MAD MAY 2013

PROJECT ID: 5090-03-60

WITH:

COUNTY: COLUMBIA

ORDER OF SHEETS

TOTAL SHEETS = 104

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5090-03-60	———	—

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREVENTATIVE MAINTENANCE PROJECT

BARABOO - PORTAGE

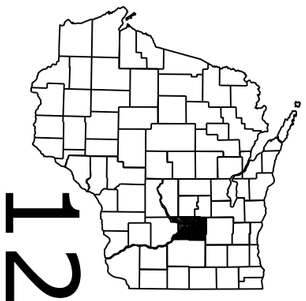
WEST COUNTY LINE TO IH90/IH94

STH 33

COLUMBIA COUNTY

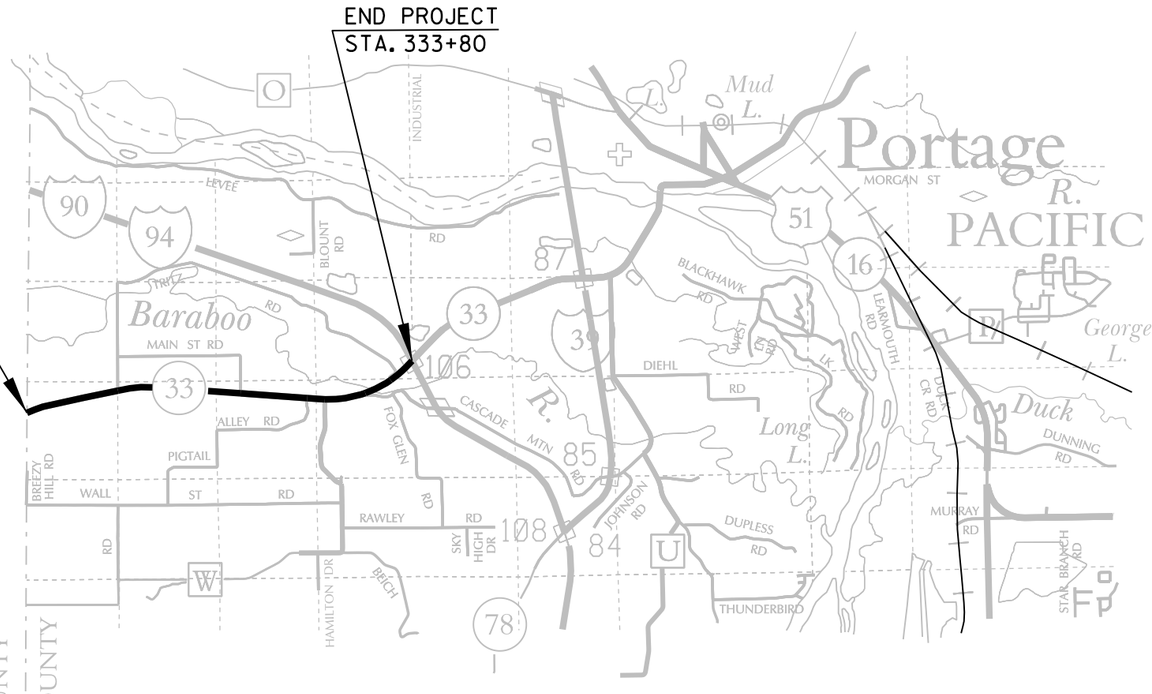
STATE PROJECT NUMBER

5090-03-60



12

N



LAYOUT

SCALE 0 0.75 MI.

TOTAL NET LENGTH OF CENTERLINE = 3.98 MI.

DESIGN DESIGNATION

A.A.D.T.	2008	= 7400
A.A.D.T.	2033	= 10,700
D.H.V.		= 13%
D.D.		= 62/38
T.		= 16.3%
DESIGN SPEED		= 60 MPH
ESALS		= 1,500,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- REFERENCE LINE
- COMBUSTIBLE FLUIDS (CAUTION)

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

PREPARED BY

Surveyor	
Designer	BRANDAN HAGER
Project Manager	JEREMY HALL
Regional Examiner	
Regional Supervisor	KURT JOHNSON
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 1/30/13 Kurt A. Johnson (Signature)

E

GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATION HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS' HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

IF UTILITY CONFLICTS OCCUR DURING CONSTRUCTION FACILITIES ADJUSTMENTS WILL BE COORDINATED WITH CONTRACTOR. IF THERE ARE CONFLICTS WITH NEW BEAM GUARD, SIGNS, OR OTHER WORK UNDER PROJECT, THE CONTRACTOR WILL WORK AROUND THE UTILITY FACILITIES.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 110 LB/SY/INCH.

APPLY TACK COAT TO MILLED SURFACES. THE RATE OF APPLICATION IS 0.025 GALLONS PER SQUARE YARD OR AS DIRECTED BY THE ENGINEER.

PRIOR TO PLACEMENT OF STEEL PLATE BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

ALL EXISTING SIGNS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

THE LOCATION OF STOP LINES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, ALL SIGNS RELATING TO THIS OPERATION SHALL BE COVERED OR REMOVED AND FACILITY RESTORED TO NORMAL OPERATION.

THE EXACT LOCATIONS AND LIMITS OF PRIVATE ENTRANCES AND FIELD ENTRANCES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

PAVING LIMITS AT INTERSECTIONS ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER AND SHALL HAVE BUTT JOINTS.

EXISTING SHOULDER AGGREGATE SHALL BE INCORPORATED INTO THE NEW SHOULDERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER IN THE FIELD.

CURVE INFORMATION SHOWN ON THE PLANS HAS NOT BEEN VERIFIED BY A FIELD SURVEY. THE ENGINEER SHALL DETERMINE THE APPROPRIATE SUPER-ELEVATION AND RUN-OFF INFORMATION AND PROVIDE TO THE CONTRACTOR PRIOR TO PAVING.

REMOVE AND REPLACE ALL SIGNS AND POSTS WITH NEW SIGNS AND POSTS IN THE SAME GENERAL LOCATION UNLESS OTHERWISE NOTED ON THE PLANS.

HMA PAVEMENT OVERLAY WILL BE PLACED IN ONE LAYER FOR A TOTAL DEPTH OF 2".

THE CONTACTOR'S PAVING OPERATIONS SHALL BE CONSISTANT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING OR PARKING LANE.

BEAM GUARD WILL BE REPLACED THE SAME DAY IT IS REMOVED.

PIPE LENGTHS SIZE, AND LOCATION ARE TO BE VERIFIED PRIOR TO ORDERING MATERIAL. NO PIPE LENGTH SHALL EXCEED EXISTING LENGTH INCLUDING ENDWALLS UNLESS SPECIFIED.

EROSION CONTROL ITEMS ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

PROTECT WETLANDS AND OTHER WATERWAYS THAT ARE PRESENT WITHIN THE PROJECT LIMITS.

KEEP ALL EQUIPMENT AND MATERIALS OUT OF ENVIRONMENTALLY SENSITIVE AREAS. DO NOT PARK IN THESE AREAS.

UTILITIES

Jason Hogan
Alliant Energy - Electricity
Suite 1000
4902 N Biltmore Lane
Madison, Wi. 53718
(608) 458-4871
jasonhogan@alliantenergy.com

Steve Blado
CenturyLink - Communication Line
333 N Front Street
P.O. Box 4800
La Crosse, Wi. 54602
(608) 796-5543
steve.blado@centurytel.com

Robert Church
Frontier Communications of WI LLC- Communications Line
118 Division Street
Plymouth, Wi. 53073
(608) 837-1881
robert.church@ftr.com

DNR CONTACT

Cathy Bleser
Wisconsin DNR, South Central Region
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3308
(608) 220-3838 Cell

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

2

END PROJECT
STA. 333+80

BEGIN PROJECT
STA. 123+20

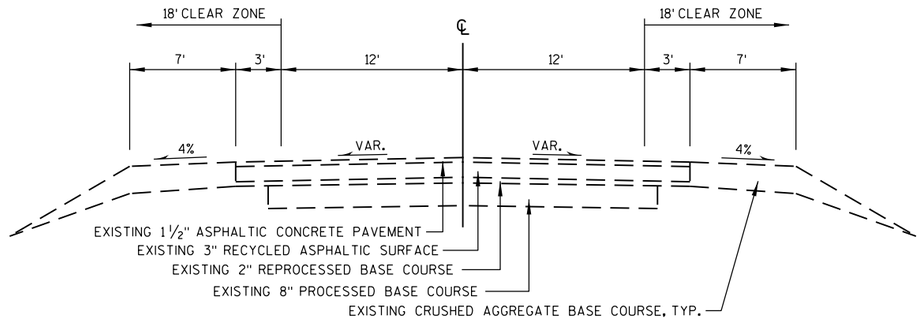
173+50
238+50
273+75
283+25
305+00
320+00
328+75

N

Portage
PACIFIC
R.
Mud L.
L.
George L.
Long L.
Duck
Baraboo
MORGAN ST
MAIN ST RD
INDUSTRIAL
LEVEE
BLOUNT RD
TREFZ RD
ALLEY RD
PIGTAIL
BREEZY HILL RD
WALL ST RD
RAWLEY RD
FOX GLEN RD
CASCADE MTN RD
HAMILTON DR
BEICH RD
SKY HIGH DR
JOHNSON RD
BLACKHAWK RD
WEST LK RD
LEARMOUTH RD
DUCK CR RD
DUNNING RD
DIEHL RD
DUPLESS RD
MURRAY RD
STAR BRANCH RD
THUNDERBIRD
SAUK COUNTY
COLUMBIA COUNTY
90
94
33
39
87
106
85
108
84
78
51
16
P
U
W

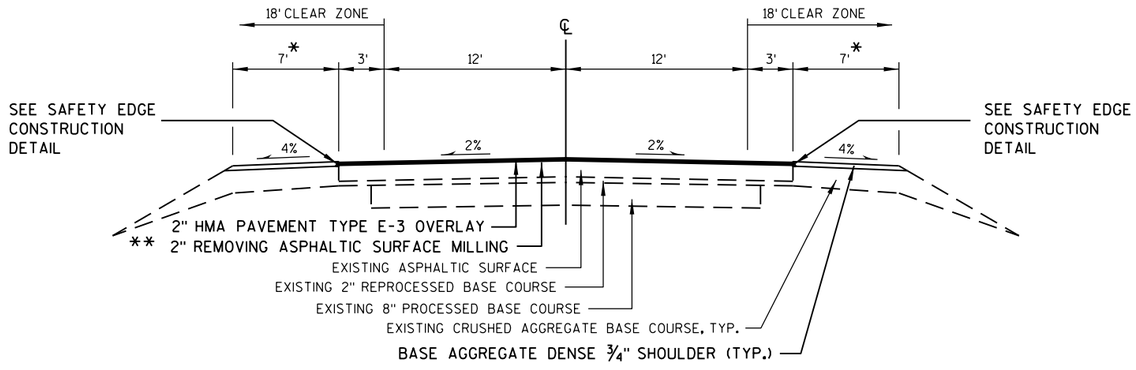
PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PROJECT OVERVIEW	SHEET	E

FILE NAME : R:\Projects\d1_50900330\020201_po.dgn PLOT DATE : 30-JAN-2013 09:28 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000



TYPICAL EXISTING SECTION

STH 33
STA. 123+20 - STA. 126+52
STA. 139+91 - STA. 176+34
STA. 194+16 - STA. 308+97



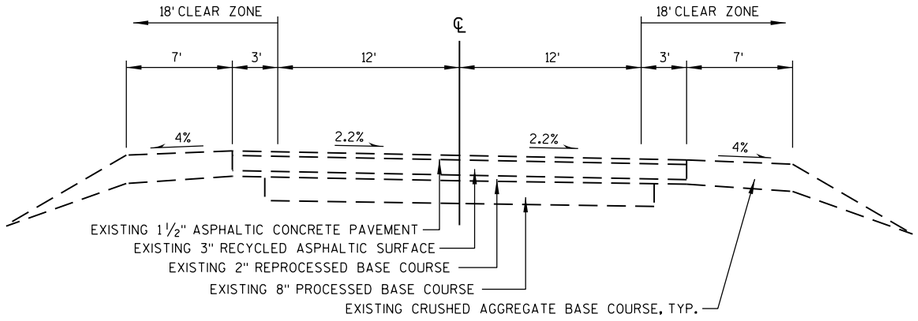
TYPICAL PROPOSED SECTION

STH 33
STA. 123+20 - STA. 126+52
STA. 139+91 - STA. 176+34
STA. 194+16 - STA. 308+97

* SHOULDER REPAIR AT VARIOUS PLACES THROUGHOUT PROJECT

** 2" MILL DEPTH AT SHOULDER AND A 2% CROWNED CROSS-SLOPE WHERE SLOPE CORRECTION IS NEEDED

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	TYPICAL SECTIONS	SHEET	E



TYPICAL EXISTING SECTION

STH 33
STA. 126+52 - STA. 139+91
STA. 176+34 - STA. 194+16

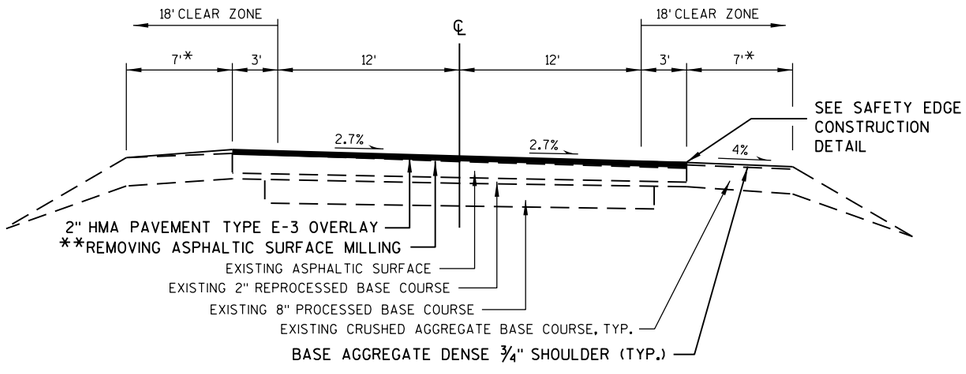
SUPERELEVATION TABLE 126+52 CURVE

NC	126+52
FLAT	127+05
RC	127+58
FS	127+82
FS	138+61
RC	138+85
FLAT	139+38
NC	139+91

SUPERELEVATION TABLE 176+34 CURVE

NC	176+34
FLAT	176+87
RC	177+40
FS	177+64
FS	192+86
RC	193+10
FLAT	193+63
NC	194+16

NOTE: SUPERELEVATION INFORMATION TO BE FIELD VERIFIED



TYPICAL FINISHED SECTION

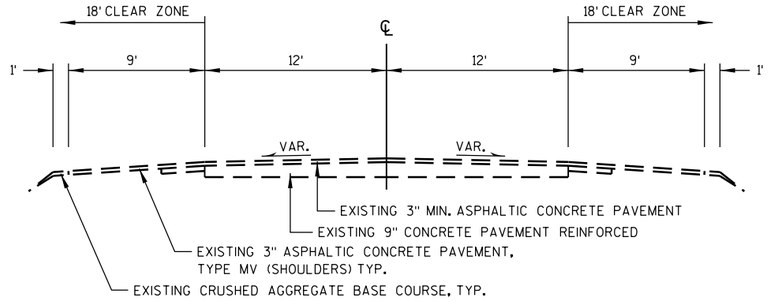
STH 33
STA. 126+52 - STA. 139+91
STA. 176+34 - STA. 194+16

* SHOULDER REPAIR AT VARIOUS PLACES THROUGHOUT PROJECT

** 2" MILL DEPTH AT RT. SHOULDER, 1.1" MILL DEPTH AT CENTERLINE AND 0.2" MILL DEPTH AT LT. SHOULDER

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	TYPICAL SECTIONS	SHEET	E

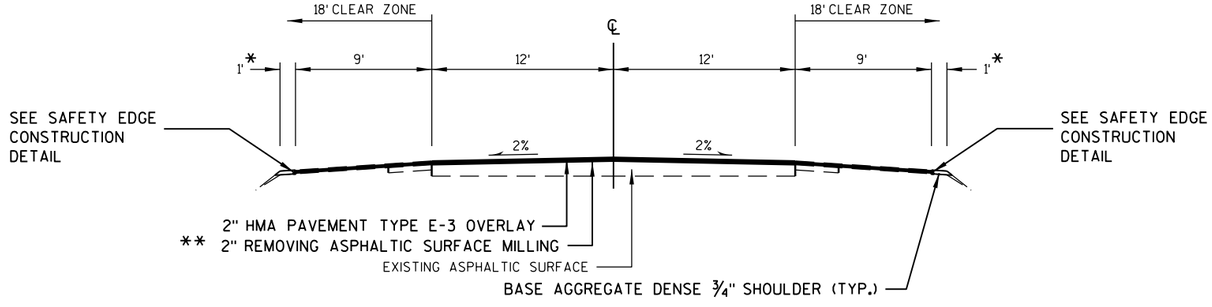
2



TYPICAL EXISTING SECTION

STH 33

STA. 310+76 - STA. 333+80



TYPICAL PROPOSED SECTION

STH 33

STA. 310+76 - STA. 333+80

* SHOULDER REPAIR AT VARIOUS PLACES THROUGHOUT PROJECT

** 2" MILL DEPTH AT SHOULDER AND A 2% CROWNED CROSS-SLOPE WHERE SLOPE CORRECTION IS NEEDED

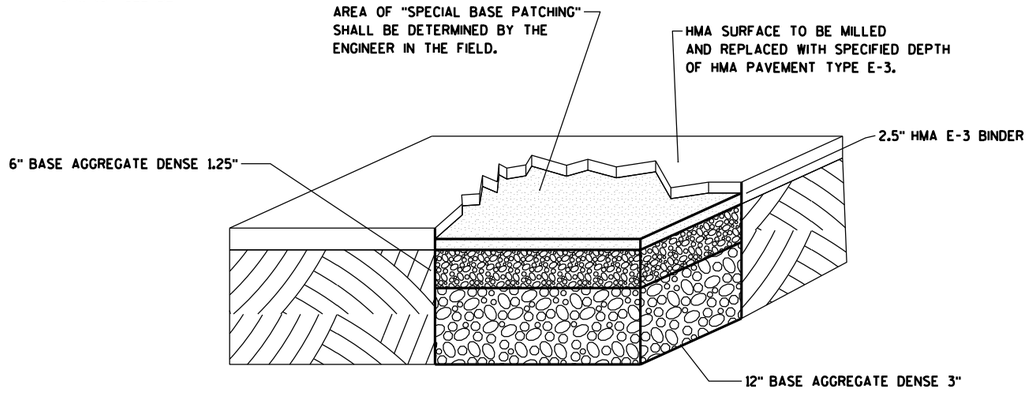
PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	TYPICAL SECTIONS	SHEET	E

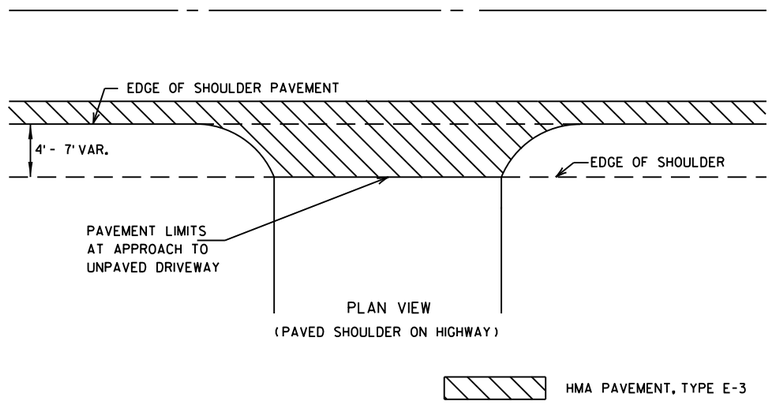
FILE NAME : R:\Projects\d1_50900330\020301_ts.dgn PLOT DATE : 30-JAN-2013 09:28 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000 WISDOT/CADDS SHEET 42

2

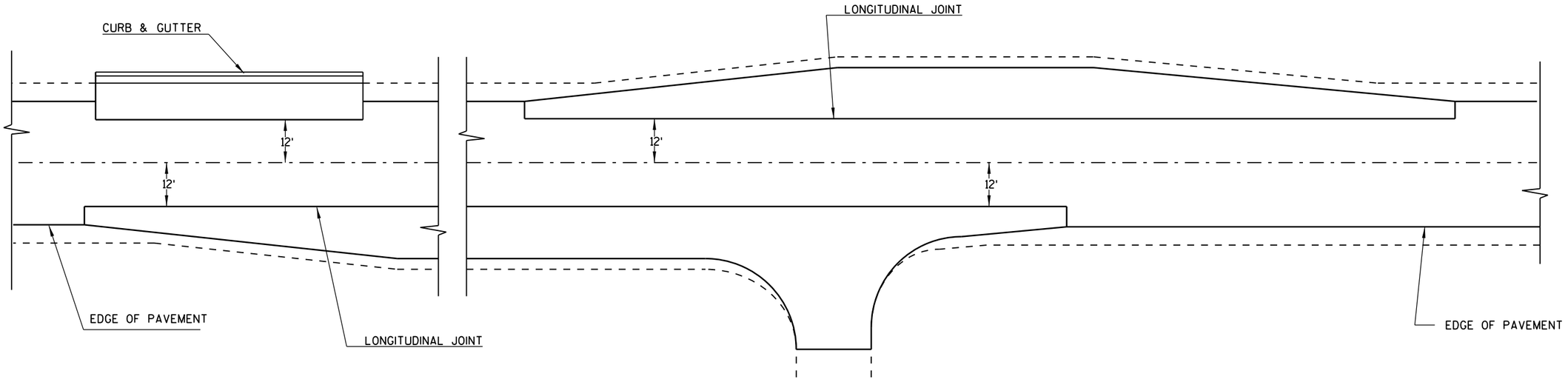
SPECIAL BASE PATCHING

* TO BE INCLUDED IN "SPECIAL BASE PATCHING" ITEM:
  * 20.5" OF COMMON EXCAVATION
  * 12" OF BASE AGGREGATE DENSE 3-INCH
  * 6" OF BASE AGGREGATE DENSE 1.25-INCH
  * 2.5" OF HMA BINDER MATERIAL
  * SAWING FULL DEPTH





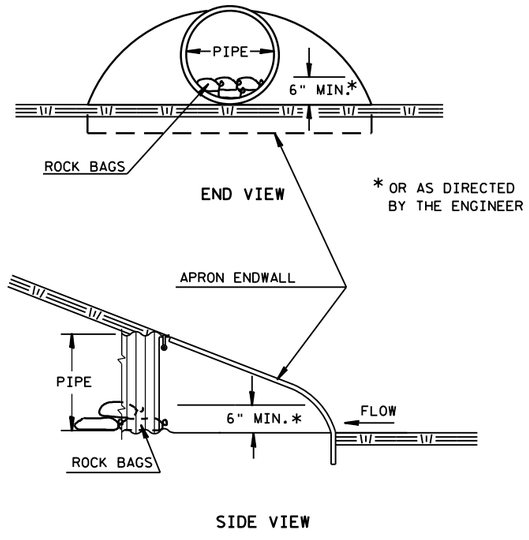
RURAL DRIVEWAY INTERSECTION DETAIL



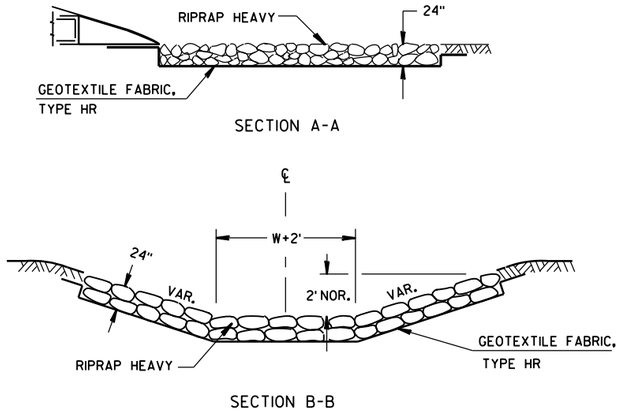
HMA LONGITUDINAL JOINT DETAIL *

* TO BE USED AT ALL INTERSECTIONS, BYPASS, PASSING LANE AND RURAL CURB SECTIONS

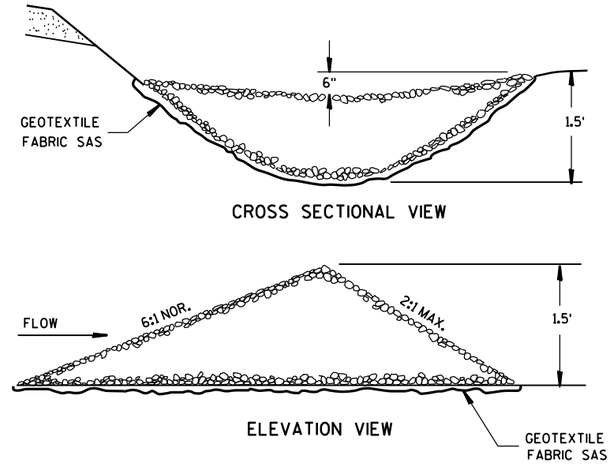
PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E



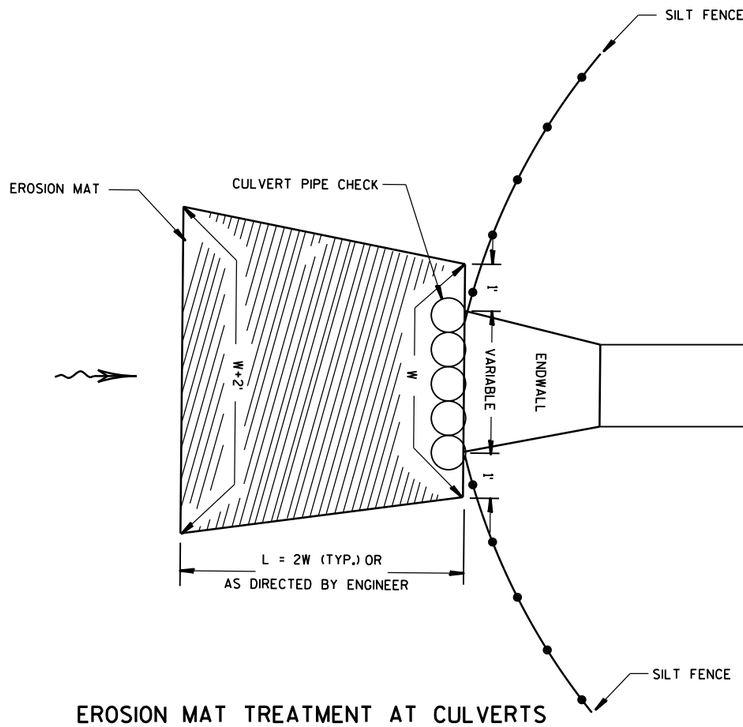
CULVERT PIPE CHECK



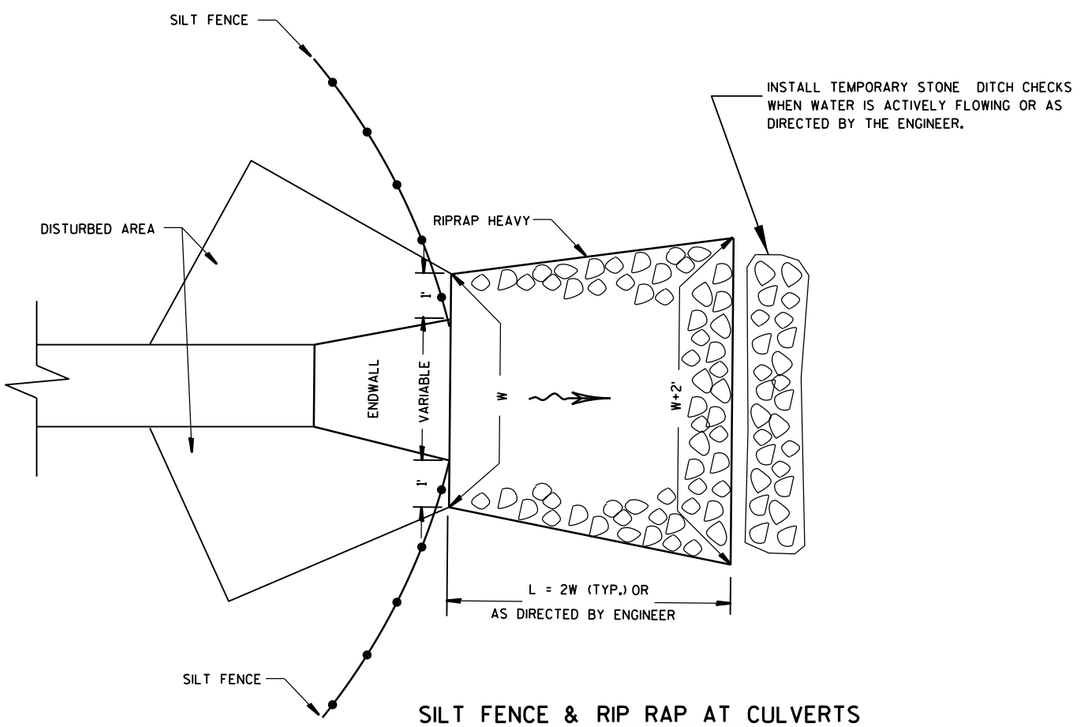
RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS



TEMPORARY STONE DITCH CHECKS DETAIL



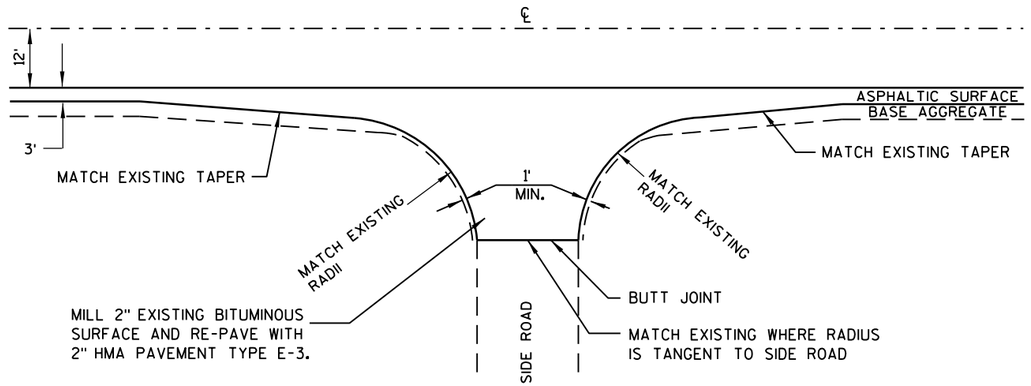
EROSION MAT TREATMENT AT CULVERTS



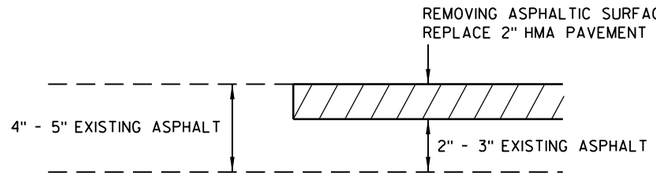
SILT FENCE & RIP RAP AT CULVERTS

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E

2



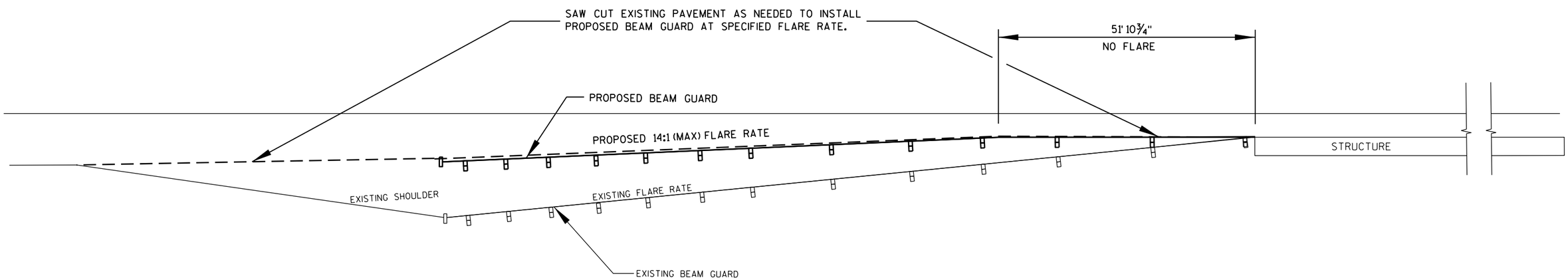
TYPICAL SIDE ROAD DETAIL



BUTT JOINT DETAIL

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E

2



SHOULDER SAW CUT & BEAM GUARD DETAIL

STA. 306+00 - STA. 314+00

BARABOO RIVER BRIDGE

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E

FILE NAME : P:\STATE\PROJECTS\STH33\5090-03-60 BARABOO\cad\SHOULDER_SAWCUT_DETAILS PLOT DATE : 12/21/11 PLOT BY : BLH PLOT NAME : PLOT SCALE : 4:1

2

GENERAL NOTES

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

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

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.

ADDITIONAL WORK VEHICLES MAY BE USED BETWEEN V1 AND V2.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE AND OTHER FACTORS.

IF THERE IS A SIDE ROAD INTERSECTION BETWEEN THE FLAGGER STATIONS PROVIDE "ROAD WORK AHEAD" SIGNS ON THE SIDE ROAD AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE "ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

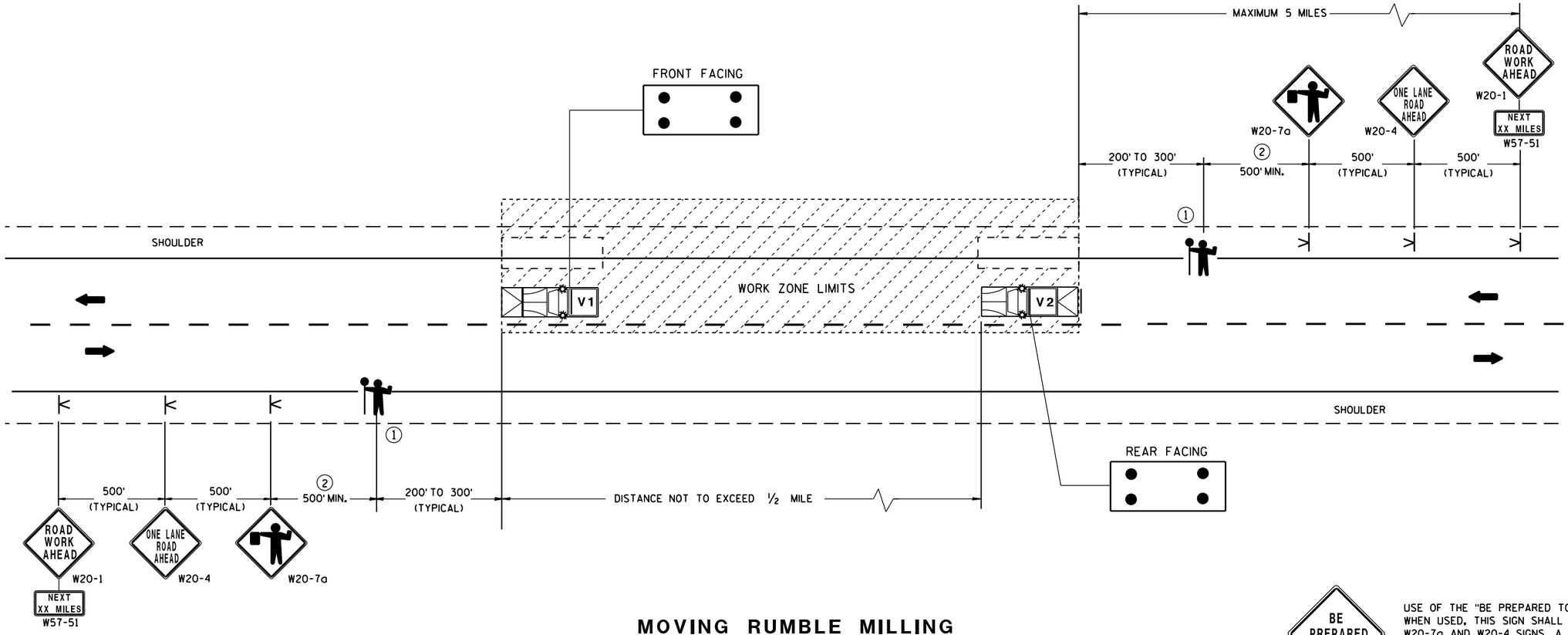
THIS DRAWING SHALL BE USED FOR CENTERLINE AND SHOULDER MILLING OF RUMBLE STRIPS.

① MAXIMUM DISTANCE BETWEEN FLAGGER STATIONS SHALL BE TWO MILES.

② FOR MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

LEGEND

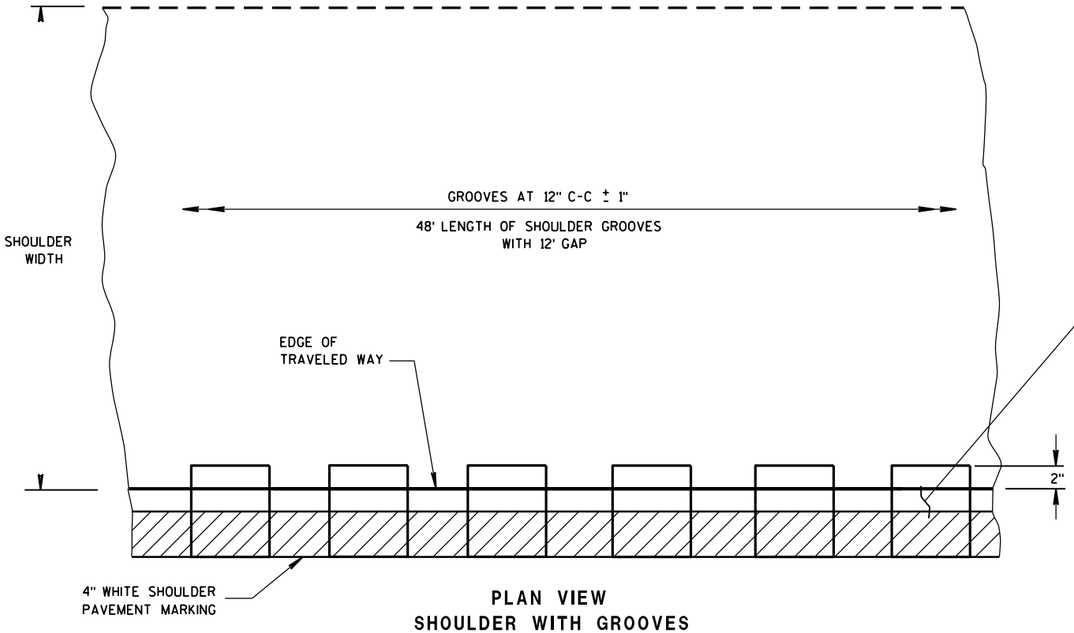
- **V1** LEAD VEHICLE
- **V2** TRAIL VEHICLE WITH TMA
- **TMA** TRUCK-MOUNTED ATTENUATOR
- SIGN ON PORTABLE SUPPORT
- DIRECTION OF TRAVEL
- FLASHING ARROW PANEL (CAUTION)
- (FLAGGER STATION) FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
- WORK AREA



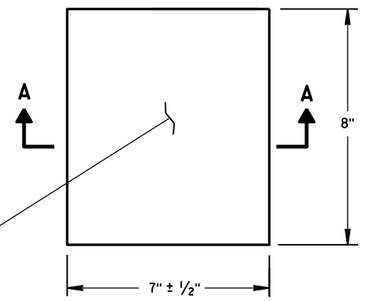
MOVING RUMBLE MILLING
OPERATIONS TWO-LANE TWO-WAY ROADWAY
(REPOSITION VEHICLES TO OUTER EDGE FOR SHOULDER MILLING)

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

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E



PLAN VIEW
SHOULDER WITH GROOVES



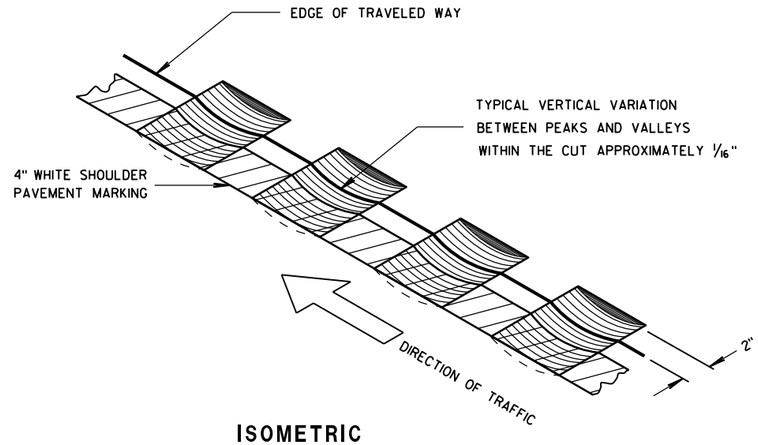
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

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

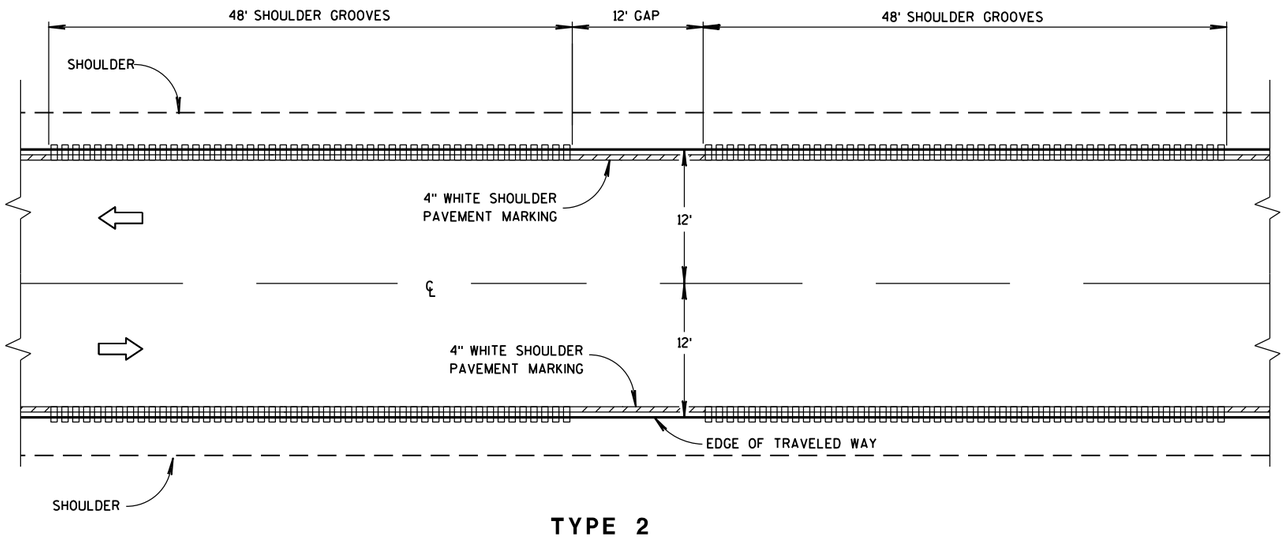
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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

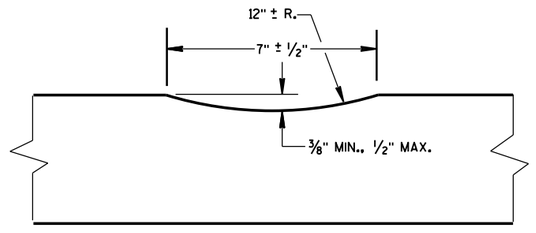


ISOMETRIC

PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP



TYPE 2
2-LANE SHOULDER RUMBLE STRIP



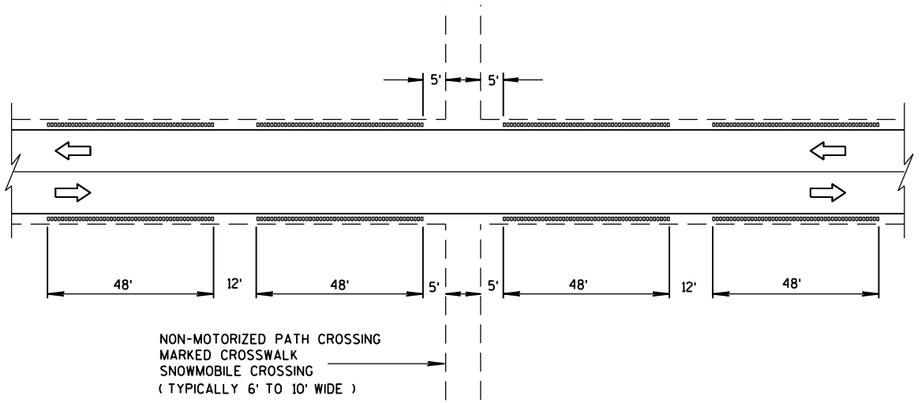
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

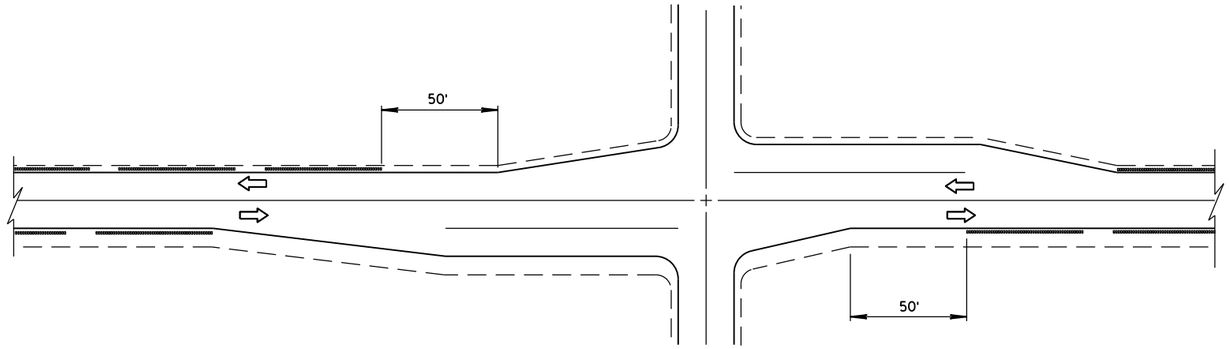
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E

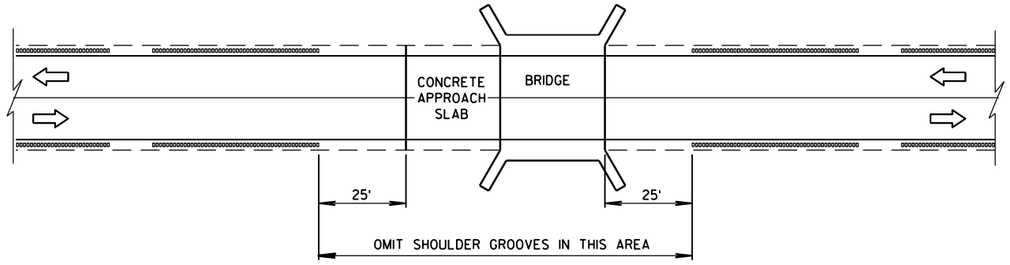
FILE NAME : P:\STATE\PROJECTS\STH33\5090-03-60 BARABOO\cad\SHOULDER_SAWCUT_DETAILS | PLOT DATE : 12/21/11 | PLOT BY : BLH | PLOT NAME : | PLOT SCALE : 4:1



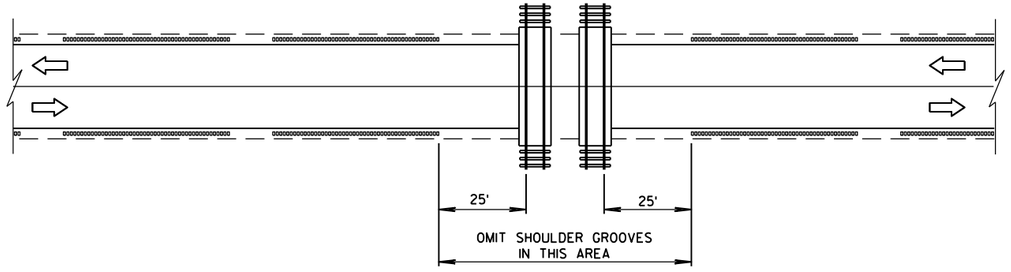
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



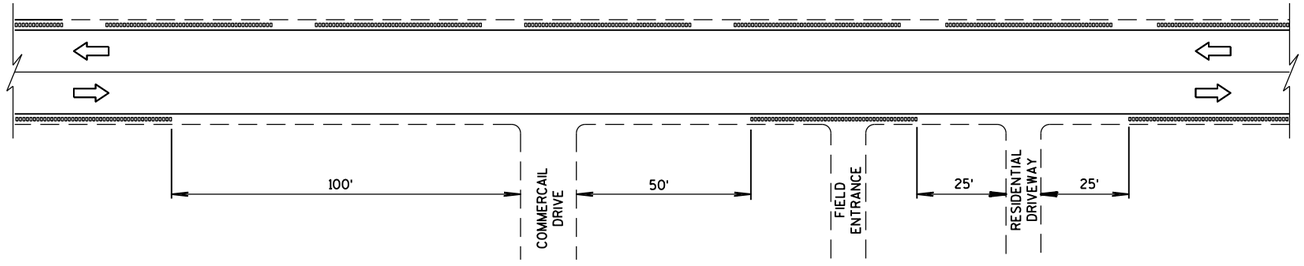
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT DRIVEWAYS (1)

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

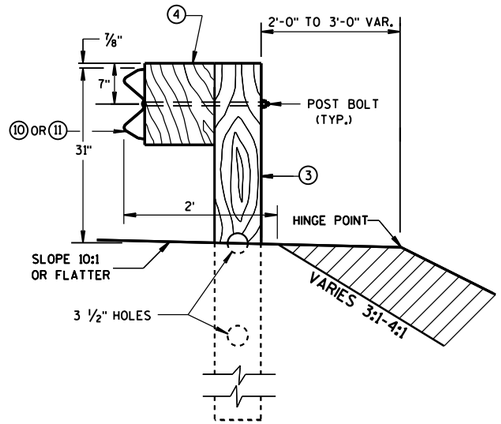
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E

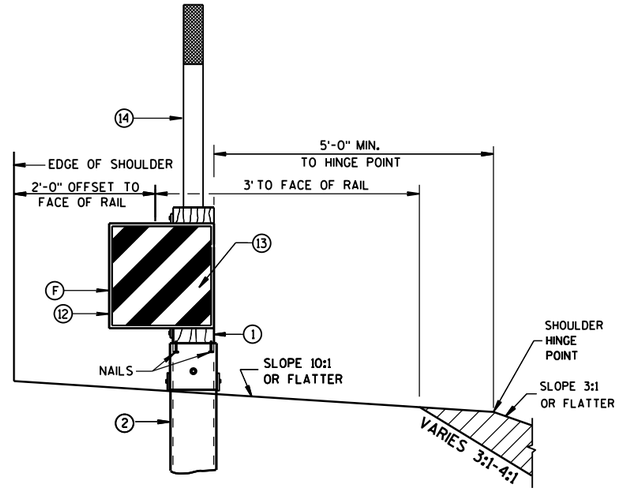
FILE NAME : P:\STATE\PROJECTS\STH33\5090-03-60 BARABOO\cad\SHOULDER_SAWCUT_DETAILS | PLOT DATE : 12/21/11 | PLOT BY : BLH | PLOT NAME : | PLOT SCALE : 4:1

2

SEE SDD "MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)" FOR DETAILS



TYPICAL AT POST NOS. 3-9



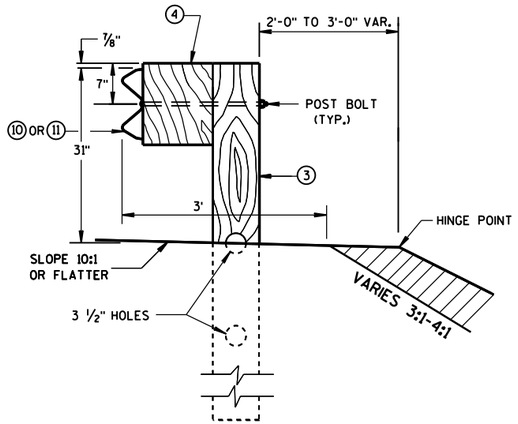
TYPICAL AT POST NO. 1*

STA. 298+10 - STA. 301+04 RT.

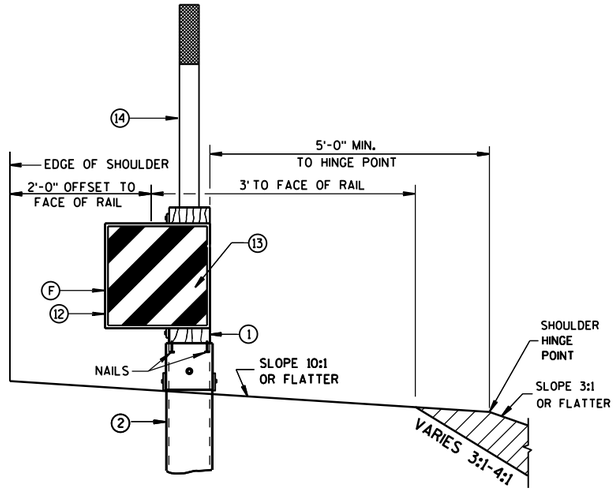
PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	CONSTRUCTION DETAIL	SHEET	E

2

SEE SDD "MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)" FOR DETAILS



TYPICAL AT POST NOS. 3-9



TYPICAL AT POST NO. 1*

STA. 196+00 - STA. 196+50 LT.
STA. 197+00 - STA. 197+50 RT.
STA. 206+30 - STA. 206+80 LT.
STA. 206+50 - STA. 207+00 RT.
STA. 218+60 - STA. 218+87 LT.
STA. 233+00 - STA. 235+40 LT.
STA. 269+25 - STA. 273+32 LT.
STA. 269+63 - STA. 272+94 RT.

2

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

2

2

N

2-1

W3-1
36" X 36"

INSTALL 750' (MIN.)
BEFORE INTERSECTION

TRITZ RD.

2-2

STOP
R1-1
30" X 30"

STA. 174+50
REPLACE EXISTING 36" CMCP
APRON ENDWALLS REQ'D, LT. & RT.
TO BE LENGTHENED APPROX. 5'
ON SOUTH SIDE & 8' ON NORTH SIDE.
EXISTING MASONRY ENDWALLS TO BE
REMOVED. RIPRAP REQ'D. ON BOTH ENDS
OF CULVERT.

150 155 160 STH 33 165 170 175 180

LEGEND

33 PROPOSED SIGN

33 EXISTING SIGN

CULVERT PIPE

BEAM GUARD

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

FILE NAME : R:\Projects\d1_50900330\021202_pd.dgn PLOT DATE : 30-JAN-2013 09:29 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000 WISDOT/CADDS SHEET 42

2

2

N

STA. 192+50
REPLACE EXISTING 24" CMCP
APRON ENDWALLS REQ'D, LT. & RT.
TO BE LENGTHENED APPROX. 6'
ON SOUTH SIDE.
RIPRAP REQ'D. ON OUTFALL.

3-1
NO PASSING ZONE
W14-3
48" X 36"

STA. 196+00 - STA. 196+50
REMOVE 37.5' BEAM GUARD
REPLACE W/E.A.T.

STA. 206+30 - STA. 206+80
REMOVE 50' BEAM GUARD
REPLACE W/12.5' STEEL PLATE
BEAM GUARD & E.A.T.

STA. 197+00 - STA. 197+50
REMOVE 50' BEAM GUARD
REPLACE W/12.5' STEEL PLATE
BEAM GUARD & E.A.T.

STA. 206+50 - STA. 207+00
REMOVE 37.5' BEAM GUARD
REPLACE W/E.A.T.

STH 33

180 185 190 195 200 205 210

LEGEND

33 PROPOSED SIGN

33 EXISTING SIGN

CULVERT PIPE

BEAM GUARD

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

FILE NAME : R:\Projects\d1_50900330\021203_pd.dgn PLOT DATE : 30-JAN-2013 09:30 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000 WISDOT/CADDS SHEET 42

2

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

FILE NAME : R:\Projects\d1_50900330\021204_pd.dgn PLOT DATE : 28-FEB-2013 14:54 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000

WISDOT/CADDS SHEET 42

2

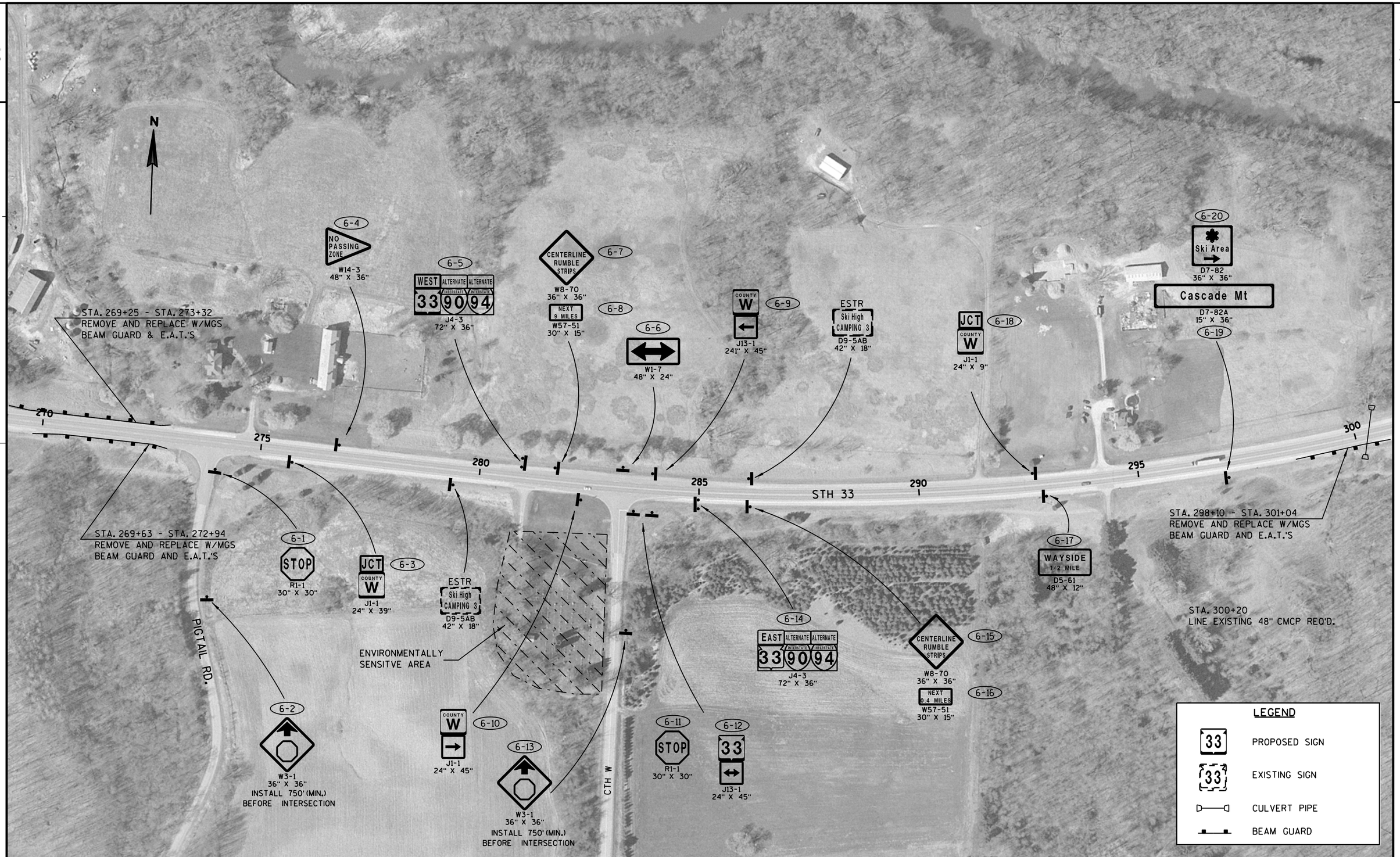
2

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

FILE NAME : R:\Projects\d1_50900330\021205_pd.dgn PLOT DATE : 30-JAN-2013 09:30 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000

WISDOT/CADDS SHEET 42

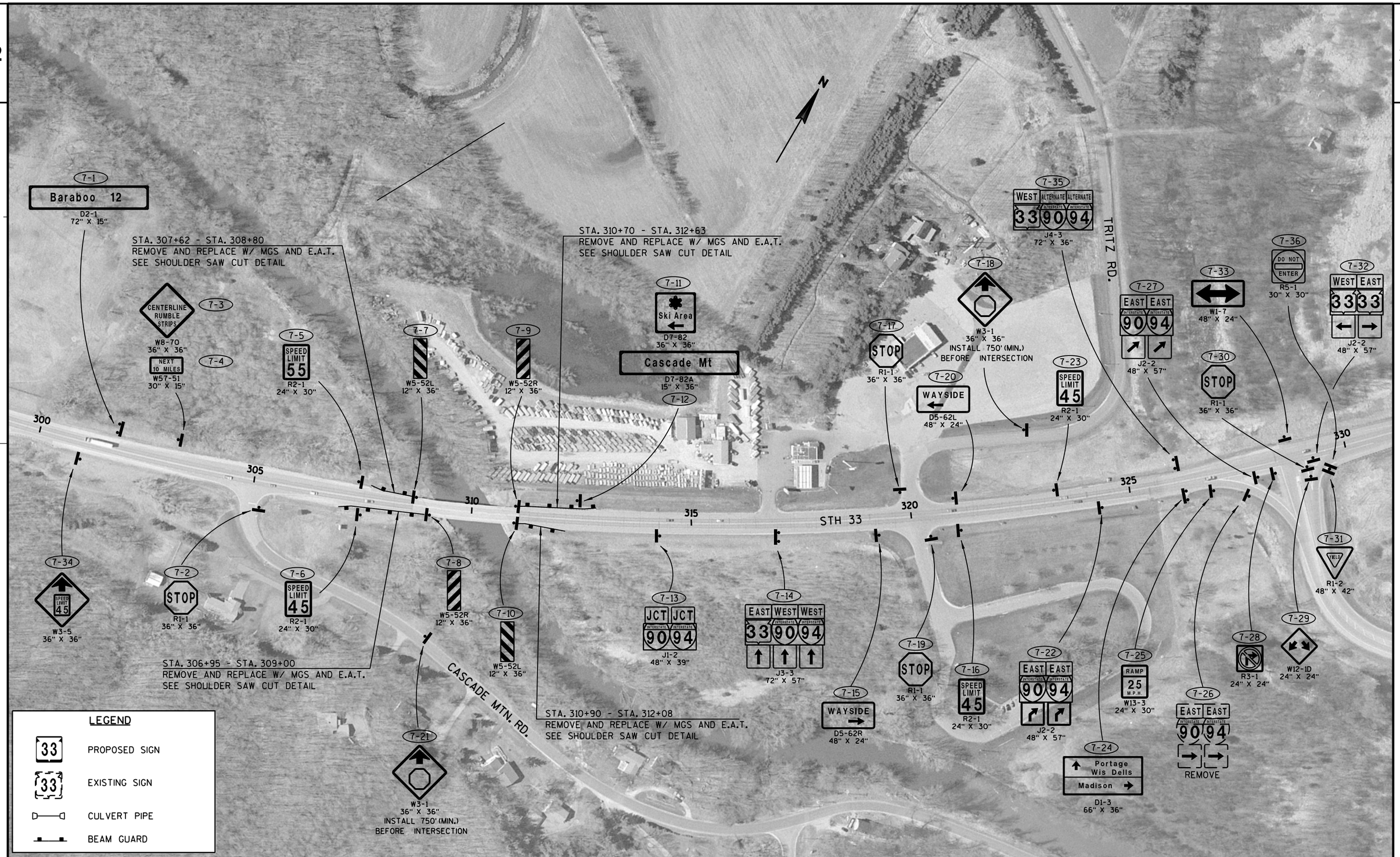
2



PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

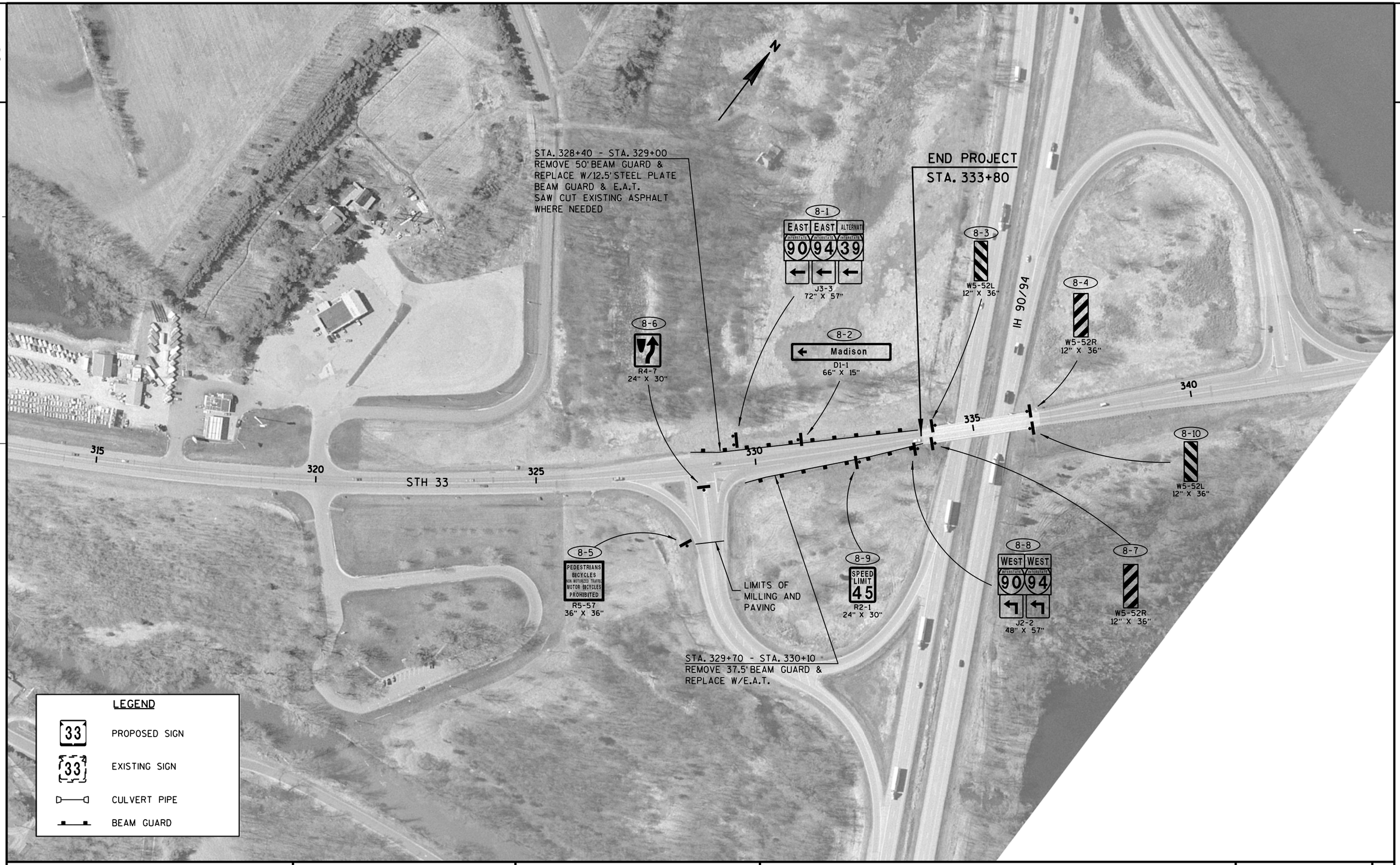
FILE NAME : R:\Projects\d1_50900330\021206_pd.dgn PLOT DATE : 30-JAN-2013 09:31 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 200.000000:1.000000 WISDOT/CADDS SHEET 42

2



PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

2



PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	PLAN DETAILS	SHEET	E

TRAFFIC CONTROL:
FOR MOVING OPERATION STA. 123+20 - STA. 333+80
SEE STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATION)."

A
ROAD WORK AHEAD
W20-1
48" X 48"

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

*
HWY 33
UNDER CONSTR
JUL ** - AUG **
G20-57
48" X 96"

** PLACE FIXED MESSAGE SIGN AT LIMITS OF PROJECT FOR 14 CALENDAR DAYS PRIOR TO BEGINNING CONSTRUCTION.

END PROJECT
STA. 333+80

BEG. PROJECT
STA. 123+20

SEE STANDARD DETAIL DRAWING "TRAFFIC CONTROL ADVANCED WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

SEE STANDARD DETAIL DRAWING "TRAFFIC CONTROL ADVANCED WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

90 94 33 106 108

Baraboo

TRITZ RD
MAIN ST RD
ALLEY RD
PIGTAIL
BREEZY HILL RD
WALL ST RD
FOX GLEN
CASCADE MTN
RAWLEY RD
SKY HIGH DR

173+50 238+50 273+75 283+25 305+00 320+00 328+75

PROJECT NO: 5090-03-60	HWY: STH 33	COUNTY: COLUMBIA	TRAFFIC CONTROL - STH 33 OPEN TO TRAFFIC	SHEET	E

FILE NAME : R:\Projects\d1_50900330\025001_tc.dgn PLOT DATE : 27-FEB-2013 13:43 PLOT BY : dotj3j PLOT NAME : PLOT SCALE : 100.000000:1.000000

DATE 14MAR13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5090-03-60 QUANTITY
0010	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	3.000	3.000
0020	204.0165	REMOVING GUARDRAIL	LF	1,929.000	1,929.000
0030	204.0185	REMOVING MASONRY	CY	27.000	27.000
0040	213.0100	FINISHING ROADWAY (PROJECT) 01. 5090-03-60	EACH	1.000	1.000
0050	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	6,280.000	6,280.000
0060	305.0500	SHAPING SHOULDERS	STA	422.000	422.000
0070	440.4410.S	INCENTIVE IRI RIDE	DOL	16,000.000	16,000.000
0080	455.0105	ASPHALTIC MATERIAL PG58-28	TON	524.000	524.000
0090	455.0605	TACK COAT	GAL	2,170.000	2,170.000
0100	460.1103	HMA PAVEMENT TYPE E-3	TON	9,510.000	9,510.000
0110	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	6,090.000	6,090.000
0120	465.0425.S	ASPHALT SHOULDER RUMBLE STRIP 2-LANE RURAL	LF	32,800.000	32,800.000
0130	465.0475.S	ASPHALT CENTER LINE RUMBLE STRIP 2-LANE RURAL	LF	15,900.000	15,900.000
0140	490.0200	SALVAGED ASPHALTIC PAVEMENT MILLING	SY	86,000.000	86,000.000
0150	520.0700.S	CULVERT PIPE LINERS (INCH) 01. 48-INCH	LF	116.000	116.000
0160	522.0124	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF	71.000	71.000
0170	522.0136	CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH	LF	79.000	79.000
0180	522.0154	CULVERT PIPE REINFORCED CONCRETE CLASS III 54-INCH	LF	70.000	70.000
0190	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	2.000	2.000
0200	522.1036	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	EACH	2.000	2.000
0210	522.1054	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 54-INCH	EACH	2.000	2.000
0220	606.0300	RIPRAP HEAVY	CY	65.000	65.000
0230	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	15.000	15.000
0240	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	212.500	212.500
0250	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	8.000	8.000
0260	614.2300	MGS GUARDRAIL 3	LF	975.000	975.000
0270	614.2500	MGS THRIE BEAM TRANSITION	LF	157.600	157.600
0280	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	10.000	10.000
0290	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 5090-03-60	EACH	1.000	1.000
0300	619.1000	MOBILIZATION	EACH	1.000	1.000
0310	625.0500	SALVAGED TOPSOIL	SY	275.000	275.000
0320	628.1504	SILT FENCE	LF	5,980.000	5,980.000
0330	628.1520	SILT FENCE MAINTENANCE	LF	2,990.000	2,990.000
0340	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0350	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0360	628.2002	EROSION MAT CLASS I TYPE A	SY	275.000	275.000
0370	628.7555	CULVERT PIPE CHECKS	EACH	22.000	22.000
0380	629.0210	FERTILIZER TYPE B	CWT	0.300	0.300
0390	630.0130	SEEDING MIXTURE NO. 30	LB	5.000	5.000
0400	633.5200	MARKERS CULVERT END	EACH	8.000	8.000
0410	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	9.000	9.000
0420	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	41.000	41.000
0430	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	9.000	9.000
0440	634.0620	POSTS WOOD 4X6-INCH X 20-FT	EACH	2.000	2.000
0450	637.0202	SIGNS REFLECTIVE TYPE II	SF	606.450	606.450

3

DATE 14MAR13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5090-03-60 QUANTITY
0460	638.2102	MOVING SIGNS TYPE II	EACH	4.000	4.000
0470	638.2602	REMOVING SIGNS TYPE II	EACH	75.000	75.000
0480	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	73.000	73.000
0490	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0500	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5090-03-60	EACH	1.000	1.000
0510	643.0300	TRAFFIC CONTROL DRUMS	DAY	500.000	500.000
0520	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,080.000	1,080.000
0530	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	96.000	96.000
0540	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	100.000	100.000
0550	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	61,200.000	61,200.000
0560	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	1,100.000	1,100.000
0570	646.0406	PAVEMENT MARKING SAME DAY EPOXY 4-INCH	LF	28,200.000	28,200.000
0580	647.0526	PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH	EACH	10.000	10.000
0590	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	180.000	180.000
0600	648.0100	LOCATING NO-PASSING ZONES	MI	3.990	3.990
0610	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	3.000	3.000
0620	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	21,060.000	21,060.000
0630	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5090-03-60	LS	1.000	1.000
0640	690.0150	SAWING ASPHALT	LF	950.000	950.000
0650	SPV.0035	SPECIAL 01. TEMPORARY STONE DITCH CHECKS	CY	29.000	29.000
0660	SPV.0180	SPECIAL 01. SPECIAL BASE PATCHING	SY	1,820.000	1,820.000

BASE ITEMS

STATION	-	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE, 3/4" TON	305.0500 SHAPING SHOULDERS STA	SPV.0180.01 * SPECIAL BASE PATCHING SY
123+20	-	333+80	MAINLINE	5,980	422	1,700
			DRIVEWAYS AND FIELD ENTRANCES	300	-	-
			TOTAL	**6,280**	**422**	**1,700** *

*** ADDITIONAL QUANTITY LISTED ELSEWHERE IN THE PLANS**

HMA PAVEMENT

LOCATION	490.0200 SALVAGED ASPHALTIC PAVEMENT MILLING SY	460.1103 HMA PAVEMENT TYPE E-3 TON	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL
MAINLINE	81,300	9,000	495	2,040
SIDEROADS	4,100	450	25	110
DRIVEWAYS	600	60	4	20
TOTAL	**86,000**	**9,510**	**524**	**2,170**

RUMBLE STRIPS

STA	-	STA	LOCATION	465.0425.S ASPHALT SHOULDER RUMBLE STRIP 2-LANE RURAL LF	465.0475.S ASPHALT CENTER LINE RUMBLE STRIP 2-LANE RURAL LF
123+20	-	304+00	CENTER LINE	-	15,900
123+20	-	304+00	LT	16,300	-
123+20	-	304+00	RT	16,500	-
			TOTAL	**32,800**	**15,900**

CULVERTS

STA	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	204.0185 REMOVING MASONRY CY	522.0124 * CPRC CLASS III 24-INCH LF	522.0136 * CPRC CLASS III 36-INCH LF	522.0154 * CPRC CLASS III 54-INCH LF	522.1024 AEW FOR CPRC 24-INCH EACH	522.1036 AEW FOR CPRC 36-INCH EACH	522.1054 AEW FOR CPRC 54-INCH EACH	633.5200 ** MARKERS CULVERT END EACH	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	SPV.0035.01 TEMPORARY STONE DITCH CHECKS CY	SPV.0180.01 ** SPECIAL BASE PATCHING SY	REMARKS
174+50	MAINLINE	1	17	-	79	-	-	2	-	2	1	9	40	EXTEND 5' TO SOUTH AND 8' TO NORTH
192+50	MAINLINE	1	-	71	-	-	2	-	-	2	1	8	40	EXTEND 6' TO SOUTH
237+10	MAINLINE	1	10	-	-	70	-	-	2	2	1	12	40	EXTEND 5' TO SOUTH AND 8' TO NORTH
PROJECT TOTAL:		**3**	**27**	**71** *	**79** *	**70** *	**2**	**2**	**2**	**6** **	**3**	**29**	**120** **	

*** PIPE LENGTHS TO BE FIELD VERIFIED PRIOR TO ORDERING**

**** ADDITIONAL QUANTITY LISTED ELSEWHERE IN THE PLANS**

LINING CULVERTS

STATION	LOCATION	TYPE	SLOPE	CULVERT PIPE FULL FLOW CAPACITY CFS	520.0700.S CULVERT PIPE LINERS 48-INCH LF	633.5200 * MARKERS CULVERT END EACH
300+20	MAINLINE	CMP	4.7%	194	116	2 *

*** ADDITIONAL QUANTITY LISTED ELSEWHERE IN THE PLANS**

BEAM GUARD REPLACEMENT

STA	-	STA		204.0165 REMOVING GUARDRAIL LF	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0370 STEEL PLATE BEAM GUARD EAT EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	690.0150 SAWING ASPHALT LF
196+00	-	206+80	LT	88	2	12.5	2	-	-	-	50
197+00	-	207+00	RT	88	2	12.5	2	-	-	-	50
218+60	-	235+40	LT	250	2	175	2	-	-	-	50
269+25	-	273+32	LT	380	1	-	-	300	-	2	50
269+63	-	272+94	RT	310	1	-	-	225	-	2	50
298+10	-	301+04	RT	104	1	-	-	187.5	-	2	-
306+95	-	309+00	RT	209	1	-	-	112.5	39.4	1	210
307+62	-	308+80	LT	109	1	-	-	25	39.4	1	120
310+70	-	312+63	LT	194	1	-	-	100	39.4	1	200
310+90	-	312+08	RT	109	1	-	-	25	39.4	1	120
328+40	-	334+00	LT	50	1	12.5	1	-	-	-	25
329+70	-	334+00	RT	38	1	-	1	-	-	-	25
			TOTAL	1929	15	212.5	8	975	157.6	10	950

BARRIER SYSTEM GRADING, SHAPING, FINISHING ITEM 614.0010

STA	-	STA	LOCATION	* BORROW EXCAVATION CY	* SALVAGED TOPSOIL SY	* FERTILIZER TYPE B CWT	* SEEDING MIXTURE No. 30 LB	* MULCHING SY
196+00	-	206+80	LT	136	95	0.09	2.28	95
197+00	-	207+00	RT	136	95	0.09	2.28	95
218+60	-	235+40	LT	388	271	0.26	6.50	271
269+25	-	273+32	LT	589	412	0.39	9.89	412
269+63	-	272+94	RT	481	336	0.32	8.06	336
298+10	-	301+04	RT	161	113	0.11	2.71	113
306+95	-	309+00	RT	324	227	0.22	5.45	227
307+62	-	308+80	LT	169	118	0.11	2.83	118
310+70	-	312+63	LT	301	210	0.20	5.04	210
310+90	-	312+08	RT	169	118	0.11	2.83	118
328+40	-	334+00	LT	78	53	0.05	1.27	53
329+70	-	334+00	RT	69	52	0.05	1.25	52
			Total	3000	2100	2	50	2100

*** ITEMS AND QUANTITIES USED FOR BID INFORMATION ONLY**

EROSION CONTROL

LOCATION	606.0300 RIPRAP HEAVY CY	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH	628.2002 EMAT CLASS I TYPE A SY	628.7555 CULVERT PIPE CHECKS EACH	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	645.0120 GEOTEXTILE FABRIC TYPE HR SY
CULVERT AREAS	52	220	150	75	-	-	220	17	0.2	4	80
BEAM GUARD AREAS	-	-	3,130	1,565	-	-	-	-	-	-	-
MILLINGS STOCKPILE	-	-	1,500	750	-	-	-	-	-	-	-
UNDISTRIBUTED	13	55	1,200	600	1	1	55	5	0.1	1	20
TOTAL:	**65**	**275**	**5,980**	**2,990**	**1**	**1**	**275**	**22**	**0.3**	**5**	**100**

PERMANENT SIGNING

SIGN NUMBER	LOCATION	SIGN CODE	SIGN W x H	MESSAGE	634.0614 POSTS WOOD 4X6 INCH 14 FT EACH	634.0616 POSTS WOOD 4X6 INCH 16 FT EACH	634.0618 POSTS WOOD 4X6 INCH 18 FT EACH	634.0620 POSTS WOOD 4X6 INCH 20 FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
1-1	125+50 LT	W14-3	48 x 36	NO PASSING ZONE	-	1	-	-	6.00	-	1	1	
1-2	145+50 RT	W14-3	48 x 36	NO PASSING ZONE	-	1	-	-	6.00	-	1	1	
1-3	126+00 RT	W8-70	36 x 36	CENTERLINE RUMBLE STRIPS	-	-	1	-	9.00	-	-	-	
1-4	126+00 RT	W57-51	36 x 18	NEXT 4 MILES	-	-	-	-	4.50	-	-	-	POSTED WITH 1-3
1-5	125+50 LT	I55-56	30 x 36	ADOPT A HIGHWAY	-	-	-	-	-	1	-	-	POSTED WITH 1-1
2-1	173+20 LT	W3-1	36 x 36	STOP AHEAD	-	-	1	-	9.00	-	1	1	
2-2	173+20 LT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
3-1	192+00 LT	W14-3	48 x 36	NO PASSING ZONE	-	1	-	-	6.00	-	1	1	
4-1	235+30 RT	W14-3	48 x 36	NO PASSING ZONE	-	1	-	-	6.00	-	1	1	
4-2	238+00 LT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
4-3	238+00 LT	W3-1	36 x 36	STOP AHEAD	-	-	1	-	9.00	-	1	1	
6-1	274+10 RT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
6-2	274+10 RT	W3-1	36 x 36	STOP AHEAD	-	-	1	-	9.00	-	1	1	
6-3	275+50 RT	J1-1	24 x 39	ROUTE MARKER ASSEMBLY	-	1	-	-	6.50	-	1	1	J-ASSEMBLY
		M2-1	21 x 15	JCT	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-5A	24 x 24	CTH W	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-4	276+20 LT	W14-3	48 x 36	NO PASSING ZONE	-	1	-	-	6.00	-	1	1	
6-5	281+00 LT	J4-3	72 x 36	REASSURANCE MARKER	-	1	1	-	18.00	-	2	2	J-ASSEMBLY
		M3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-6	283+50 LT	W1-7	48 x 24	TWO-DIRECTION ARROW	-	1	-	-	8.00	-	-	-	
6-7	279+00 LT	W8-70	36 x 36	CENTERLINE RUMBLE STRIPS	-	-	1	-	9.00	-	-	-	
6-8	279+00 LT	W57-51	36 x 18	NEXT 9 MILES	-	-	-	-	4.50	-	-	-	POSTED WITH 6-7
6-9	284+00 LT	J13-1	24 x 45	ROUTE MARKER ASSEMBLY	-	1	-	-	7.50	-	1	1	J-ASSEMBLY
		M1-5A	24 x 24	CTH W	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M6-1	21 x 21	LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-10	283+50 RT	J13-1	24 x 45	ROUTE MARKER ASSEMBLY	-	1	-	-	7.50	-	1	1	J-ASSEMBLY
		M1-5A	24 x 24	CTH W	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M6-1	21 x 21	RIGHT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-11	284+00 RT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
6-12	284+00 RT	J13-1	24 x 45	ROUTE MARKER ASSEMBLY	-	1	-	-	7.50	-	1	1	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M6-4	21 x 21	TWO-DIRECTION ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-13	284+00 RT	W3-1	36 x 36	STOP AHEAD	-	-	1	-	9.00	-	1	1	
6-14	285+00 RT	J4-3	72 x 36	REASSURANCE MARKER	-	1	1	-	18.00	-	1	1	J-ASSEMBLY
		M3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-15	286+00 RT	W8-70	36 x 36	CENTERLINE RUMBLE STRIPS	-	-	1	-	9.00	-	-	-	
6-16	286+00 RT	W57-51	36 x 18	NEXT 0.4 MILES	-	-	-	-	4.50	-	-	-	POSTED WITH 6-15
6-17	293+50 RT	D5-61	48 x 24	WAYSIDE 1/2 MILE	-	1	-	-	8.00	-	1	1	
6-18	293+50 LT	J1-1	24 x 39	ROUTE MARKER ASSEMBLY	-	1	-	-	6.50	-	1	1	J-ASSEMBLY
		M2-1	21 x 15	JCT	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-5A	24 x 24	CTH W	-	-	-	-	-	-	-	-	J-ASSEMBLY
6-19	297+00 RT	D7-82	36 x 36	SKI AREA	-	-	1	-	9.00	-	1	1	
6-20	297+00 RT	D7-82A	36 x 15	CASCADE MT	-	-	-	-	3.75	-	1	-	POSTED WITH 6-19
7-1	302+30 LT	D2-1	72 x 15	BARABOO 12		1	1		7.50	-	1	2	
7-2	305+00 RT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
7-3	303+00 LT	W8-70	36 x 36	CENTERLINE RUMBLE STRIPS	-	-	1	-	9.00	-	-	-	
7-4	303+00 LT	W57-51	36 x 18	NEXT 10 MILES	-	-	-	-	4.50	-	-	-	POSTED WITH 7-3
7-5	307+50 LT	R2-1	24 x 30	SPEED LIMIT 55	-	1	-	-	5.00	-	1	1	
7-6	307+50 RT	R2-1	24 x 30	SPEED LIMIT 45	-	1	-	-	5.00	-	1	1	
7-7	309+00 LT	W5-52L	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
7-8	309+00 RT	W5-52R	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
7-9	311+00 LT	W5-52R	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
7-10	311+00 RT	W5-52L	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
7-11	312+20 LT	D7-82	36 x 36	SKI AREA	-	-	1	-	9.00	-	1	1	
7-12	312+20 LT	D7-82A	36 x 15	CASCADE MT	-	-	-	-	3.75	-	1	-	POSTED WITH 7-11
7-13	314+30 RT	J1-2	48 x 39	ROUTE MARKER ASSEMBLY	-	1	-	-	13.00	-	1	1	J-ASSEMBLY
		MB2-1	21 x 15	JCT	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB2-1	21 x 15	JCT	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
				PAGE 1 TOTAL	4	23	1	0	301.40	1	35	32	

PERMANENT SIGNING

SIGN NUMBER	LOCATION	SIGN CODE	SIGN W x H	MESSAGE	634.0614 POSTS WOOD 4X6 INCH 14 FT EACH	634.0616 POSTS WOOD 4X6 INCH 16 FT EACH	634.0618 POSTS WOOD 4X6 INCH 18 FT EACH	634.0620 POSTS WOOD 4X6 INCH 20 FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
7-14	317+00 RT	J2-3	72 x 57	ROUTE MARKER ASSEMBLY	-	-	-	2	28.50	-	1	2	J-ASSEMBLY
		M3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M6-1	21 x 21	AHEAD ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-1	21 x 21	AHEAD ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-1	21 x 21	AHEAD ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
7-15	319+00 RT	D5-62R	48 x 24	WAYSIDE WITH ARROW	-	1	-	-	8.00	-	1	1	
7-16	321+00 RT	R2-1	24 x 30	SPEED LIMIT 45	-	1	-	-	5.00	-	1	1	
7-17	320+00 LT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
7-18	320+00 LT	W3-1	36 x 36	STOP AHEAD	-	-	1	-	9.00	-	1	1	
7-19	320+00 RT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
7-20	321+50 LT	D5-62L	48 x 24	WAYSIDE WITH ARROW	-	1	-	-	8.00	-	1	1	
7-21	305+00 RT	W3-1	36 x 36	STOP AHEAD	-	-	1	-	9.00	-	1	1	
7-22	324+00 RT	J2-2	48 x 57	ROUTE MARKER ASSEMBLY	-	-	1	-	19.00	-	1	1	J-ASSEMBLY
		MB3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB5-2R	21 x 21	TILT AHEAD RIGHT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB5-2R	21 x 21	TILT AHEAD RIGHT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
7-23	323+00 LT	R2-1	24 x 30	SPEED LIMIT 45	-	1	-	-	5.00	-	1	1	
7-24	326+30 RT	D1-3	66 x 36	PORTAGE, WIS. DELLS, MADISON	-	1	1	-	16.50	-	1	2	
7-25	327+00 RT	W13-3	24 x 30	RAMP 25 MPH	-	1	-	-	5.00	-	1	1	
7-26	328+00 RT	J3-2	-	ROUTE MARKER ASSEMBLY	-	-	-	-	-	-	1	2	
7-27	328+00 RT	J3-2	48 x 57	ROUTE MARKER ASSEMBLY	-	-	1	-	19.00	-	1	1	J-ASSEMBLY
		MB3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-2	21 x 21	TILT RIGHT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-2	21 x 21	TILT RIGHT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
7-28	328+20 RT	R3-1	24 x 24	NO RIGHT TURN	-	1	-	-	4.00	-	1	1	
7-29	329+00 RT	W12-1D	24 x 24	DOUBLE DOWN ARROW	1	-	-	-	4.00	-	1	1	
7-30	329+00 RT	R1-1	30 x 30	STOP	-	1	-	-	5.18	-	1	1	
7-31	329+40 RT	R1-2	36 x 31	YIELD	-	1	-	-	3.88	-	1	1	
7-32	329+20 RT	J3-2	48 x 57	ROUTE MARKER ASSEMBLY	-	-	1	-	19.00	-	1	1	J-ASSEMBLY
		M3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M6-1	21 x 21	LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M6-1	21 x 21	RIGHT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
7-33	329+20 LT	W1-7	48 x 24	TWO-DIRECTION ARROW	-	1	-	-	8.00	-	-	-	
7-34	301+00 RT	W3-5	36 x 36	45 MPH AHEAD	-	-	1	-	9.00	-	1	1	
7-35	326+00 LT	J4-3	72 x 36	REASSURANCE MARKER	-	1	1	-	18.00	-	2	2	J-ASSEMBLY
		M3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		M1-6	24 x 24	STH 33	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
7-36	329+40 RT	R5-1	30 x 30	DO NOT ENTER	-	-	-	-	6.25	-	1	-	POSTED WITH 7-31
8-1	329+30 LT	J3-3	72 x 57	ROUTE MARKER ASSEMBLY	-	-	-	2	28.50	-	1	2	J-ASSEMBLY
		MB3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-1	21 x 21	LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB3-2	24 x 12	EAST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-1	21 x 21	LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB4-1	24 x 12	ALTERNATE	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 39	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB6-1	21 x 21	LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
8-2	330+80 LT	D1-1	66 x 15	MADISON	-	2	-		6.88	-	1	2	
8-3	333+80 LT	W5-52L	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
8-4	336+50 LT	W5-52R	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
8-5	328+30 RT	R5-57	36 x 36	NON-MOTORIZED PROHIBITED	-	1	-	-	9.00	-	1	1	
				PAGE 2 TOTAL	3	16	7	2	270.05	0	28	30	

PERMANENT SIGNING

SIGN NUMBER	LOCATION	SIGN CODE	SIGN W x H	MESSAGE	634.0614 POSTS WOOD 4X6 INCH 14 FT EACH	634.0616 POSTS WOOD 4X6 INCH 16 FT EACH	634.0618 POSTS WOOD 4X6 INCH 18 FT EACH	634.0620 POSTS WOOD 4X6 INCH 20 FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
8-6	329+00 RT	R4-7	24 x 30	KEEP RIGHT	-	1	-	-	5.00	-	1	1	
8-7	333+80 RT	W5-52R	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
8-8	333+80 RT	J2-2	48 x 57	ROUTE MARKER ASSEMBLY	-	-	1	-	19.00	-	1	1	J-ASSEMBLY
		MB3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 90	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB5-1L	21 x 21	AHEAD LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB3-4	24 x 12	WEST	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB1-1	24 x 24	IH 94	-	-	-	-	-	-	-	-	J-ASSEMBLY
		MB5-1L	21 x 21	AHEAD LEFT ARROW	-	-	-	-	-	-	-	-	J-ASSEMBLY
8-9	332+00 RT	R2-1	24 x 30	SPEED LIMIT 45	-	1	-	-	5.00	-	1	-	
8-10	336+50 RT	W5-52L	12 x 36	BRIDGE WARNING HATCH	1	-	-	-	3.00	-	1	1	
				PAGE 3 TOTAL	2	2	1	0	35.00	0	5	4	
				PAGE 1 TOTAL	4	23	1	0	301.40	1	35	32	
				PAGE 2 TOTAL	3	16	7	2	270.05	0	28	30	
				UNDISTRIBUTED	-	-	-	-	-	3	7	7	
				PROJECT TOTAL	**9**	**41**	**9**	**2**	**606.45**	**4**	**75**	**73**	

TRAFFIC CONTROL

LOCATION	* DAYS	643.0100 TRAFFIC CONTROL PROJECT EACH	643.0300 DRUMS DAYS	643.0900 SIGNS DAYS	643.1000 SIGNS FIXED MESSAGE SF
PROJECT	35	1	-	420	96
SIDEROADS	35	-	-	560	-
UNDISTRIBUTED	-	-	500	100	-
	TOTAL:	**1**	**500**	**1,080**	**96**

*** FOR INFORMATION ONLY**

PAVEMENT MARKING

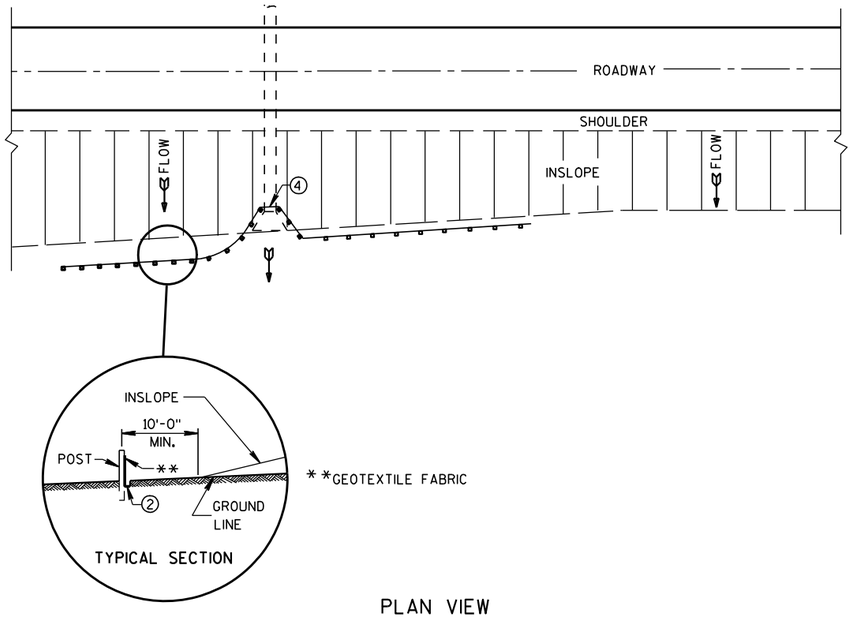
STATION	-	STATION	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	646.0406 PAVEMENT MARKING SAME DAY EPOXY 4-INCH YELLOW LF	646.0126 PAVEMENT MARKING EPOXY 8-INCH WHITE LF	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH WHITE LF	647.0526 PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH EACH	648.0100 LOCATING NO PASSING ZONES MI
123+20	-	303+00	MAINLINE	36,100	17,700	17,700	-	-	-	3.41
303+00	-	333+80	MAINLINE	6,300	-	10,500	-	-	-	0.58
		173+50	TRITZ RD.	-	-	-	-	20	-	-
		233+50	OWEN RD.	-	-	-	-	20	-	-
		273+80	PIGTAIL ALLEY	-	-	-	-	20	-	-
		283+20	CTH W	-	-	-	-	20	-	-
		305+00	CASCADE MOUNTAIN RD	-	-	-	-	20	-	-
		320+00	TRITZ RD.	-	-	-	-	20	-	-
		320+00	WAYSIDE	-	-	-	-	20	-	-
		328+80	IH 90/94 ENTRANCE	100	300	-	700	20	-	-
		329+20	IH 90/94 EXIT	400	300	-	400	20	10	-
			SUBTOTAL	**42,900**	**18,300**	**-**	**-**	**-**	**-**	**-**
			TOTAL	**61,200**		**28,200**	**1,100**	**180**	**10**	**3.99**

CONSTRUCTION STAKING

LOCATION	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL (PROJECT) LS
PROJECT	21,060	1

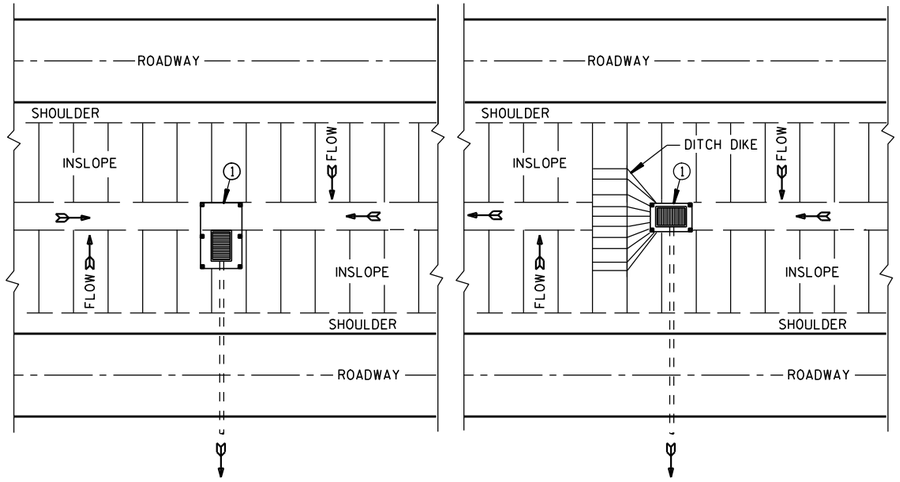
Standard Detail Drawing List

08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09A01-13B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
13A11-01A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-01B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B29-01	SAFETY EDGE
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
15C08-15F	PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-01A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C20-01	YIELD MARKING
15C27-01	DOUBLE ARROW WARNING SIGN PLACEMENT
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

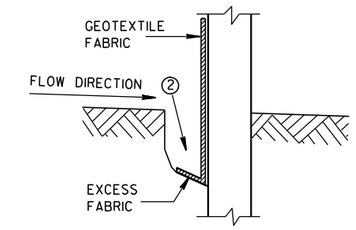
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

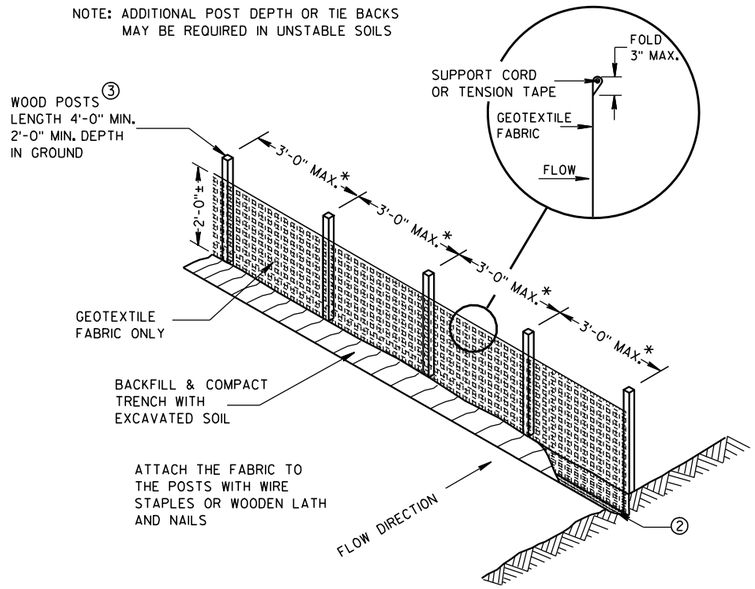
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

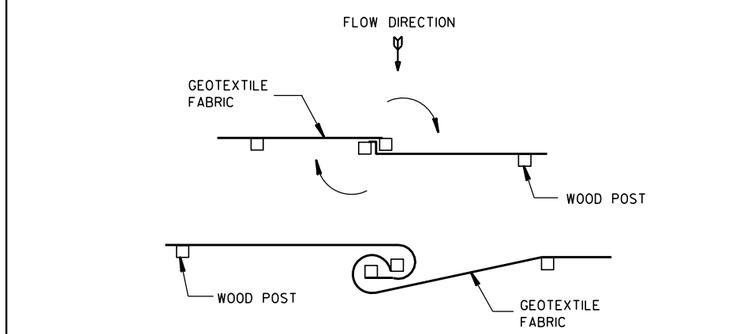
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



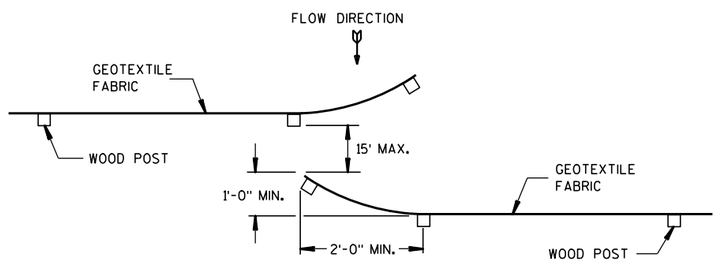
TRENCH DETAIL



SILT FENCE

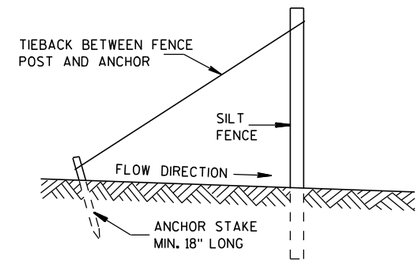


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

METAL APRON ENDWALLS

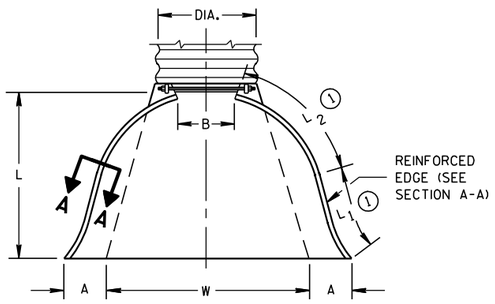
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 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

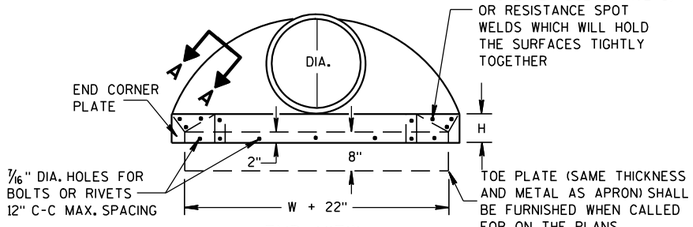
REINFORCED CONCRETE APRON ENDWALLS

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

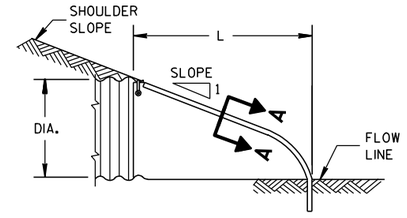
* MINIMUM
** MAXIMUM



PLAN VIEW

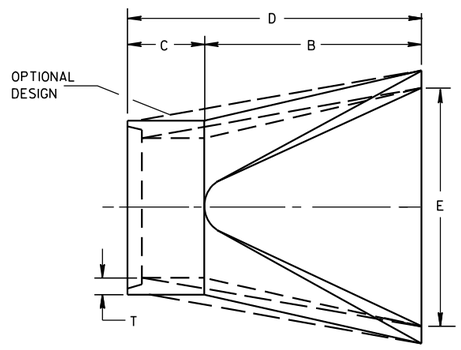


END VIEW

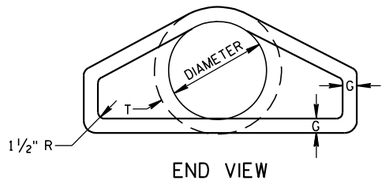


SIDE ELEVATION

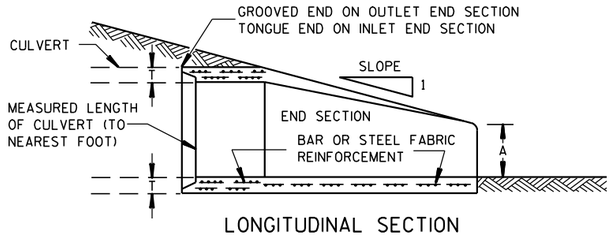
METAL ENDWALLS



PLAN

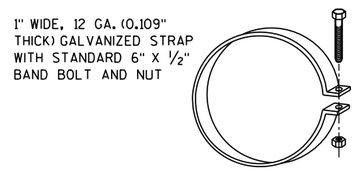


END VIEW



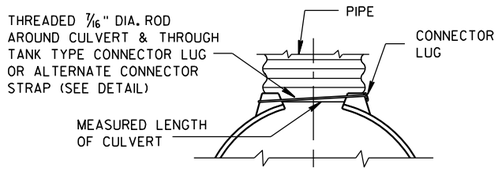
LONGITUDINAL SECTION

CONCRETE ENDWALLS

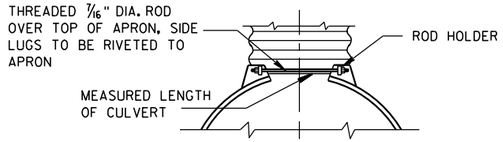


ALTERNATE FOR TYPE 1 CONNECTION

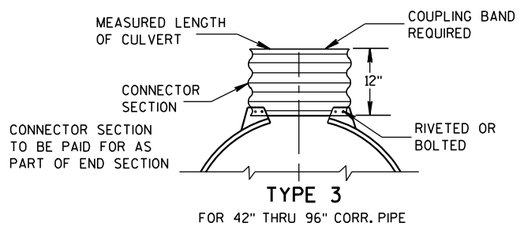
END SECTION CONNECTOR STRAP



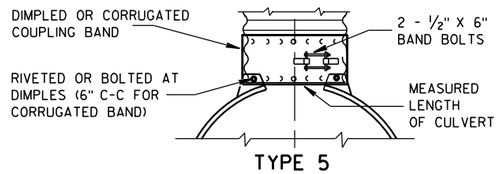
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

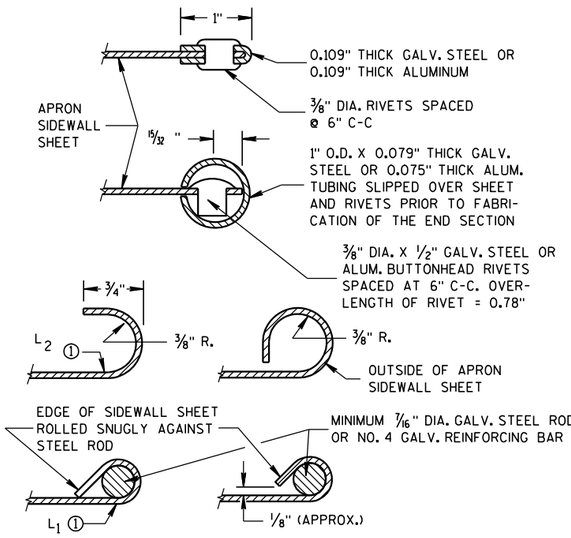
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

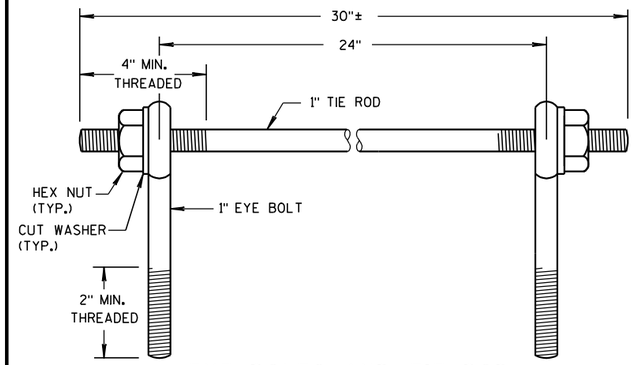
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

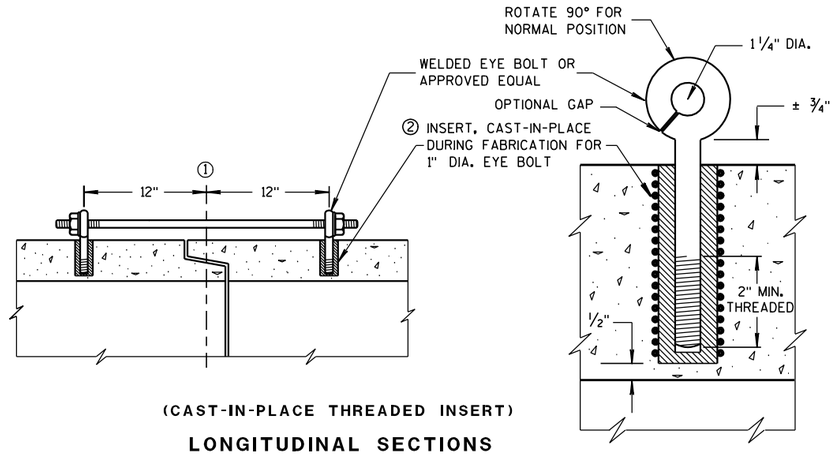
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

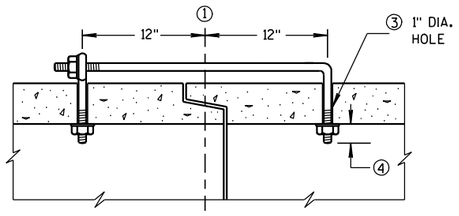
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

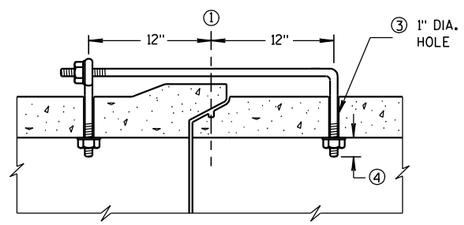
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

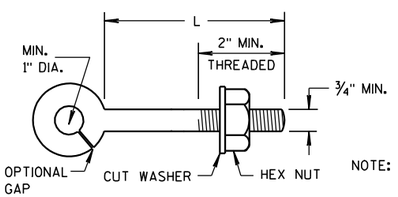


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

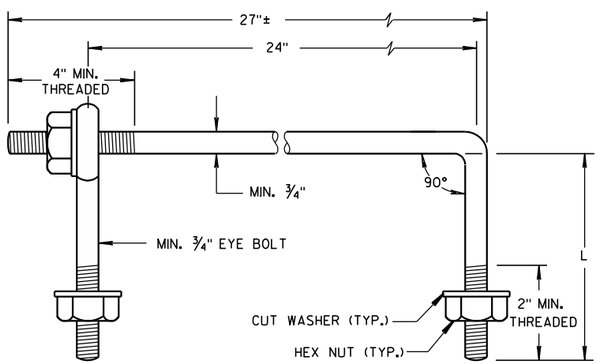
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

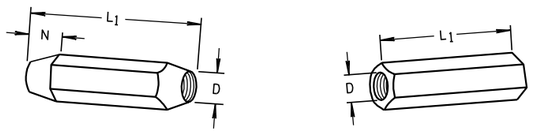
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

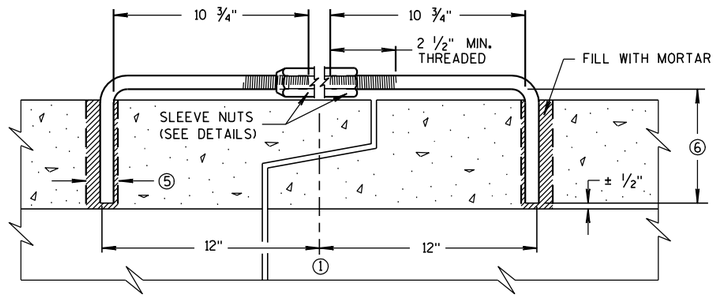
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

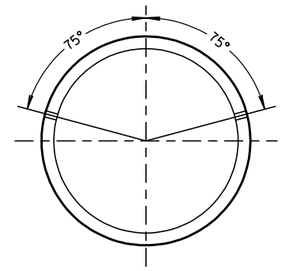
SLEEVE NUTS



LONGITUDINAL SECTION

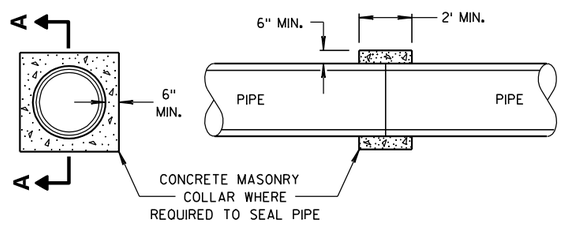
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

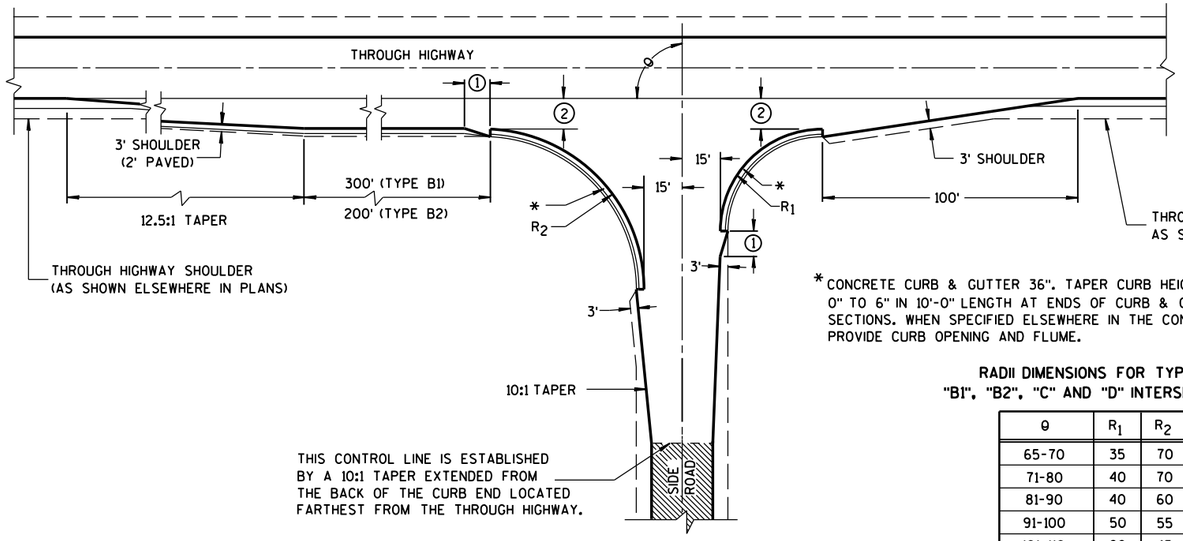
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7

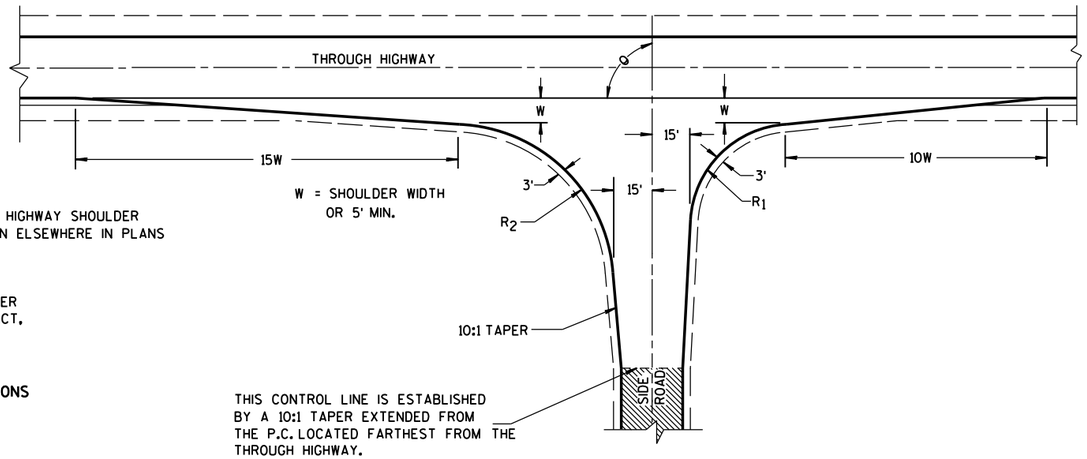


TYPE "B1" AND "B2"

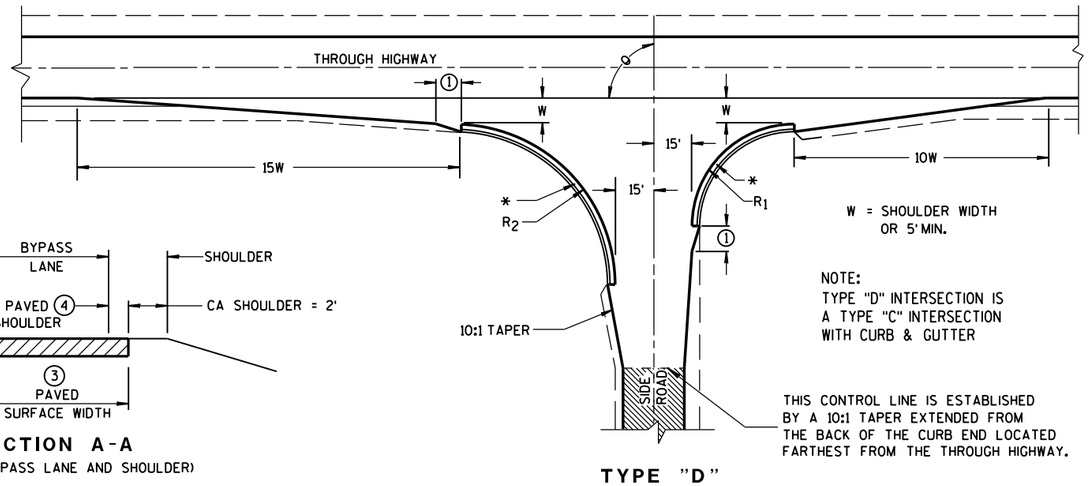
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

(1) 10-FT TYPICAL.

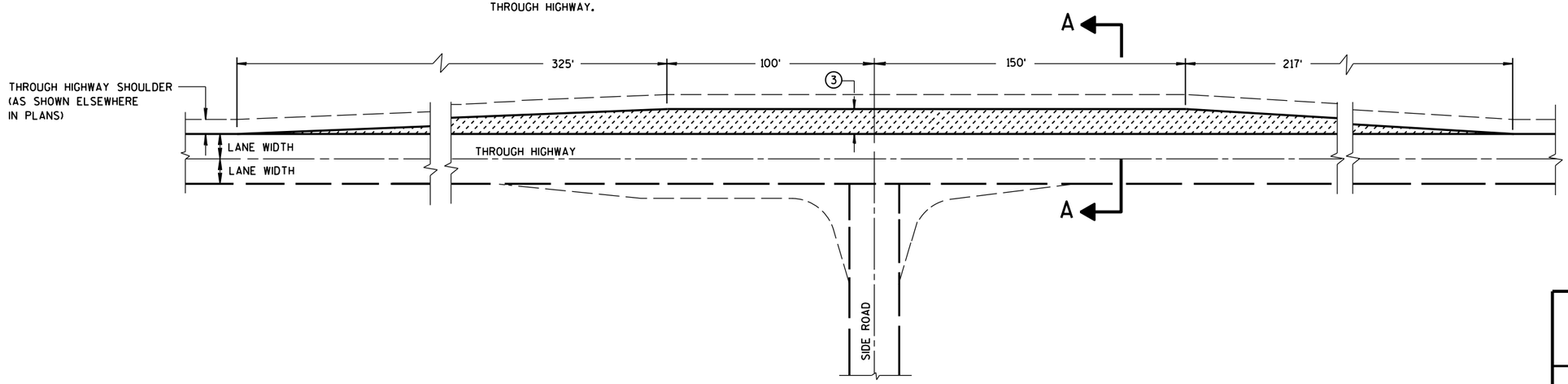
(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



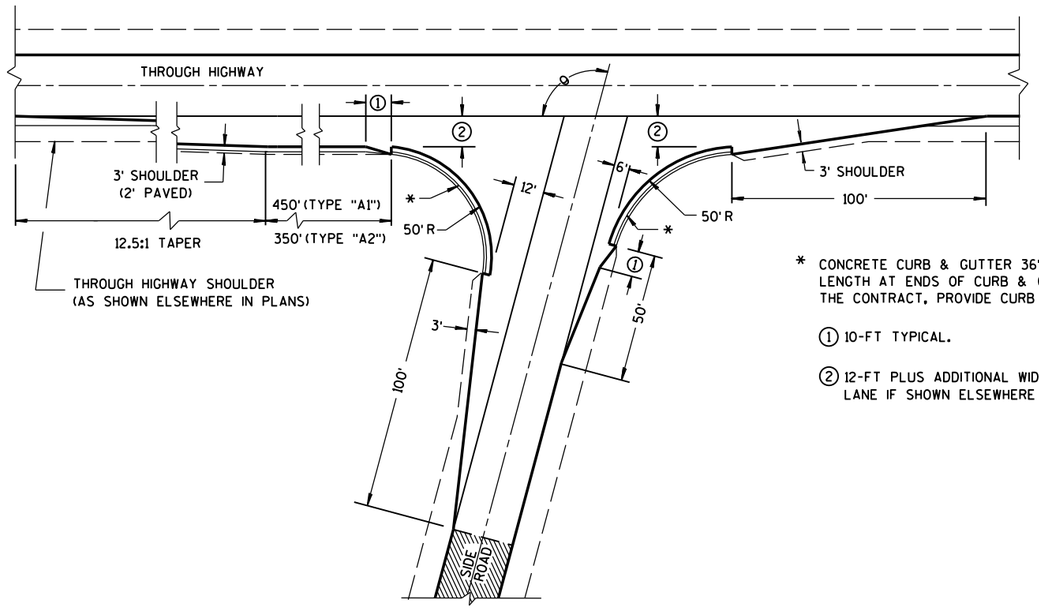
TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

S.D.D. 9 A 1-13a



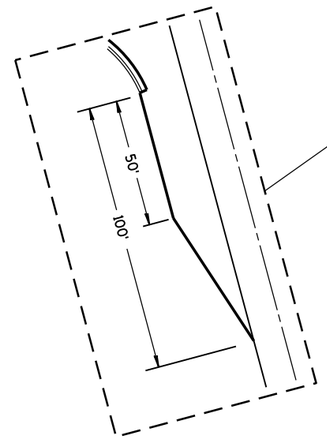
θ = MORE THAN 80°

* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

① 10-FT TYPICAL.

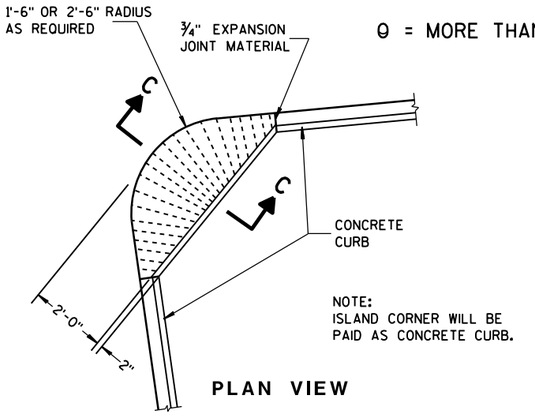
② 12-FT PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLANS.

EXISTING PAVED SURFACE

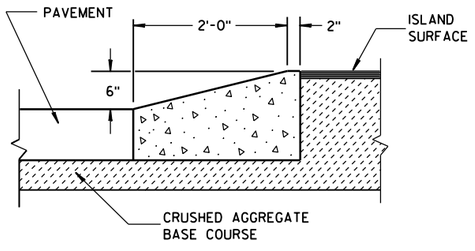


θ = ACUTE ANGLES 80° OR LESS

SIDE ROAD WIDENING AND TAPER REQUIRED WHERE
THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
θ = ACUTE ANGLES 70° OR LESS



PLAN VIEW



SECTION C-C

ISLAND CORNER DETAIL

(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR
VARIABLE SIDE ROAD INTERSECTION ANGLES
(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT "O") X / Y								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7 / -14.0	44.9 / -12.0	46.4 / -72.4	41.9 / 0.0	205.0 / 0.0	104.6 / -12.0	64.0 / -75.5	85.0 / -147.1	32.3	67.4	4.9	85.9	169.9
65	10.9 / -14.0	39.0 / -12.0	37.8 / -71.6	39.4 / 0.0	196.1 / 0.0	95.7 / -12.0	54.1 / -71.5	70.5 / -151.3	28.2	63.6	8.5	80.9	166.9
70	9.4 / -14.0	33.9 / -12.0	29.8 / -70.1	37.4 / 0.0	188.3 / 0.0	87.8 / -12.0	45.6 / -67.5	56.1 / -154.2	24.6	59.7	11.5	76.1	164.1
75	7.9 / -14.0	29.3 / -12.0	22.3 / -67.9	35.7 / 0.0	181.2 / 0.0	80.7 / -12.0	38.2 / -63.4	41.8 / -155.9	21.5	55.8	13.8	71.4	161.4
80	6.5 / -14.0	25.4 / -12.0	15.6 / -65.2	34.4 / 0.0	174.8 / 0.0	74.4 / -12.0	31.8 / -59.3	27.6 / -156.5	18.9	52.0	15.6	66.9	158.9

TYPE "A1" & "A2" SIDE ROAD INTERSECTION DETAILS

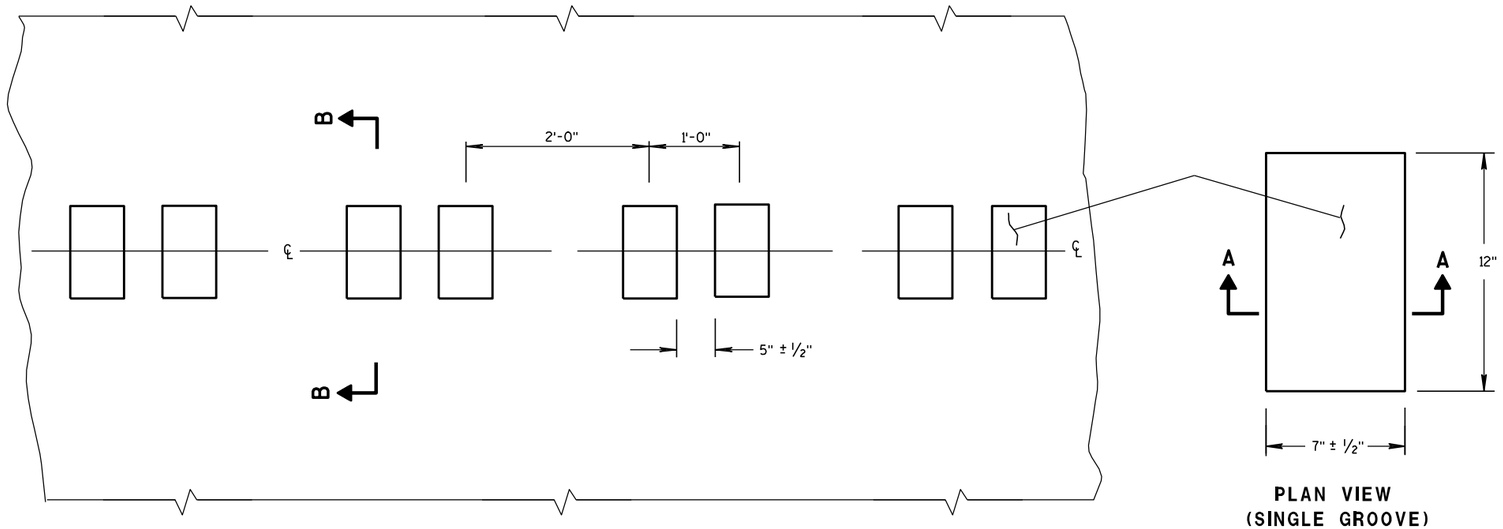
AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/12 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 9 A 1-13b



PLAN VIEW
CENTER LINE WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

GENERAL NOTES

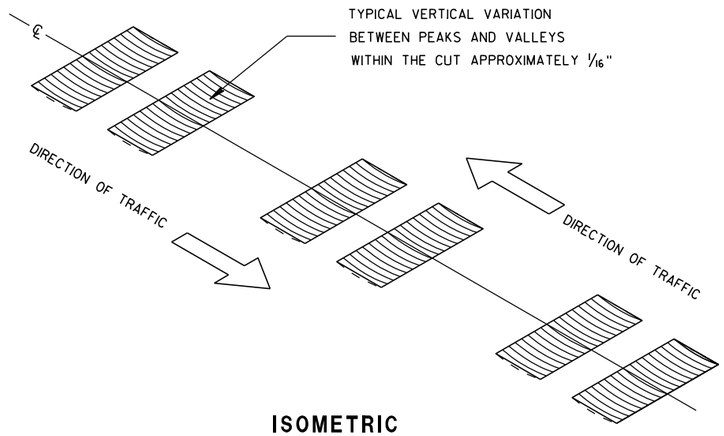
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

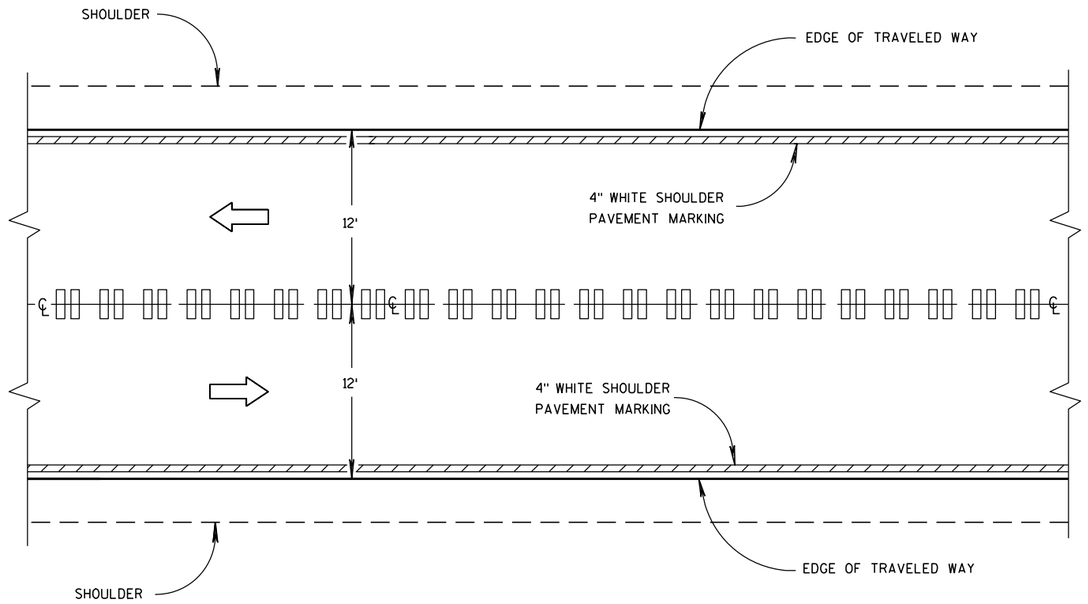
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

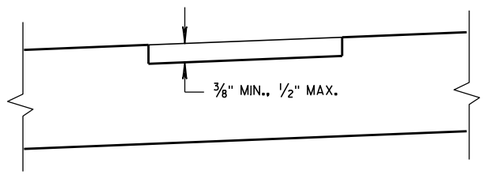
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



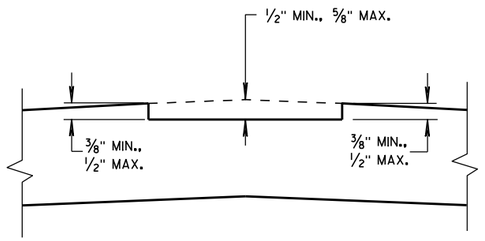
ISOMETRIC



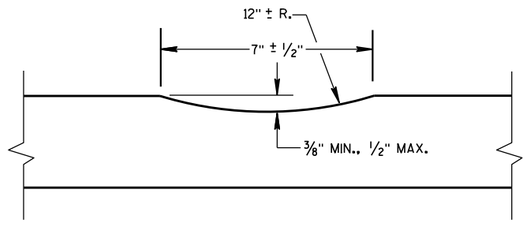
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



SECTION B-B
CROWNED ROADWAY



SECTION A-A

6

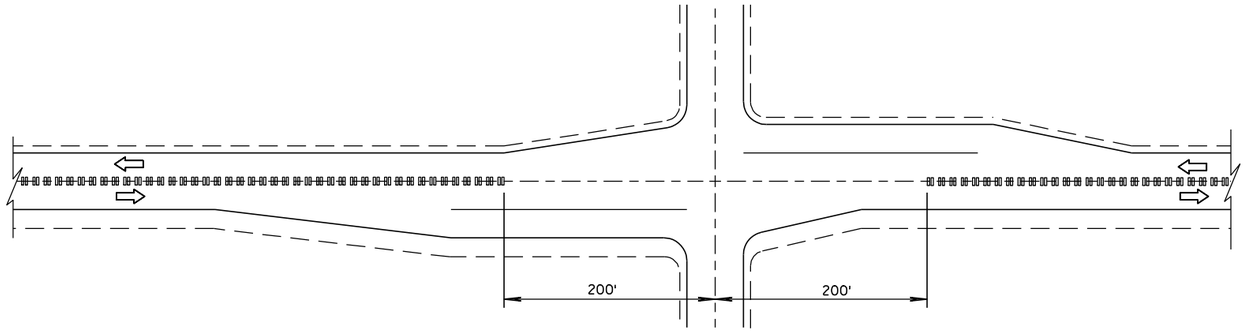
S.D.D. 13 A 11-1a

6

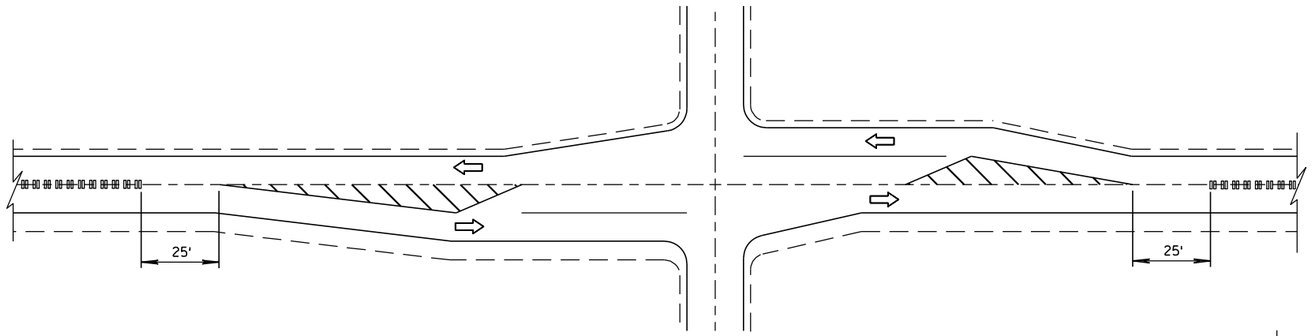
S.D.D. 13 A 11-1a

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

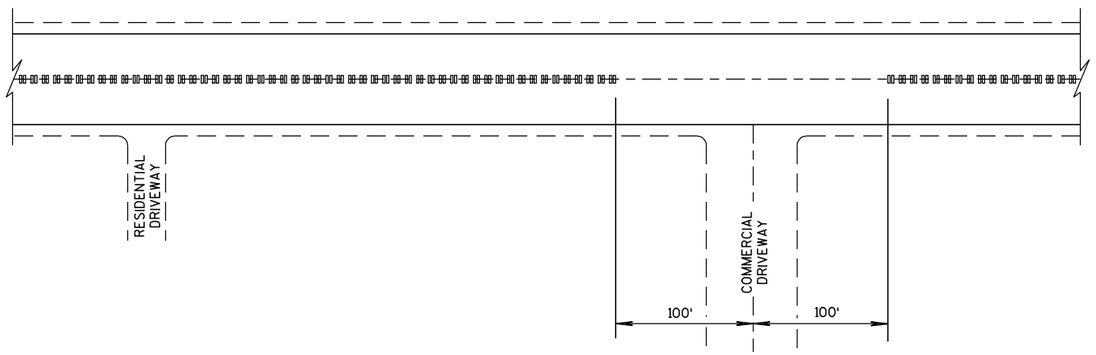
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO



CENTER LINE GROOVES AT INTERSECTIONS

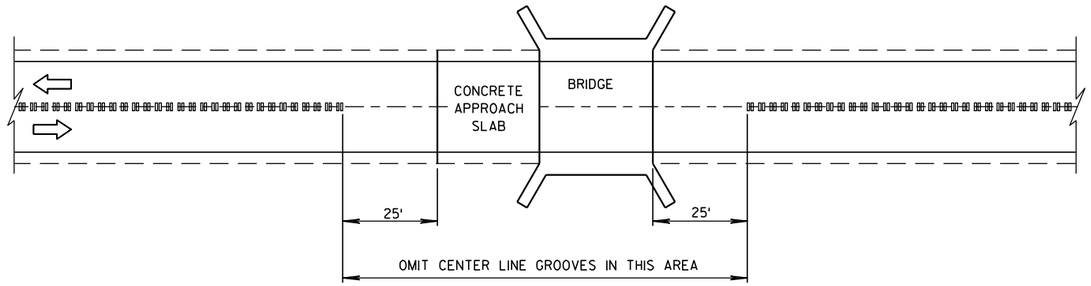


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

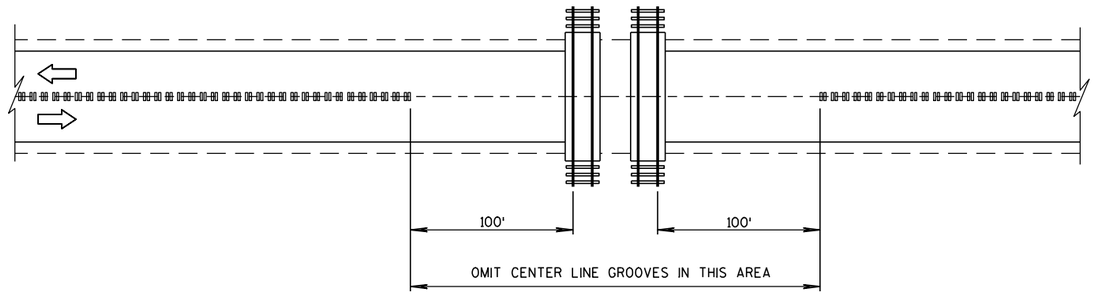


CENTER LINE GROOVES AT DRIVEWAYS (1)

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



CENTER LINE GROOVES AT BRIDGES



CENTER LINE GROOVES AT RAILROADS

6

S.D.D. 13 A 11-1b

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/28/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 13 A 11-1b

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) 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.

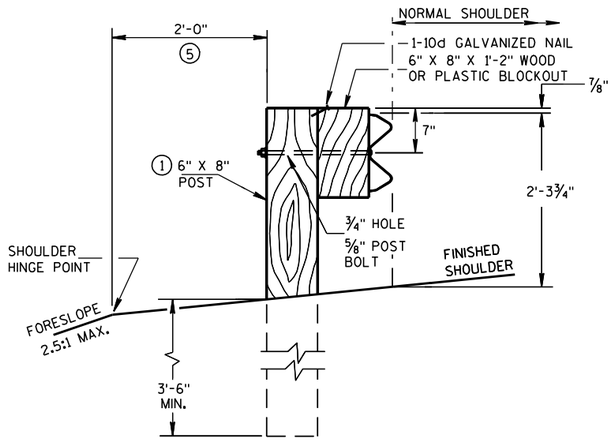
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(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).

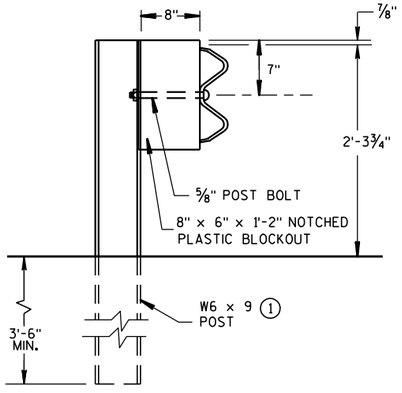
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED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

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

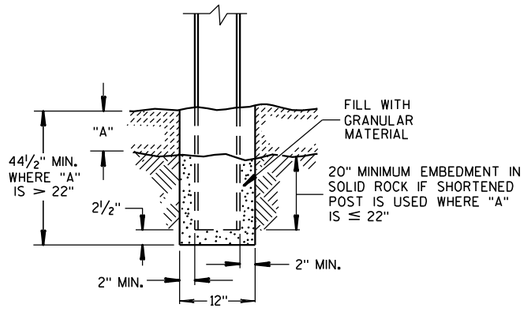
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



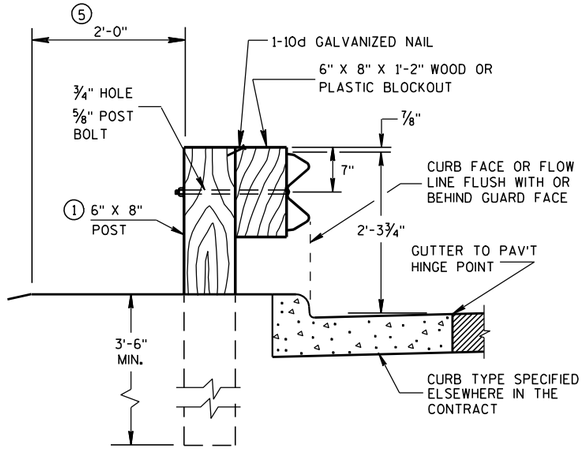
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



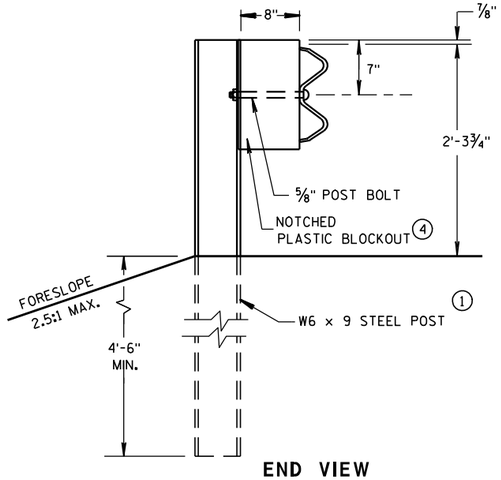
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



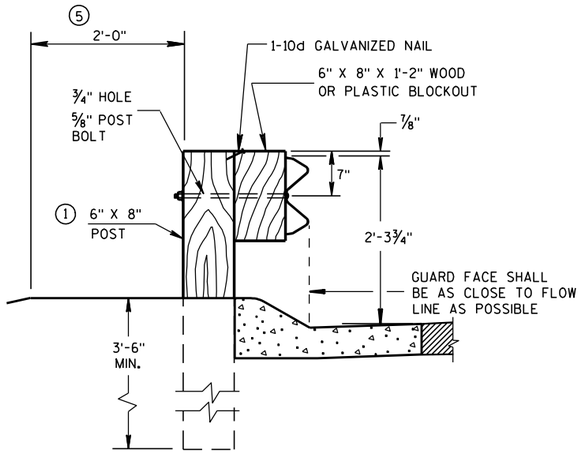
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



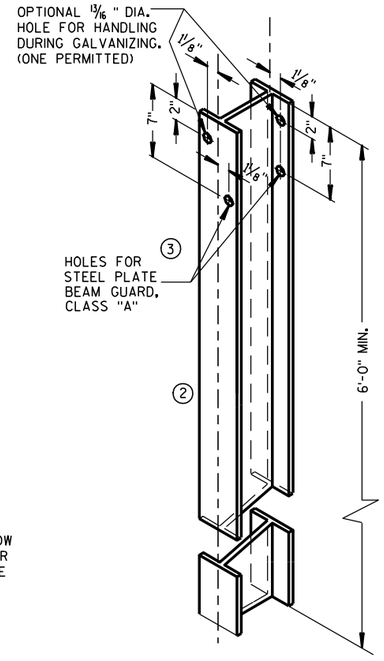
END VIEW
LOCATED ALONG A CURBED ROADWAY



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

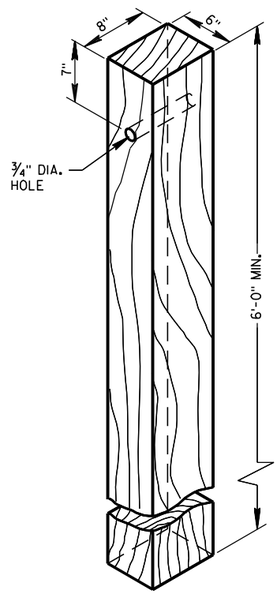


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

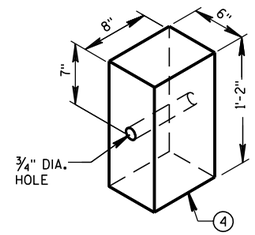


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

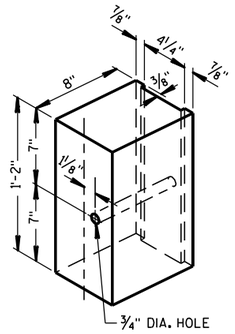
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



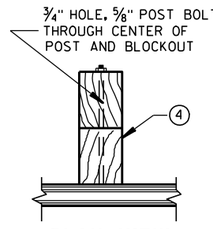
WOOD POST
(6"X8") NOMINAL



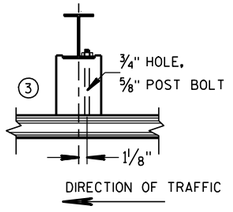
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



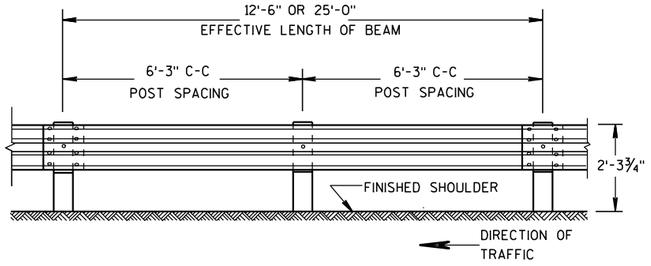
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

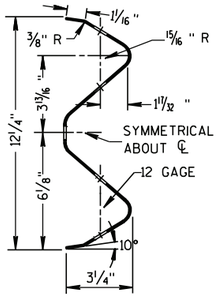
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

6
S.D.D. 14 B 15-7a

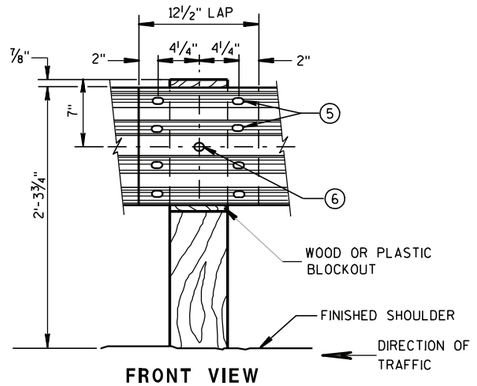


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

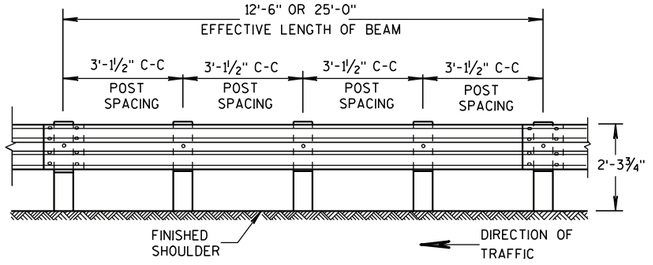


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

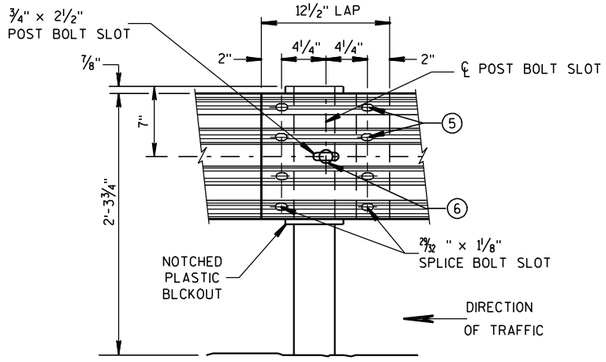
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

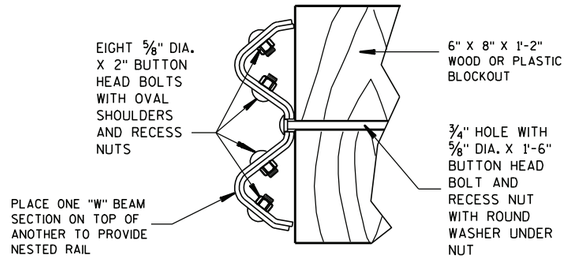
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

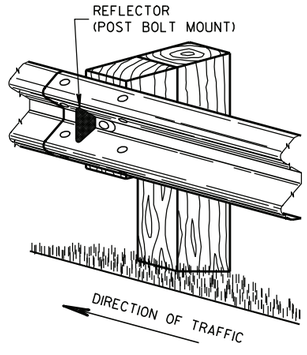


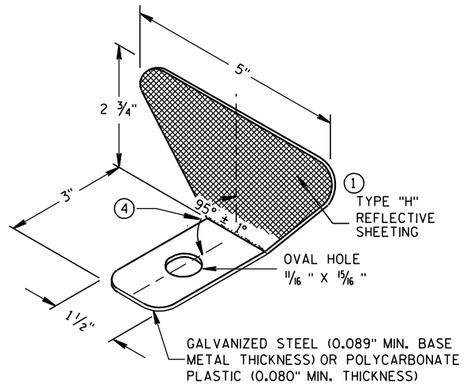
NESTED W BEAM (NW)

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

REFLECTOR SPACING (2)

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



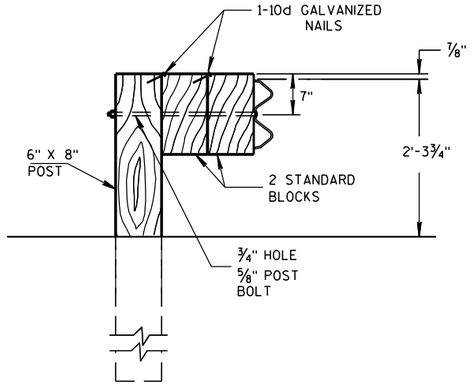


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

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

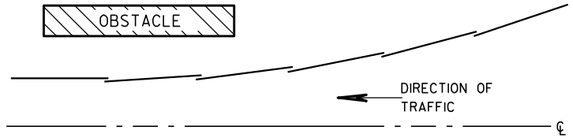
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-7b

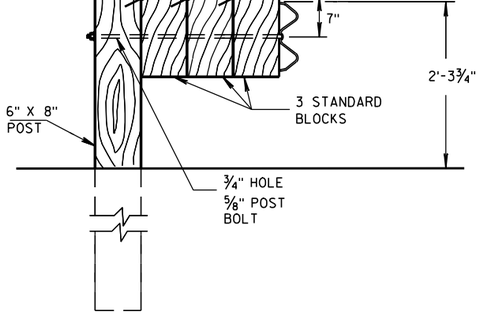


DETAIL FOR DOUBLE BLOCKS

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

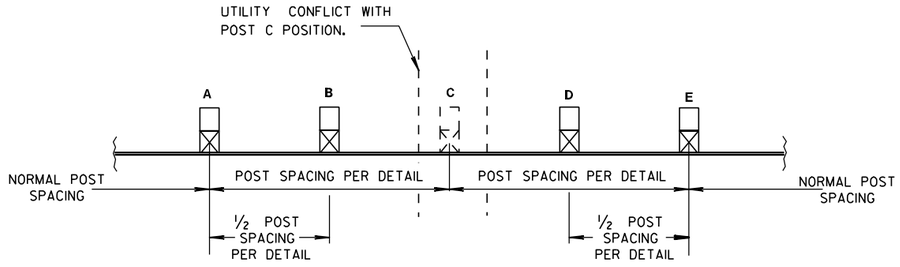


PLAN VIEW
BEAM LAPPING DETAIL



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

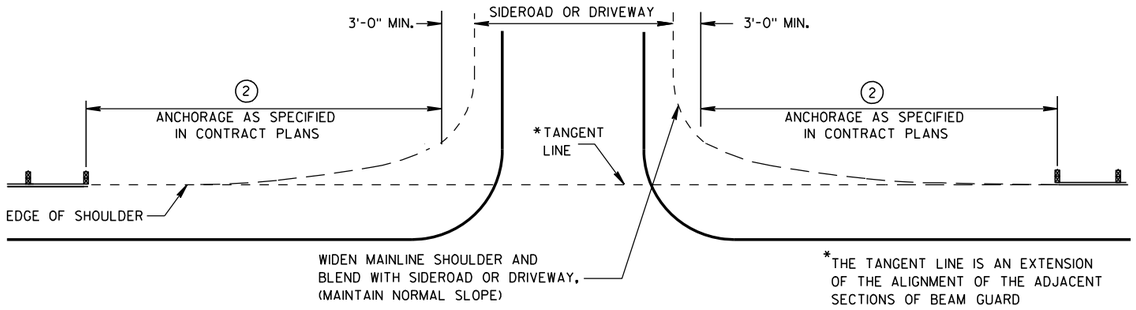
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

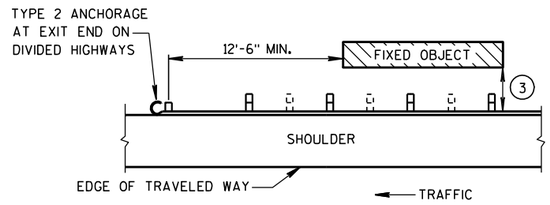
5/23/11	/S/ Jerry H. Zogg	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

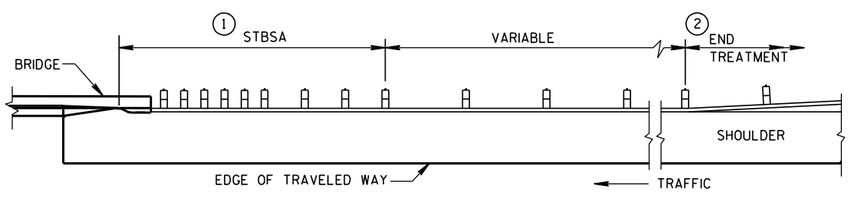
6
S.D.D. 14 B 15-7c



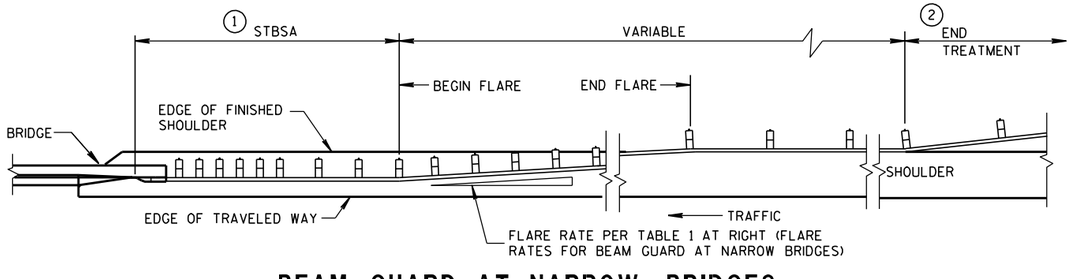
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



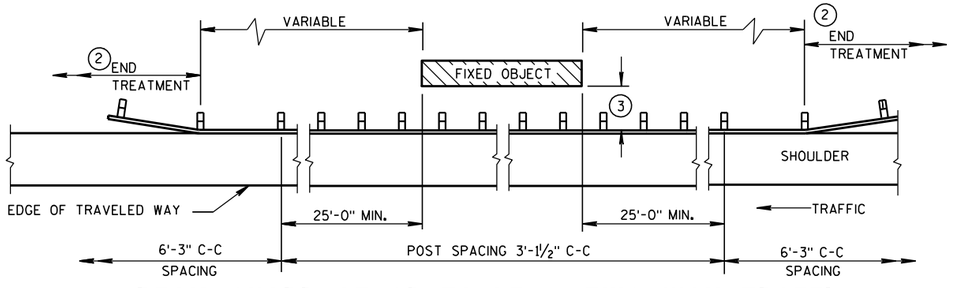
BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC
(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH 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.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 18-6a

6

S.D.D. 14 B 18-6a

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

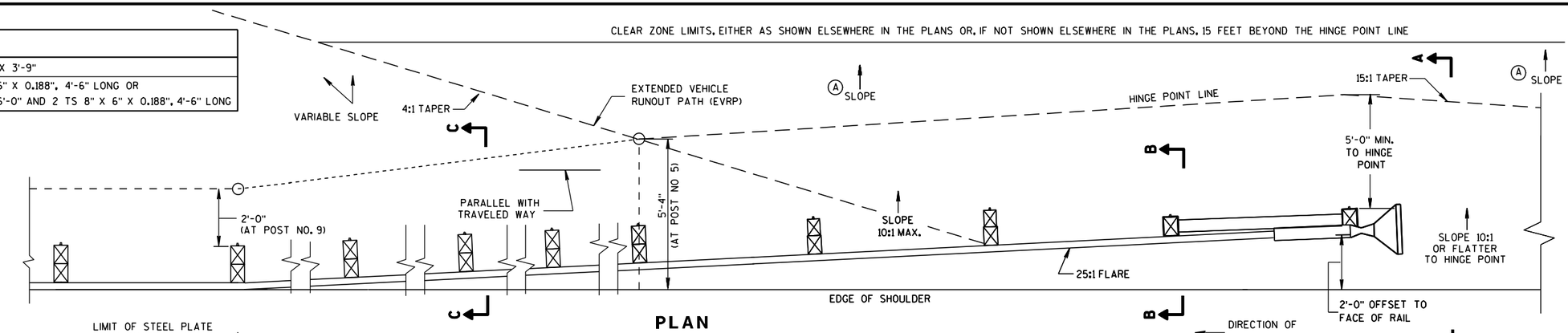
(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

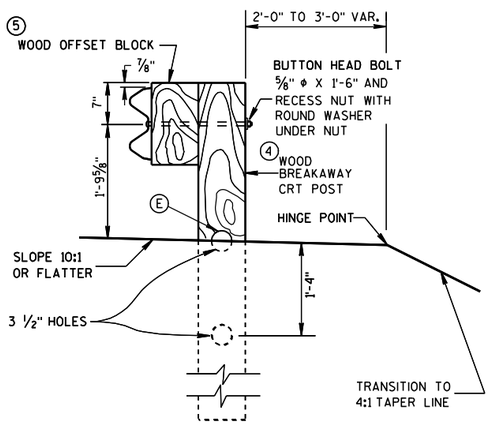
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

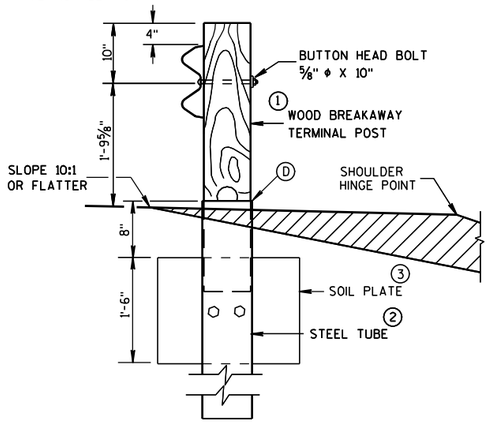
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.





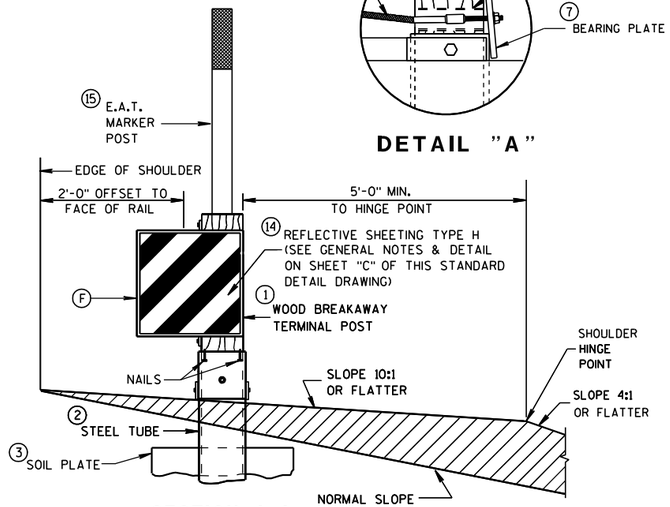
SECTION C-C

TYPICAL AT POST NOS. 6, 8



SECTION B-B

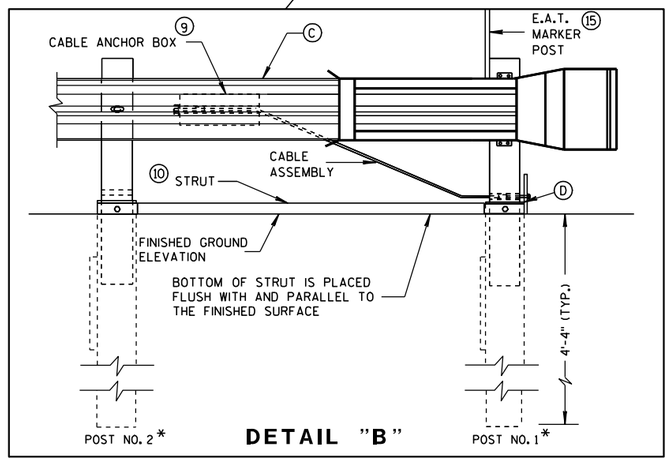
TYPICAL AT POST NO. 2*



DETAIL "A"

SECTION A-A

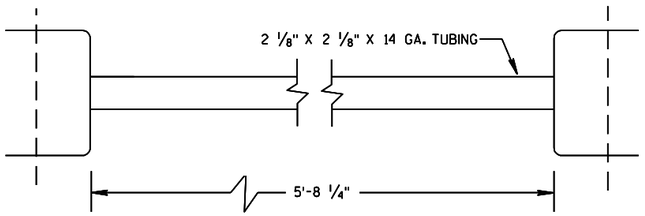
TYPICAL AT POST NO. 1*



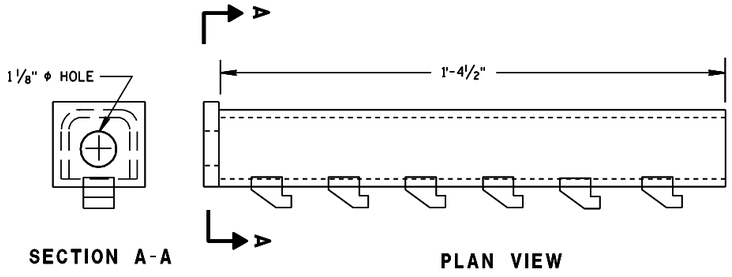
DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

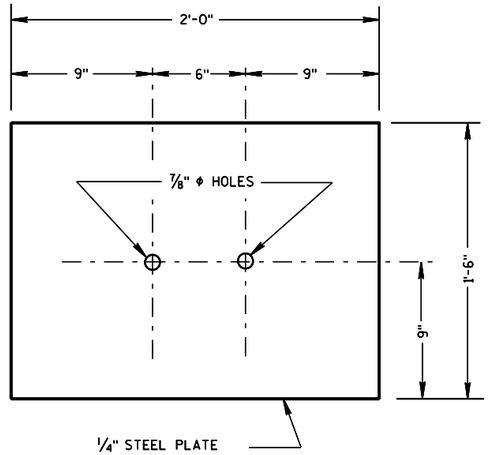
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



⑩ STRUT DETAIL (SKT-350)

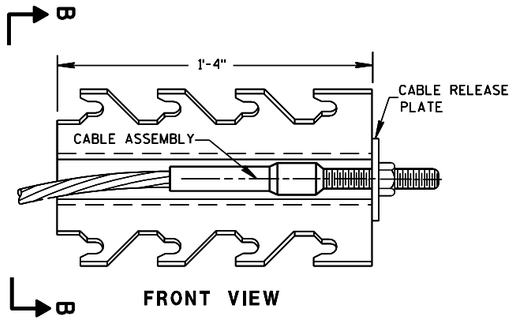


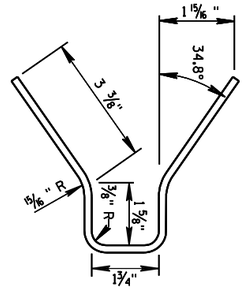
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

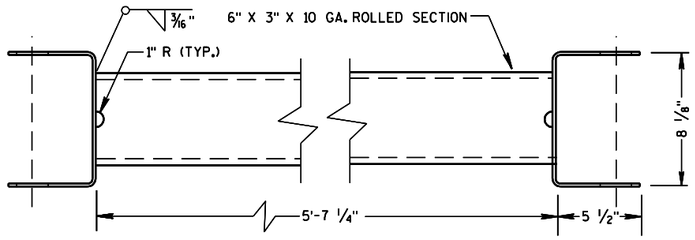
(SKT-350, ET-2000/ET-2000 PLUS)





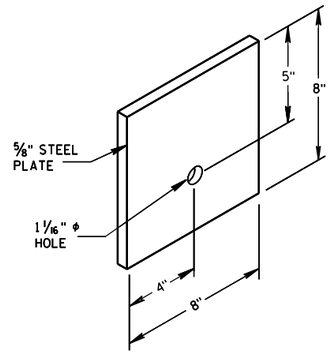
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

(SKT-350, ET-2000/ET-2000 PLUS)

6

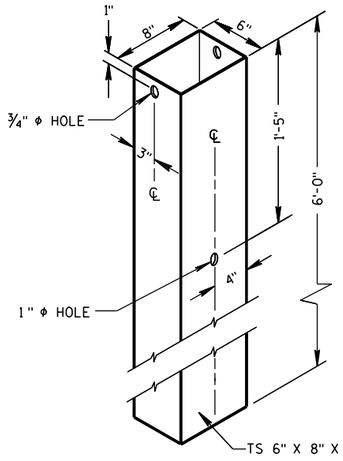
6

S.D.D. 14 B 24-7b

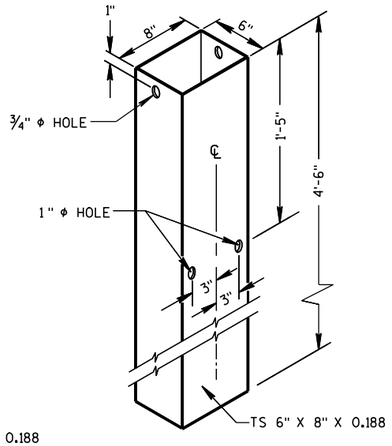
S.D.D. 14 B 24-7b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

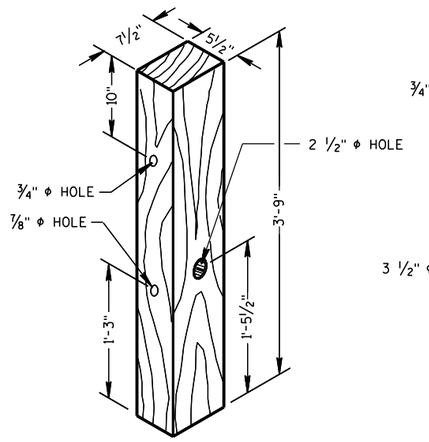
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



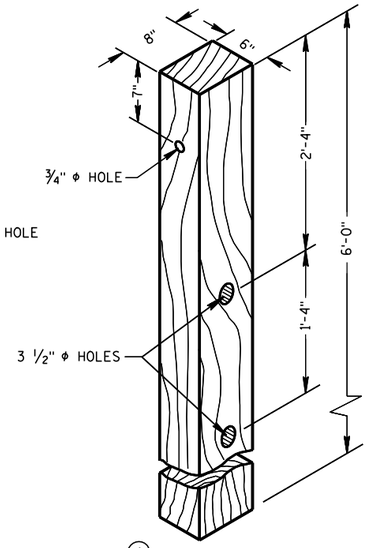
② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4



④ CRT POST
(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS

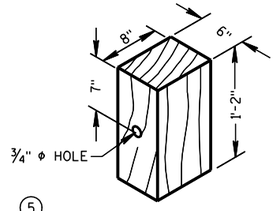
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

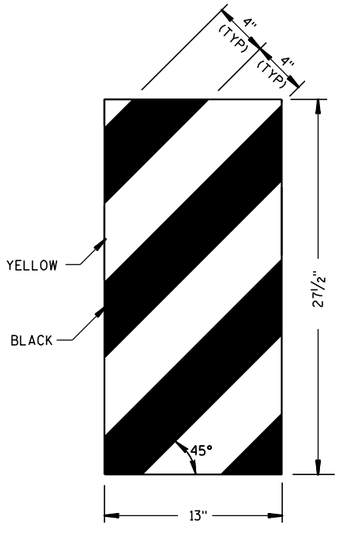
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

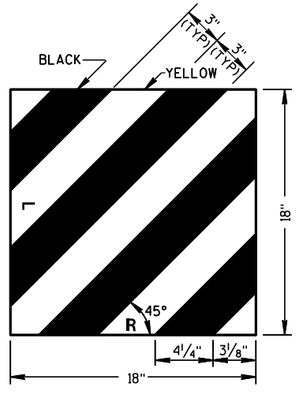
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

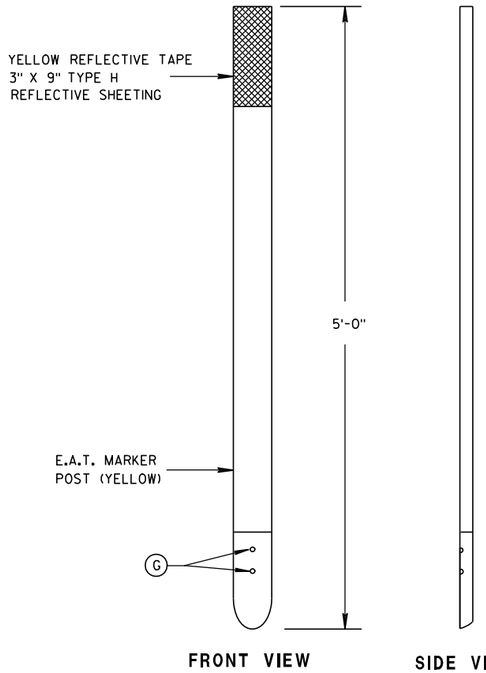


ET-2000 PLUS ONLY



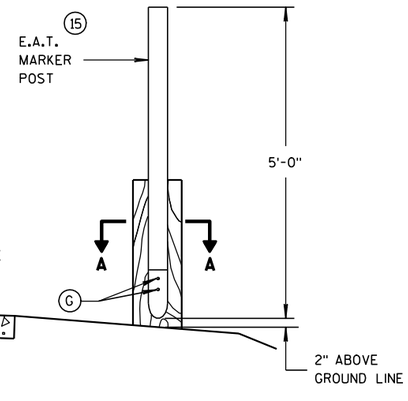
ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

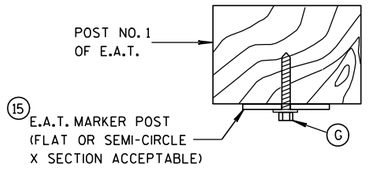


FRONT VIEW SIDE VIEW

⑮ E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

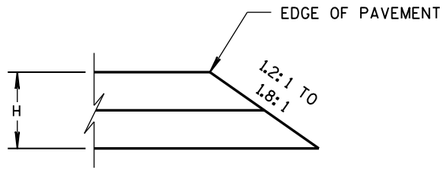
APPROVED
4-12-10 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
45
FHWA

6

S.D.D. 14 B 24-7c

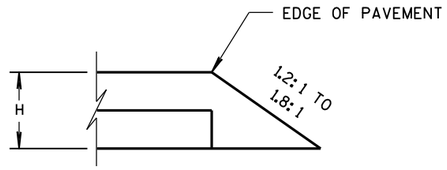
6

S.D.D. 14 B 24-7c



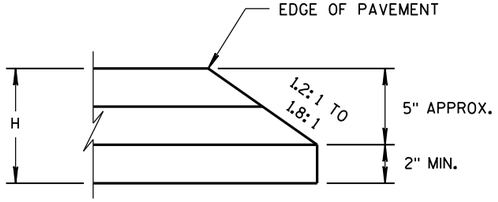
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



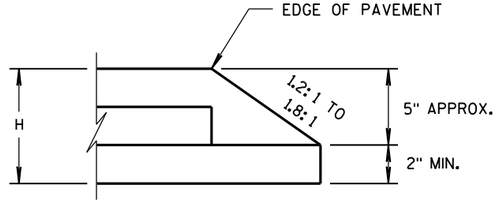
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

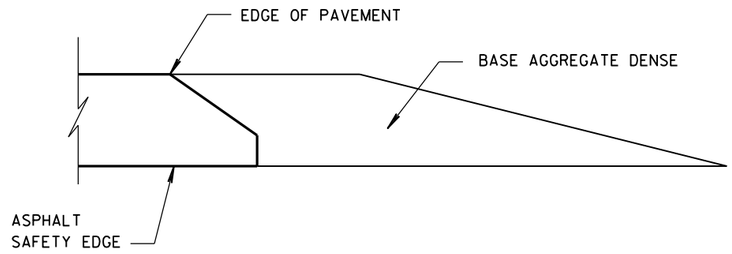
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

GENERAL NOTES

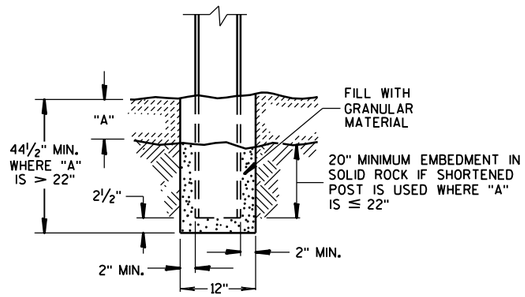
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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

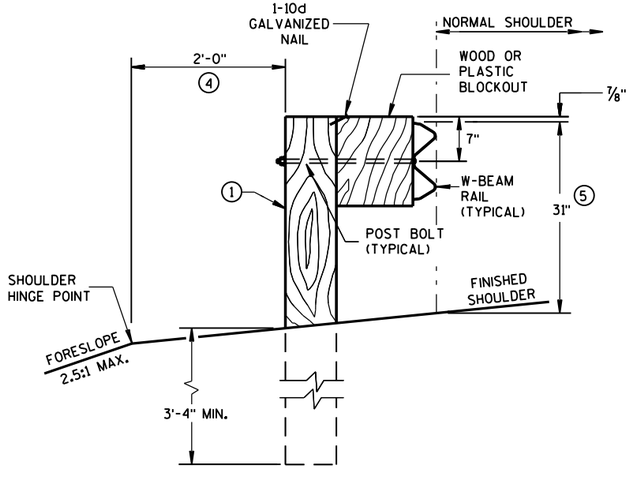
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO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

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

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

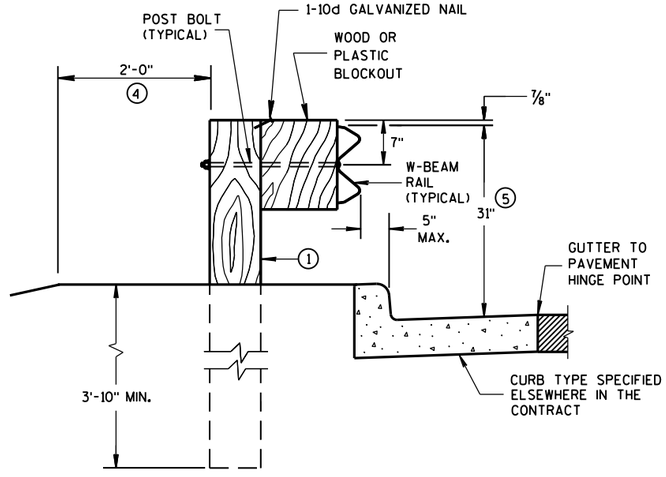


END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



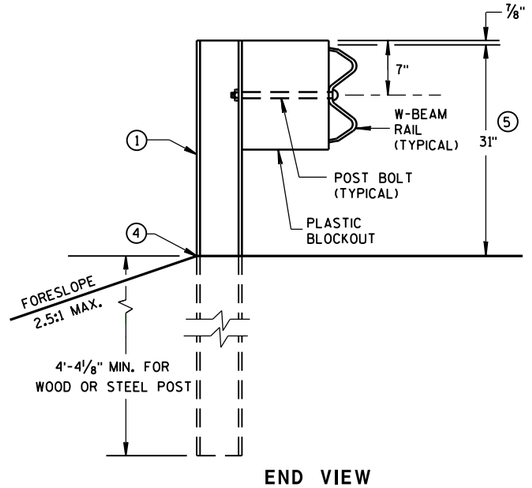
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



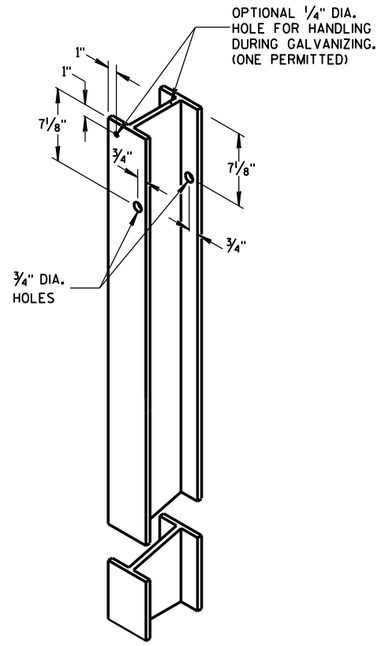
END VIEW

LOCATED ALONG A CURBED ROADWAY

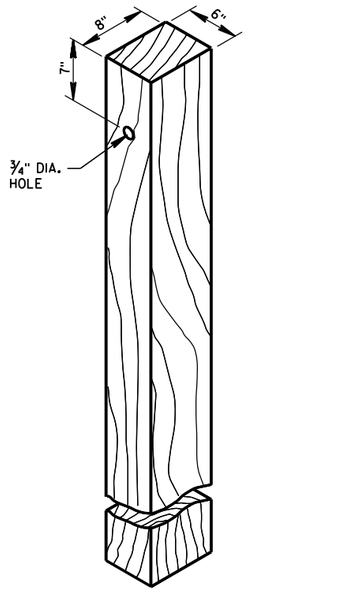


END VIEW

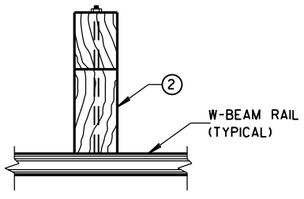
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



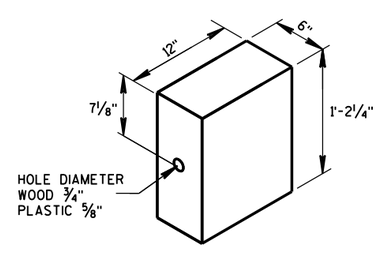
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



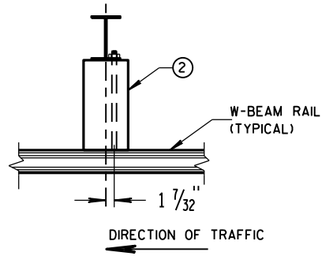
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

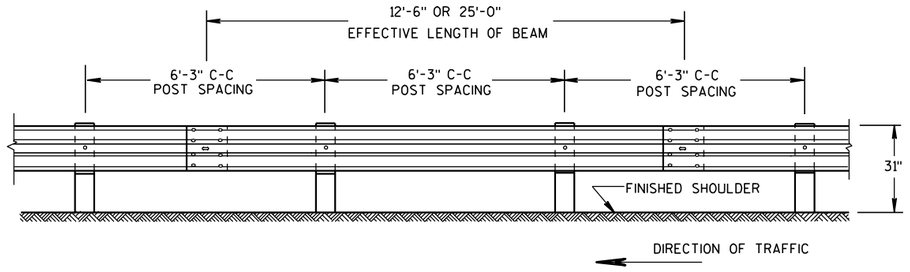


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

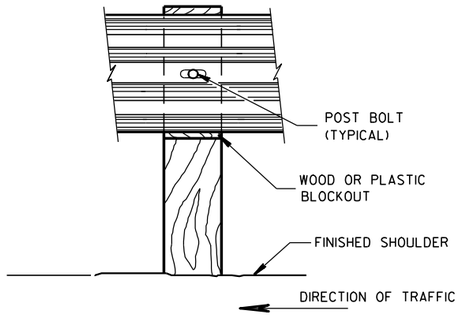
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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



FRONT VIEW

POST SPACING STANDARD INSTALLATION



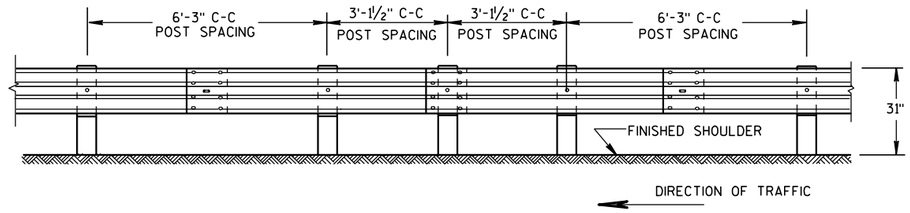
FRONT VIEW AT WOOD POST

GENERAL NOTES

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

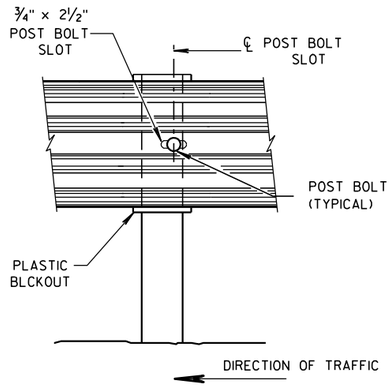
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

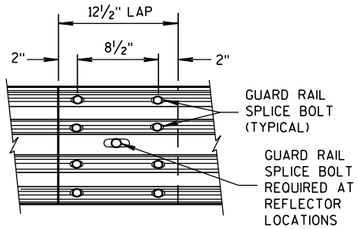


FRONT VIEW

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

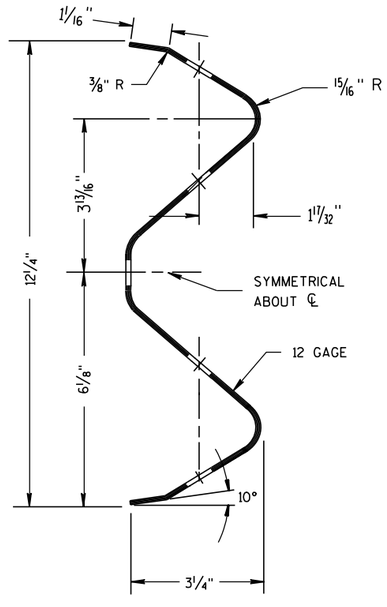


FRONT VIEW AT STEEL POST

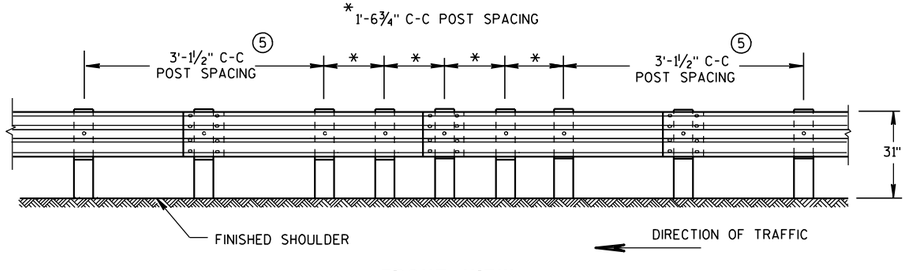


FRONT VIEW

MID-SPAN BEAM SPLICE

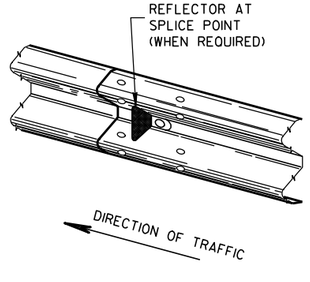


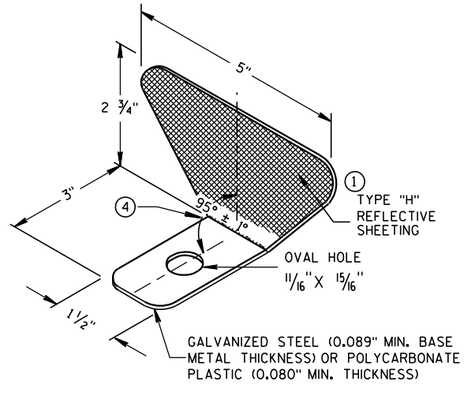
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

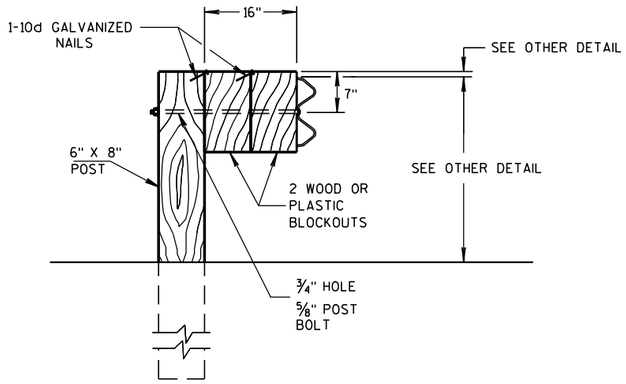
REFLECTOR SPACING ②

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

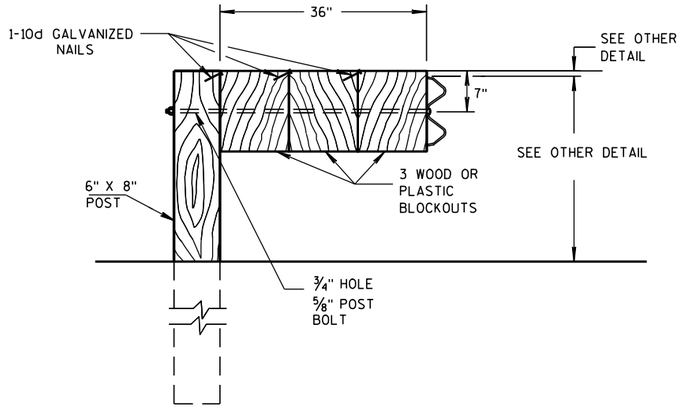
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DETAIL FOR 16" BLOCKOUT DEPTH

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

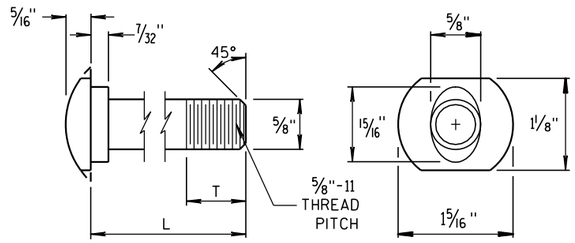


DETAIL FOR 36" BLOCKOUT DEPTH

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

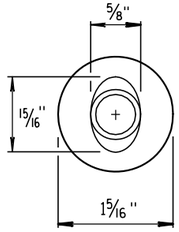
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

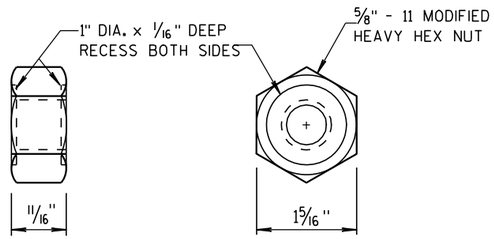


POST BOLT TABLE

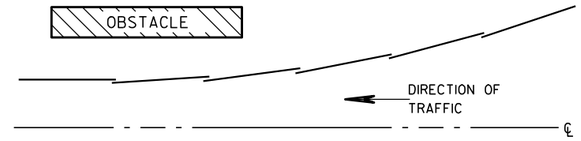
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

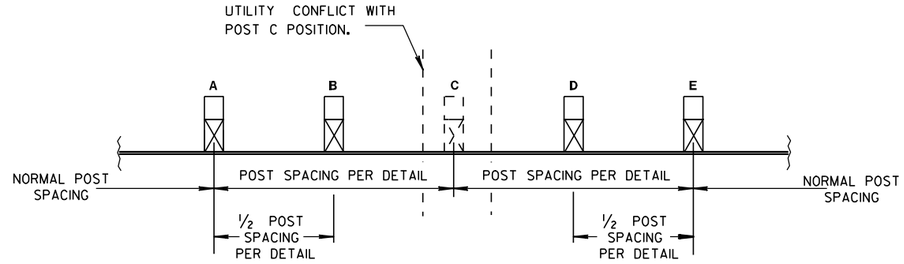


POST BOLT AND RECESS NUT

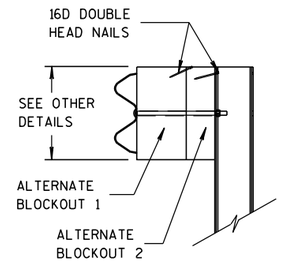


PLAN VIEW

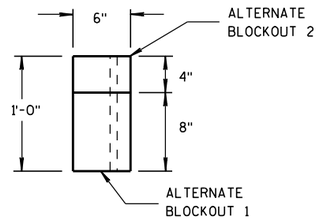
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

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

FHWA

ENT

6

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

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

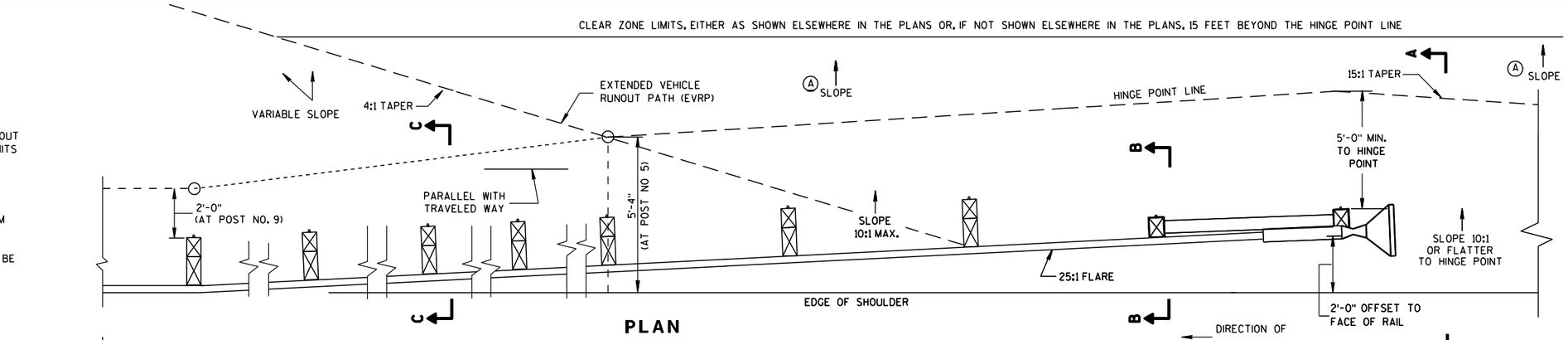
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

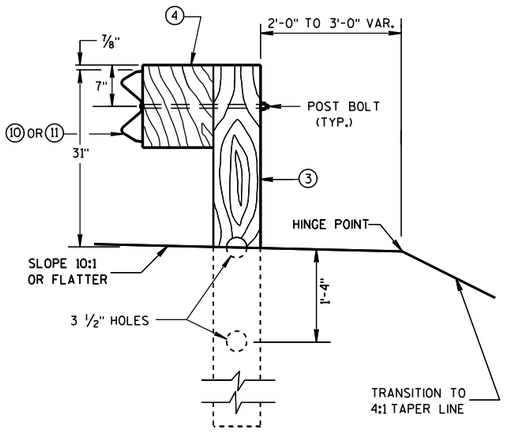
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

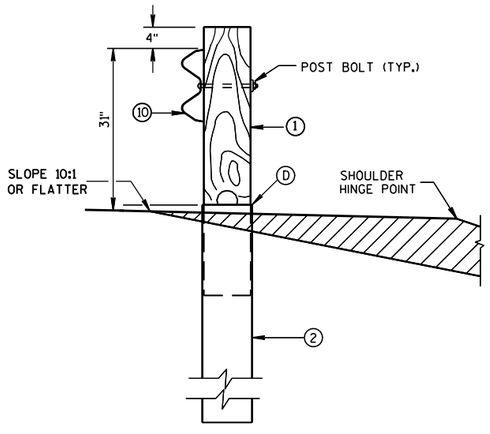
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

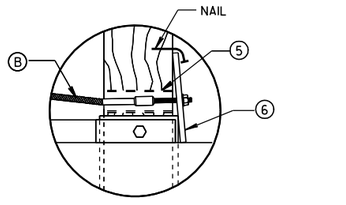




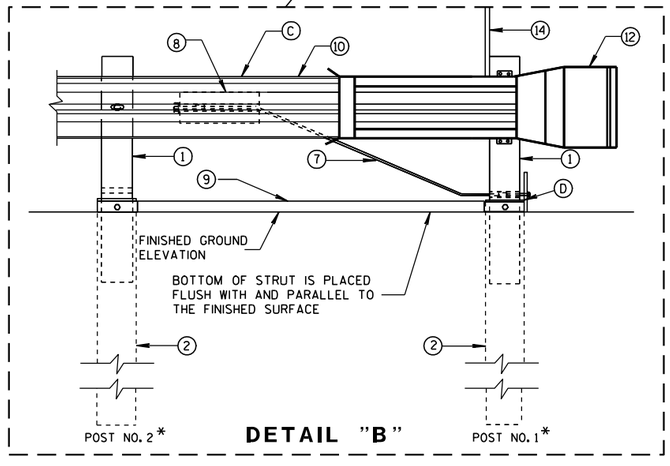
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



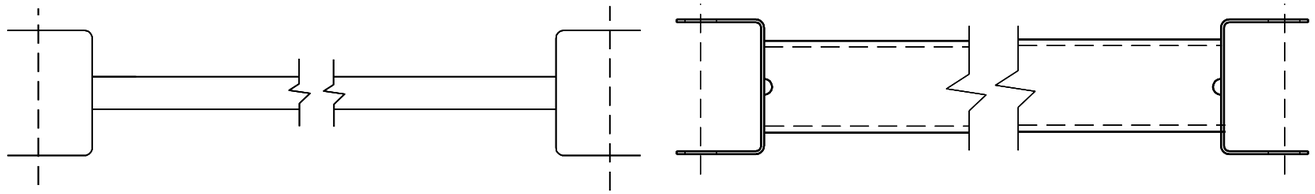
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 44-1a

6

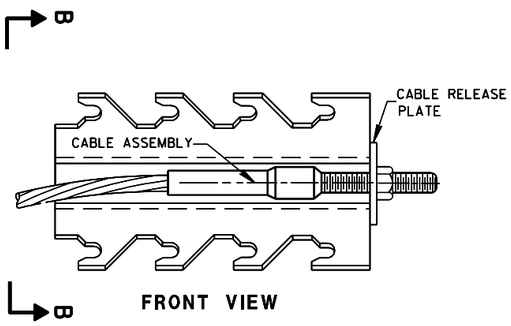


(9) (H)

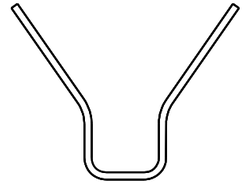
GENERIC GROUND STRUT

BILL OF MATERIALS

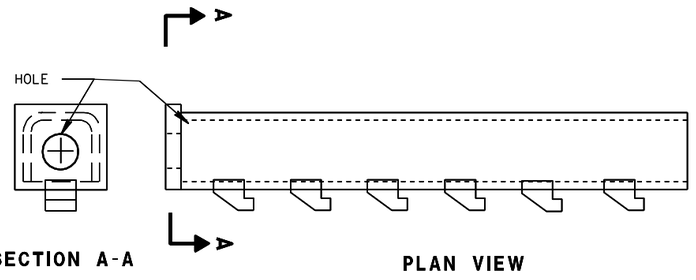
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



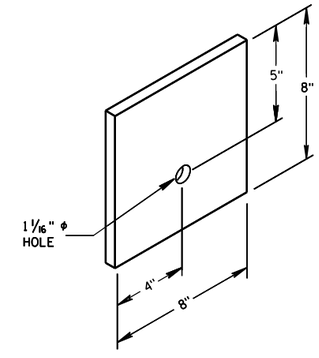
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



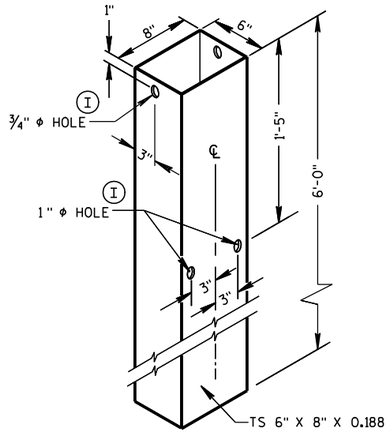
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

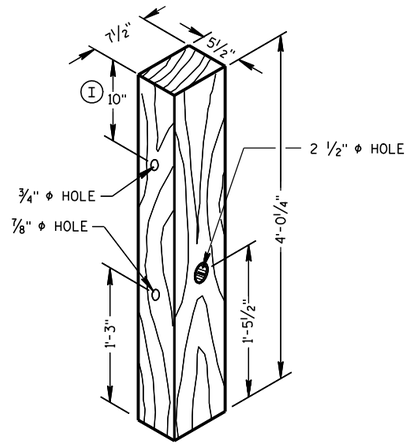
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

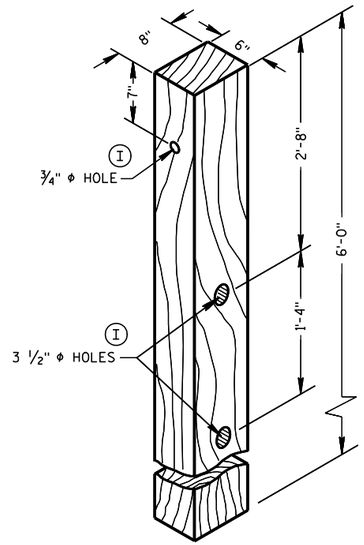


FOUNDATION TUBE (2)



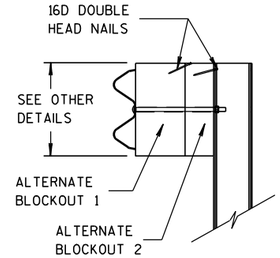
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

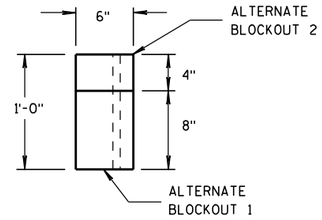


POSTS NUMBER 3-9

WOOD CRT POST (3)

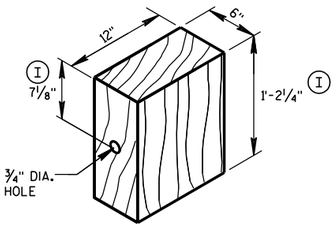


SIDE VIEW



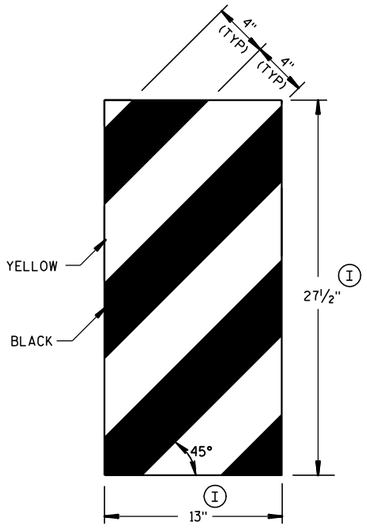
TOP VIEW

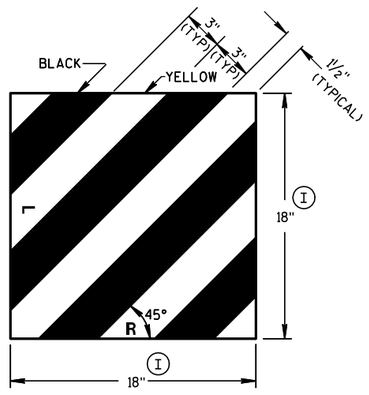
ALTERNATE WOOD BLOCKOUT DETAIL



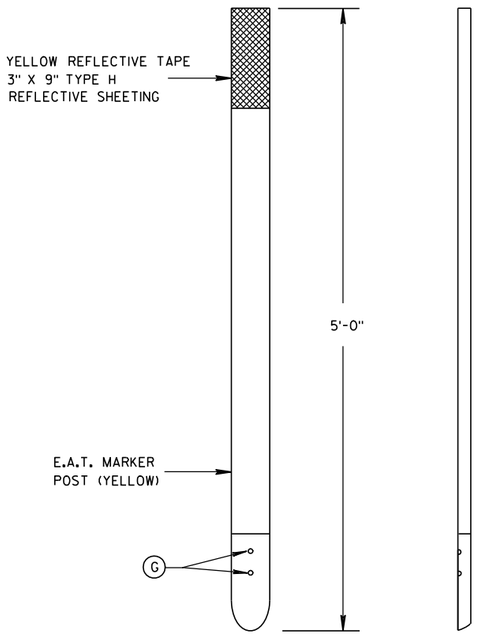
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





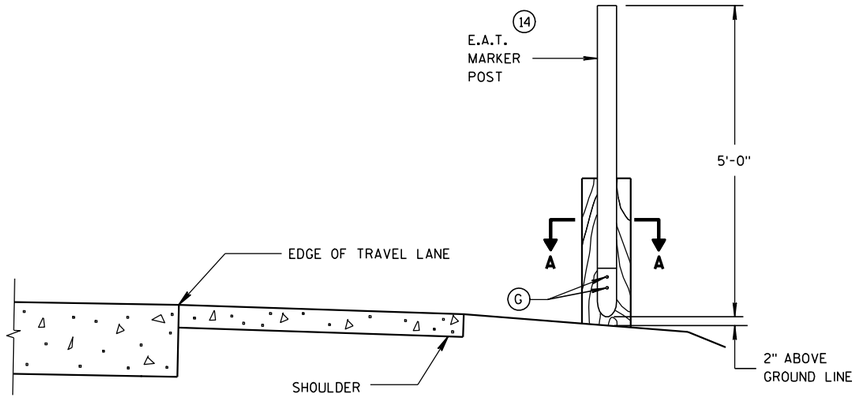
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

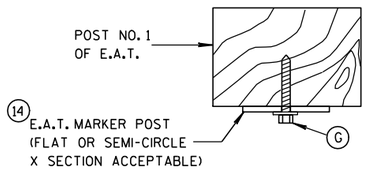
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

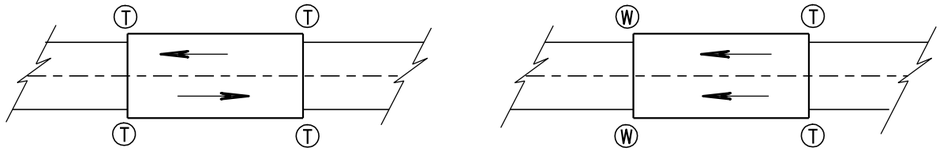
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS 52 ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



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

GENERAL NOTES

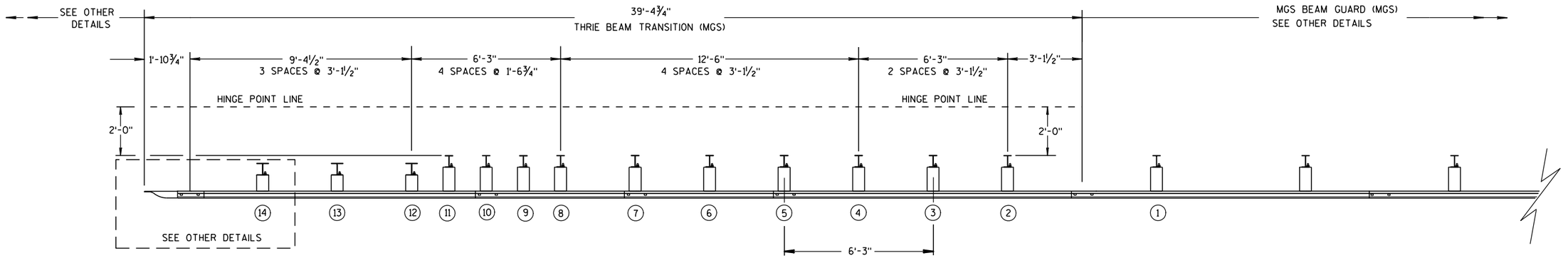
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

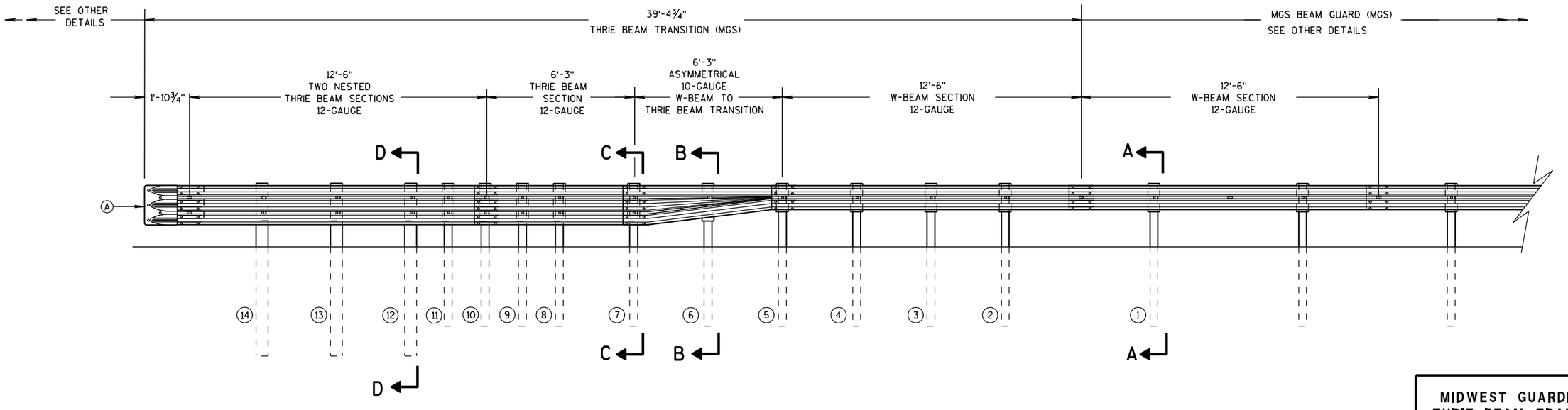
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

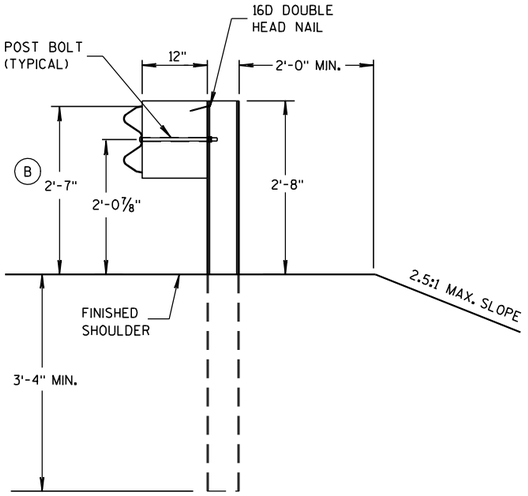
S.D.D. 14 B 45-3a

6

S.D.D. 14 B 45-3a

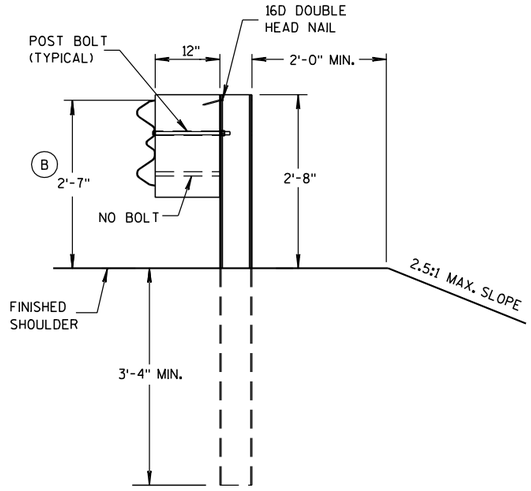
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



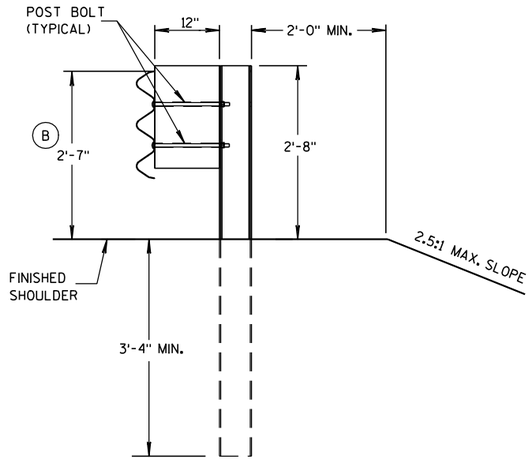
SECTION A-A

POSTS 1-5



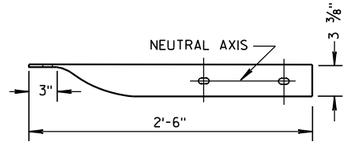
SECTION B-B

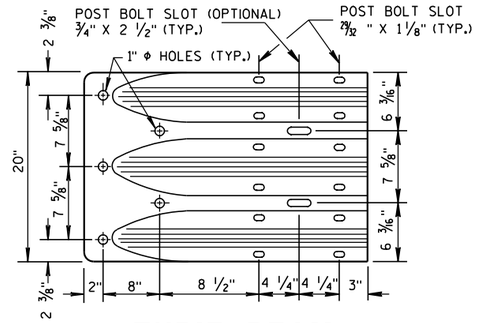
POST 6



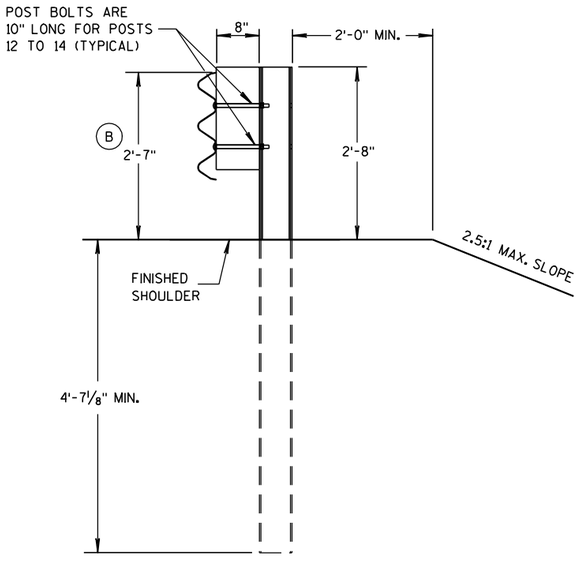
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

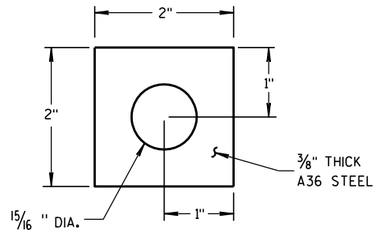
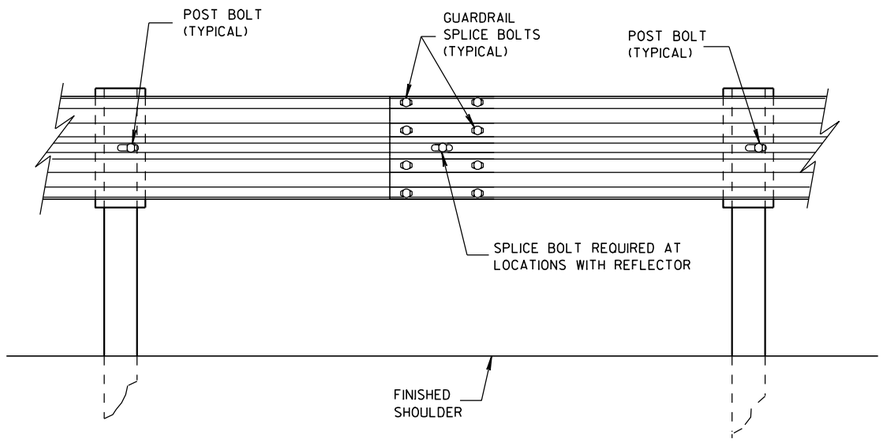
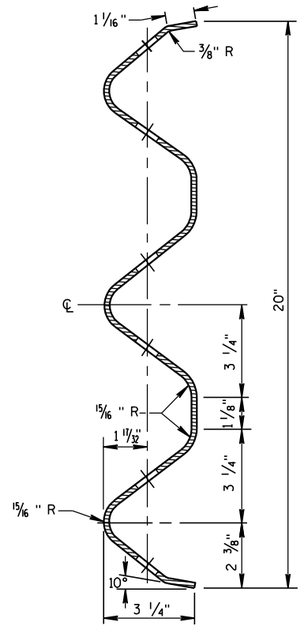


PLATE WASHER DETAIL



SPLICE DETAIL



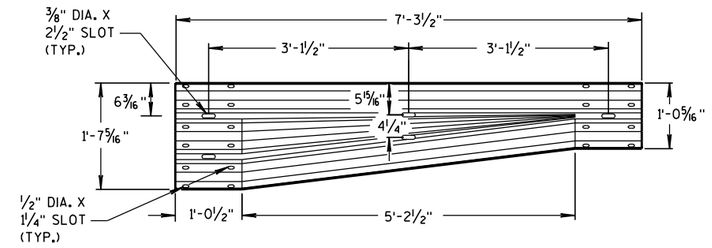
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

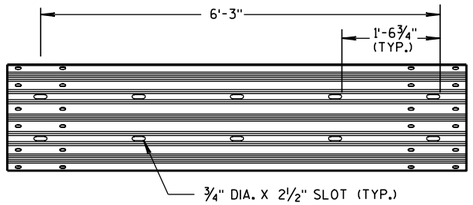
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

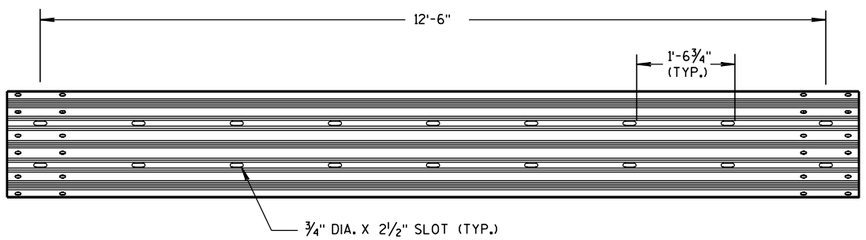
S.D.D. 14 B 45-3b



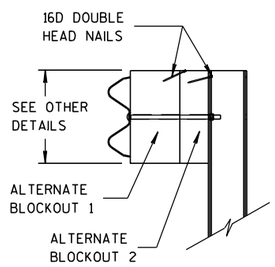
W-BEAM TO THRIE BEAM TRANSITION SECTION



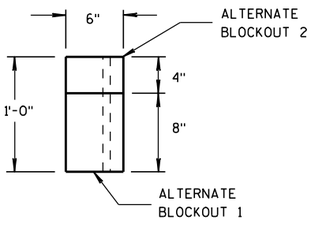
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

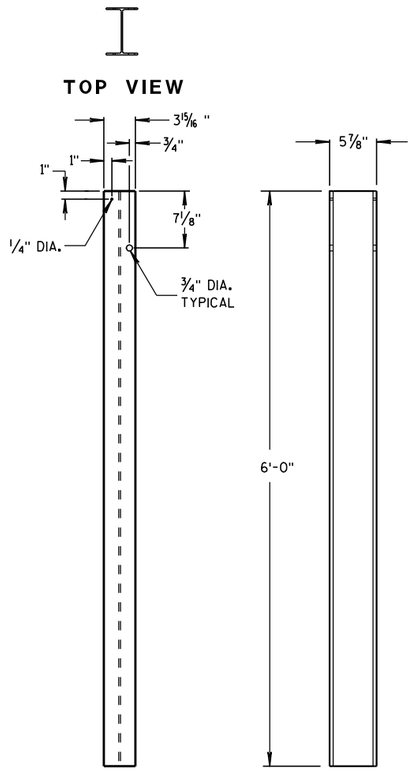


SIDE VIEW



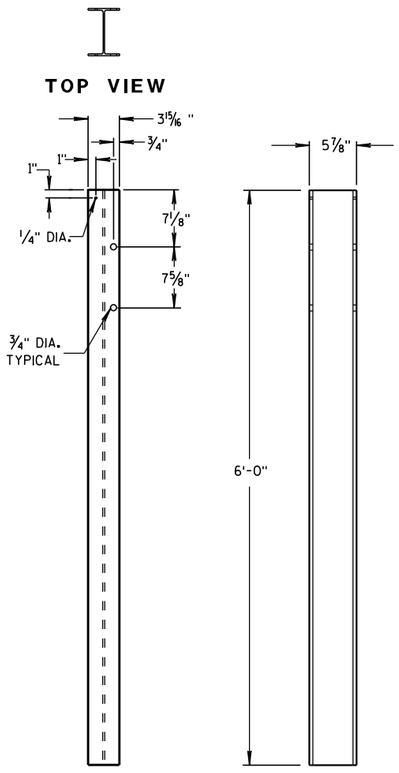
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



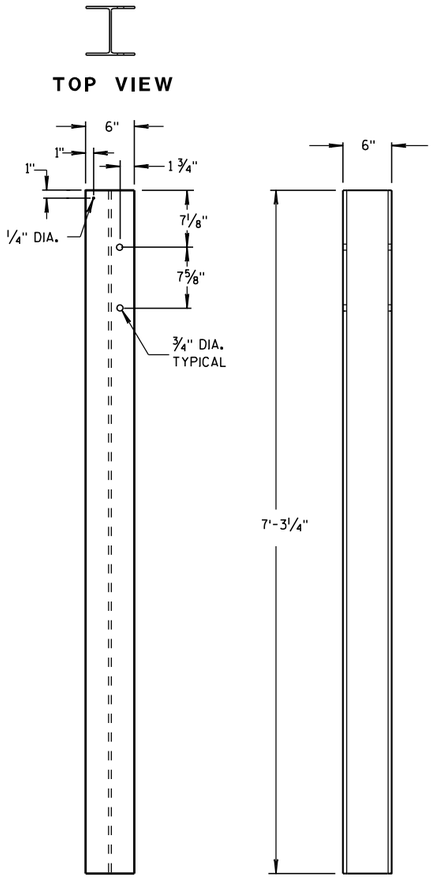
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

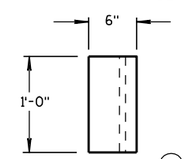
STEEL POSTS 6-11



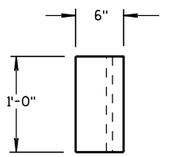
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

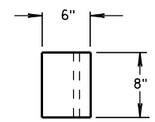
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



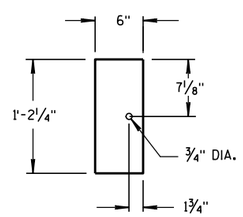
TOP VIEW (1)



TOP VIEW (1)

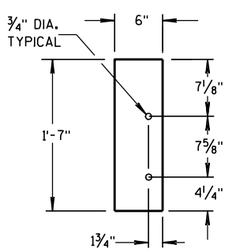


TOP VIEW



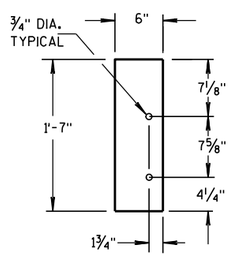
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

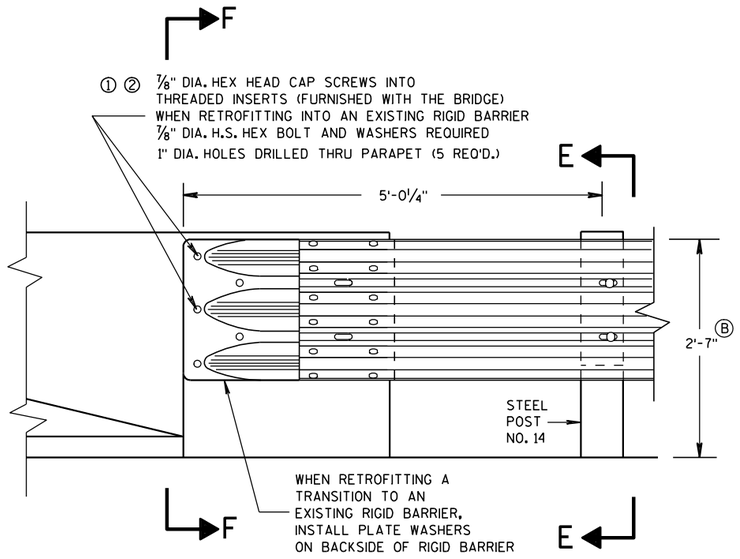
STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

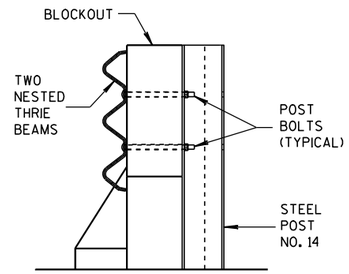
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

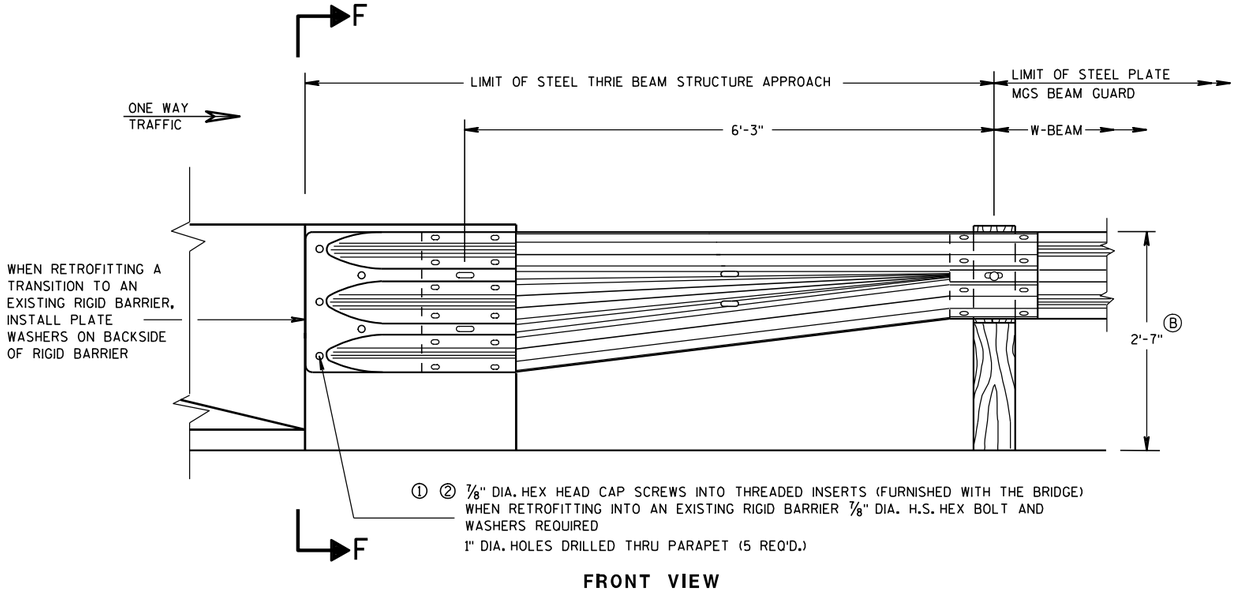
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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 CONNECTOR PLATE. 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.

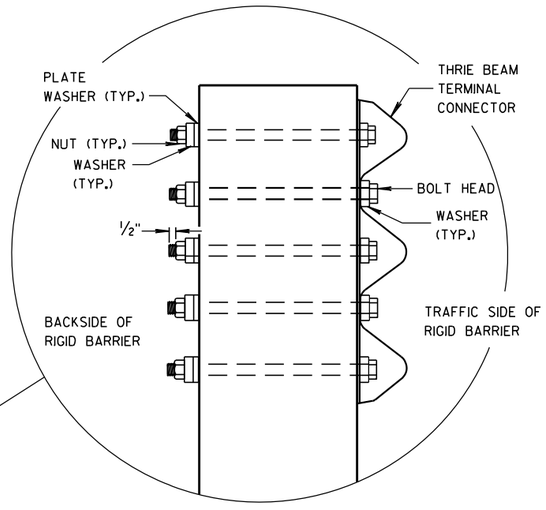
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

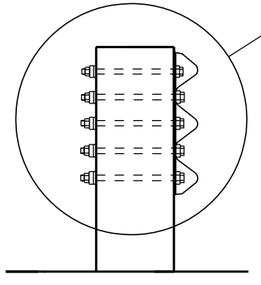
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

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

FHWA

6
S.D.D. 14 B 45-3d

GENERAL NOTES

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

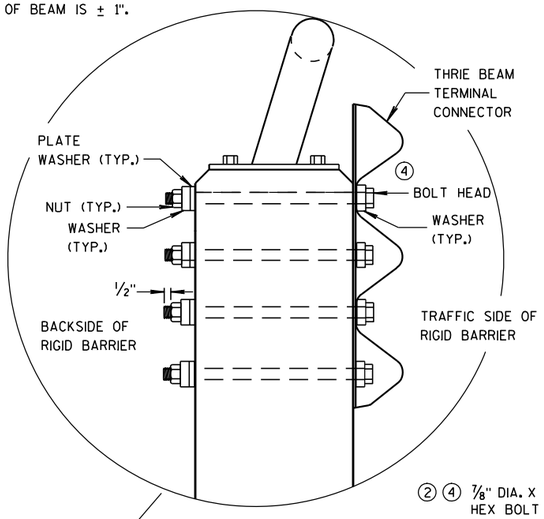
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

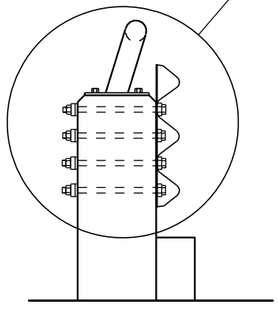
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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 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 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

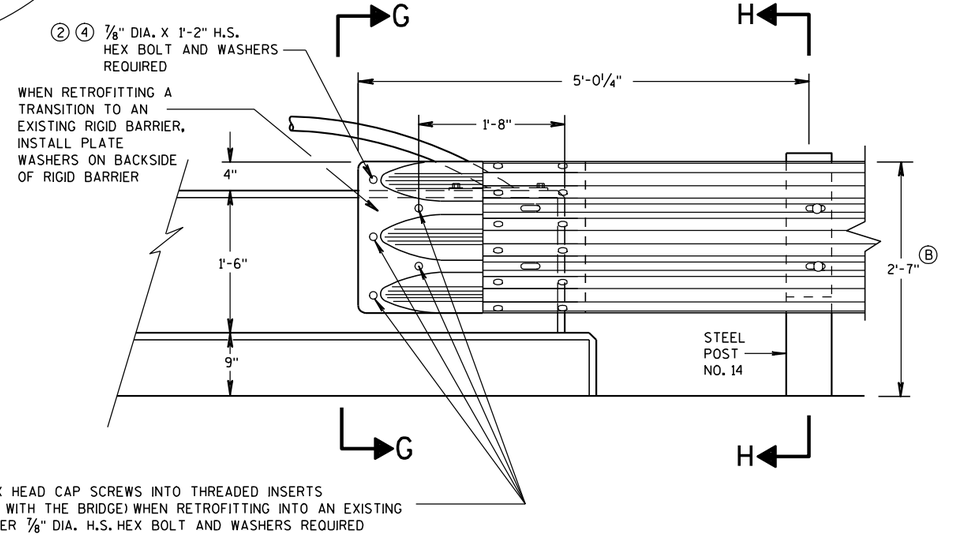
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

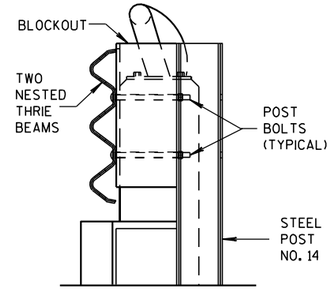




SECTION G-G

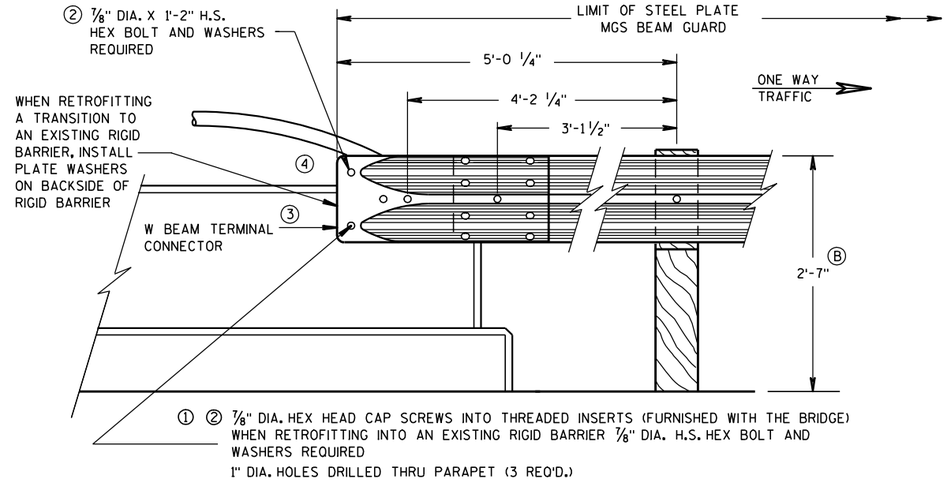


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

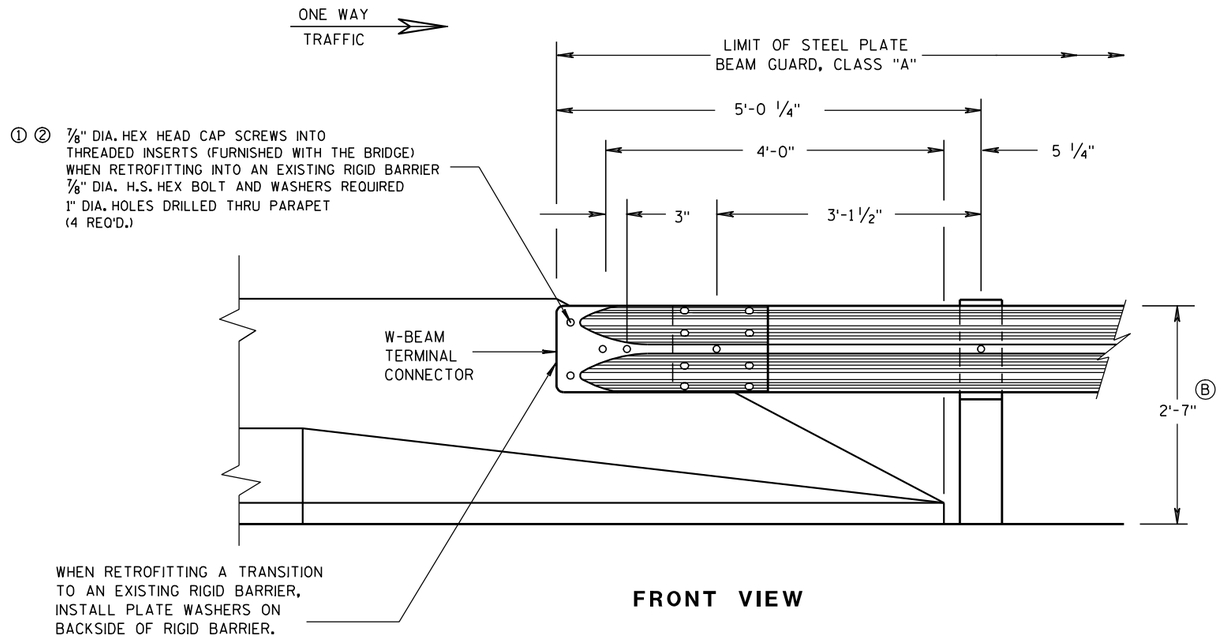
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

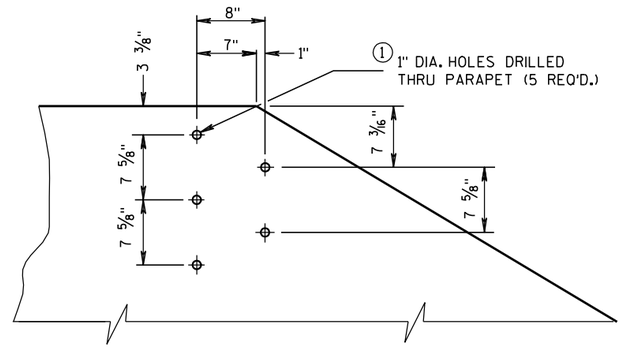
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

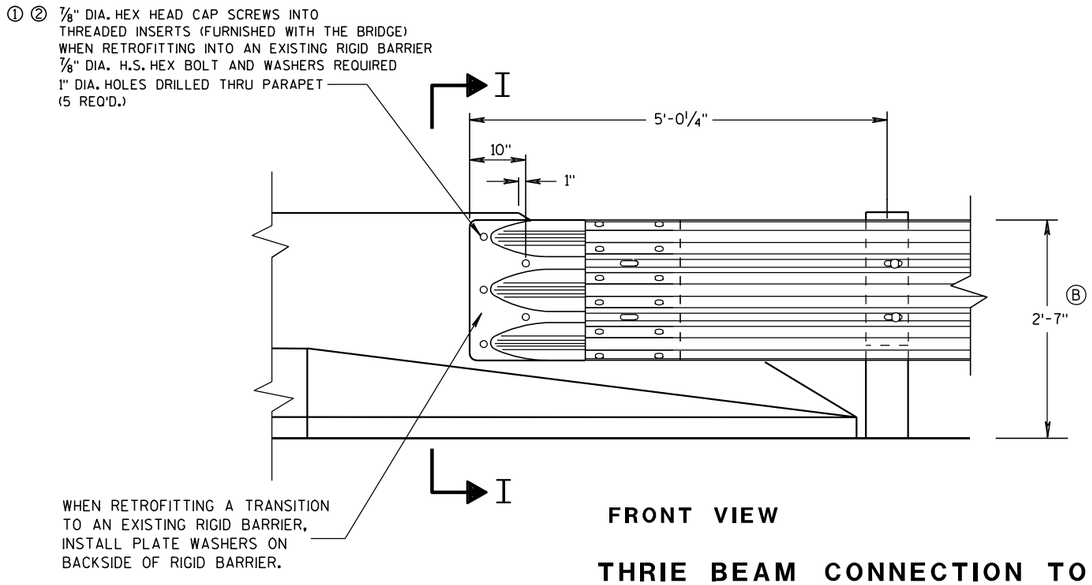
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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 CONNECTOR PLATE. 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.

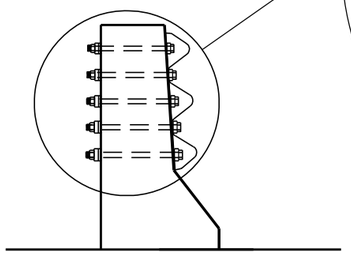
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



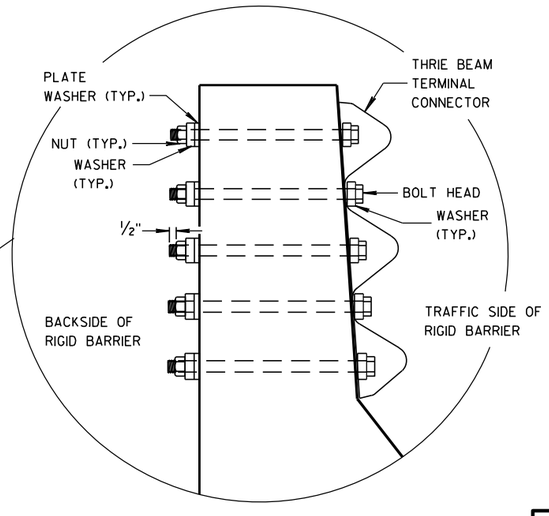
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

58

ENT

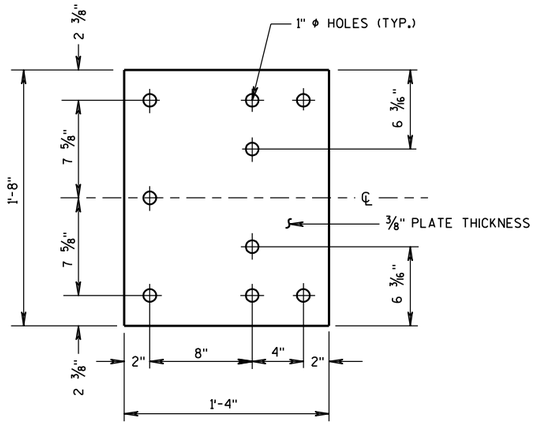
FHWA

6

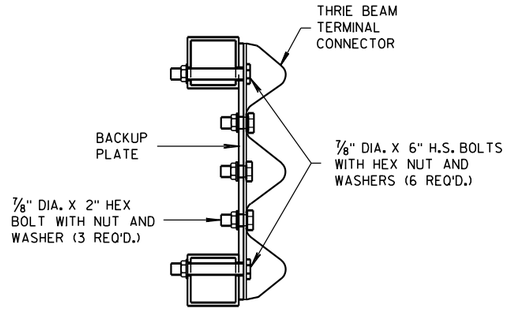
S.D.D. 14 B 45-3f

6

S.D.D. 14 B 45-3f



BACK-UP PLATE DETAIL

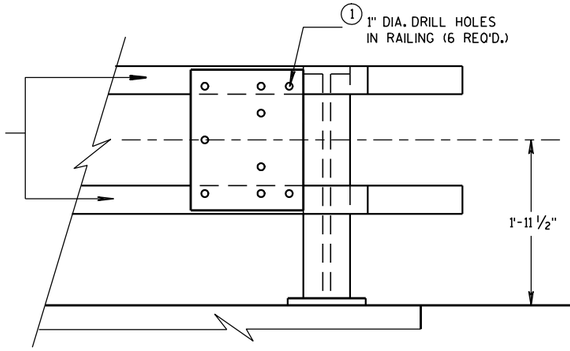


SECTION J-J

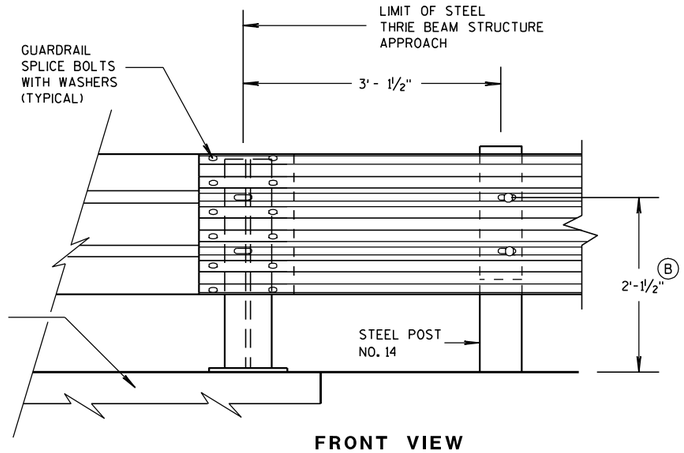
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(B) TOLERANCE FOR TOP OF BEAM IS ± 1".

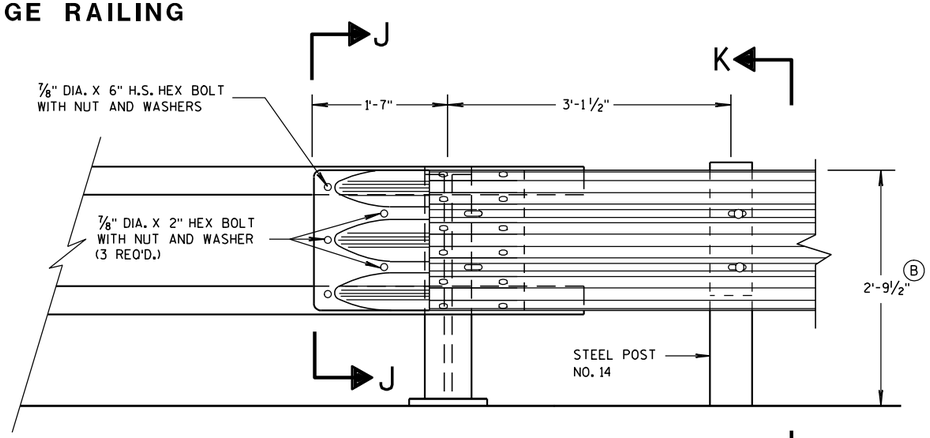


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

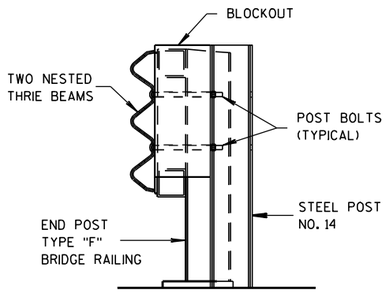


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

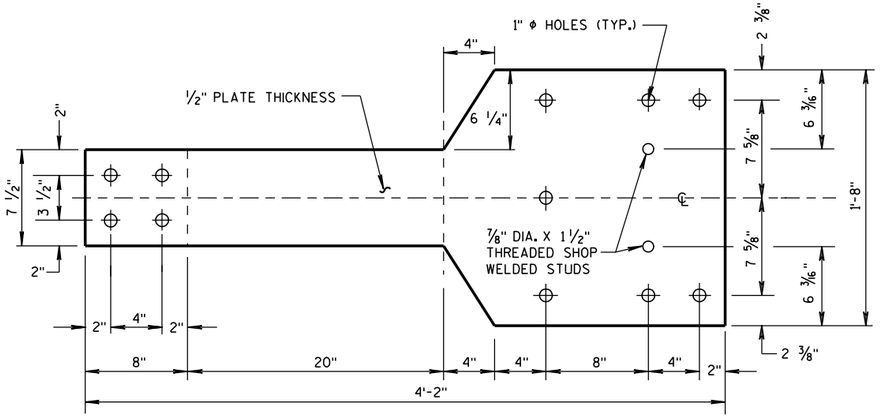
S.D.D. 14 B 45-3g

6

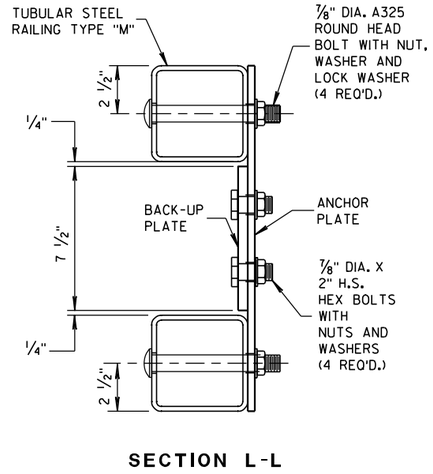
S.D.D. 14 B 45-3g

GENERAL NOTES

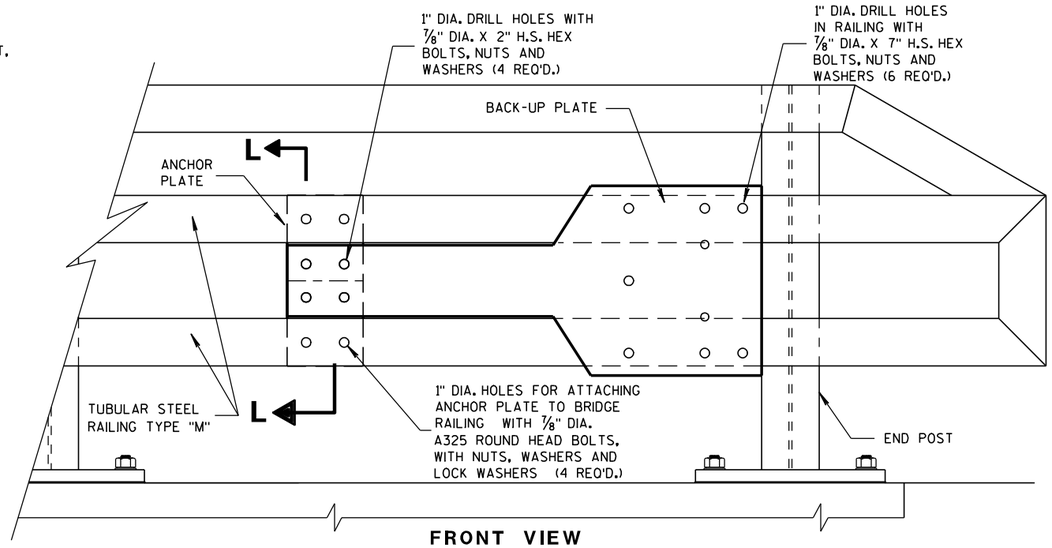
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

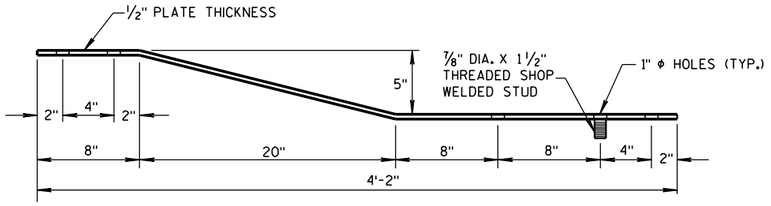


SECTION L-L



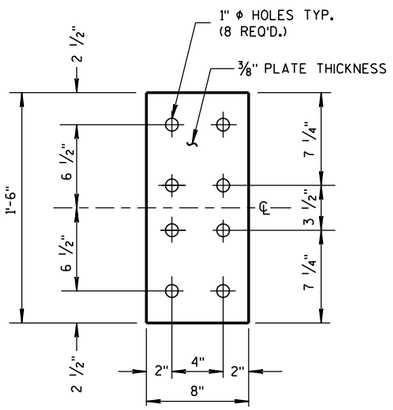
FRONT VIEW

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



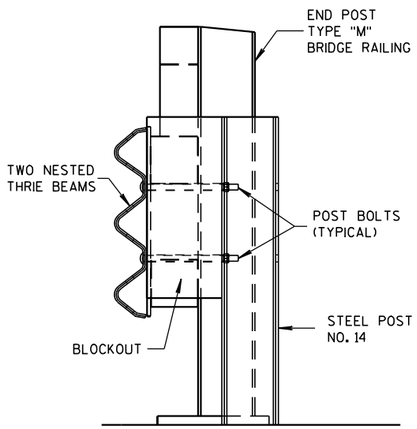
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

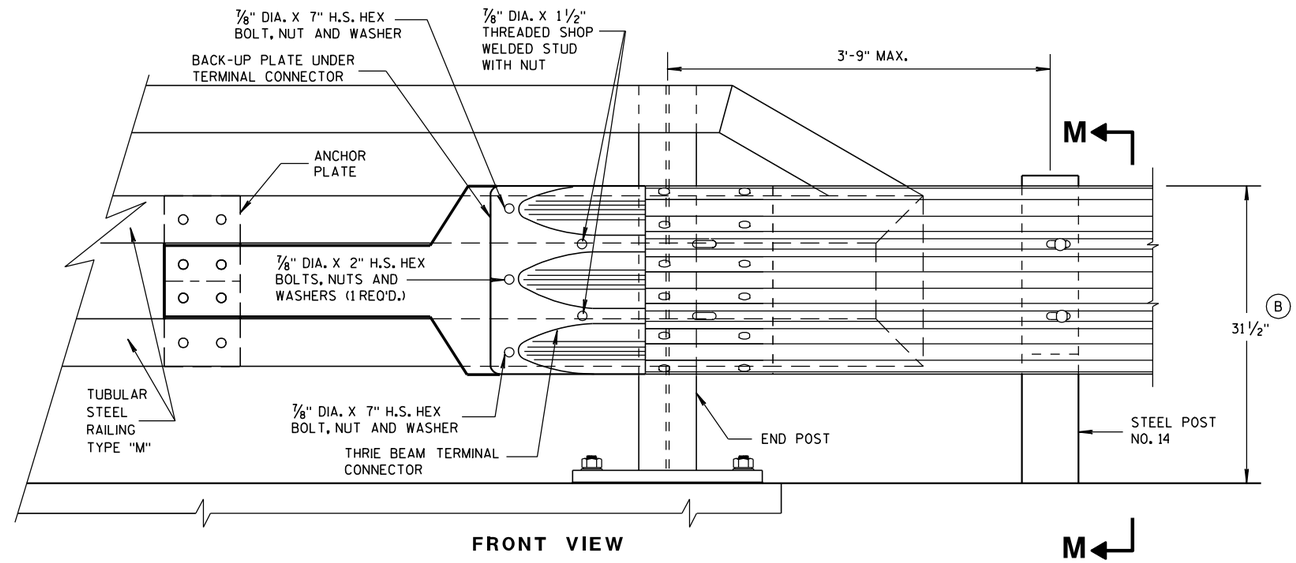


FRONT VIEW

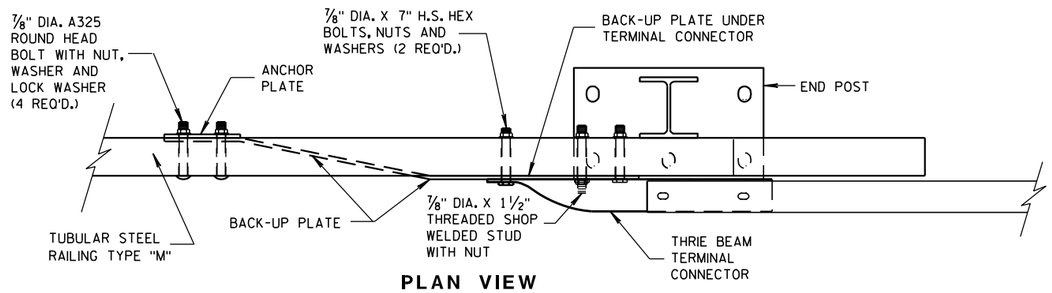
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

60

ENT

FHWA

6

S.D. 14 B 45-3h

6

S.D. 14 B 45-3h

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.

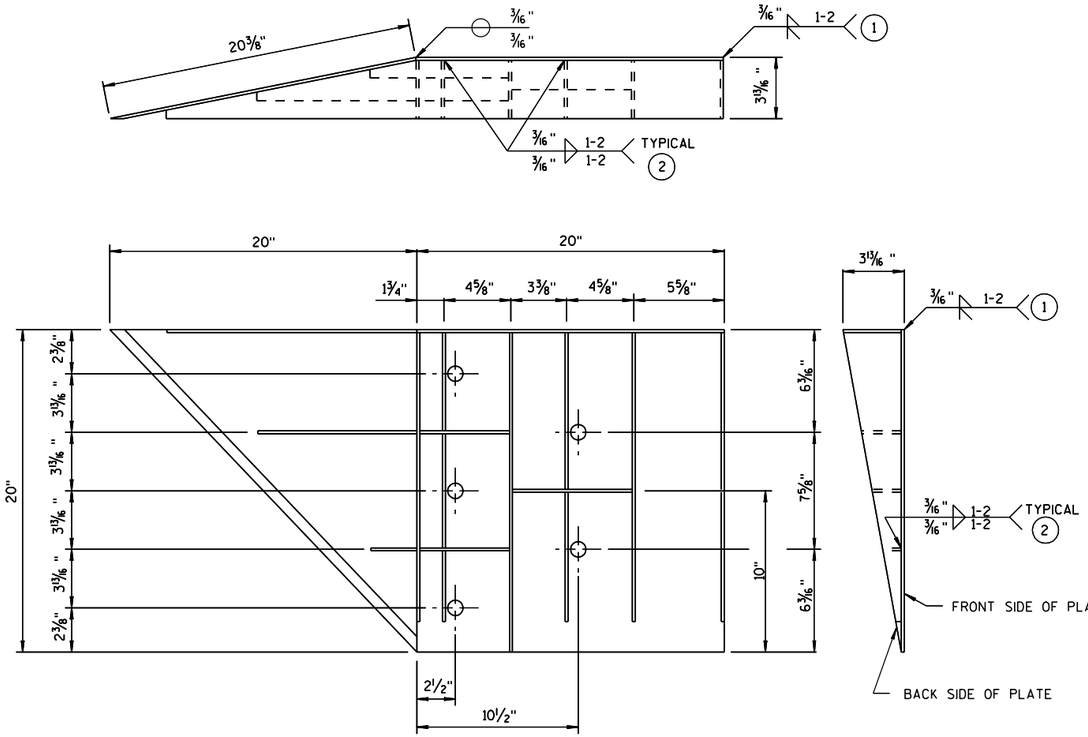
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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)

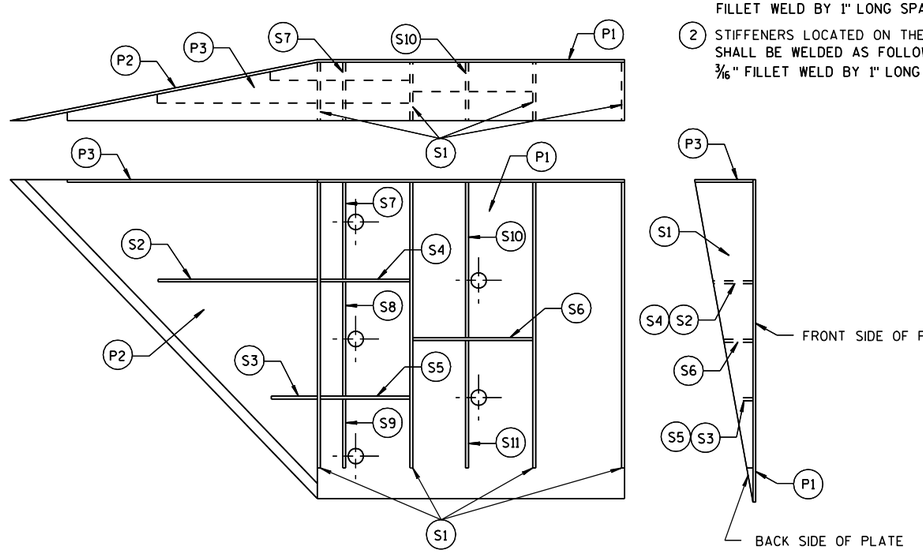


PLATE AND STIFFENER IDENTIFICATION

(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"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

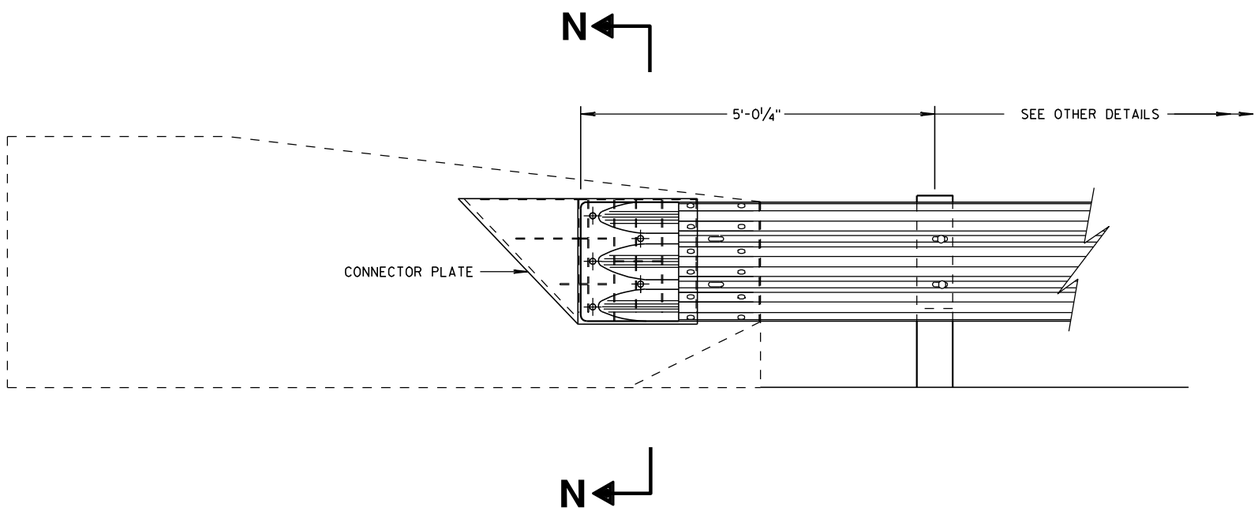
APPROVED
8/31/2012 — DATE
/S/ Jerry H ---- — ROADWAY STANDARDS ENGINEER
FHWA

6

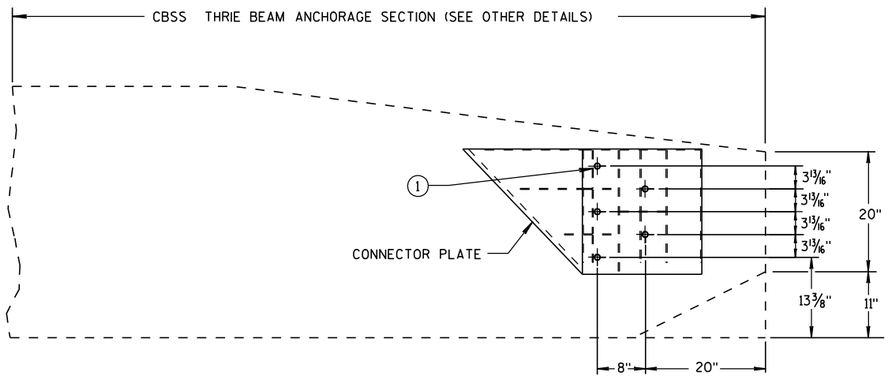
S.D.D. 14 B 45-3i

6

S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

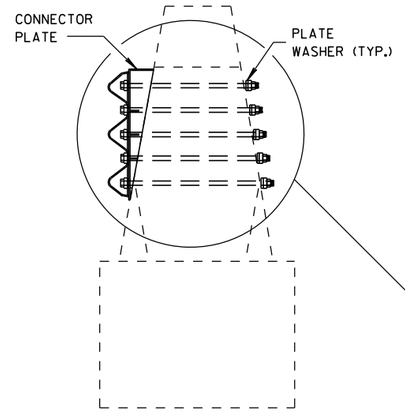


SINGLE SLOPE CONNECTION PLATE PLACEMENT

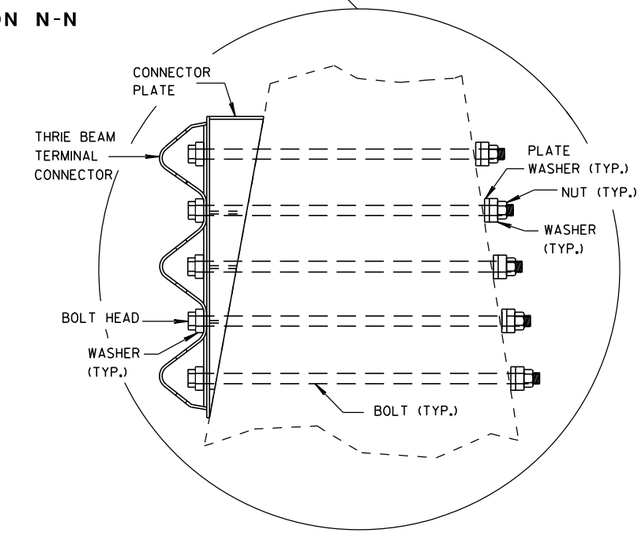
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE 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 CONNECTOR PLATE. 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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

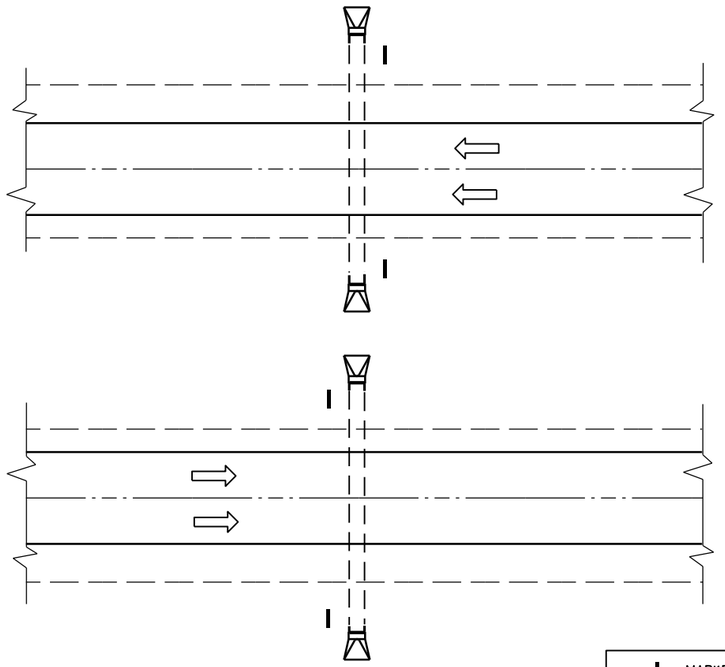
APPROVED
8/31/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 45-3j

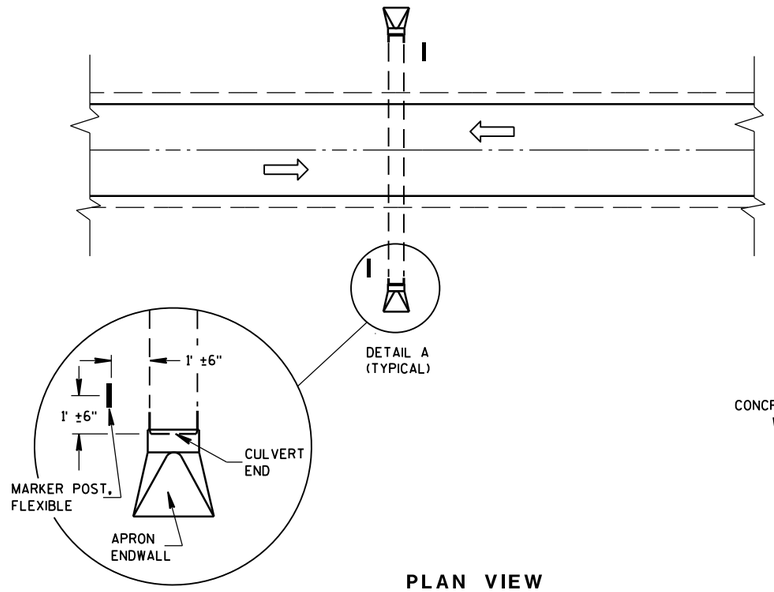
6

S.D.D. 14 B 45-3j



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

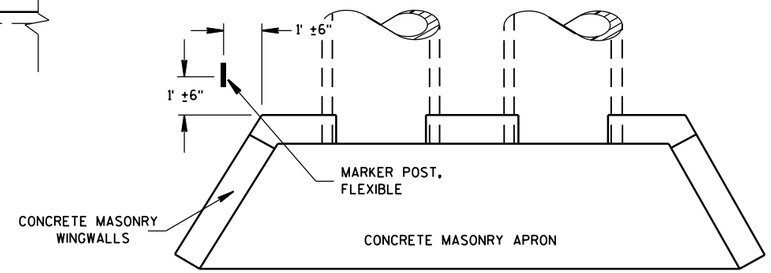
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

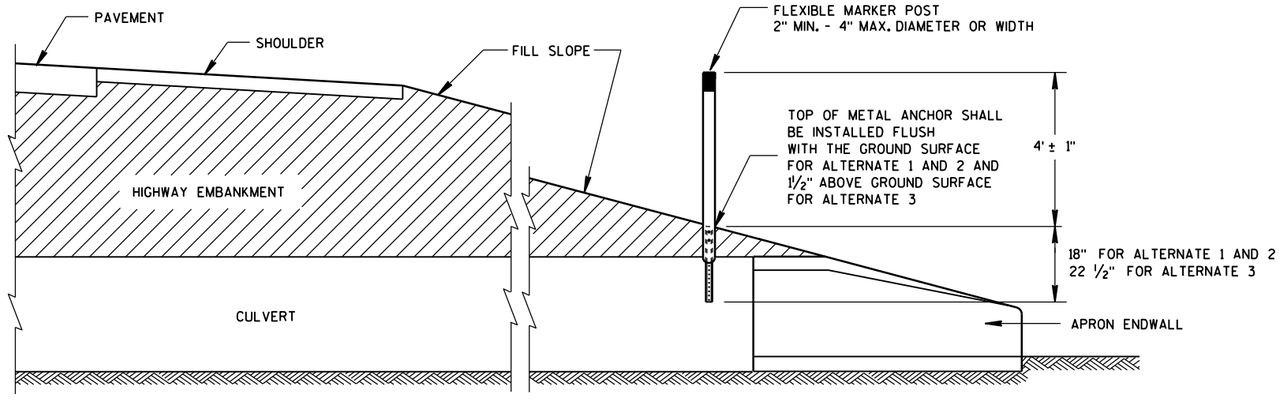
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

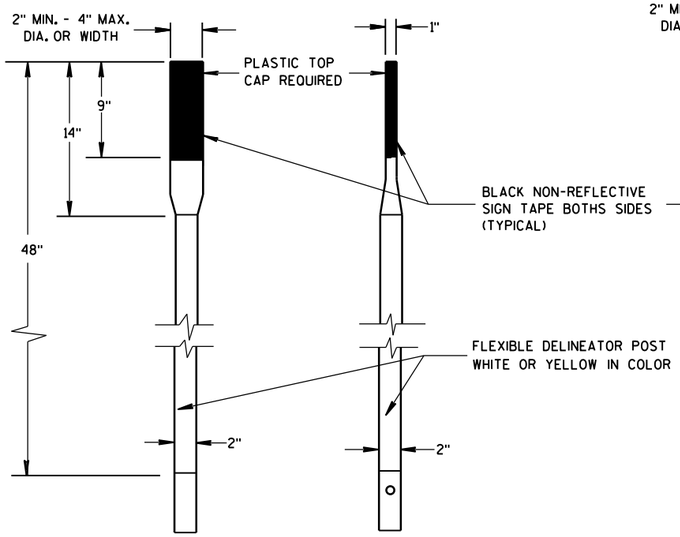
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

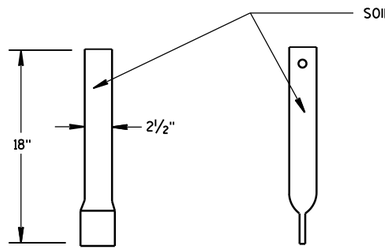
6

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

6

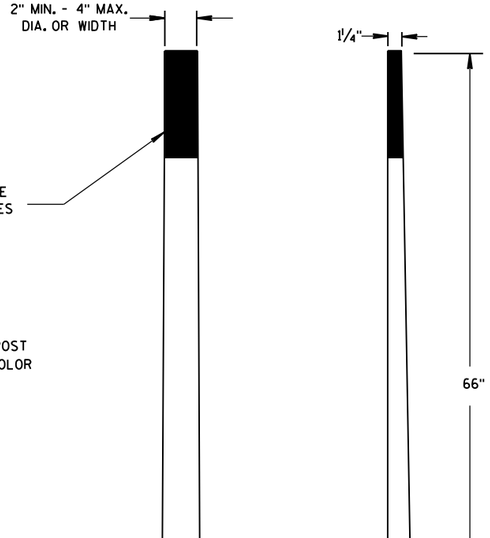
S.D.D. 15 A 3-2a





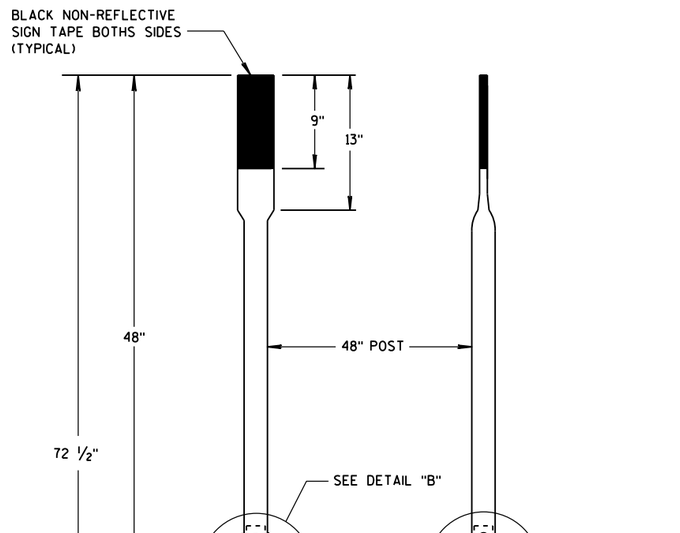
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

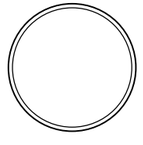
ALTERNATE 2



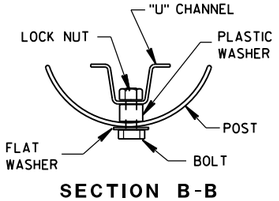
FRONT VIEW SIDE VIEW

ALTERNATE 3

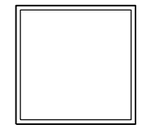
FLEXIBLE MARKER POSTS



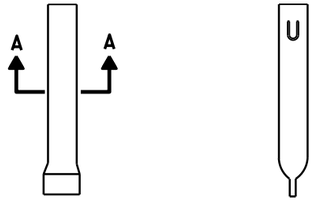
SECTION A-A



SECTION B-B

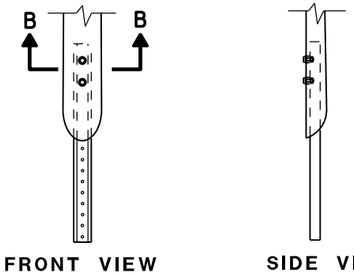


SECTION C-C



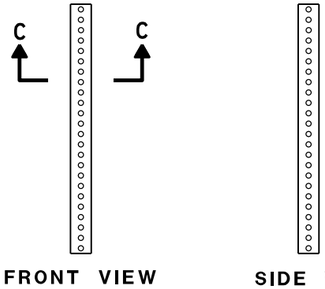
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

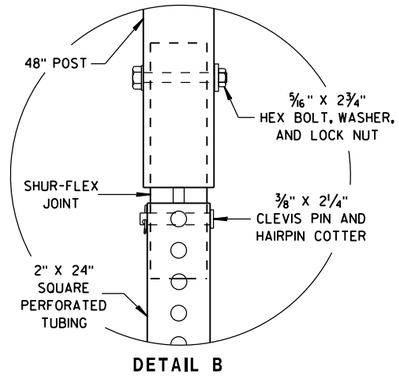
ALTERNATE 2



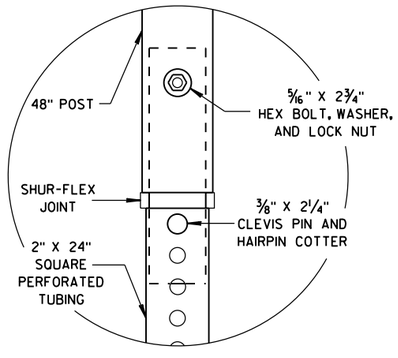
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

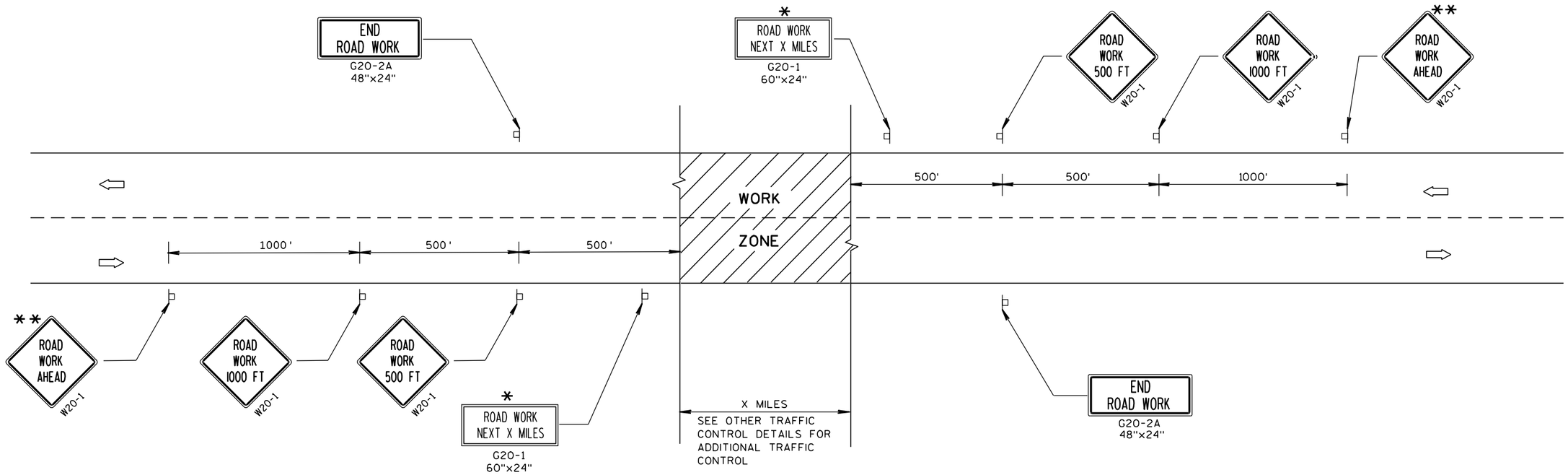
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

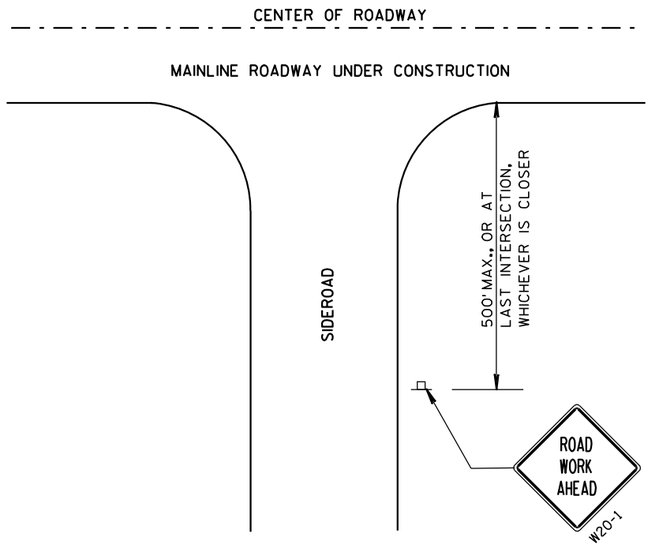
S.D.D. 15 A 3-2b

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 W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA OR SIGNING.

LEGEND

POST MOUNTED SIGN

DIRECTION OF TRAFFIC FLOW

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

5/23/00 DATE — /S/ Chester J. [illegible] CHIEF SIGNS AND MARK[illegible]NEER

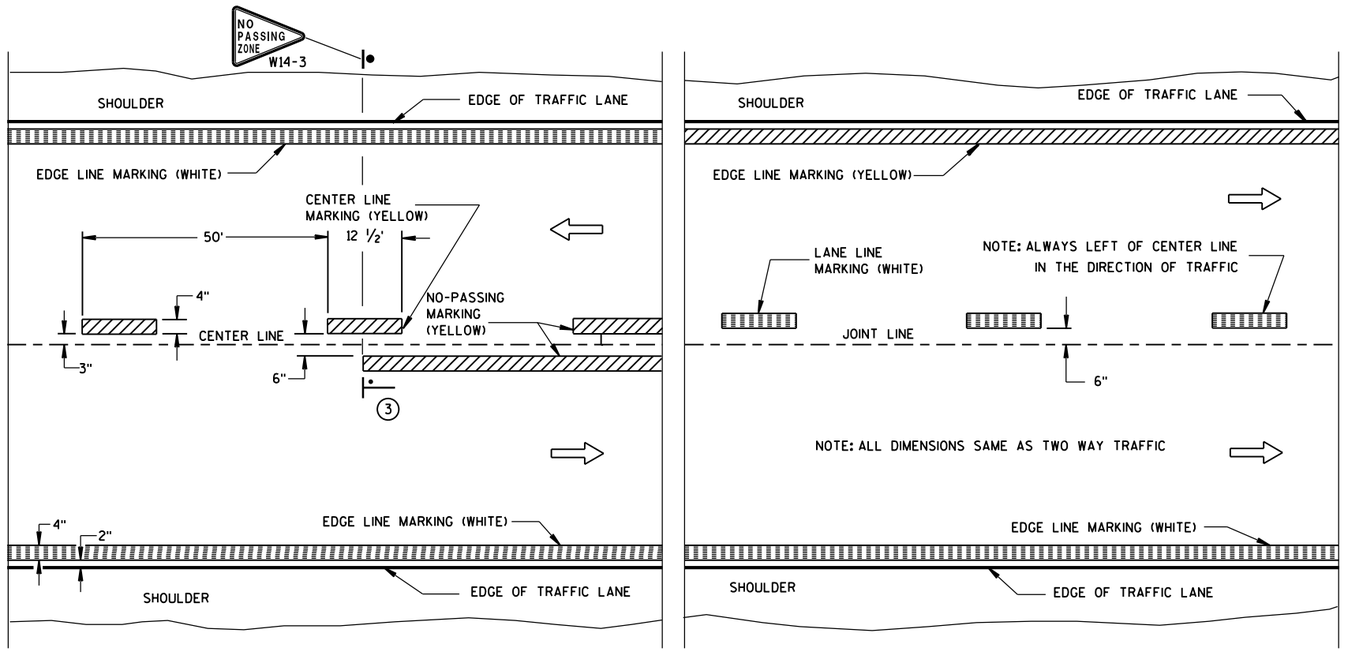
FHWA

6

S.D.D. 15 C 4-1

6

S.D.D. 15 C 4-1



TWO WAY TRAFFIC

ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

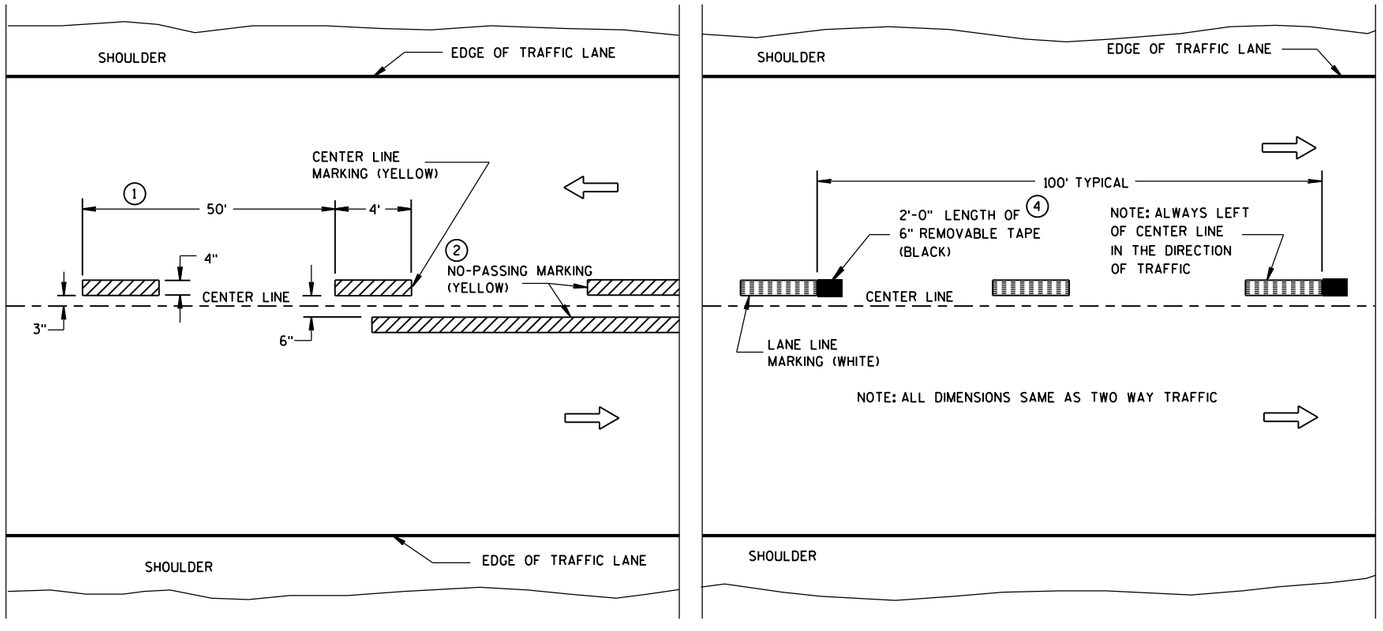
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

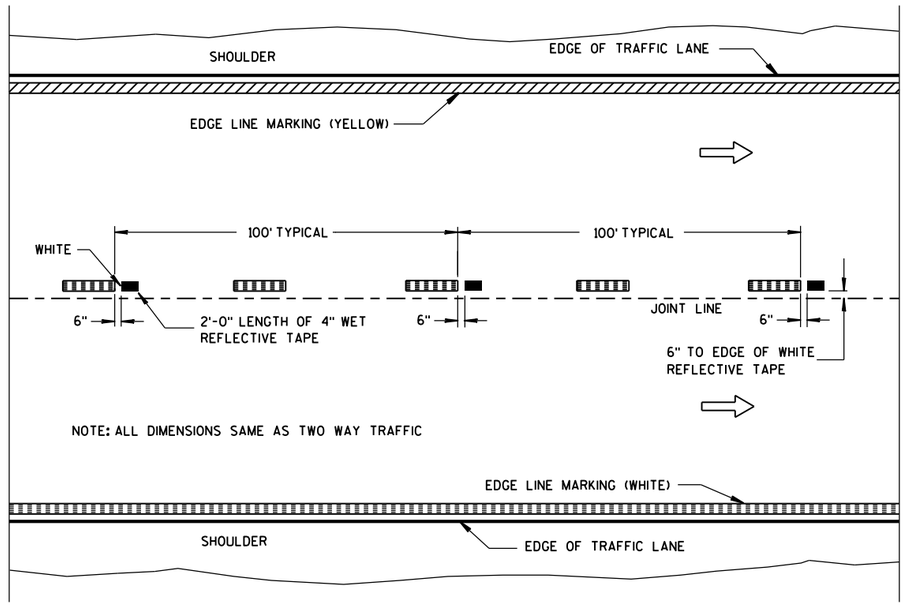


TWO WAY TRAFFIC

ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

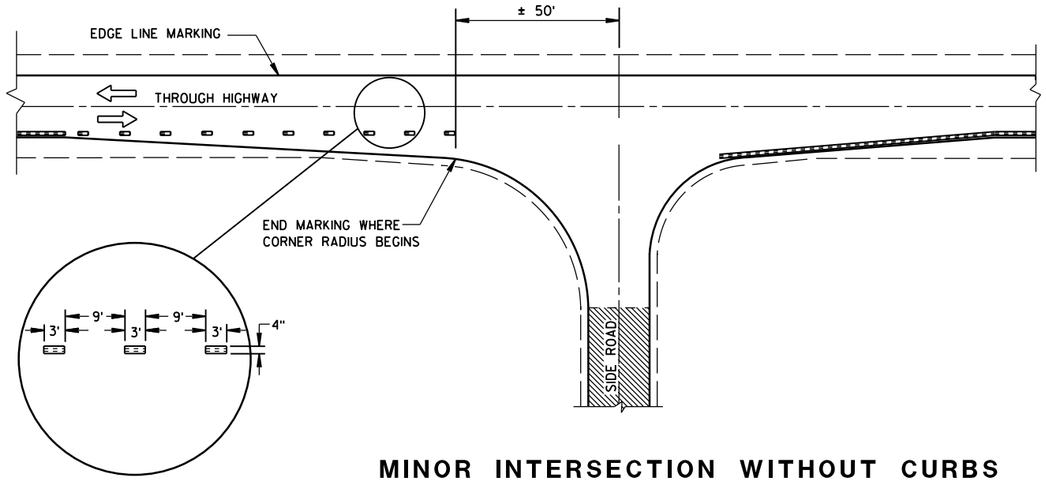
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED 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) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

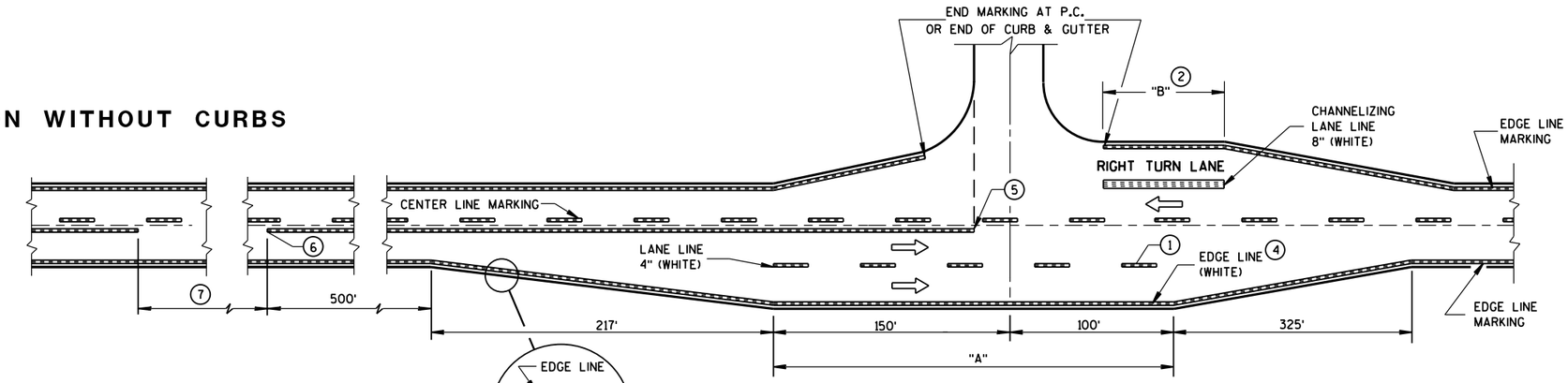
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

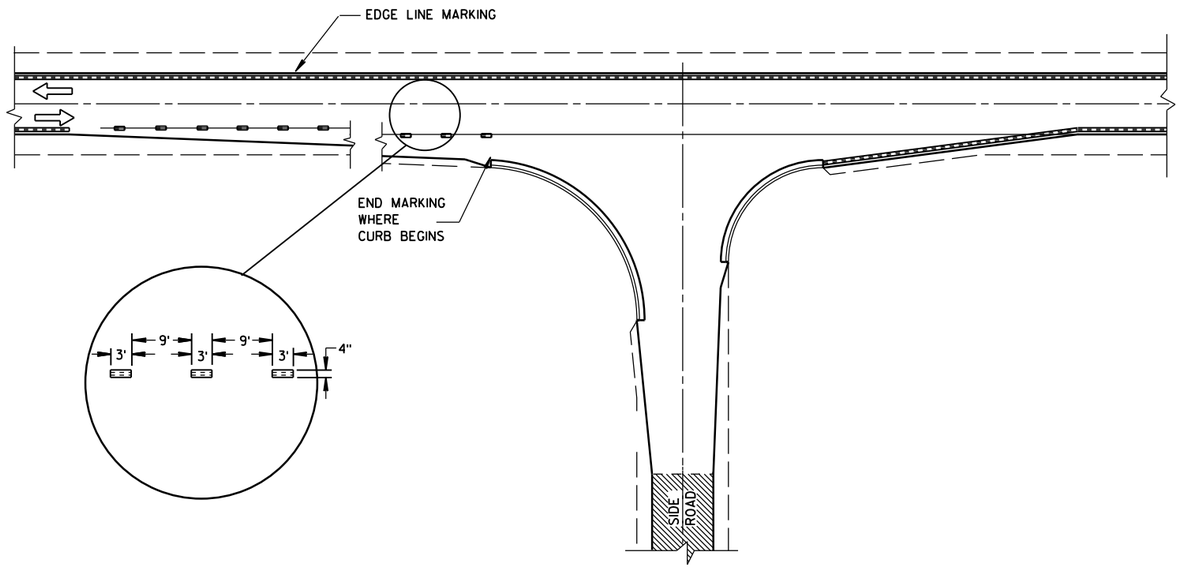
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



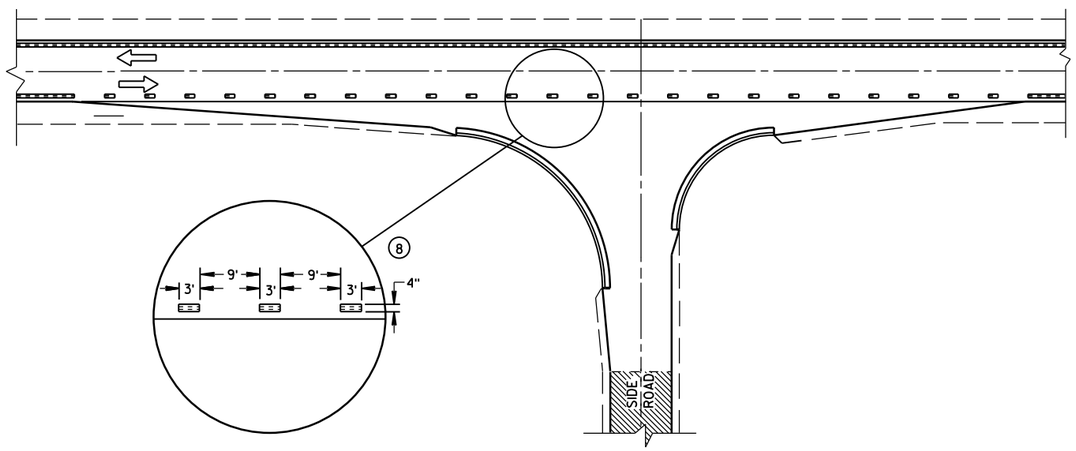
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

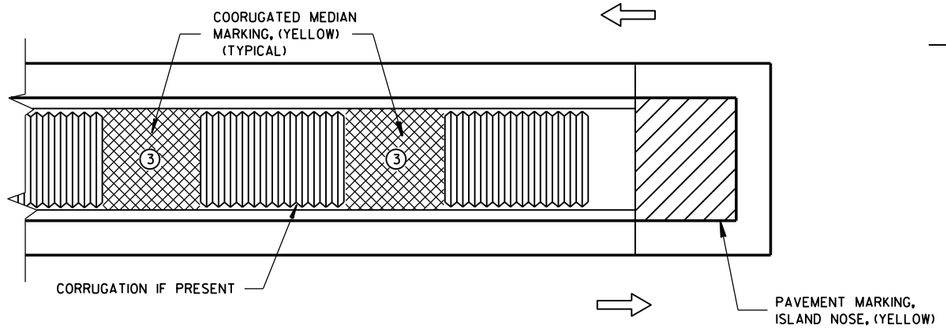
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

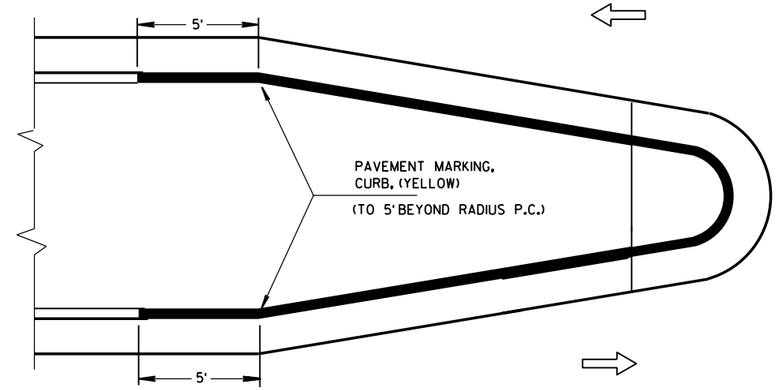
S.D.D. 15 C 8-15b

6

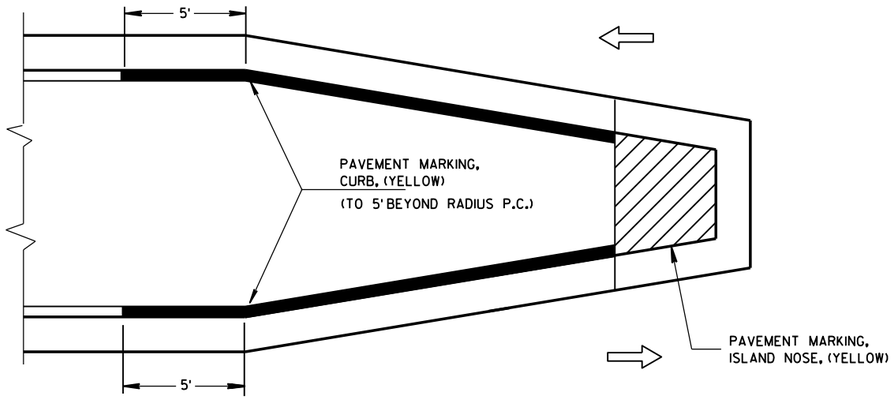
S.D.D. 15 C 8-15b



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

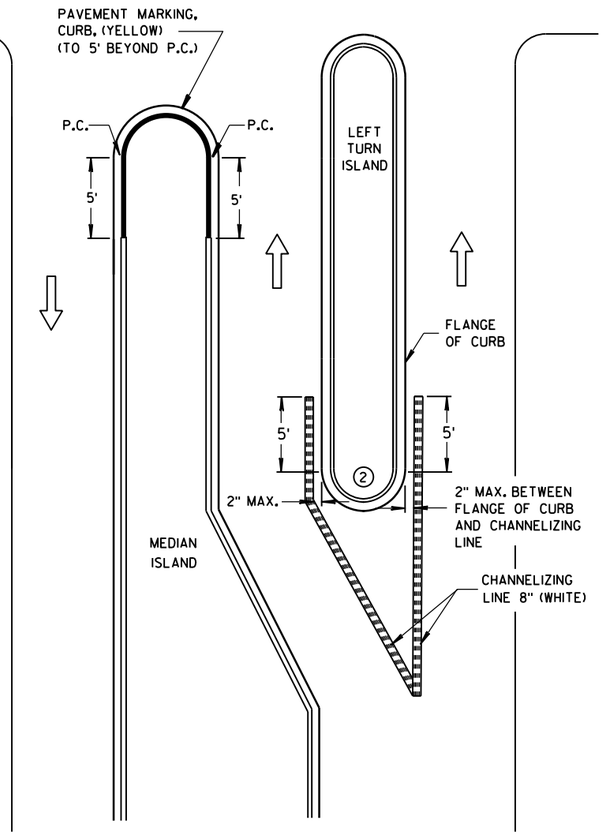


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

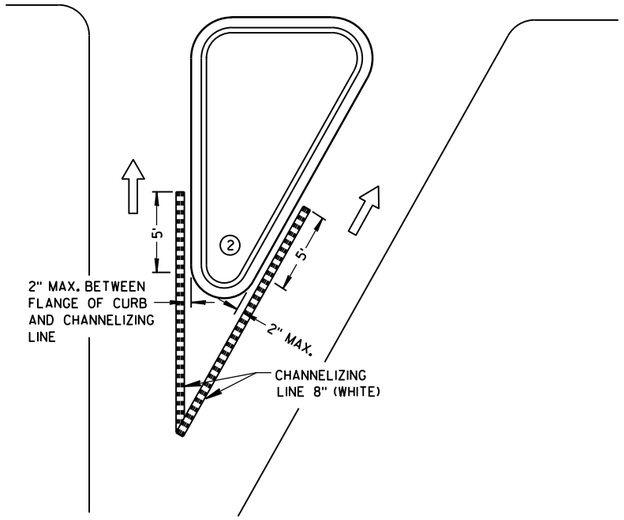
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



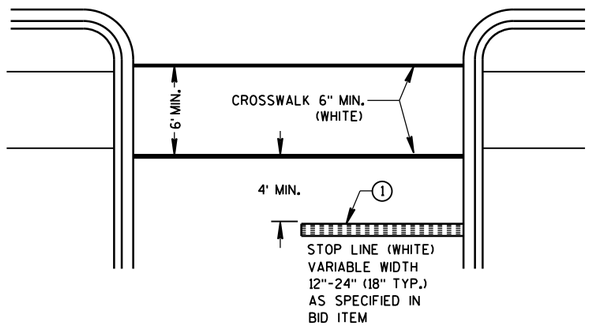
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. STOP LINE IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
3. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND



STOP LINE AND CROSSWALK

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 C 8-15f

6

S.D.D. 15 C 8-15f

TWO-LANE ROADWAY

SYMBOLS

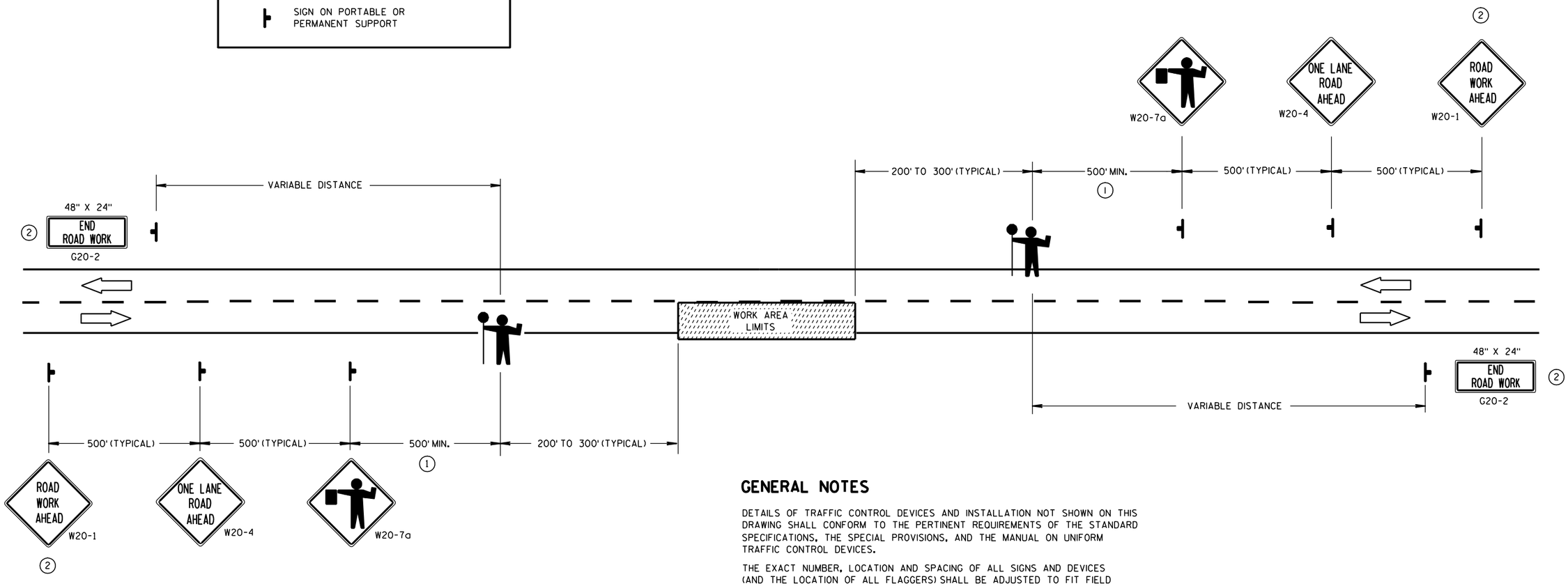
WORK AREA

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

SIGN ON PORTABLE OR PERMANENT SUPPORT

W3-4

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



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

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

GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

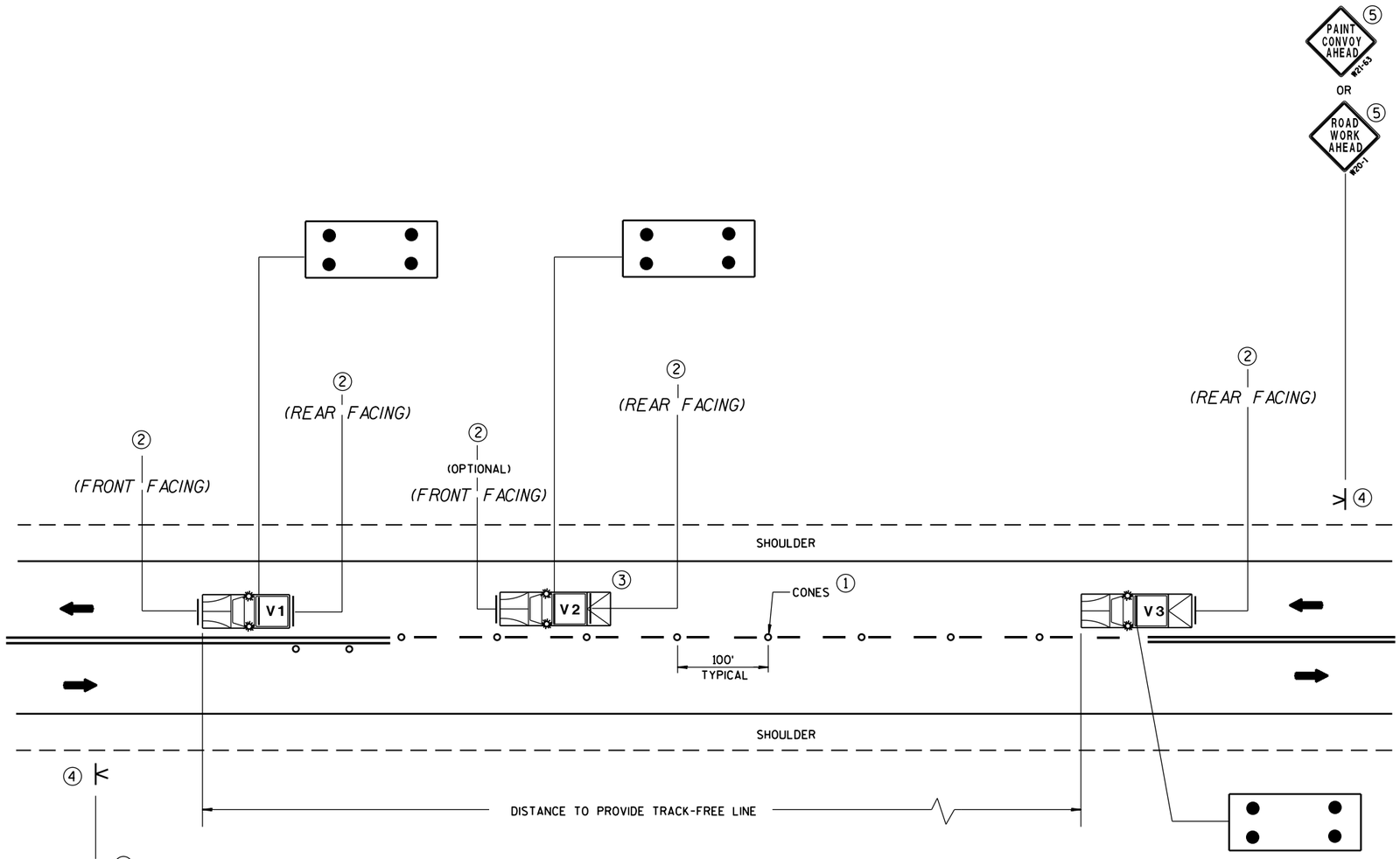
9/5/06 — DATE

/S/ Thomas N. Nathaam — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 12-3



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

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

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

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

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

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

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

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

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

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

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

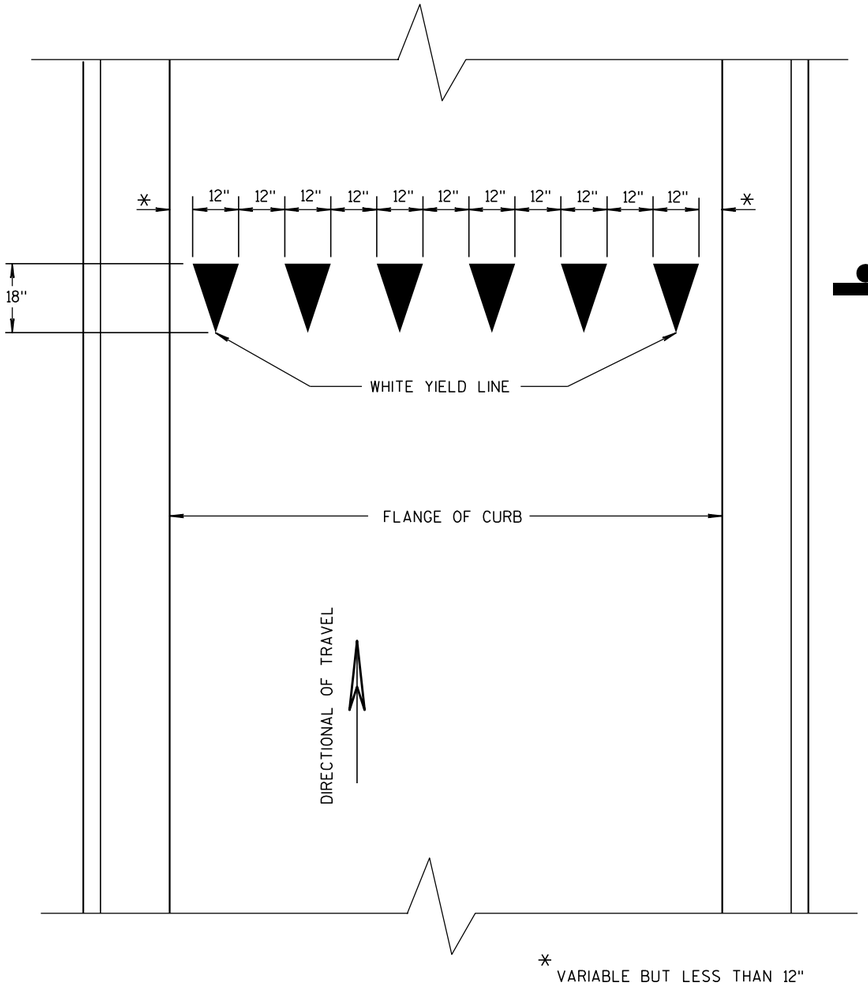
(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

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

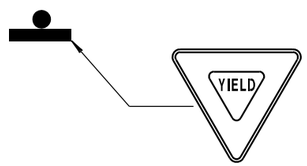
LEGEND

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

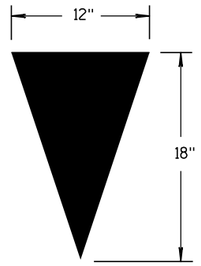
MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 12/6/2011 DATE /S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER SIGN
FHWA



YIELD LINE



R1-2
36" X 31"



YIELD TRIANGLE

YIELD MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

1/28/05
DATE

/S/ Thomas N. Nothdurft
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 20-1

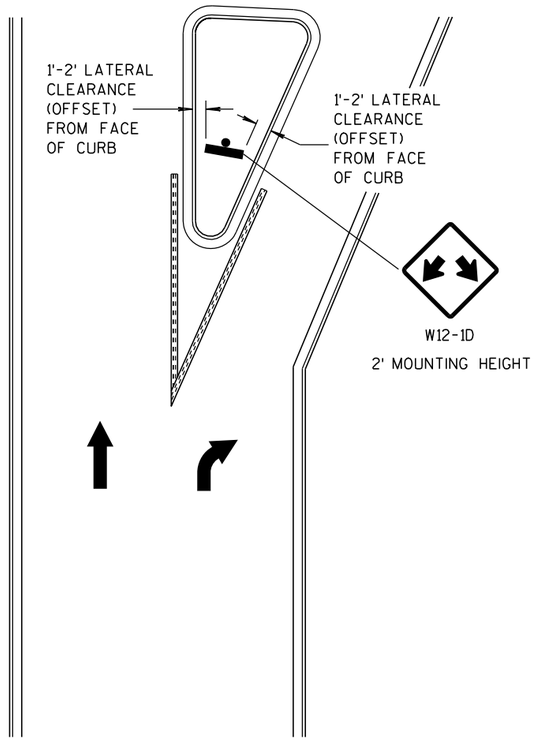
6

S.D.D. 15 C 20-1

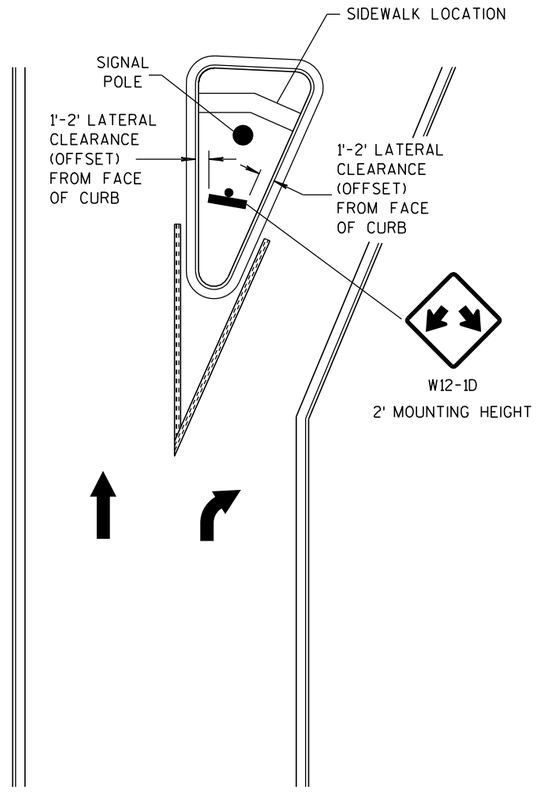
GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

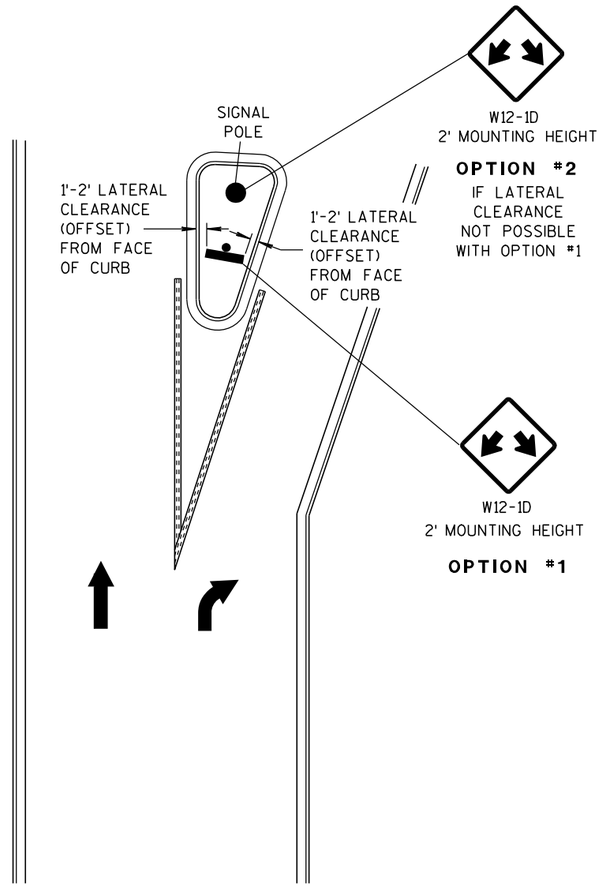
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.



LARGE RIGHT TURN ISLAND



LARGE RIGHT TURN ISLAND
WITH SIGNAL POLE



SMALL RIGHT TURN ISLAND

DOUBLE ARROW WARNING SIGN PLACEMENT

DOUBLE ARROW WARNING SIGN PLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
10-22-08 DATE	/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA	

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.

W20-1 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.

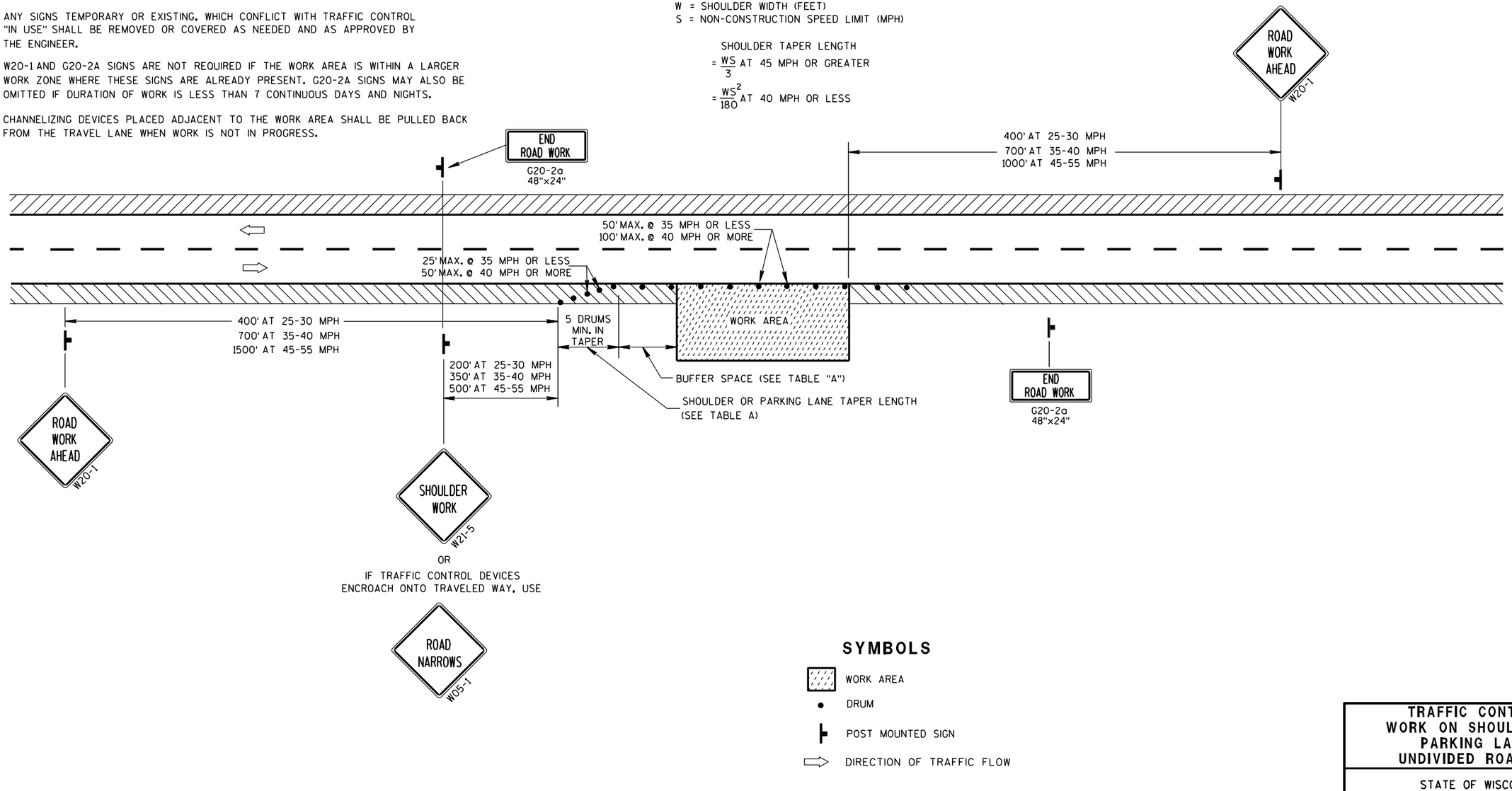
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

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

SHOULDER TAPER LENGTH
$= \frac{WS}{3}$ AT 45 MPH OR GREATER
$= \frac{WS^2}{180}$ AT 40 MPH OR LESS



SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

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

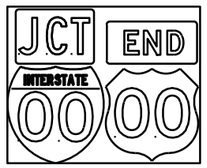
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK[illegible]NNEER
FHWA

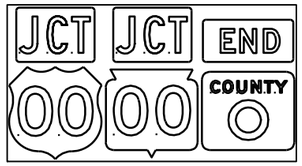
6
S.D.D. 15 D 28-1

TYPICAL ASSEMBLIES

J1-1

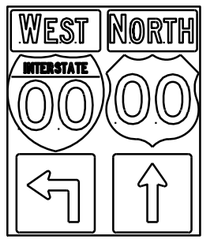


J1-2

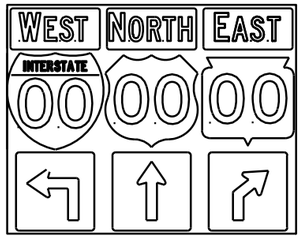


J1-3

J2-1

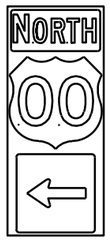


J2-2

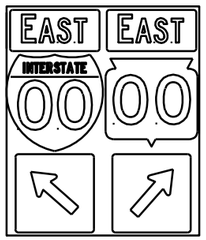


J2-3

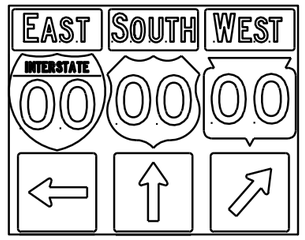
JV



J3-1

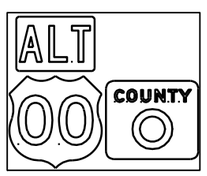


J3-2

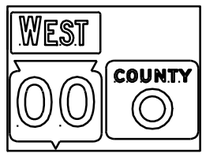


J3-3

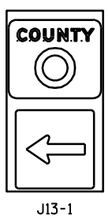
J4-1



J4-2



J4-2



J13-1

J12-1

J32-1

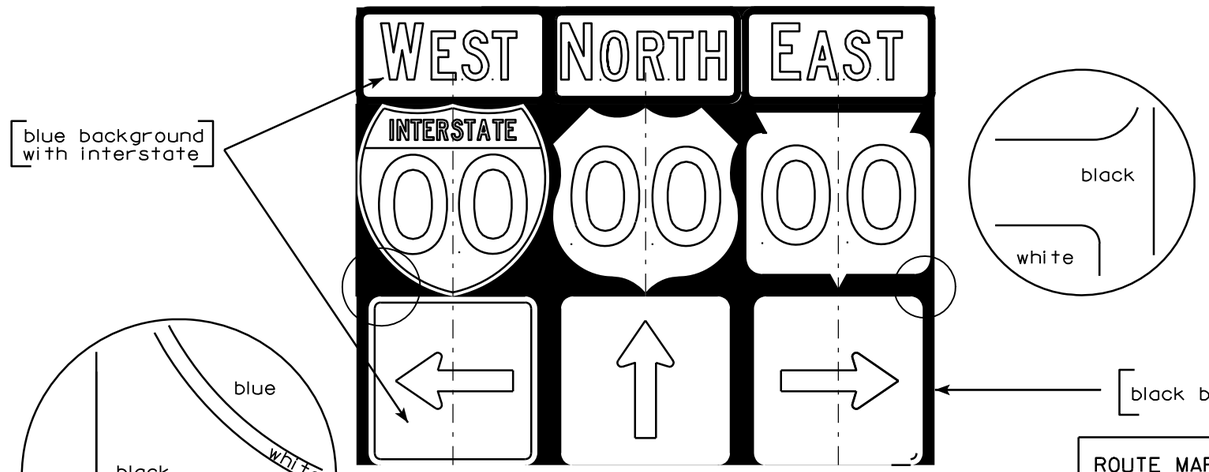
J33-1

J23-1

J22-1

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square since base material is plywood.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.



ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

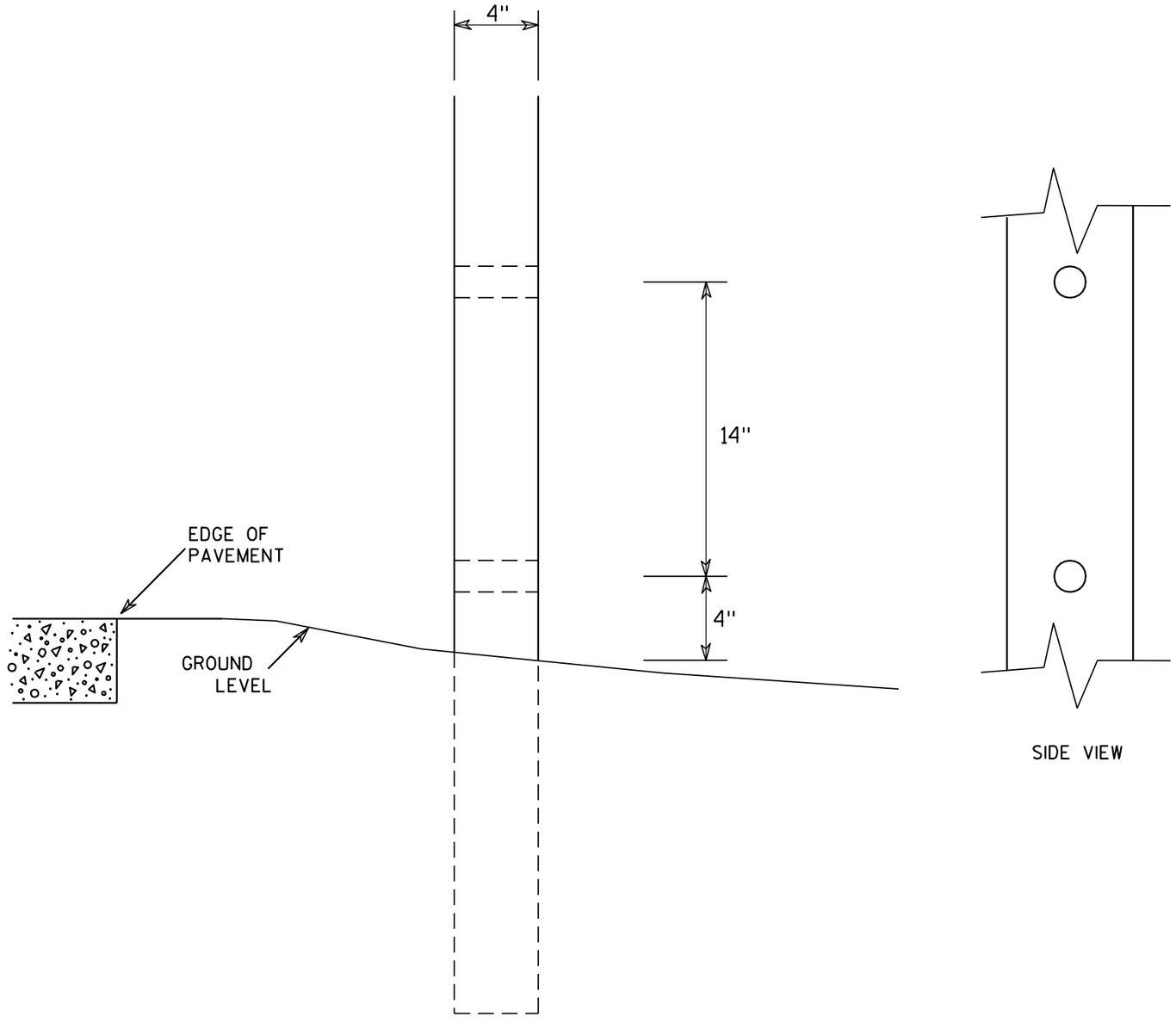
DATE 10/21/09 PLATE NO. A2-1S.6

7

7

PROJECT NO:

SHEET NO: 74 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

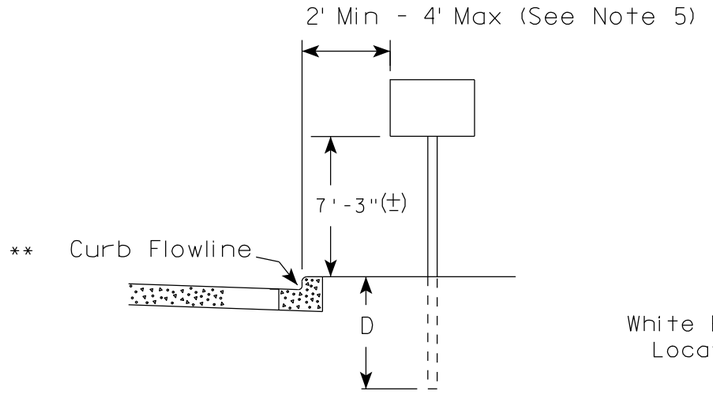
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

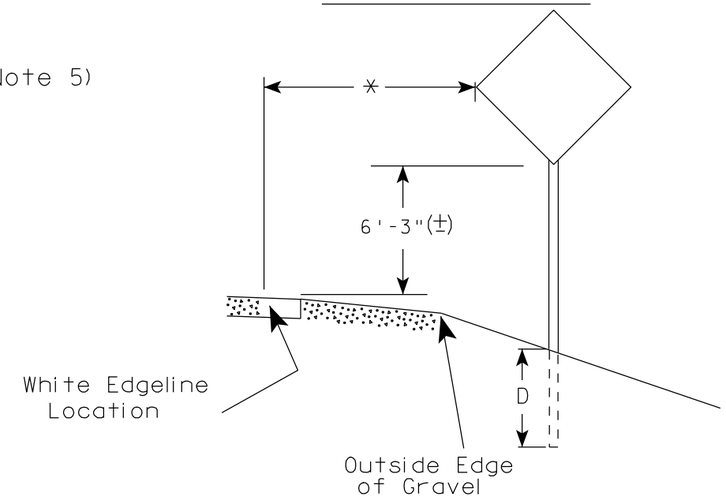
DATE 3/27/97 PLATE NO. A4-11.2

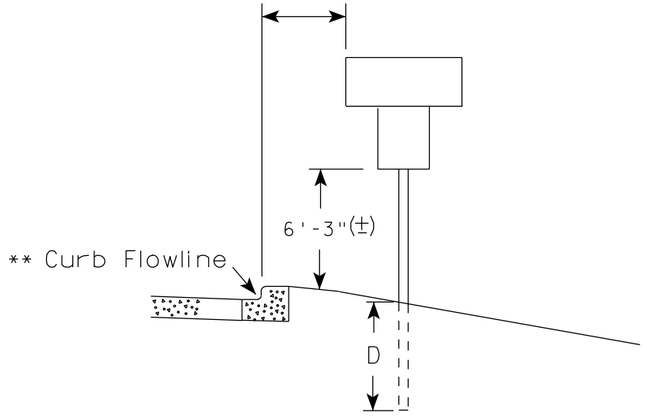
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 75	E

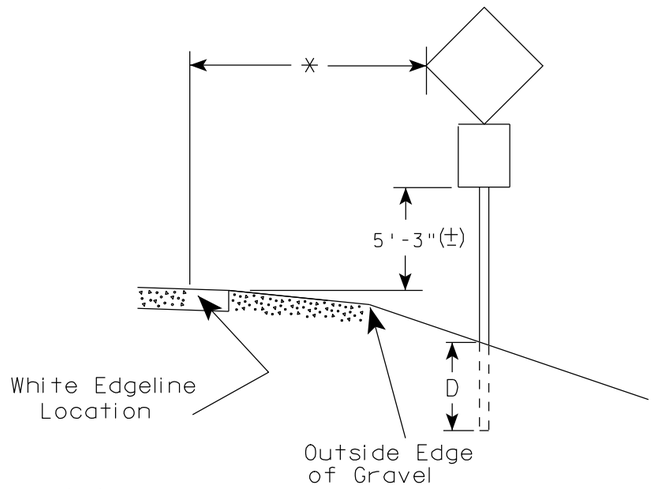
URBAN AREA



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.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

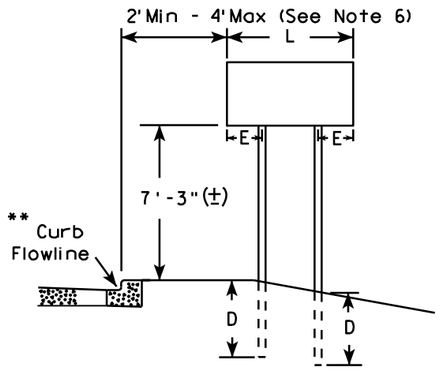
DATE 9/21/2011 PLATE NO. A4-3.16

7

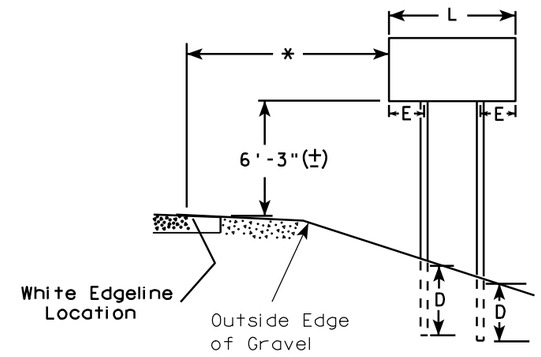
7

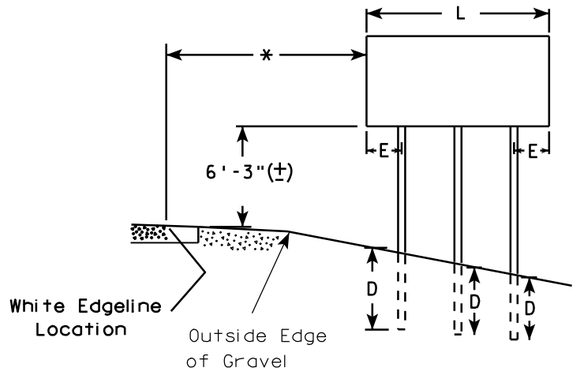
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 76 | E

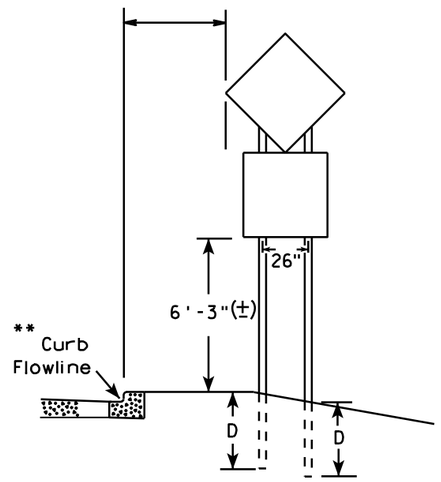
URBAN AREA



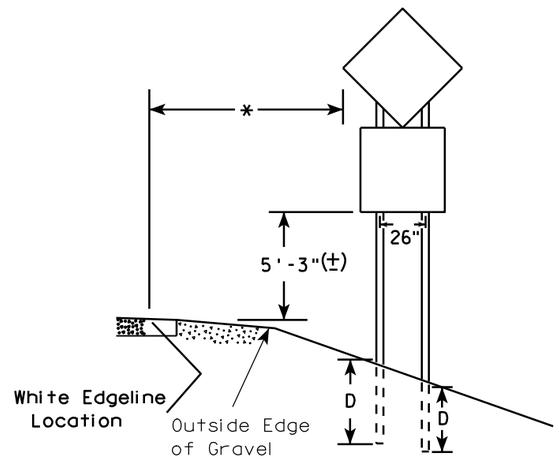
RURAL AREA (See Note 3)







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 120"	L/5

***

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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

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

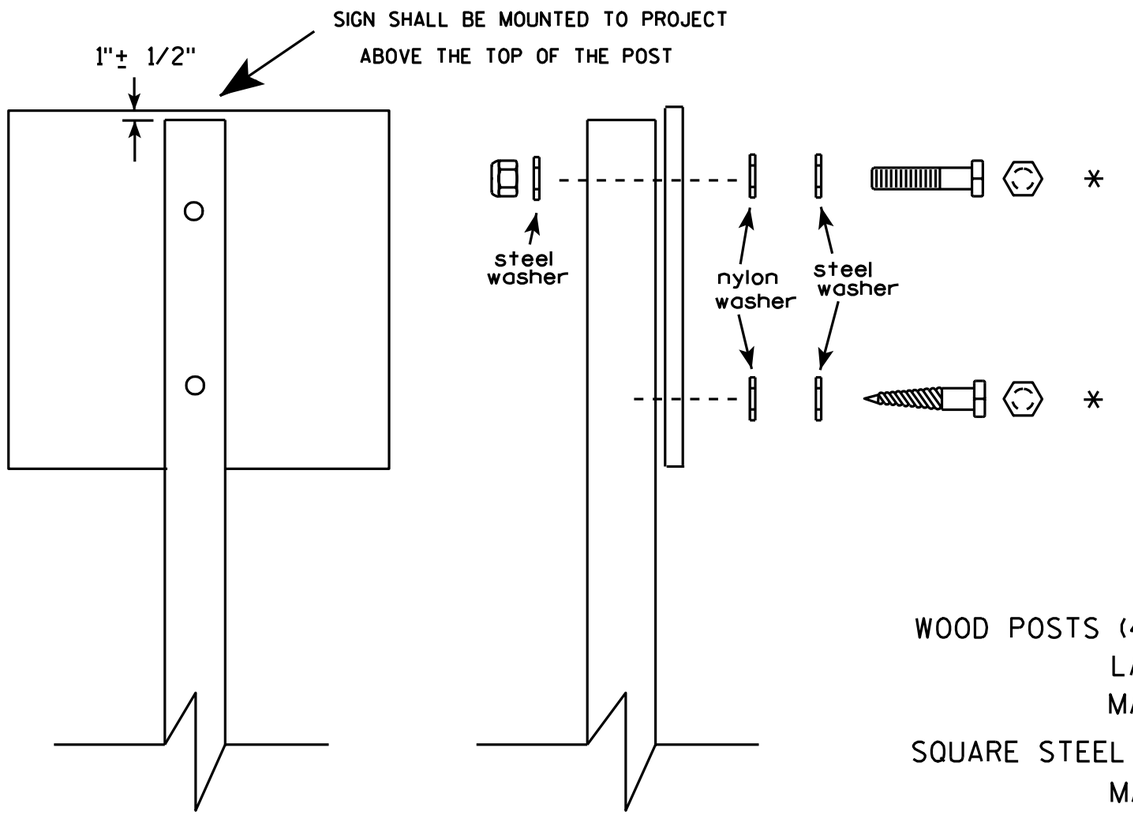
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

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



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

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

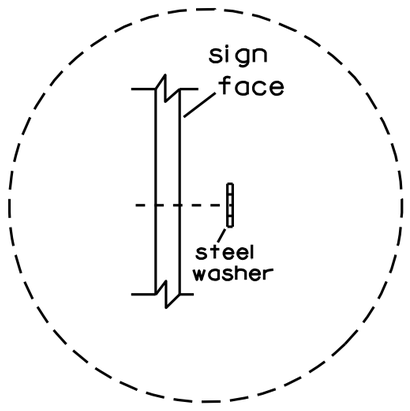
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

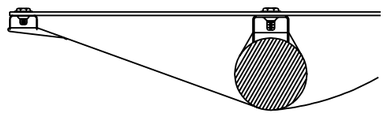
7

7

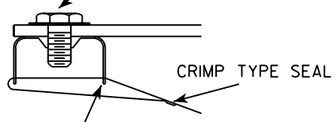
PROJECT NO:

SHEET NO: 78 E

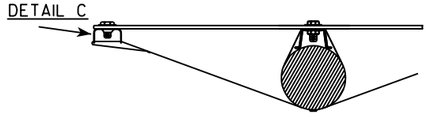
BRACE BANDING

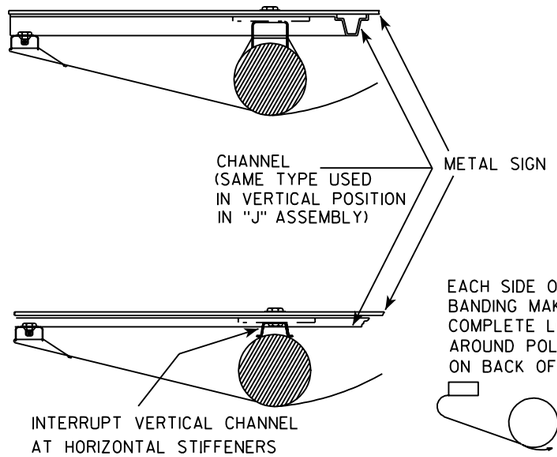


DETAIL C
CADMIUM PLATED STEEL BOLT
THROUGH BLACK BORDER



DETAIL C

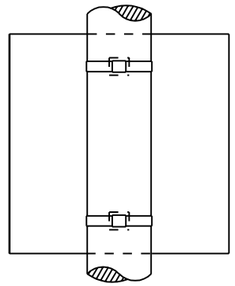


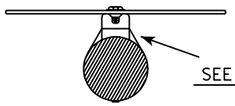


EACH SIDE OF BRACE
BANDING MAKES ONE
COMPLETE LOOP
AROUND POLE-SEAL
ON BACK OF POLE

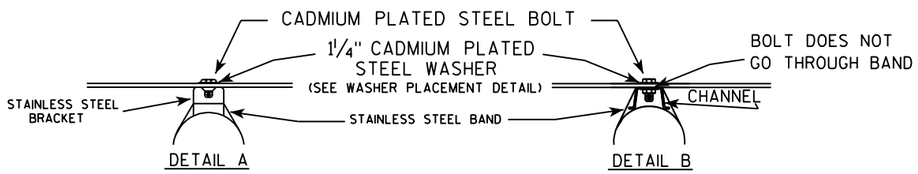
BRACKET BANDING

SINGLE SIGN

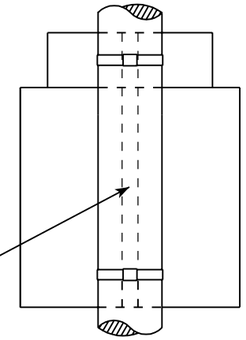




SEE DETAIL A



"J" ASSEMBLY

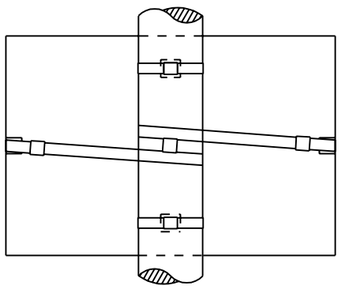


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

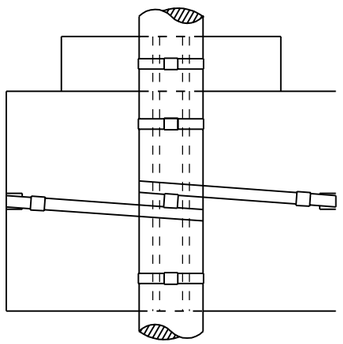
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' 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.

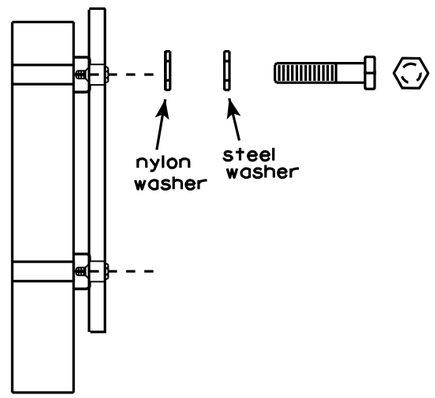


BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF 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

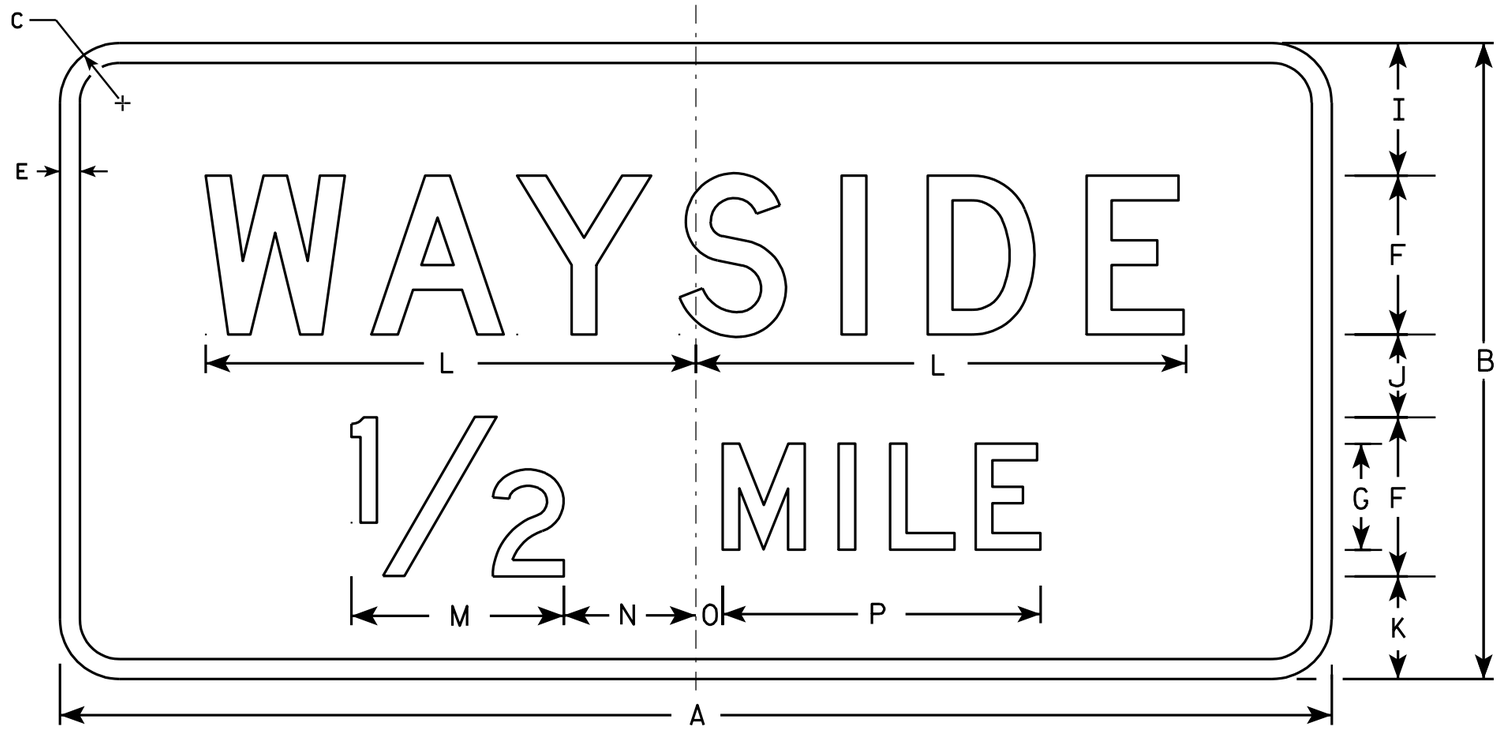
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 79	E



D5-61

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z		
1																												
2	48	24	2 1/4		3/4	6	4	6	5	3 1/8	3 7/8	18 1/2	8	5	1	12											8.0	0.72
3																												
4	78	42	3		1	10	7	10 1/2	8 3/4	5 3/4	7	30 1/8	14	8 3/4	1 3/4	21											22.8	2.05
5																												

STANDARD SIGN
D5-61

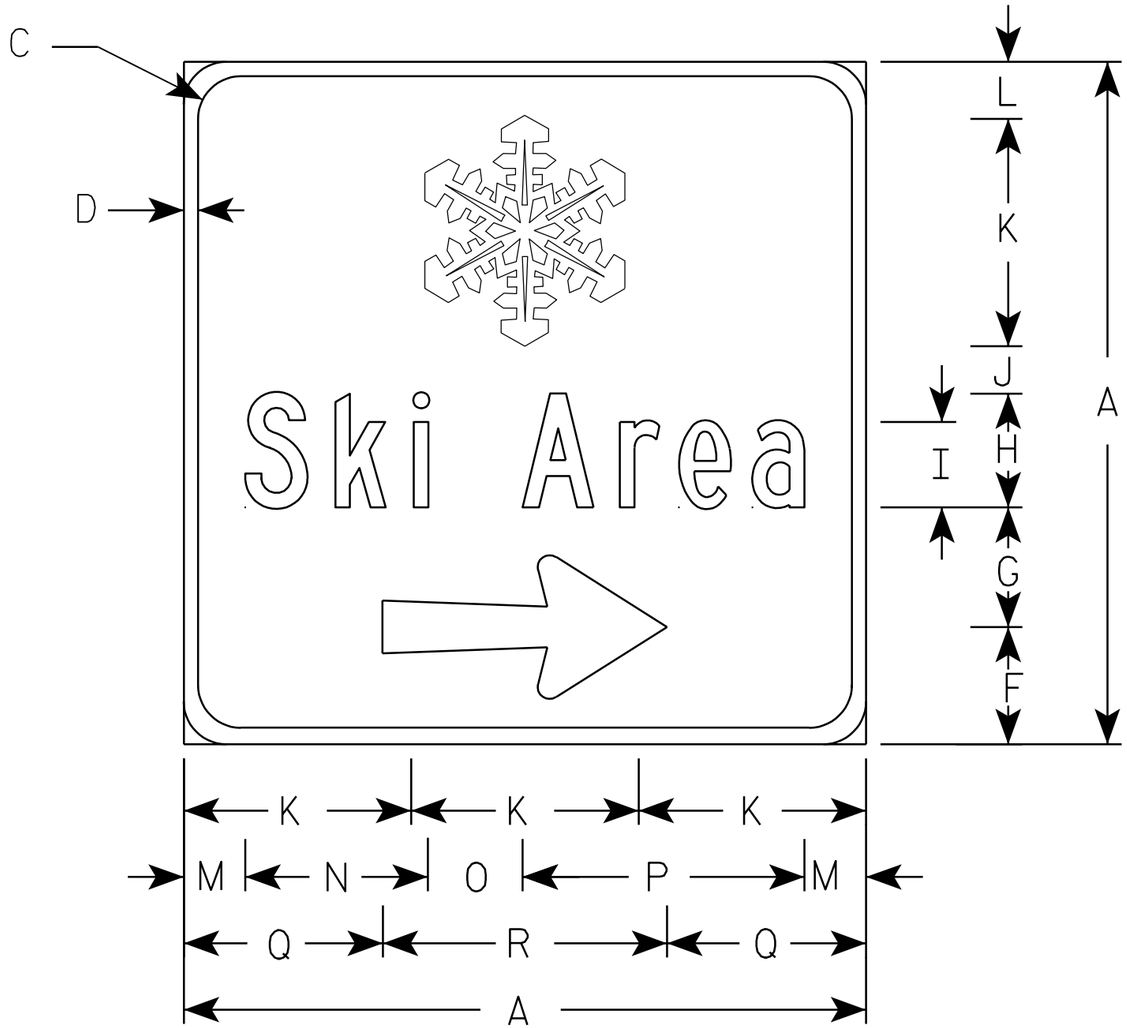
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spagg for State Traffic Engineer

DATE 1/09/02 PLATE NO. D5-61.9

STATE PROJECT NUMBER:

SHEET NO: 80 E



D7-82

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - BROWN
   Message - WHITE
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	
2	900 mm X 900 mm
3	
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	36		2 1/4	3/4		6 1/4	6 3/8	6	4 1/2	2 1/2	12	3	3 1/4	9 5/8	5	14 7/8	10 1/2	15									9.0	0.81
3																												
4																												
5																												

STANDARD SIGN
D7-82

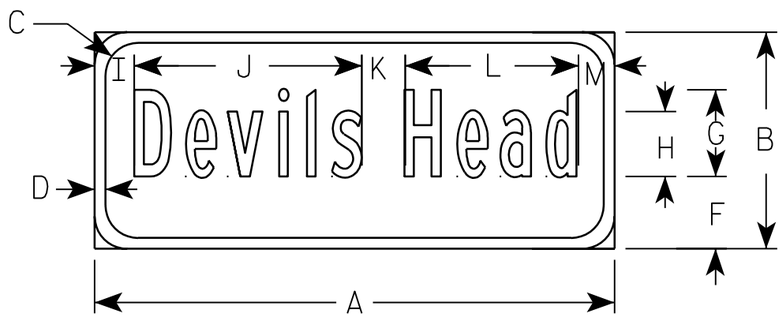
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/04/05 PLATE NO. D7-82.1

PROJECT NO:

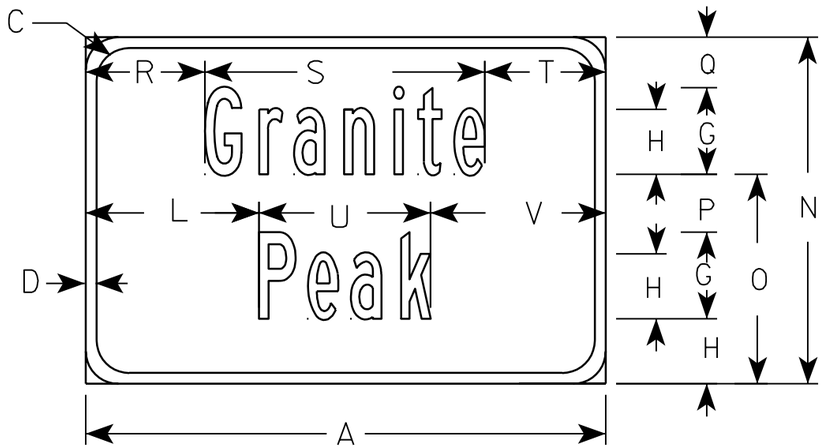
SHEET NO: 81 E



D7-82A

NOTES

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



D7-82B

7

Metric equivalent for this sign is:

SIZE	D7-82A
1	
2	900 mm X 375 mm
3	
4	
5	

Metric equivalent for this sign is:

SIZE	D7-82B
1	
2	900 mm X 600 mm
3	
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	D7-82A Area sq. ft.	D7-82A Area m2	D7-82B Area sq. ft.	D7-82B Area m2
1																														
2	36	15	2 1/4	3/4		5	6	4 1/2	2 3/4	15 3/4	3	12	2 1/2	24	14 1/2	4	3 1/2	8 1/4	19 3/8	8 3/8	11 7/8	12 1/8					3.75	0.33	6.0	0.54
3																														
4																														
5																														

STANDARD SIGN
D7-82A&B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/07/05 PLATE NO. D7-82A&B.1

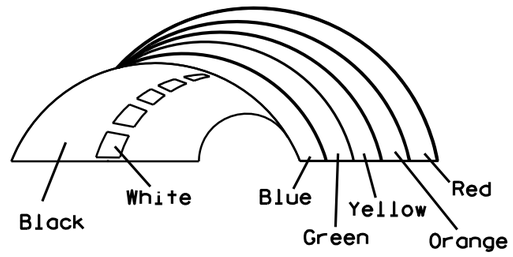
PROJECT NO:

SHEET NO: 82 E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - (See Note 5)
3. Message Series - (See Note 6)
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. Border - Blue
   Line 1 - Red
   Line 2 - Black
   Line 3-5 - Blue
6. Line 1 - Dutch 8011L
   Line 2 - Series E
   Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

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	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

STANDARD SIGN
I55-56

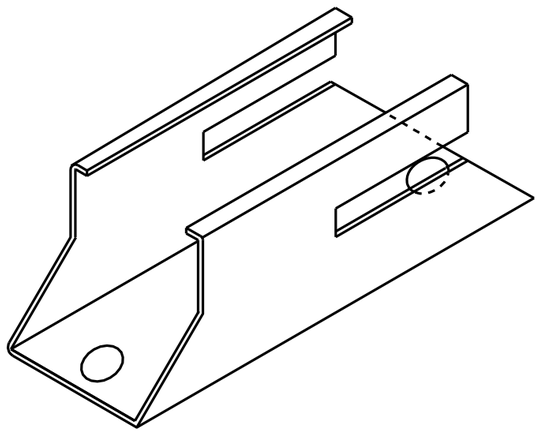
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/27/11 PLATE NO. 155-56.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 83

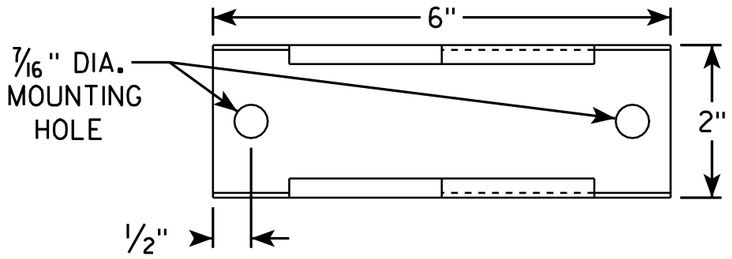
ISOMETRIC VIEW



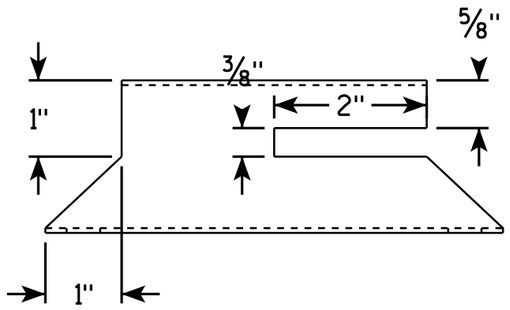
NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

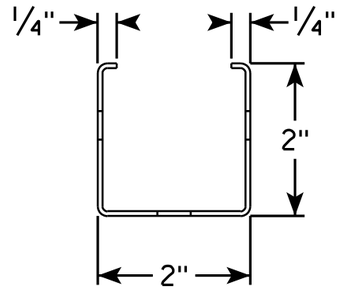
TOP VIEW



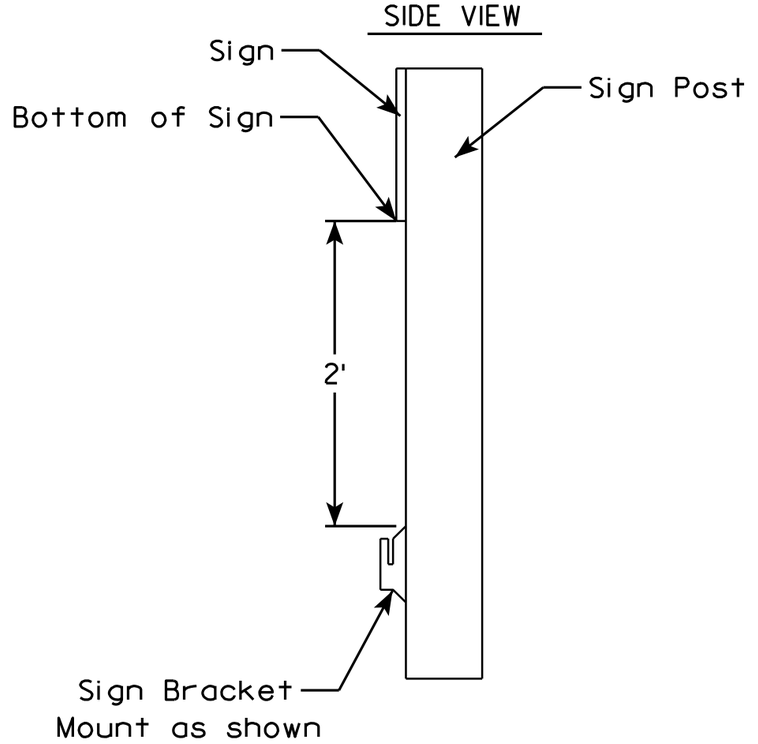
SIDE VIEW



END VIEW



SIDE VIEW



7

7

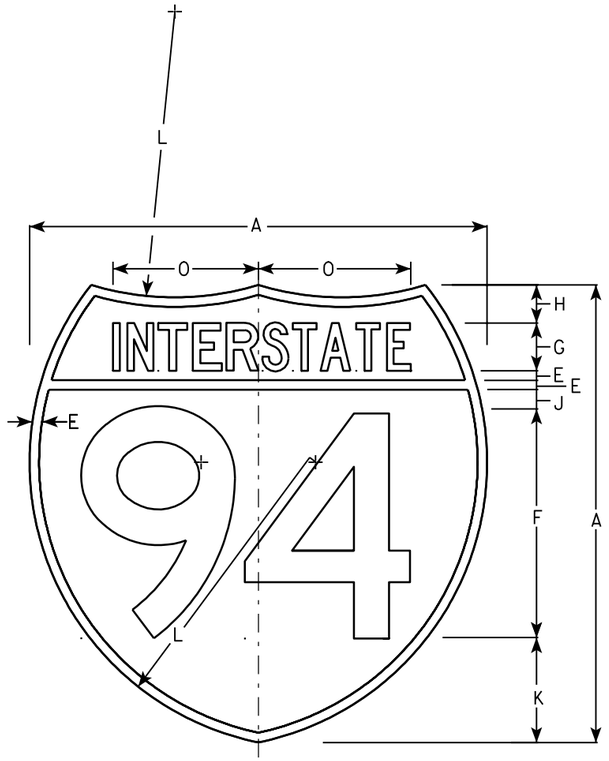
ROLLUP SIGN BRACKET I55-56B

WISCONSIN DEPT OF TRANSPORTATION

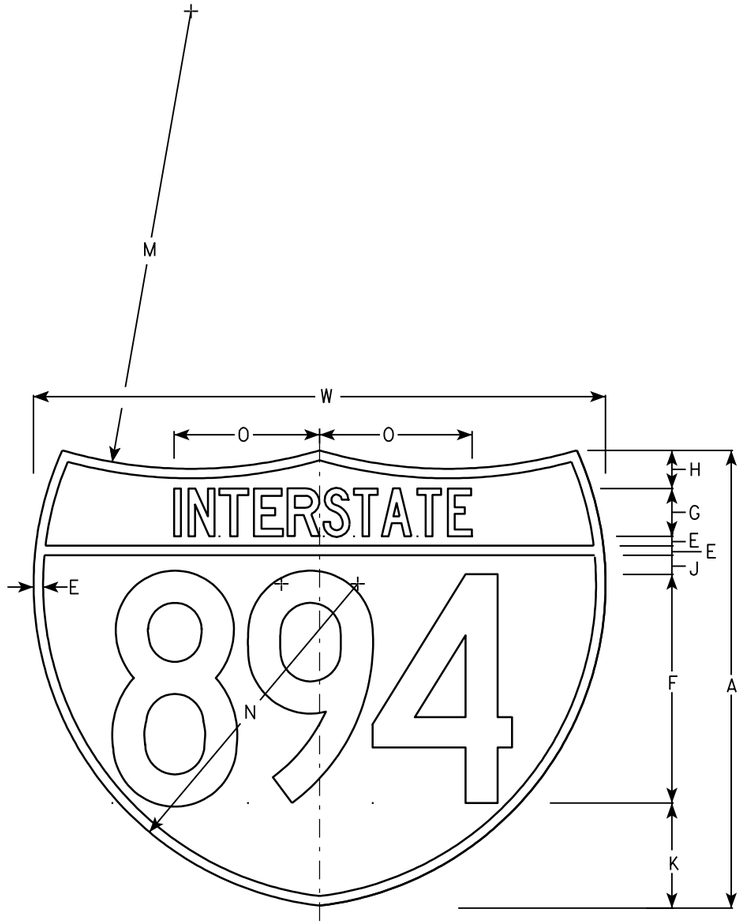
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 84	E



M1-1



M1-1A

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Top Red - Bottom Blue (See Note 6)
   Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C
6. Permanent Signs
   Message - Type H Reflective
   Detour or other temporary signs
   Background - Reflective
   Message - Reflective

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 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	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m2	M1-1A Area m2
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

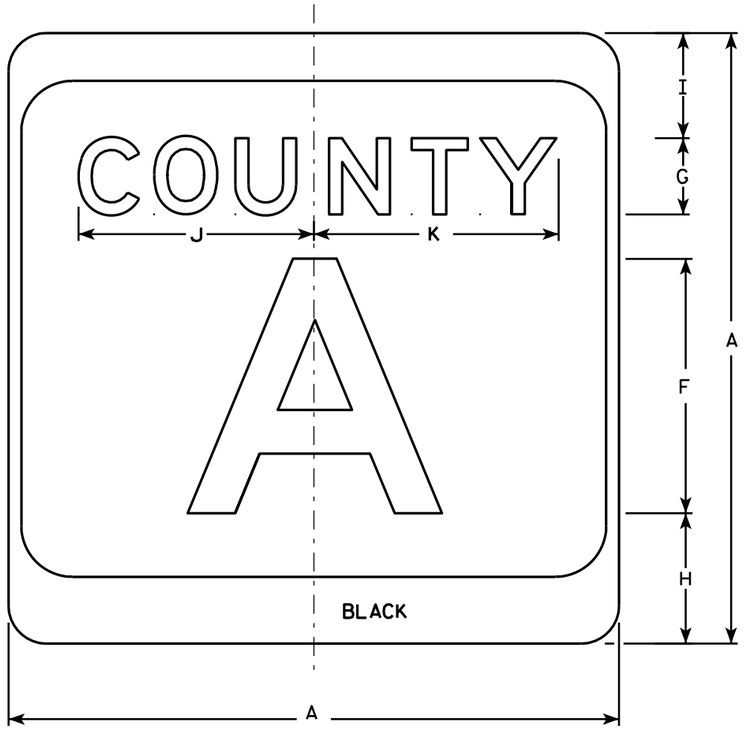
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

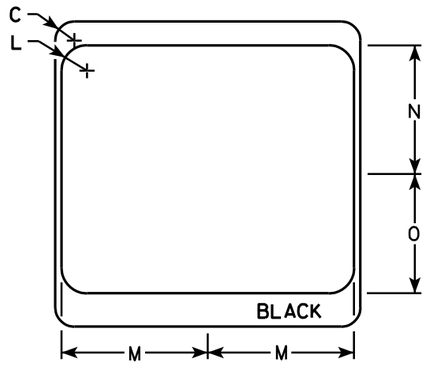
APPROVED Matthew R Rauch
for State Traffic Engineer

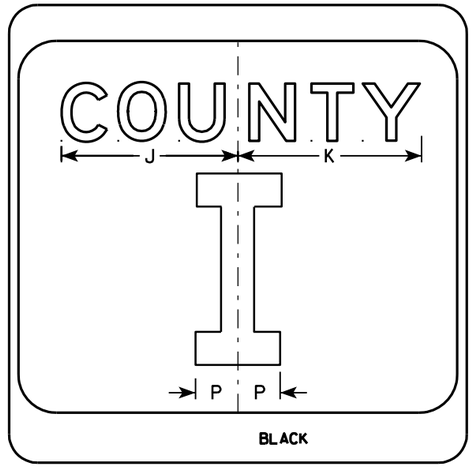
DATE 08/23/05 PLATE NO. M1-1.8

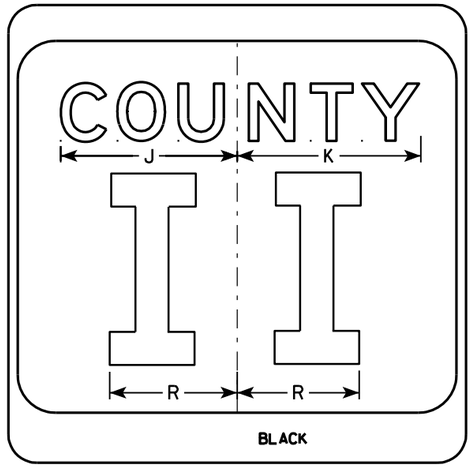
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 85	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

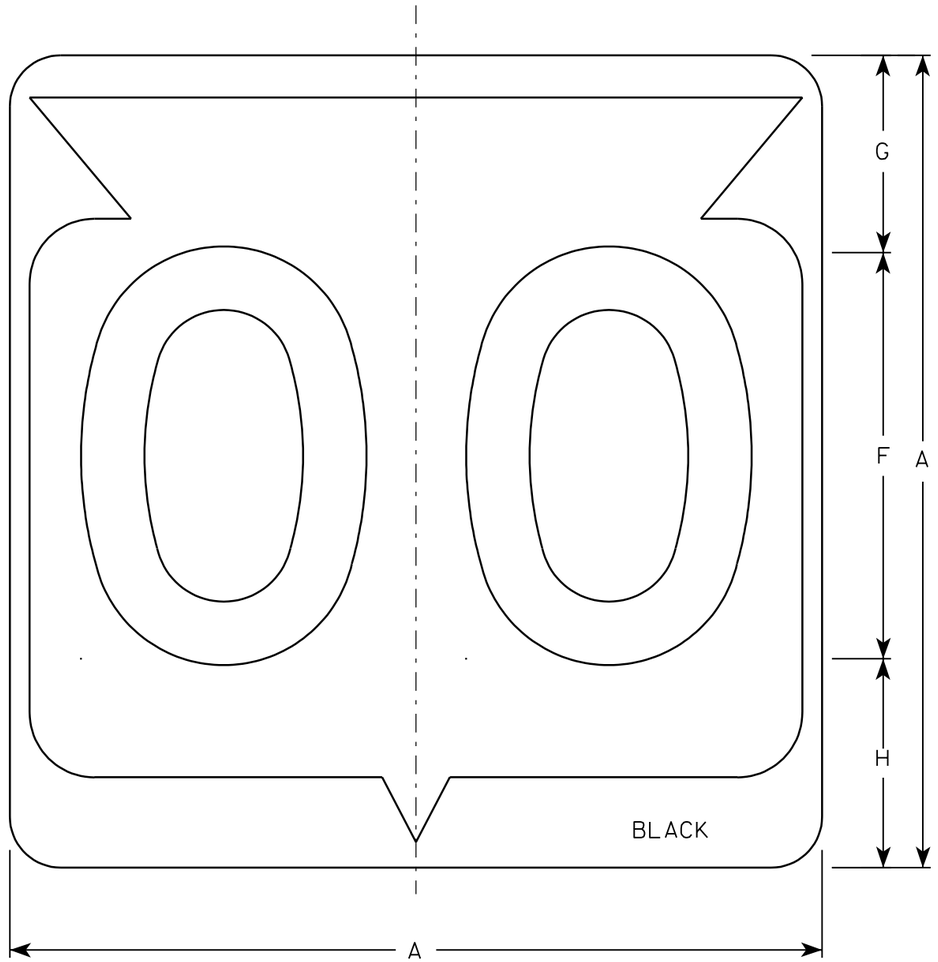
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 86 | E

7

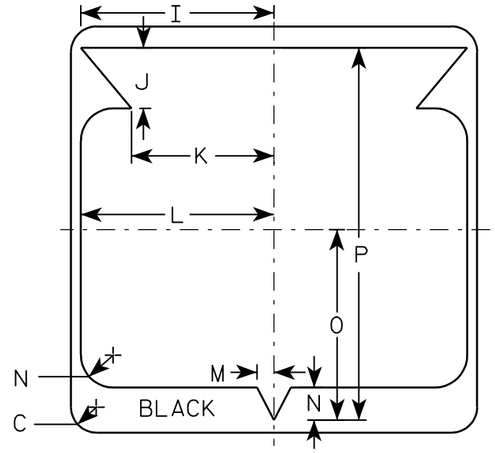
FILE NAME : C:\Users\PROJECTS\tr_stdplate\M15A.DGN PLOT DATE : 29-SEP-2011 11:25 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000
WISDOT/CADDS SHEET 42



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 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																												
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	.36
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	.81
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	.81
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	.81

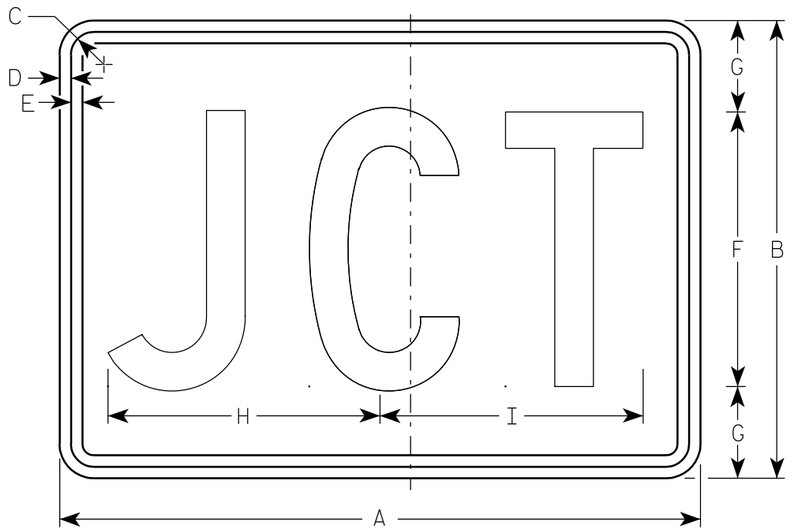
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

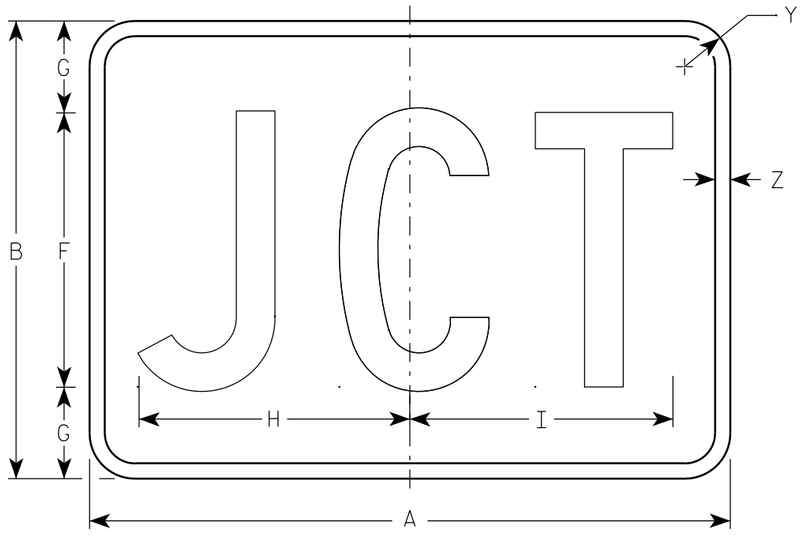
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 87	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 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																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

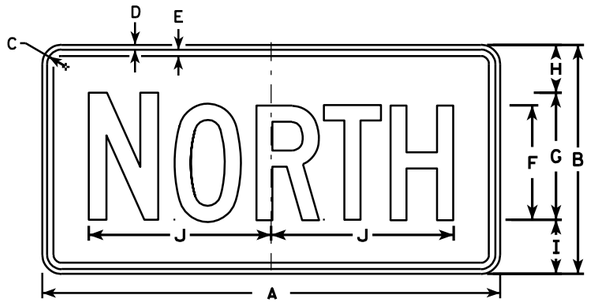
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

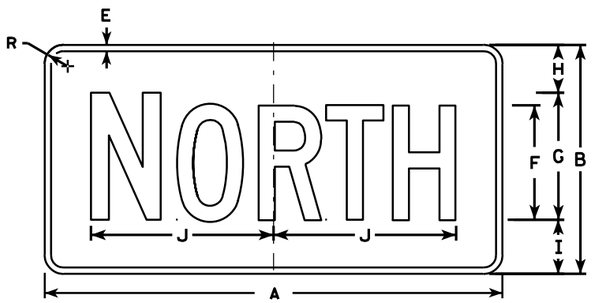
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 88 | E



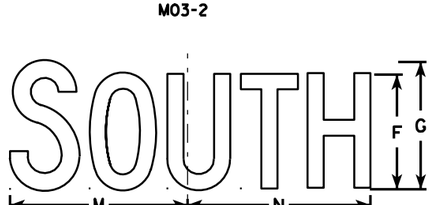
M3-1
MK3-1
MO3-1



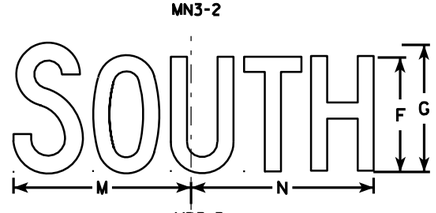
MB3-1
MG3-1
MM3-1
MN3-1

M3-2
MK3-2
MO3-2

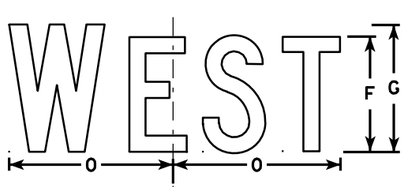
MB3-2
MG3-2
MM3-2
MN3-2



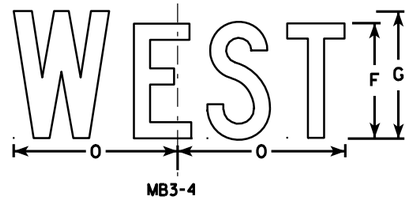
M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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 - Type H Reflective
   (Detour or temporary signs - Reflective)
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green
   Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green
   Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective
   Message - Black
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

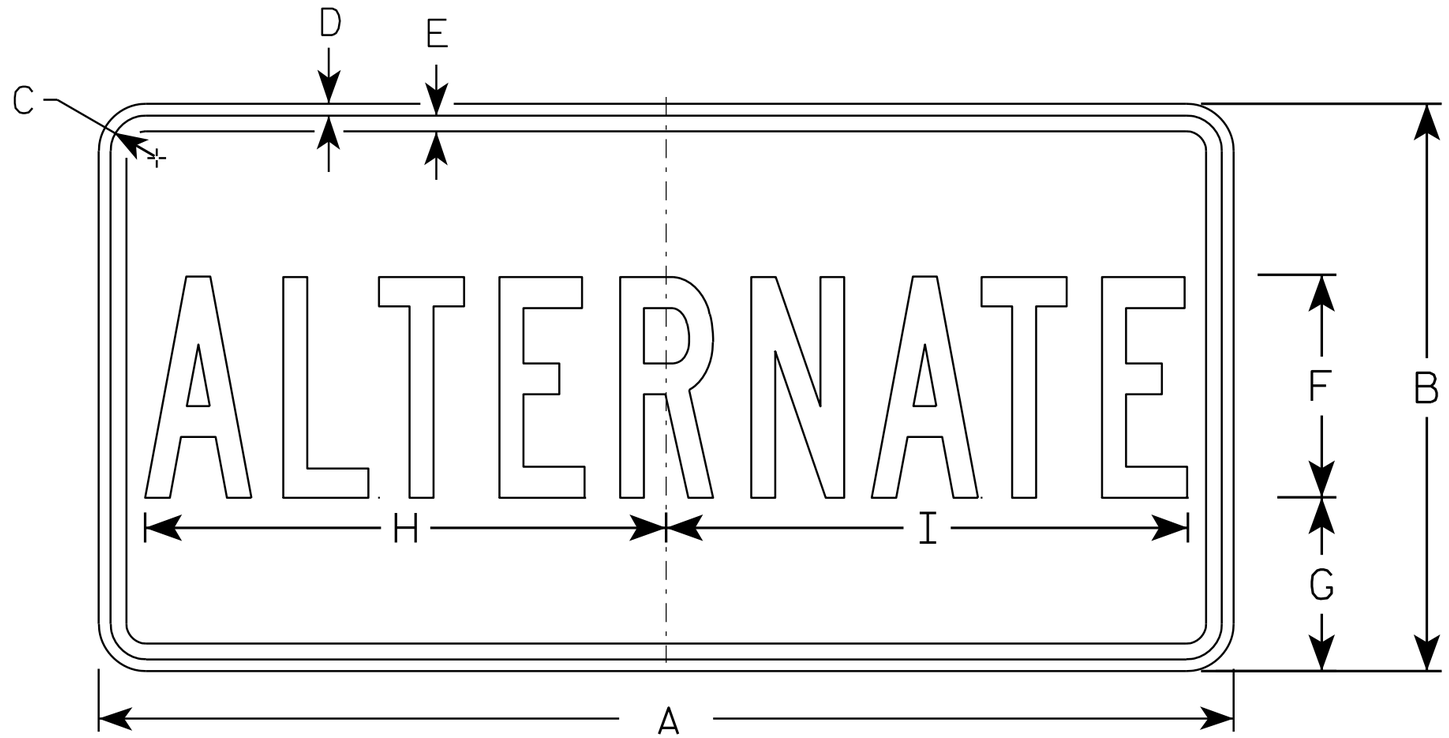
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 89	E



M4 - 1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See Note 5
   Message - See note 5
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-1 Background - White - Type H Reflective
   Message - Black

   MB4-1 Background - Blue
   Message - White - Type H Reflective

   M04-1 Background - Orange - Reflective
   Message - Black

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 ½	⅜	⅜	4	4	9 ¾	9 ½																		2.00
3	36	18	1 ½	⅜	½	7	5 ½	16 ⅜	16 ½																		4.5
4	36	18	1 ½	⅜	½	7	5 ½	16 ⅜	16 ½																		4.5
5	36	18	1 ½	⅜	½	7	5 ½	16 ⅜	16 ½																		4.5

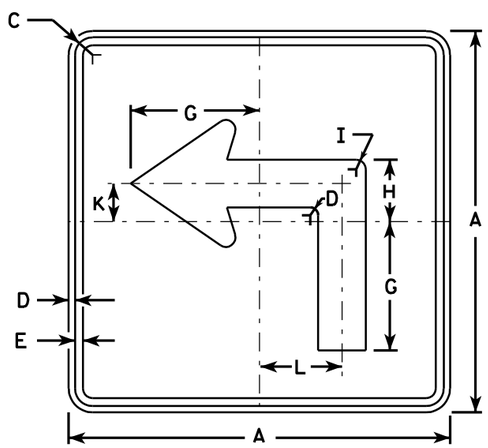
STANDARD SIGN
M4 - 1

WISCONSIN DEPT OF TRANSPORTATION

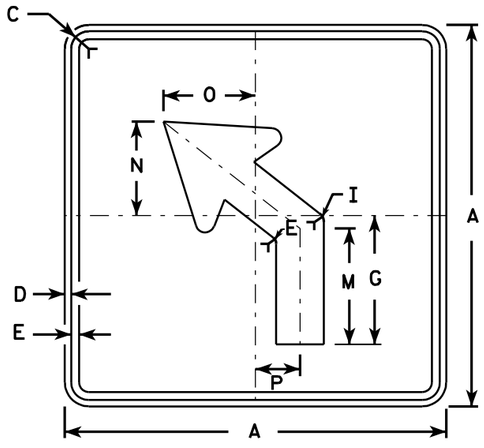
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-1.7

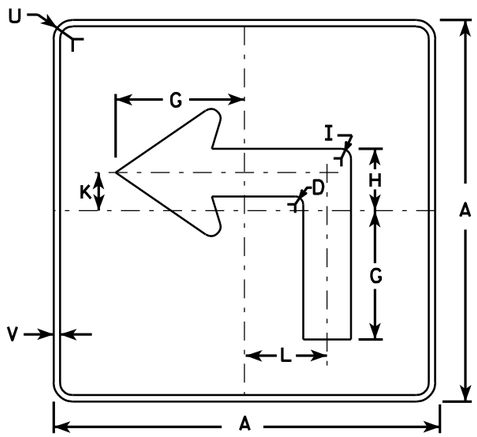
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 90 | E



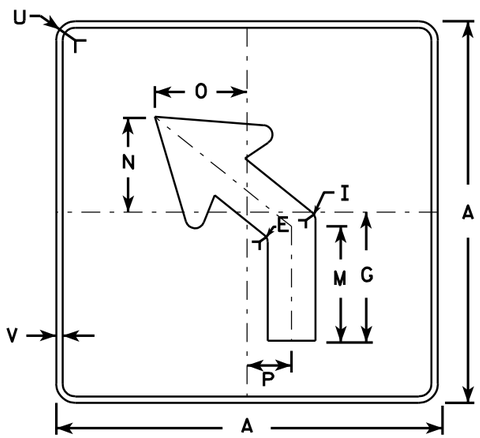
M5-1L
MK5-1L
MM5-1L
MO5-1L
MR5-1L



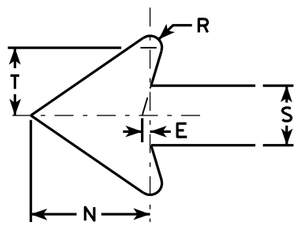
M5-2L
MK5-2L
MM5-2L
MO5-2L
MR5-2L



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



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



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB5-1 and MB5-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG5-1 and MG5-2 Background - Green Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective Message - Green
   MN5-1 and MN5-2 Background - Brown Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Reflective Message - Black
   MR5-1 and MR5-2 Background - Brown Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 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																												
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56

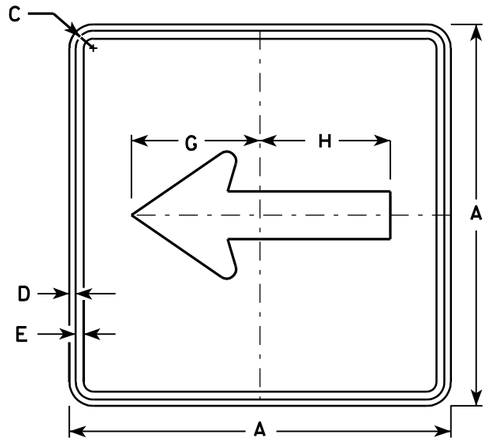
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

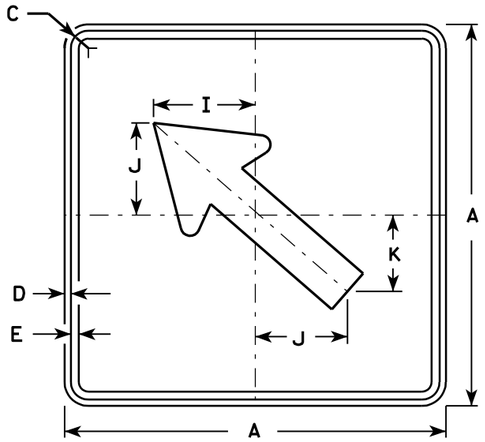
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M5-1.11

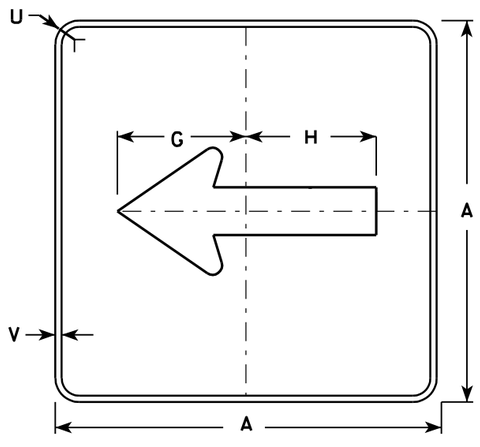
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 91	E



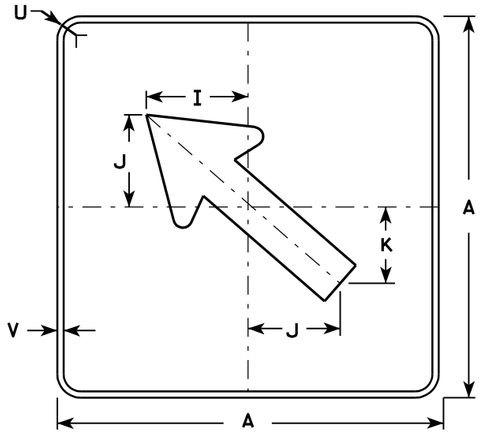
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



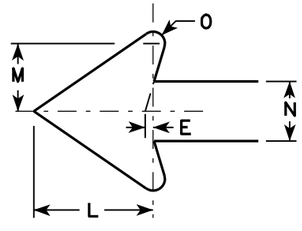
MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB6-1 and MB6-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG6-1 and MG6-2 Background - Green Message - White - Type H Reflective
   MK6-1 and MK6-2 Background - Green Message - White - Type H Reflective
   MM6-1 and MM6-2 Background - White - Type H Reflective Message - Green
   MN6-1 and MN6-2 Background - Brown Message - White - Type H Reflective
   MO6-1 and MO6-2 Background - Orange - Reflective Message - Black
   MR6-1 and MR6-2 Background - Brown Message - Yellow - Type H Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 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																												
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

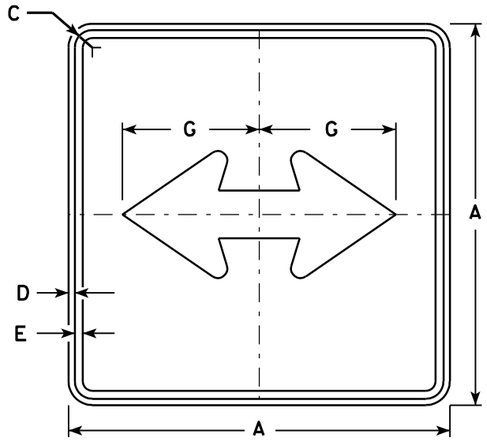
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

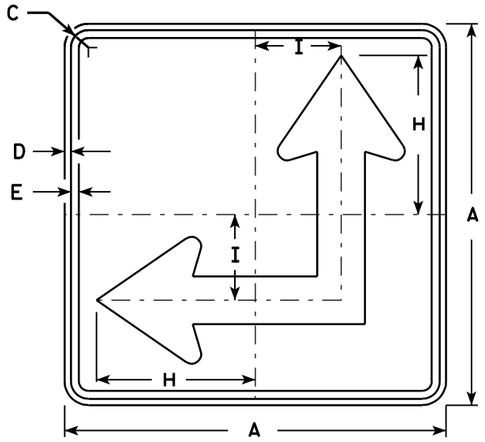
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

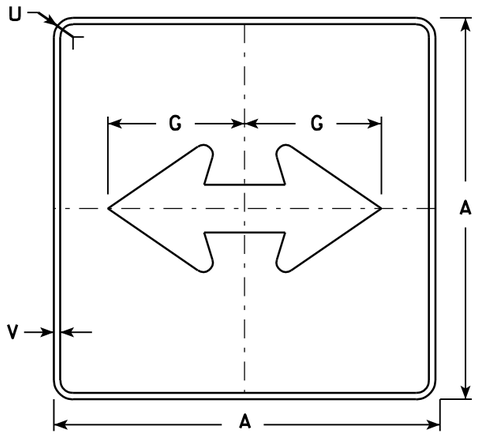
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 92	E



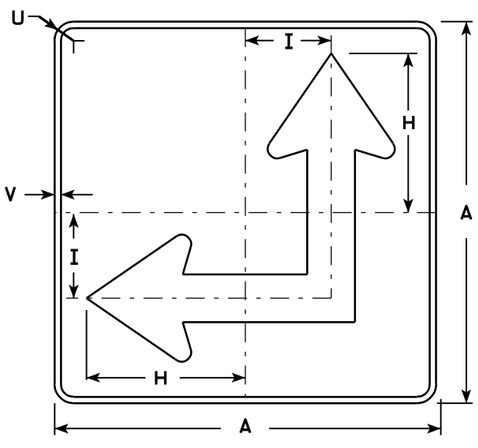
M6-4
MK6-4
MM6-4
MO6-4
MR6-4



M6-6
MK6-6
MM6-6
MO6-6
MR6-6



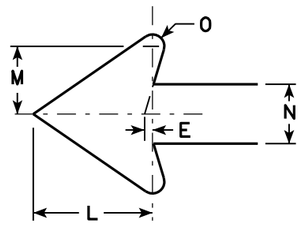
MB6-4
MG6-4
MN6-4



MB6-6
MG6-6
MN6-6

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG6-4 and MG6-6 Background - Green
   Message - White - Type H Reflective
   MK6-4 and MK6-6 Background - Green
   Message - White - Type H Reflective
   MM6-4 and MM6-6 Background - White - Type H Reflective
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White - Type H Reflective
   MO6-4 and MO6-6 Background - Orange - Reflective
   Message - Black
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow - Type H Reflective
5. M6-6R same as M6-6L except arrow points ahead and right.



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 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																												
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

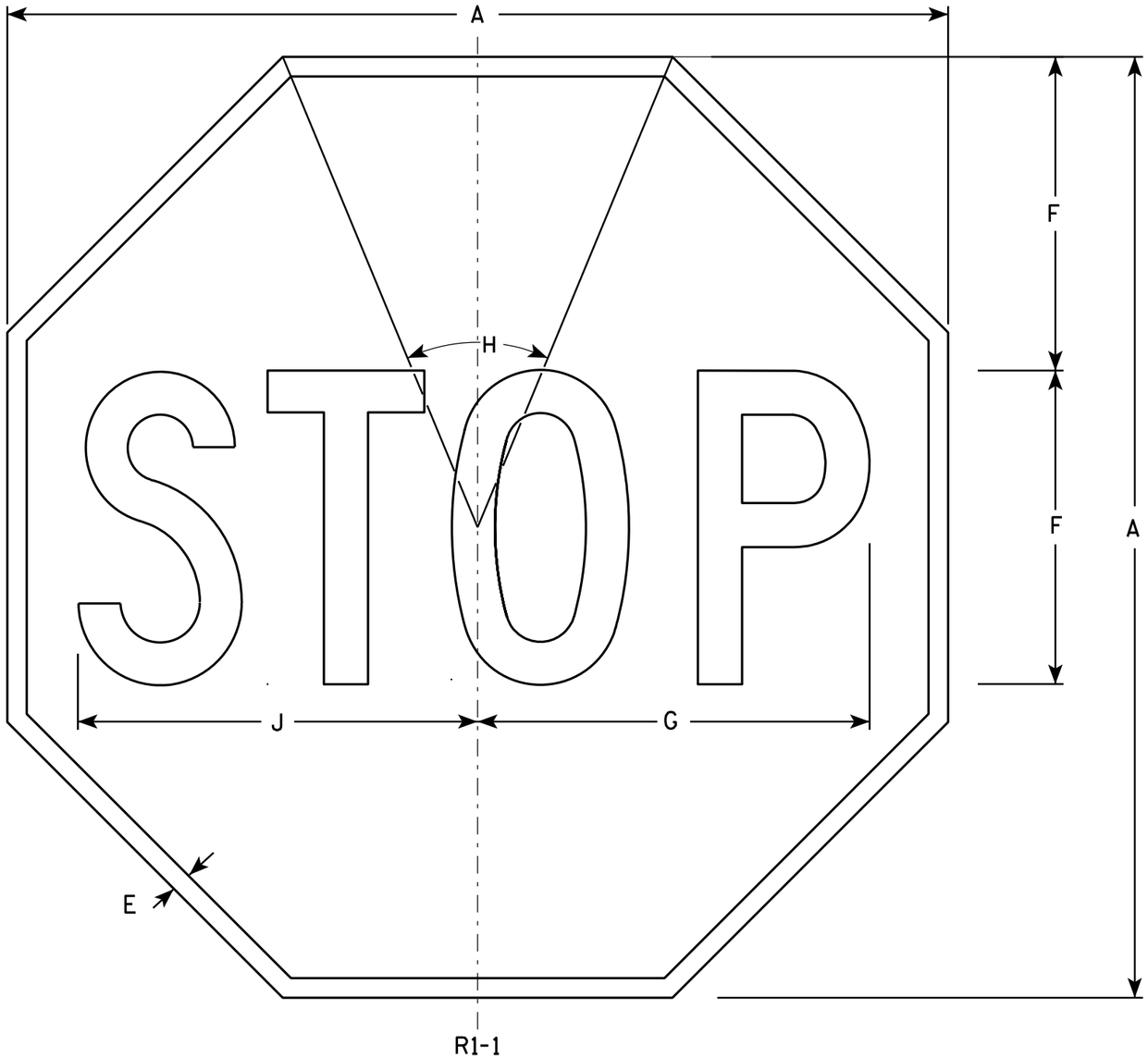
STANDARD SIGN M6-4 & M6-6 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-4.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 93	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

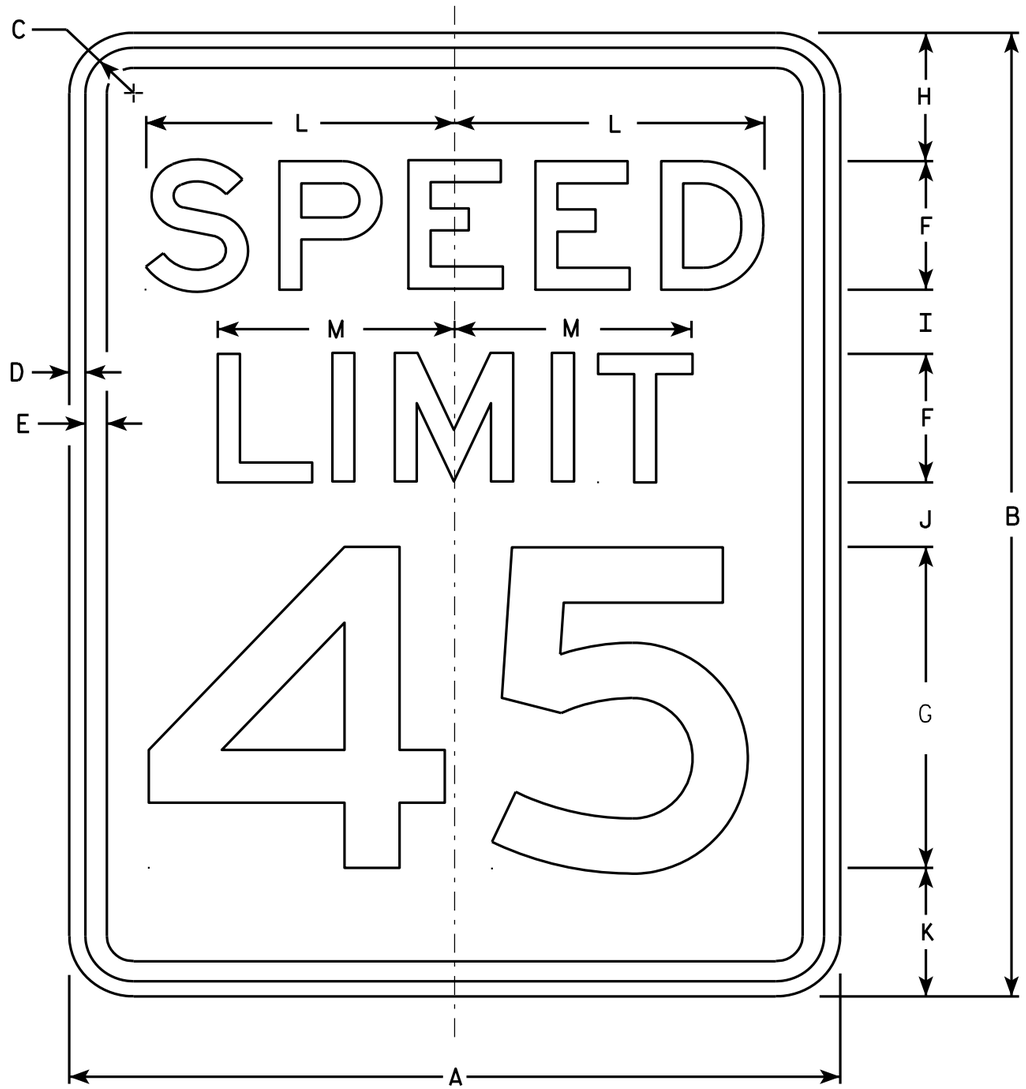
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 94	E



R2-1

NOTES

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

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

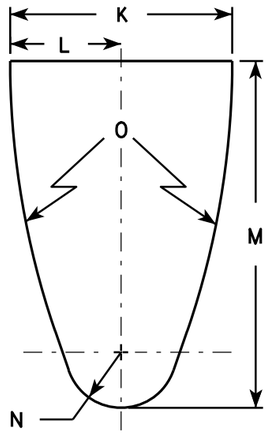
STANDARD SIGN
R2-1

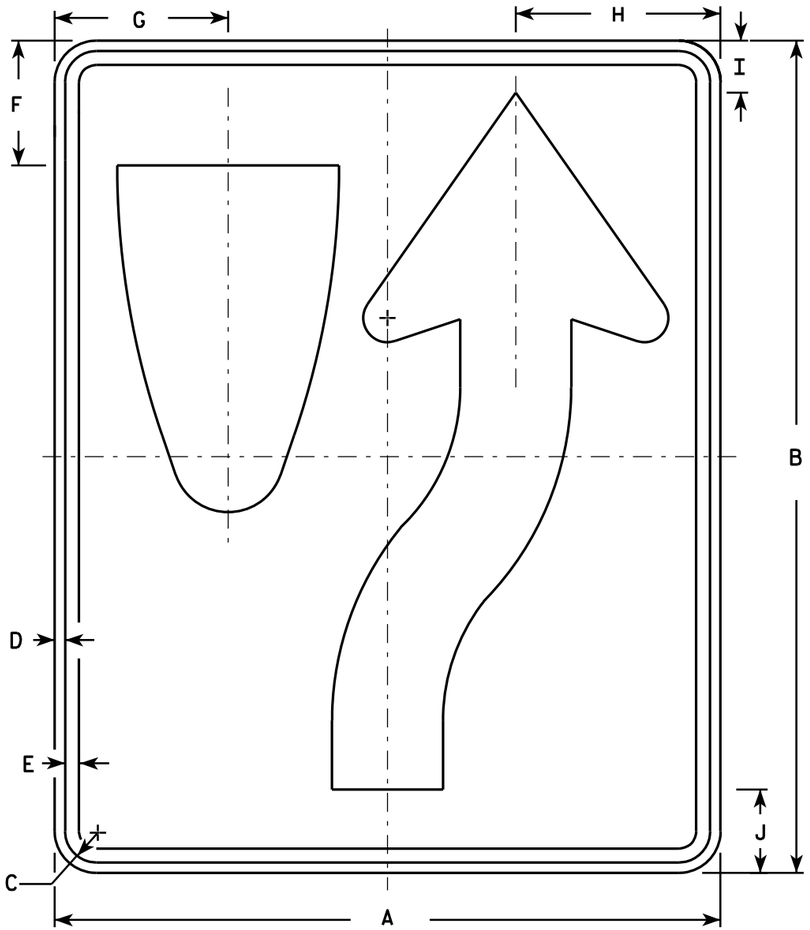
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 95	E

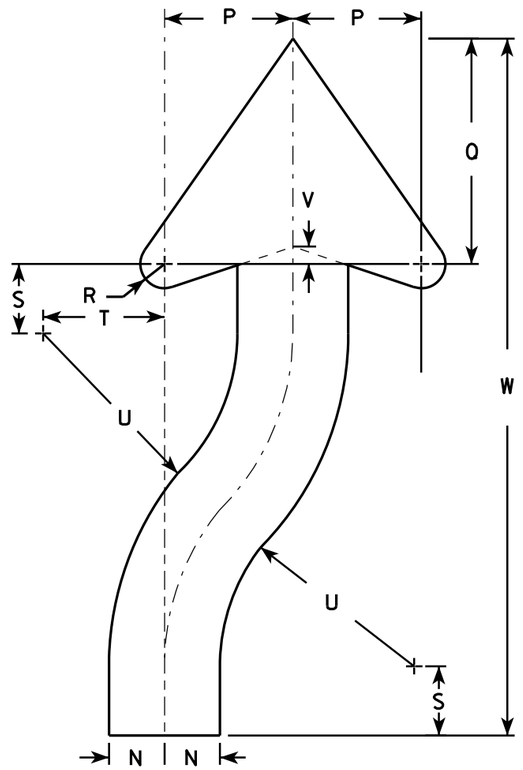




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

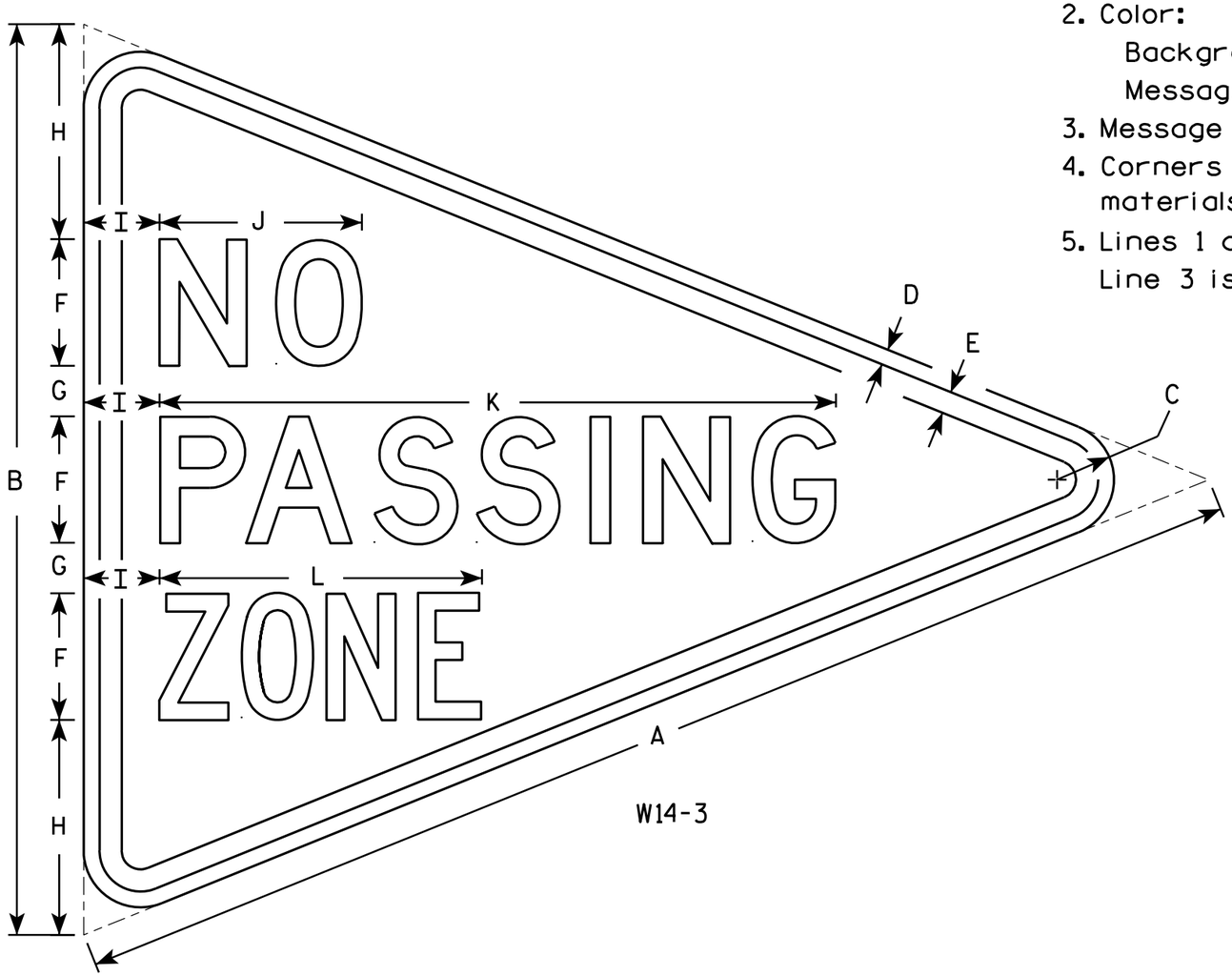
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 96	E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See note 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

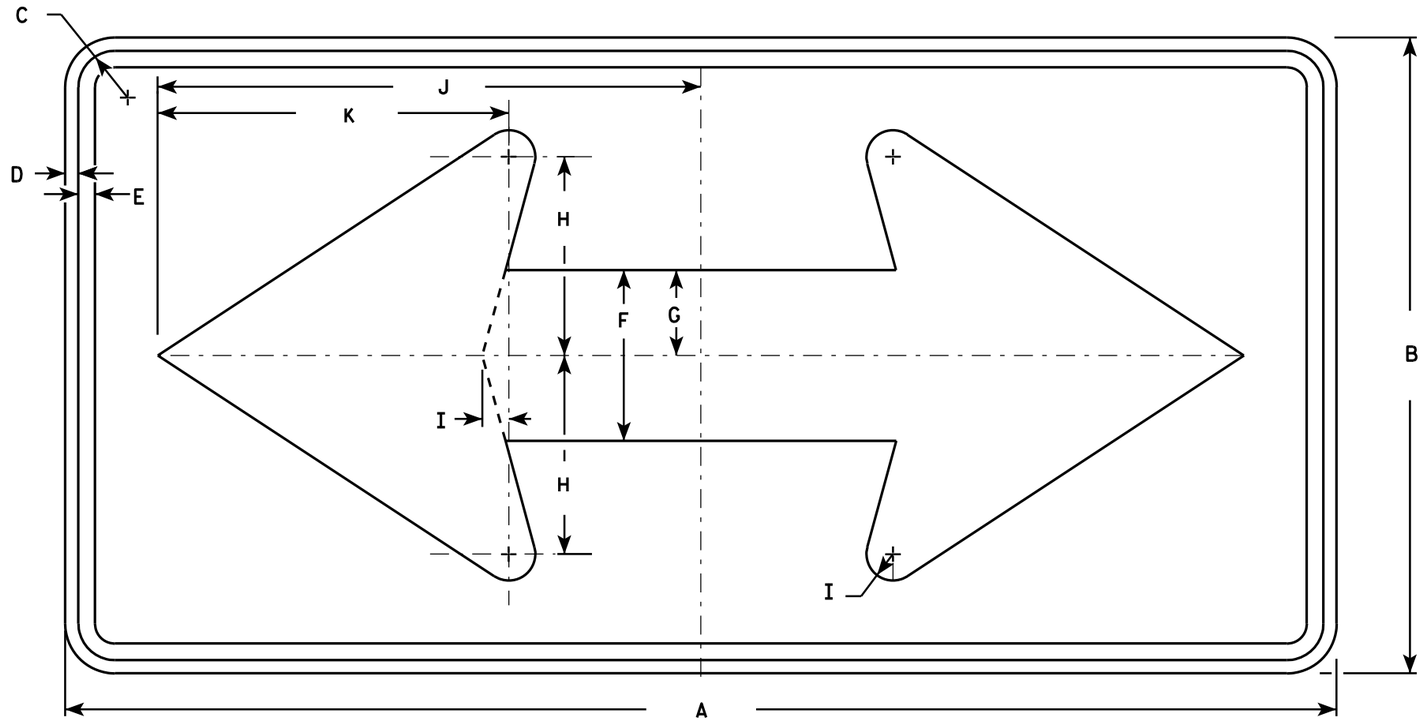
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 97	E



W1-7

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

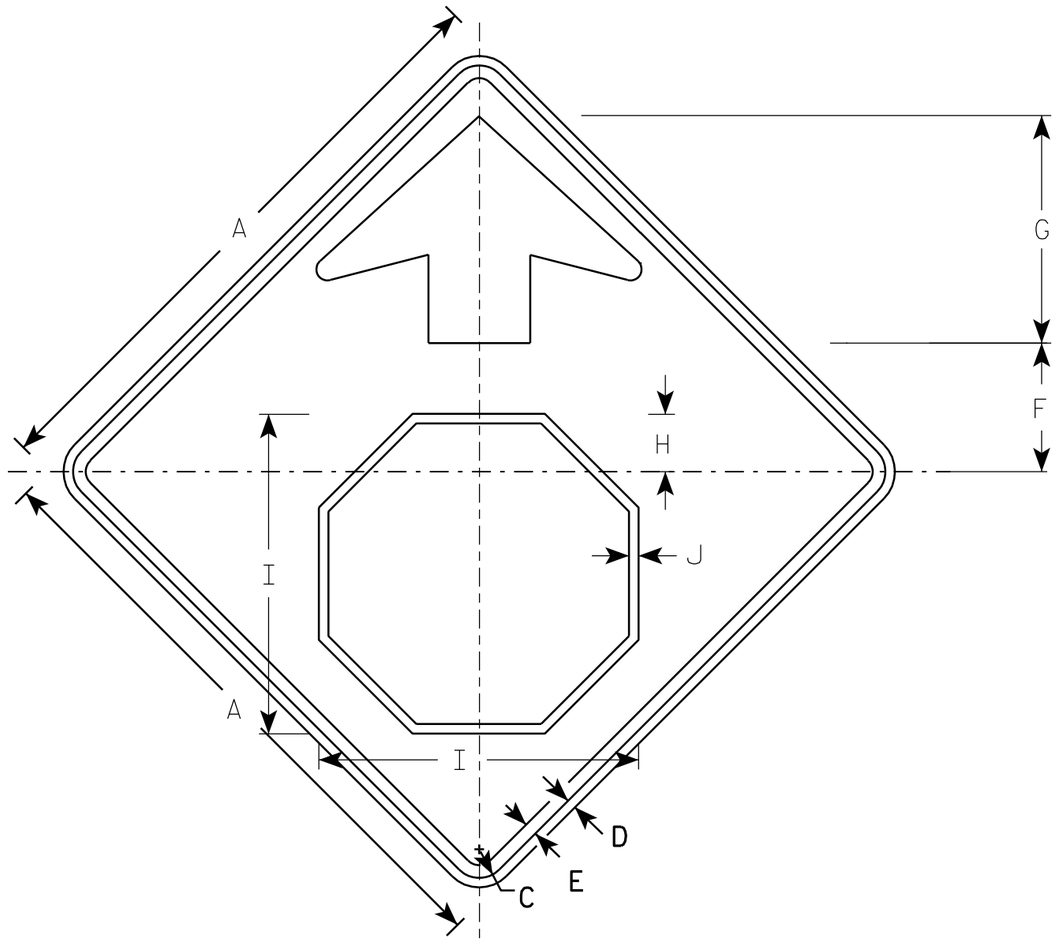
STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

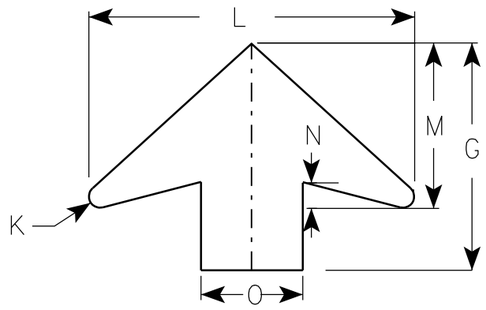
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 98 | E



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

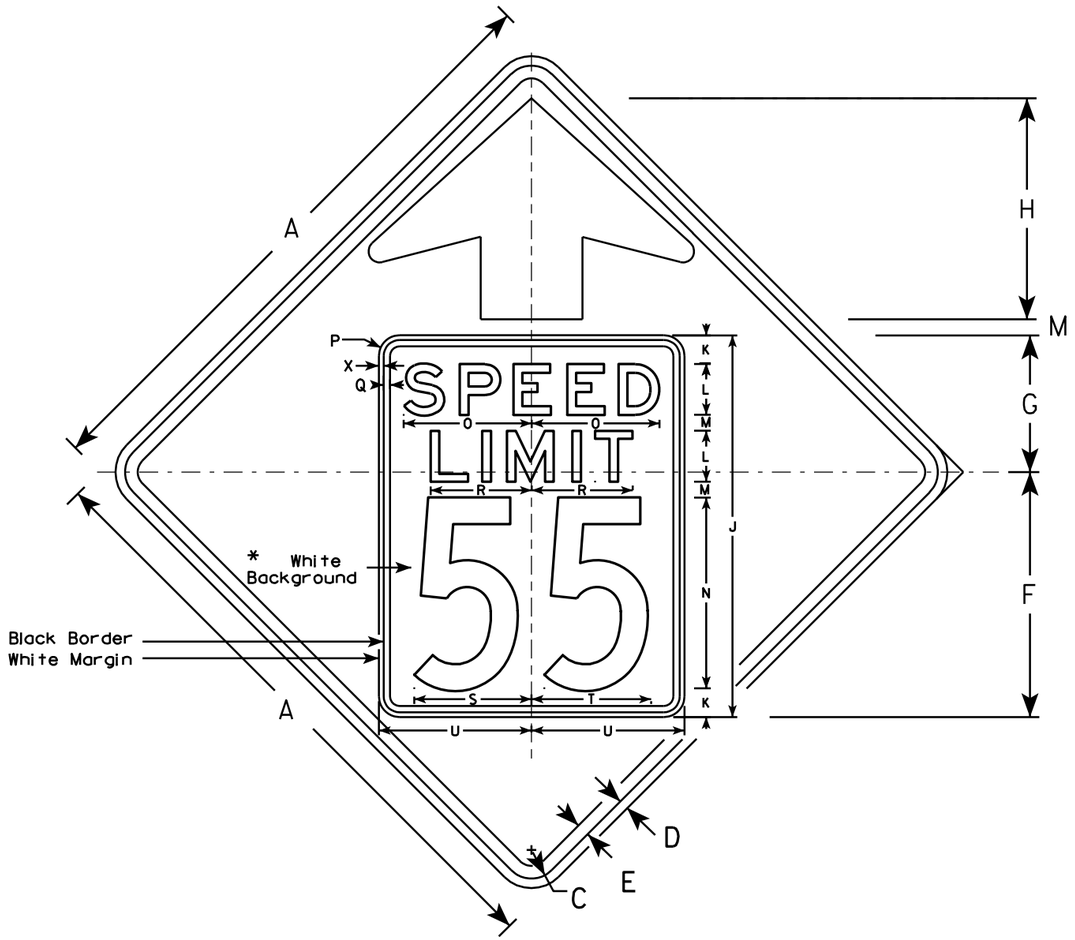
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

SHEET NO: 99 E

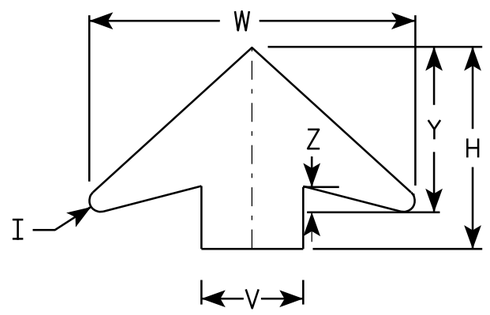


W3-5

NOTES

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

*Speed Limit Sign shall have a White Background



ARROW DETAIL

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

STANDARD SIGN
W3-5

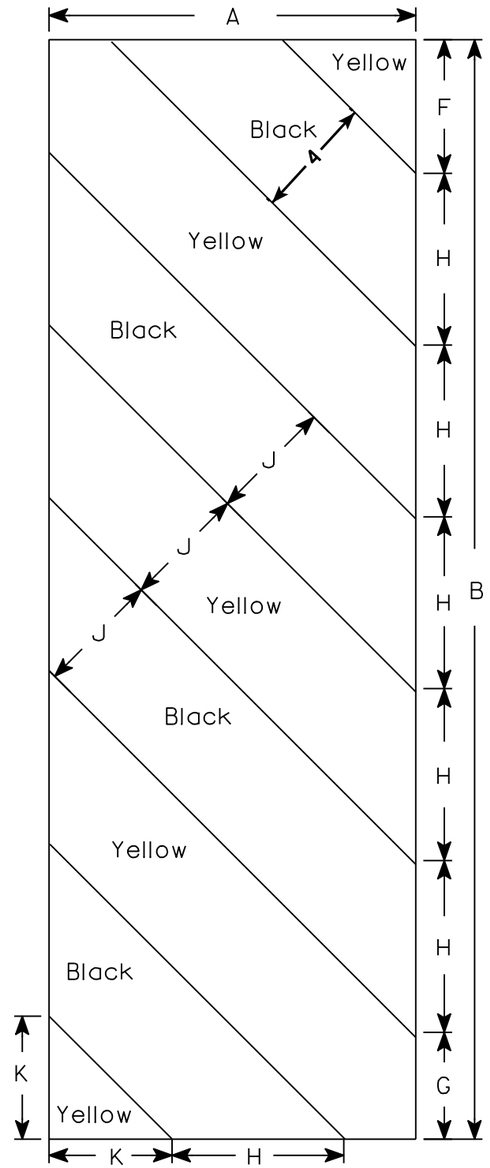
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

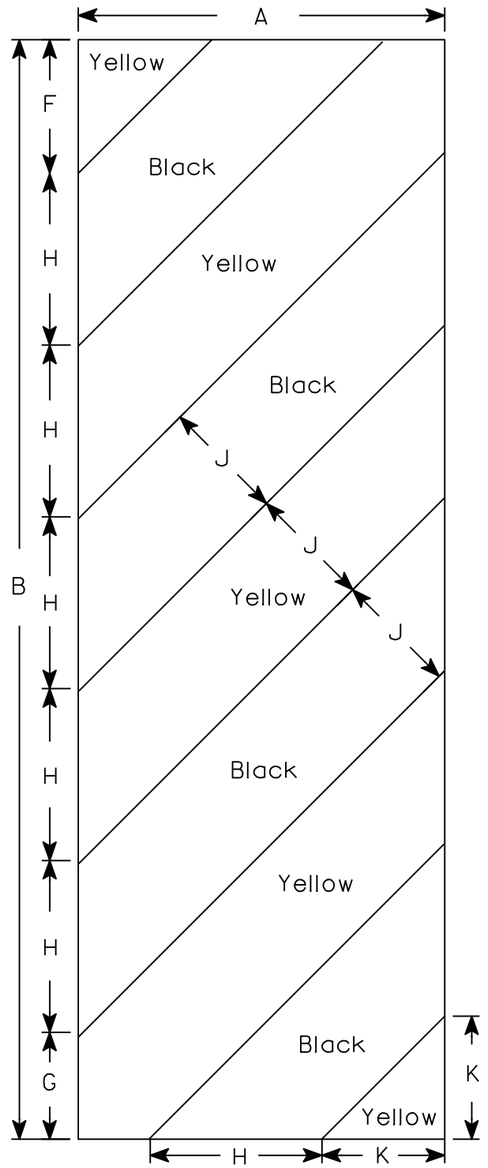
DATE 5/29/12 PLATE NO. W3-5.5

PROJECT NO:

SHEET NO: 100 E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

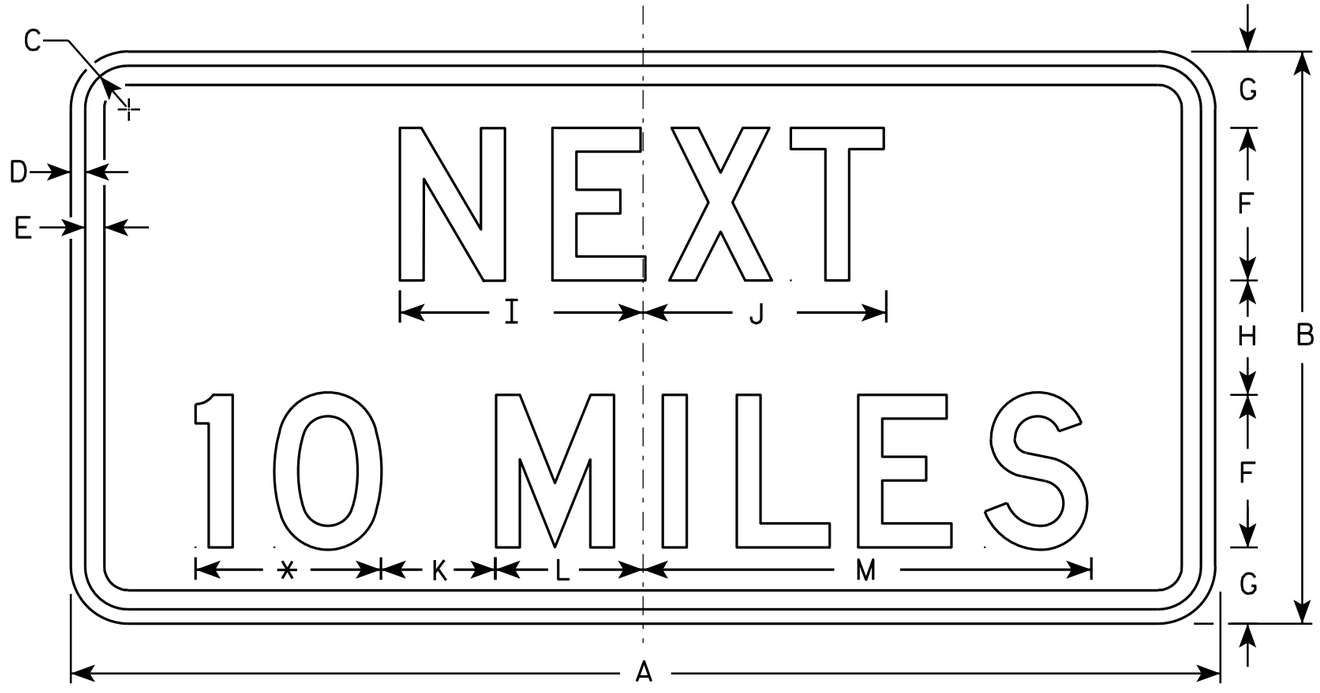
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 101	E



W57-51

NOTES

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

* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	12	1 1/8	3/8	3/8	3	1 3/4	2 1/2	5	5 1/8	3	2 3/4	9 5/8														2.0
2S	30	15	1 1/8	3/8	1/2	4	2	3	6 3/8	6 3/8	3	3 1/8	11 3/4														3.13
2M	36	18	1 1/8	3/8	1/2	5	2 5/8	2 3/4	7 1/8	8	5	4 1/8	15 3/8														4.5
3	36	18	1 1/8	3/8	1/2	5	2 5/8	2 3/4	7 1/8	8	5	4 1/8	15 3/8														4.5
4	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
5	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0

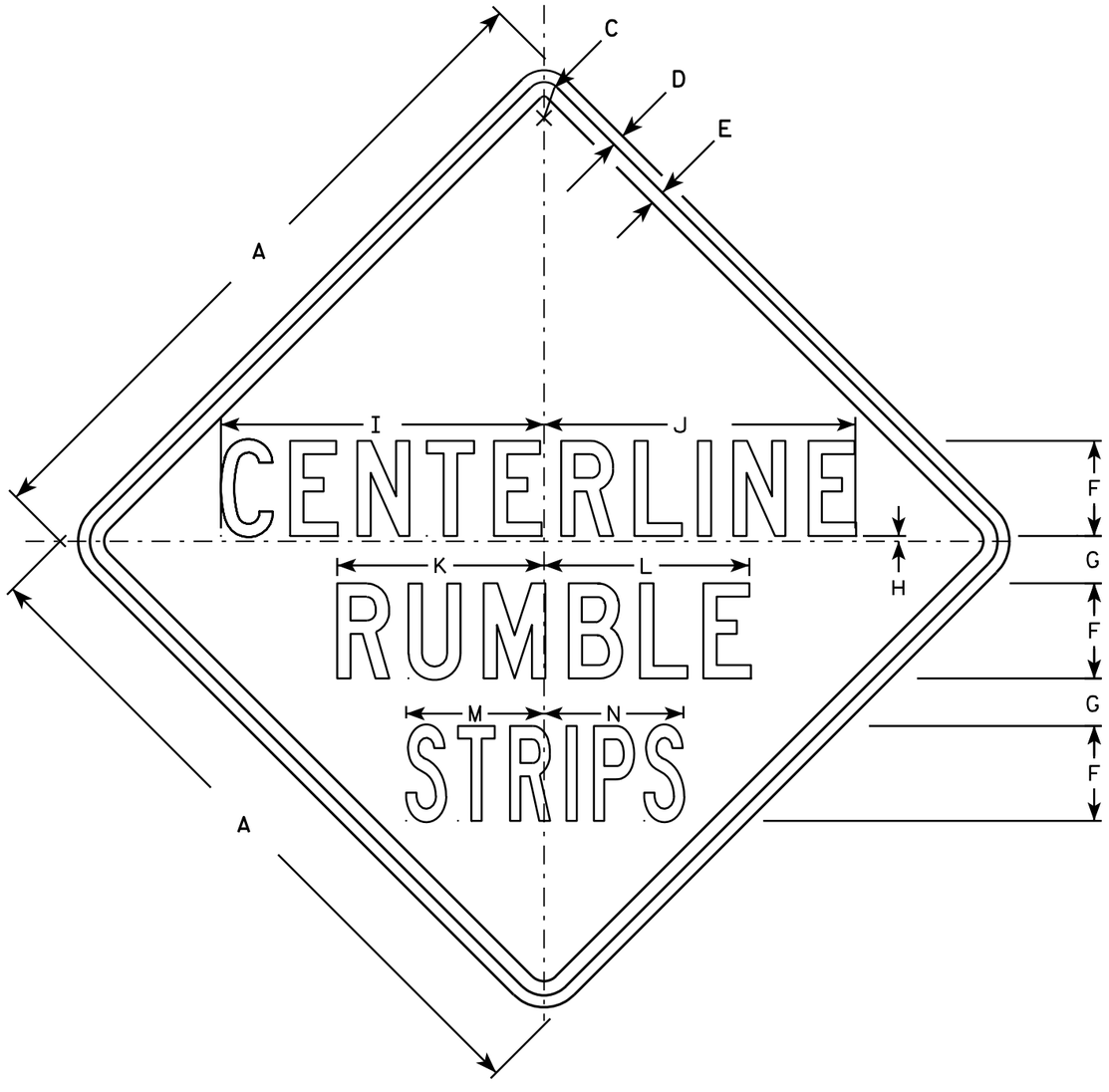
STANDARD SIGN
W57-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/18/11 PLATE NO. W57-51.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 102	E



W8-70

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Message - BLACK
3. Message Series - SEE NOTE 5.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 and 2 are Series C.
   Line 3 is Series B.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5/8	5/8	3/4	5	2 1/2	1/4	17	16 3/8	10 7/8	10 3/4	7 1/4	7 3/8													9.0
2M	36		1 5/8	5/8	3/4	5	2 1/2	1/4	17	16 3/8	10 7/8	10 3/4	7 1/4	7 3/8													9.0
3	36		1 5/8	5/8	3/4	5	2 1/2	1/4	17	16 3/8	10 7/8	10 3/4	7 1/4	7 3/8													9.0
4																											
5																											

STANDARD SIGN
W8-70

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/11 PLATE NO. W8-70.2

PROJECT NO:

SHEET NO: 103 E

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov