wis August 2019

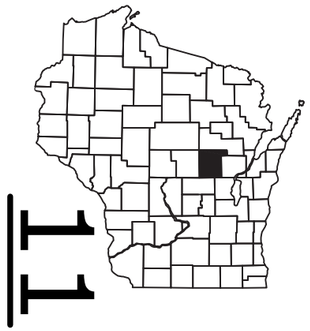
PROJECT ID: 6590-02-75

WITH: N/A

COUNTY: WAUPACA

ORDER OF SHEETS

TOTAL SHEETS = 74



11

N

DESIGN DESIGNATION

A.A.D.T.	(2019)	= 5,800
A.A.D.T.	(2029)	= 6,400
D.H.V.	(2039)	= 778
D.D.		= 60/40
T.		= 20.2%
DESIGN SPEED		= 55 MPH
ESALS		= 2,525,800

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WAUPACA - CLINTONVILLE

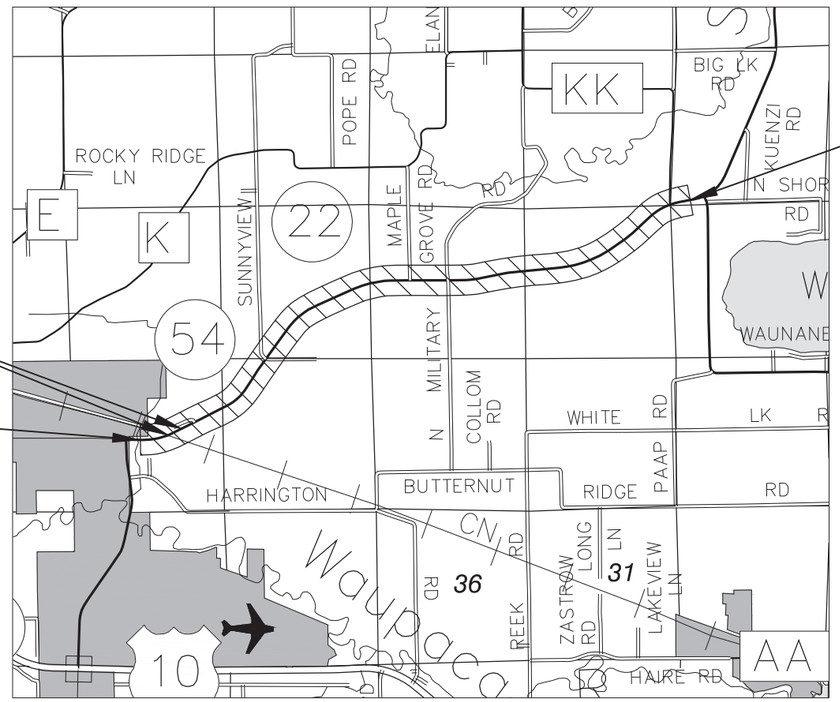
WCL RR BRIDGE TO STH 110S

STH 22

WAUPACA COUNTY

STATE PROJECT NUMBER
6590-02-75

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6590-02-75	WISC 2019587	1



END PROJECT
STA 332+17.47

EXCEPTION TO NET CENTERLINE LENGTH
STA 121+85.87 TO STA 123+96.78
STRUCTURE B-68-050

BEGIN PROJECT
STA 118+06.57
Y=339549.362
X=550940.314

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 4.015 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUPACA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ORIGINAL PLANS PREPARED BY
CBS SQUARED INC.

WISCONSIN
TAMMY S. TUCKER
E-40780
WAUKESHA, WI
PROFESSIONAL ENGINEER

1/24/2019 Tammy Tucker

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CBS SQUARED INC.
Designer	CBS SQUARED INC.
Project Manager	W. ARNESON
Regional Examiner	C. SIMON
Regional Supervisor	M. KRETSCHMER

APPROVED FOR THE DEPARTMENT

DATE: 1/25/19 Wendy Arneson (Signature)

E

RUNOFF COEFFICIENT TABLE

A	HYDROLOGIC SOIL GROUP											
	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 = 22.820 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.006 ACRES

ORDER OF SECTION 2 SHEETS

GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGER'S HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.

WHEN THE QUANTITY OF BASE AGGREGATE IS MEASURED 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.

RIGHT OF WAY IS ASSUMED TO BE 33' EITHER SIDE OF ALIGNMENT DUE TO THE LAST AVAILABLE RECORD OF RIGHT AWAY APPEARS TO BE ON A 1969 AS-BUILT.

UTILITY CONTACTS

ANR PIPLINE CO - GAS/PETROLEUM
W3925 PIPELINE LN
EDEN, WI 53019
EMAIL: Todd_Brister@transcanada.com
PHONE: (920) 477-2235
MOBILE: (920) 979-0060

AT&T WISCONSIN - COMMUNICATION LINE
CHUCK BARTELT
70 E DIVISION ST
FOND DU LAC, WI 54935
EMAIL: CB1461@ATT.COM
PHONE: (920) 929-1013
MOBILE: (920) 375-9172

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION
DOUG VOSBERG
5303 FEN OAK DRIVE
MADISON, WI 53718
EMAIL: dvosberg@atcllc.com
PHONE: (608) 877-7650

CENTURYLINK - COMMUNICATION LINE
MATT GUNDERSON
212 CHURCH AVE
CASCO, WI 54205
EMAIL: matt.gunderson@centurylink.com
PHONE: (920) 837-2344
MOBILE: (920) 896-2867

WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
DAVE PETERSEN
3300 N MAIN ST
OSHKOSH, WI 54901
EMAIL: david.petersen@wisconsinpublicservice.com
PHONE: (920) 236-5910
MOBILE: (920) 680-2036

WE ENERGIES - ELECTRICITY
KENNETH J. VAN OSS
800 S LYNNDALE DR
APPLETON, WI 54912
PHONE: (920) 380-3318

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

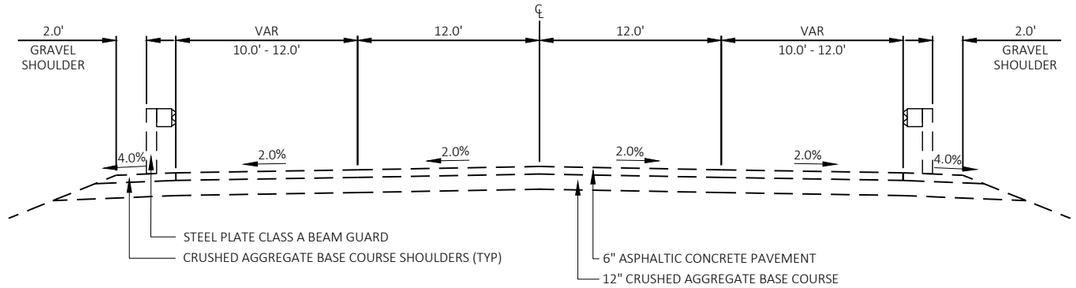
WISCONSIN DNR LIAISON

CASEY JONES
DNR WISCONSIN RAPIDS SERVICE CENTER
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
(715) 213-6571
CASEY.JONES@WISCONSIN.GOV

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	PROJECT OVERVIEW	SHEET	E

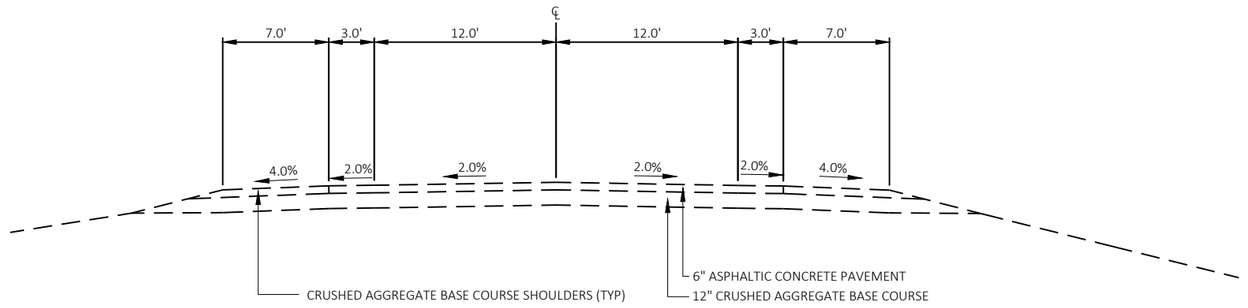
FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\POSTH22.DWG SHEET NAME: PROJECT OVERVIEW PLOT SCALE : 1 IN:800 FT

2



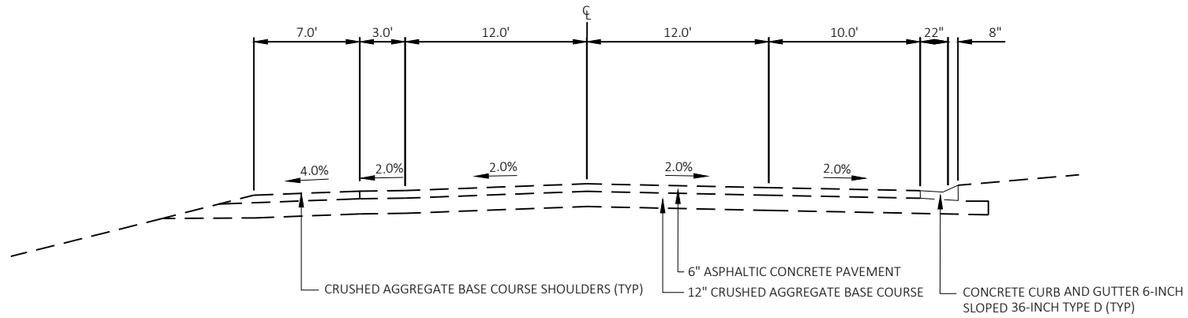
TYPICAL EXISTING SECTION

STH 22
STA 118+06.57 TO STA 121+85.87
STA 123+97 TO STA 133+00



TYPICAL EXISTING SECTION

STH 22
STA 133+00 TO STA 159+18
STA 167+10 TO STA 207+20
STA 214+60 TO STA 321+30
STA 329+22 TO STA 332+17.47



TYPICAL EXISTING SECTION

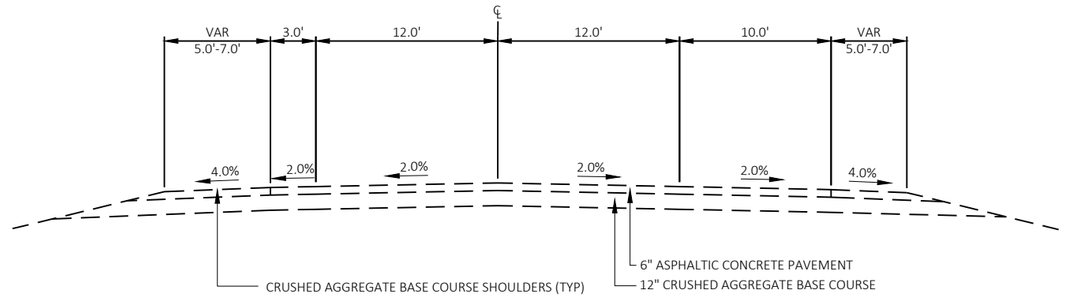
STH 22
STA 159+18 TO STA 163+55
STA 322+90 TO STA 325+00
STA 327+65 TO STA 329+22

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	TYPICAL SECTIONS	SHEET 4	E

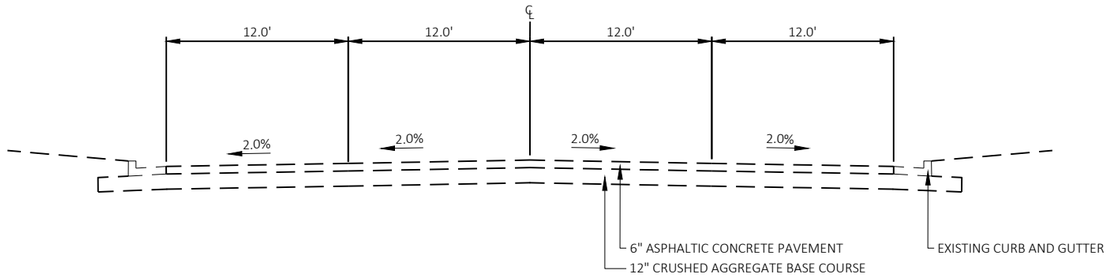
FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\TYPSECTIONS.DWG

SHEET NAME: TSSTH2201

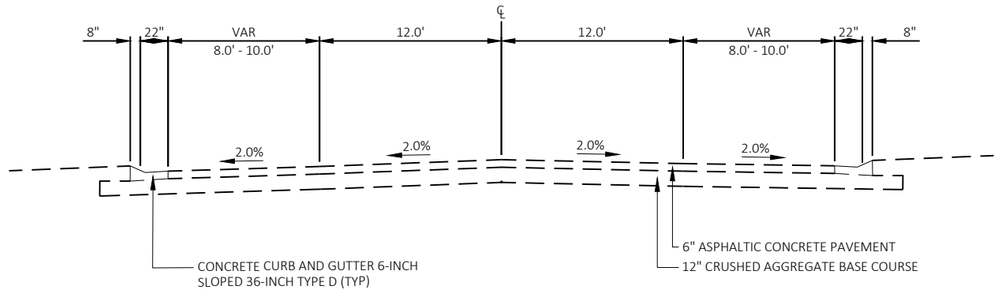
2



TYPICAL EXISTING SECTION
STH 22
STA 163+55 TO STA 167+10
STA 207+20 TO STA 210+80
STA 321+30 TO STA 322+90



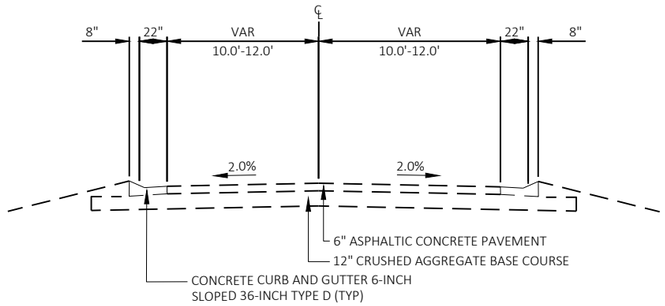
TYPICAL EXISTING SECTION
STH 22
STA 210+80 TO STA 214+60



TYPICAL EXISTING SECTION
STH 22
STA 325+00 TO STA 327+65

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	TYPICAL SECTIONS	SHEET 5	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\TYPSECTIONS.DWG
SHEET NAME: TSSTH2202



TYPICAL EXISTING SECTION - SIDEROADS

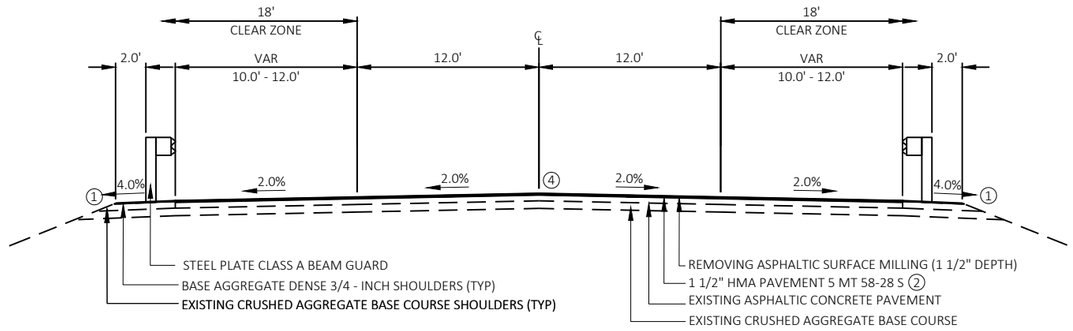
AXTELL LN, SUNNYVIEW RD, HANDRICH RD, MAPLE GROVE RD
N MILITARY RD, S MILITARY RD, CTH KK, STH 110

2

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	TYPICAL SECTIONS	SHEET 6	E

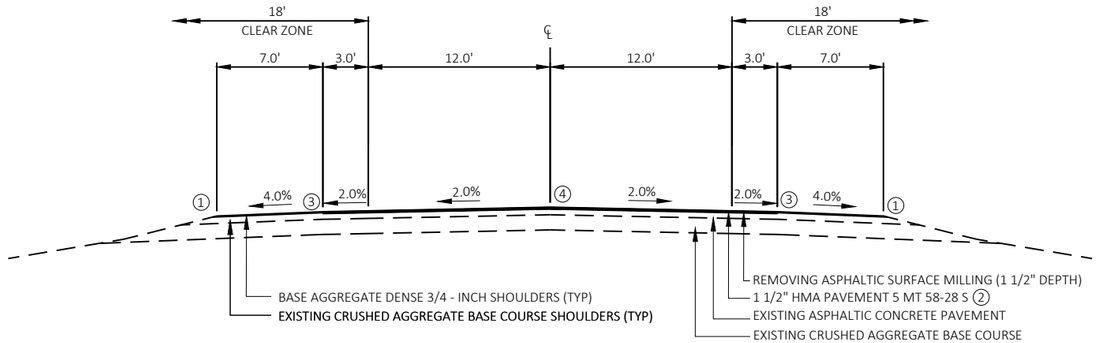
FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\TYPSECTIONS.DWG

SHEET NAME: TSSTH2203



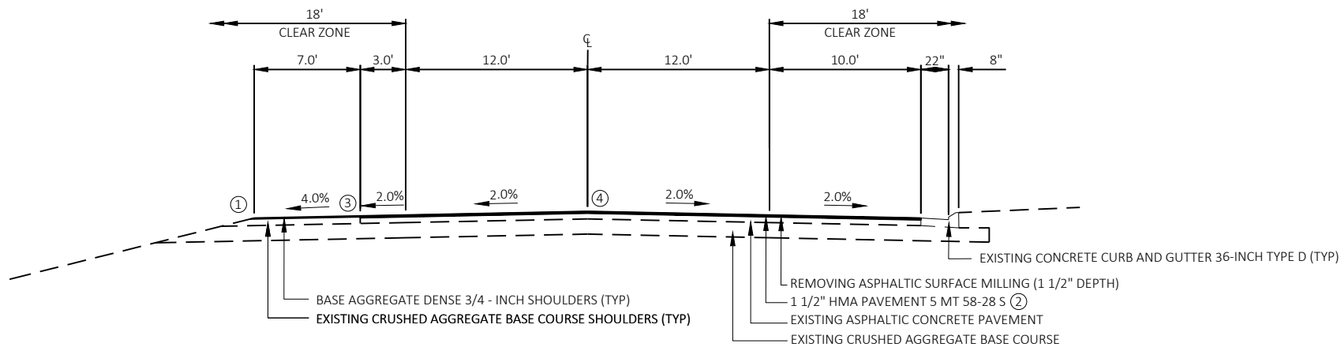
TYPICAL FINISHED SECTION

STH 22
STA 118+06.57 TO STA 121+85.87
STA 123+97 TO STA 133+00



TYPICAL FINISHED SECTION

STH 22
STA 133+00 TO STA 159+18
STA 167+10 TO STA 207+20
STA 214+60 TO STA 321+30
STA 329+22 TO STA 332+17.47

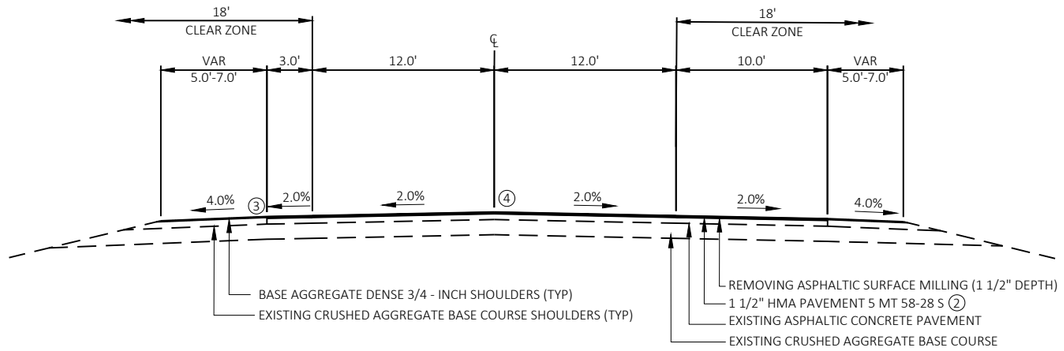


TYPICAL FINISHED SECTION

STH 22
STA 159+18 TO STA 163+55
STA 322+90 TO STA 325+00
STA 327+65 TO STA 329+22

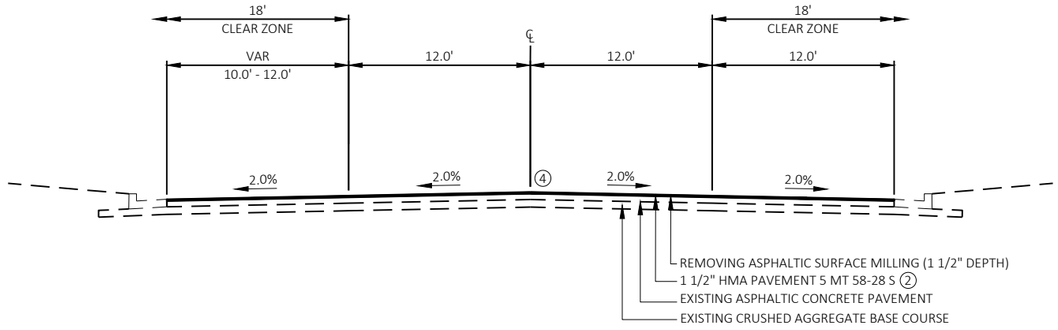
NOTES:

1. MATCH EXISTING SHOULDER POINT. DO NOT STEEPEN INSLOPE.
2. PRIOR TO PAVING PREPARE THE MILLING SURFACE IN ACCORDANCE TO THE ITEM "PREPARATION OF FOUNDATION FOR ASPHALTIC SURFACE".
3. SAFETY EDGE.
4. ASPHALTIC CENTERLINE RUMBLE STRIPS 2 - LANE RURAL.



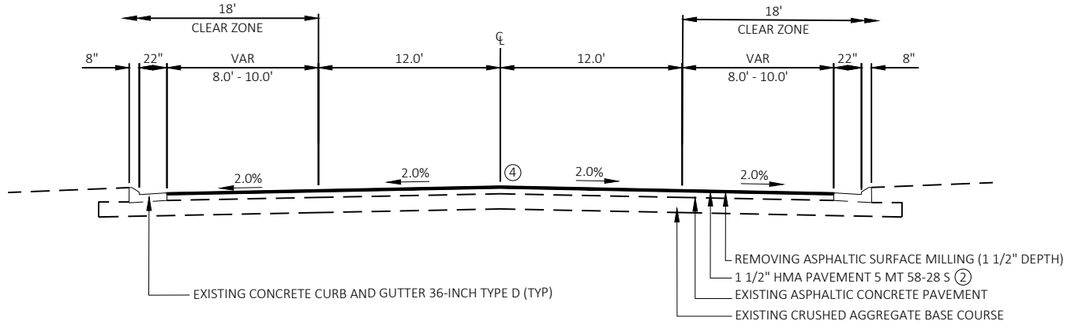
TYPICAL FINISHED SECTION

STH 22
STA 163+55 TO STA 167+10
STA 207+20 TO STA 210+80
STA 321+30 TO STA 322+90



TYPICAL FINISHED SECTION

STH 22
STA 210+80 TO STA 214+60



TYPICAL FINISHED SECTION

STH 22
STA 325+00 TO STA 327+65

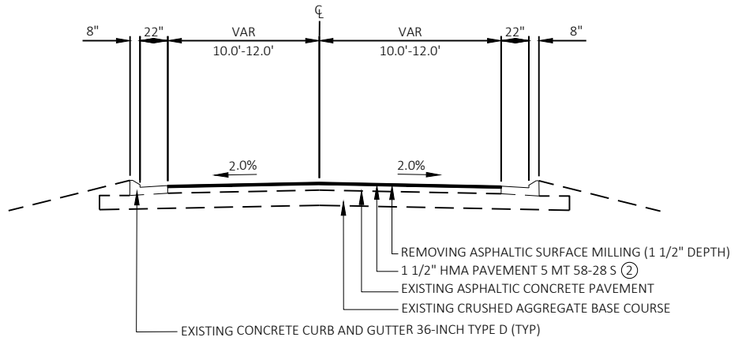
NOTES:

① MATCH EXISTING SHOULDER POINT. DO NOT STEEPEN INSLOPE.

② PRIOR TO PAVING PREPARE THE MILLING SURFACE IN ACCORDANCE TO THE ITEM "PREPARATION OF FOUNDATION FOR ASPHALTIC SURFACE".

③ SAFETY EDGE.

④ ASPHALTIC CENTERLINE RUMBLE STRIPS 2 - LANE RURAL.



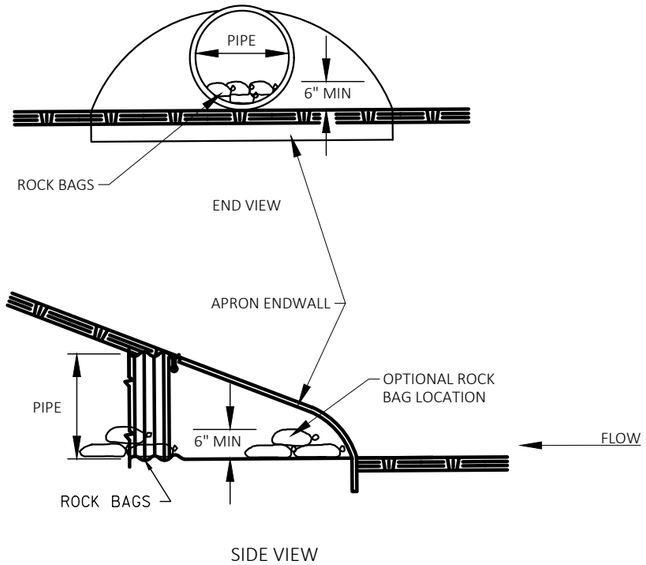
TYPICAL FINISHED SECTION - SIDEROADS

AXTELL LN, SUNNYVIEW RD, HANDRICH RD, MAPLE GROVE RD
N MILITARY RD, S MILITARY RD, CTH KK, STH 110

NOTES:

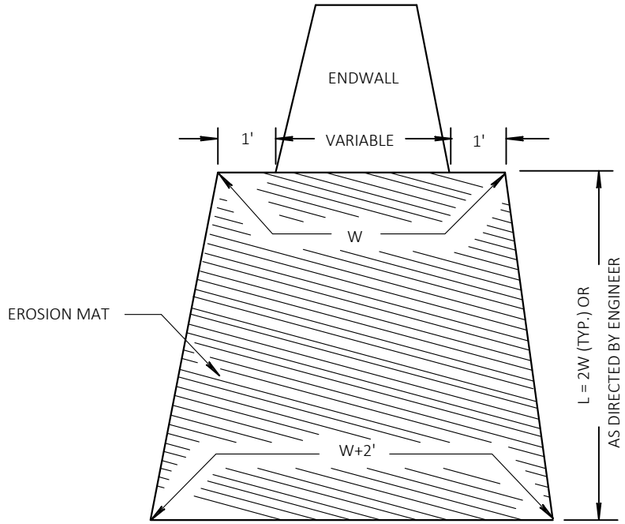
1. MATCH EXISTING SHOULDER POINT. DO NOT STEEPEN INSLOPE.
2. PRIOR TO PAVING PREPARE THE MILLING SURFACE IN ACCORDANCE TO THE ITEM "PREPARATION OF FOUNDATION FOR ASPHALTIC SURFACE".
3. SAFETY EDGE.
4. ASPHALTIC CENTERLINE RUMBLE STRIPS 2 - LANE RURAL

2



CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

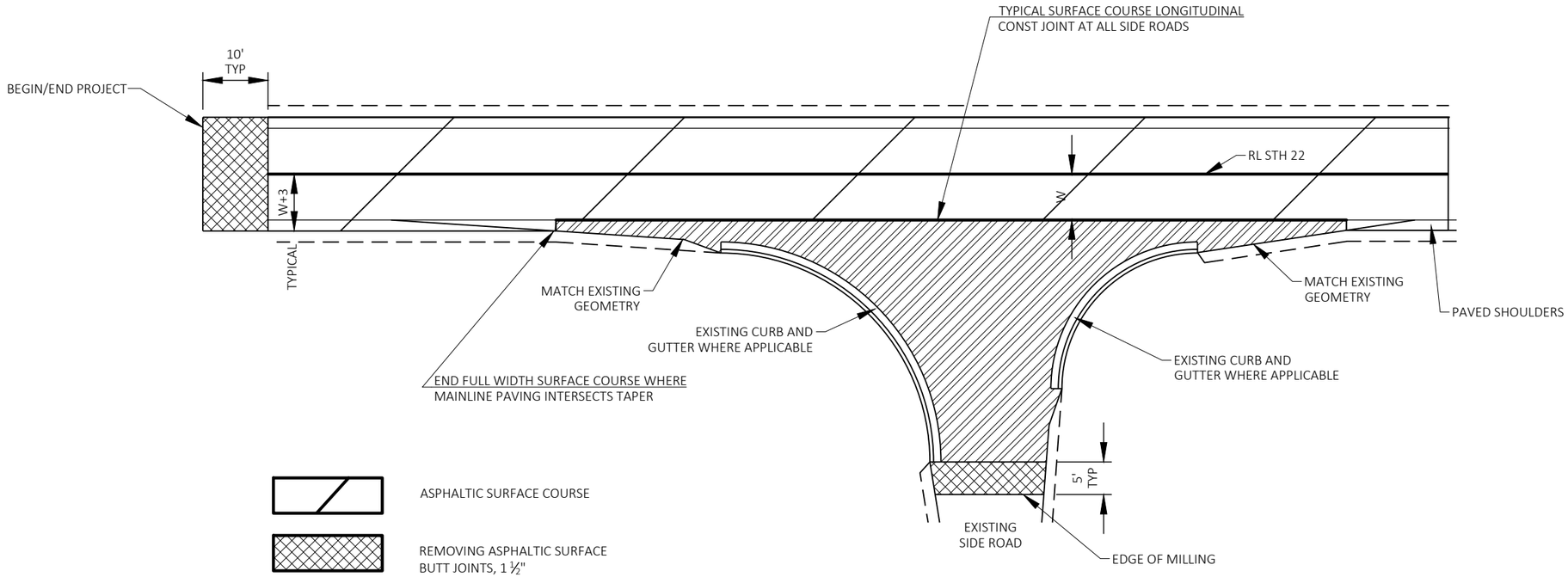


EROSION MAT TREATMENT AT CULVERTS

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	CONSTRUCTION DETAILS	SHEET 10	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\CDSTH 22.DWG SHEET NAME: CDSTH2201 PLOT SCALE : **********

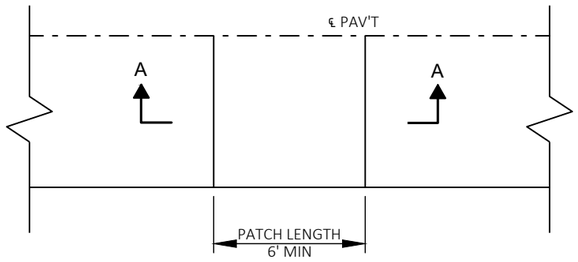
2



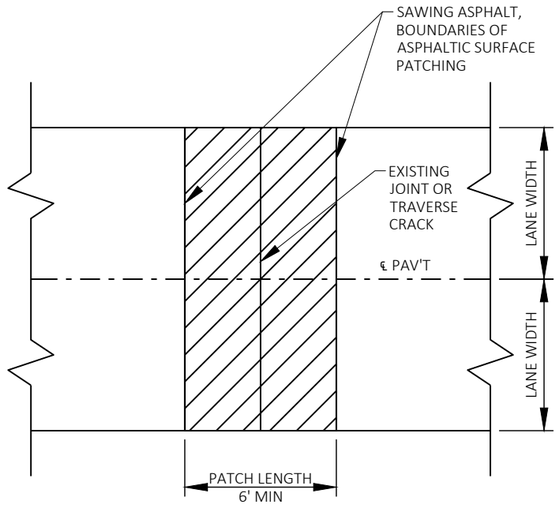
NOTES:
W = MATCH EXISTING ROADWAY WIDTH

TYPICAL SURFACE COURSE SIDE ROAD PAVING

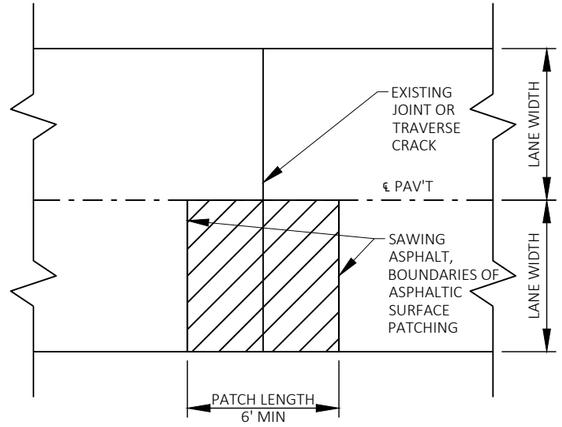
2



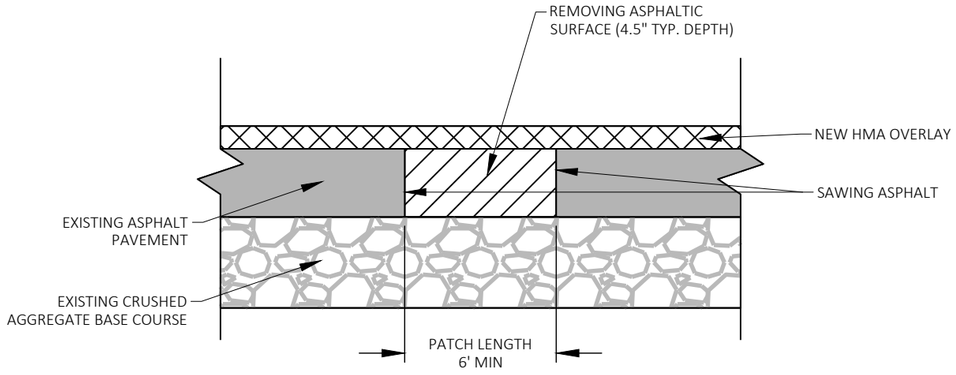
PLAN VIEW



PLAN VIEW
(DOUBLE LANE PATCH)



PLAN VIEW
(SINGLE LANE PATCH)



SECTION A-A

ASPHALT PATCH REMOVAL

ASPHALTIC SURFACE PATCHING

2

2

CURVE 1

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	112+08.00	-2.0%	-2.0%
END RUNOUT	112+59.00	-2.0%	0.0%
REVERSE CROWN	113+10.00	-2.0%	2.0%
BEGIN FULL SUPER	113+87.00	-5.0%	6.0%

CURVE 2

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END FULL SUPER	124+75.00	-5.0%	5.0%
REVERSE CROWN	125+52.00	-2.0%	2.0%
BEGIN RUNOUT	126+03.00	-2.0%	0.0%
BEGIN NORMAL CROWN	126+54.00	-2.0%	-2.0%

CURVE 3

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	143+69.00	-2.0%	-2.0%
END RUNOUT	144+20.00	-2.0%	0.0%
REVERSE CROWN	144+71.00	-2.0%	2.0%
BEGIN FULL SUPER	145+60.00	-5.5%	5.5%
END FULL SUPER	155+01.00	-5.5%	5.5%
REVERSE CROWN	155+90.00	-2.0%	2.0%
BEGIN RUNOUT	156+41.00	-2.0%	0.0%
BEGIN NORMAL CROWN	156+92.00	-2.0%	-2.0%

CURVE 4

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	159+13.00	-2.0%	-2.0%
END RUNOUT	159+64.00	0.0%	-2.0%
REVERSE CROWN	160+15.00	2.0%	-2.0%
BEGIN FULL SUPER	160+33.00	2.7%	-2.7%
END FULL SUPER	164+22.00	2.7%	-2.7%
REVERSE CROWN	164+40.00	2.0%	-2.0%
BEGIN RUNOUT	164+91.00	0.0%	-2.0%
BEGIN NORMAL CROWN	165+42.00	-2.0%	-2.0%

CURVE 5

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	179+23.00	-2.0%	-2.0%
END RUNOUT	179+74.00	0.0%	-2.0%
REVERSE CROWN	180+25.00	2.0%	-2.0%
BEGIN FULL SUPER	181+04.00	5.1%	-5.1%
END FULL SUPER	192+03.00	5.1%	-5.1%
REVERSE CROWN	192+82.00	2.0%	-2.0%
BEGIN RUNOUT	193+33.00	0.0%	-2.0%
BEGIN NORMAL CROWN	193+84.00	-2.0%	-2.0%

CURVE 6

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	205+18.00	-2.0%	-2.0%
END RUNOUT	205+69.00	0.0%	-2.0%
REVERSE CROWN	206+20.00	2.0%	-2.0%
BEGIN FULL SUPER	206+63.00	3.7%	-3.7%
END FULL SUPER	222+34.00	3.7%	-3.7%
REVERSE CROWN	222+77.00	2.0%	-2.0%
BEGIN RUNOUT	223+28.00	0.0%	-2.0%
BEGIN NORMAL CROWN	223+79.00	-2.0%	-2.0%

SUPERELEVATION TRANSITION TABLES REFERENCE THE SUPERELEVATION PERCENTAGES NOTED ON THE PLAN DETAILS. SUPERELEVATIONS LISTED ARE FROM AS-BUILT PLANS. FIELD VERIFY.

CURVE 7

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	243+91.00	-2.0%	-2.0%
END RUNOUT	244+42.00	-2.0%	0.0%
REVERSE CROWN	244+93.00	-2.0%	2.0%
BEGIN FULL SUPER	245+36.00	-3.7%	3.7%
END FULL SUPER	252+49.00	-3.7%	3.7%
REVERSE CROWN	252+92.00	-2.0%	2.0%
BEGIN RUNOUT	253+43.00	-2.0%	0.0%
BEGIN NORMAL CROWN	253+94.00	-2.0%	-2.0%

CURVE 8

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	258+56.00	-2.0%	-2.0%
END RUNOUT	259+07.00	0.0%	-2.0%
REVERSE CROWN	259+58.00	2.0%	-2.0%
BEGIN FULL SUPER	260+01.00	3.7%	-3.7%
END FULL SUPER	263+97.00	3.7%	-3.7%
REVERSE CROWN	264+40.00	2.0%	-2.0%
BEGIN RUNOUT	264+91.00	0.0%	-2.0%
BEGIN NORMAL CROWN	265+42.00	-2.0%	-2.0%

CURVE 9

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	278+83.00	-2.0%	-2.0%
END RUNOUT	279+34.00	-2.0%	0.0%
REVERSE CROWN	279+85.00	-2.0%	2.0%
BEGIN FULL SUPER	280+28.00	-3.7%	3.7%
END FULL SUPER	299+15.00	-3.7%	3.7%
REVERSE CROWN	299+58.00	-2.0%	2.0%
BEGIN RUNOUT	300+09.00	-2.0%	0.0%
BEGIN NORMAL CROWN	300+60.00	-2.0%	-2.0%

CURVE 10

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	302+56.00	-2.0%	-2.0%
END RUNOUT	303+07.00	0.0%	-2.0%
REVERSE CROWN	303+58.00	2.0%	-2.0%
BEGIN FULL SUPER	304+01.00	3.7%	-3.7%
END FULL SUPER	309+84.00	3.7%	-3.7%
REVERSE CROWN	310+27.00	2.0%	-2.0%
BEGIN RUNOUT	310+78.00	0.0%	-2.0%
BEGIN NORMAL CROWN	311+29.00	-2.0%	-2.0%

CURVE 11

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	314+81.00	-2.0%	-2.0%
END RUNOUT	315+32.00	0.0%	-2.0%
REVERSE CROWN	315+83.00	2.0%	-2.0%
BEGIN FULL SUPER	316+67.00	5.3%	-5.3%
END FULL SUPER	327+75.00	5.3%	-5.3%
REVERSE CROWN	328+59.00	2.0%	-2.0%
BEGIN RUNOUT	329+10.00	0.0%	-2.0%
BEGIN NORMAL CROWN	329+61.00	-2.0%	-2.0%

CURVE 12

SUPERELEVATION TABLE			
	STATION	LEFT LANE	RIGHT LANE
END NORMAL CROWN	332+67.00	-2.0%	-2.0%
END RUNOUT	333+18.00	-2.0%	0.0%
REVERSE CROWN	333+69.00	-2.0%	2.0%
BEGIN FULL SUPER	334+71.00	-6.0%	6.0%
END FULL SUPER	347+47.00	-6.0%	6.0%
REVERSE CROWN	348+49.00	-2.0%	2.0%
BEGIN RUNOUT	349+00.00	-2.0%	0.0%
BEGIN NORMAL CROWN	349+51.00	-2.0%	-2.0%

SUPERELEVATION TRANSITION TABLES REFERENCE THE SUPERELEVATION PERCENTAGES NOTED ON THE PLAN DETAILS. SUPERELEVATIONS LISTED ARE FROM AS-BUILT PLANS. FIELD VERIFY.

NOTE: REPLACE GUARDRAIL REFLECTORS AS NEEDED

ADJUST 14 BEAM GUARD PANELS (12.5'/PANEL)

PC STA 113+45.07

109+49

110+00

GRASS

RL STH 22

REPLACE 4 BEAM GUARD PANELS (12.5'/PANEL)

MATCHLINE STA 114+00

ADJUST 6 BEAM GUARD PANELS (12.5'/PANEL)

ADJUST 6 BEAM GUARD PANELS (12.5'/PANEL)

RL STH 22

115+00

MATCHLINE STA 114+00

MATCHLINE STA 118+50

LEGEND

ADJUSTING STEEL PLATE BEAM GUARD

REPLACING GUARDRAIL RAIL AND HARDWARE

REPLACING GUARDRAIL POSTS AND BLOCKS

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	BEAM GUARDRAIL AND BEAM GUARD POST REPLACEMENT LOCATIONS	SHEET 15	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSOTHER\BEAM.DETAIL.STH22.DWG

SHEET NAME: BGSTH22 (1)

PLOT SCALE : 1:30

2

2

NOTE: REPLACE GUARDRAIL REFLECTORS AS NEEDED

N

WCL RAILROAD

PCC STA 121+50.36

RL STH 22

120+00

STRUCTURE B-68-050

MATCHLINE STA 118+50

LEGEND

ADJUSTING STEEL PLATE BEAM GUARD

REPLACING GUARDRAIL RAIL AND HARDWARE

REPLACING GUARDRAIL POSTS AND BLOCKS

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	BEAM GUARDRAIL AND BEAM GUARD POST REPLACEMENT LOCATIONS	SHEET 16 E

FILE NAME : N:\PDS\C3D\65900205\SHEETSOTHER\BEAM.DETAIL.STH22.DWG

SHEET NAME: BGSTH22 (2)

PLOT SCALE : 1:50

NOTE: REPLACE GUARDRAIL REFLECTORS AS NEEDED

REPLACE 1 BEAM GUARD PANEL (12.5'/PANEL)

ADJUST 10 BEAM GUARD PANELS (12.5'/PANEL)

PI STA 125+16.86

ADJUST 8 BEAM GUARD PANELS (12.5'/PANEL)

RL STH 22

125+00

STH 22

STRUCTURE B-68-050

ADJUST 4 BEAM GUARD PANELS (12.5'/PANEL)

ADJUST 5 BEAM GUARD PANELS (12.5'/PANEL)

MATCHLINE STA 128+00

MATCHLINE STA 128+00

RL STH 22

130+00

LEGEND

ADJUSTING STEEL PLATE BEAM GUARD

REPLACING GUARDRAIL RAIL AND HARDWARE

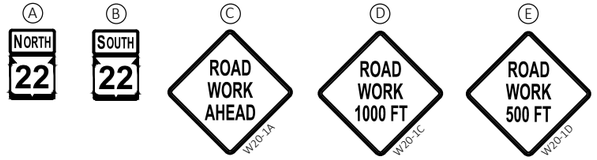
REPLACING GUARDRAIL POSTS AND BLOCKS

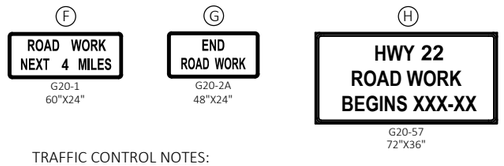
PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	BEAM GUARDRAIL AND BEAM GUARD POST REPLACEMENT LOCATIONS	SHEET 17	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSOTHER\BEAM.DETAIL.STH22.DWG

SHEET NAME: BGSTH22 (3)

PLOT SCALE : 1:30





LEGEND:

TRAFFIC CONTROL SIGN ON POST

TRAFFIC CONTROL NOTES:

1. ADVANCE SIGNING SHALL BE PER S.D.D. "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC". INCLUDE ADVANCE SIGNING PER DETAIL A AND B.
2. TRAFFIC CONTROL FOR MILLING AND PAVING OPERATIONS FROM STATION 118+06 TO STATION 332+17 SHALL BE PER S.D.D "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION".
3. TRAFFIC CONTROL FOR BEAM GUARD ADJUSTMENT, REPAIR, AND REPLACEMENT SHALL BE PER S.D.D "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION".
4. ALL SIDE ROADS SHALL HAVE TRAFFIC CONTROL AS SHOWN ON TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL PER S.D.D "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC".
5. TRAFFIC CONTROL FOR CULVERT ENDWALL REPLACEMENT SHALL BE PER S.D.D "TRAFFIC CONTROL WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY".
6. HWY 22 ROAD WORK BEGINS XXX-XX SIGNING TO BE PLACED 7 CALENDAR DAYS PRIOR TO PROJECT START. TO BE REMOVED AFTER PROJECT BEGINS.

GENERAL NOTES:

DRAWING IS NOT TO SCALE.

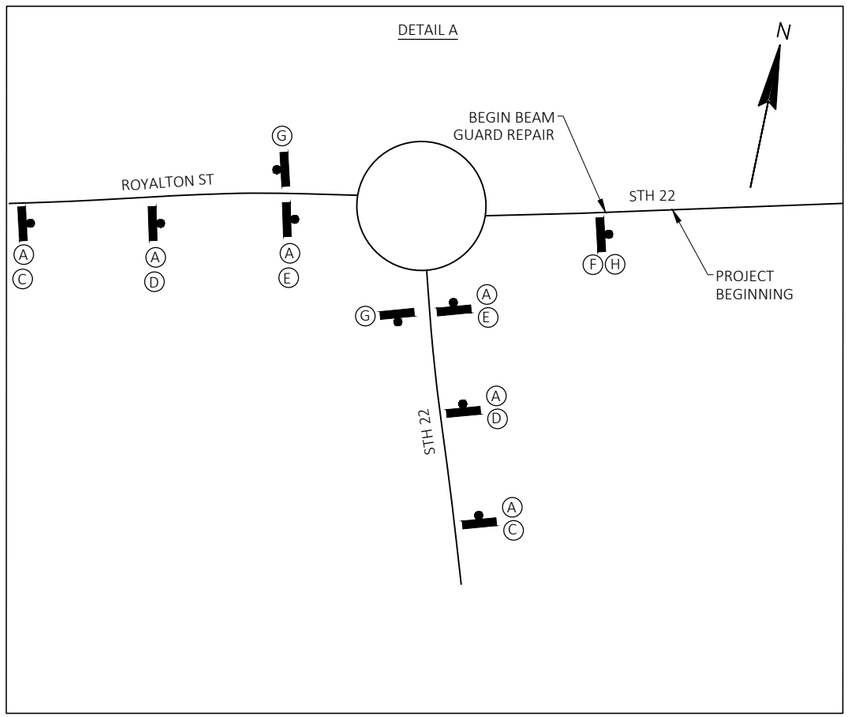
ALL TRAFFIC CONTROL SIGNS AND DEVICES AND THEIR LOCATION SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD), THE PLANS, SPECIFICATIONS, CONTRACT AND APPLICABLE STANDARD DETAIL DRAWINGS.

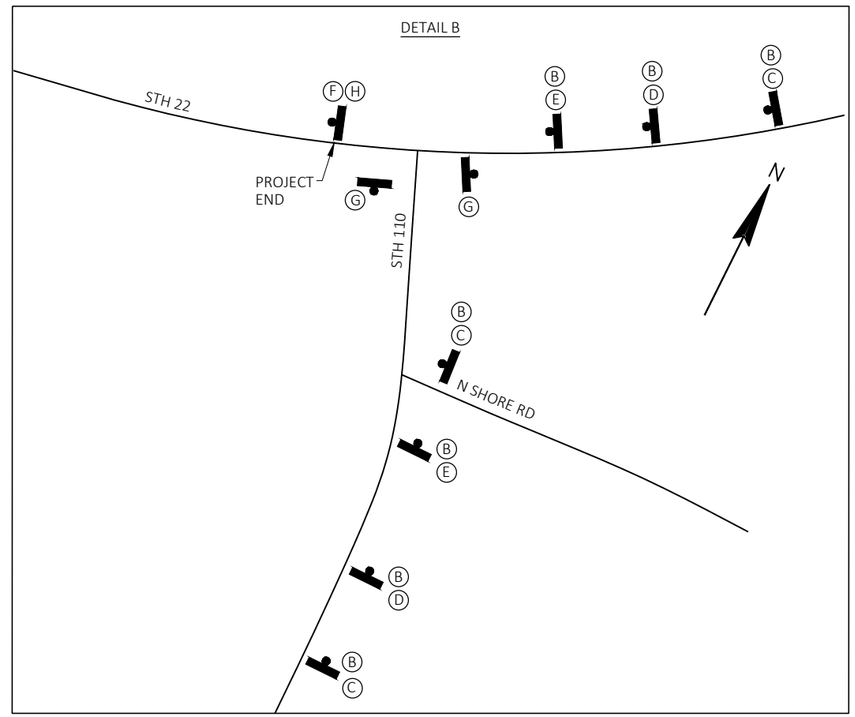
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

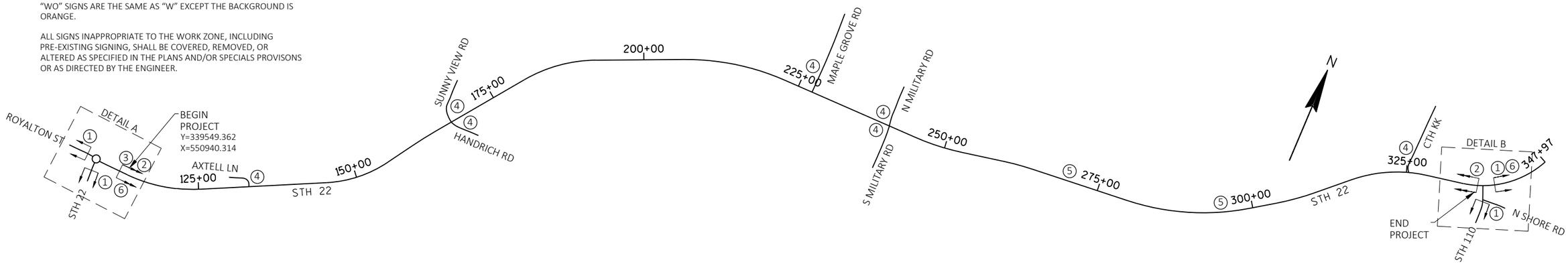
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

ALL SIGNS INAPPROPRIATE TO THE WORK ZONE, INCLUDING PRE-EXISTING SIGNING, SHALL BE COVERED, REMOVED, OR ALTERED AS SPECIFIED IN THE PLANS AND/OR SPECIALS PROVISONS OR AS DIRECTED BY THE ENGINEER.







PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	TRAFFIC CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\DETOUR_STH22.DWG

SHEET NAME: PROJECT OVERVIEW

PLOT SCALE : ••••••••••••

6590-02-75

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	773.000	773.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	176.000	176.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	77,130.000	77,130.000
0008	204.9060.S	Removing (item description) 01. Apron Endwall	EACH	2.000	2.000
0010	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 6590-02-75	LS	1.000	1.000
0012	213.0100	Finishing Roadway (project) 01. 6590-02-75	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,392.000	3,392.000
0016	455.0605	Tack Coat	GAL	5,419.000	5,419.000
0018	460.2000	Incentive Density HMA Pavement	DOL	4,280.000	4,280.000
0020	460.6225	HMA Pavement 5 MT 58-28 S	TON	6,680.000	6,680.000
0022	465.0110	Asphaltic Surface Patching	TON	200.000	200.000
0024	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	18,685.000	18,685.000
0026	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0028	614.0400	Adjusting Steel Plate Beam Guard	LF	725.000	725.000
0030	614.0950	Replacing Guardrail Posts and Blocks	EACH	6.000	6.000
0032	614.0951	Replacing Guardrail Rail and Hardware	LF	100.000	100.000
0034	614.0952	Replacing Guardrail Reflectors	EACH	15.000	15.000
0036	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6590-02-75	EACH	1.000	1.000
0038	619.1000	Mobilization	EACH	1.000	1.000
0040	624.0100	Water	MGAL	51.000	51.000
0042	625.0100	Topsoil	SY	17.000	17.000
0044	627.0200	Mulching	SY	17.000	17.000
0046	628.1104	Erosion Bales	EACH	20.000	20.000
0048	628.1504	Silt Fence	LF	100.000	100.000
0050	628.1520	Silt Fence Maintenance	LF	100.000	100.000
0052	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0054	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0056	628.2004	Erosion Mat Class I Type B	SY	27.000	27.000
0058	628.7555	Culvert Pipe Checks	EACH	24.000	24.000
0060	629.0205	Fertilizer Type A	CWT	0.010	0.010
0062	630.0130	Seeding Mixture No. 30	LB	0.300	0.300
0064	633.5200	Markers Culvert End	EACH	4.000	4.000
0066	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	10.000	10.000
0068	638.2102	Moving Signs Type II	EACH	10.000	10.000
0070	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0072	642.5001	Field Office Type B	EACH	1.000	1.000
0074	643.0300	Traffic Control Drums	DAY	2,050.000	2,050.000

6590-02-75

Line	Item	Item Description	Unit	Total	Qty
0076	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0078	643.0715	Traffic Control Warning Lights Type C	DAY	2,050.000	2,050.000
0080	643.0900	Traffic Control Signs	DAY	4,650.000	4,650.000
0082	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0084	643.5000	Traffic Control	EACH	1.000	1.000
0086	646.1020	Marking Line Epoxy 4-Inch	LF	32,078.000	32,078.000
0088	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	42,066.000	42,066.000
0090	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	964.000	964.000
0092	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	32,078.000	32,078.000
0094	648.0100	Locating No-Passing Zones	MI	4.060	4.060
0096	649.0105	Temporary Marking Line Paint 4-Inch	LF	32,078.000	32,078.000
0098	650.8000	Construction Staking Resurfacing Reference	LF	21,411.000	21,411.000
0100	650.9910	Construction Staking Supplemental Control (project) 01. 6590-02-75	LS	1.000	1.000
0102	690.0150	Sawing Asphalt	LF	2,783.000	2,783.000
0104	740.0440	Incentive IRI Ride	DOL	16,053.000	16,053.000
0106	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0108	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0110	SPV.0060	Special 01. Grading and Shaping for Culvert Ends	EACH	2.000	2.000

3

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

REMOVING ASPHALTIC SURFACE BUTT JOINTS

HWY	STATION - STATION	204.0115 SY
STH 22		
BEGIN	118+06.57	33
END	332+17.47	33
STH 22 INTERSECTIONS		
AXTELL LN		14
SUNNY VIEW RD		18
HANDRICH RD		15
MAPLE GROVE ROAD		16
N MILITARY RD		15
S MILITARY RD		14
CTH KK		17
TOTAL:		176

REMOVING ASPHALTIC SURFACE

HWY	204.0110 SY	REMARKS
STH 22	773	ASPHALT SURFACE PATCHING PAVEMENT REMOVAL
TOTAL:	773	

REMOVING APRON ENDWALL

HWY	STATION	LOCATION	204.9060.S EACH	REMARKS
STH 22	274+67	LT	1	REMOVE AEW
STH 22	291+50	LT	1	REMOVE AEW
TOTAL:			2	

REMOVING ASPHALTIC SURFACE MILLING

HWY	STATION - STATION	LOCATION	204.0120 SY	REMARKS
STH 22	118+06.57 - 121+85.87	LT & RT	978	
STH 22	123+96.78 - 332+17.47	LT & RT	55,489	
TAPERS AND LANES		LT & RT	16,725	
STH 22 INTERSECTIONS				
AXTELL LN		LT	343	
SUNNY VIEW RD		LT	396	
HANDRICH RD		RT	461	
MAPLE GROVE ROAD		LT	438	
N MILITARY RD		LT	451	
S MILITARY RD		RT	428	
CTH KK		LT	817	
CTH KK BYPASS		RT	604	
TOTAL			77,130	

PREPARE FOUNDATION FOR ASPHALTIC PAVING (6590-02-75)

HWY	211.0100.01 LS
STH 22 (PROJECT)	1
TOTAL:	1

FINISHING ROADWAY

HWY	213.0100.01 (6590-02-75) EACH
STH 22 (PROJECT)	1
TOTAL:	1

3

BASE COURSE ITEMS

HWY	STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	REMARKS
STH 22	118+06.57 - 332+17.47	LT & RT	3,392	SHOULDER SHAPING MATERIAL
TOTAL:			3,392	

ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

HWY	STATION - STATION	465.0475 LF
MAINLINE (EXCEPTION INCLUDED; BRIDGE)		
STH 22	118+06.57 - 332+17.47	18,685
TOTAL:		18,685

CULVERT PIPE ITEMS

HWY	STATION	LOCATION	520.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH
STH 22	274+67	LT	1
STH 22	291+50	LT	1
TOTAL:			2

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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HMA PAVEMENT ITEMS

HWY	STATION - STATION	LOCATION	455.0605 TACK COAT GAL	460.6225 HMA PAVEMENT 5 MT 58-28 S TON	465.0110 ASPHALTIC SURFACE PATCHING TON
STH 22	118+06.57 - 332+17.47		5,419	6,680	---
UNDISTRIBUTED			---	---	200
TOTALS:			5,419	6,680	200

MAINTENANCE AND REPAIR OF HAUL ROADS (6590-02-75)

HWY	618.0100 EACH
STH 22 (PROJECT)	1
TOTAL:	1

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	MISCELLANEOUS QUANTITIES	SHEET 22	E

FILE NAME : PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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CLASS A BEAM GUARD

HWY	LOCATION	614.0400 ADJUSTING STEEL PLATE BEAM GUARD LF	614.0950 REPLACING GUARDRAIL POSTS AND BLOCKS EACH	614.0951 REPLACING GUARDRAIL RAIL AND HARDWARE LF	614.0952 REPLACING GUARDRAIL REFLECTORS EACH	REMARKS
STH 22	AT WCL BRIDGE	662.5	4	62.5	10	REFLECTORS 90' SPACING DUE TO RADIUS
UNDISTRIBUTED		62.5	2	37.5	5	
TOTALS:		725	6	100	15	

MOBILIZATION

HWY	619.1000 MOBILIZATION EACH
STH 22 (PROJECT)	1
TOTAL:	1

RESTORATION ITEMS

HWY	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0205 FERTILIZER TYPE A CWT	630.0130 SEEDING MIXTURE NO. 30 LB
STH 22	274+67	LT	7	7	0.004	0.13
STH 22	291+50	LT	7	7	0.004	0.13
UNDISTRIBUTED			3	3	0.002	0.04
TOTALS:			17	17	0.010	0.30

WATER

HWY	624.0100 WATER MGAL
STH 22 (PROJECT)	51
TOTAL:	51

EROSION CONTROL ITEMS

HWY	STATION	LOCATION	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2004 EROSION MAT CLASS I TYPE B SY	628.7555 CULVERT PIPE CHECKS EACH
STH 22	274+67	LT	---	---	---	11	10
STH 22	291+50	LT	---	---	---	11	10
UNDISTRIBUTED			20	100	100	5	4
TOTALS:			20	100	100	27	24

3

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

MOBILIZATIONS EROSION CONTROL ITEMS

HWY	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
STH 22	LT & RT	4	2
TOTALS:		4	2

MARKERS CULVERT END

HWY	STATION	LOCATION	633.5200 EACH
STH 22	274+67	LT & RT	2
STH 22	291+50	LT & RT	2
TOTAL:			4

SIGNING ITEMS

ROADWAY	634.0614 POSTS WOOD 4X6-INCH x 14-FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
STH 22 (UNDISTRIBUTED)	10	10	10	NO PASSING ZONE SIGNS
TOTALS:	10	10	10	

FIELD OFFICE

HWY	642.5001 TYPE B EACH
STH 22 (PROJECT)	1
TOTAL:	1

TRAFFIC CONTROL ITEMS

ROADWAY	DURATION (DAYS)	643.0300 TRAFFIC CONTROL DRUMS EACH**	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH**	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900* TRAFFIC CONTROL SIGNS EACH**	643.0900* TRAFFIC CONTROL SIGNS DAY	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE (72"X36") EACH**	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE (72"X36") SF
STH 22	60	28	1,680	28	1,680	64	3,840	2	36
UNDISTRIBUTED		340		340		770		--	
TOTALS:		2,050		2,050		4,650		36	

** INFORMATION ONLY

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	MISCELLANEOUS QUANTITIES	SHEET	E

FILE NAME : PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

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TEMPORARY PORTABLE RUMBLE STRIPS

HWY	643.0310.S LS
STH 22 (PROJECT)	1
TOTAL:	1

TRAFFIC CONTROL

HWY	643.5000 EACH
STH 22 (PROJECT)	1
TOTAL:	1

PAVEMENT MARKING ITEMS

HWY	STATION - STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH (YELLOW) LF	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE) LF	646.3040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 8-INCH (WHITE) LF	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH (YELLOW) (LF)	649.0105 TEMPORARY PAVEMENT MARKING PAINT 4-INCH (YELLOW CL) LF
STH 22	118+06.57 - 332+17.47	LT & RT	32,078	42,066	964	32,078	32,078
TOTALS:			32,078	42,066	964	32,078	32,078

3

LOCATING NO-PASSING ZONES

HWY	STATION - STATION	LOCATION	648.0100 MI
STH 22	118+06.57 - 332+17.47	LT & RT	4.06
TOTAL:			4.06

CONSTRUCTION STAKING

HWY	STATION - STATION	LOCATION	650.8000 RESURFACING REFERENCE LF	650.9910.01 SUPPLEMENTAL CONTROL (6590-02-75) LS
STH 22	118+06.57 - 332+17.47	LT & RT	21,411	1
TOTALS:			21,411	1

SAWING ASPHALT

HWY	690.0150 LF	REMARKS
STH 22	2783	FOR ASPHALTIC SURFACE PATCHING
TOTAL:	2783	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

GRADING AND SHAPING FOR CULVERT ENDS

HWY	STATION	LOCATION	SPV.0060.01 EACH	REMARKS
STH 22	274+67	LT	1	FOR REPLACING AEW
STH 22	291+50	LT	1	FOR REPLACING AEW
TOTAL:			2	

BEGIN PROJECT
STA 118+06.57
Y=339549.362
X=550940.314
SAWCUT REQ'D
MATCHING EXISTING

WPS (OVERHEAD ELECTRIC)

PC STA 113+45.07

GUARD RAIL MAINTENANCE SEE CONSTRUCTION DETAILS

WCL RAILROAD

PCC STA 121+50.36

EXCEPTION TO NET CENTERLINE LENGTH
STA 121+85.87 TO STA 123+96.78
STRUCTURE B-68-050

PT STA 125+16.86

CURVE 1
PI STA = 117+51.54
Y = 339507.27
X = 550886.38
DELTA = 19°13'30"
T = 406.47
L = 805.29
R = 2400.00
PC STA = 113+45.07
PT STA = 121+50.36
S.E. = 5.0%*

CURVE 2
PI STA = 123+34.00
Y = 339678.69
X = 551451.04
DELTA = 9°09'45"
T = 183.64
L = 366.50
R = 2291.83
PC STA = 121+50.36
PT STA = 125+16.86
S.E. = 5.0%*

* SUPERELEVATION IS FROM AS-BUILT PLAN. FIELD VERIFY.

WPS (OVERHEAD ELECTRIC)

MOVE EXISTING SIGN FROM STA 140+50

SEE SDD PAVEMENT MARKING (INTERSECTIONS).

SEE TYPICAL SURFACE COURSE SIDE ROAD PAVING CONSTRUCTION DETAIL FOR CONSTRUCTION LIMIT.

AXTELL LN

GUARD RAIL MAINTENANCE SEE CONSTRUCTION DETAILS

STA 136+55 LT
FE AGG

STA 136+52 RT
CE AGG

NEW CE AT
THIS LOCATION

GUARD RAIL MAINTENANCE SEE CONSTRUCTION DETAILS

GUARD RAIL MAINTENANCE SEE CONSTRUCTION DETAILS

MATCH EXISTING CONCRETE APPROACH SLAB. WORK ON STRUCTURE IS TO BE COMPLETED BY OTHERS.

ATC (OVERHEAD ELECTRIC)

STH 22

N63° 59' 46"E

MATCHLINE STA 140+00

CURVE 3
PI STA = 150+46.35
Y = 340868.22
X = 553889.50
DELTA = 30°58'43"
T = 526.53
L = 1027.29
R = 1900.00
PC STA = 145+19.82
PT STA = 155+47.10
S.E. = 5.5%*

CURVE 4
PI STA = 162+27.36
Y = 341880.11
X = 554547.08
DELTA = 3°49'46"
T = 217.29
L = 434.43
R = 6500.00
PC STA = 160+10.07
PT STA = 164+44.49
S.E. = 2.7%*

* SUPERELEVATION IS FROM AS-BUILT PLAN. FIELD VERIFY.

MATCHLINE STA 140+00

STH 22

PC STA 145+19.82

STA 144+68 LT
PE AGG

STA 144+27 RT
FE AGG

STA 150+13 LT
PE AGG

STA 150+97 LT
PE AGG

STA 150+82 RT
FE AGG

PT STA 155+47.10

STA 159+98 LT
FE AGG

PC STA 160+10.07

STA 162+04 RT
PE CONC

PT STA 164+44.49

STA 163+33 LT
PE AGG

STA 163+38 RT
PE AGG

SEE SDD PAVEMENT MARKING (INTERSECTIONS).

SEE TYPICAL SURFACE COURSE SIDE ROAD PAVING CONSTRUCTION DETAIL FOR CONSTRUCTION LIMIT.

SUNNY VIEW RD

PIPL

HANDRICH RD

MATCHLINE STA 170+00

N32° 01' 03"E

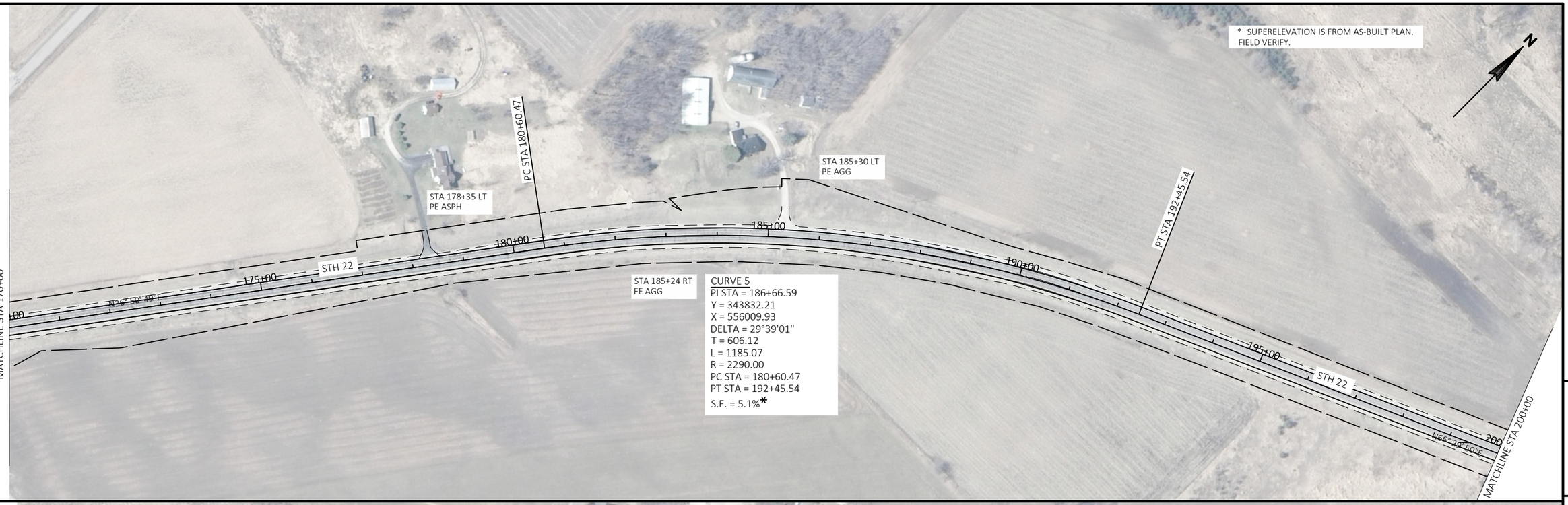
NO PASSING ZONES MAY MOVE AS A RESULT OF LOCATING NO PASSING ZONE ITEM. UNDISTRIBUTED QUANTITIES LOCATED IN PLAN.

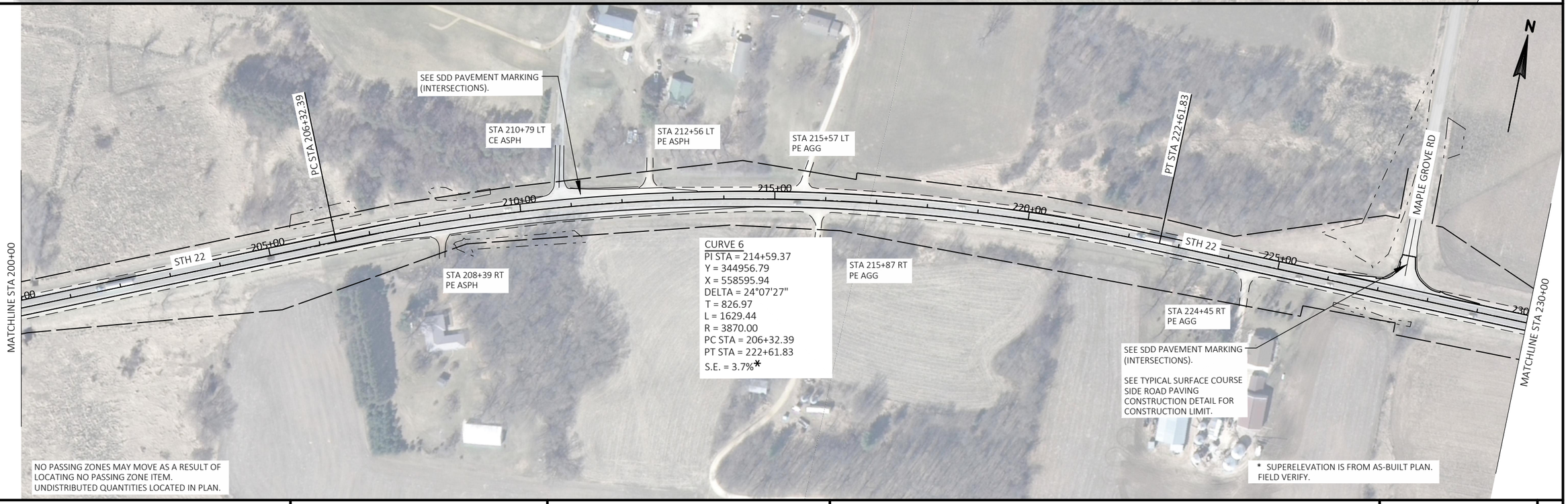
PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\PPSTH22.DWG

SHEET NAME: PPSTH22 (1)

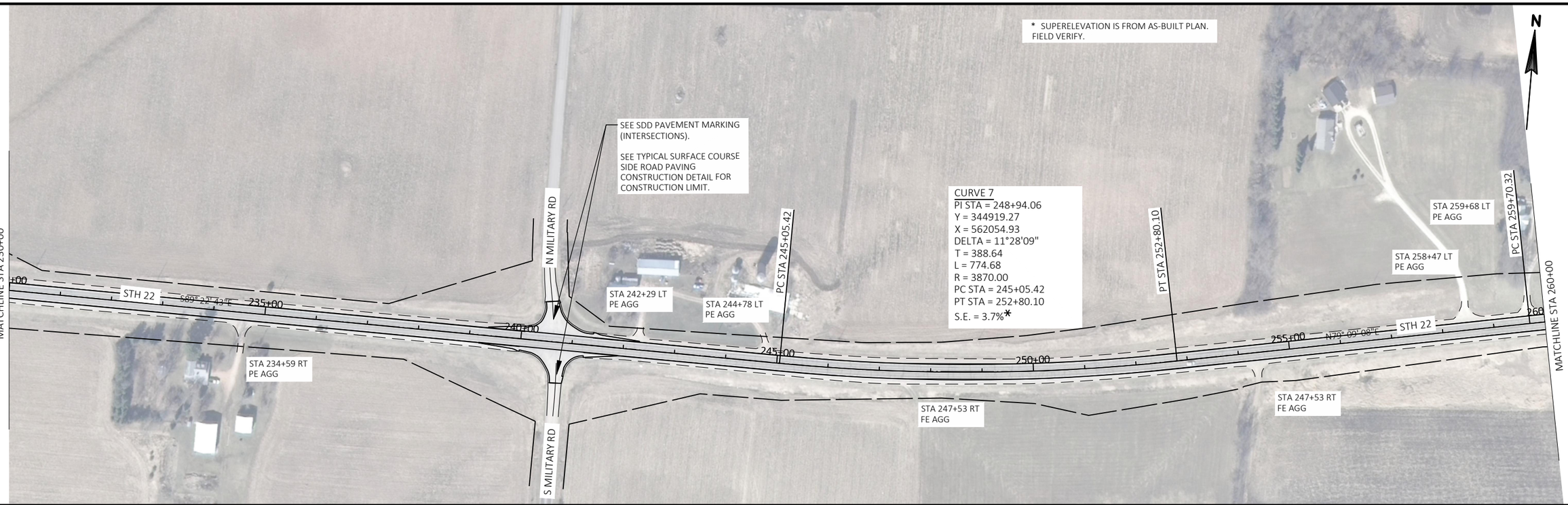
PLOT SCALE : 1:200

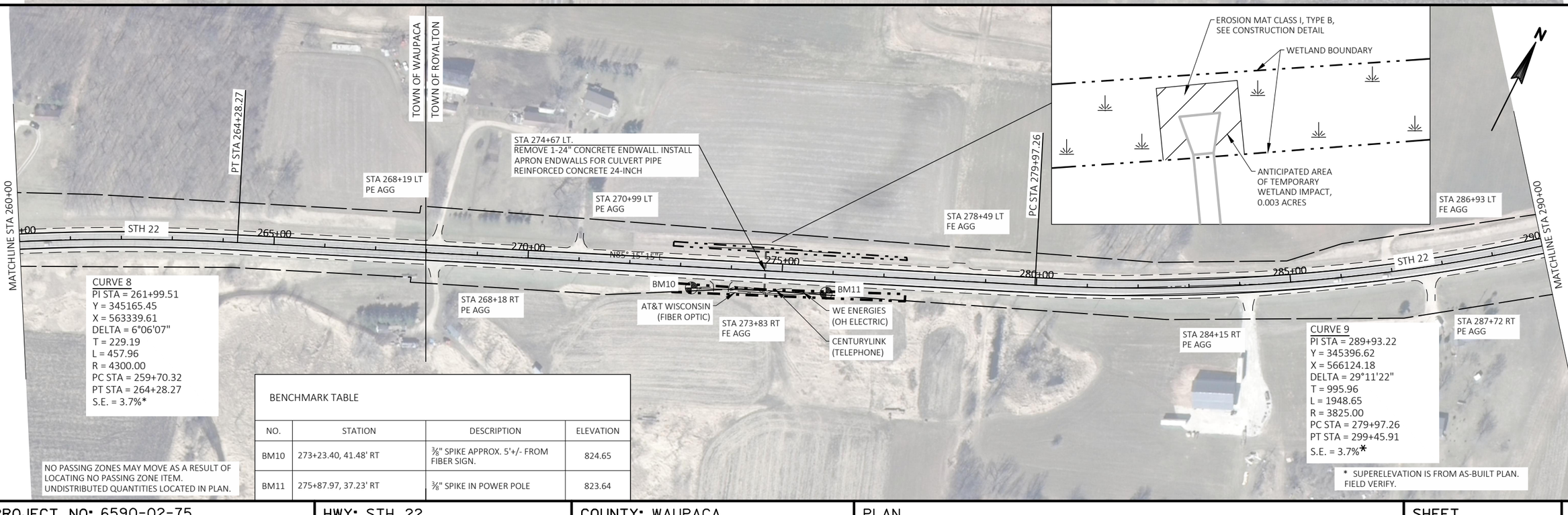




PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	PLAN	SHEET 27 E

FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\PPSTH22.DWG SHEET NAME: PPSTH22 (2) PLOT SCALE : #####





BENCHMARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
BM10	273+23.40, 41.48' RT	⅜" SPIKE APPROX. 5'+/- FROM FIBER SIGN.	824.65
BM11	275+87.97, 37.23' RT	⅜" SPIKE IN POWER POLE	823.64

NO PASSING ZONES MAY MOVE AS A RESULT OF LOCATING NO PASSING ZONE ITEM. UNDISTRIBUTED QUANTITIES LOCATED IN PLAN.

PROJECT NO: 6590-02-75	HWY: STH 22	COUNTY: WAUPACA	PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\65900205\SHEETSPLAN\PPSTH22.DWG
SHEET NAME: PPSTH22 (3-DNR)
PLOT SCALE : #####

EROSION MAT CLASS I, TYPE B, SEE CONSTRUCTION DETAIL

STA 291+50 LT.
REMOVE 1-24" CONCRETE ENDWALL. INSTALL APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH

MATCHLINE STA 290+00

290+00

BM13

BM12

CENTURYLINK (TELEPHONE)

WE ENERGIES (OH ELECTRIC)

AT&T WISCONSIN (FIBER OPTIC)

STA 291+14 RT PE AGG

295+00

STH 22

STA 297+90 RT PE AGG

STA 298+47 LT PE AGG

PT STA 299+45.91

300+00

N56° 02' 53"E

PC STA 303+70.42

305+00

CURVE 10
PI STA = 306+93.25
Y = 346369.83
X = 567570.54
DELTA = 8°35'14"
T = 322.83
L = 644.45
R = 4300.00
PC STA = 303+70.42
PT STA = 310+14.87
S.E. = 3.7%*

PT STA 310+14.87

310+00

* SUPERELEVATION IS FROM AS-BUILT PLAN. FIELD VERIFY.

PE TO NEW TOWER

STA 315+10 LT PE AGG

PC STA 316+22.97

315+00

N47° 28' 40"E

STA 316+23 RT PE ASPH

STA 318+10 LT PE ASPH

320

STH 22

MATCHLINE STA 320+00

SEE SDD PAVEMENT MARKING (INTERSECTIONS).

SEE TYPICAL SURFACE COURSE SIDE ROAD PAVING CONSTRUCTION DETAIL FOR CONSTRUCTION LIMIT.

CTH KK

MATCHLINE STA 320+00

320+00

STH 22

325+00

STA 326+64 LT PE AGG

PT STA 328+19.06

END PROJECT
STA 332+17.47
SAWCUT REQ'D MATCH EXISTING

330+00

N79° 39' 07"E

PC STA 334+20.82

CURVE 11
PI STA = 322+37.24
Y = 347414.19
X = 568709.37
DELTA = 32°10'27"
D = 2°41'24"
T = 614.27
L = 1196.09
R = 2130.00
PC STA = 316+22.97
PT STA = 328+19.06

STA 328+98 RT PE ASPH

STA 329+87 RT FE AGG

335+00

340+00

345+00

347+97

STH 22

STH 110

N SHORE RD

CURVE 12
PI STA = 341+63.66
Y = 347777.04
X = 570634.30
DELTA = 53°27'43"
T = 742.85
L = 1376.30
R = 1475.00
PC STA = 334+20.82
PT STA = 347+97.12
S.E. = 6.0%*

* SUPERELEVATION IS FROM AS-BUILT PLAN. FIELD VERIFY.

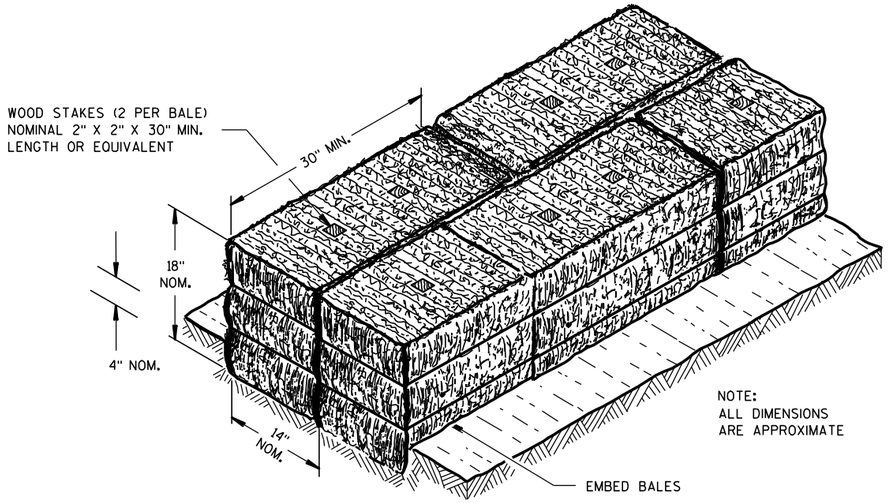
BENCHMARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
BM12	291+21.51, 91.50' RT	3/8" SPIKE APPROX. 5'+/- FROM GUY WIRE.	845.78
BM13	292+91.20, 47.13' LT	3/8" SPIKE IN 12" DECIDUOUS TREE	850.42

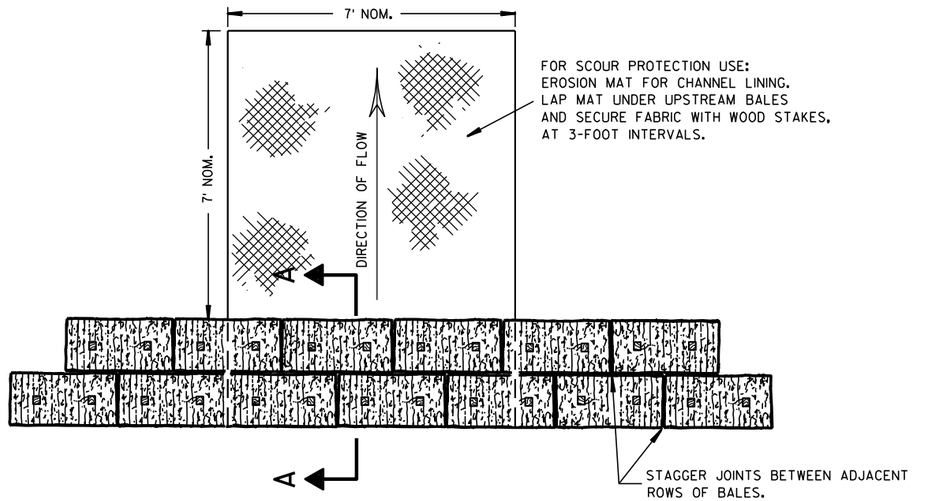
NO PASSING ZONES MAY MOVE AS A RESULT OF LOCATING NO PASSING ZONE ITEM. UNDISTRIBUTED QUANTITIES LOCATED IN PLAN.

Standard Detail Drawing List

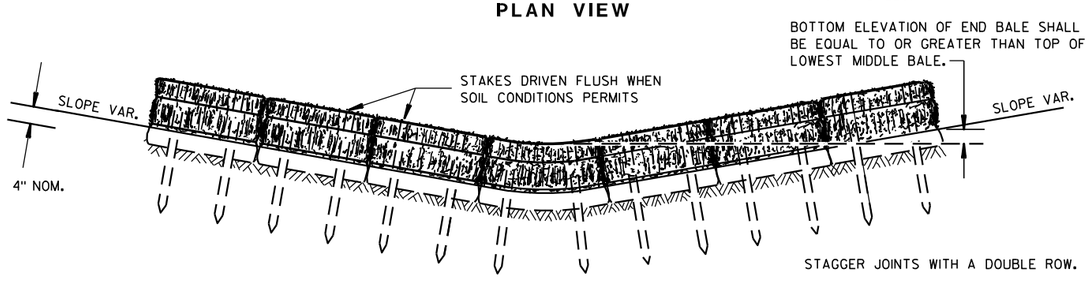
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-11E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B20-11F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C35-03A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



SECTION A-A



PLAN VIEW



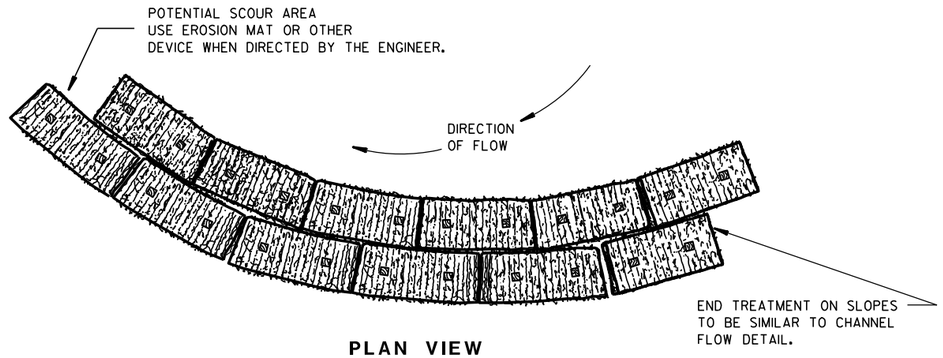
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

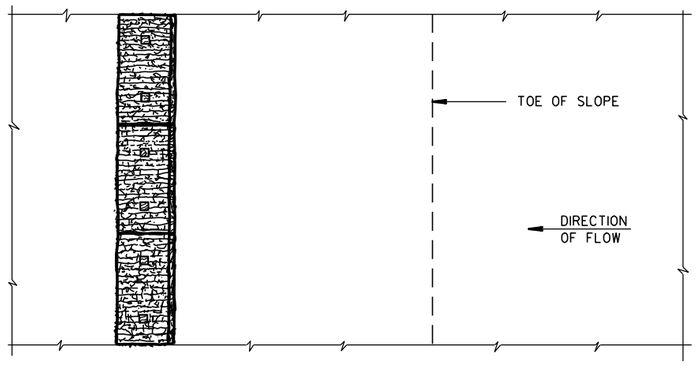
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

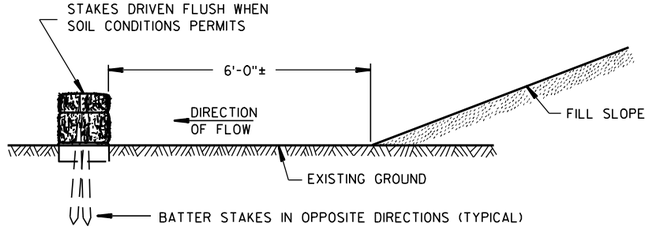


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

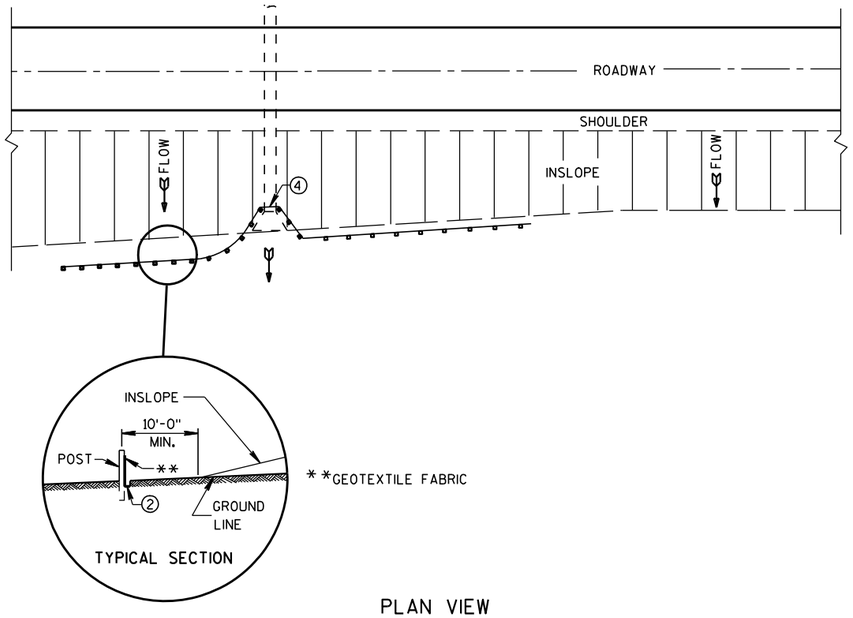
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

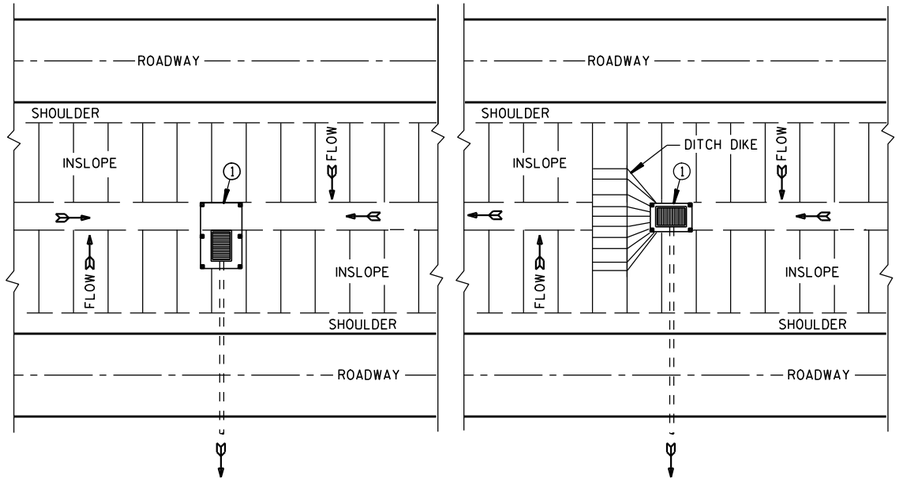
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



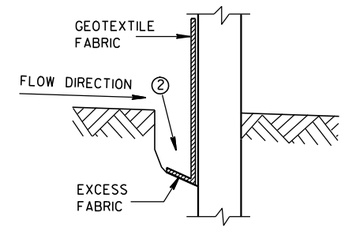
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

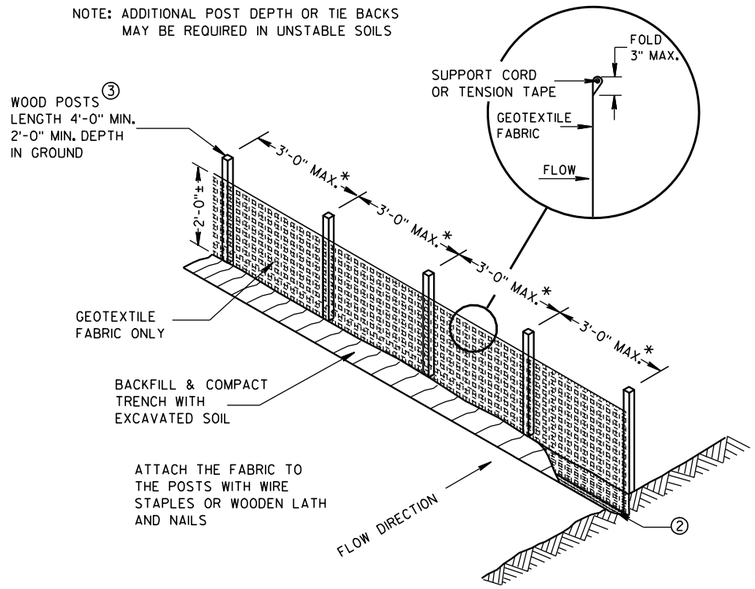
GENERAL NOTES

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

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

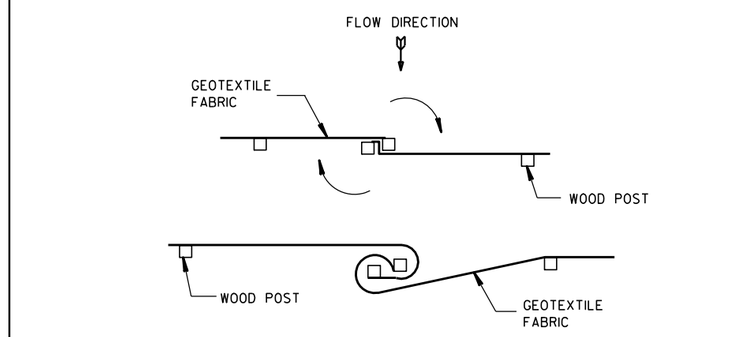


TRENCH DETAIL

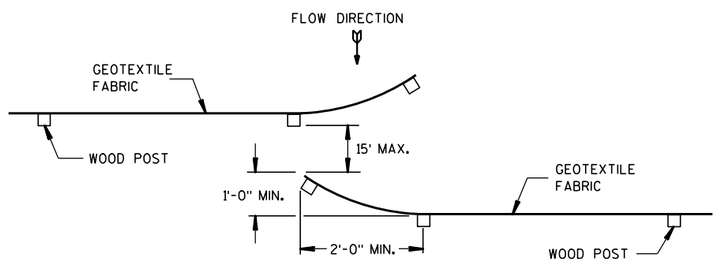


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

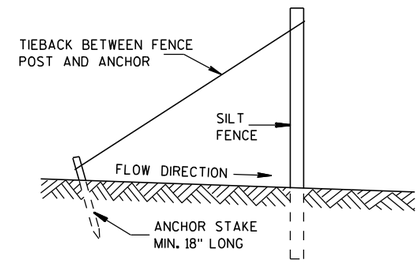


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

METAL APRON ENDWALLS

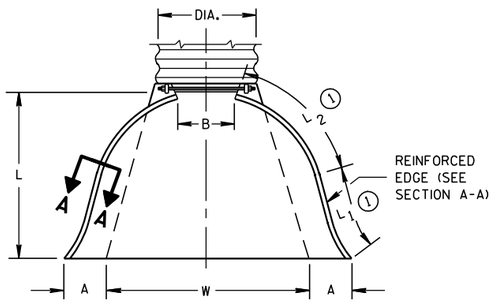
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

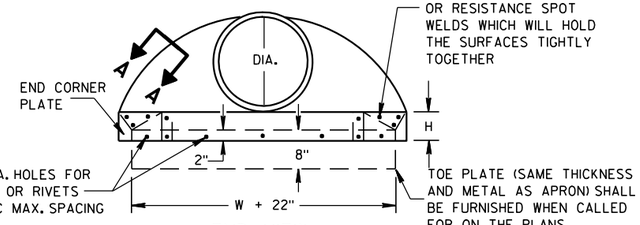
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24-30 **	* 72-78 **	* 21-27 **	99	102	5 1/2	2 to 1
72	7	* 24-36 **	78	21	99	108	6	2 to 1
78	7 1/2	* 24-36 **	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

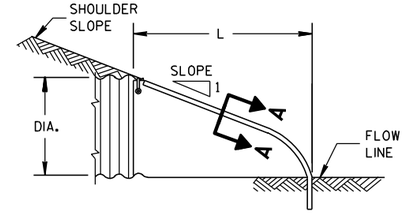
* MINIMUM
** MAXIMUM



PLAN VIEW

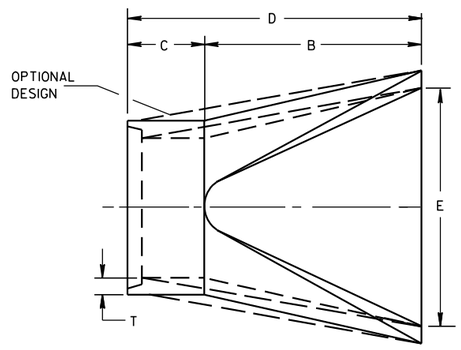


END VIEW

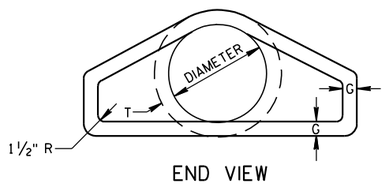


SIDE ELEVATION

METAL ENDWALLS



PLAN



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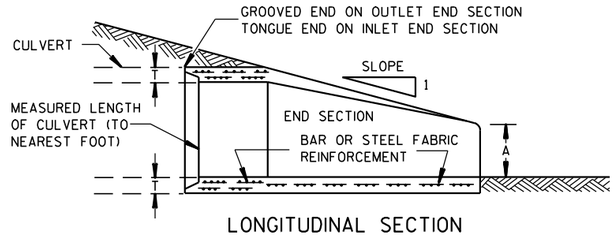
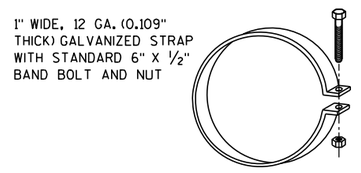


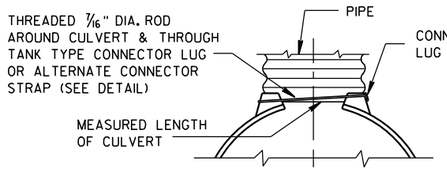
LONGITUDINAL SECTION

CONCRETE ENDWALLS

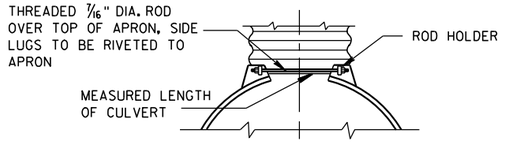


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

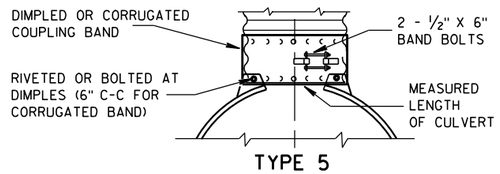


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

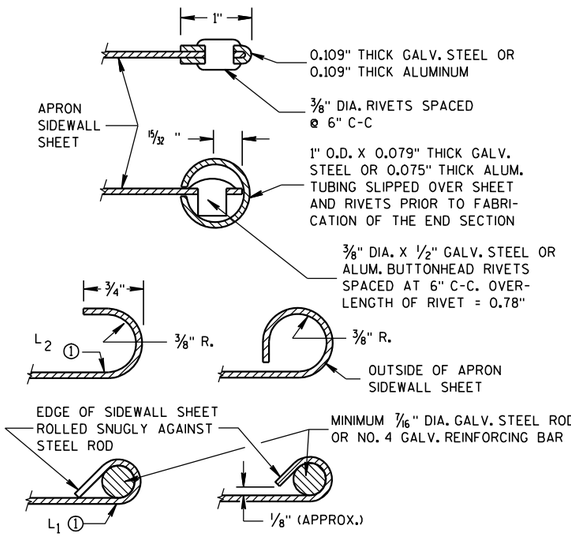
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

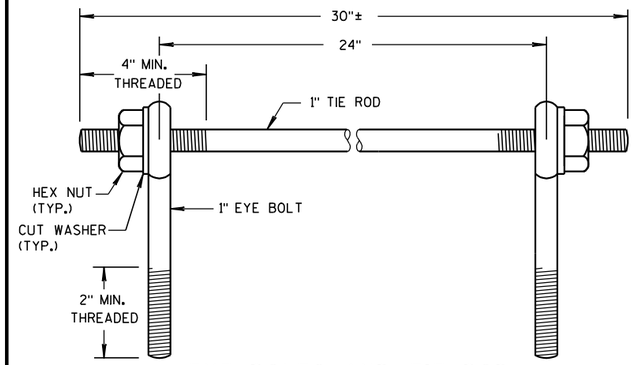
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

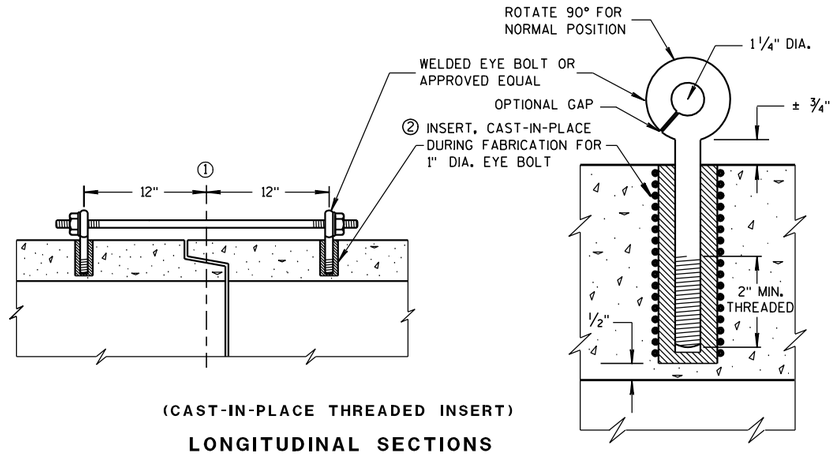
APPROVED
11/30/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

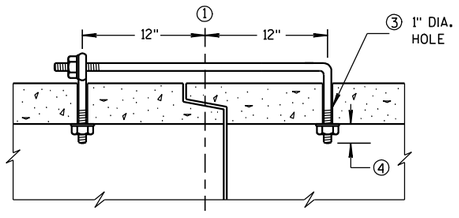
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

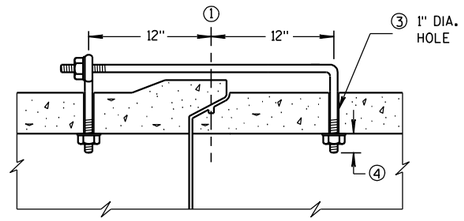
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

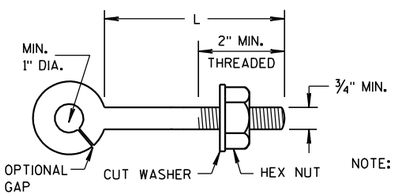


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

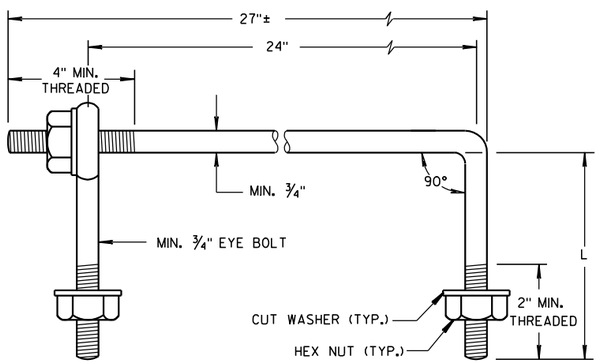
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

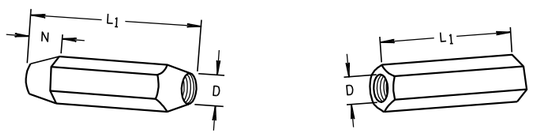
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

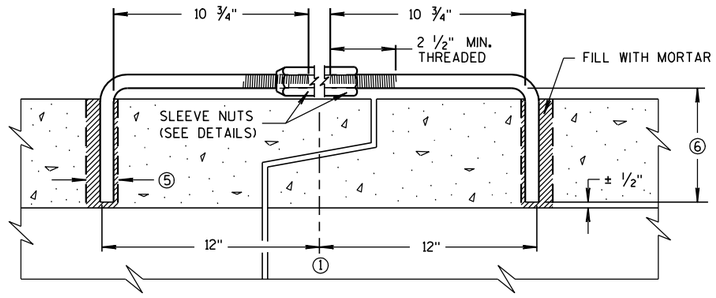
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

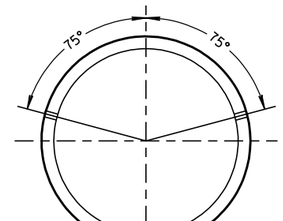
SLEEVE NUTS



LONGITUDINAL SECTION

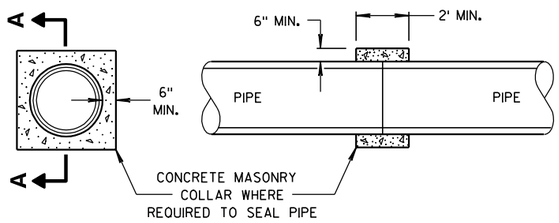
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

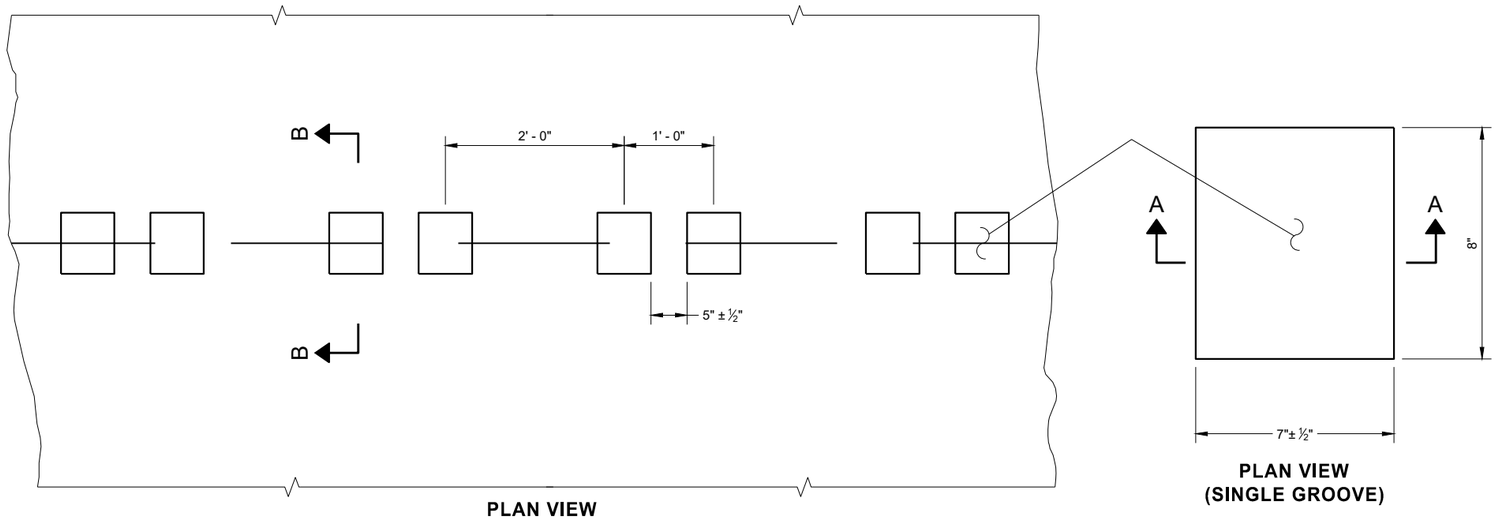
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

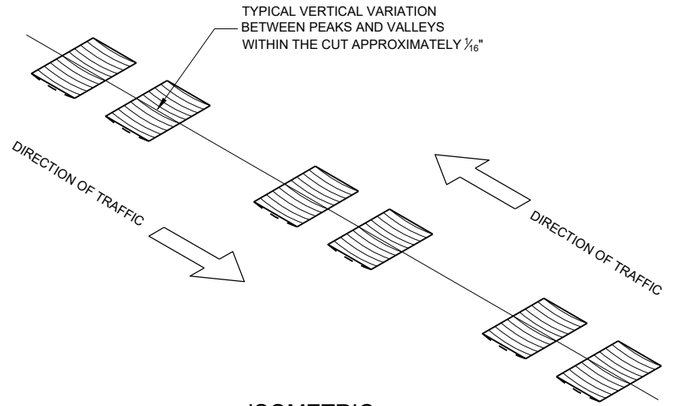
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

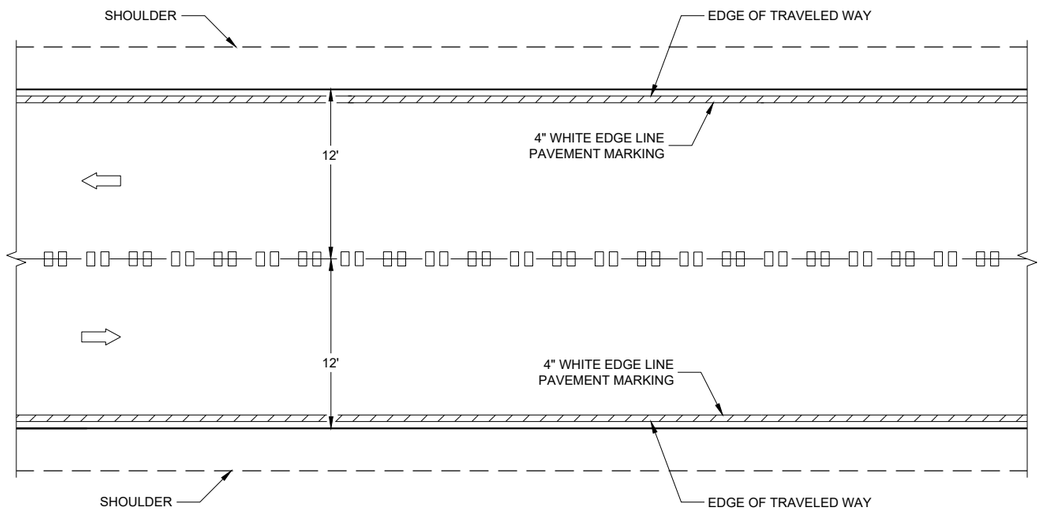
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

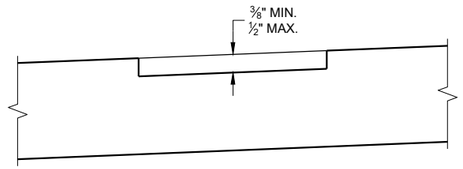
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



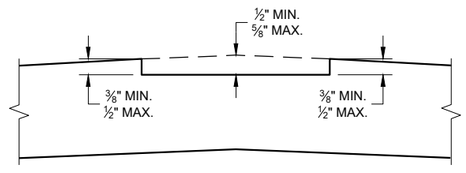
ISOMETRIC



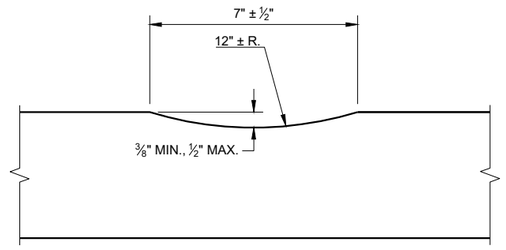
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



SECTION A - A

6

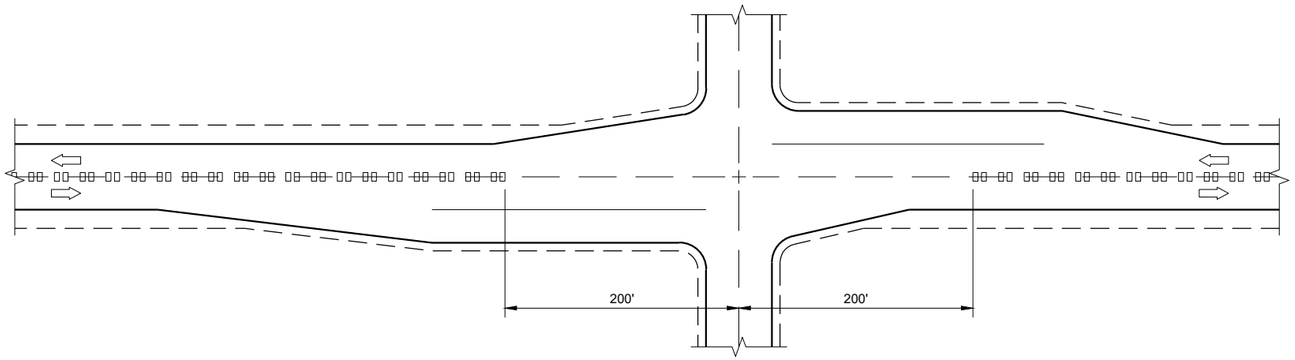
6

SDD 13A11 - 03a

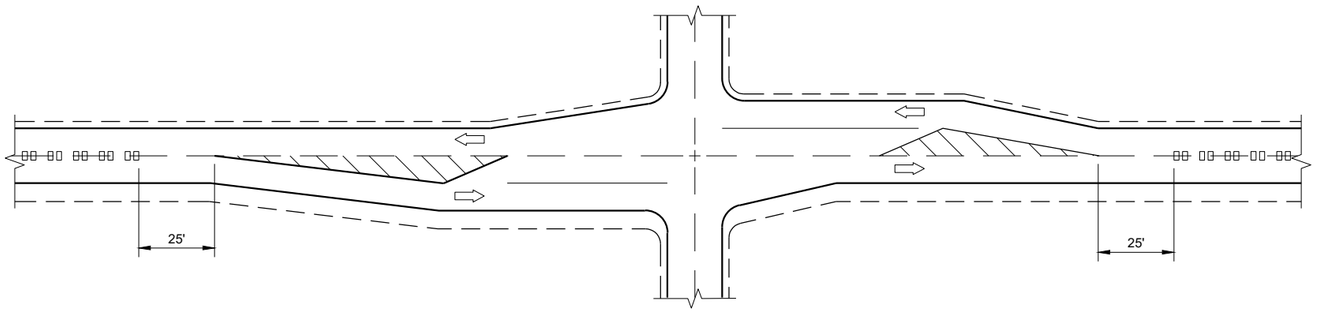
SDD 13A11 - 03a

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

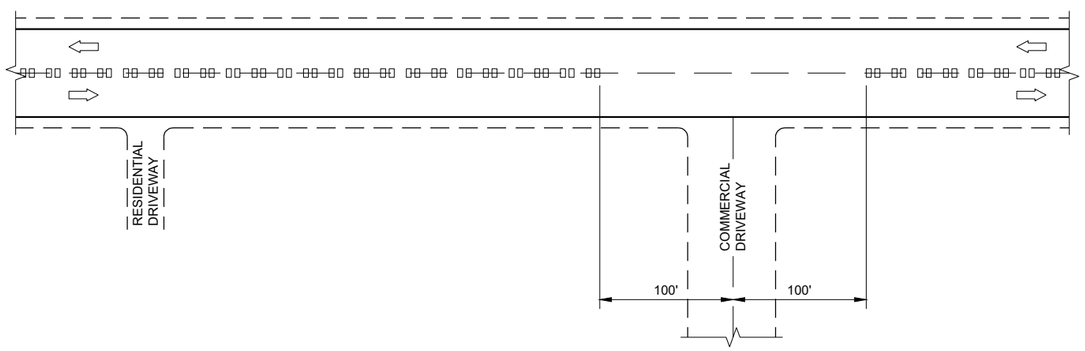
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



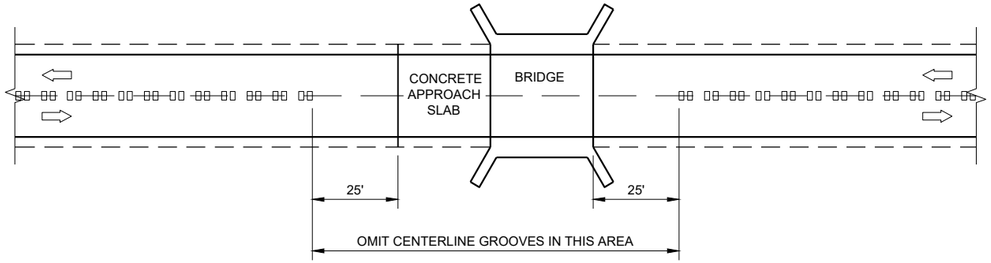
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



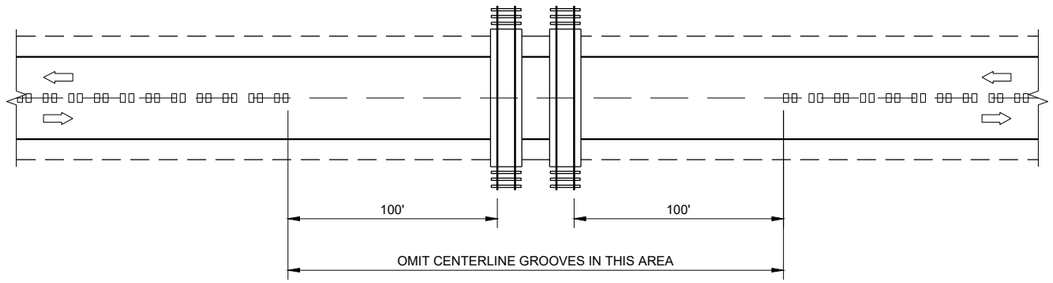
CENTERLINE GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

6
SDD 13A11 - 03b

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

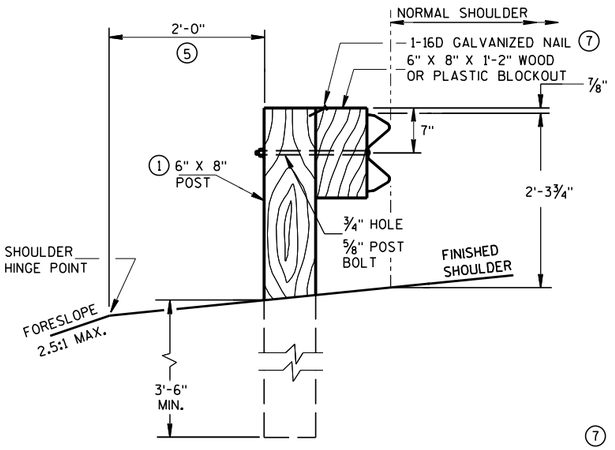
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

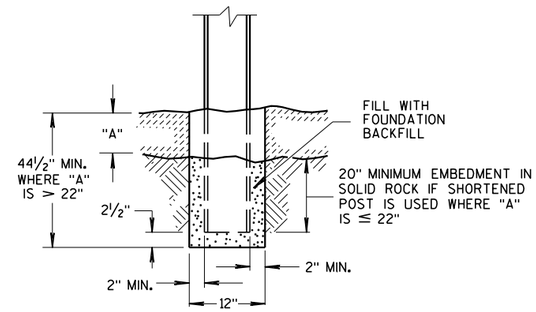
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

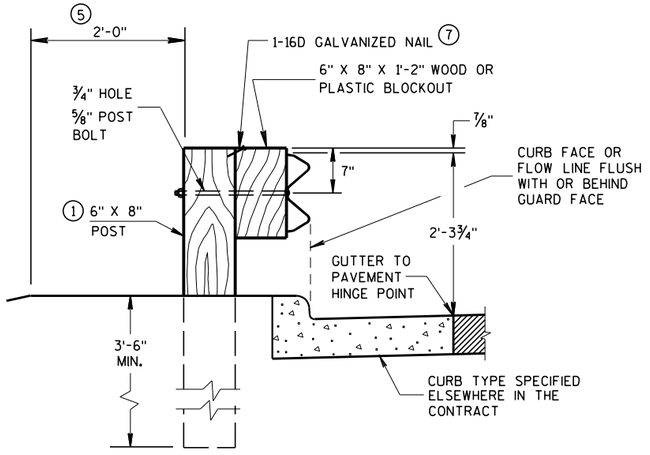
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



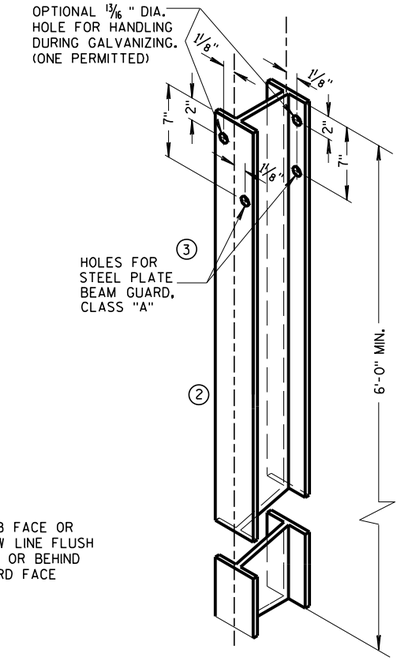
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

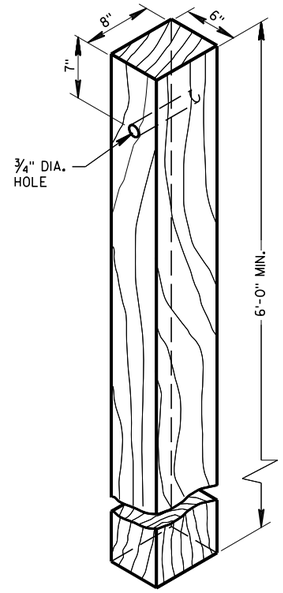


END VIEW
LOCATED ALONG A CURBED ROADWAY

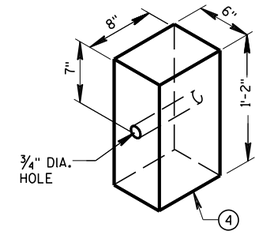


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

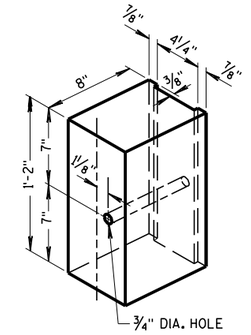
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



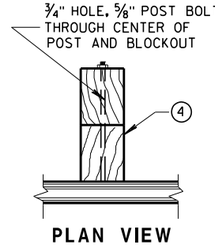
WOOD POST
(6"X8") NOMINAL



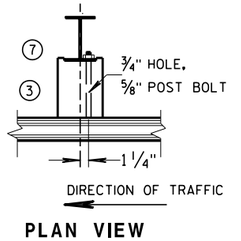
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



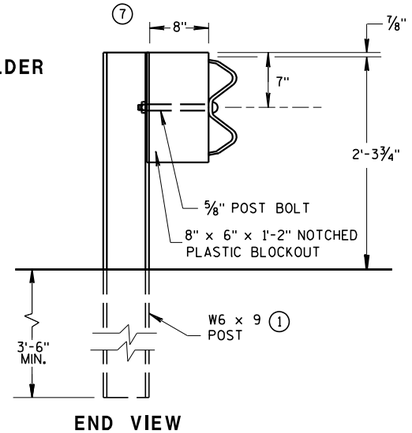
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



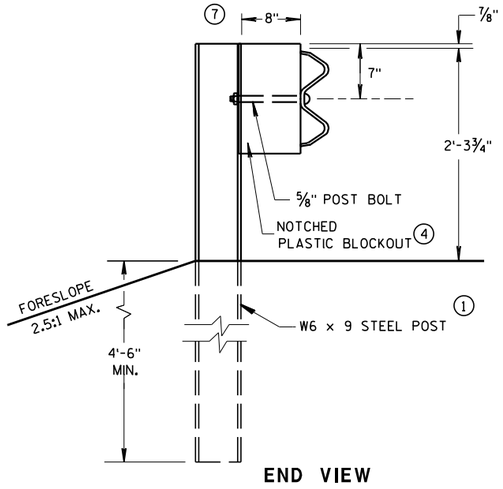
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



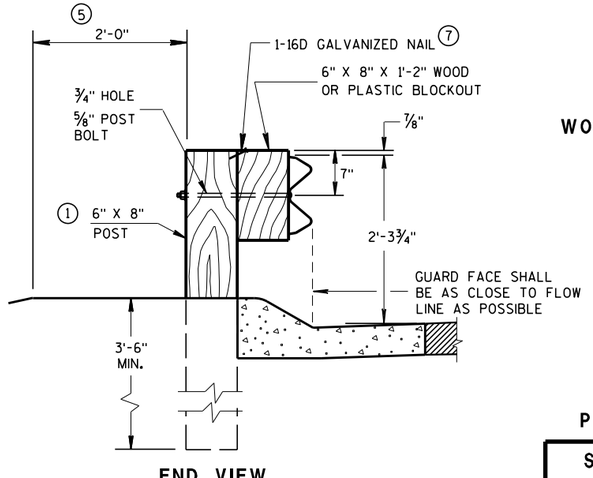
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 15-11a

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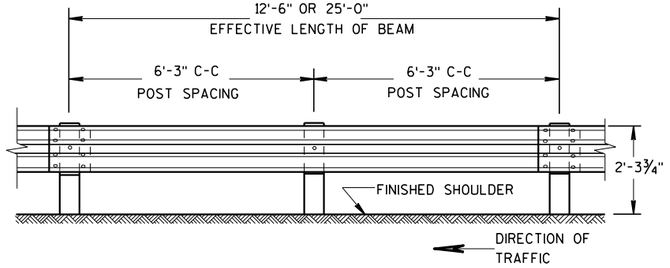
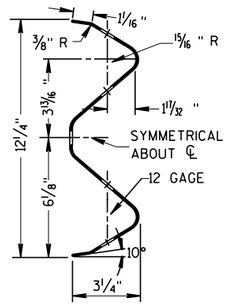
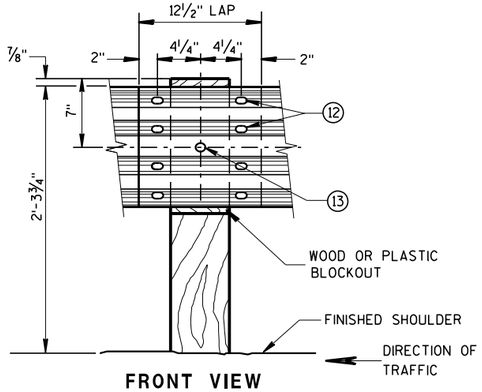


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

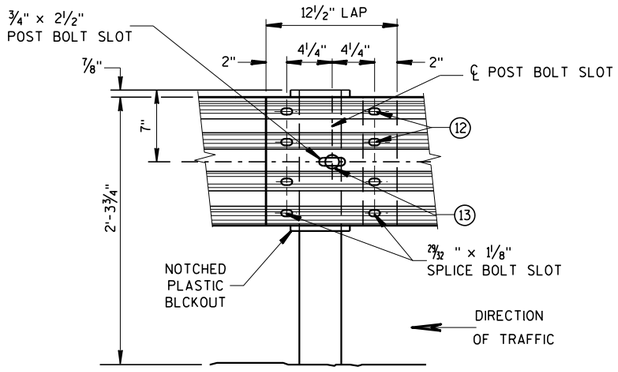
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.

FRONT VIEW

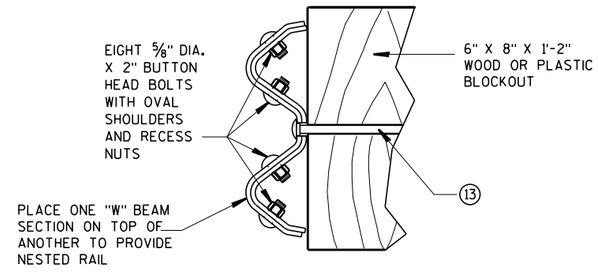
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

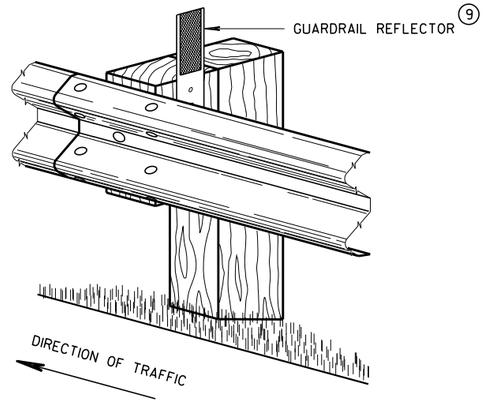
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



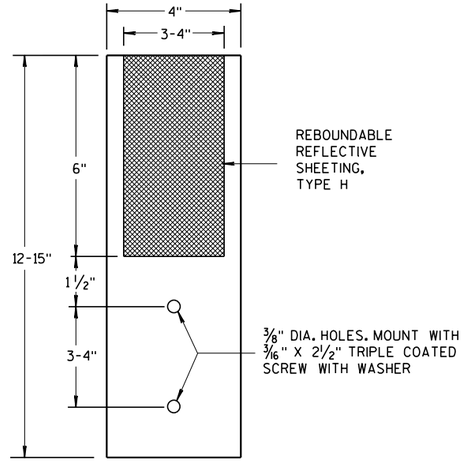
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



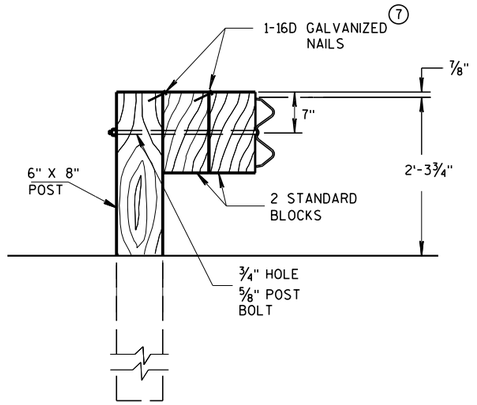
4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

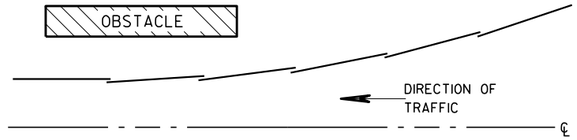
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

6
S.D.D. 14 B 15-11b

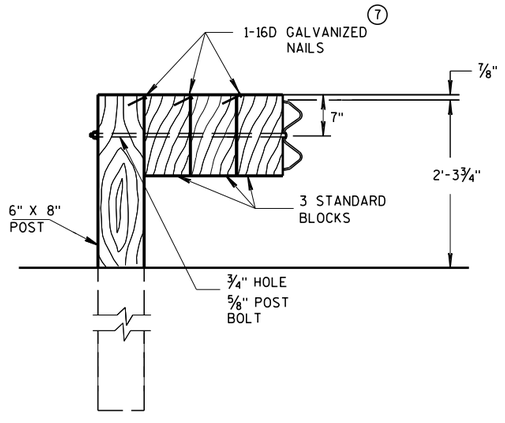


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

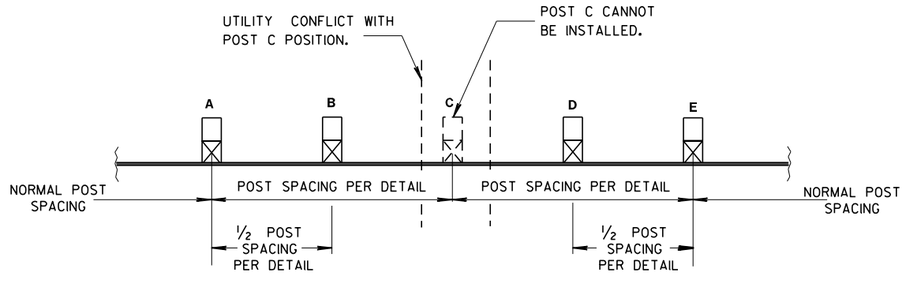


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

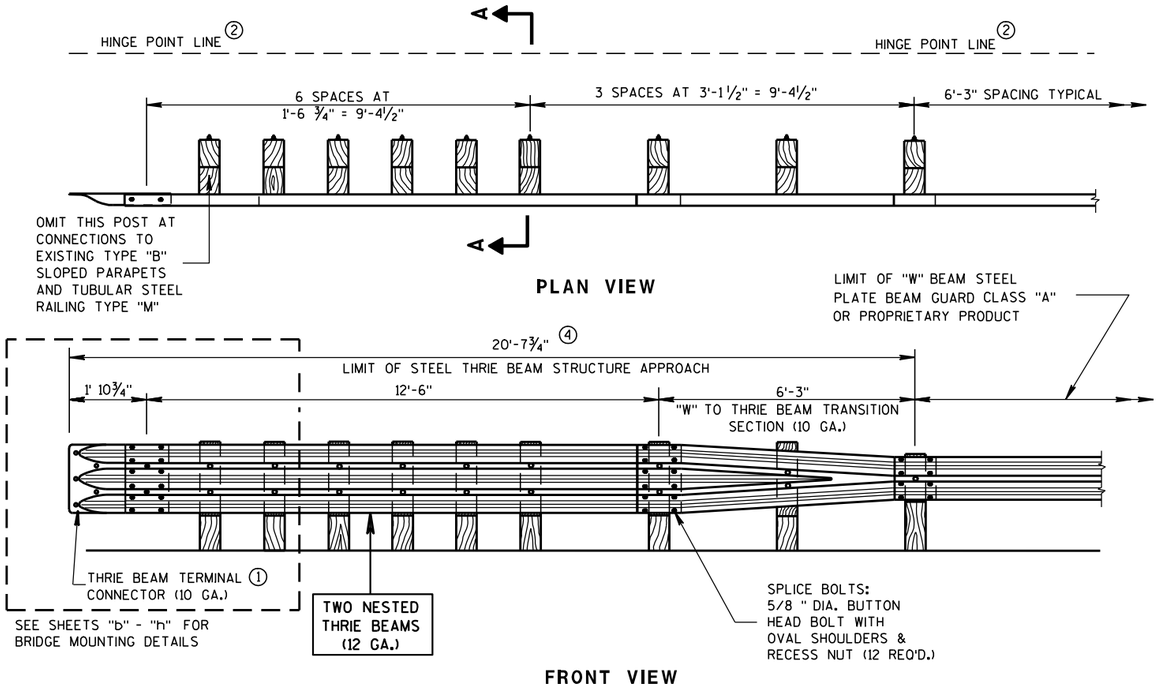
DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

6
S.D.D. 14 B 15-11c



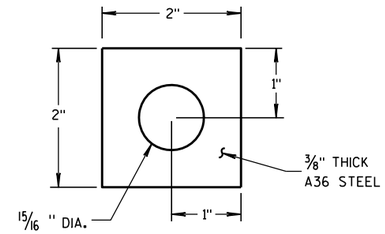


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

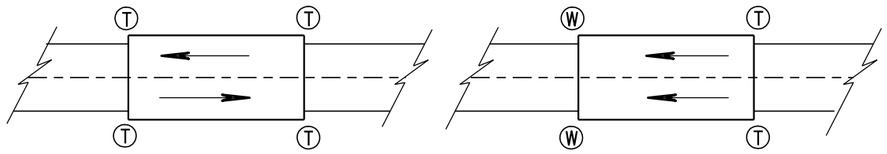
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



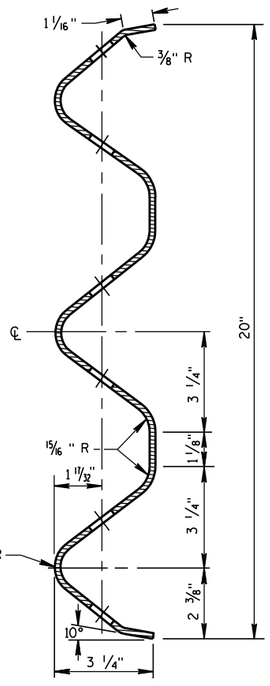
TWO WAY TRAFFIC

ONE WAY TRAFFIC

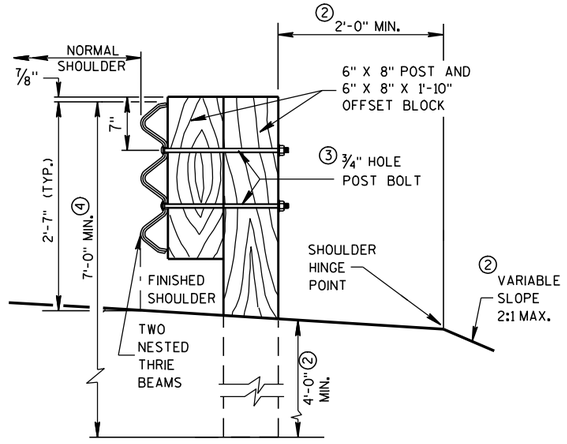
Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

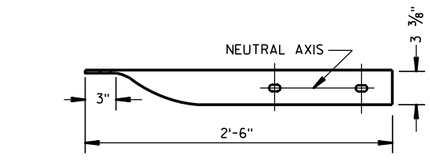
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

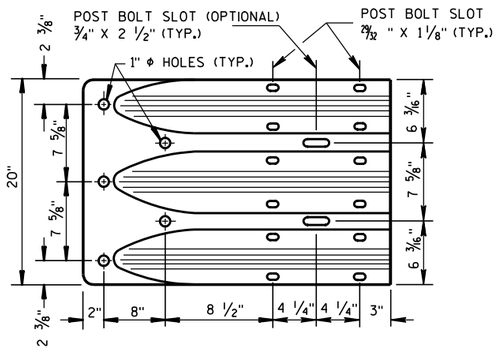


SECTION THRU THRIE BEAM RAIL ELEMENT

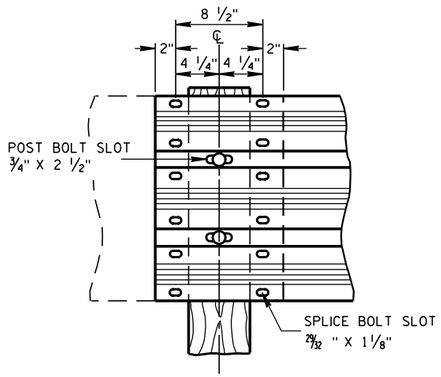


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

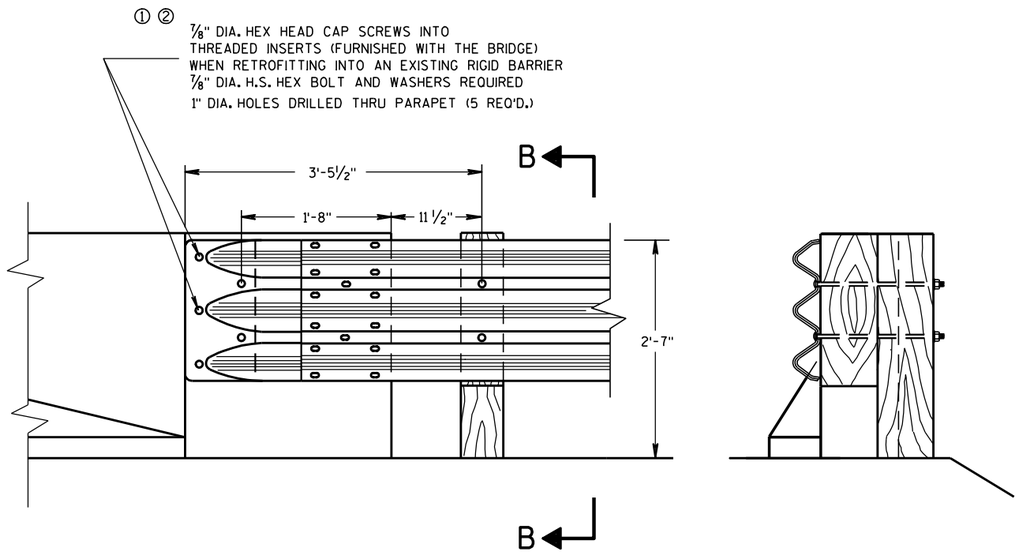
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

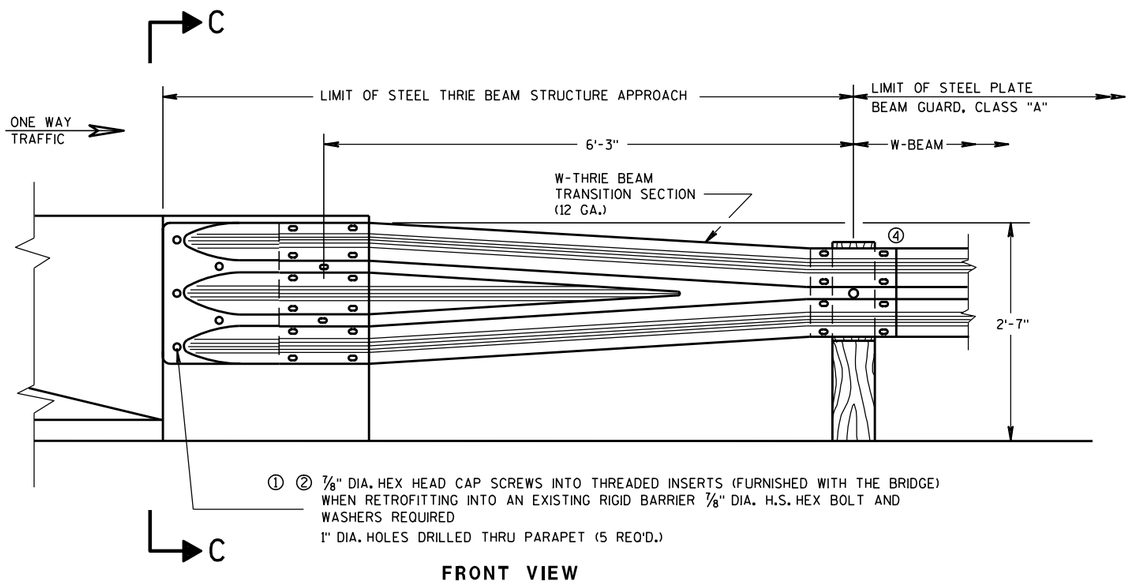
FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

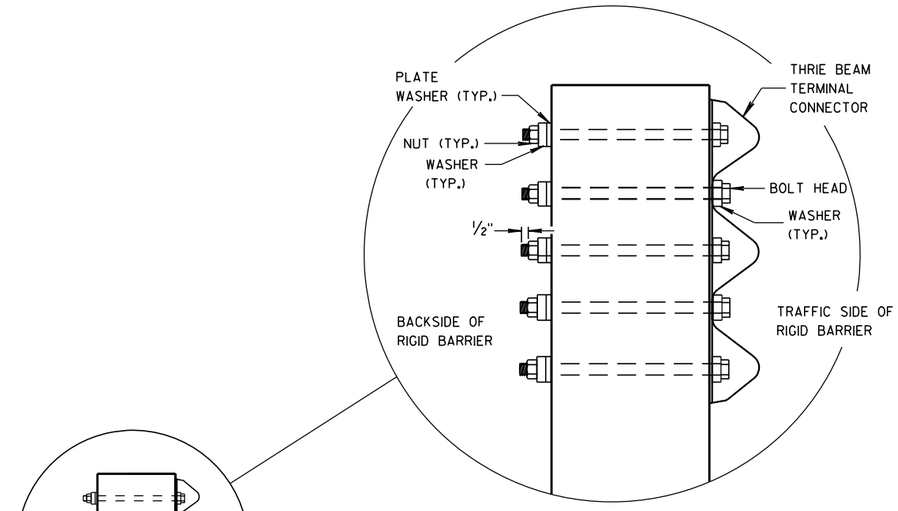
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

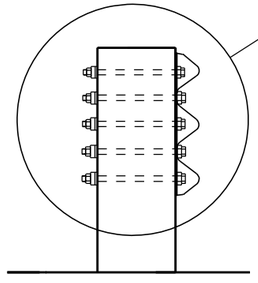
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





SECTION C-C

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

6

S.D.D. 14 B 20-11b

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

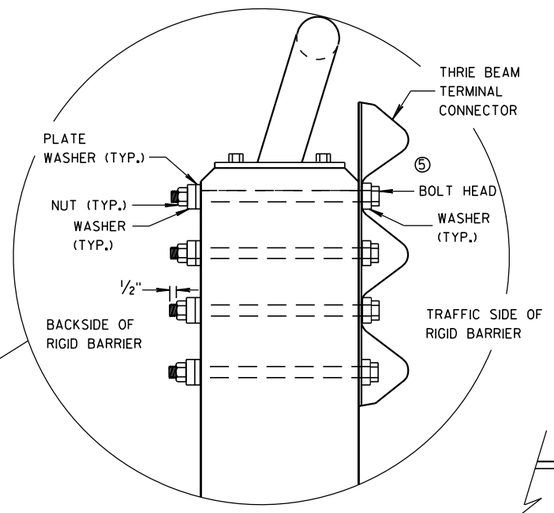
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

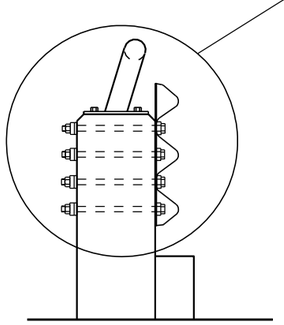
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

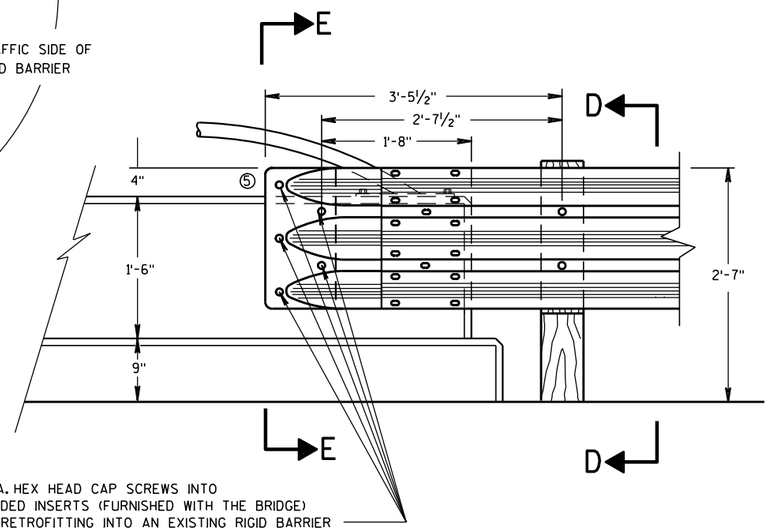
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





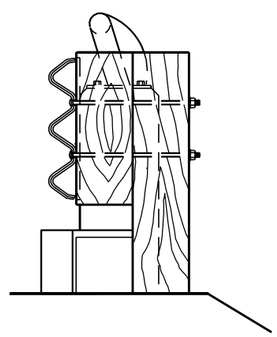
SECTION E-E



①② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

FRONT VIEW

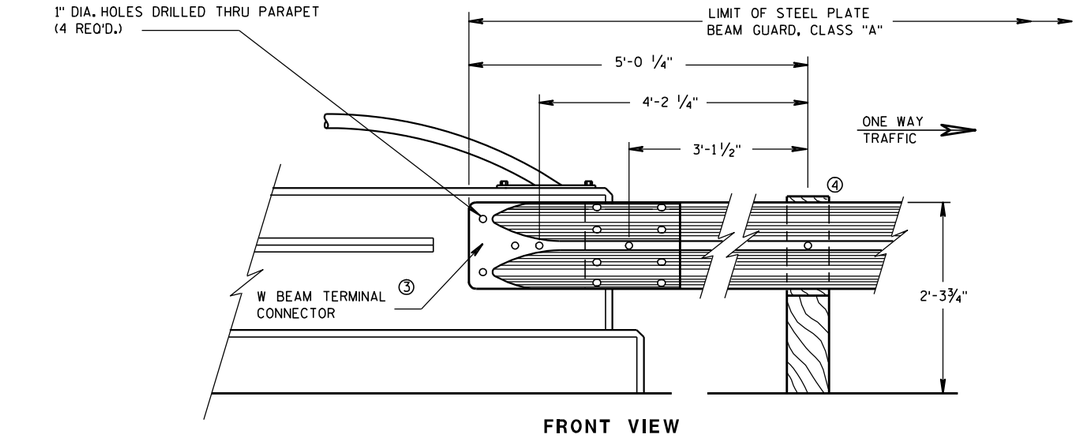


SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

①② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 14 B 20-11c

6

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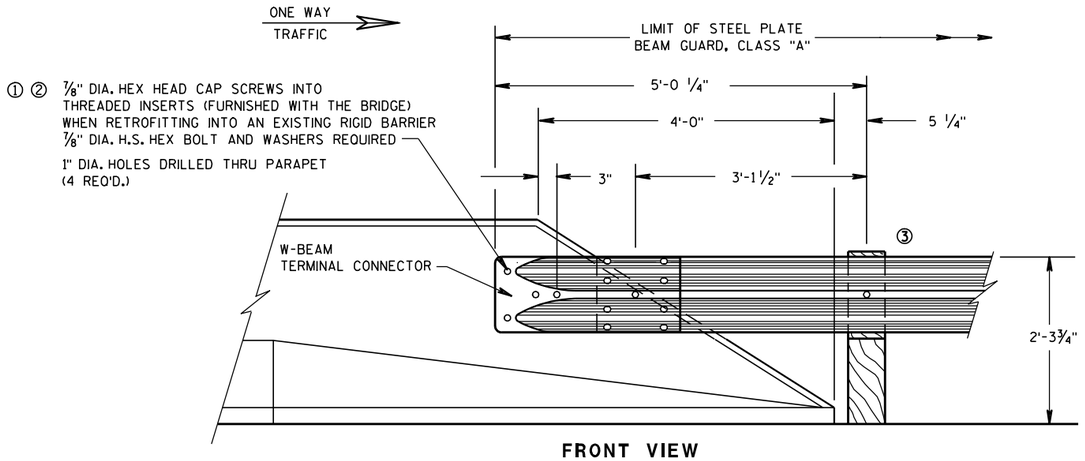


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

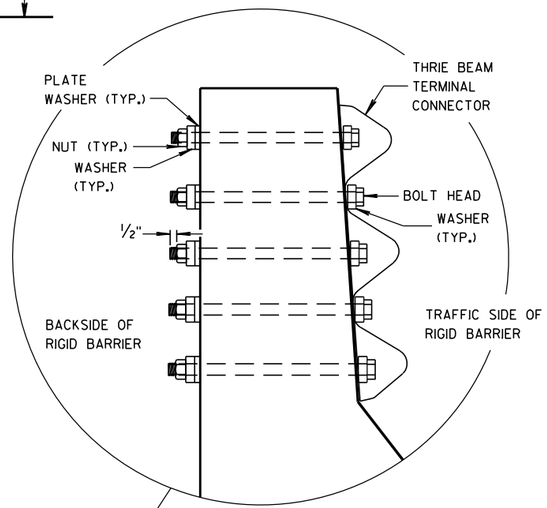
BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

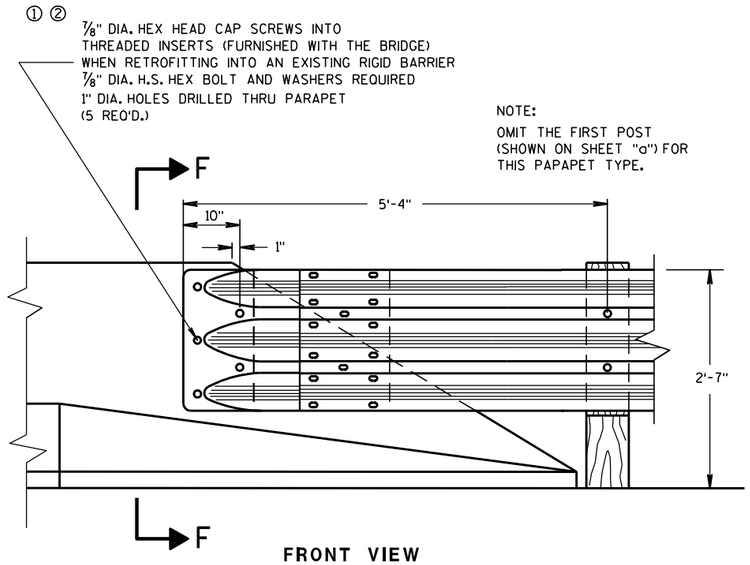
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

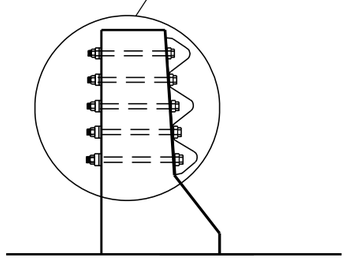
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION F-F

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

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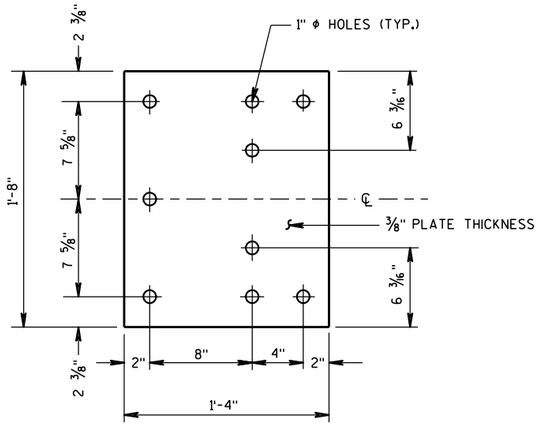
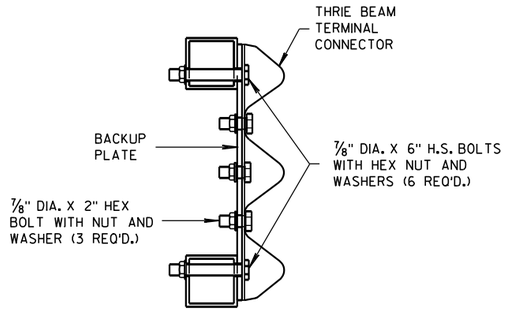


BACK-UP PLATE DETAIL



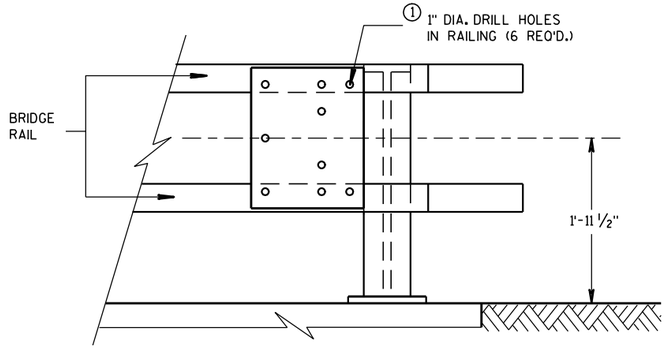
SECTION G-G

GENERAL NOTES

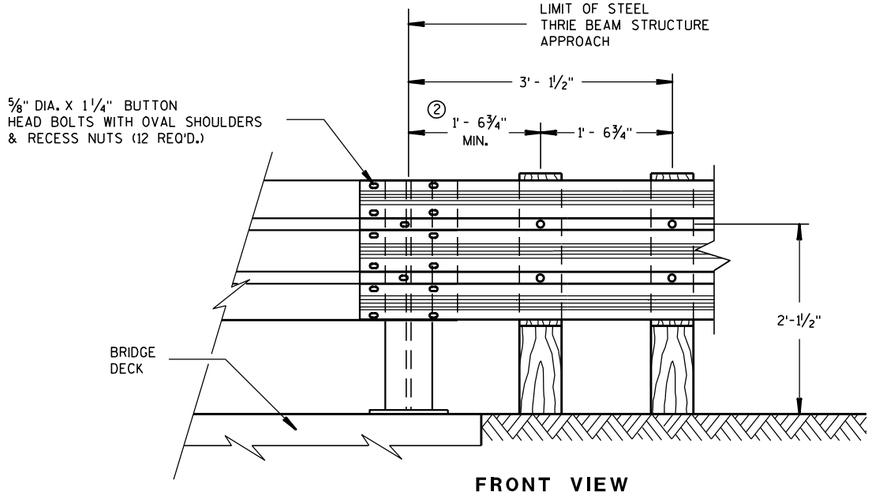
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.

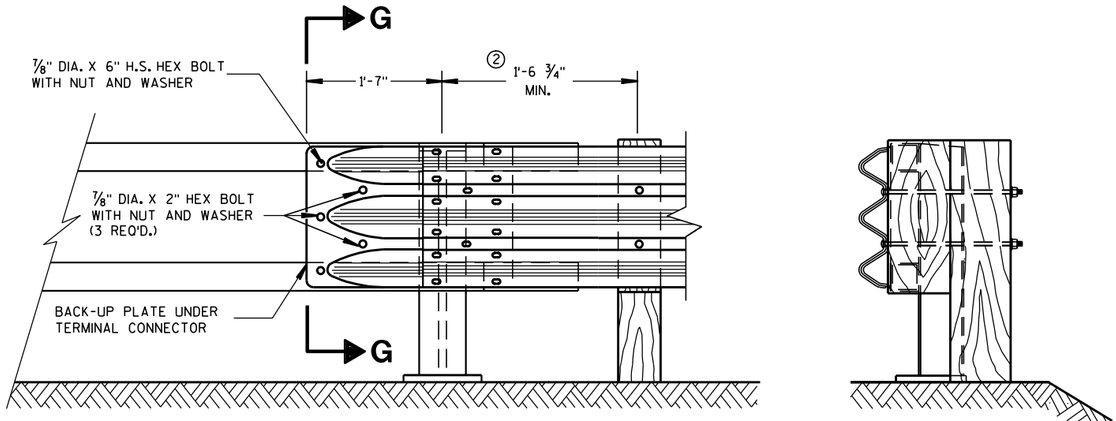


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

END VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"

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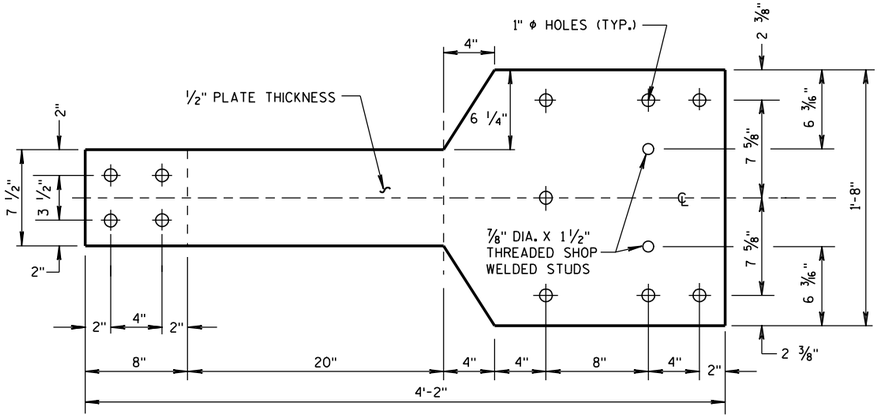
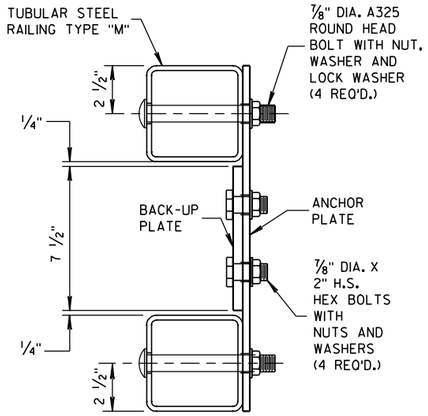
GENERAL NOTES

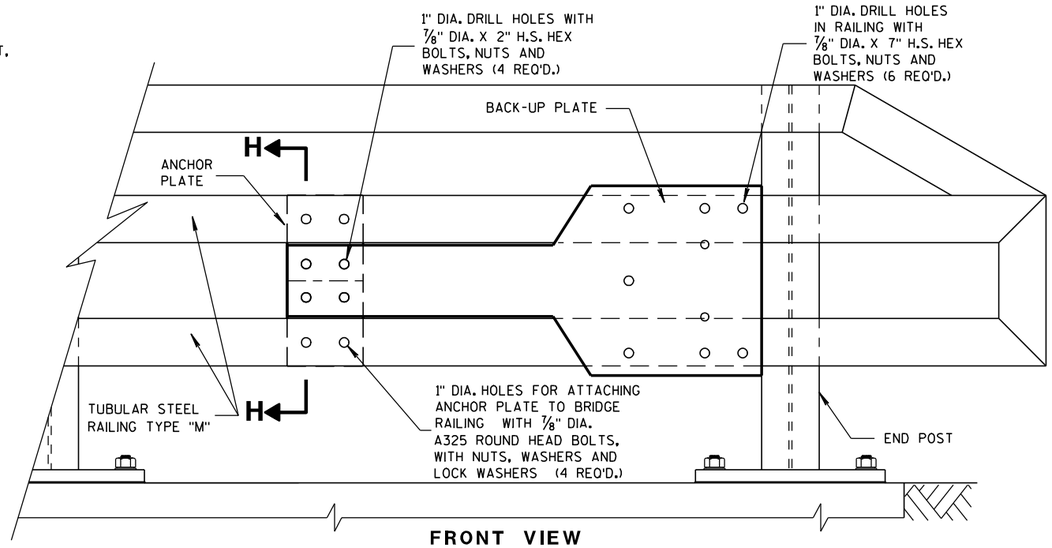
① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.



FRONT VIEW

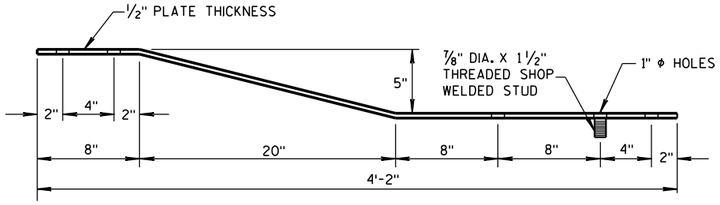


SECTION H-H



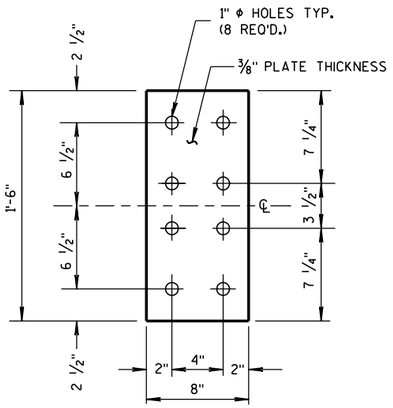
FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



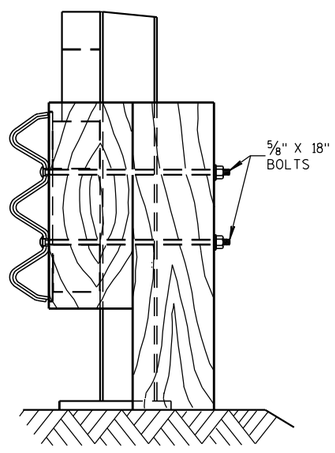
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

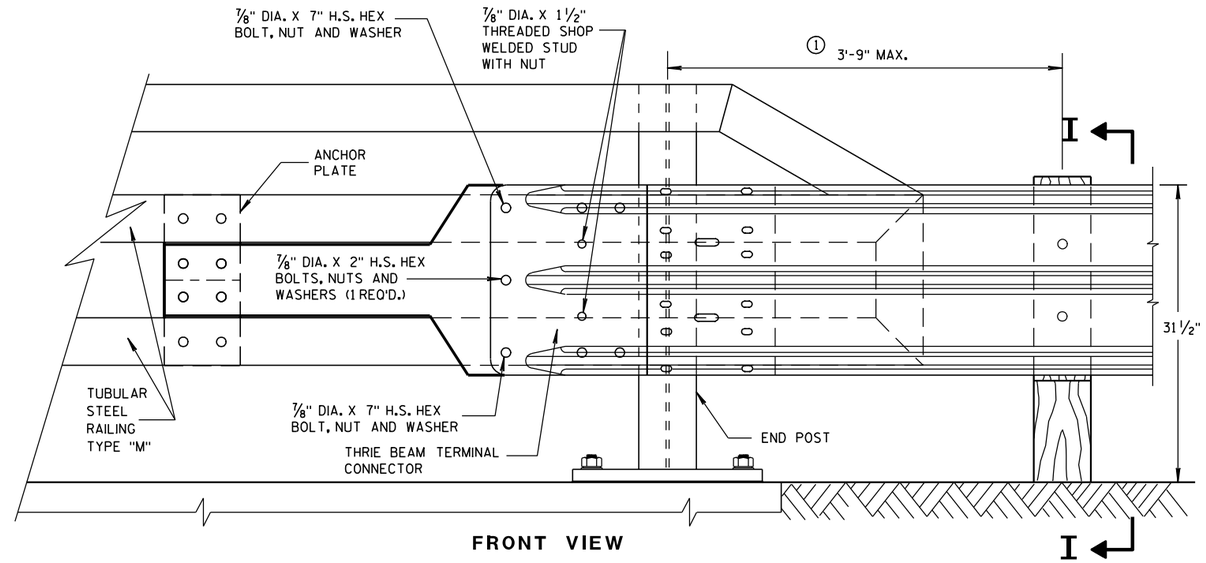


FRONT VIEW

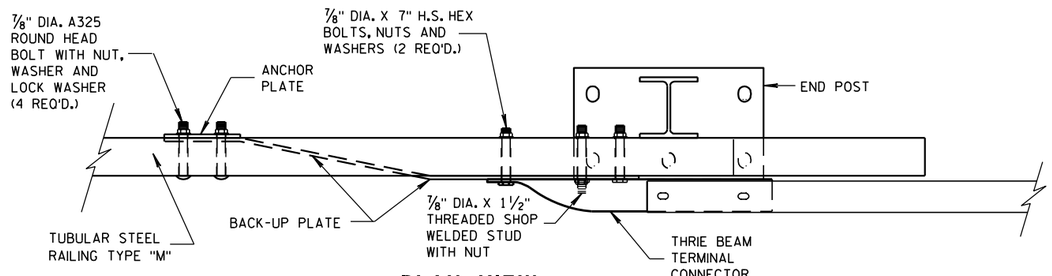
ANCHOR PLATE DETAIL, TYPE "M"



SECTION I-I



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"

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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

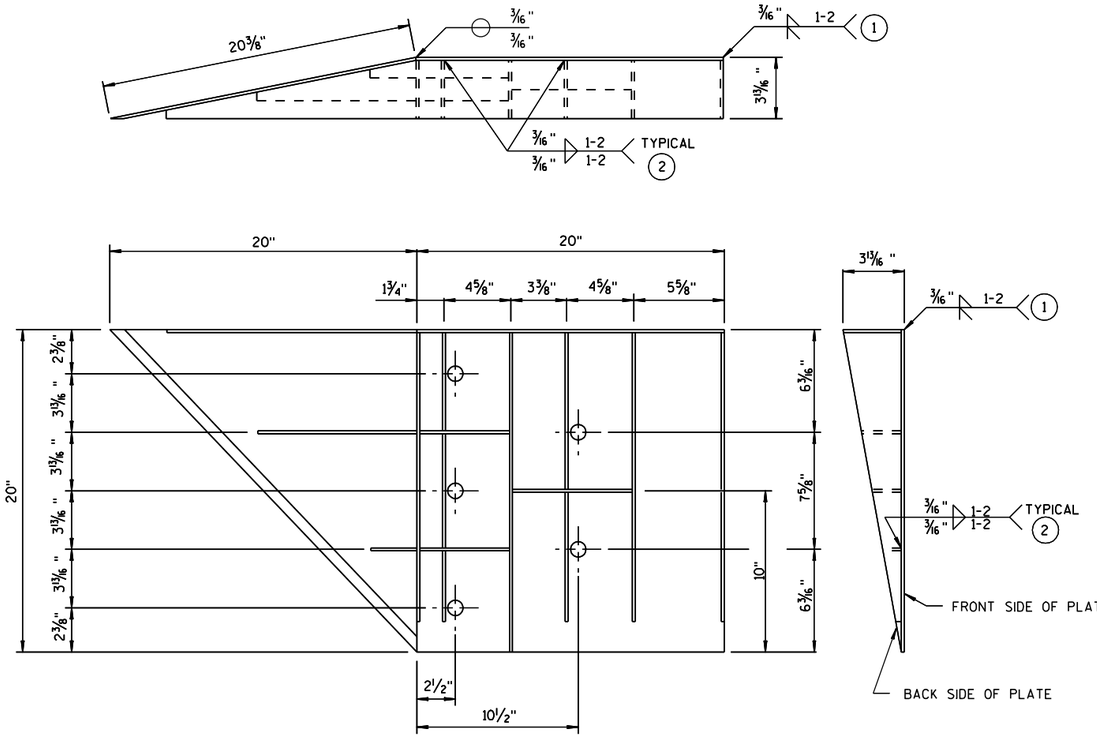
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

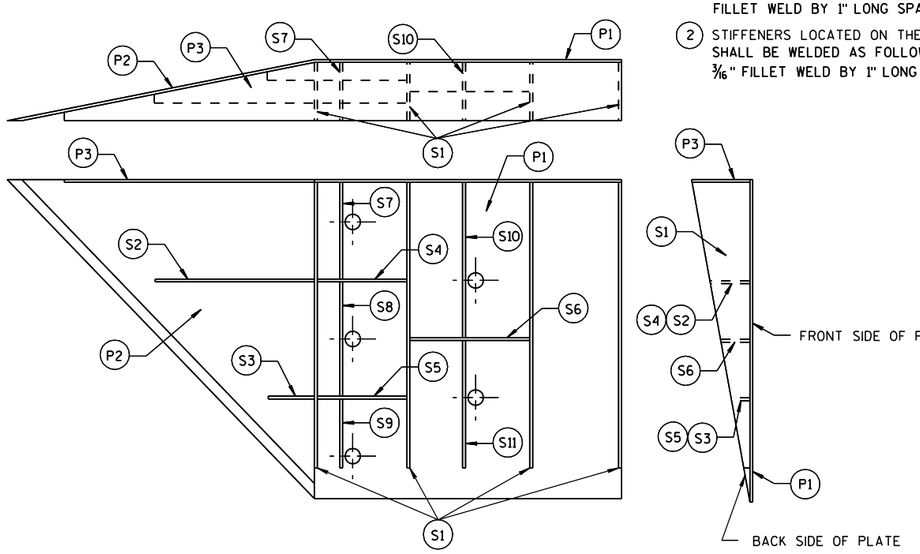


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

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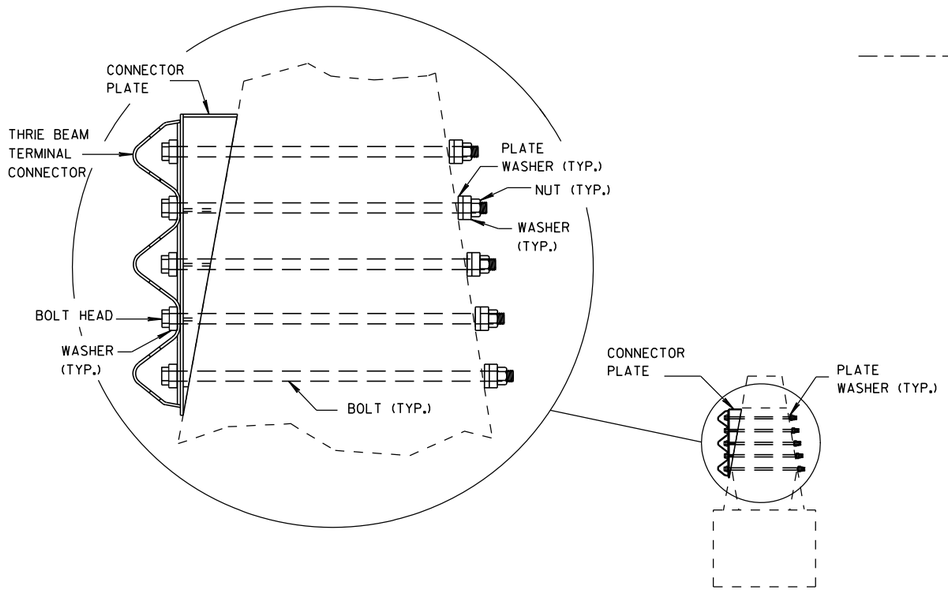
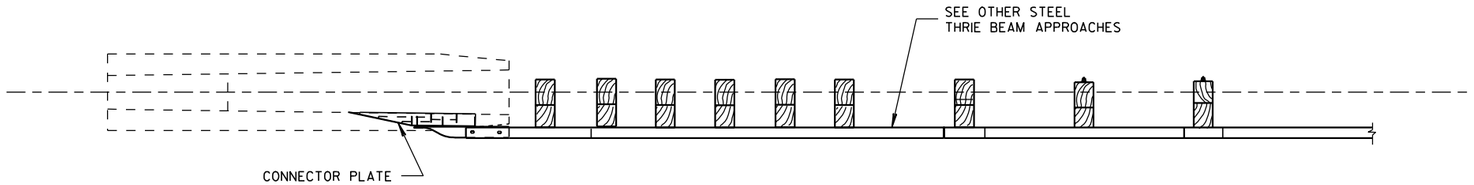
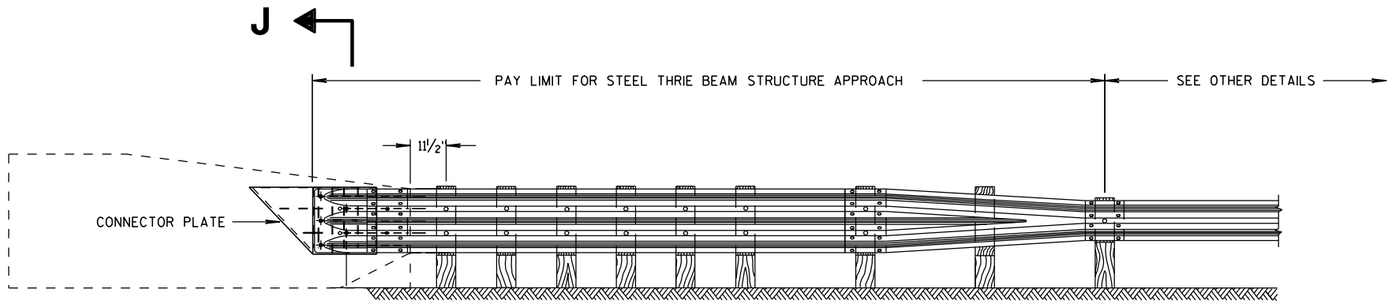


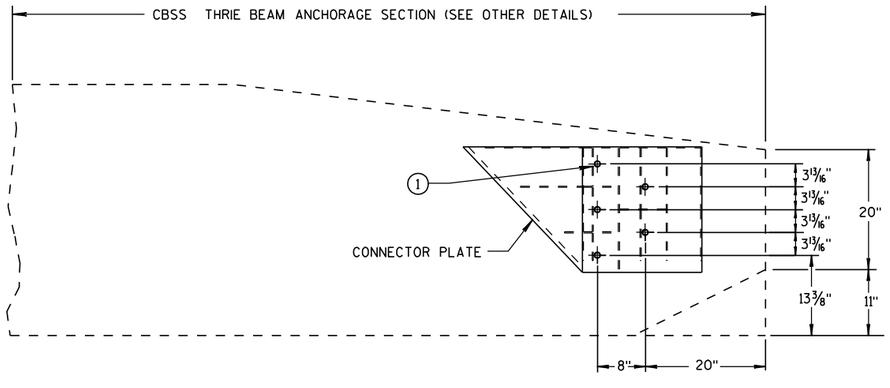
SECTION J-J



PLAN VIEW



FRONT VIEW



CONNECTOR PLATE LOCATION

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

CONNECTOR PLATE, DRILLING HOLES THROUGH PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT

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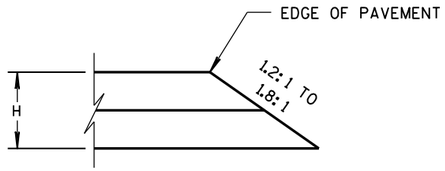
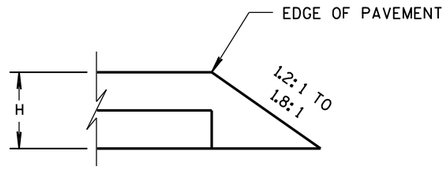


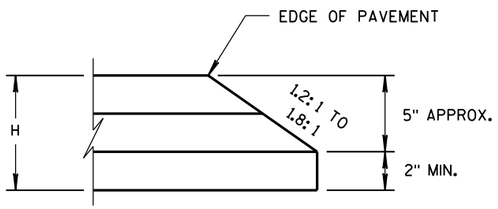
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



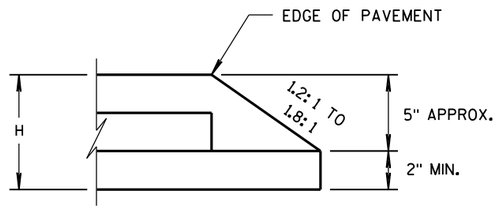
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

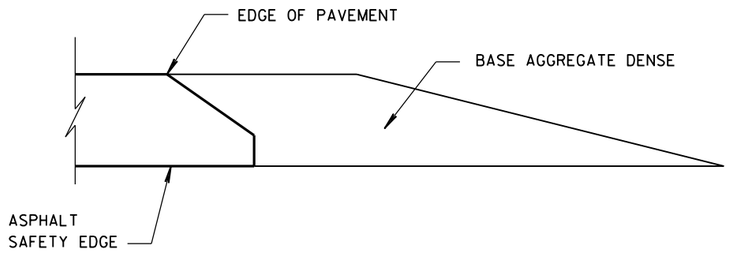
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

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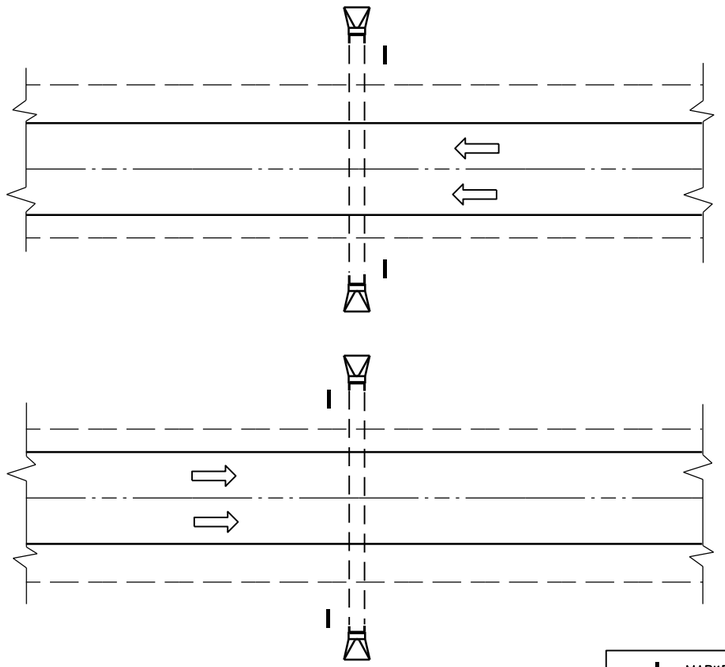
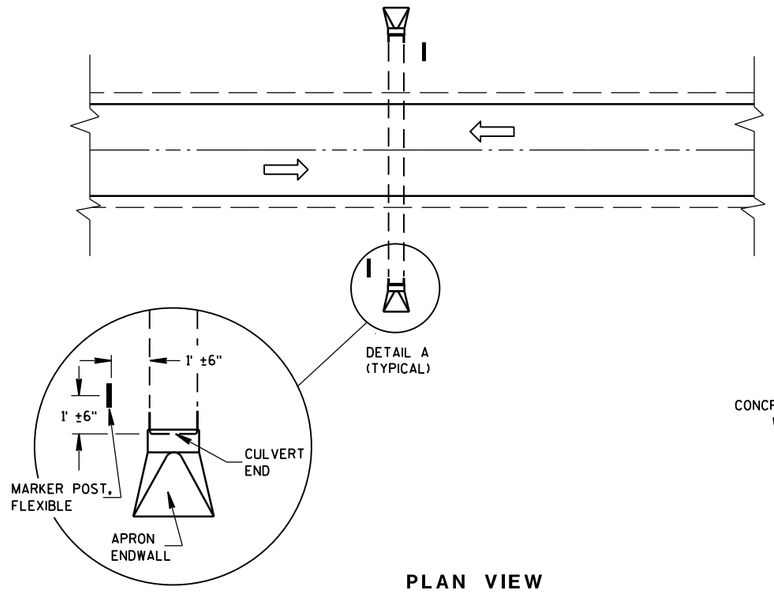


PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

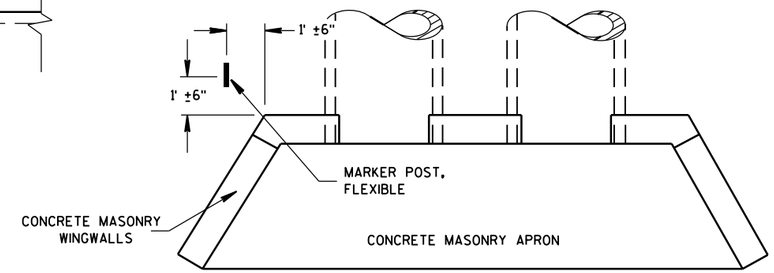
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

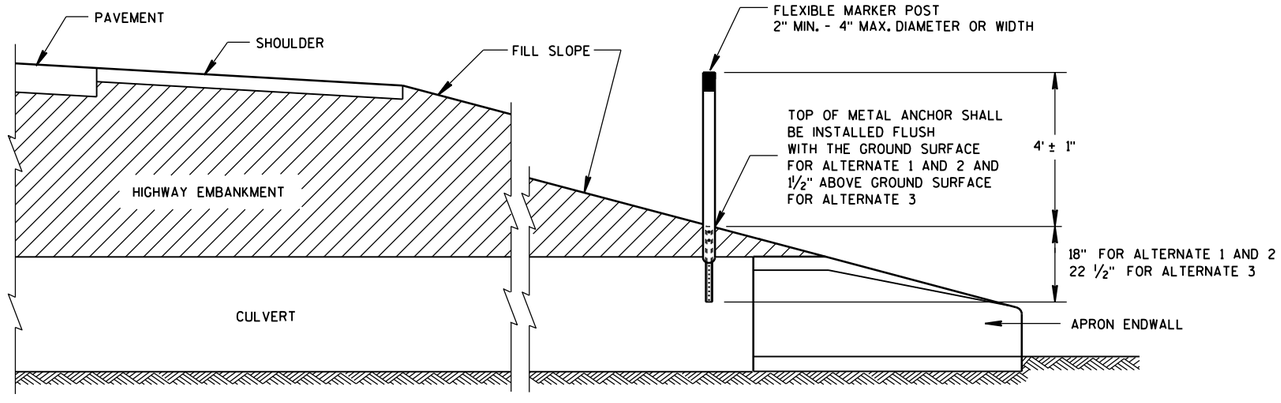
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

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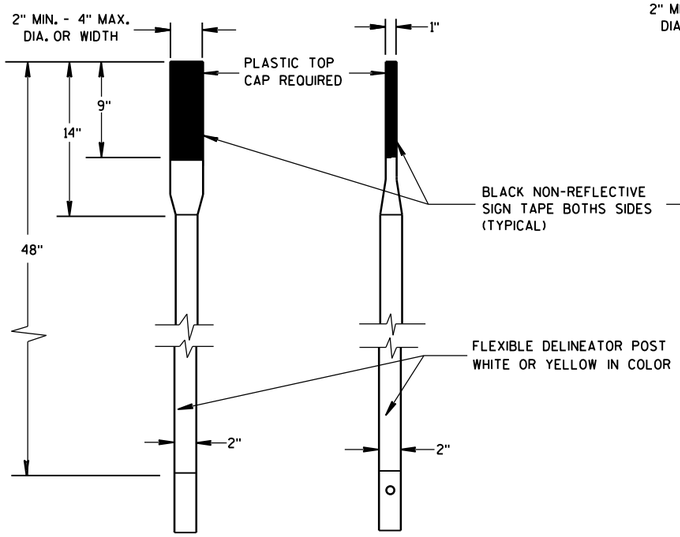
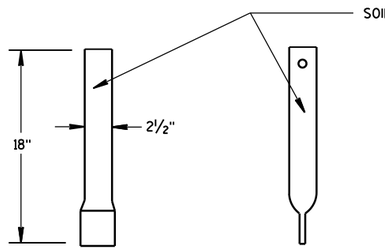
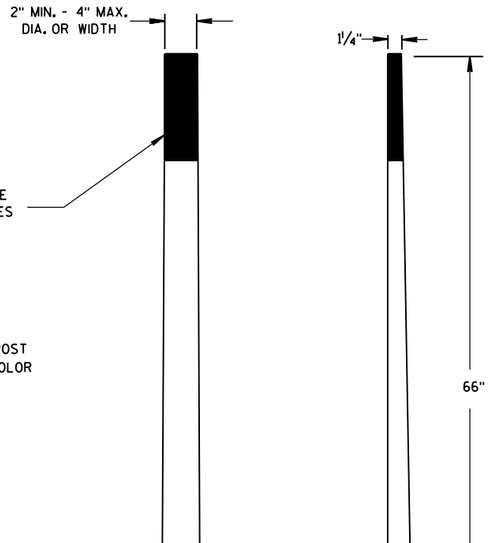




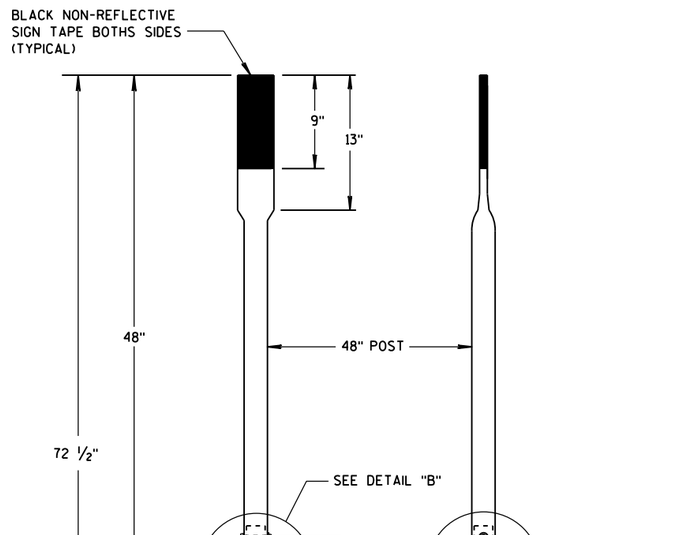
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

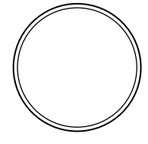
ALTERNATE 2



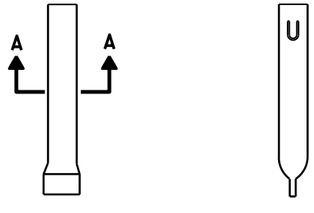
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

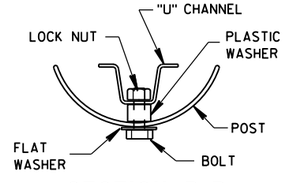


SECTION A-A

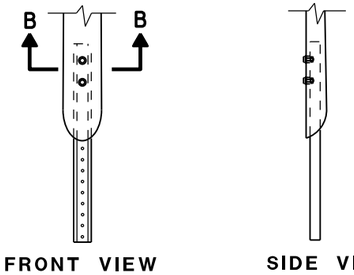


FRONT VIEW SIDE VIEW

ALTERNATE 1

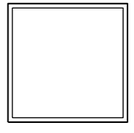


SECTION B-B

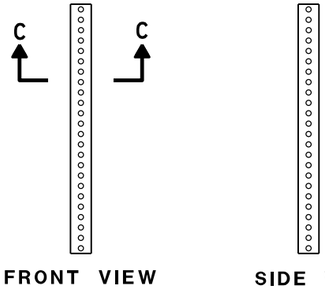


FRONT VIEW SIDE VIEW

ALTERNATE 2



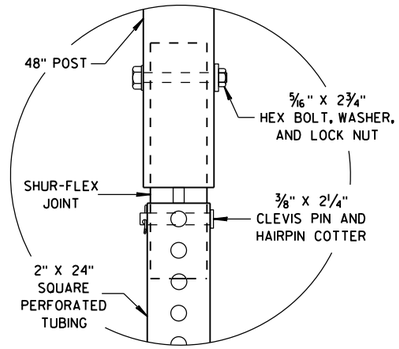
SECTION C-C



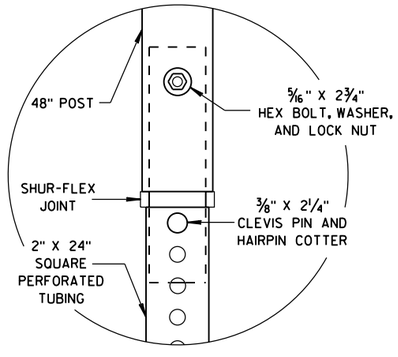
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

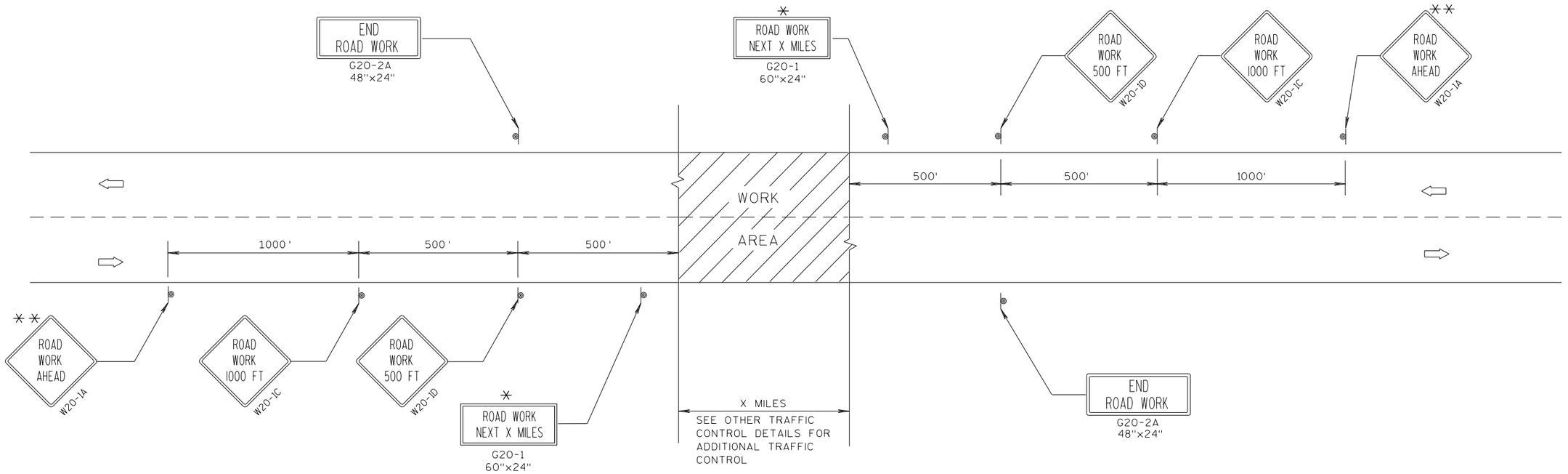
6

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

6

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

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.

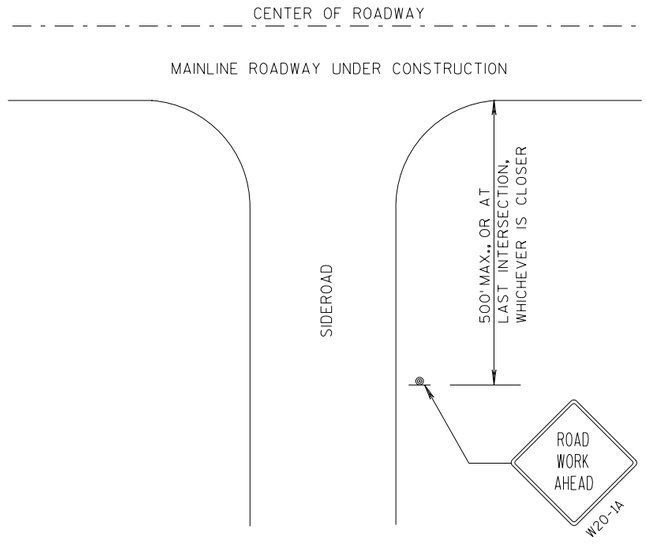
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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 W20-1A "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

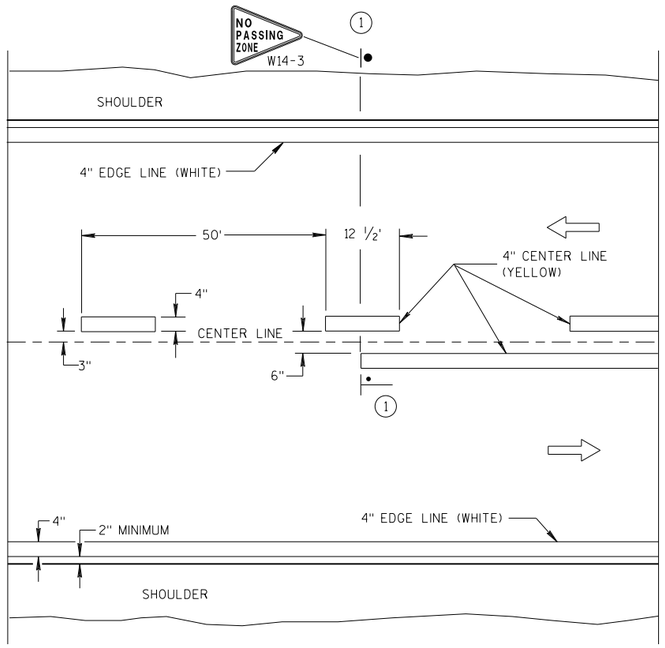
7/2018
DATE

/S/ Andrew Heldtke
WORK ZONE ENGI

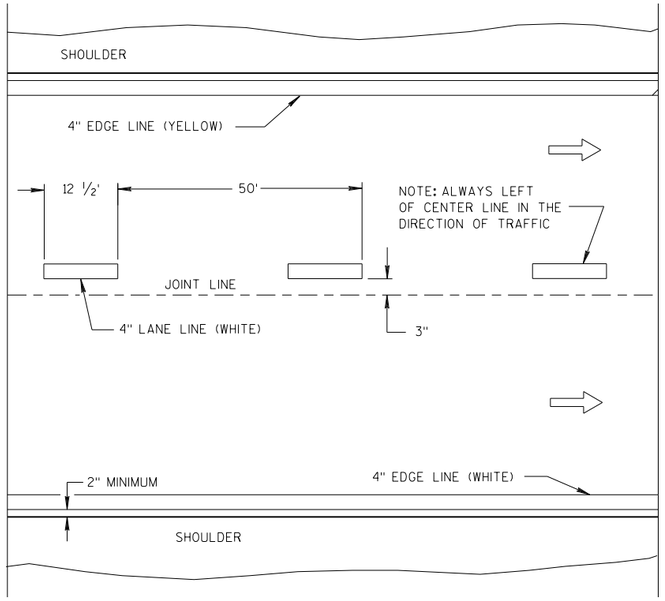
FHWA

6

S.D.D. 15 C 4-5



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

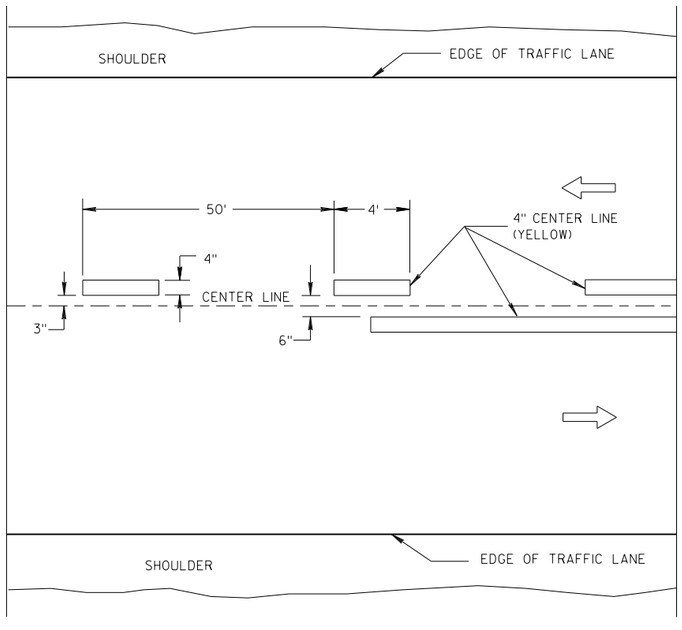
GENERAL NOTES

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

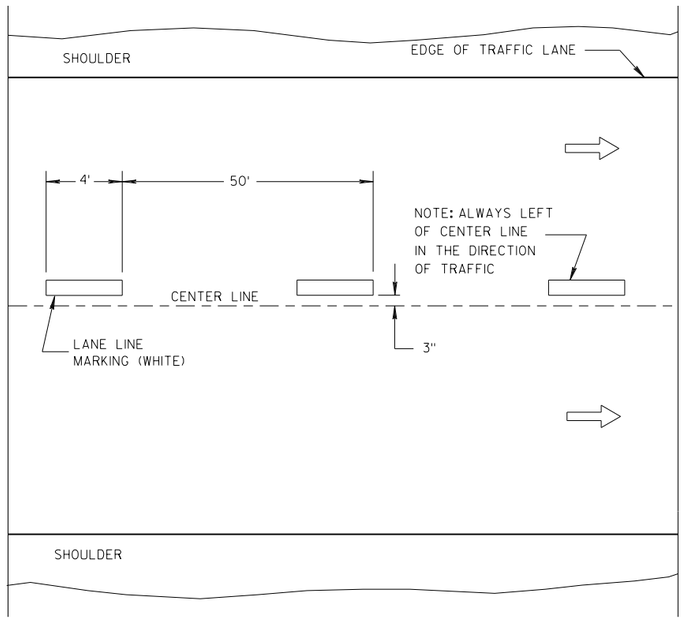
(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LEGEND

"T" MARKING

POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

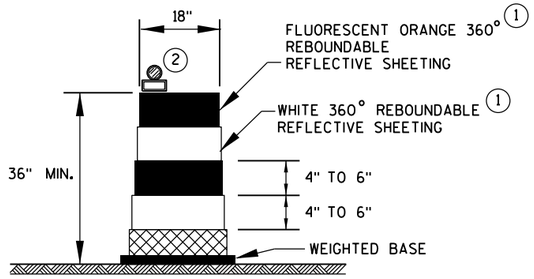
7/2018 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

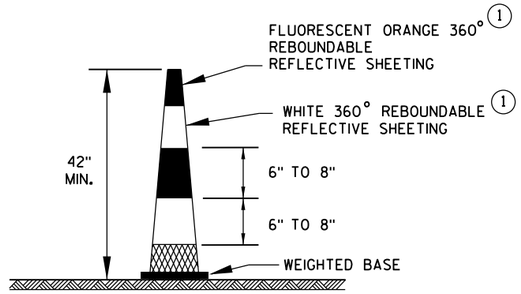
FHWA

6

S.D.D. 15 C 8-19a



DRUM

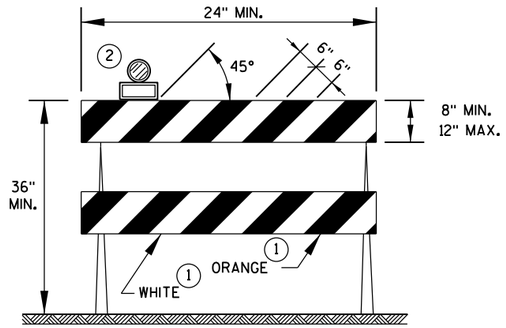


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

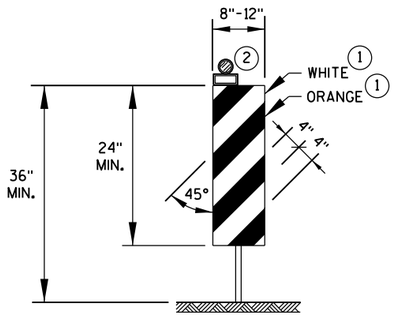
GENERAL NOTES

1. REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
2. LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



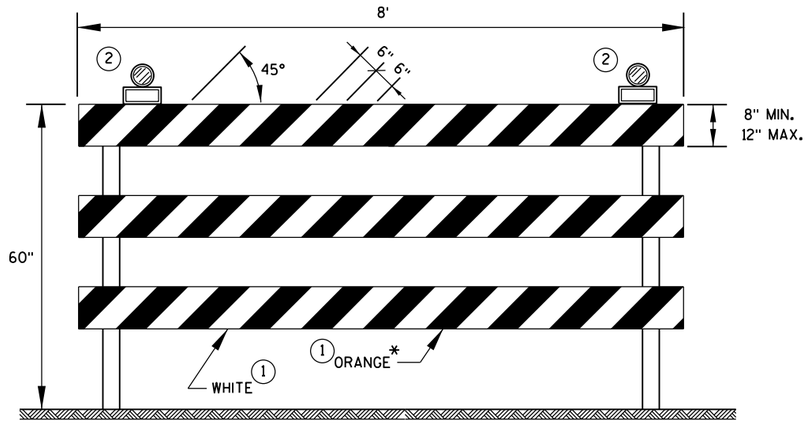
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENG
FHWA	

6

S.D.D. 15 C 11-7b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

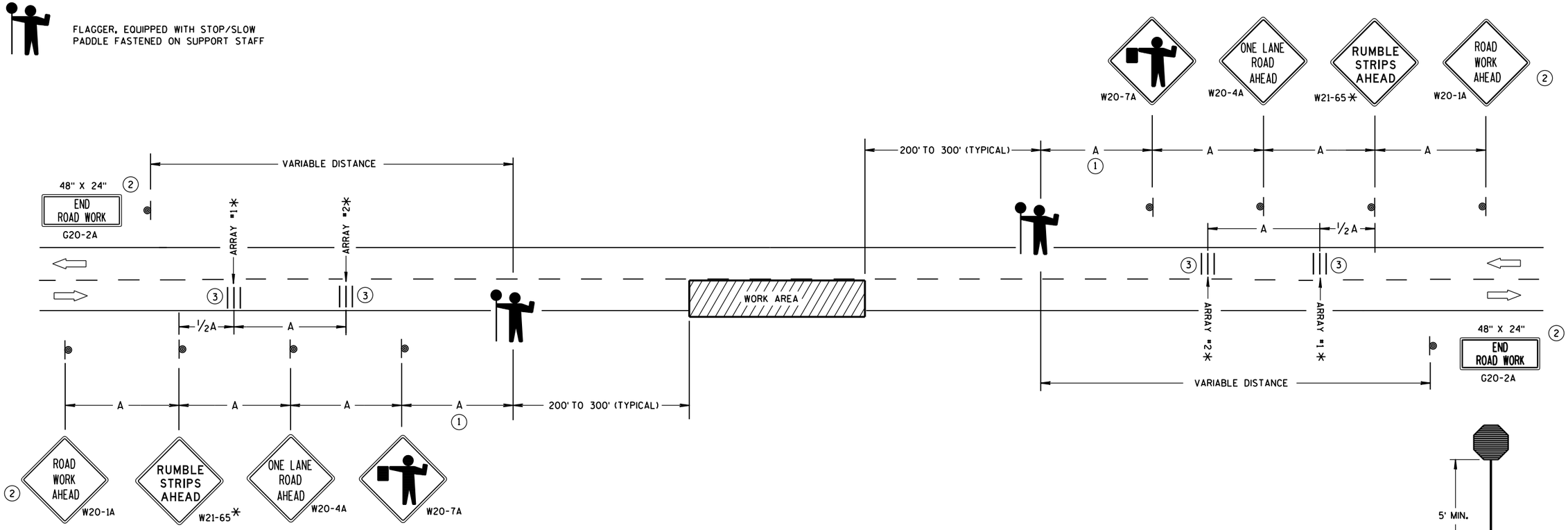
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

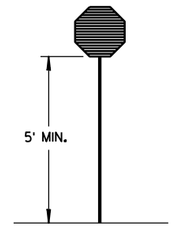
SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

W03-4

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





STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

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

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

(1) FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

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

(3) EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

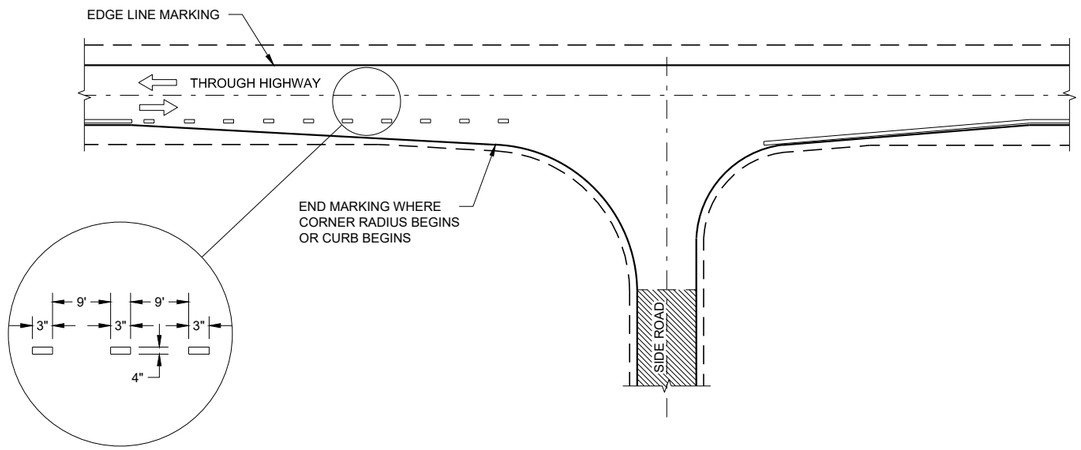
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENG
FHWA

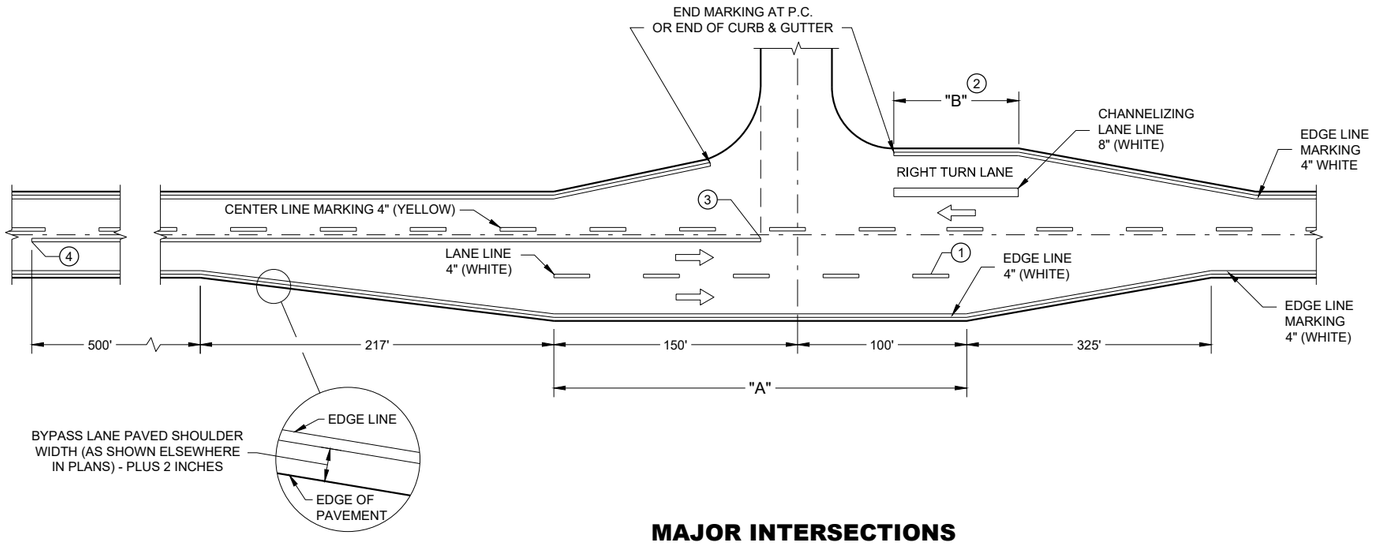
6

S.D.D. 15 C 12-6

S.D.D. 15 C 12-6



MINOR INTERSECTION



MAJOR INTERSECTIONS

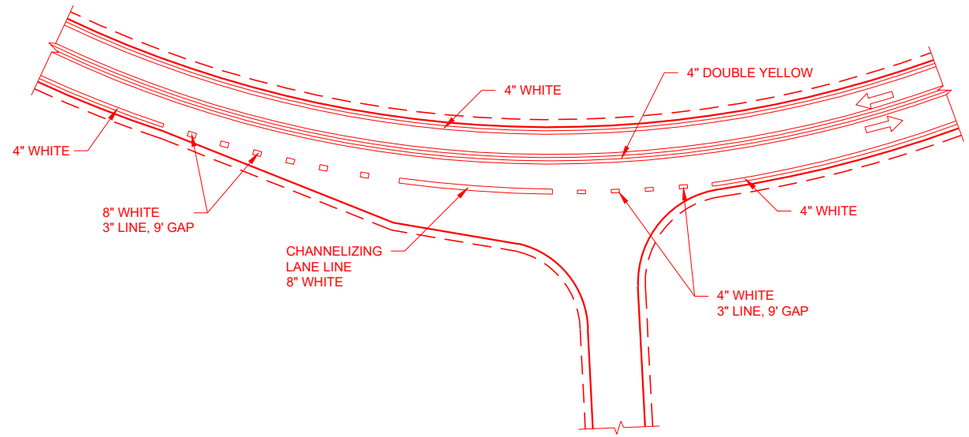
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C35 - 03a

6

SDD 15C35 - 03a

GENERAL NOTES

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. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

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

TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

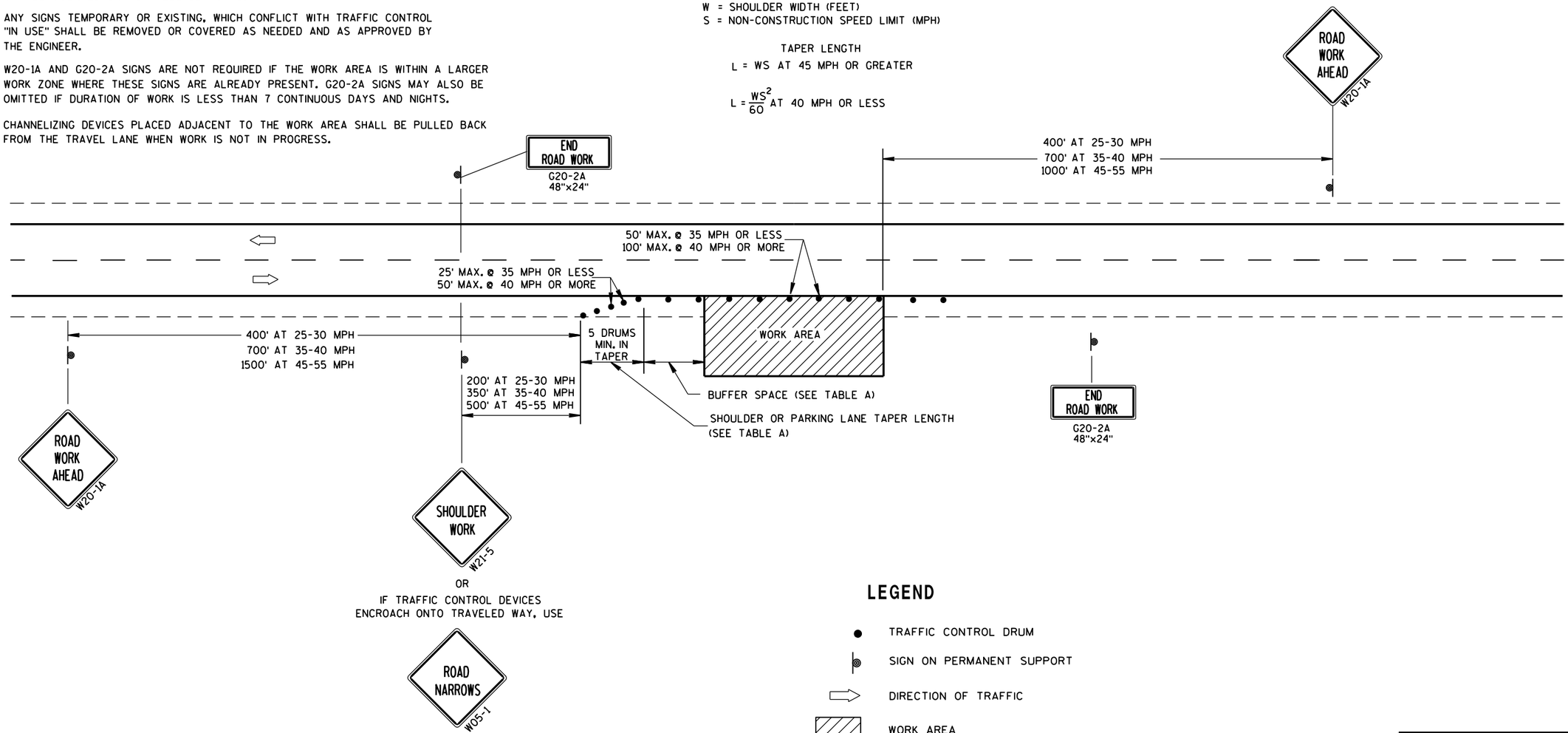
W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

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

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

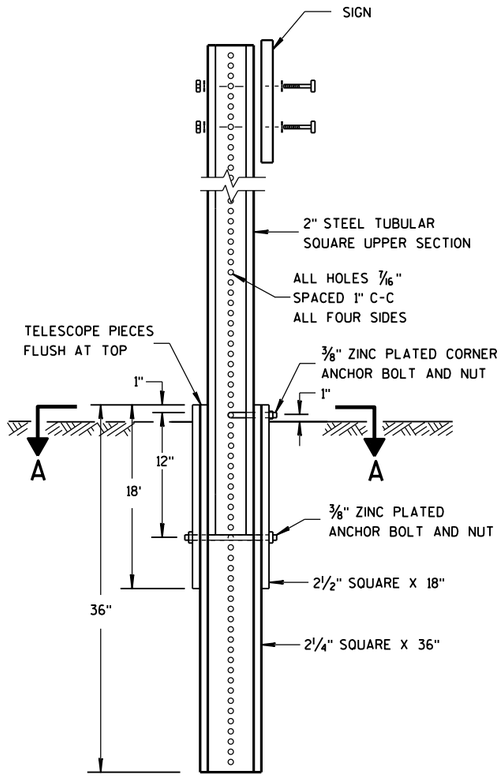
July 14, 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZO SAFETY ENGI FIC

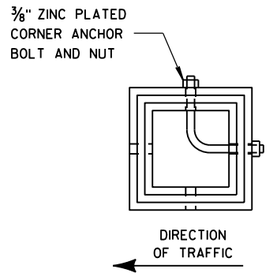
FHWA

6

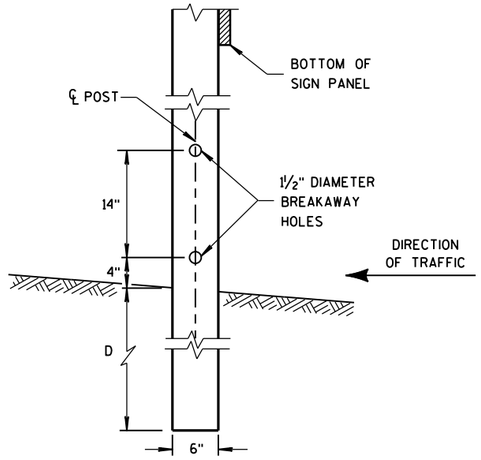
S.D.D. 15 D 28-3



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



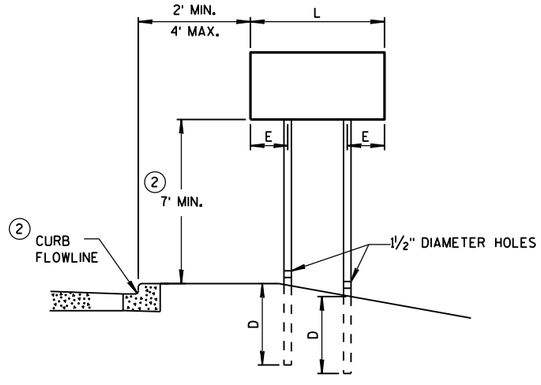
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

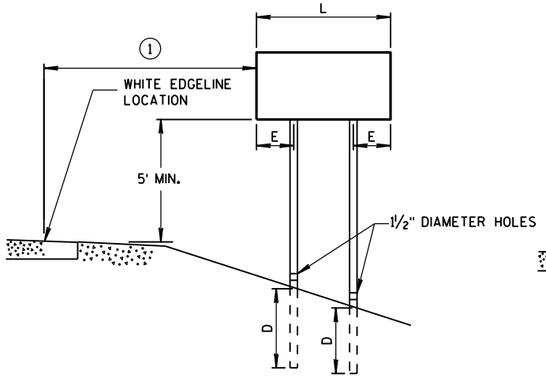
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

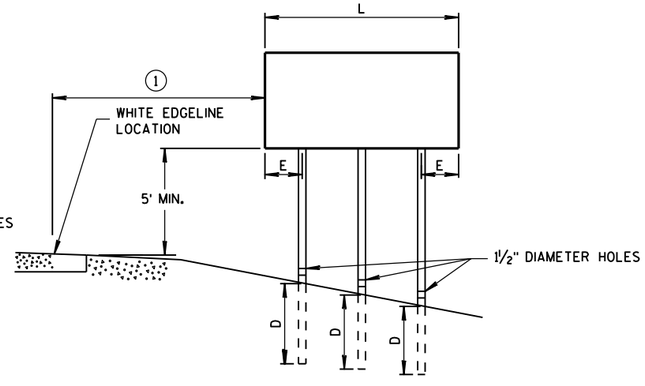
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

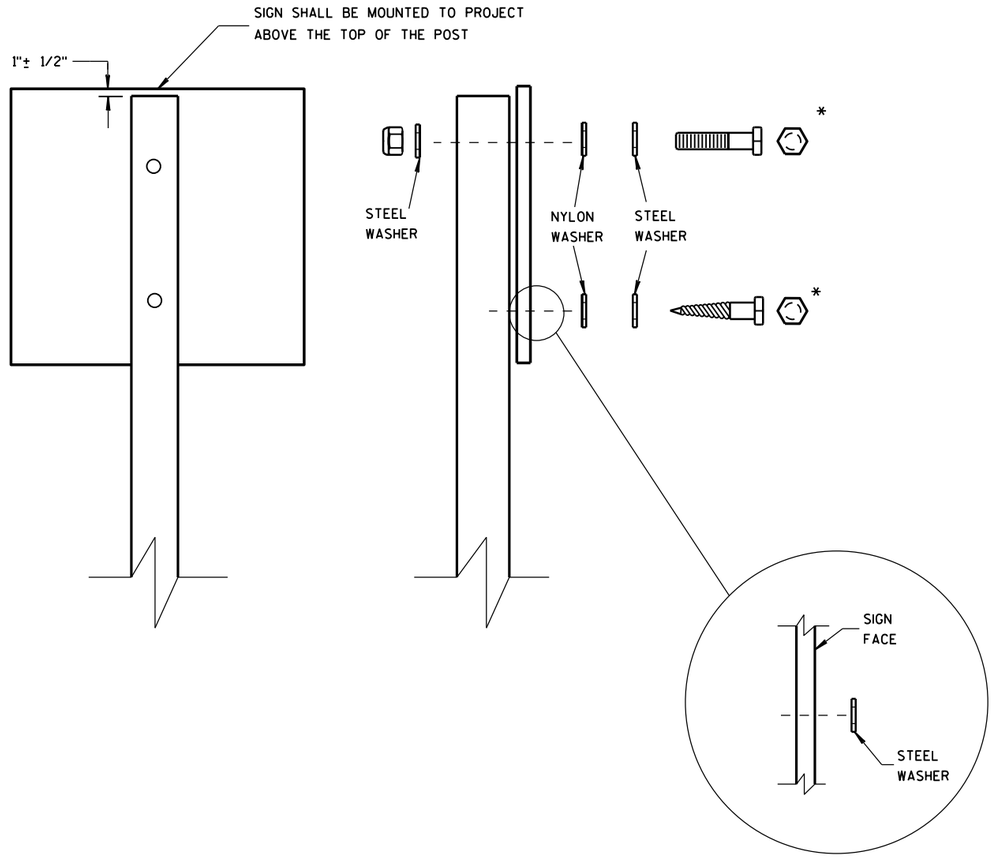
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

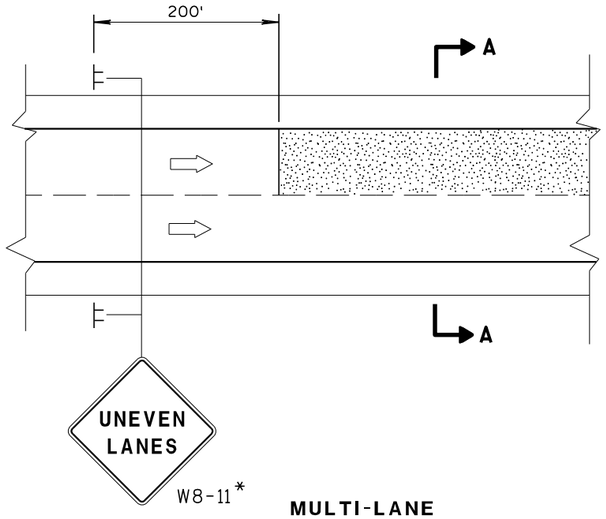
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

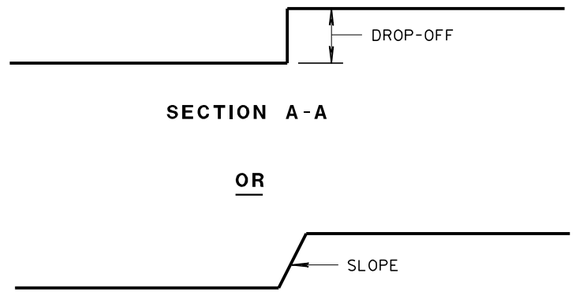
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

FHWA



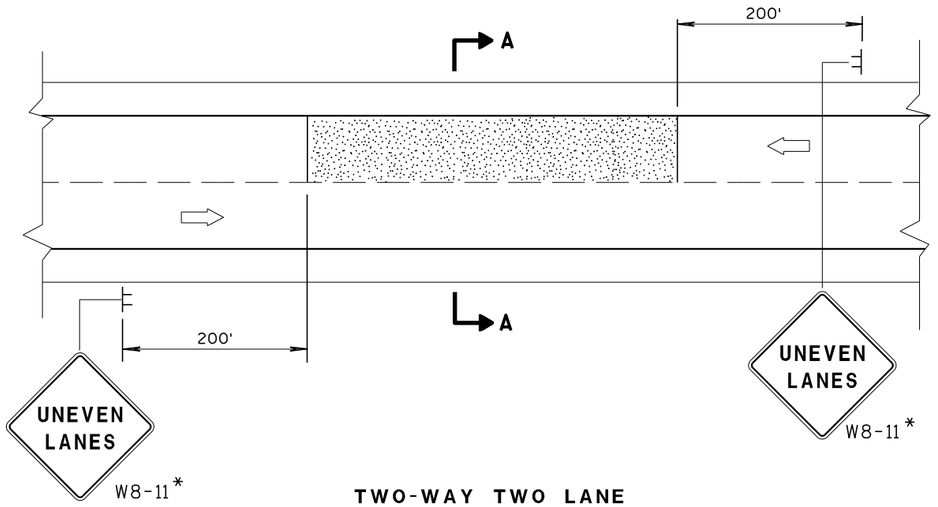
MULTI-LANE



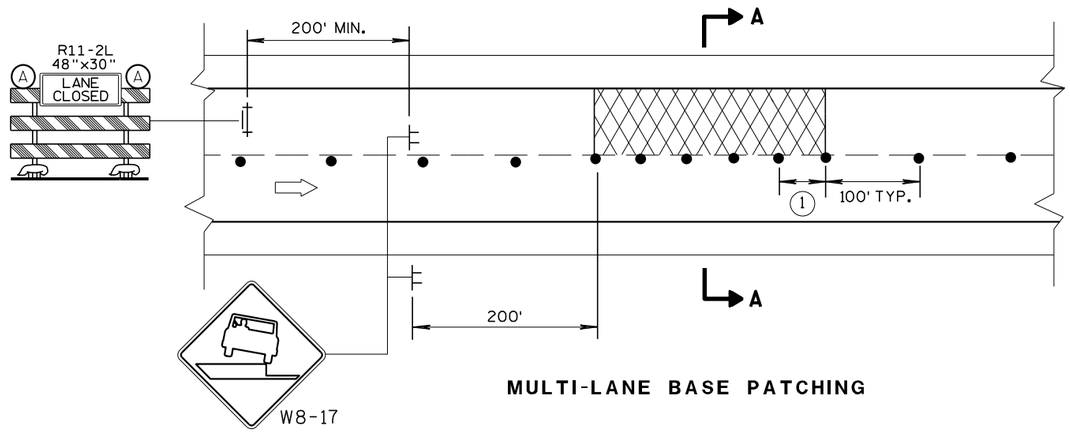
SECTION A-A

OR

SECTION A-A

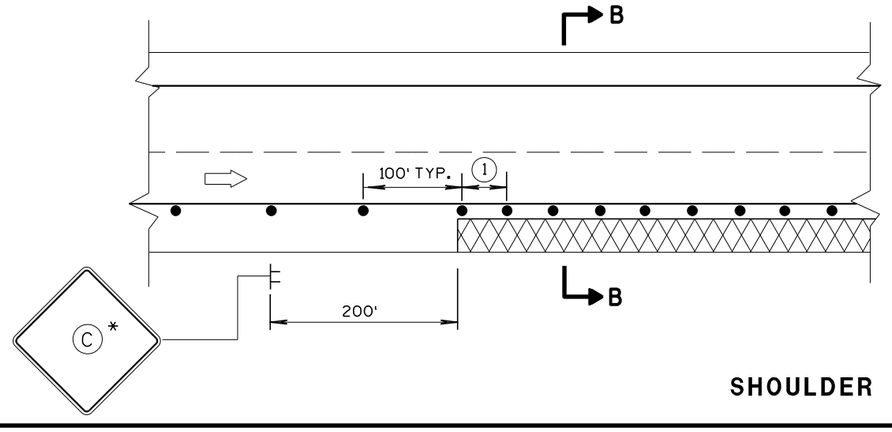


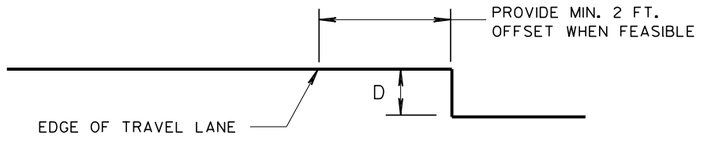
TWO-WAY TWO LANE



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS





SECTION B-B

SHOULDER DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

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

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EACH ENTRANCE RAMP.

(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Andrew H — WORK ZONE EN
FHWA

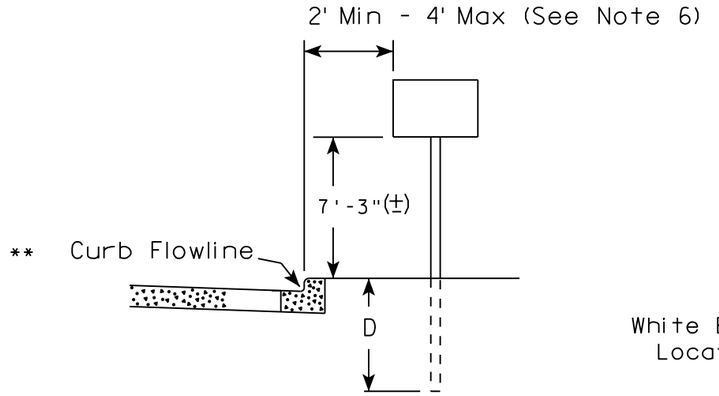
6

S.D.D. 15 D 39-2

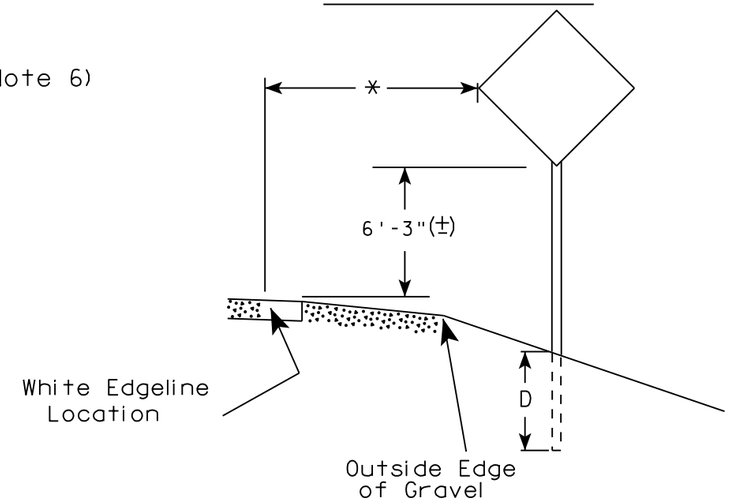
6

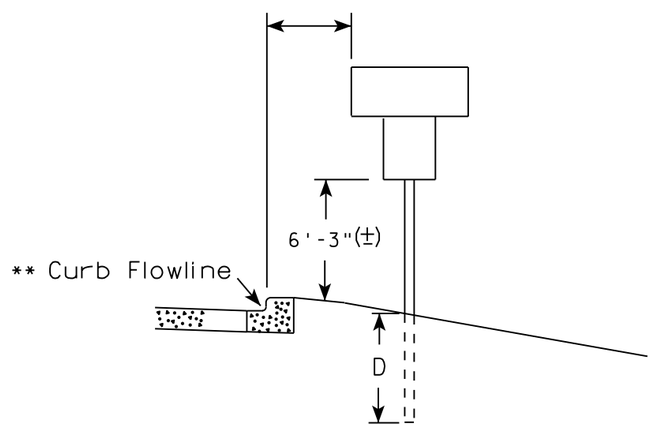
S.D.D. 15 D 39-2

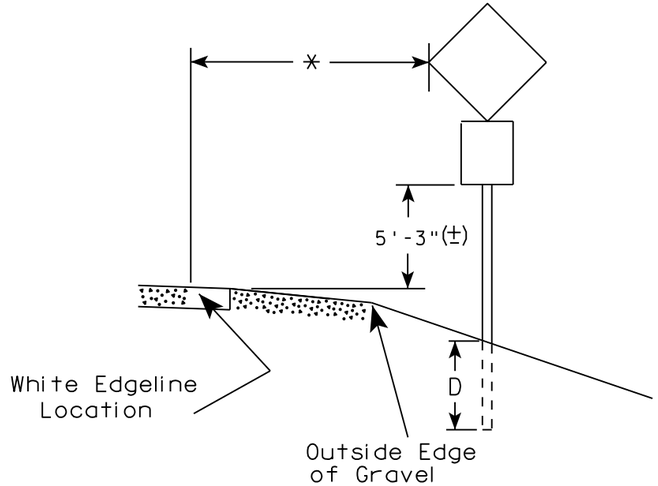
URBAN AREA



RURAL AREA (See Note 2)







** 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 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. J-Assemblies are considered to be one sign for mounting height.
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 directd 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" (±).

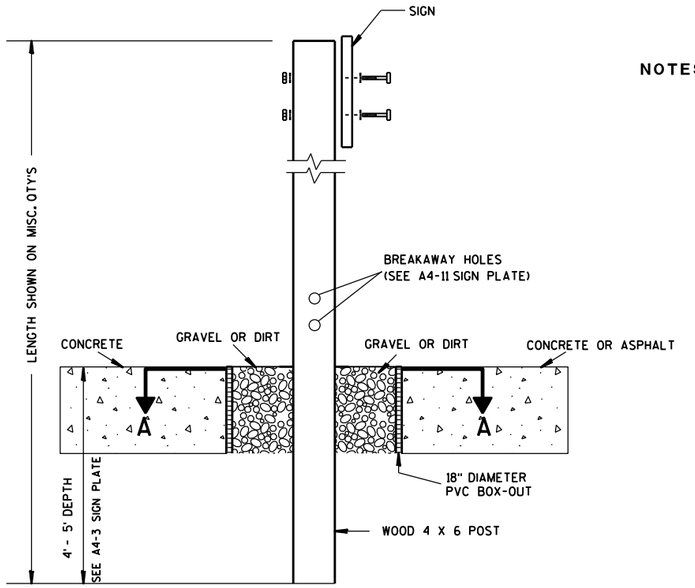
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

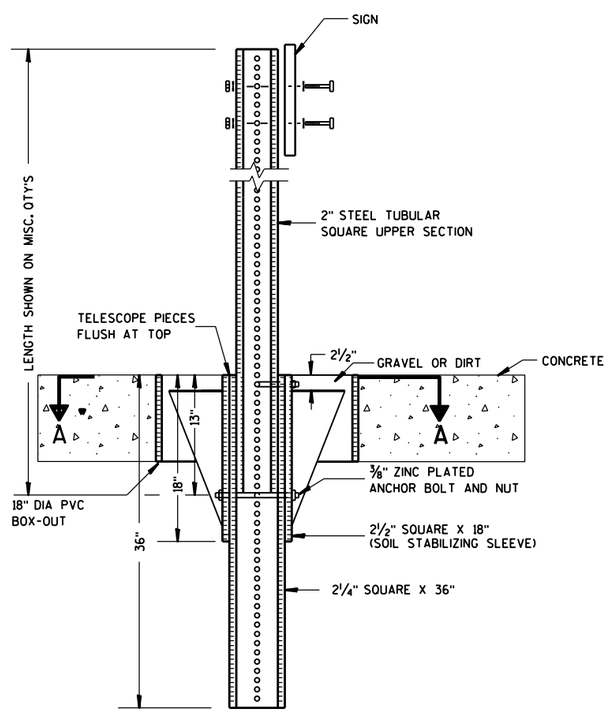
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 60	E



ELEVATION VIEW

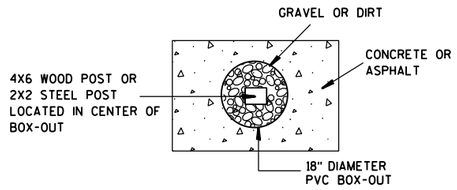
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

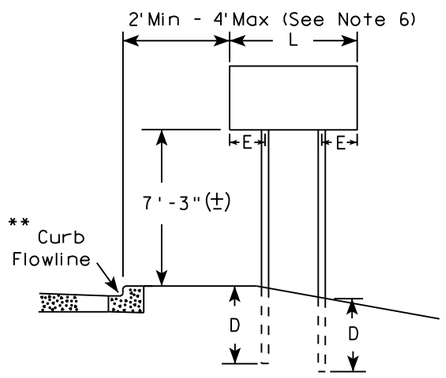
APPROVED Matthew R Rauch
for State Traffic Engineer

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

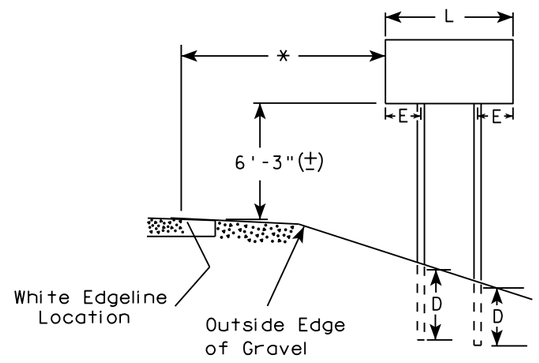
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

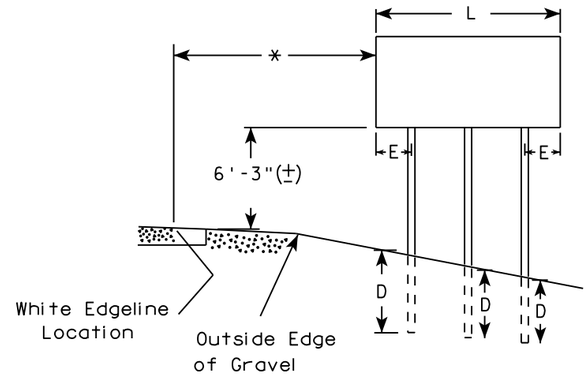
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

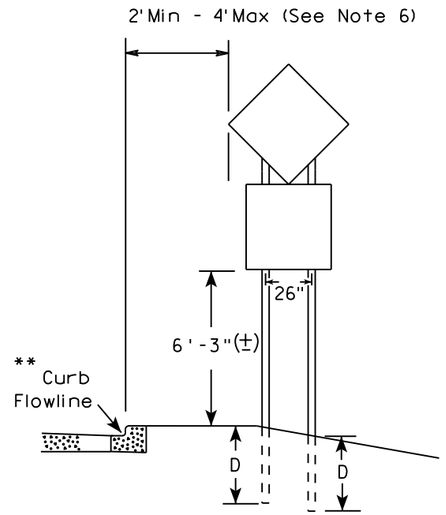
URBAN AREA



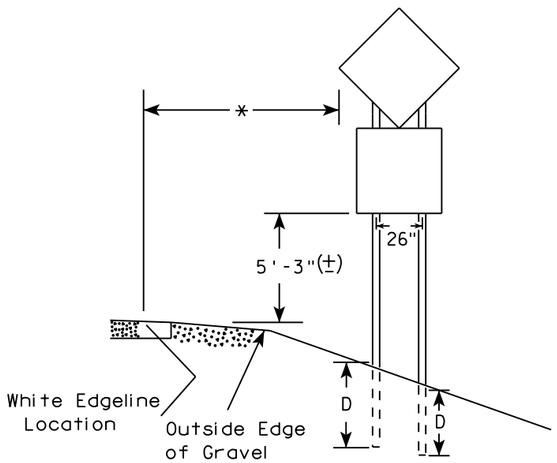
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)		
	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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. J-Assemblies are considered to be one sign for mounting height.
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 and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

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

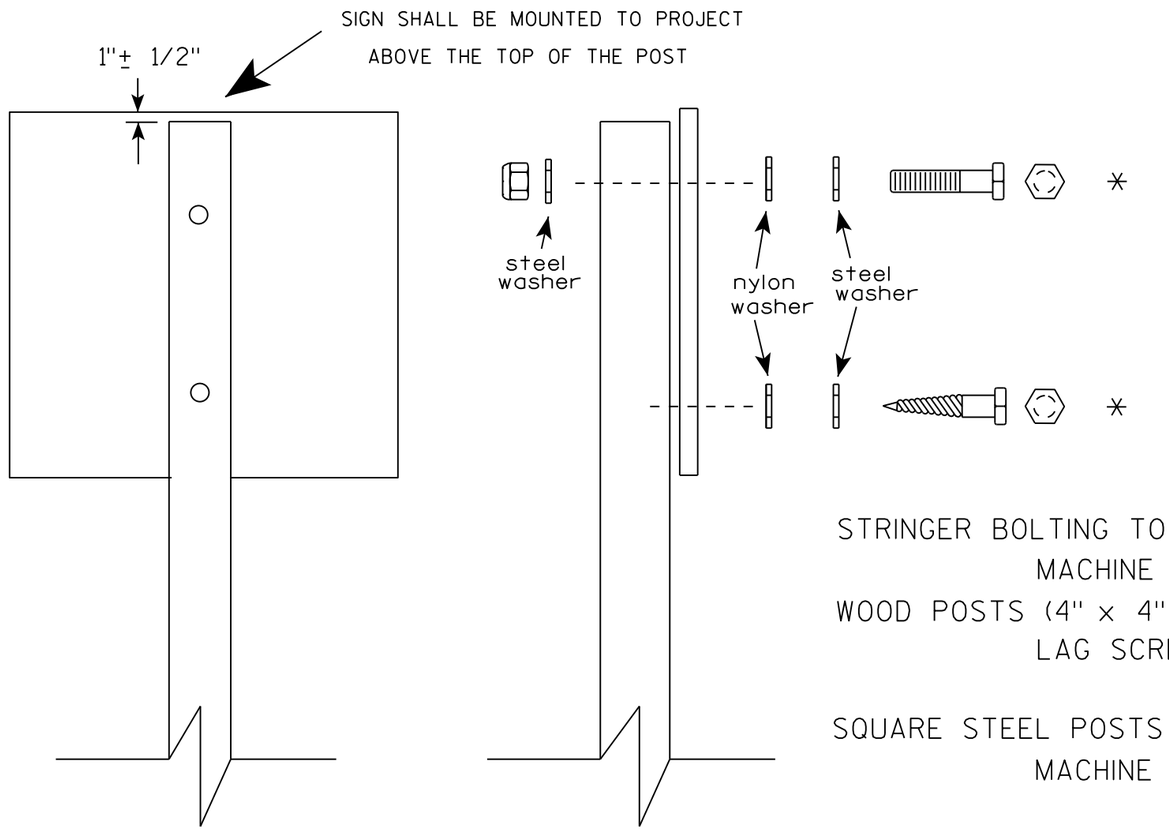
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 62	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)
SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

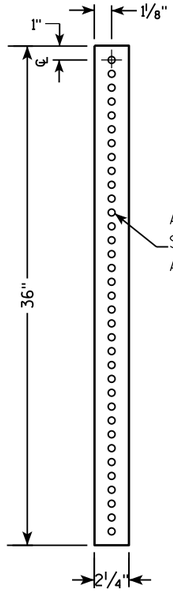
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

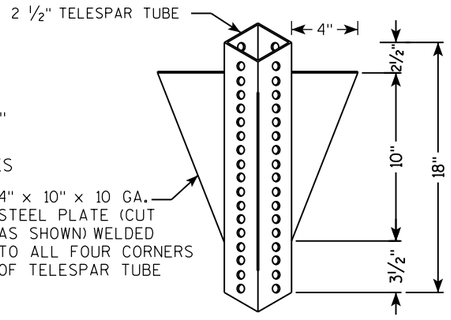
FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

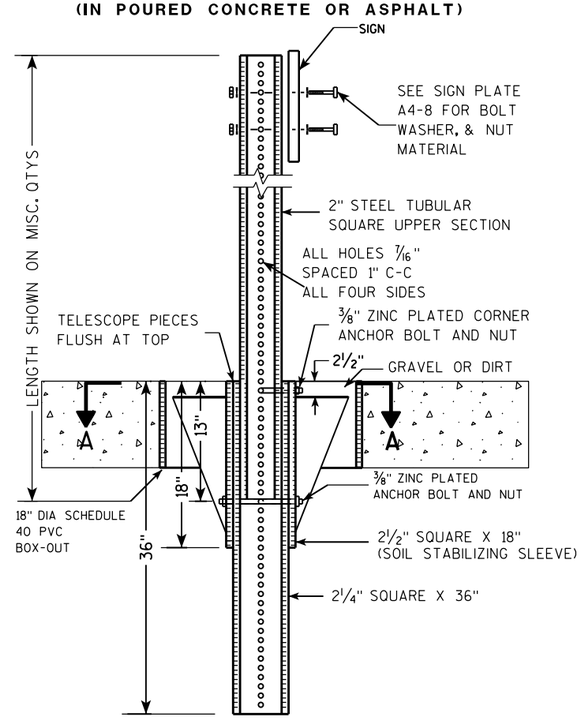
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



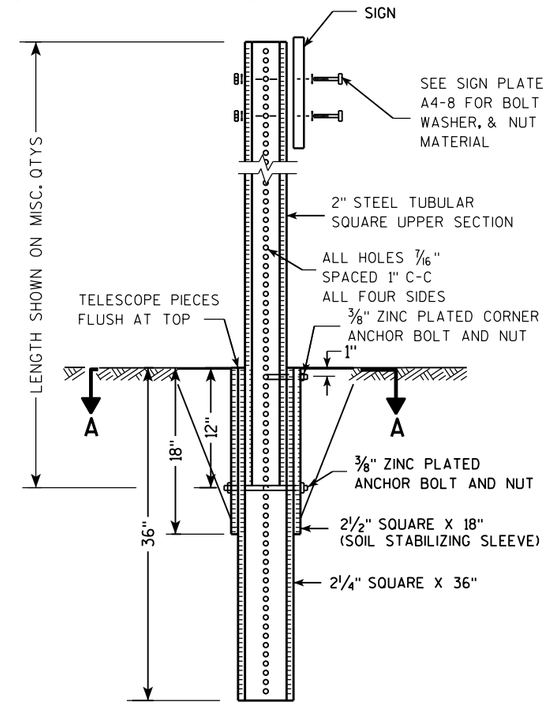
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

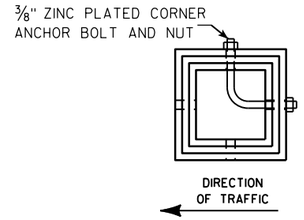


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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).

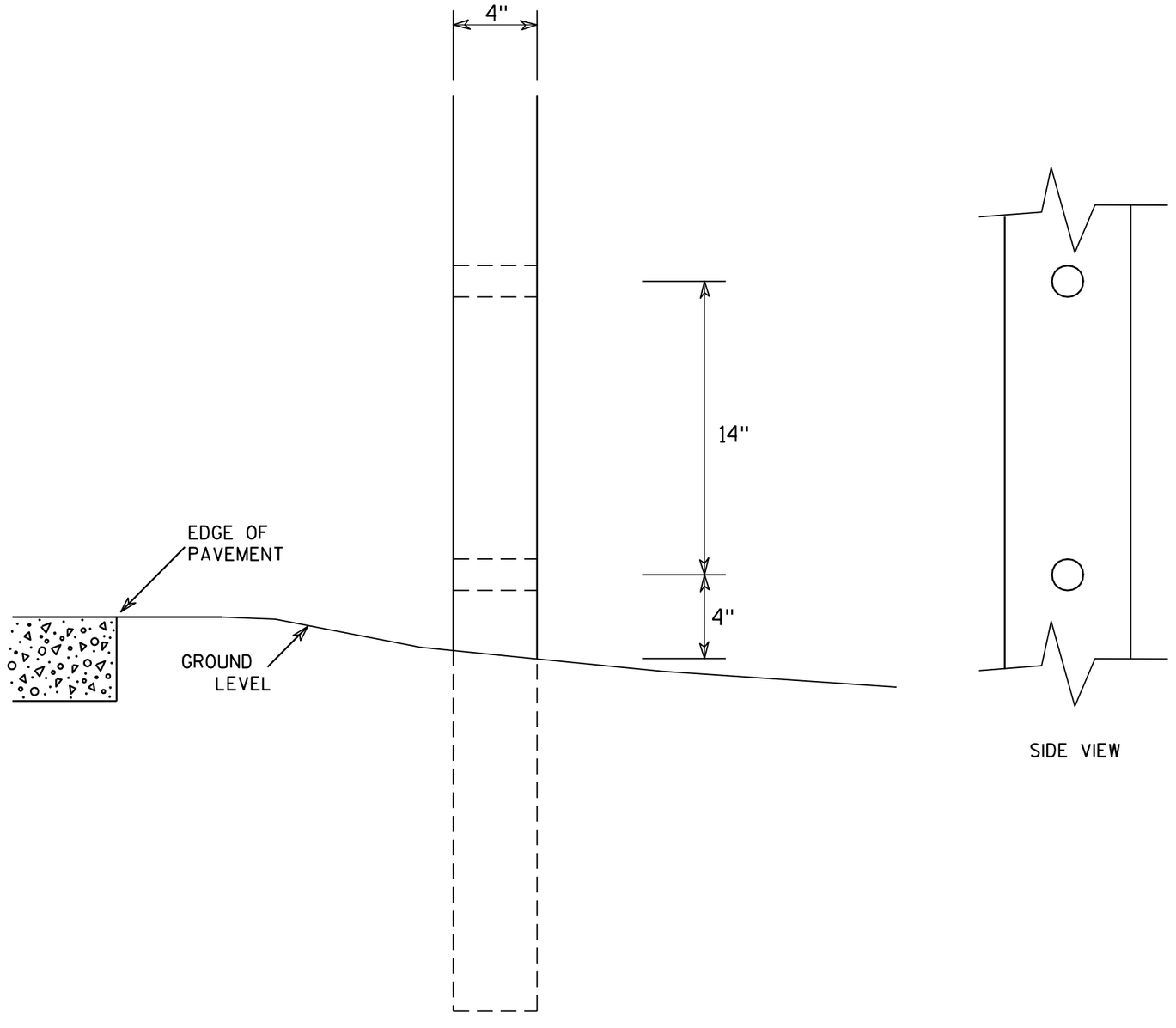
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 64 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

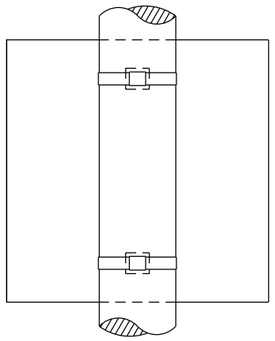
APPROVED Chester J Spang
for State Traffic Engineer

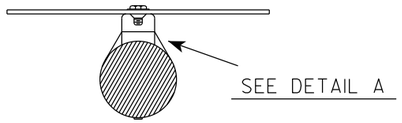
DATE 3/27/97 PLATE NO. A4-11.2

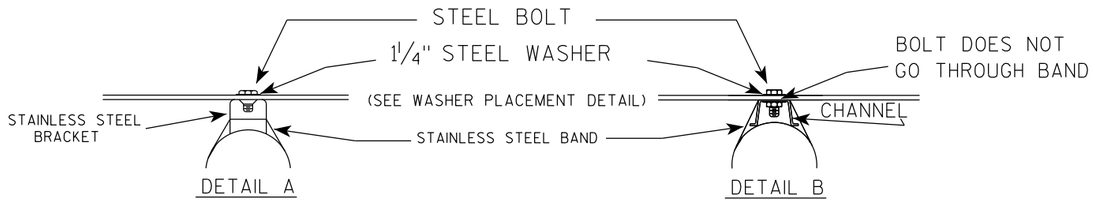
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 65	E

BANDING

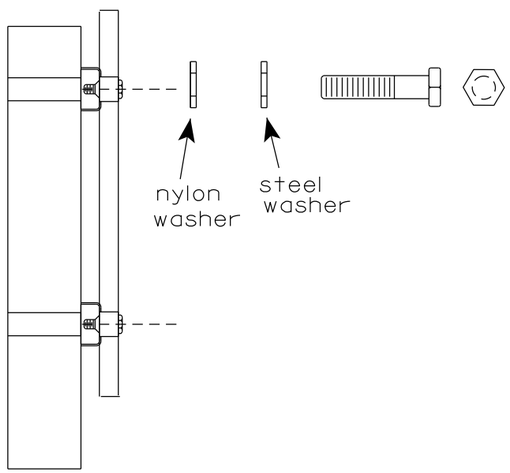
SINGLE SIGN







WASHER PLACEMENT

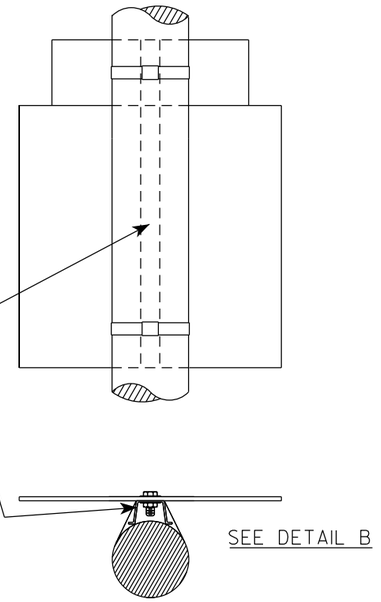


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

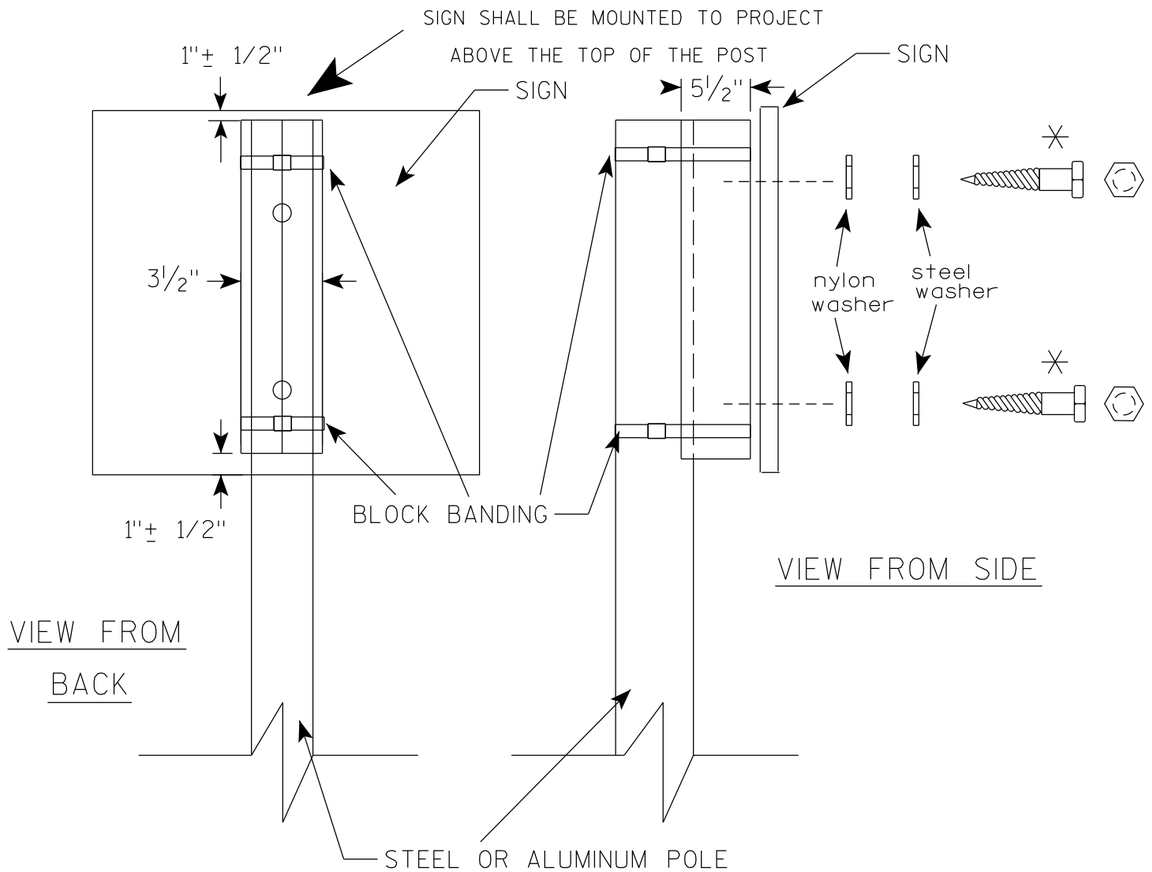
DATE 6/10/19 PLATE NO. A5-9.4

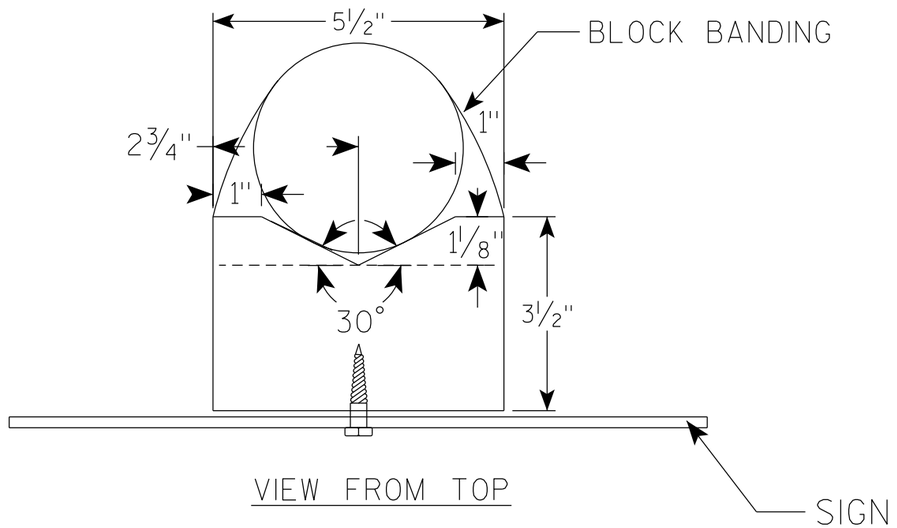
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 66	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

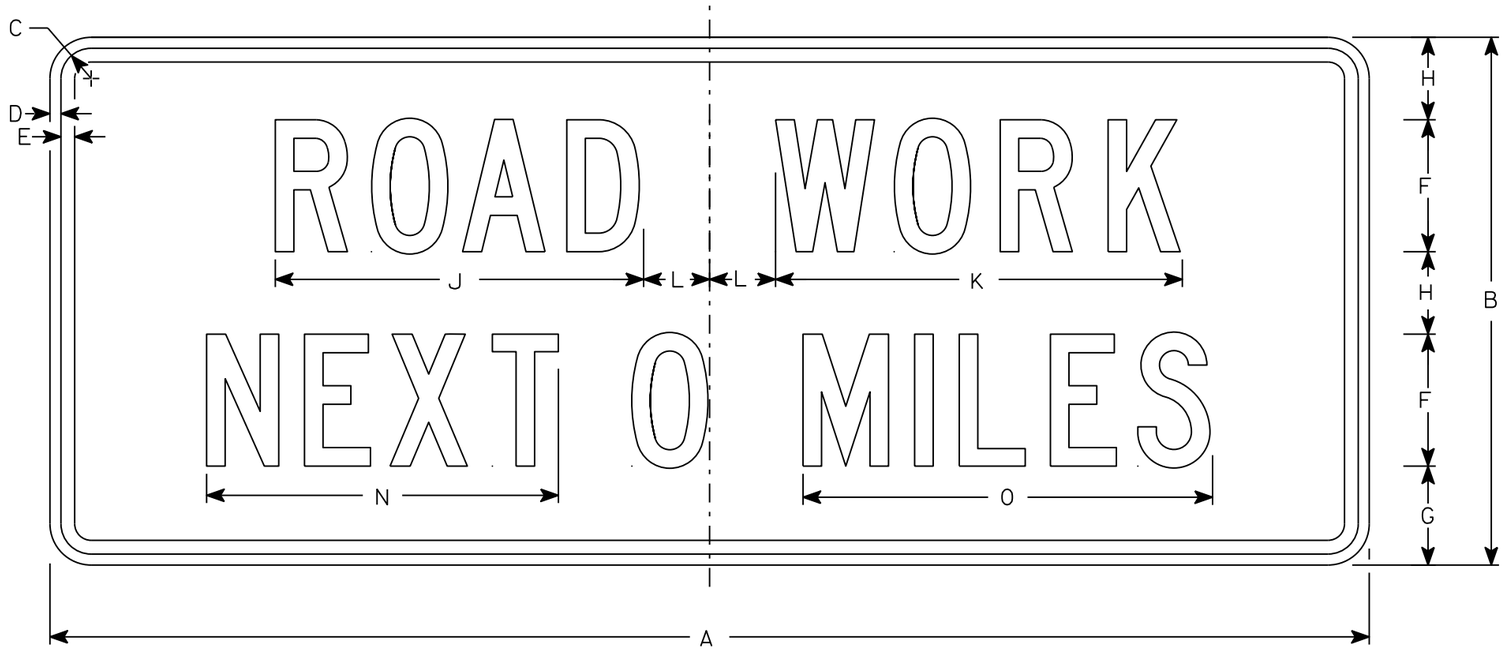
BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:				SHEET NO: 67	E



G20-1

NOTES

1. Sign is Type II - Type F Reflective
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.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10
3																											
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10
5																											

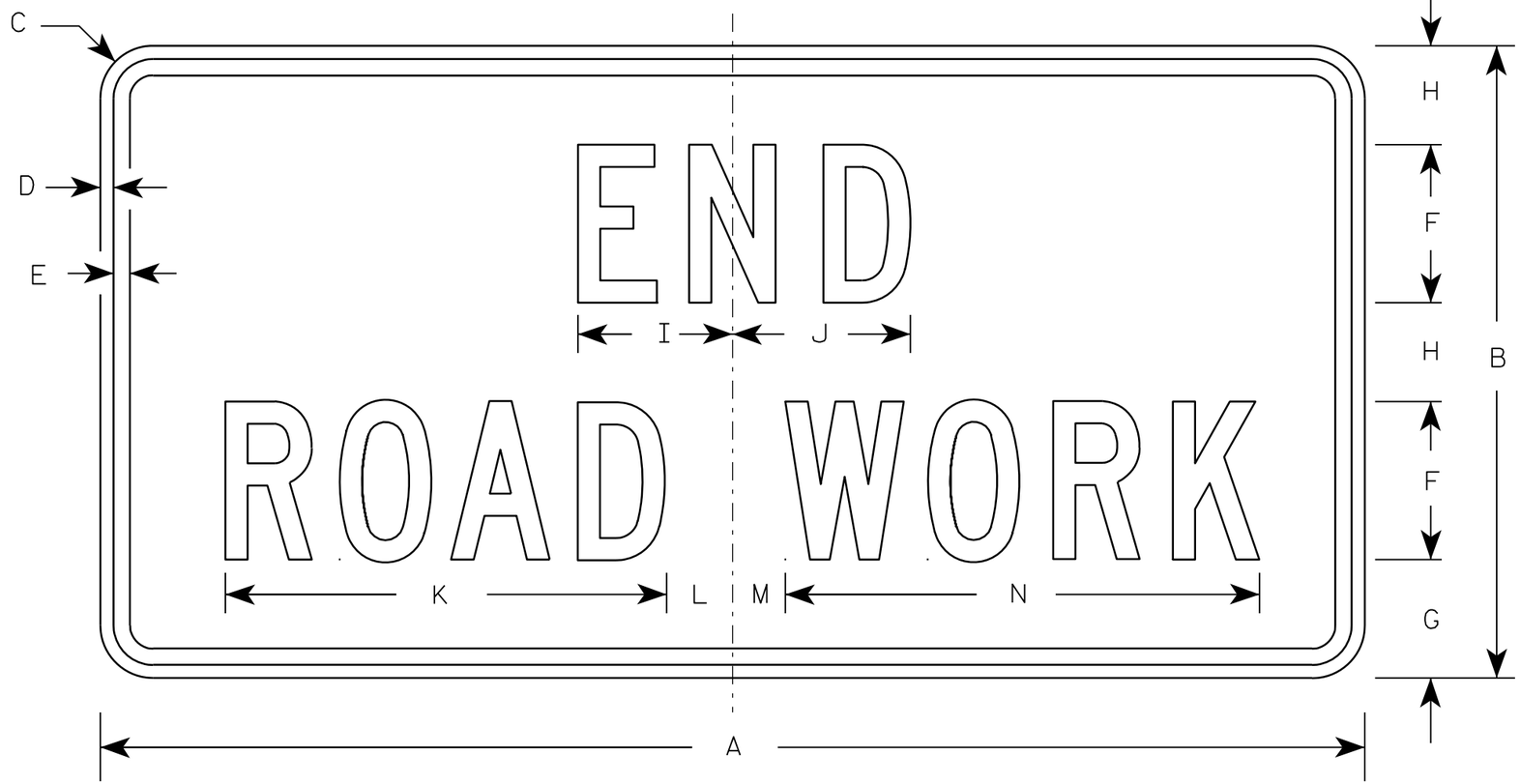
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-1.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 68 | E



G20-2A

NOTES

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

Metric equivalent for this sign is:

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

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

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

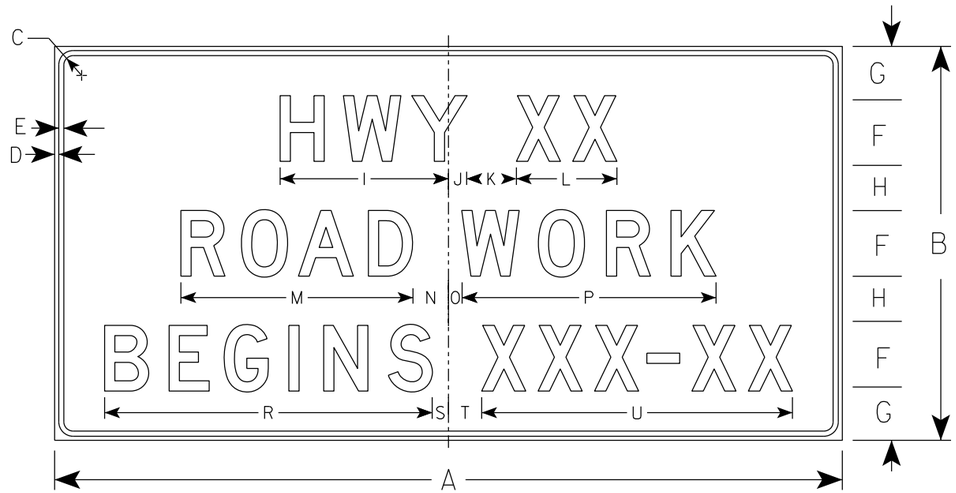
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 69	E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57

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																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

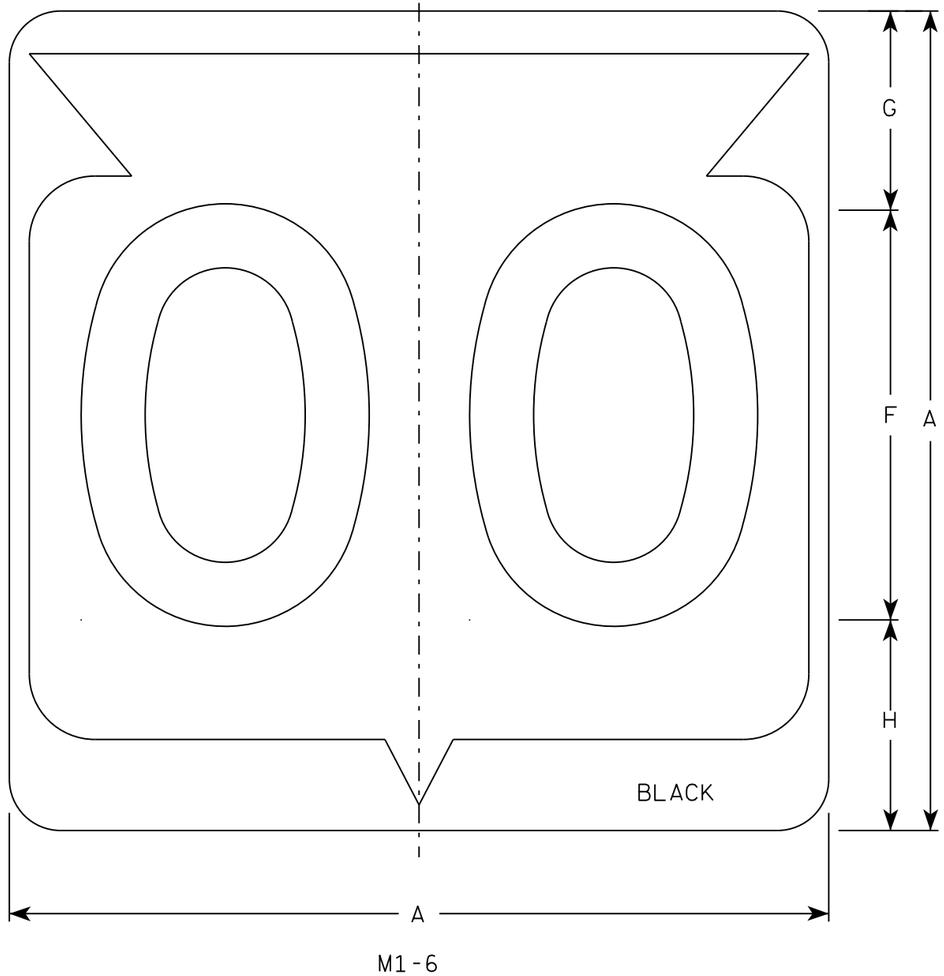
STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

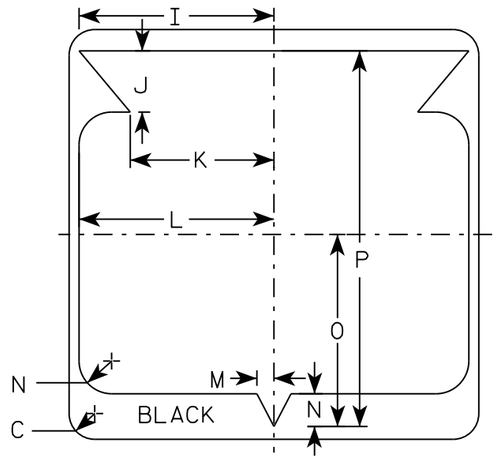
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 70	E



M1-6

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D except 3 number signs 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																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

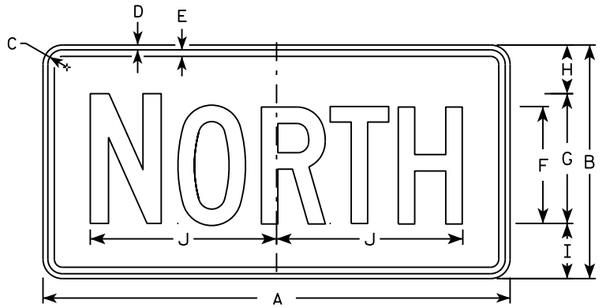
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

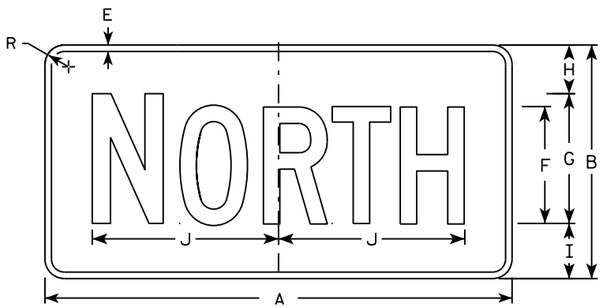
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 71	E



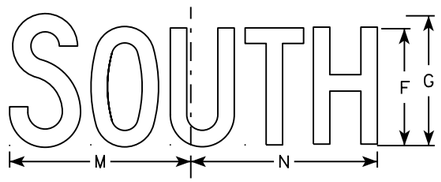
M3-1
MM3-1
MP3-1



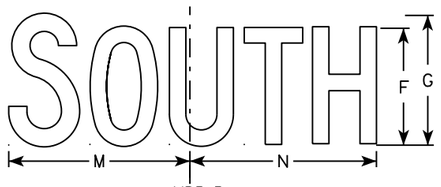
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

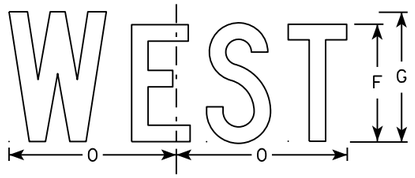
MB3-2
MK3-2
MN3-2



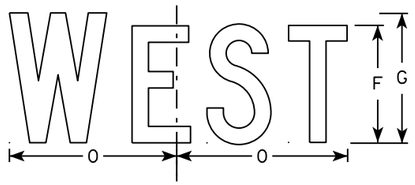
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

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
   MP3-1 thru MP3-4 Background - White
   Message - Blue
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 thur M3-4
SERIES

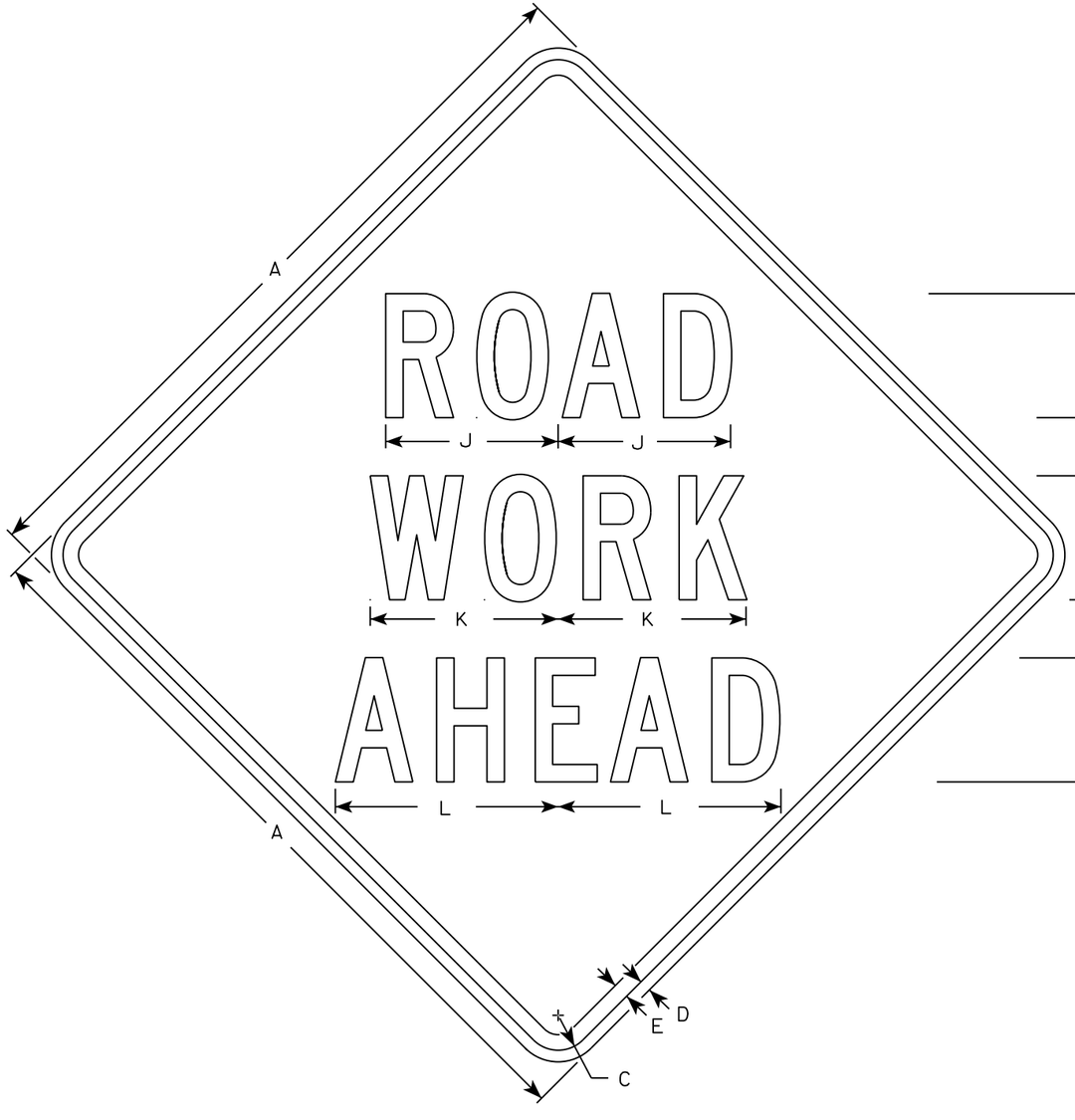
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

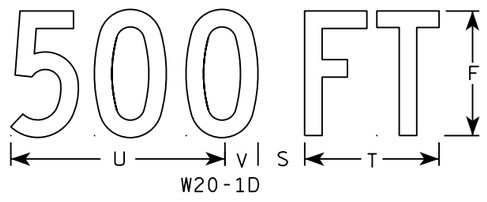
DATE 10/15/15 PLATE NO M3-1.14

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

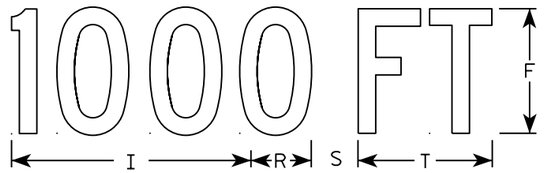
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



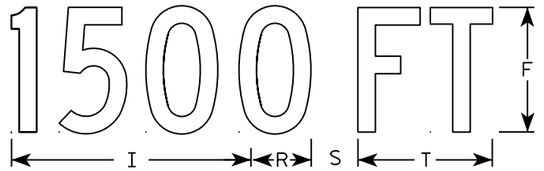
W20-1A



W20-1D

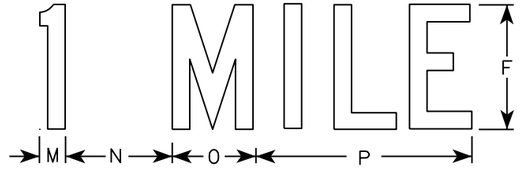


W20-1C

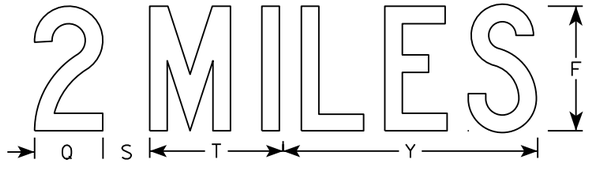


W20-1B

W20-1G



W20-1F



W20-1E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

PROJECT NO:

SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov