F  
DETOUR SIGNING



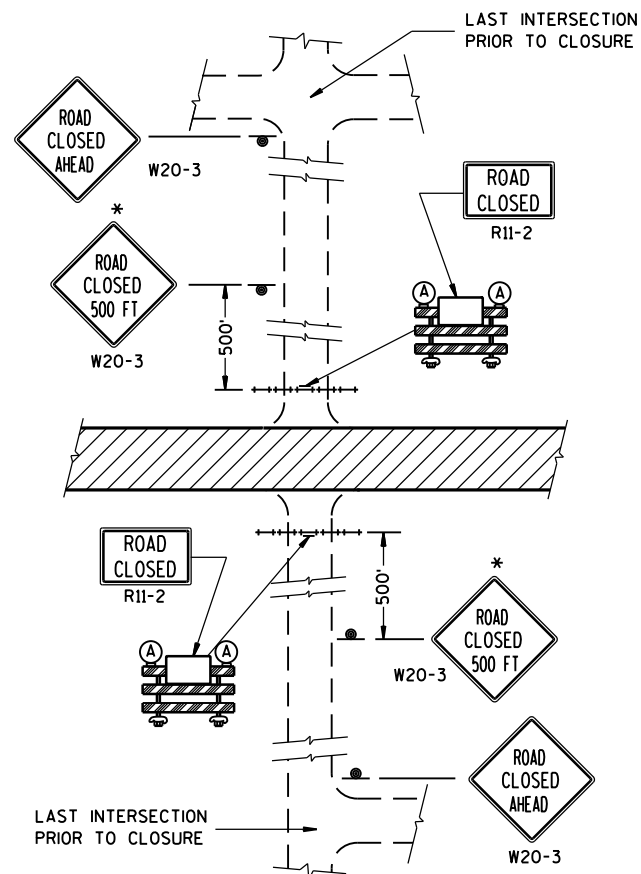
**GENERAL NOTES**

- 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.)
  - MI-4, MI-5A, AND MI-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.)
  - 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.

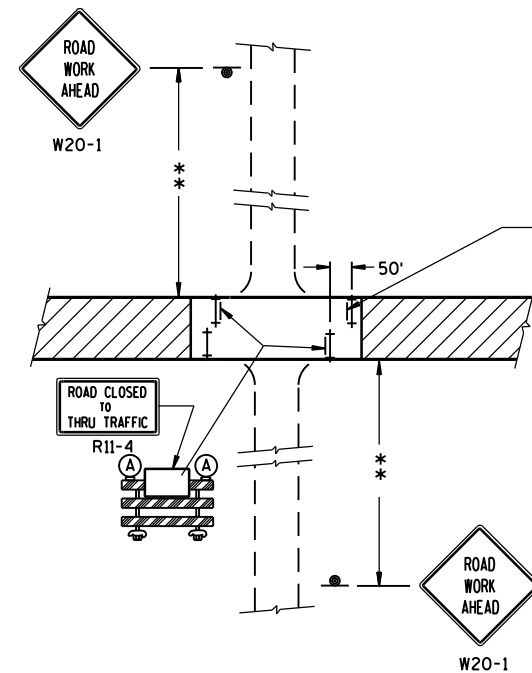


PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA.)

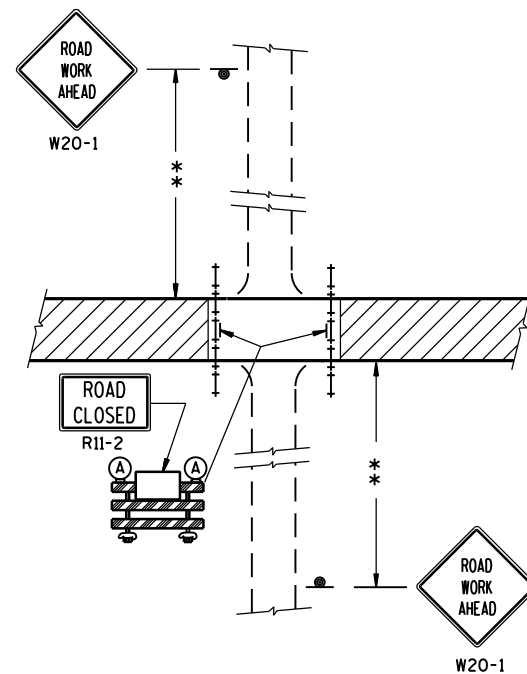
<b>DETOUR SIGNING FOR MAINLINE CLOSURES</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



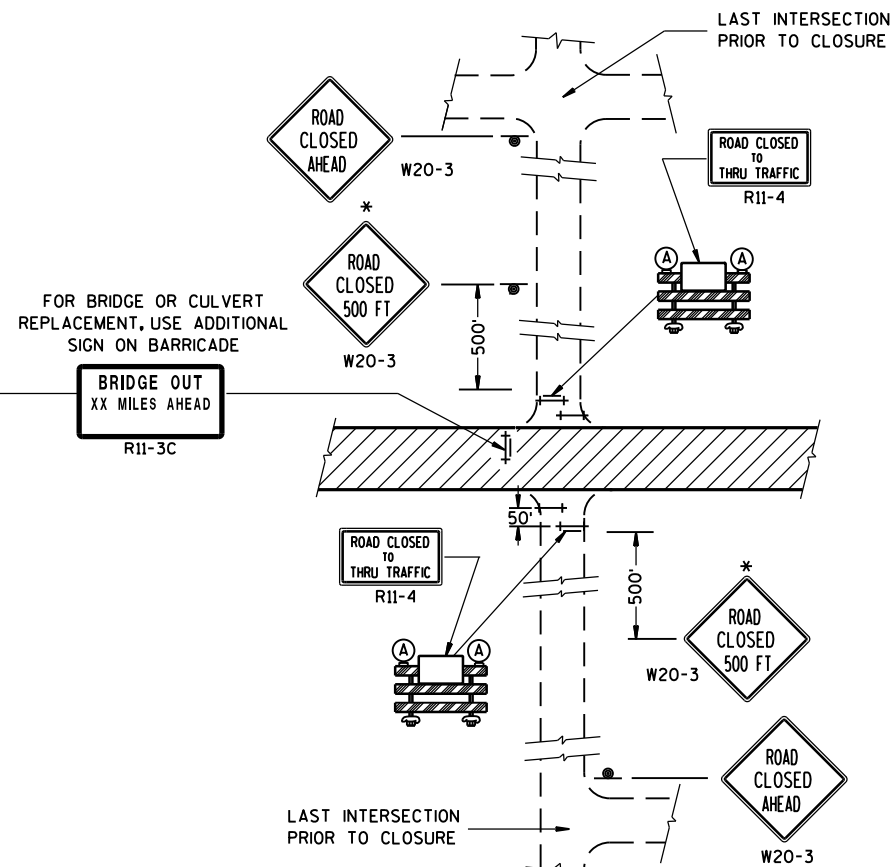
**DETAIL 1**  
(NO ACCESS TO PROJECT)



**DETAIL 3**  
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



**DETAIL 2**  
(PUBLIC CROSS-TRAFFIC MAINTAINED.  
NO ACCESS TO PROJECT).



**DETAIL 4**  
(CONTRACTOR, LOCAL BUSINESS AND  
RESIDENT ACCESS TO PROJECT)

## 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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

\*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

\*\*500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

## LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

## BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

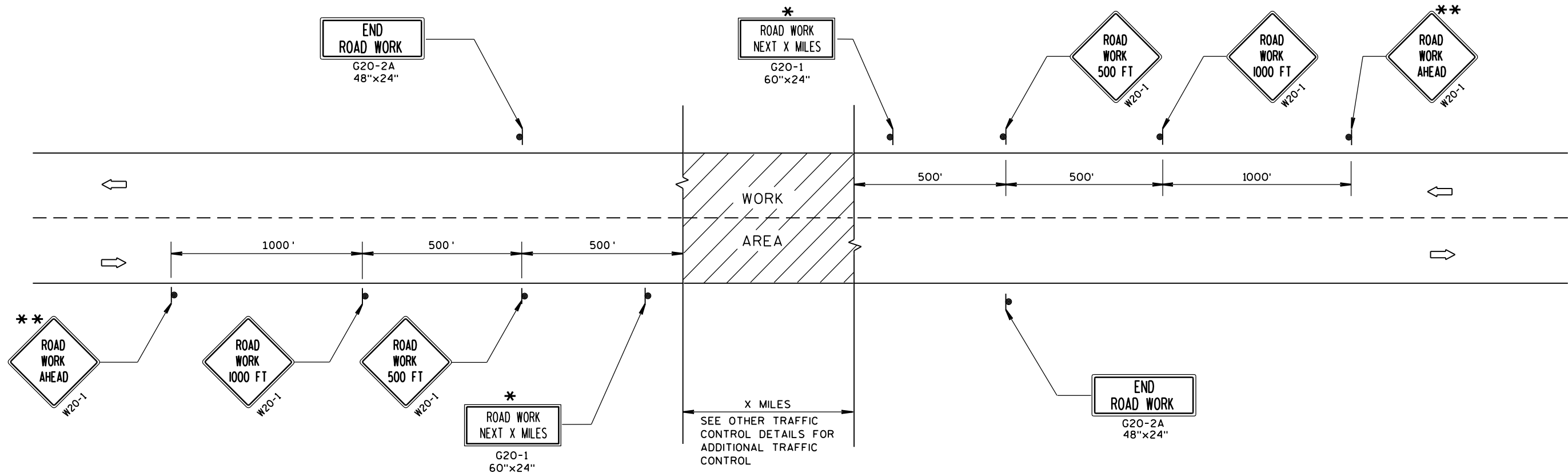
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 /S/ Travis Feltes

DATE STATE TRAFFIC ENGINEER OF DESIGN

FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

## GENERAL NOTES

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

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.

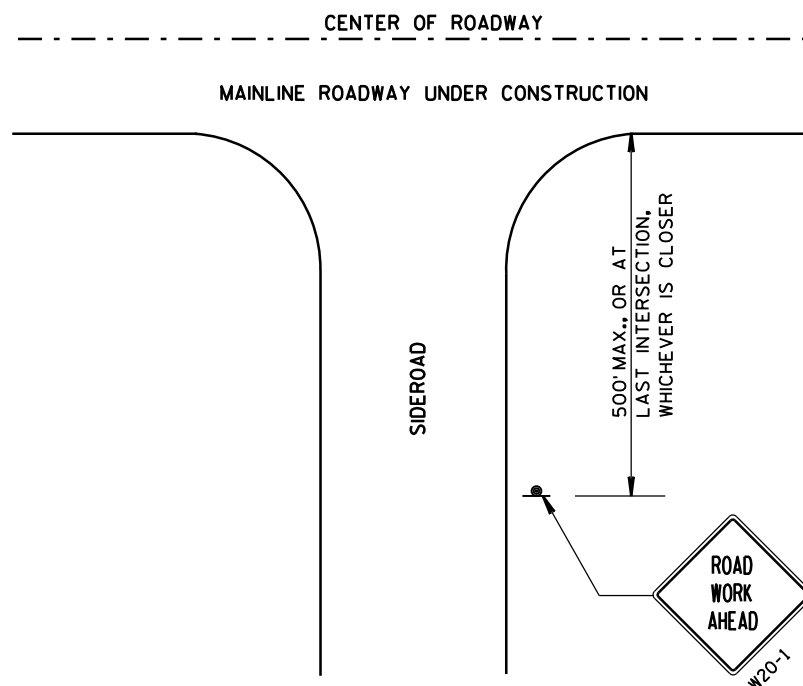
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

\* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

\*\* PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



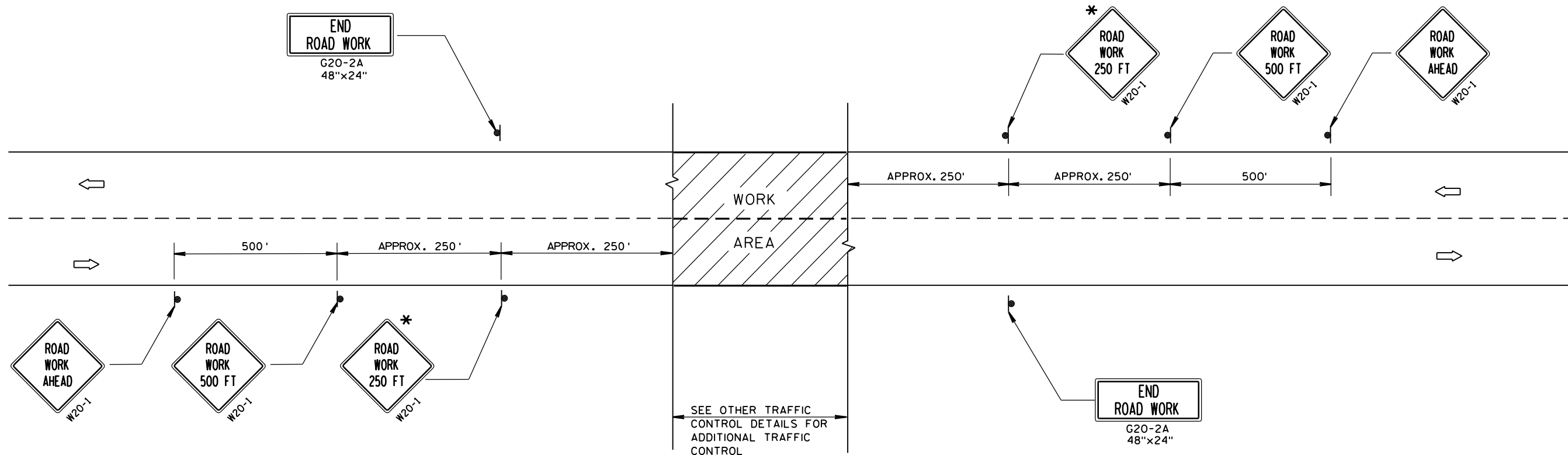
## LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE  
WARNING SIGNS 45 M.P.H.  
OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

## GENERAL NOTES

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

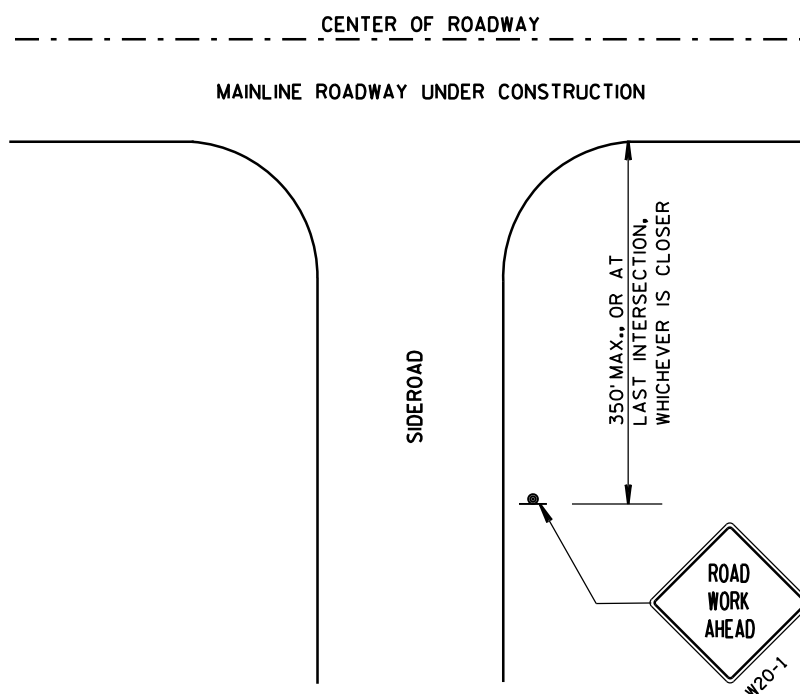
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

\* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



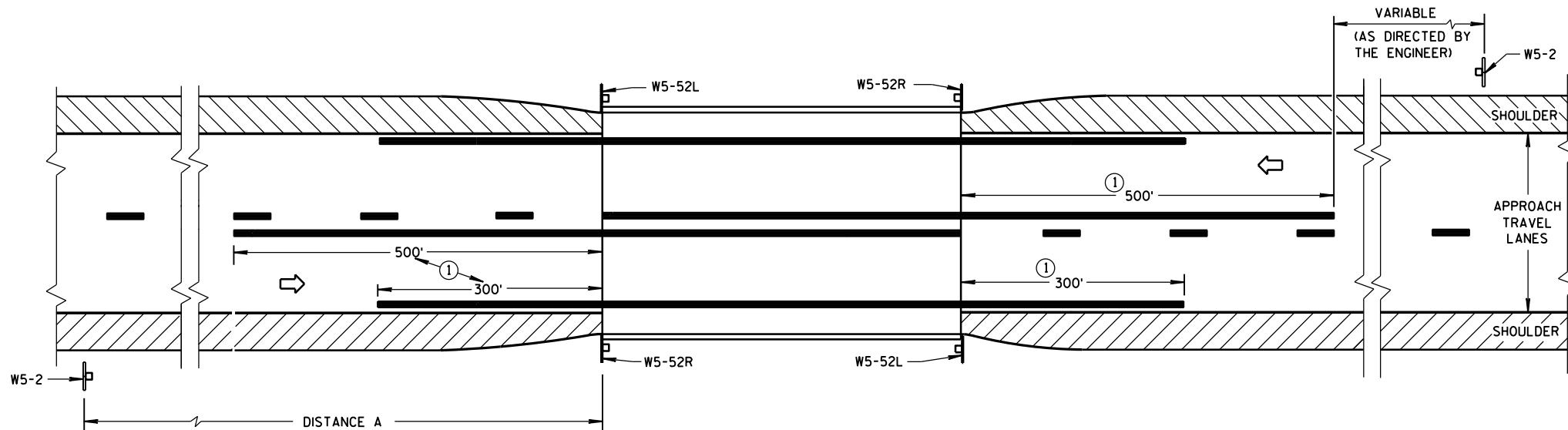
## LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE  
WARNING SIGNS 40 M.P.H.  
OR LESS TWO-WAY UNDIVIDED  
ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



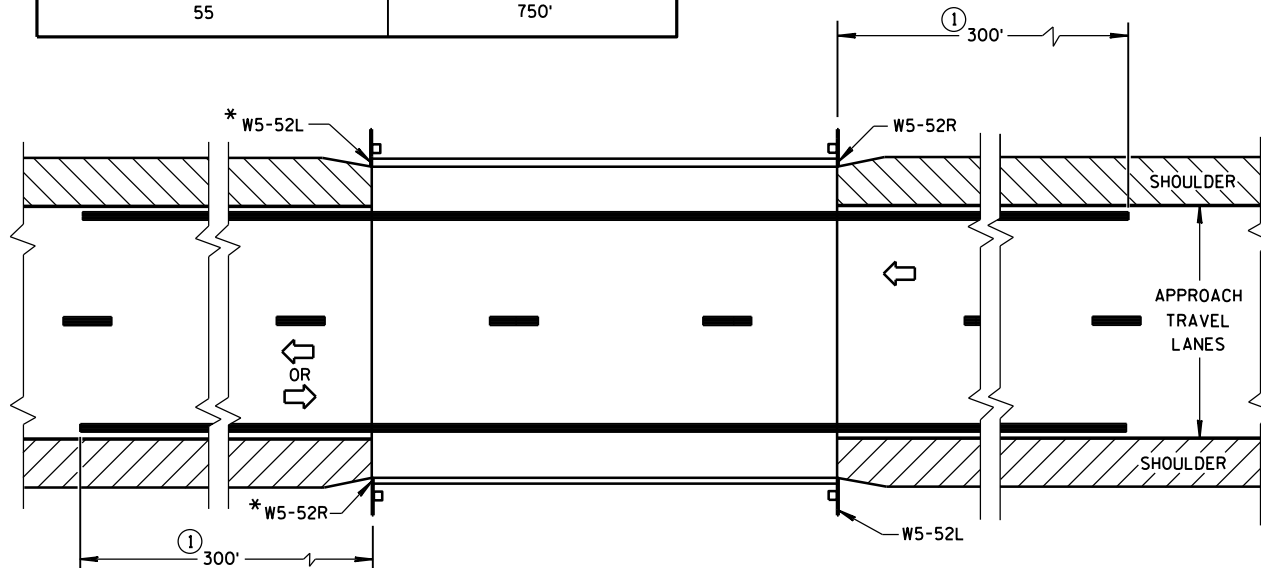
### SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

#### DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

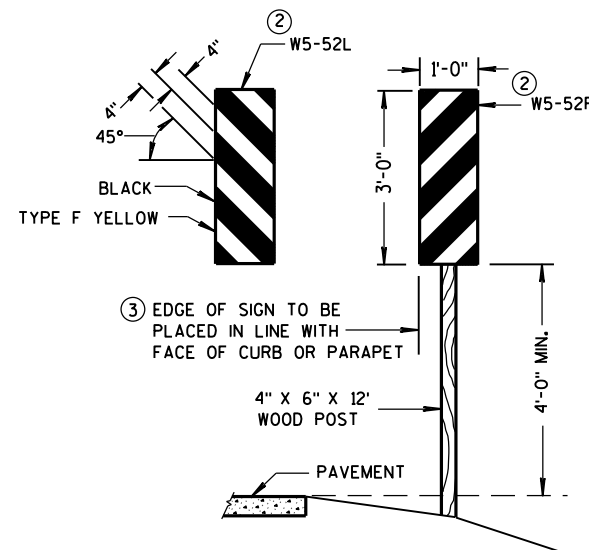


\*OMIT ON ONE-WAY TRAVELLED WAYS

### SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



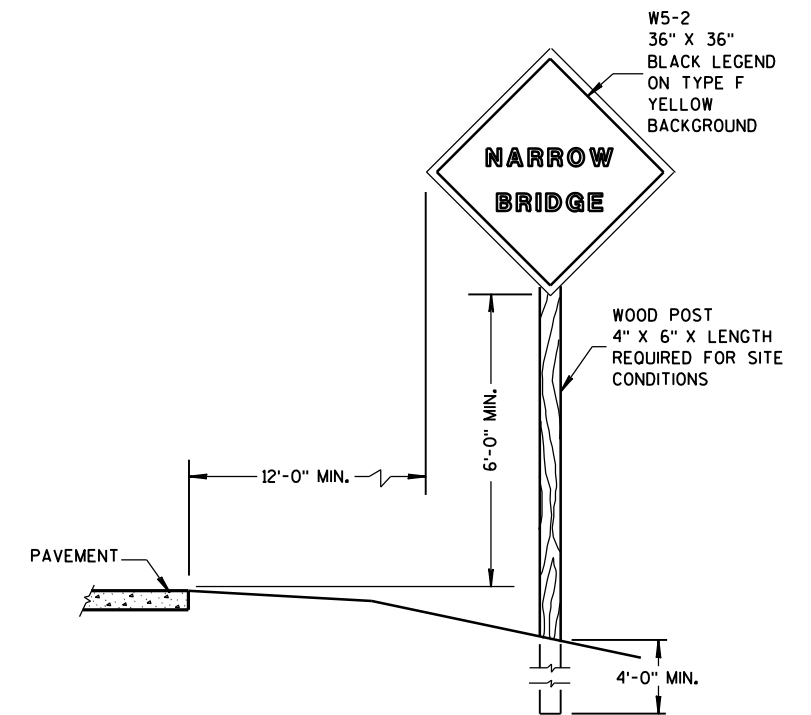
### OBJECT MARKER PLACEMENT

### 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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

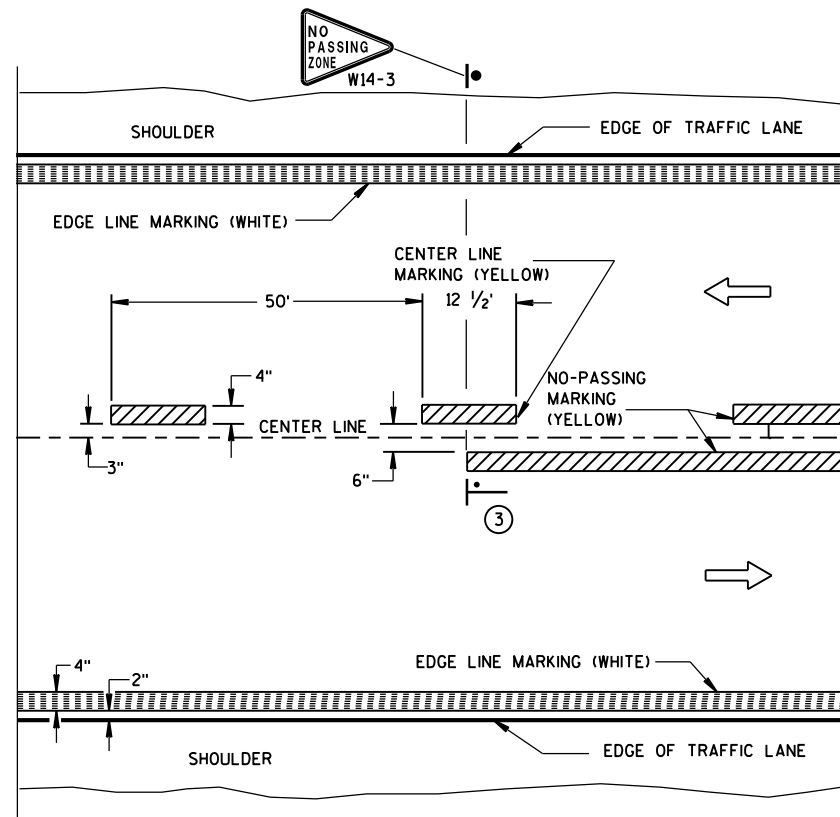


### SIGN PLACEMENT

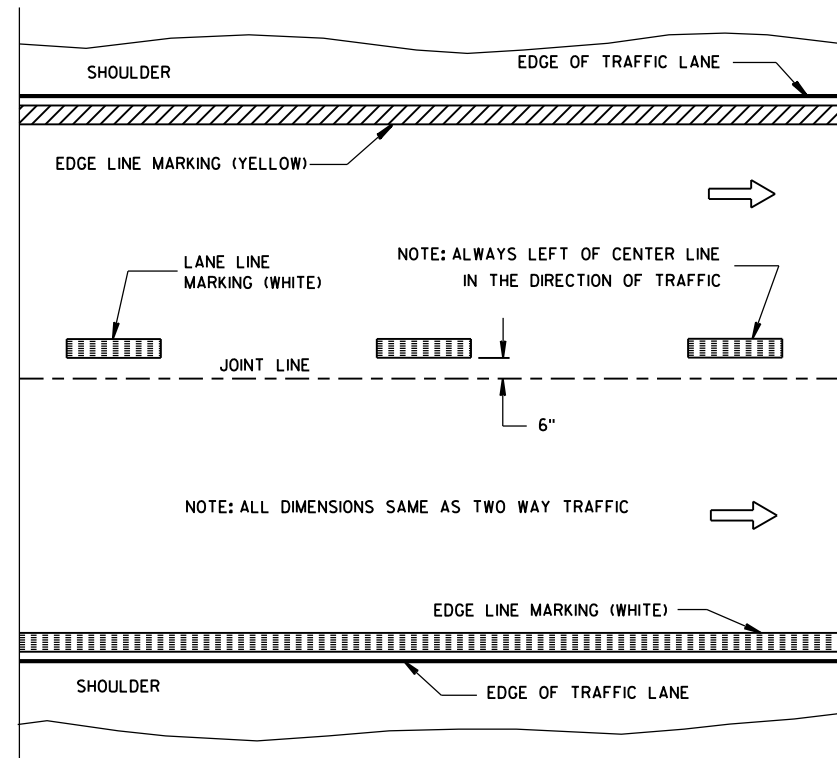
#### SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
3-2014 DATE /S/ Travis Fettes  
STATE TRAFFIC ENGINEER OF DESIGN  
FHWA

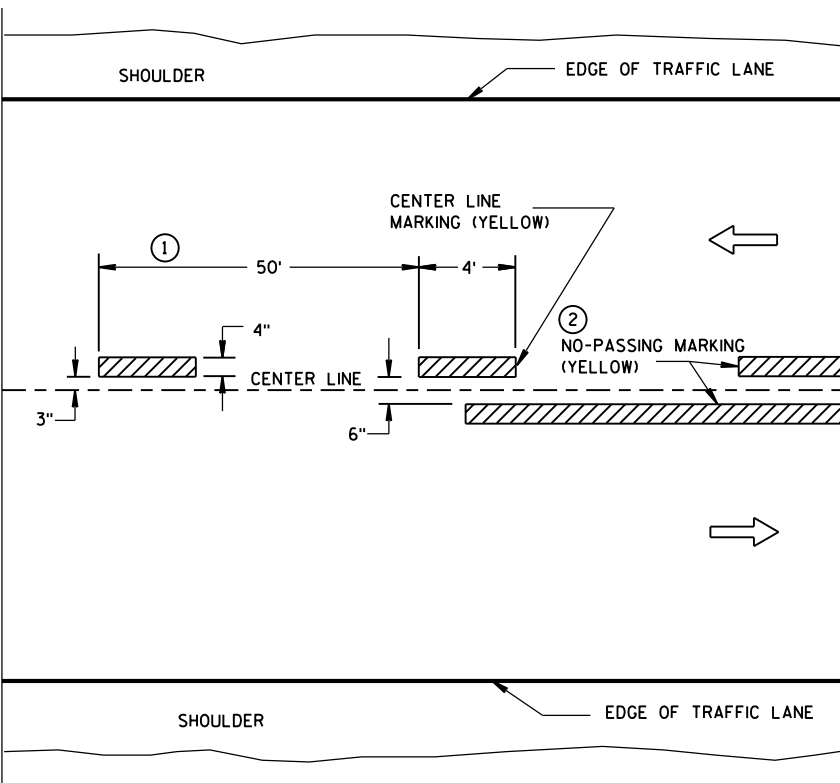


TWO WAY TRAFFIC

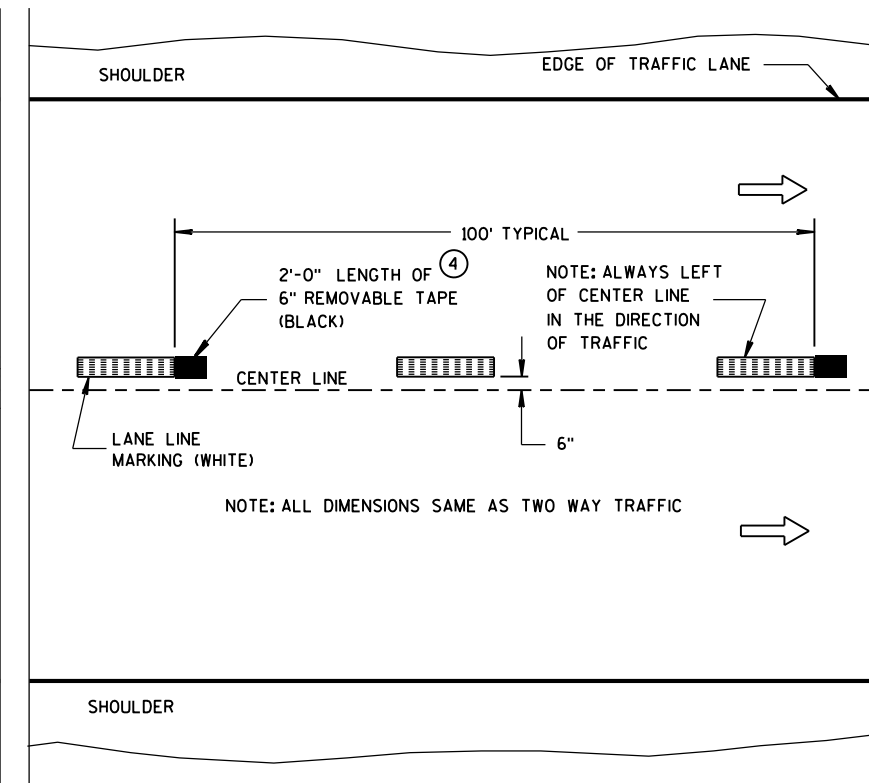


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

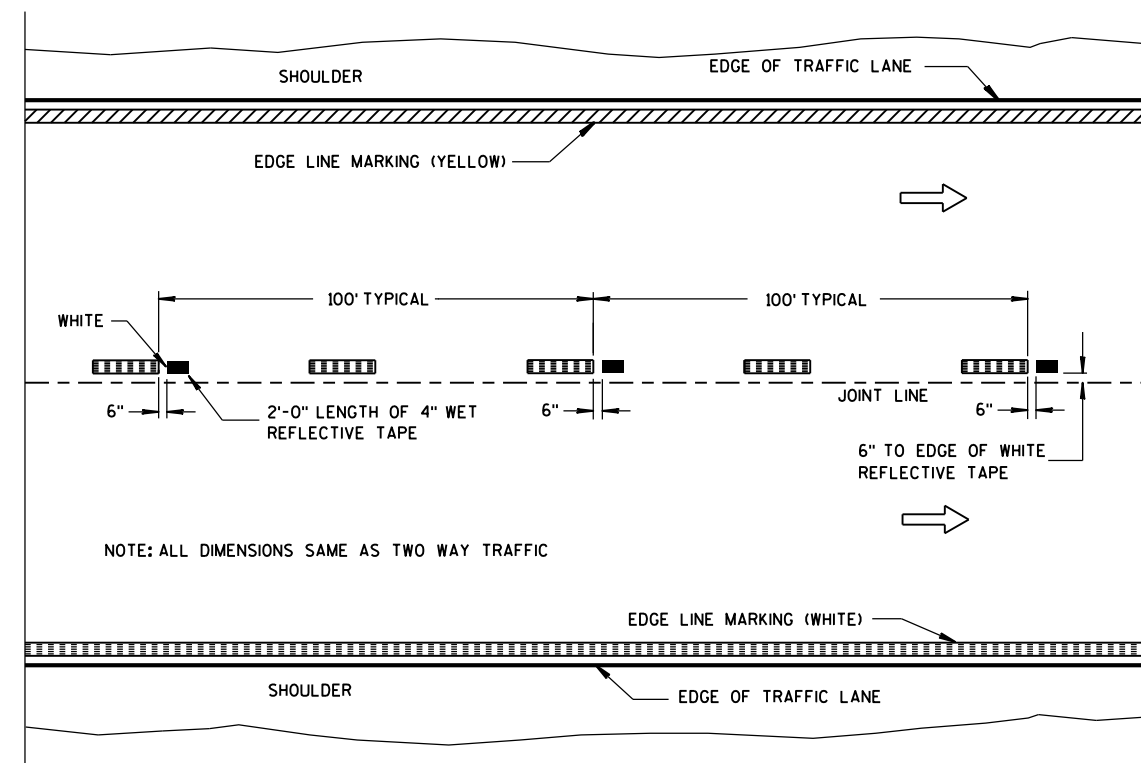
## GENERAL NOTES

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  
FHWA

/S/ Travis Feltes  
STATE TRAFFIC ENGINEER

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



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.

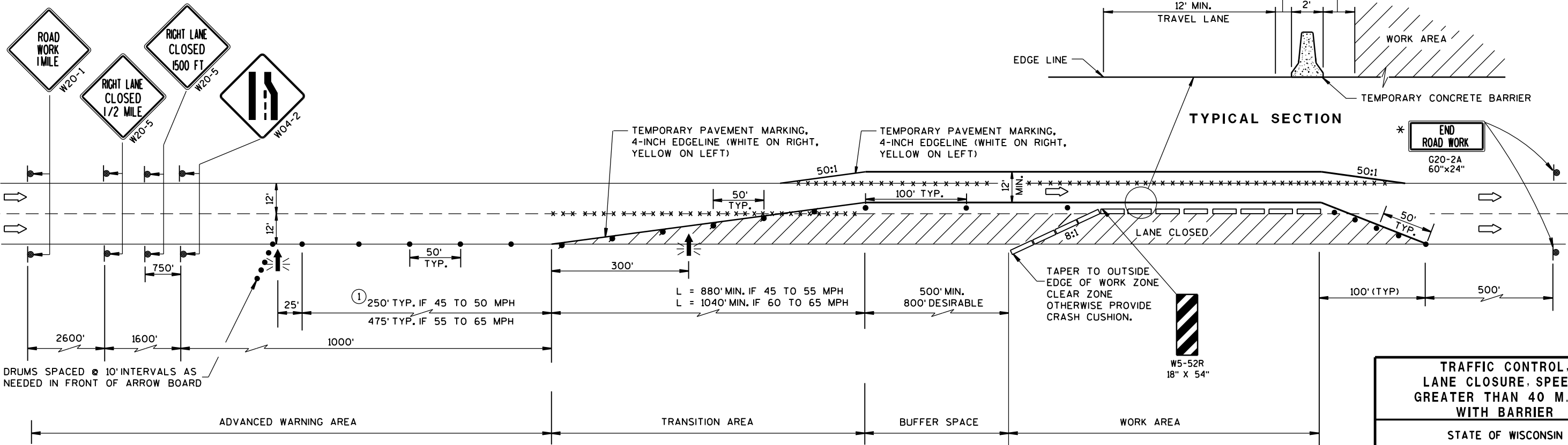
- ① CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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.



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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

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.

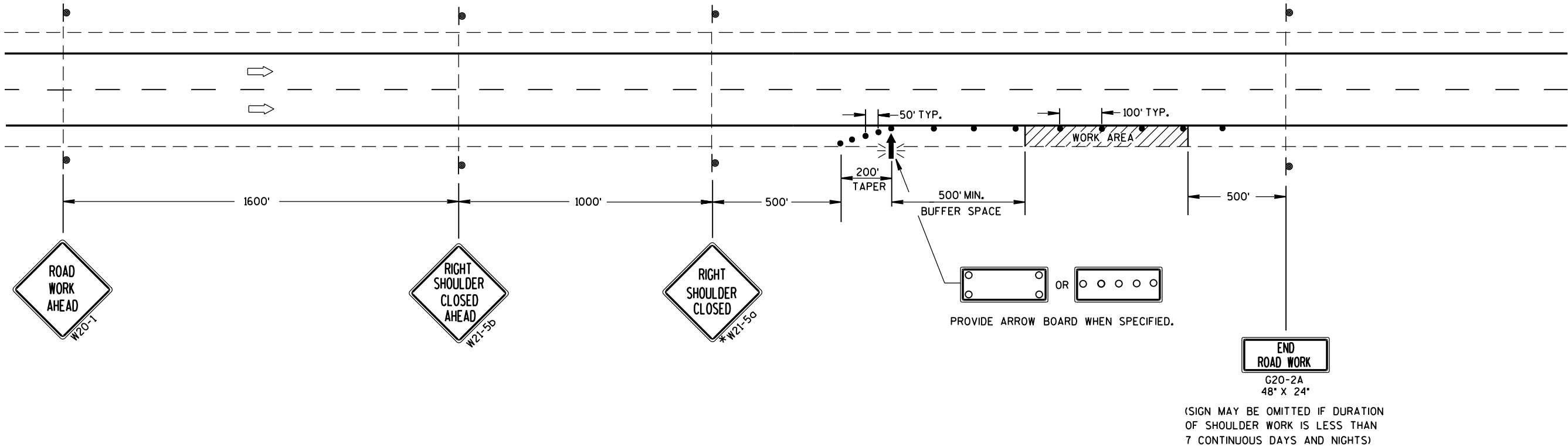
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

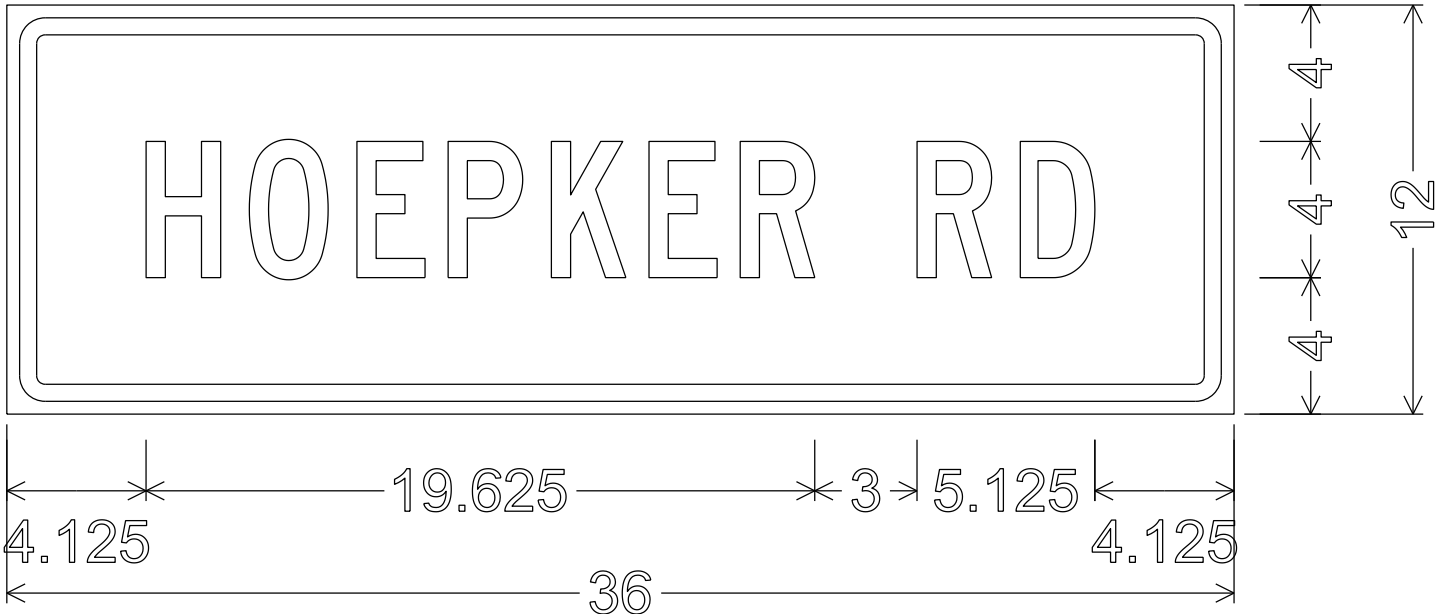
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8/2013 /S/ Travis Feltz  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA



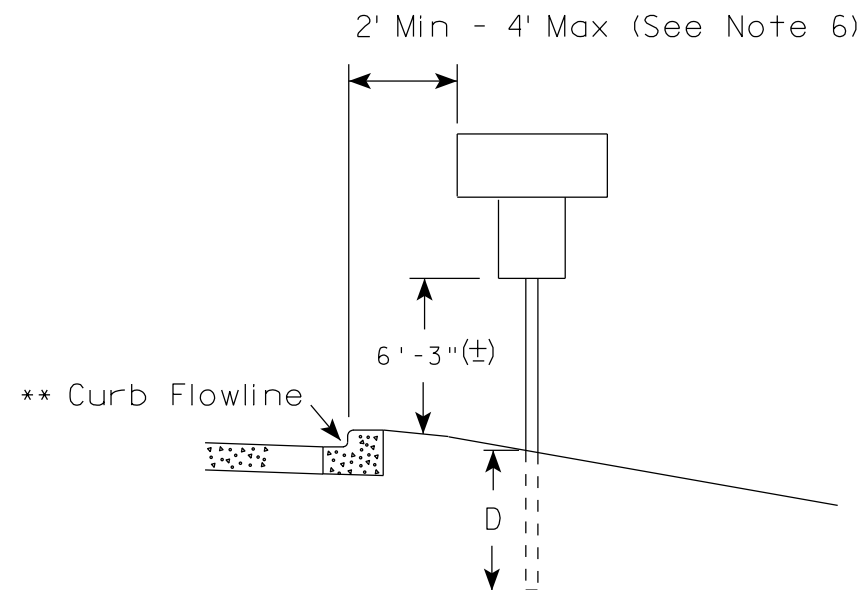
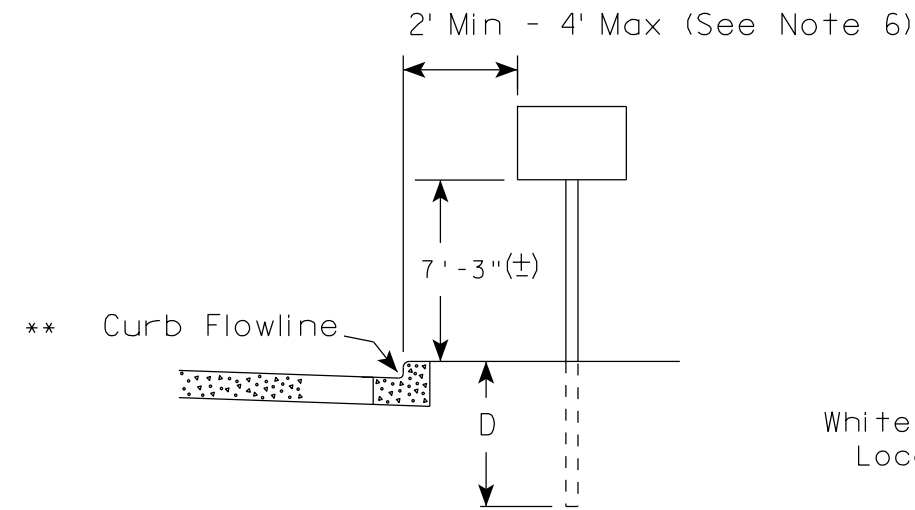
NOTES

- 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.

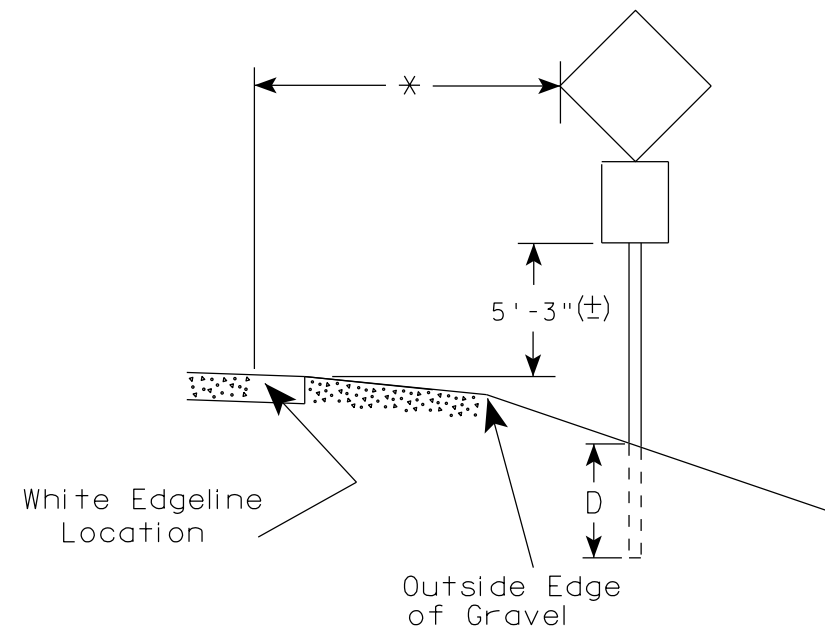
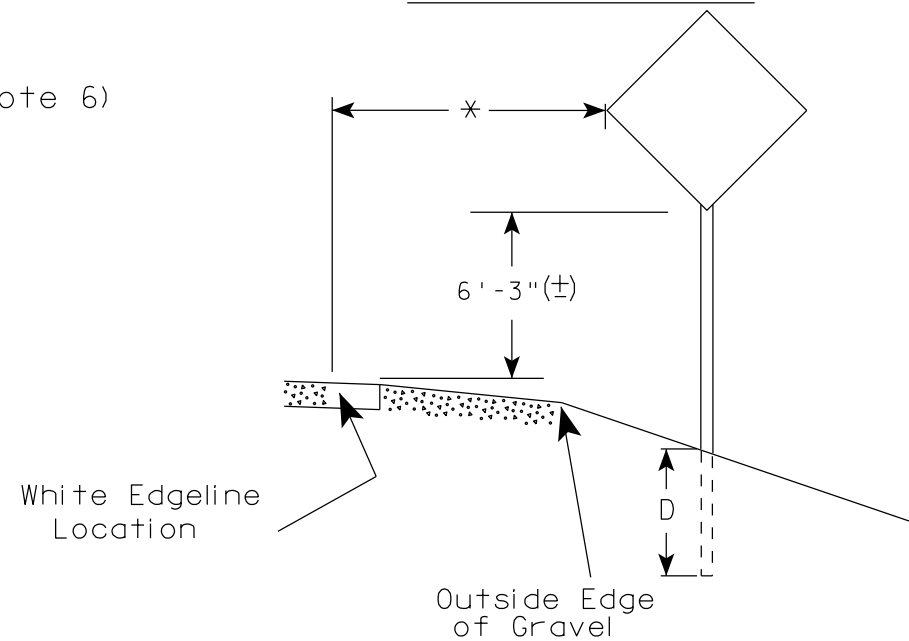


1.125" Radius, 0.500" Border, 0.375" Indent

## URBAN AREA



## RURAL AREA (See Note 2)



## GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

## POST EMBEDMENT DEPTH

Area of Sign Installation ( Sq. Ft. )	D ( Min )
20 or Less	4'
Greater than 20	5'

×× The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

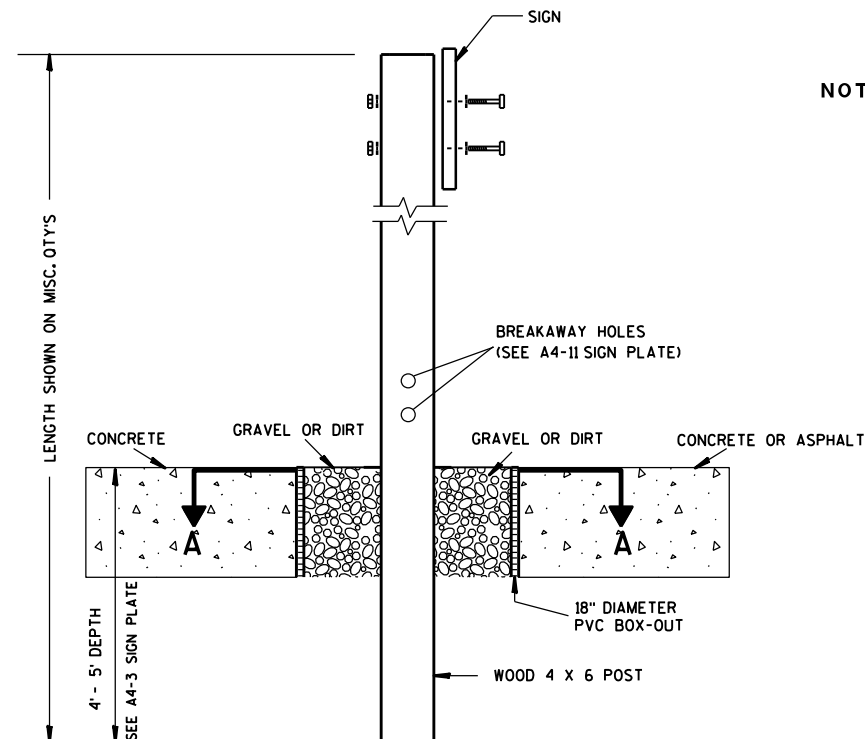
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

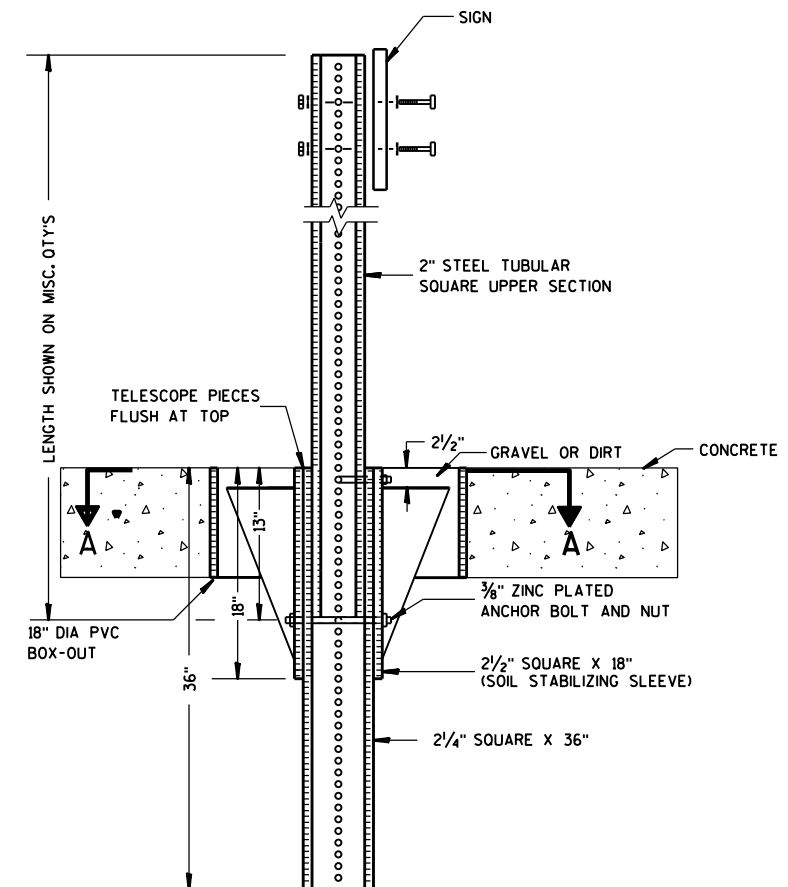
DATE 11/12/14 PLATE NO. A4-3.19



### ELEVATION VIEW

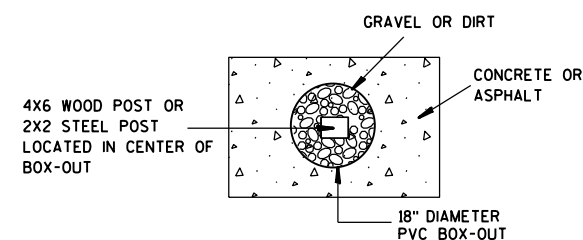
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



### ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



### PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST  
BOX-OUTS  
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

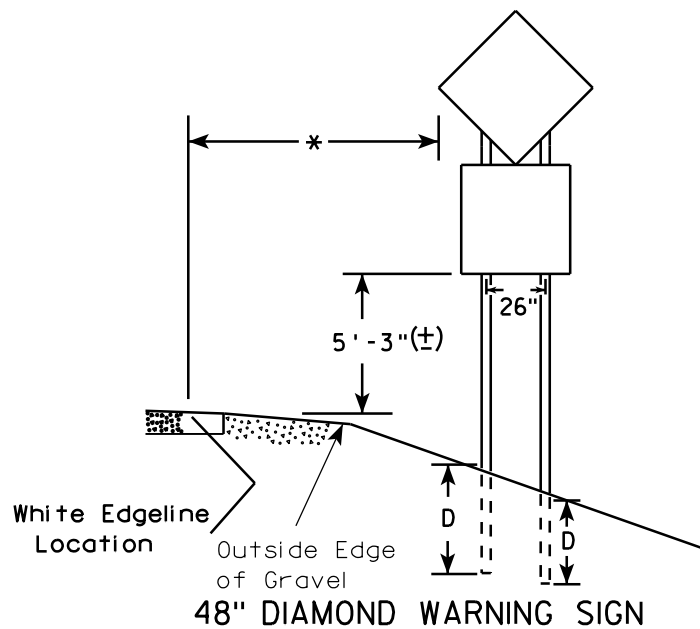
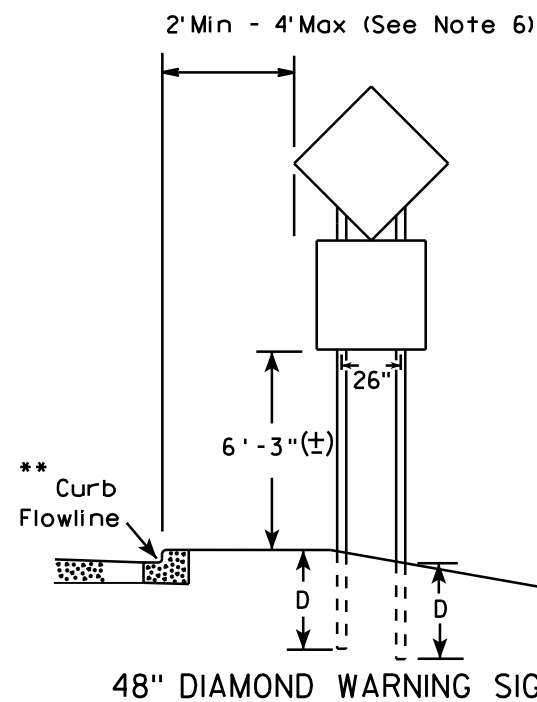
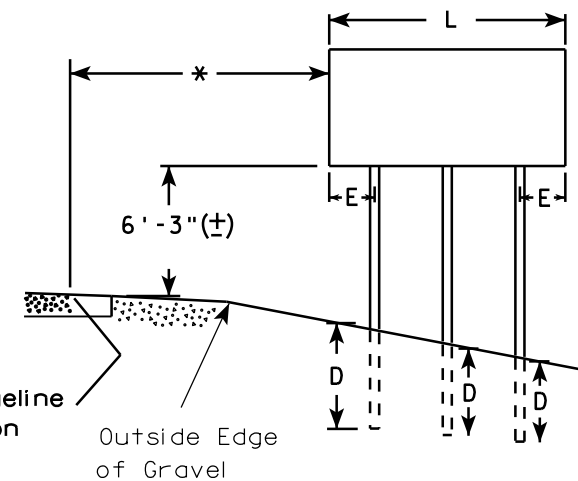
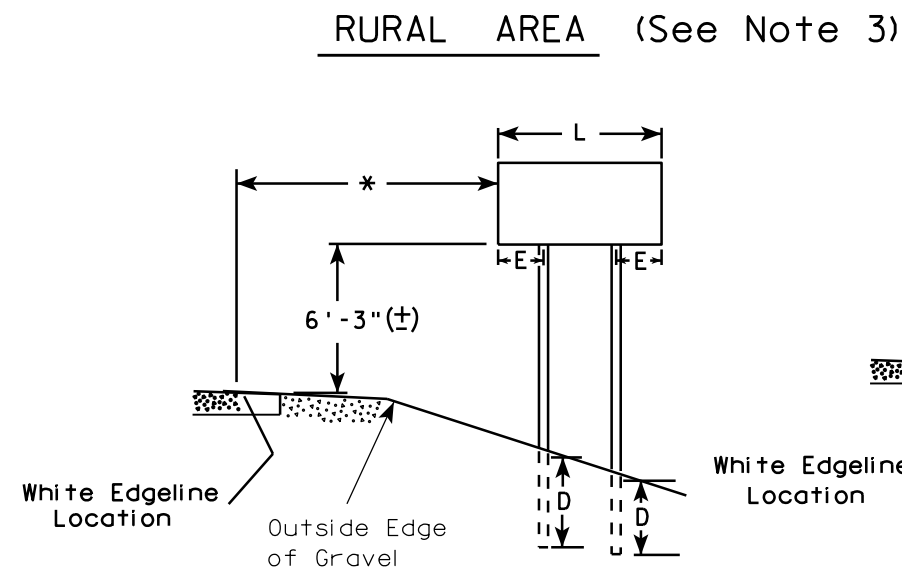
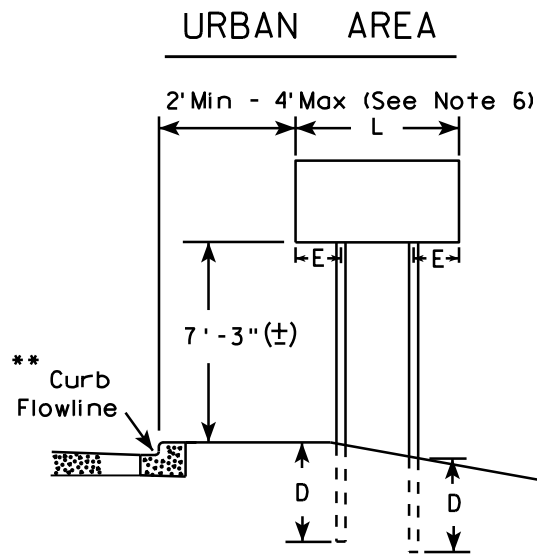
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
  2. See tables below for required number of posts.
  3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
  4. The (±) tolerance for mounting height is 3 inches.
  5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
  6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
  7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
  8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

\*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

\*\*\* See A4-3 sign plate for signs 4' or less in width or less than 20 S.F. in area.

\*\*\*

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

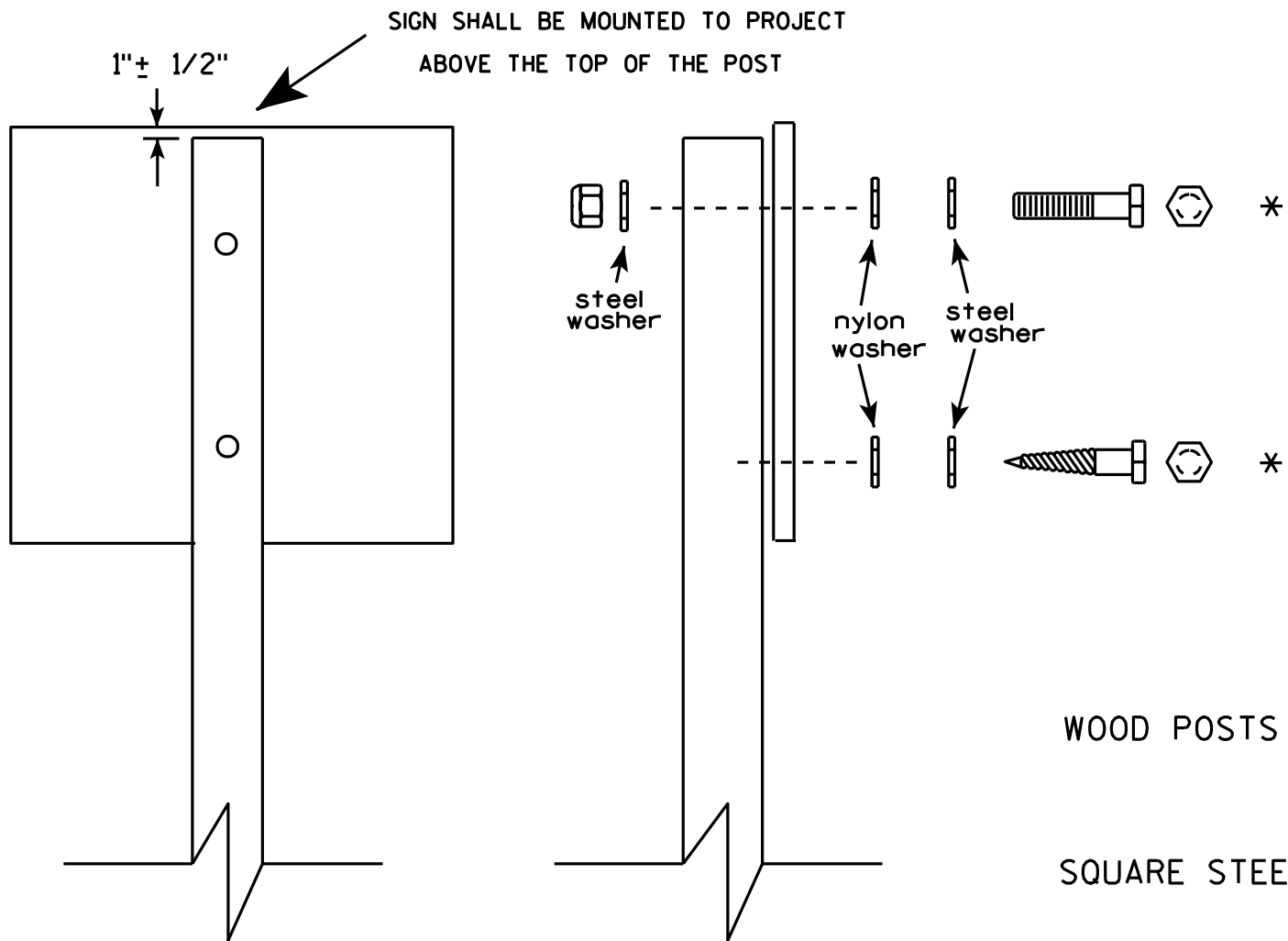
Area of Sign Installation ( Sq. Ft. )	D ( Min )
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-4.13

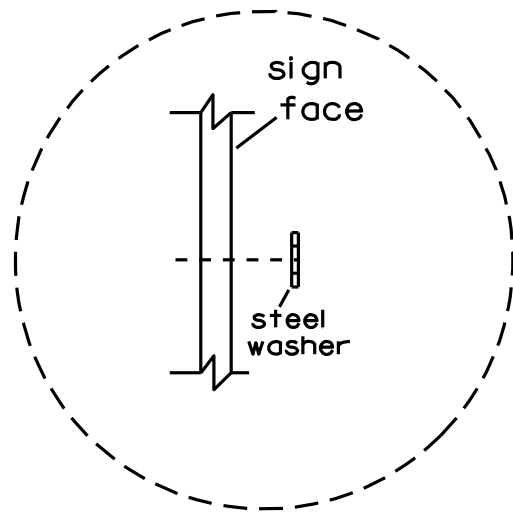


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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.

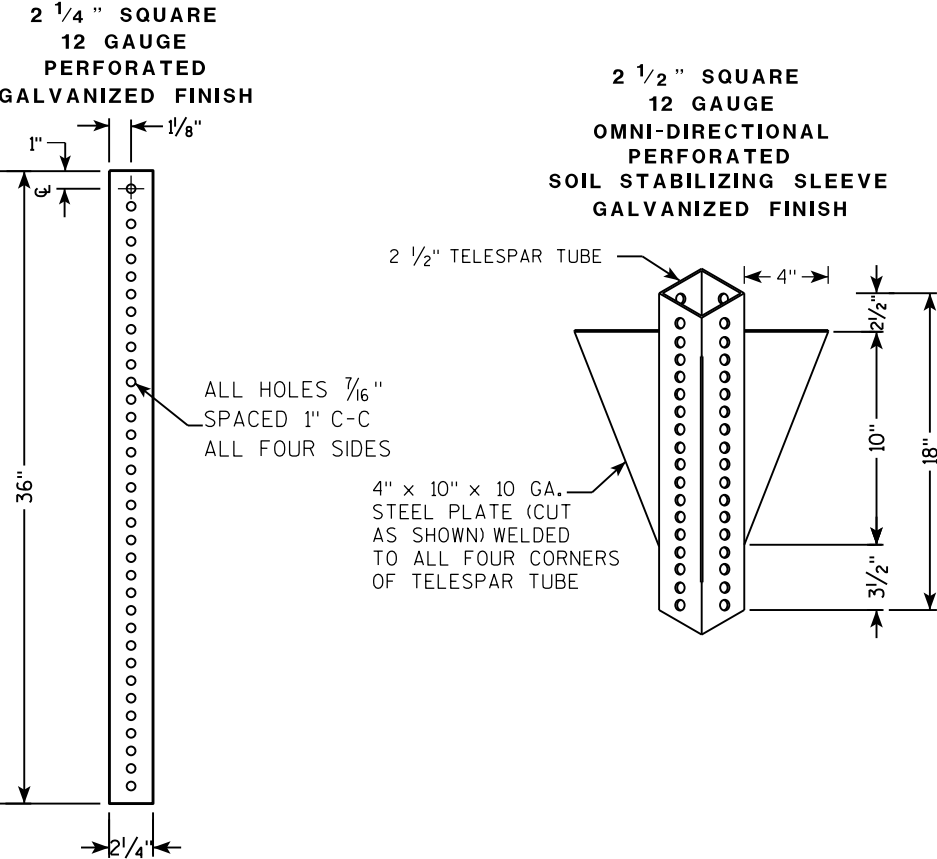


Washer Placement when Sign Has Other Than Type H or Type F Face

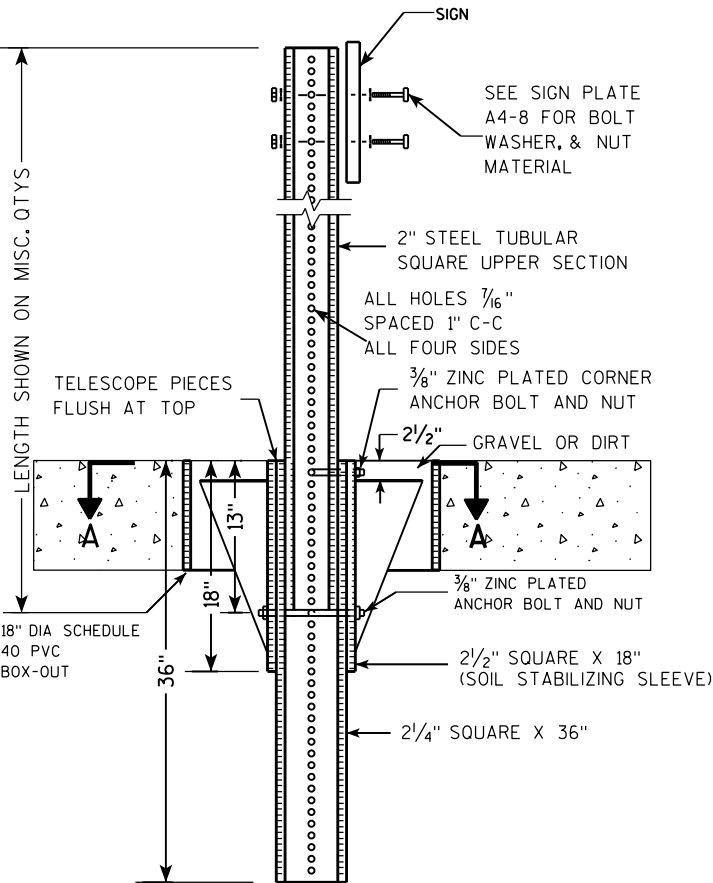
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

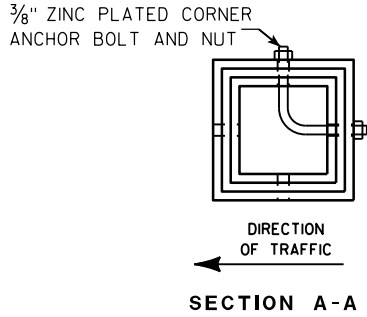
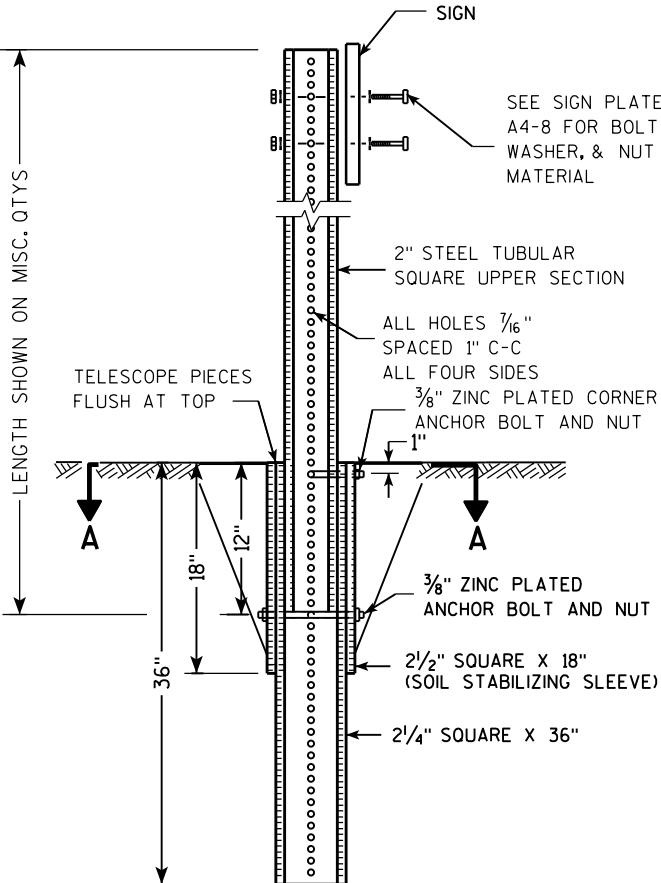
TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST  
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST  
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

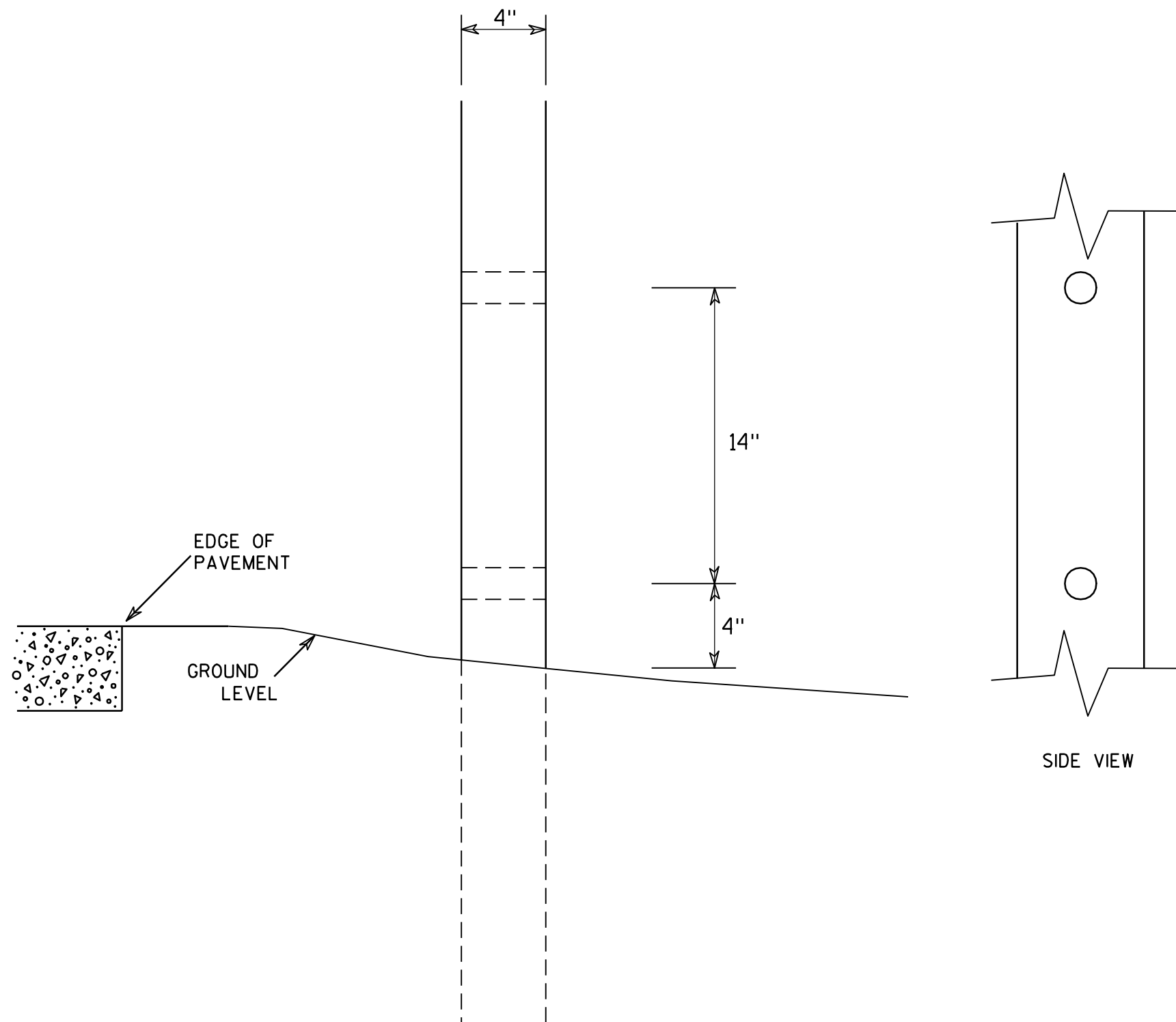
TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

7



### GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

### 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

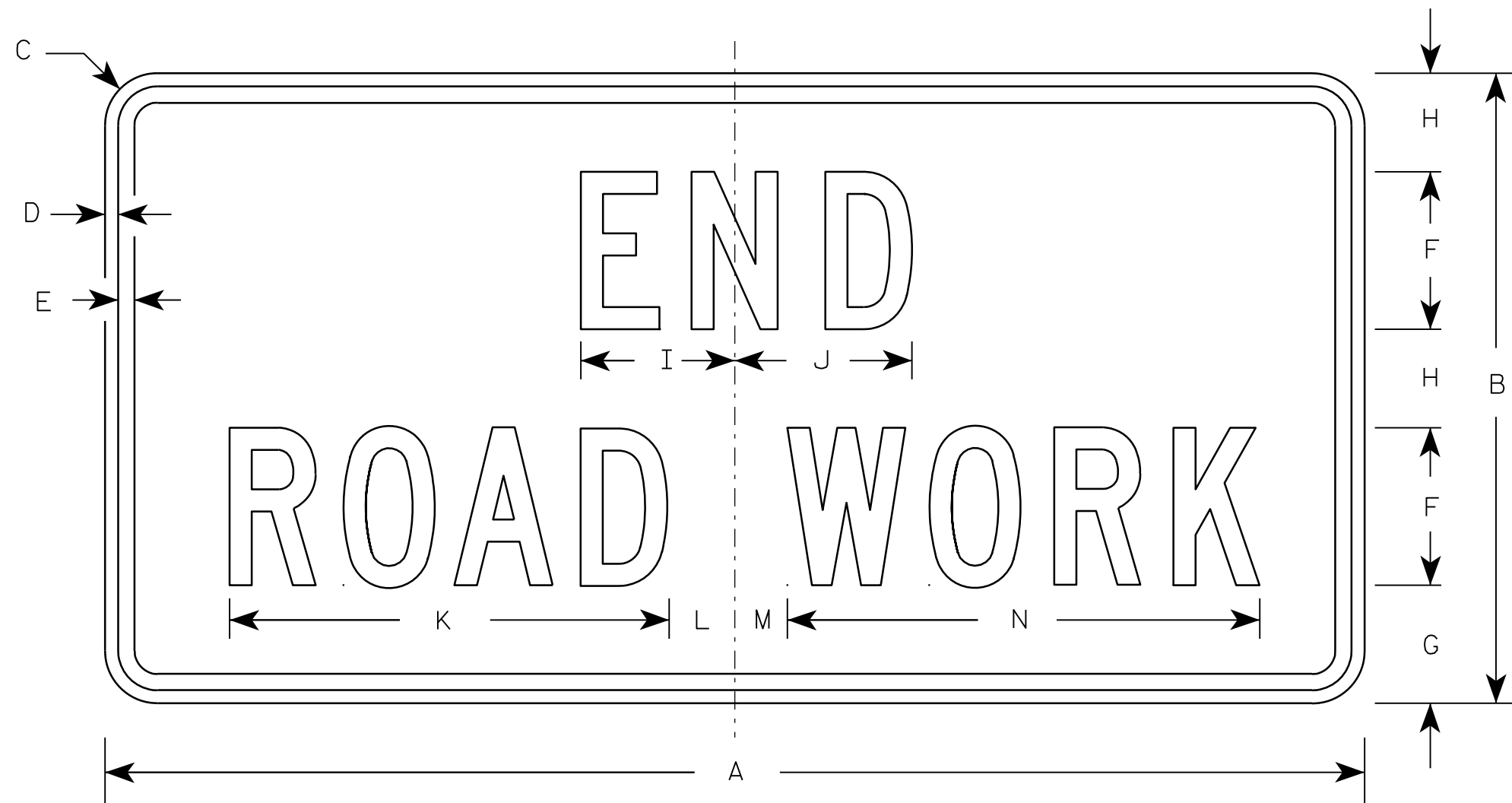
HWY:

COUNTY:

SHEET NO:

E

7



G20-2A

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

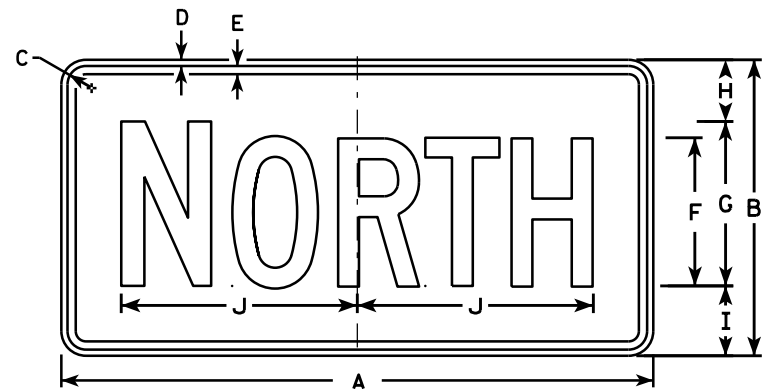
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m <sup>2</sup>
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2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

NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - Orange  
Message - Black
- Message Series - C
- 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.

7

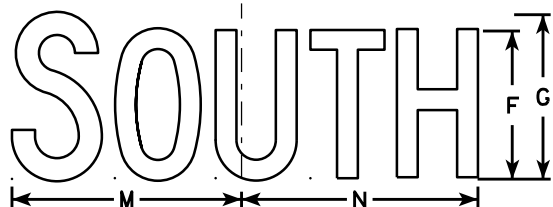




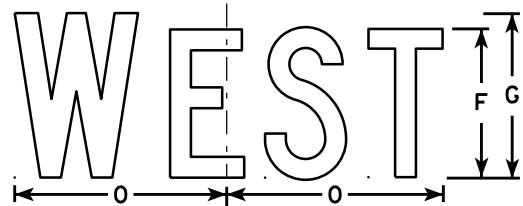
M3-1  
MK3-1  
MM3-1  
MN3-1



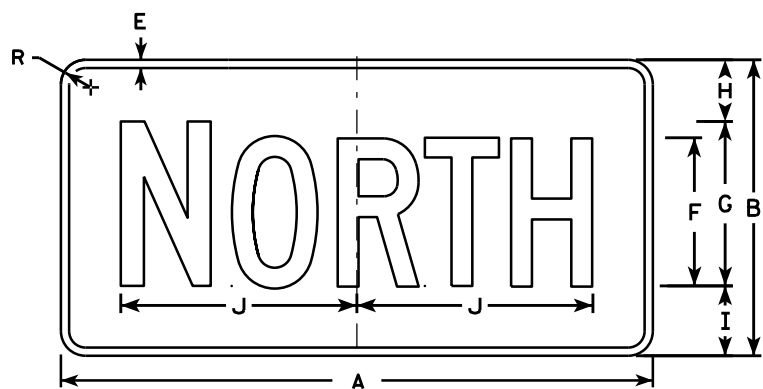
M3-2  
MK3-2  
MM3-2  
MN3-2



M3-3  
MK3-3  
MM3-3  
MN3-3



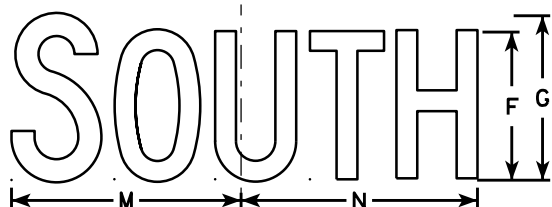
M3-4  
MK3-4  
MM3-4  
MN3-4



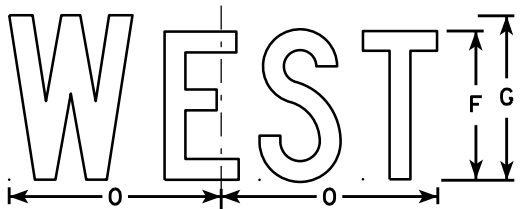
MB3-1



MB3-2



MB3-3



MB3-4

### NOTES

1. All Signs Type II - Type H
2. Color:  
Background - See note 5  
Message - See note 5
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.
5. M3-1 thru M3-4 Background - White  
Message - Black  
MB3-1 thru MB3-4 Background - Blue  
Message - White  
MK3-1 thru MK3-4 Background - Green  
Message - White  
MM3-1 thru MM3-4 Background - White  
Message - Green  
MN3-1 thru MN3-4 Background - Brown  
Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS  
M3-1 thru M3-4  
SERIES

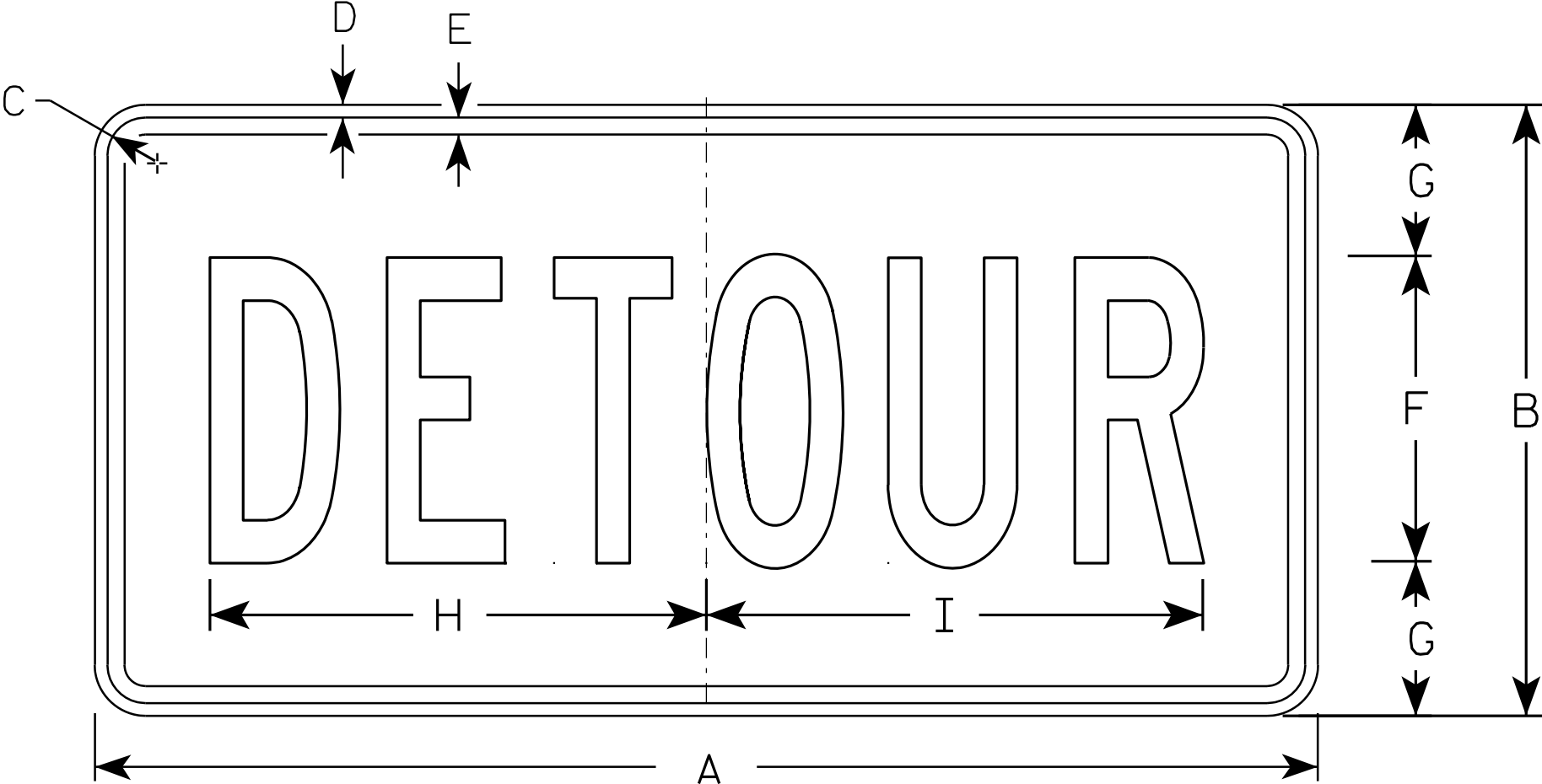
WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 6/30/14 PLATE NO. M3-1.13

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 - B
- 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.



M4 - 8

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	Areg sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

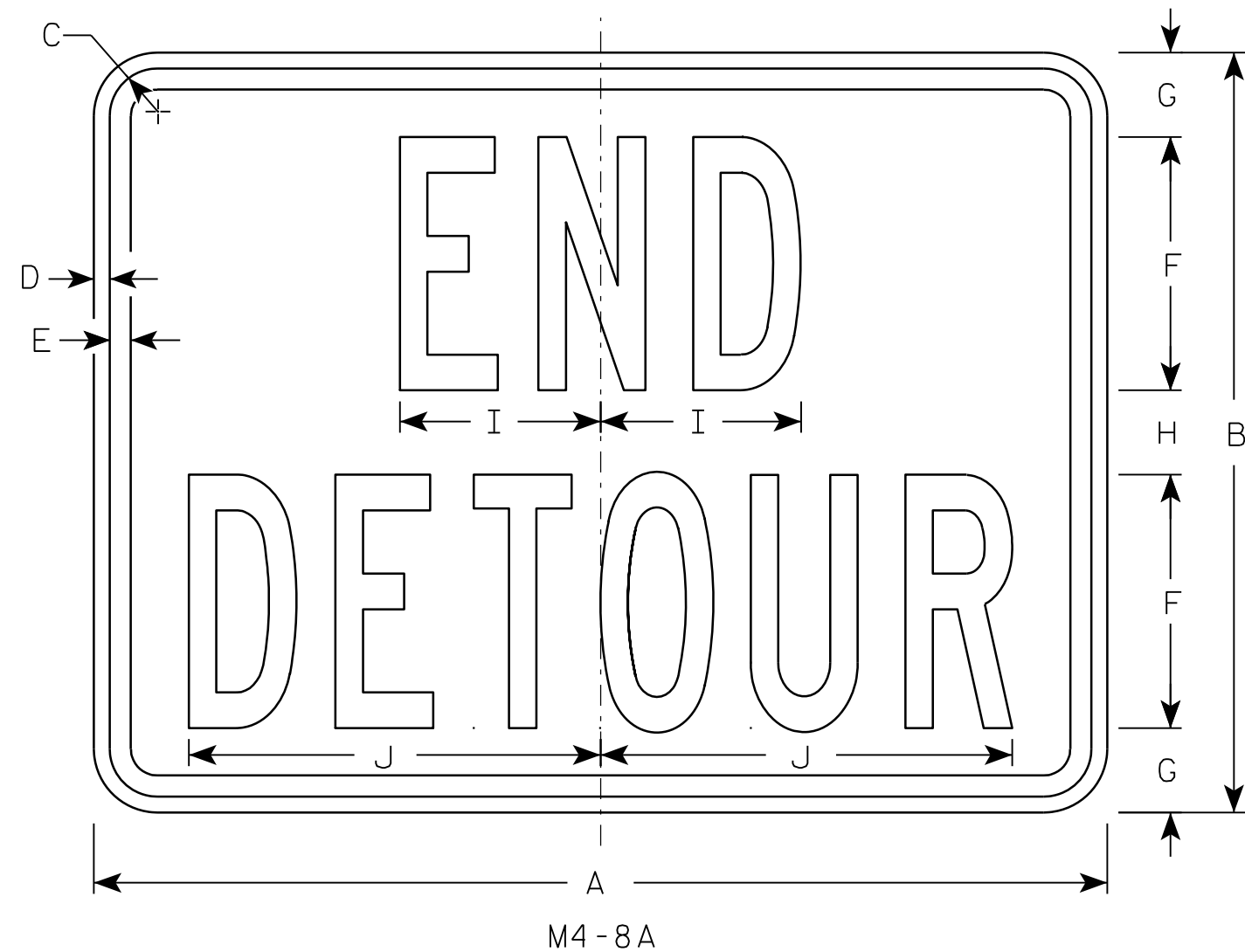
STANDARD SIGN

M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2



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 - B
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																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

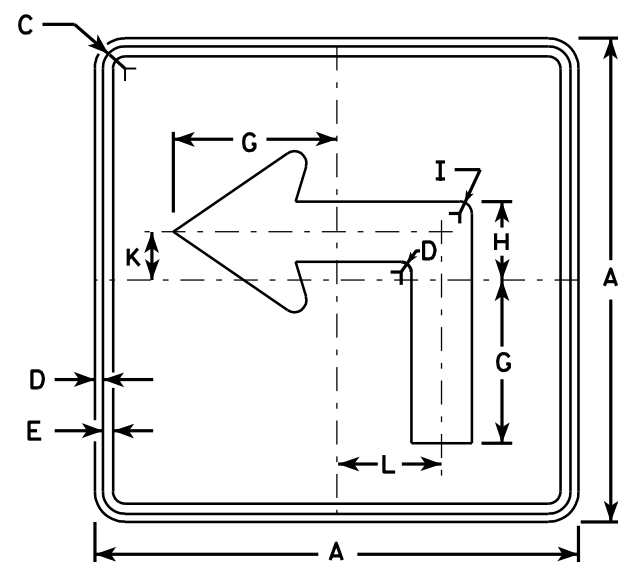
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN  
M4-8A

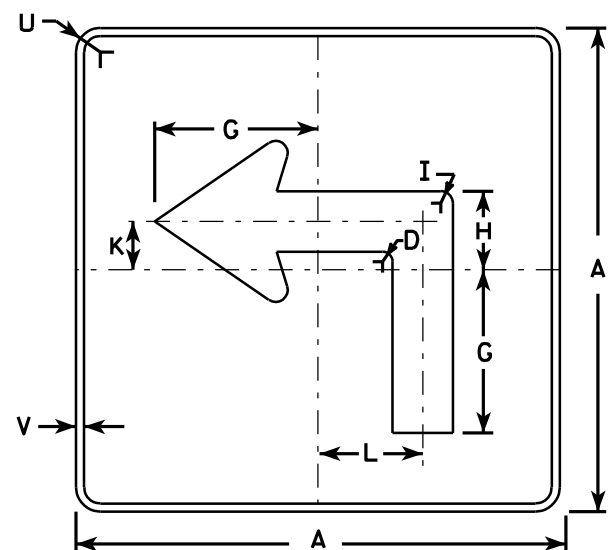
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

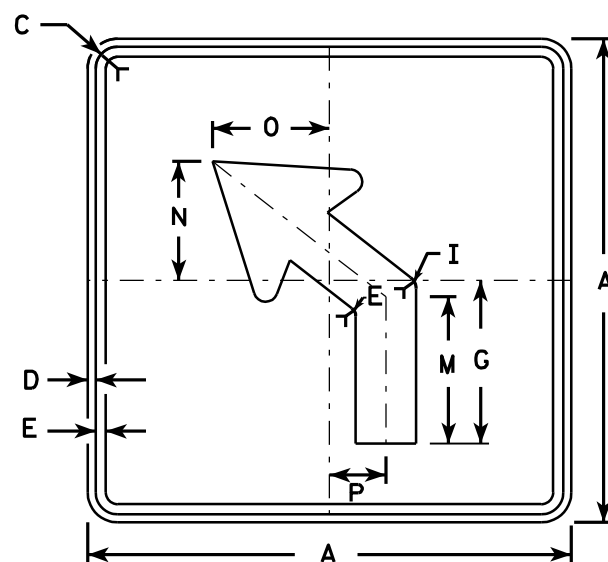
DATE 3/9/11 PLATE NO. M4-8A.2



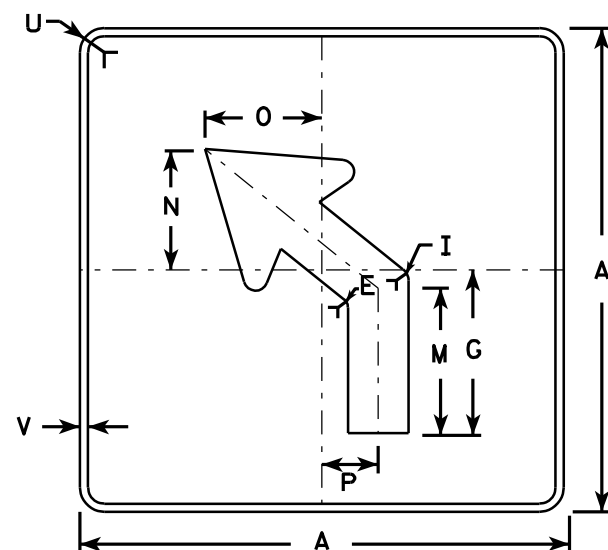
M5-1L  
MK5-1L  
MM5-1L  
M05-1L  
MP5-1L  
MR5-1L



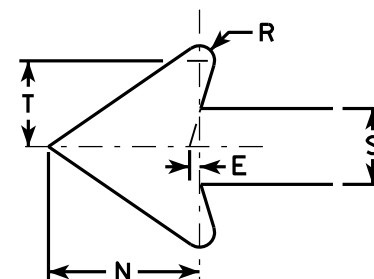
MB5-1L  
MG5-1L  
MN5-1L



M5-2L  
MK5-2L  
MM5-2L  
M05-2L  
MP5-2L  
MR5-2L



MB5-2L  
MG5-2L  
MN5-2L

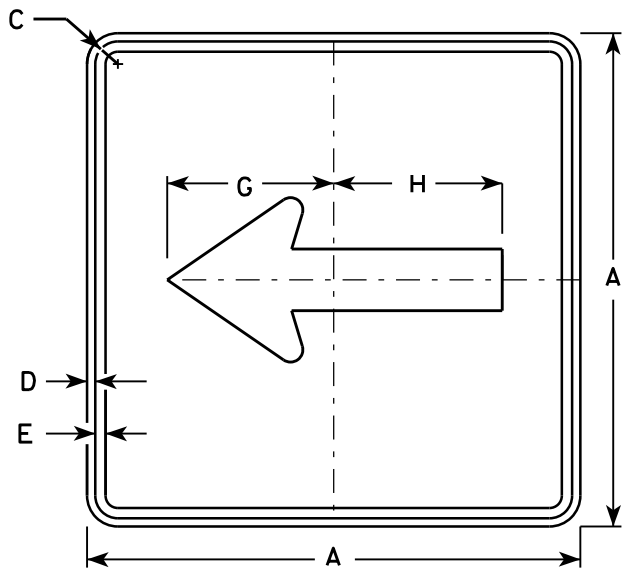


NOTES

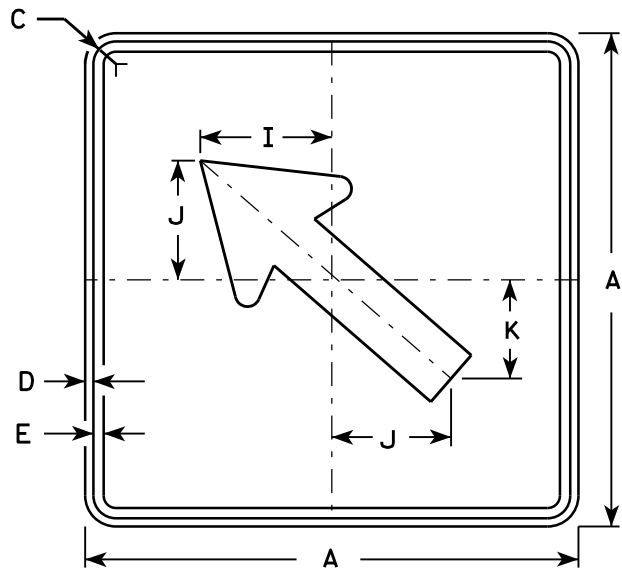
- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M5-1 and M5-2 Background - White - Type H Reflective  
Message - Black  
MB5-1 and MB5-2 Background - Blue  
Message - White - Type H Reflective  
MG5-1 and MG5-2 Background - Green  
Message - White - Type H Reflective  
MK5-1 and MK5-2 Background - Green  
Message - White Type H Reflective  
MM5-1 and MM5-2 Background - White - Type H Reflective  
Message - Green  
MN5-1 and MN5-2 Background - Brown  
Message - White - Type H Reflective  
M05-1 and M05-2 Background - Orange - Type F Reflective  
Message - Black  
MP5-1 and MP5-2 Background - White - Type H Reflective  
Message - Blue  
MR5-1 and MR5-2 Background - Brown  
Message - Yellow - Type H Reflective
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

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																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

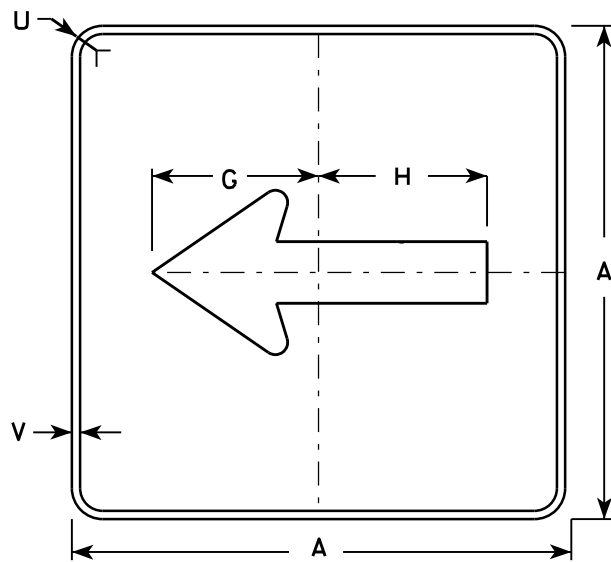
STANDARD SIGN	
M5-1 & M5-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/29/13	PLATE NO. M5-1.12



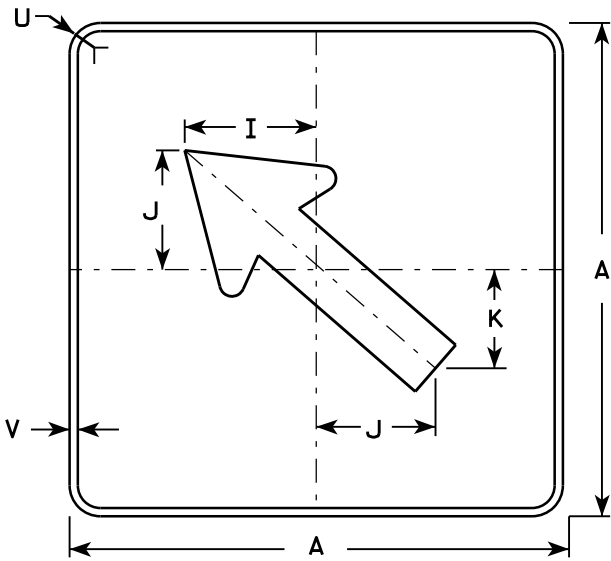
M6 - 1  
MK6 - 1  
MM6 - 1  
MN6 - 1  
M06 - 1  
MP6 - 1  
MR6 - 1



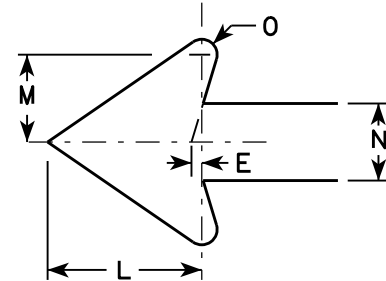
M6 - 2  
MK6 - 2  
MM6 - 2  
MN6 - 2  
M06 - 2  
MP6 - 2  
MR6 - 2



MB6 - 1



MB6 - 2



NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See note 4  
Message - See note 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.
- M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MG6-1 and MG6-2 Background - Green  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
M06-1 and M06-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

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																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN  
M6 - 1 & M6 - 2  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 7/03/14 PLATE NO. M6-1.14



R10-71



R10-71L



R10-71R

### 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 - 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.

																											R10-71L&R	R10-71
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 sq. ft.
1																												
2S	72	36	2 1/4	3/4	1	18	5	4	6	20 5/8	11 3/4	9 1/8	8 1/2	12 7/8	9 7/8	16 1/8	23 7/8	30	5 5/8	26 3/4	66	23 5/8	8 3/4	13	26 7/8	27	18.0	16.5
2M	72	36	2 1/4	3/4	1	18	5	4	6	20 5/8	11 3/4	9 1/8	8 1/2	12 7/8	9 7/8	16 1/8	23 7/8	30	5 5/8	26 3/4	66	23 5/8	8 3/4	13	26 7/8	27	18.0	16.5
3																												
4																												
5																												

### STANDARD SIGN

R10-71

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

for State Traffic Engineer

DATE 4/4/11 PLATE NO. R10-71.3

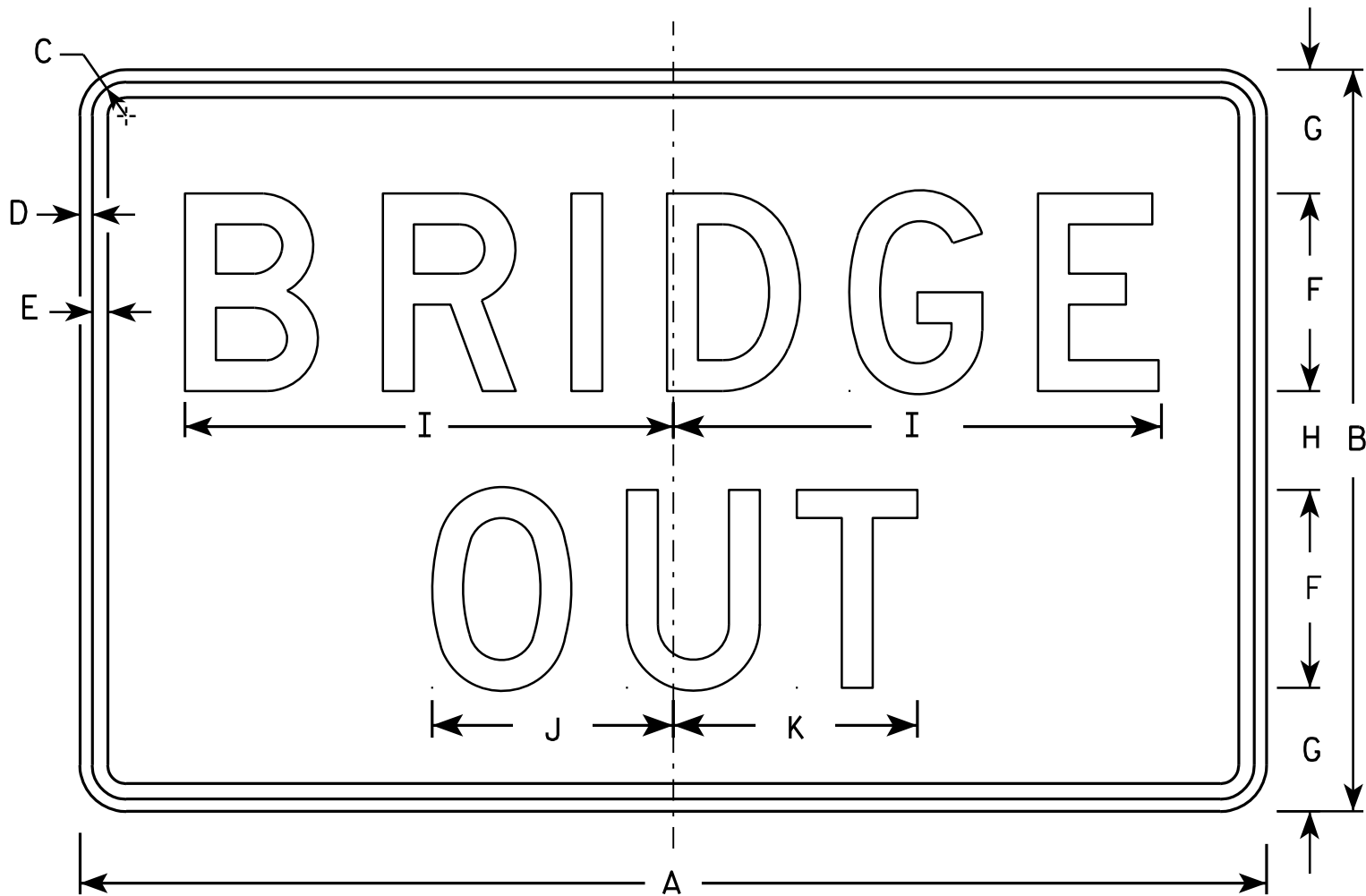
PROJECT NO:

SHEET NO:

E

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 - 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.



R11-2B

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	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

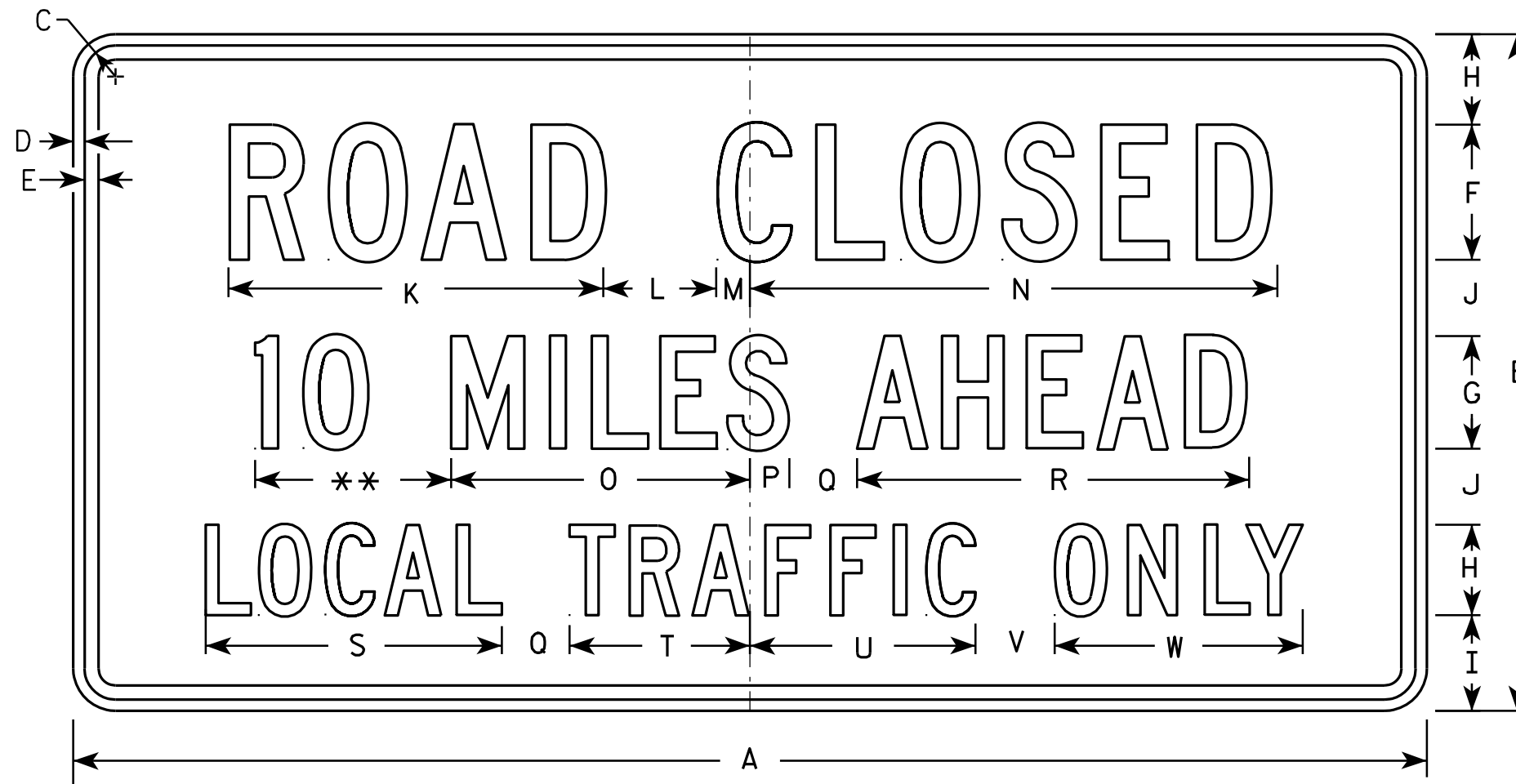
STANDARD SIGN

R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2



R11-3

#### 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 - 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.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

\*\* See Note 5

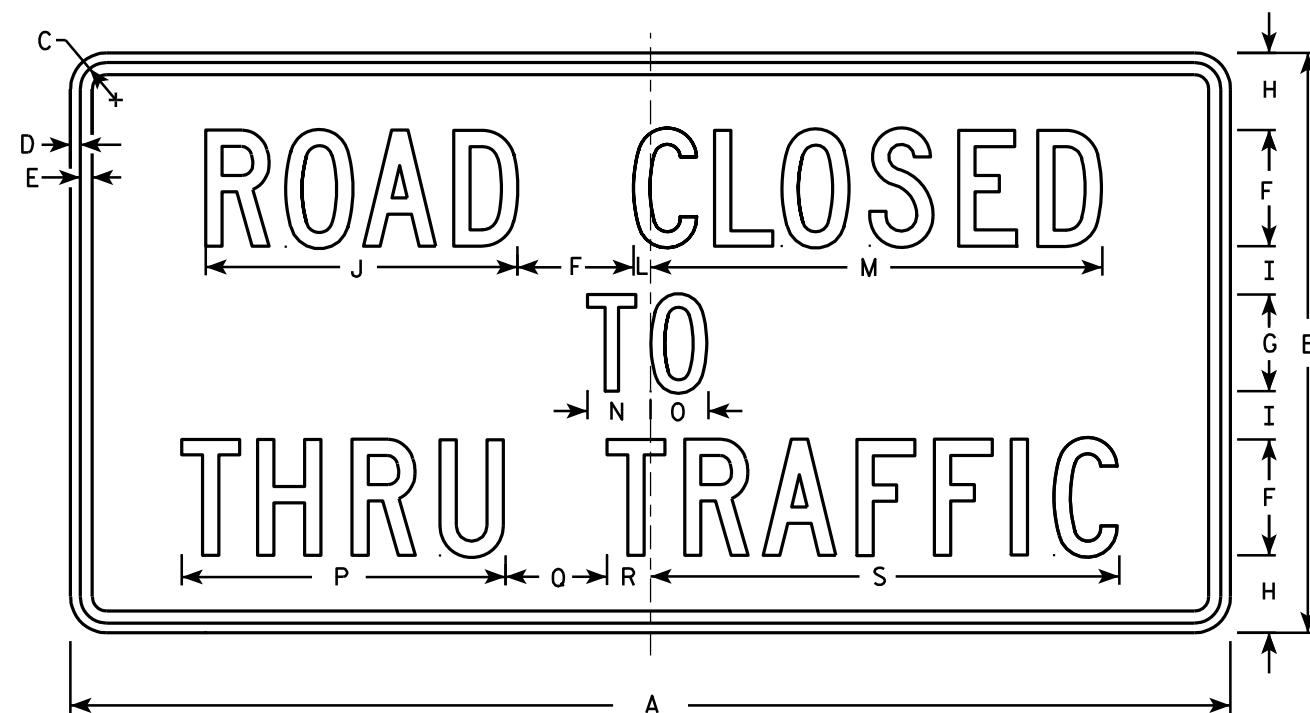
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	11 1/8	3	1 1/8	15 1/4	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4				4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
3																											
4																											
5																											

#### STANDARD SIGN R11-3

WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer  
DATE 4/1/11 PLATE NO. R11-3.6

PROJECT NO: HWY: COUNTY: SHEET NO: E





R11-4

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 - 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																											
2S	60	30	1 3⁄8	½	5⁄8	6	5	4	2 ½	16 ⅛		7⁄8	23 3⁄8	3 ¼	3	16 ¾	5 ¼	2 ¼	24 ¼								12.5
2M	60	30	1 3⁄8	½	5⁄8	6	5	4	2 ½	16 ⅛		7⁄8	23 3⁄8	3 ¼	3	16 ¾	5 ¼	2 ¼	24 ¼								12.5
3																											
4																											
5																											

STANDARD SIGN  
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

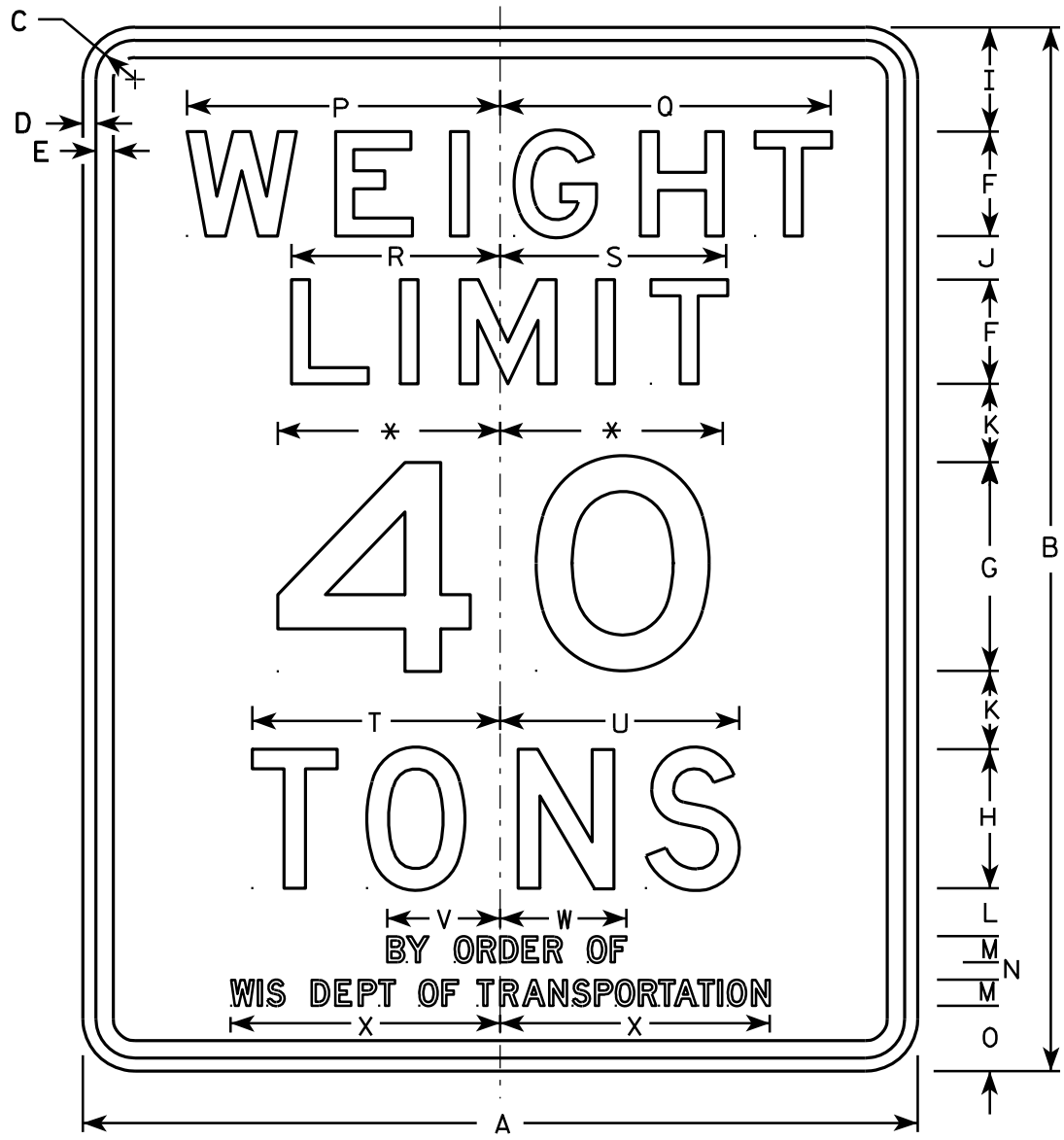
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R12-1

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 - 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, 2 & 3 are series E  
Lines 4, 5, & 6 are series D.
- 6. Substitute appropriate numeral and optically adjust spacing to achieve proper balance.
- 7. Substitute name of county or town on County Trunk and Town Highways respectively. Community name on City or Village Streets including Connecting Highways is optional.

\* Varies (see note 6)

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	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
2S	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
2M	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
3	36	48	1 3/8	1/2	5/8	6	10	8	4 1/2	2 1/2	2 1/4	1 1/2	3/4	1/2	3	13 1/2	14 1/4	9	9 3/4	10 5/8	10 1/4	3 1/4	3 5/8	7 3/4			12.0
4	48	60	2 1/4	3/4	1	6	12	8	6	2 1/2	4 1/2	2 3/4	1 1/2	1	3 3/4	18	19	12	13	14 1/4	13 3/4	6 1/2	7 1/4	15 1/2			20.0
5																											

STANDARD SIGN  
R12-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R12-1.8

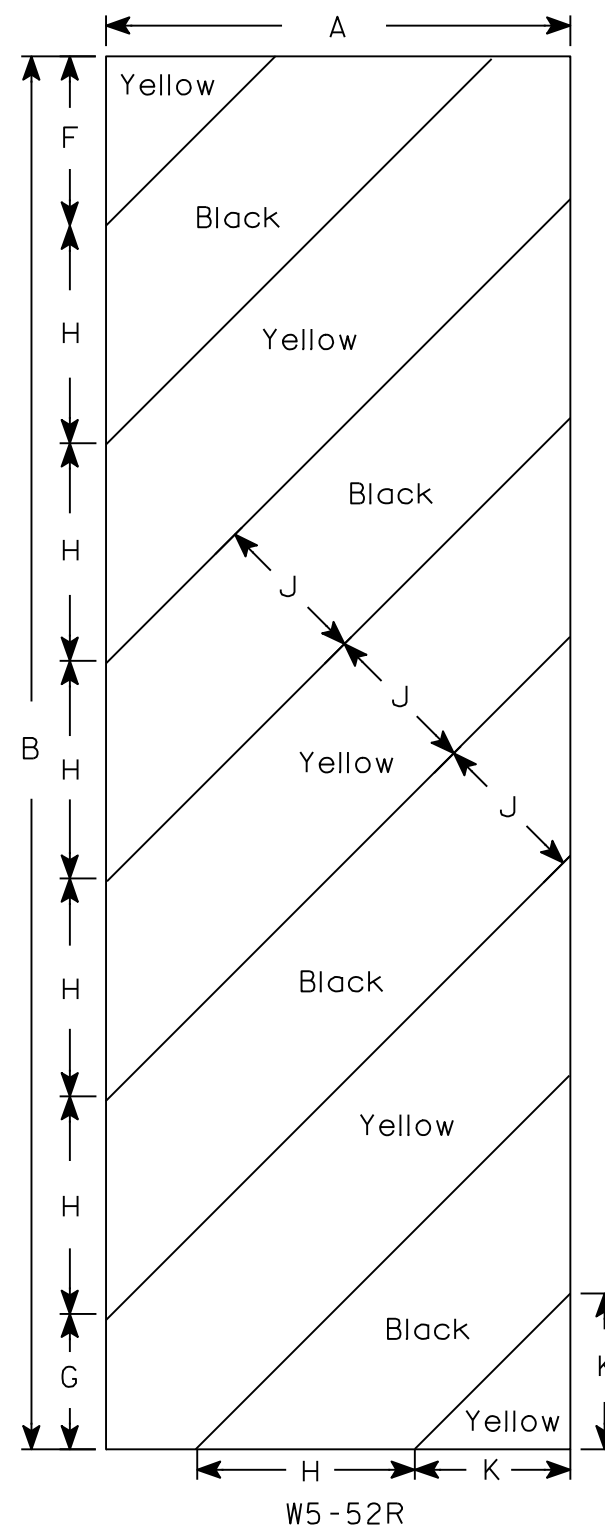
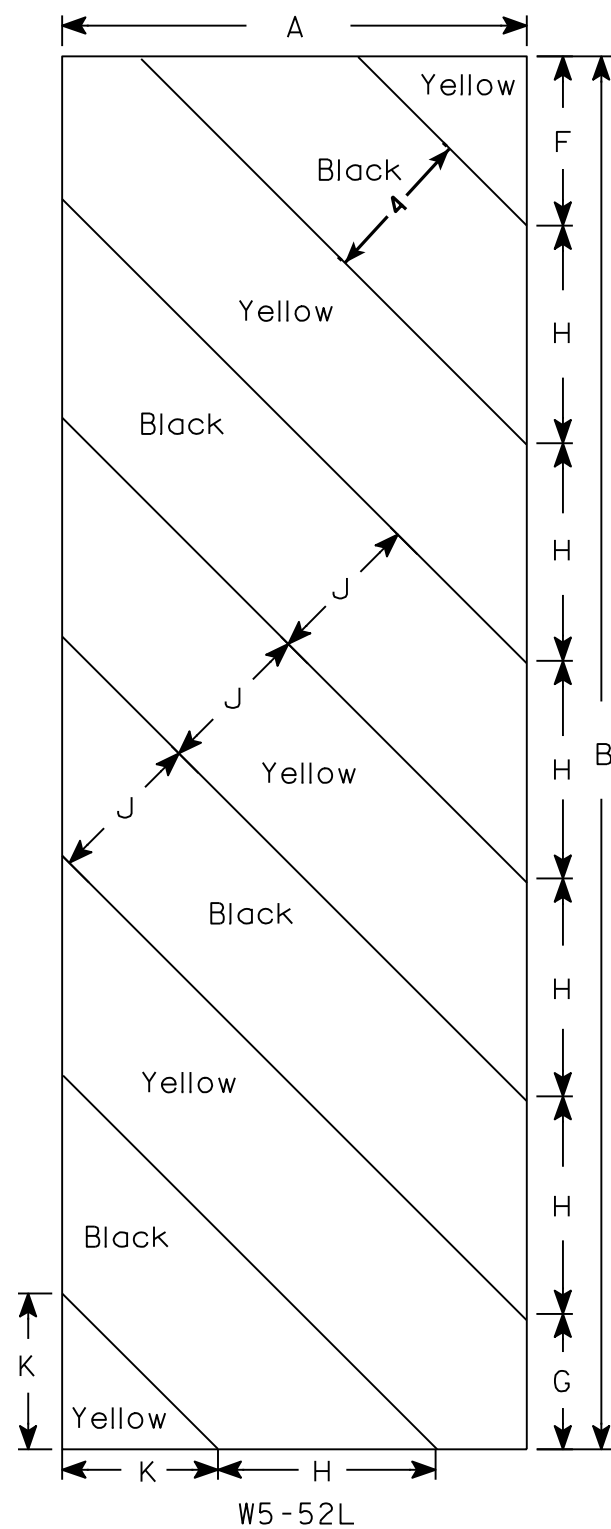
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



## 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. 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.

[illegible]

STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch  
for State Traffic Engineer  
DATE 5/29/12 PLATE NO. W5-52.9

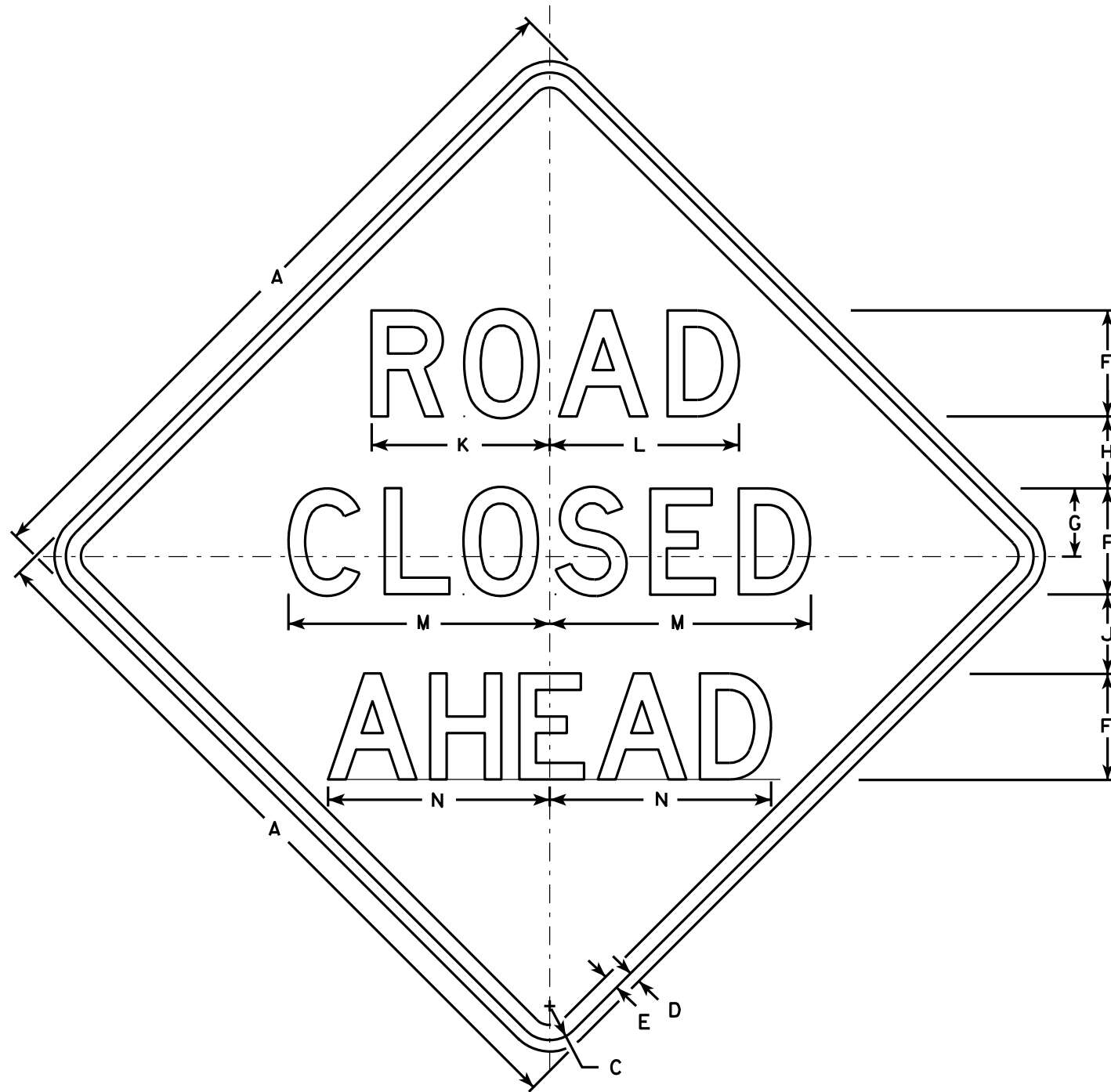
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

**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 - 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 D.  
Line 3 is Series D for AHEAD and Series C for all other distances.

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	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN  
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

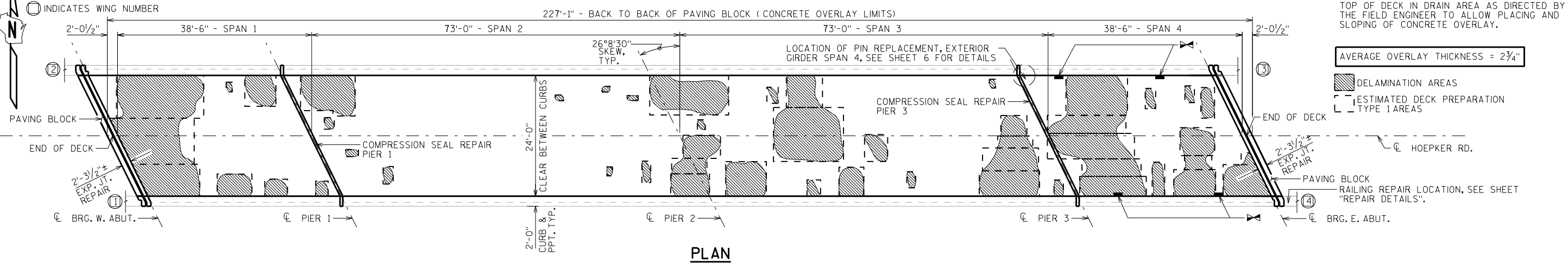
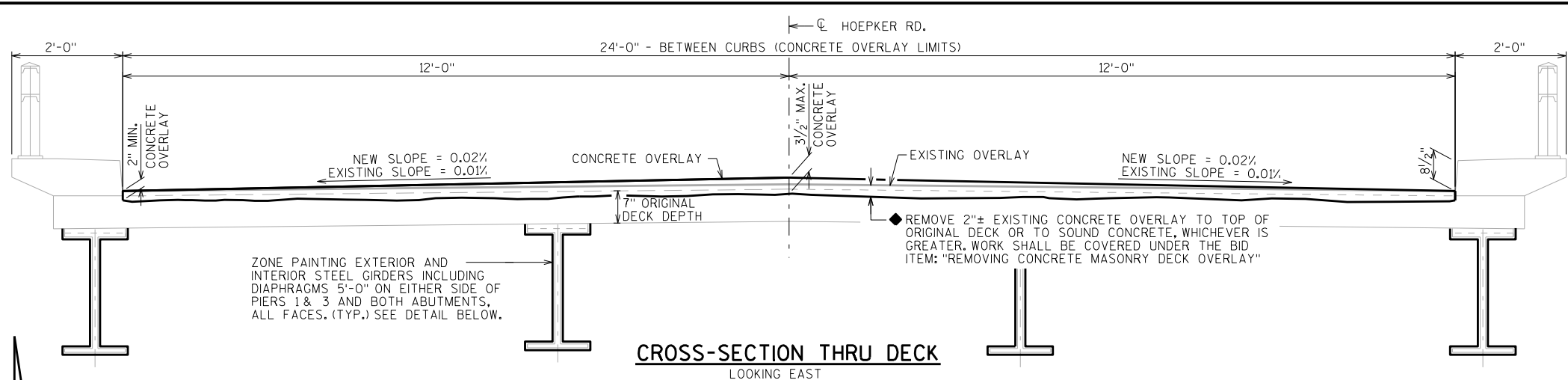
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



## DESIGN DATA

### LIVE LOAD:

INVENTORY RATING: HS-9  
OPERATING RATING: HS-15  
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 90(KIPS)

### MATERIAL PROPERTIES

CONCRETE MASONRY - DECK —  $f'_c = 4,000$  P.S.I.  
CONCRETE MASONRY - ALL OTHER —  $f'_c = 3,500$  P.S.I.  
BAR STEEL REINFORCEMENT, GRADE 60 —  $f_y = 60,000$  P.S.I.

## TRAFFIC VOLUME

HOEPKER RD.  
A.D.T.= 4,130 (2023)  
R.D.S.= 50 M.P.H.

IH 39/90/94  
A.D.T.= 91,640 (2023)  
R.D.S.= 70 M.P.H.

◆ CHECK DECK IN 3 LOCATIONS BEFORE REMOVAL TO BE SURE THE REMOVAL IS NOT CATCHING THE TOP REINFORCING MAT OF STEEL.

➤ FLOOR DRAINS TO REMAIN IN PLACE. REMOVE TOP OF DECK IN DRAIN AREA AS DIRECTED BY THE FIELD ENGINEER TO ALLOW PLACING AND SLOPING OF CONCRETE OVERLAY.

AVERAGE OVERLAY THICKNESS =  $2\frac{3}{4}$ "

DELAMINATION AREAS

ESTIMATED DECK PREPARATION TYPE 1 AREAS

## TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
502.2000	COMPRESSION JOINT SEALER PREFORMED ELASTOMERIC 3-INCH	LF	62
502.3100	EXPANSION DEVICE B-13-100	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	760
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	58
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1440
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	16
506.7050.S	REMOVING BEARINGS B-13-100	EACH	16
509.0301	PREPARATION DECKS TYPE 1	SY	205
509.0302	PREPARATION DECKS TYPE 2	SY	100
509.1000	JOINT REPAIR	SY	17
509.1200	CURB REPAIR	LF	60
509.1500	CONCRETE SURFACE REPAIR	SF	320
509.2000	FULL-DEPTH DECK REPAIR	SY	10
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	72
509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY	SY	610
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-13-100	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-13-100	LS	1
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	4
SPV.0060	MASONRY ANCHORS TYPE L NO. 8 BARS SPECIAL	EACH	8
SPV.0060	PIN REPLACEMENT	EACH	1
SPV.0060	RAILING REPAIR	EACH	1
SPV.0105	PERMANENT CRIBBING	LS	1
NON-BID ITEMS:			
	BRIDGE SEAT PROTECTION	LS	1

◆ CONCRETE SURFACE REPAIR ON SUBSTRUCTURE AS DIRECTED BY THE FIELD ENGINEER.

▲ BID ITEM INCLUDES CONCRETE FOR PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, JOINT REPAIR, CURB REPAIR, AND FULL-DEPTH DECK REPAIR.

●● BID ITEM INCLUDES MASONRY ANCHORS FOR ANCHORED LAMINATED ELASTOMERIC BEARINGS.

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.  
DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.  
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, JOINT REPAIR SURFACES AND THE CURB FROM END TO END.

ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

APPLY BRIDGE SEAT PROTECTION, PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF ALL ABUTMENTS BELOW EXPANSION DEVICES. POWER WASH AND ADEQUATELY DRY SURFACES BEFORE APPLICATION. WORK TO BE INCIDENTAL TO "JOINT REPAIR".

CONTACT THE STRUCTURES DESIGN SECTION BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN  $\frac{1}{2}$ ".

● CLEAN AND PAINT ALL EXISTING EXPOSED SUPERSTRUCTURE STEEL WITHIN 5'-0" OF THE ENDS OF GIRDERS (BOTH ABUTMENTS AND PIERS 1&3) INCLUDING GIRDERS, DIAPHRAGMS AND HARDWARE. THE COLOR SHALL BE BLUE (FEDERAL COLOR #25240) OR SIMILAR COLOR APPROVED BY THE FIELD ENGINEER.

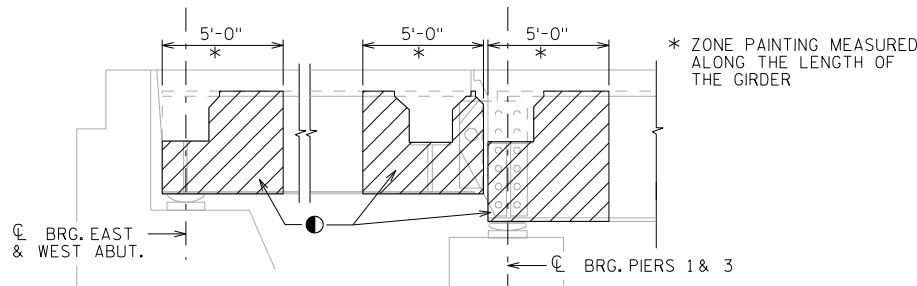
➤ CLEAN AND PAINT ALL BEARINGS AT PIER 2. FINISH COLOR IS TO BE BLUE (FEDERAL COLOR #25240) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, FULL-DEPTH DECK REPAIR, CURB REPAIR AND CONCRETE SURFACE REPAIR AREAS ARE FOR INFORMATIONAL PURPOSES ONLY AND FINAL AREAS TO BE DETERMINED BY THE FIELD ENGINEER. PREPARATION DECKS TYPE 2 AREAS ESTIMATED AT APPROXIMATELY 50% OF TYPE 1 AREAS FOR THIS BRIDGE.

PERMANENT CRIBBING TO BE PLACED AT ALL BEARINGS ON PIERS 1 AND 3, TO BE PAID FOR UNDER BID ITEM "PERMANENT CRIBBING".

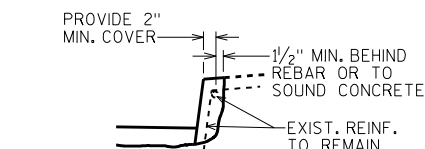
ADJUSTMENTS TO PLAN HEIGHTS OF PROPOSED BEARINGS OR PERMANENT CRIBBING SHALL BE THE CONTRACTORS RESPONSIBILITY AND CONSIDERED INCIDENTAL TO THE RESPECTIVE BID ITEMS.



## ZONE PAINTING DETAIL

### STRUCTURE DESIGN CONTACTS:


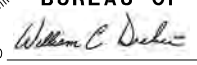
EMILY KUEHNE (608) 266-5089  
AARON BONK (608) 261-0261



## CURB REPAIR DETAIL

## LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. JOINT REPAIR
3. EXPANSION JOINT DETAILS
4. COVER PLATE DETAILS
5. COMPRESSION JOINT SEALER
6. REPAIR DETAILS
7. BEARING REPLACEMENT 1
8. BEARING REPLACEMENT 2
9. PERMANENT CRIBBING

NO.	DATE	REVISION	BY
 Plans Prepared By <b>WISDOT</b> <b>BUREAU OF STRUCTURES</b>			
ACCEPTED  <b>4/1/15</b> CHIEF STRUCTURES DESIGN ENGINEER DATE			
<b>STRUCTURE B-13-100</b>			
HOEPKER RD OVER IH-39/90/94			
COUNTY	DANE	TOWN/CITY/VILLAGE	BURKE
DESIGN SPEC.	REHABILITATION	N/A	
DESIGN BY	EMK	DESIGN CKD.	DVB
DRAWN BY	EMK	PLANS CKD.	DVB
<b>CONCRETE OVERLAY</b>			SHEET 1 OF 9

I.D. 1011-04-01

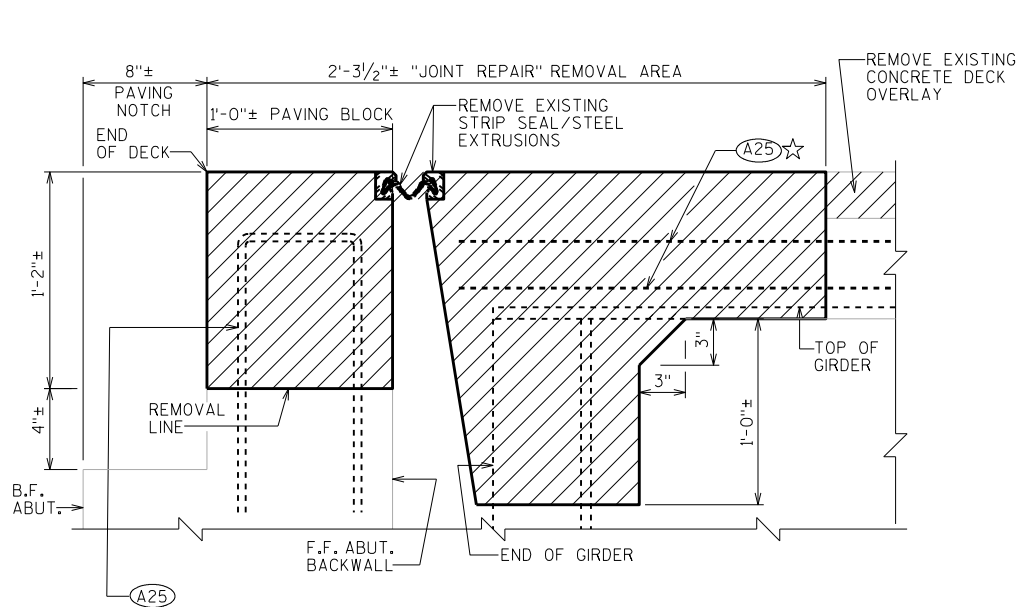
DATE: JAN. 2015

SCALE = 10'-0"

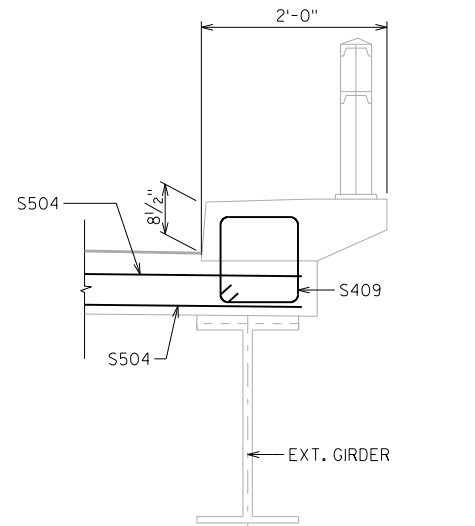
NOTE:  
THE FIRST DIGIT OF THE BAR  
MARK SIGNIFIES THE BAR SIZE.

## BILL OF BARS

BAR MARK	COAT	NO. REQ'D.		LENGTH	BENT	LOCATION
WEST ABUT.	EAST ABUT.					
S401	X	29	29	3-3	X	PAVING BLOCK - VERT. - STIRRUP
S502	X	12	12	8-2		PAVING BLOCK - HORIZ.
S503	X	29	29	3-3	X	PAVING BLOCK & EXIST. ABUT. BACKWALL - VERT. - L BAR
S504	X	10	10	15-11		DECK - HORIZ. - TRANS. - TOP & BOT.
S405	X	6	6	8-10		DECK - HORIZ. - TRANS. - BETWEEN GIRDERS
S406	X	39	39	3-4	X	DIAPHRAGM STIRRUPS
S407	X	6	6	8-10		DECK - HORIZ. - TRANS. - BETWEEN GIRDERS
S608	X	9	9	8-10		DIAPHRAGM - HORIZ. - TRANS. - BETWEEN GIRDERS
S409	X	4	4	4-4	X	DECK AND CURB STIRRUP

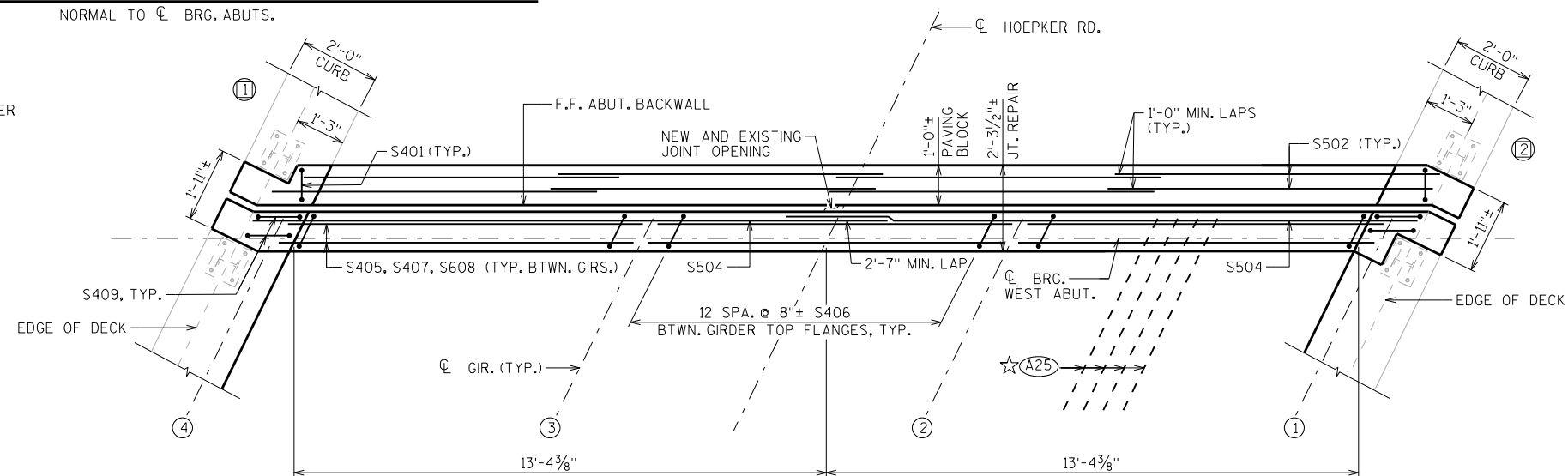


## SECTION THRU EXISTING JOINTS AT BOTH ABUTMENTS

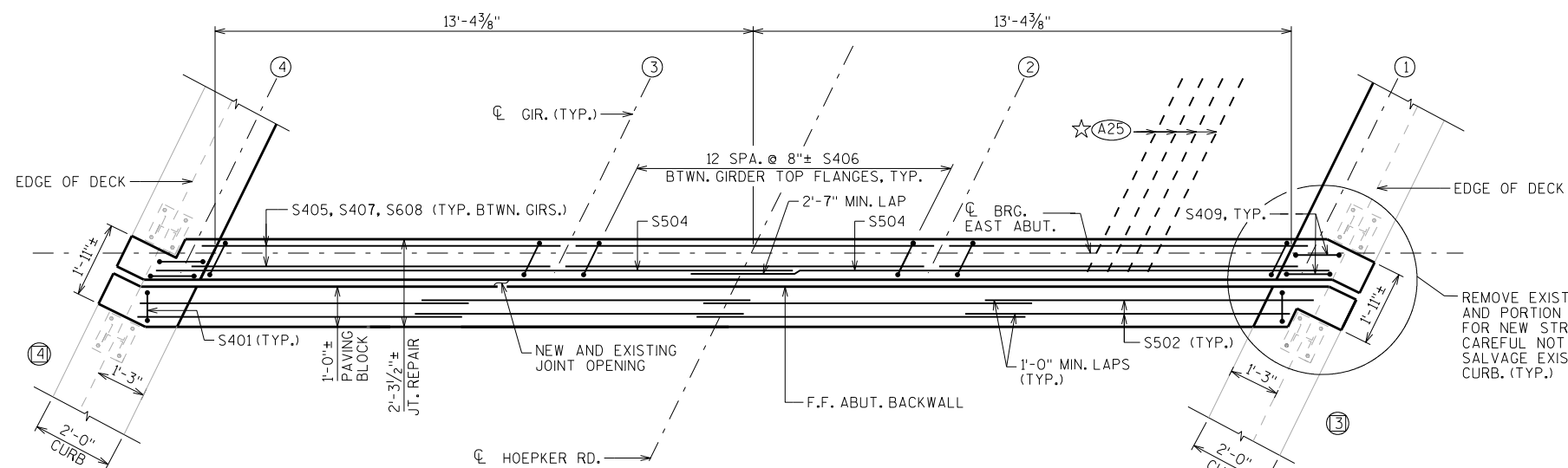
NORMAL TO  $\phi$  BRG. ABUTS.

## SECTION THRU CURB AT DECK

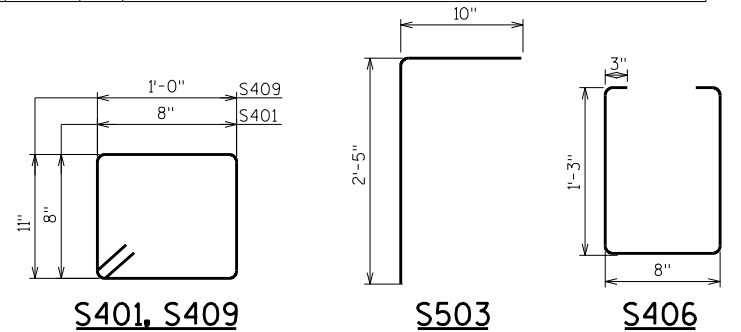
- ① INDICATES WING NUMBER  
○ INDICATES GIRDER NUMBER



## WEST ABUTMENT EXPANSION JOINT REPAIR PLAN



## EAST ABUTMENT EXPANSION JOINT REPAIR PLAN



(A23) MASONRY ANCHORS TYPE L NO. BARS, EMBED 1'-6" IN EXIST. CONCRETE. ROTATE 10" LEG OF BARS AS NECESSARY TO FIT.

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. TRIM REBAR AS NECESSARY TO ACCOMMODATE NEW JOINT OPENING.

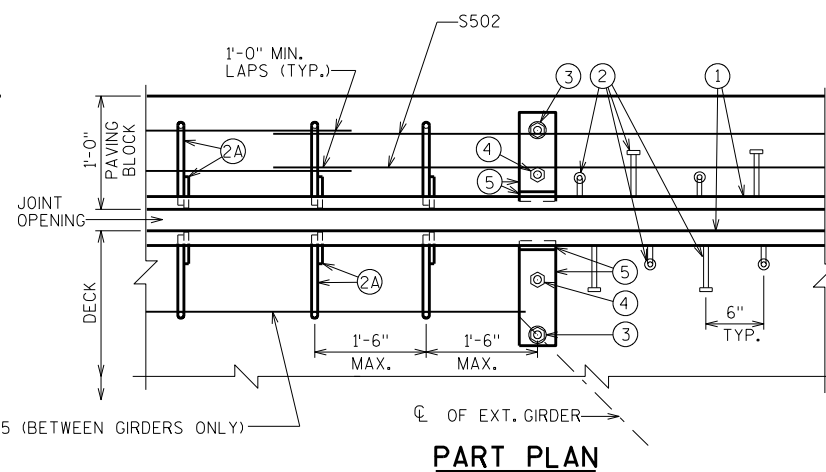
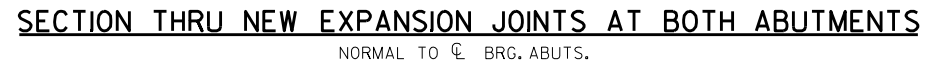
☆ IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY ANCHORED COATED NO. 5 L-SHAPED BARS WITH A 10" HORIZ. LEG. EMBED BARS 7" MIN INTO EXISTING CONC. PLACE 4" CL. MIN. OF VERT. CONC. FACE. WORK TO BE PAID FOR UNDER BID ITEM "JOINT REPAIR".

## GENERAL NOTES

CURB REPLACEMENT SHALL BE INCLUDED UNDER THE BID ITEM "JOINT REPAIR".

SEE SHEET 3 FOR THE NEW EXPANSION DEVICE & JOINT DETAILS WITHIN THE NEW JOINT REPAIR AREAS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-100			
DRAWN BY EMK		PLANS CK'D. DVB	
JOINT REPAIR			SHEET 2



STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE  
WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-13-100".

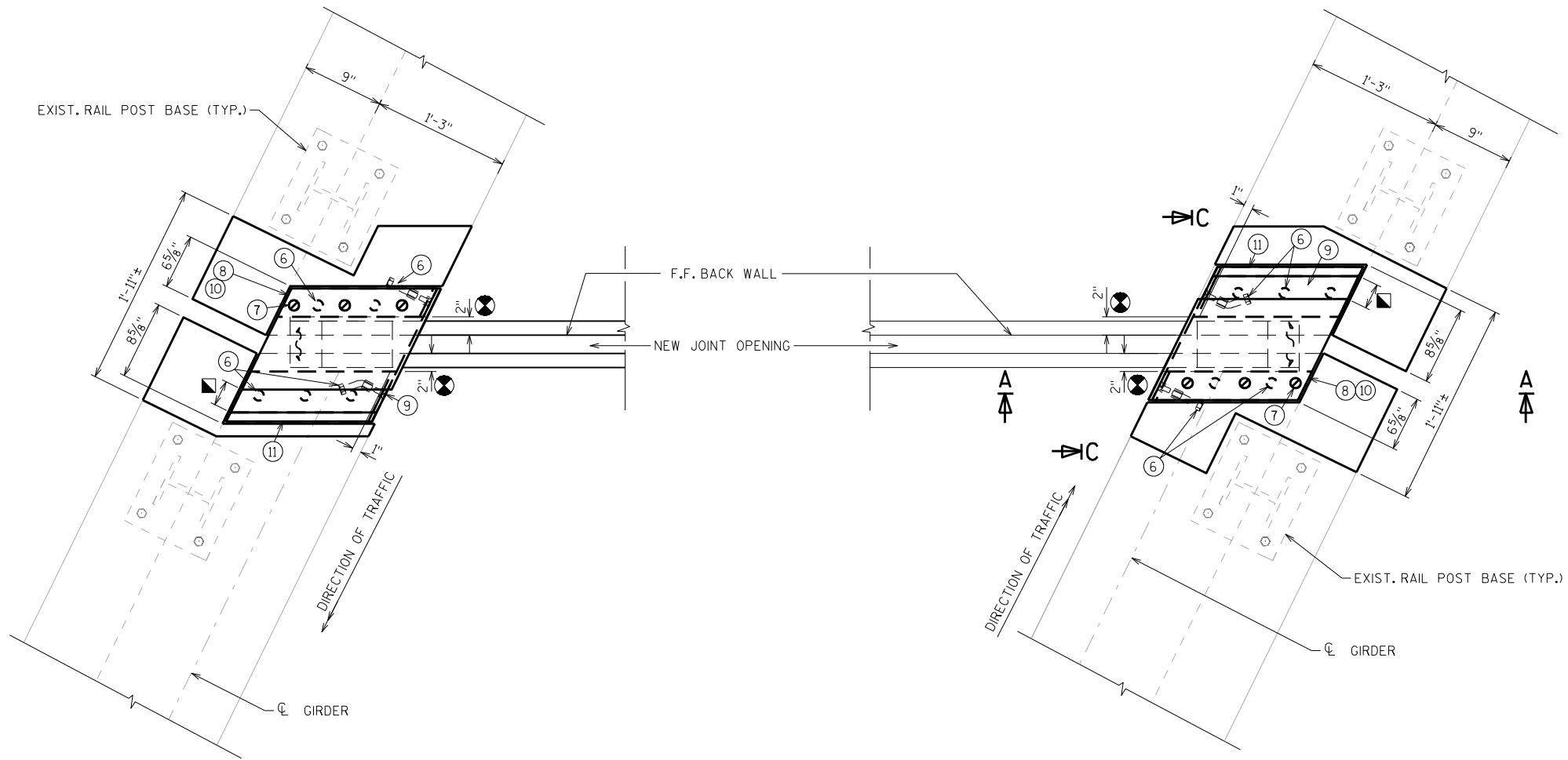
- (1) NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- (2) STUDS  $\frac{5}{8}" \phi$  X  $6\frac{3}{8}"$  LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- (2A)  $\frac{1}{2}"$  THICK ANCHOR PLATE WITH  $\frac{5}{8}" \phi$  ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- (3)  $\frac{3}{4}" \phi$  THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- (4)  $\frac{3}{4}" \phi$  THREADED ROD WITH NUT. TACK WELD NUT TO NO.5.
- (5) FABRICATE SUPPORT FROM 3" X  $\frac{1}{2}"$  BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO.1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE  $1\frac{1}{2}" \phi$  HOLE FOR NO.3 AND 1"  $\phi$  HOLE FOR NO.4.
- (6) ANCHOR STUDS  $\frac{5}{8}" \phi$  X  $6\frac{3}{8}"$  LONG. WELD TO NO.8 & 9 AS SHOWN.
- (7)  $\frac{3}{4}" \phi$  X  $1\frac{1}{2}"$  STAINLESS STEEL SOCKET FLAT HEAD SCREWS & HEX HEAD NUT. PLACE IN COUNTER SUNK HOLE. WELD TO NO.8. PROVIDE NUT WITH 1" DEEP PLASTIC CAP OVER NUT TO KEEP CONC. FROM ENTERING BOLT CAVITY.
- (8) PLATE  $\frac{3}{8}"$  X LIMITS SHOWN. - CUT TO CLEAR BLOCK OUT. BEND AS SHOWN. PROVIDE HOLES FOR NO.7.
- (9) PLATE  $\frac{3}{8}"$  X LIMITS SHOWN. - CUT TO CLEAR BLOCK OUT. BEND AS SHOWN.
- (10) PLATE  $\frac{3}{8}"$  X LIMITS SHOWN. - PROVIDE COUNTERSUNK HOLES FOR NO.7. BEND AS SHOWN.
- (11) BAR 1" X  $\frac{3}{8}"$  LIMITS SHOWN. - WELD TO NO.9. BEND AS SHOWN.

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. TRIM REBAR AS NECESSARY TO ACCOMMODATE NEW JOINT OPENING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION <b>STRUCTURES DESIGN SECTION</b>			
<b>STRUCTURE B-13-100</b>			
DRAWN BY EMK		PLANS CK'D. <b>DVB</b>	
<b>EXPANSION JOINT DETAILS</b>		SHEET 3	

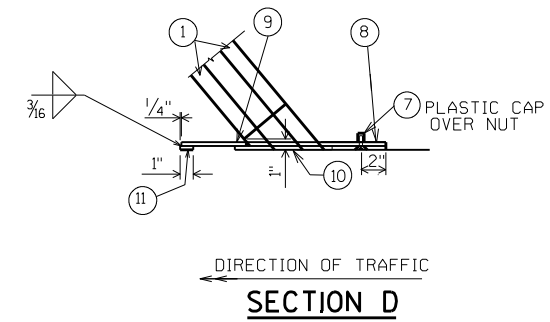
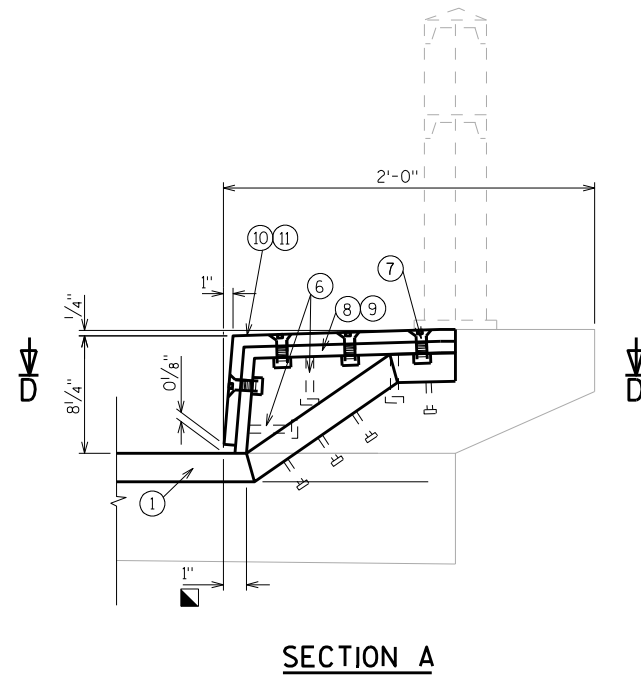
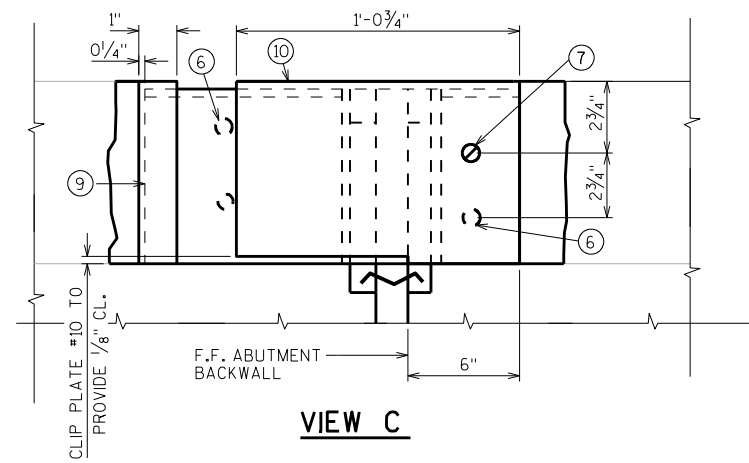


- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.  
 ▣ JOINT OPENING DIM. ALONG SKEW PLUS 1/2".



PLAN DETAIL AT WINGS 1 &amp; 3 CORNERS

PLAN DETAIL AT WINGS 2 &amp; 4 CORNERS

**GENERAL NOTES**

SEE SHEET 3 FOR COVER PLATE LEGEND.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-100			
DRAWN BY EMK		PLANS CK'D. DVB	
COVER PLATE DETAILS		SHEET 4	

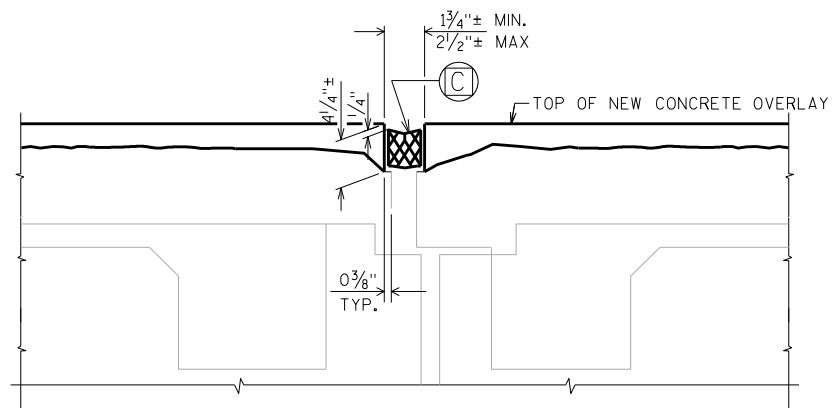


(C) COMPRESSION JOINT SEALER  
PREFORMED ELASTOMERIC

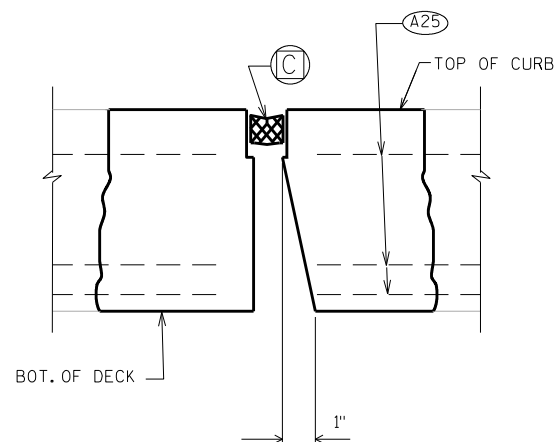
(A25) SALVAGE EXIST. REINF. & EXTEND FULL  
LENGTH INTO NEW WORK. TRIM REBAR  
AS NECESSARY TO ACCOMMODATE NEW  
JOINT OPENING.

**NOTES**

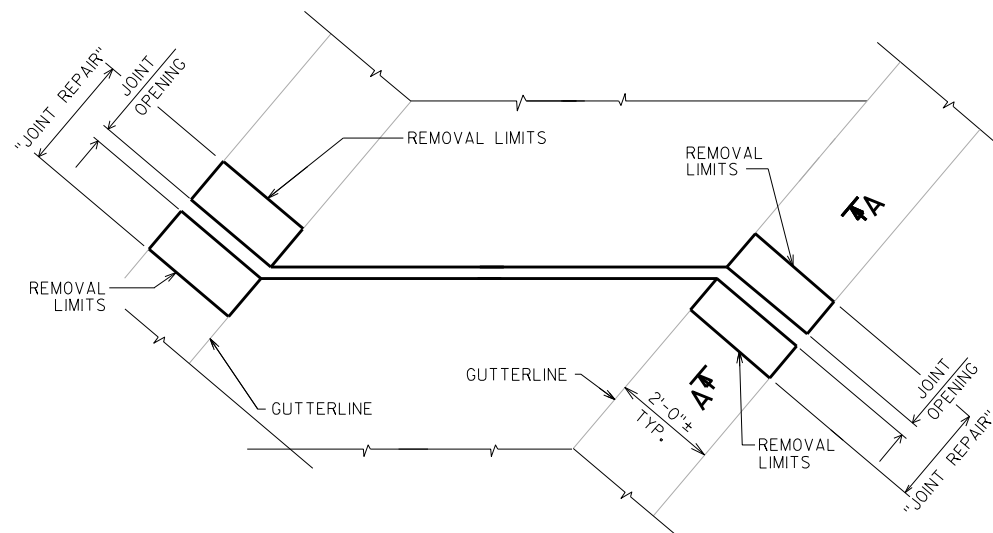
REMOVAL LIMITS TO BE DETERMINED  
BY FIELD ENGINEER.



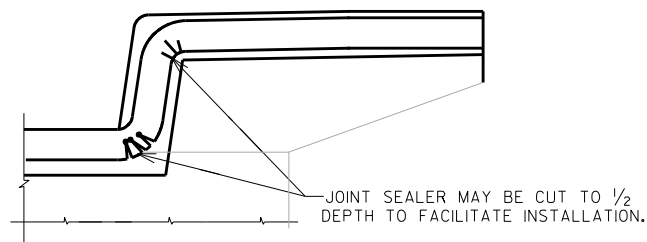
SECTION THRU PROPOSED JOINT AT PIERS 1 &amp; 3



SECTION A



PLAN OF JOINT AT PIERS 1 &amp; 3



SECTION AT CURB

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-100			
DRAWN BY EMK		PLANS CK'D. DVB	
COMPRESSION JOINT SEALER			SHEET 5



REPLACE EXISTING PIN WITH A 2 1/2"φ STAINLESS STEEL PIN CONFORMING TO ASTM 276, TYPE S20161 OR EQUAL.

BORE OUT EXISTING PIN HOLE TO A DIAMETER EQUAL TO THE NEW PIN DIAMETER PLUS 0.005" TO 0.02". GREASE INSIDE SURFACE OF HOLE. BORING PROCEDURE TO BE APPROVED BY FIELD ENGINEER.

GIRDER TO BE SUPPORTED DURING RETRO-FIT.

ALL MATERIAL AND WORK INVOLVED SHALL BE PAID FOR IN BID ITEM "PIN REPLACEMENT".

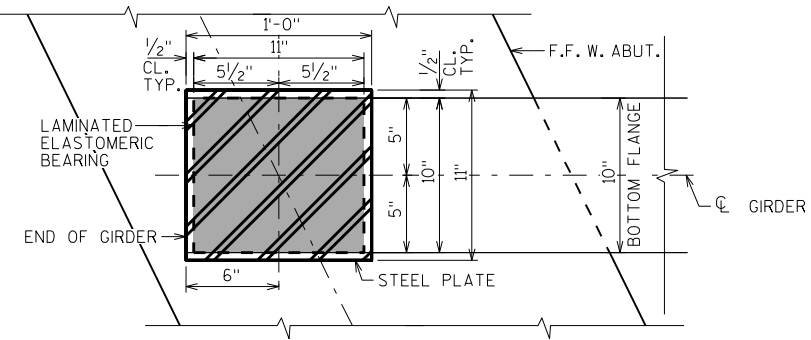
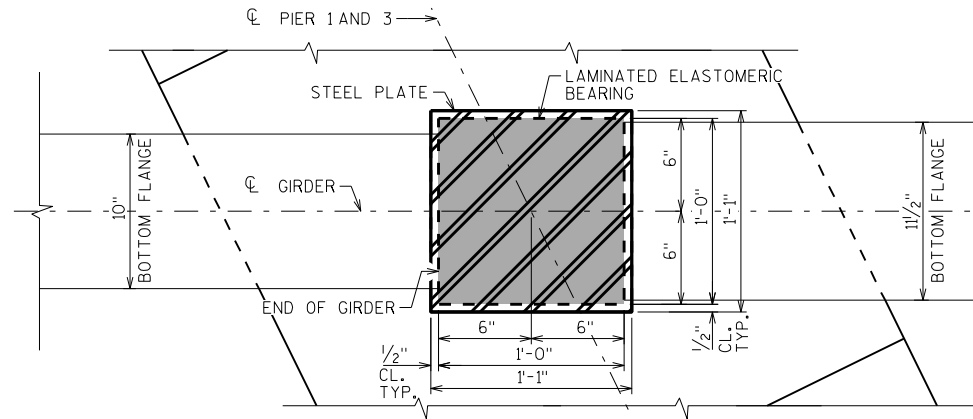
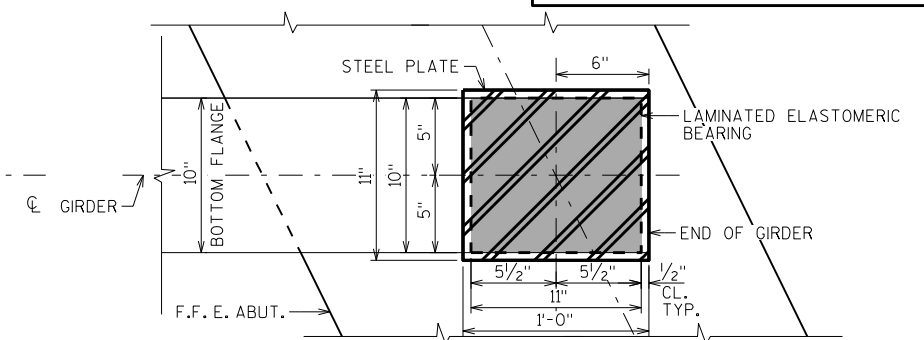
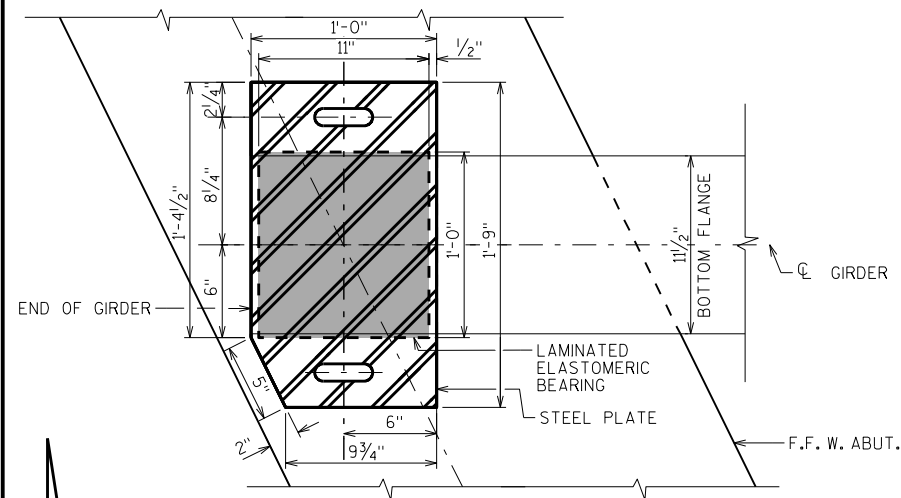
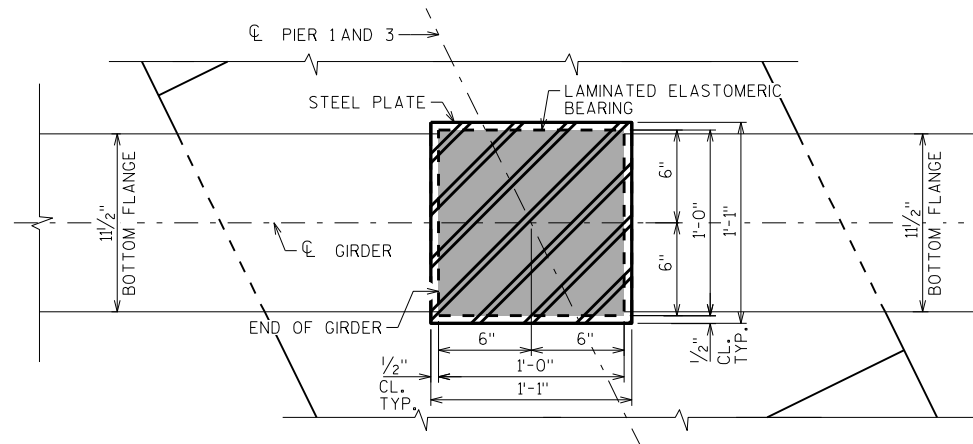
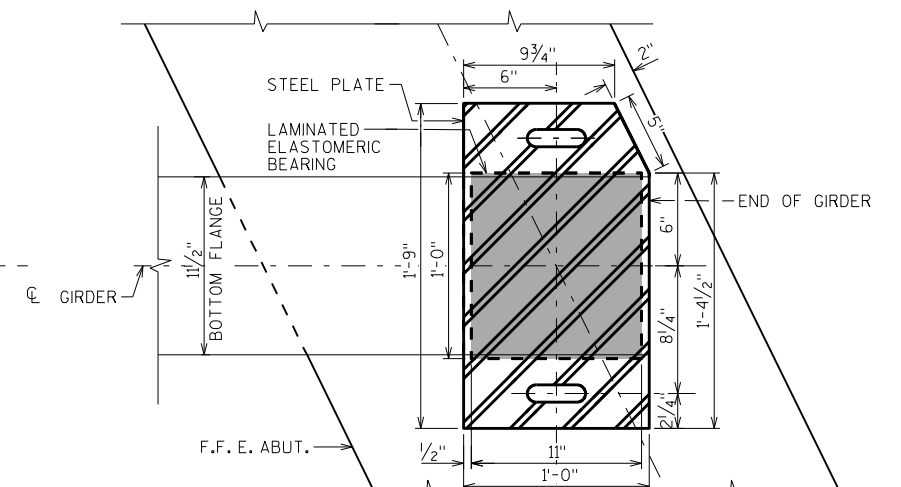
## PIN REPLACEMENT DETAILS



ANCHOR BOLT, NUT AND WASHER SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLT, NUT, AND WASHER SHALL BE GALVANIZED

PLATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709  
GRADE 36.

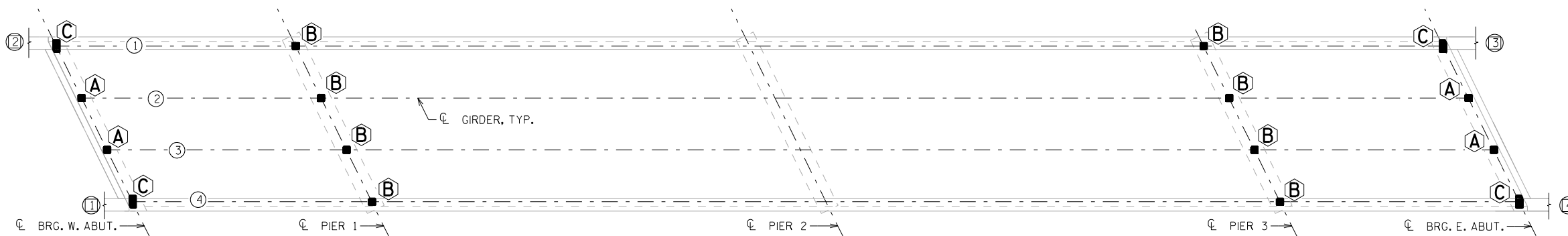
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION <b>STRUCTURES DESIGN SECTION</b>			
<b>STRUCTURE B-13-100</b>			
DRAWN BY EMK		PLANS CK'D. <b>DVB</b>	
<b>REPAIR DETAILS</b>		SHEET 6	

**BEARING TYPE: A**INTERIOR GIRDERS  
WEST ABUTMENT**BEARING TYPE: B**INTERIOR GIRDERS  
PIERS 1 AND 3**BEARING TYPE: A**INTERIOR GIRDERS  
EAST ABUTMENT**BEARING TYPE: C**EXTERIOR GIRDERS  
WEST ABUTMENT**BEARING TYPE: B**EXTERIOR GIRDERS  
PIERS 1 AND 3**BEARING TYPE: C**EXTERIOR GIRDERS  
EAST ABUTMENT

LAMINATED ELASTOMERIC BEARING

STEEL PLATE

- INDICATES WING NUMBER  
 GIRDER NUMBER  
 BEARING TYPE

**PLAN**

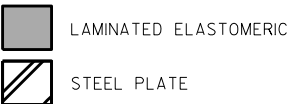
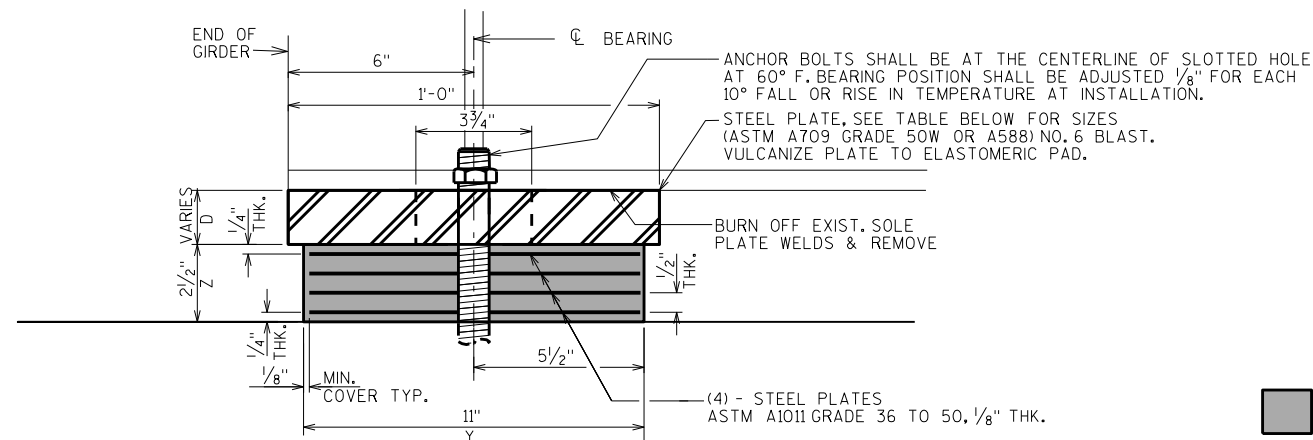
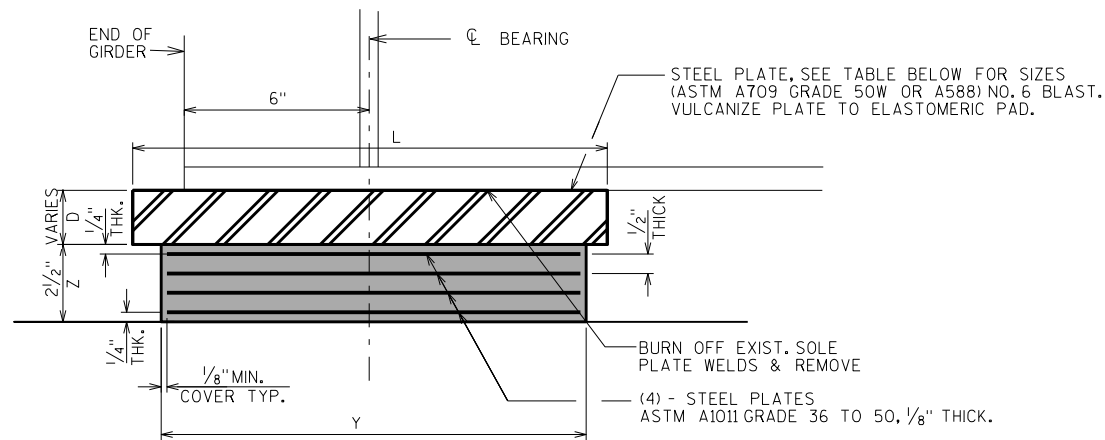
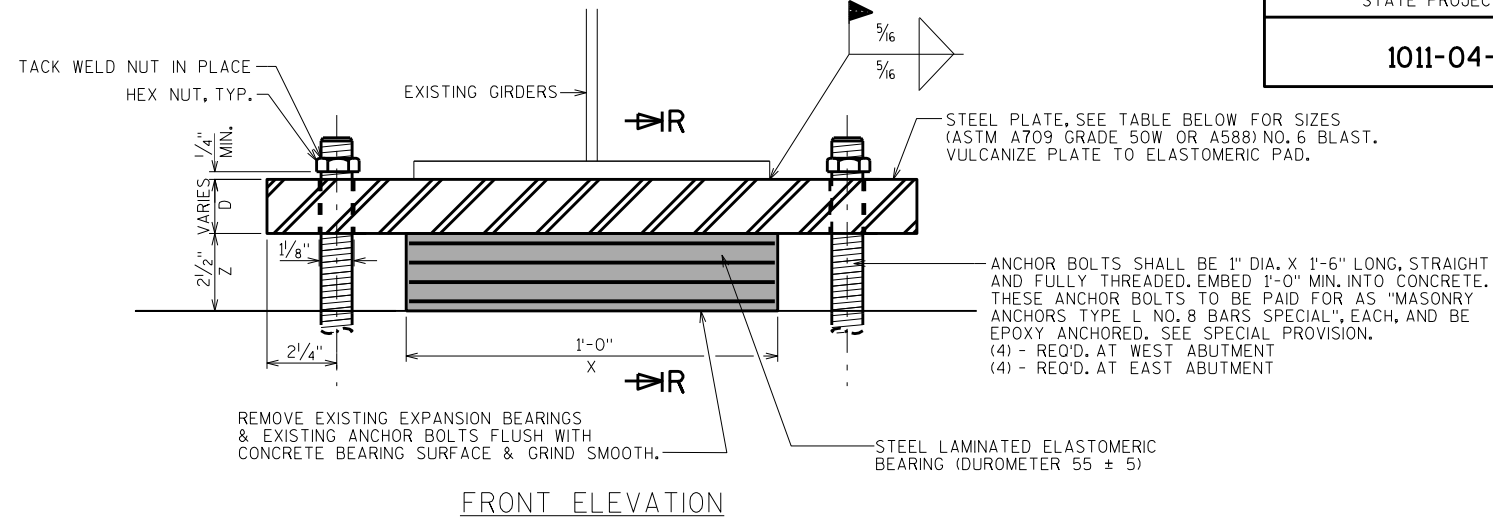
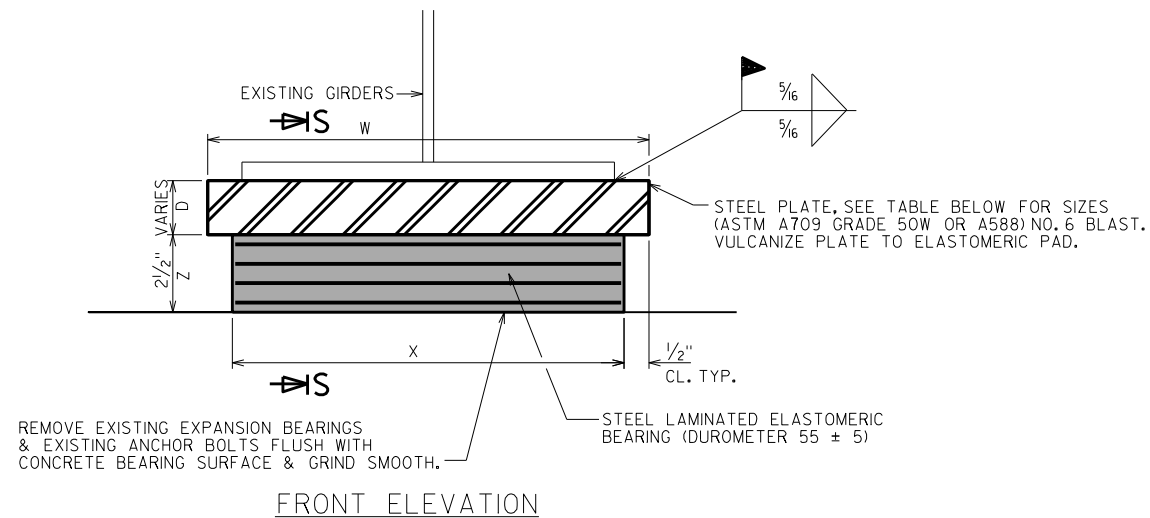
(SHOWING LOCATIONS OF BEARING TYPES)

ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED".

ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-100			
DRAWN BY EMK		PLANS CK'D. DVB	
BEARING REPLACEMENT 1		SHEET 7	

**BEARING TYPE: A AND B**

(SEE BEARING TYPE LOCATIONS PLAN VIEW SHEET 7)

**BEARING TYPE: C**

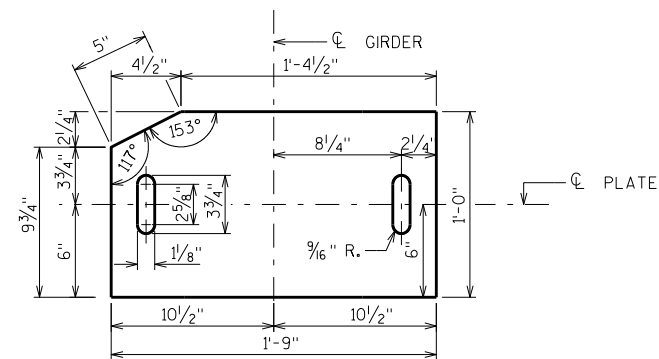
(SEE BEARING TYPE LOCATIONS PLAN VIEW SHEET 7)

**EXPANSION BEARING REPLACEMENT - STEEL GIRDERS  
ELASTOMERIC BEARINGS**

BEARING LOCATION	BEARING TYPE	DIMENSION		
		W	L	D
WEST ABUT.	GIRDER 1	C	SEE DETAIL CC	2 1/8"
	GIRDER 2	A	11"	1'-0"
	GIRDER 3	A	11"	1'-0"
	GIRDER 4	C	SEE DETAIL CC	2"
PIER 1	GIRDER 1	B	1'-1"	1'-1"
	GIRDER 2	B	1'-1"	1'-1"
	GIRDER 3	B	1'-1"	1'-1"
	GIRDER 4	B	1'-1"	1'-1"
PIER 3	GIRDER 1	B	1'-1"	1'-1"
	GIRDER 2	B	1'-1"	1'-1"
	GIRDER 3	B	1'-1"	1'-1"
	GIRDER 4	B	1'-1"	1'-1"
EAST ABUT.	GIRDER 1	C	SEE DETAIL CC	2 1/4"
	GIRDER 2	A	11"	1'-0"
	GIRDER 3	A	11"	1'-0"
	GIRDER 4	C	SEE DETAIL CC	2"

**STEEL PLATE SIZES**

BEARING TYPE	DIMENSION			NUMBER REQUIRED
	X	Y	Z	
A	10"	11"	2 1/2"	4
B	1'-0"	1'-0"	2 1/2"	8
C	1'-0"	11"	2 1/2"	4

**LAMINATED ELASTOMERIC SIZES**

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.

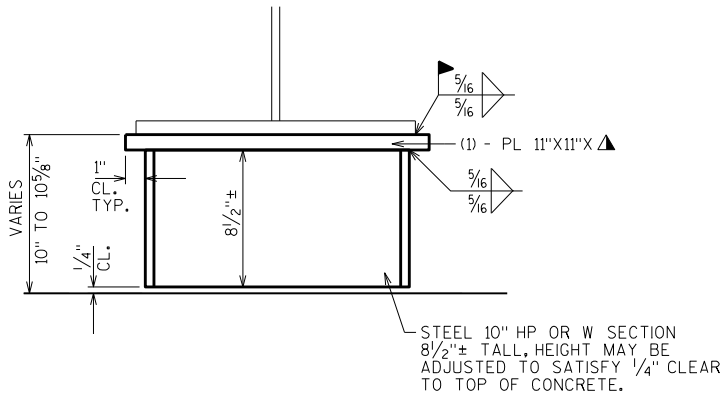
ON BEARING REPLACEMENTS, COMPRESSION LOAD AND ADHESION TESTS WILL BE WAIVED WHERE BEARINGS ARE DETAILED TO MEET HEIGHT REQUIREMENTS.

ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED".

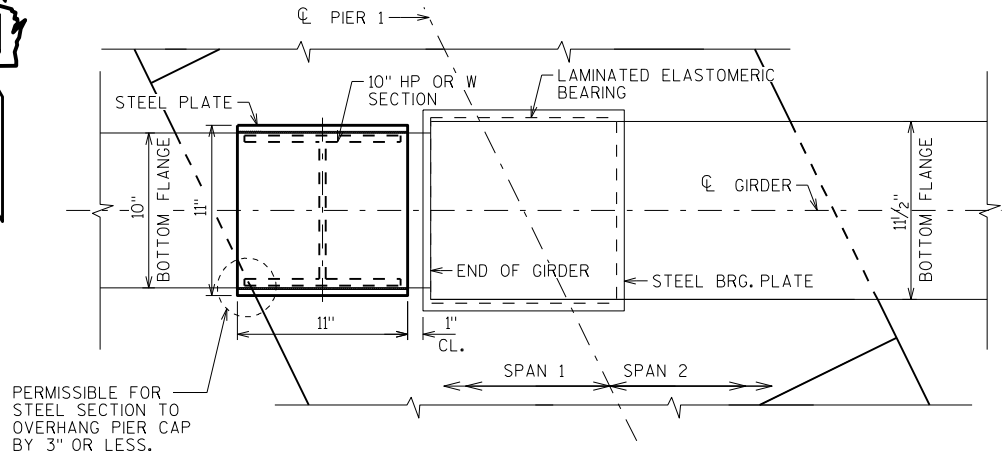
ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

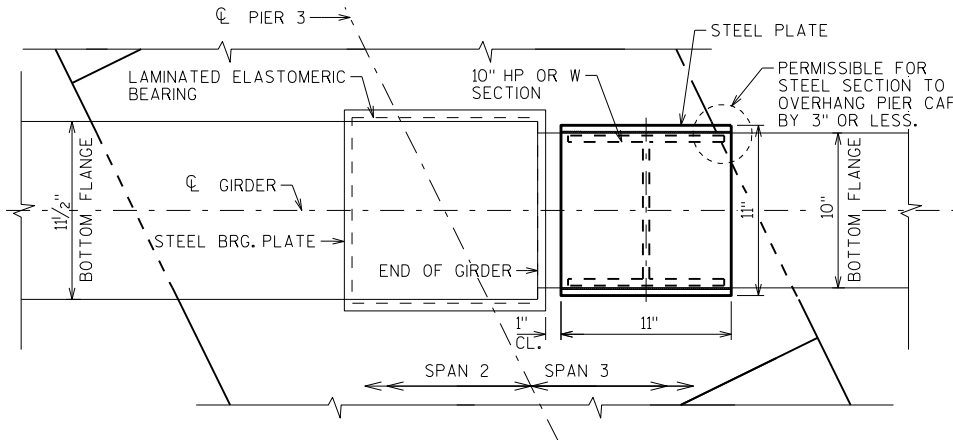
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-100			
DRAWN BY EMK		PLANS CK'D. DVB	
BEARING REPLACEMENT 2		SHEET 8	



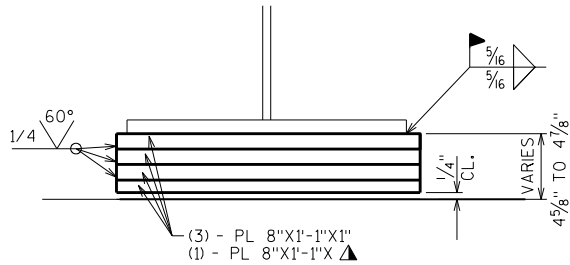
INTERIOR GIRDERS PIERS 1 AND 3  
FRONT ELEVATION



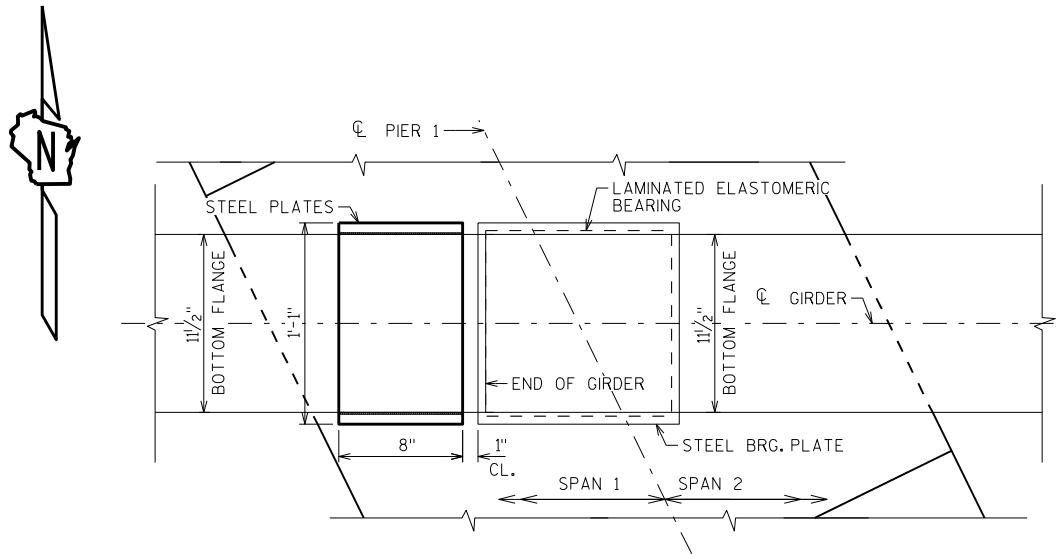
INTERIOR GIRDERS  
PIER 1



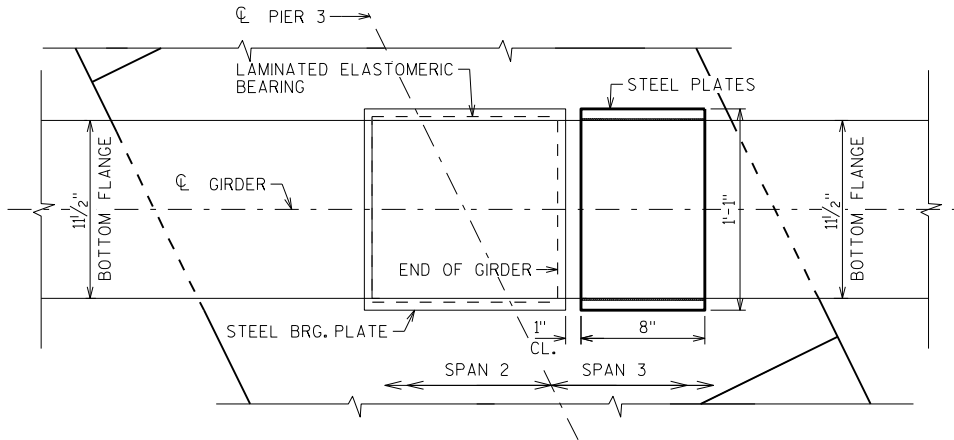
INTERIOR GIRDERS  
PIER 3



EXTERIOR GIRDERS PIERS 1 AND 3  
FRONT ELEVATION



EXTERIOR GIRDERS  
PIER 1



EXTERIOR GIRDERS  
PIER 3

CRIBBING LOCATION		PLATE THK.
PIER 1	GIRDER 1	1 3/8"
	GIRDER 2	1 1/4"
	GIRDER 3	1 1/4"
	GIRDER 4	1 3/8"
PIER 3	GIRDER 1	1 5/8"
	GIRDER 2	1 1/8"
	GIRDER 3	1 3/4"
	GIRDER 4	1 3/8"

STEEL PLATE THICKNESS

PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.

ALL MATERIAL USED FOR PERMANENT CRIBBING SHALL BE PAID FOR UNDER BID ITEM "PERMANENT CRIBBING".

ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-100			
DRAWN BY EMK		PLANS CK'D. DVB	
PERMANENT CRIBBING		SHEET 9	



## *Wisconsin Department of Transportation*

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