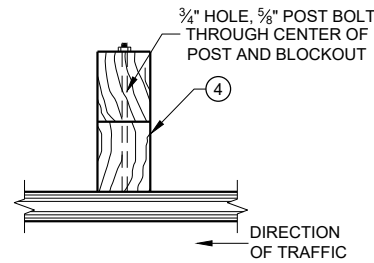


GENERAL NOTES

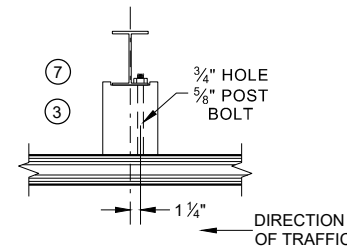
- ① WOOD OR STEEL POSTS (w6x9 OR w6x8.5) AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6"x8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL 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 DAMAGE SPALTER 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 HIGHE 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 INCHES IN DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT ADEQUATELY.
- ⑦ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS, INSTALL FOUR 16d GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

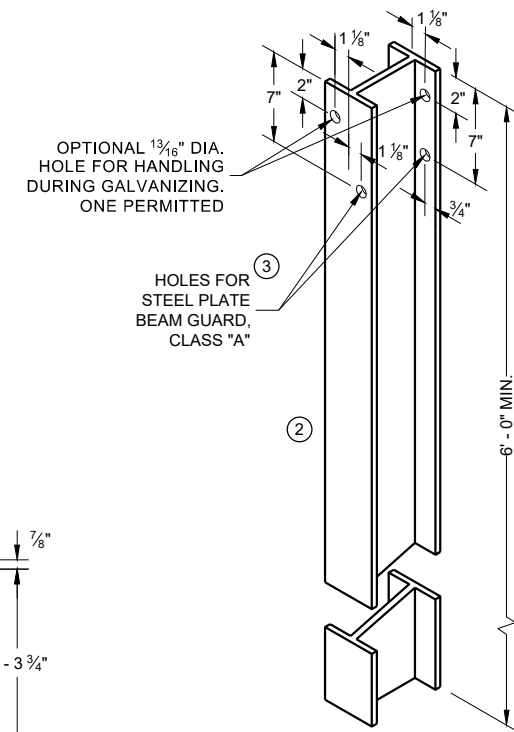
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



PLAN VIEW
WOOD POST, BLOCKOUT AND BEAM

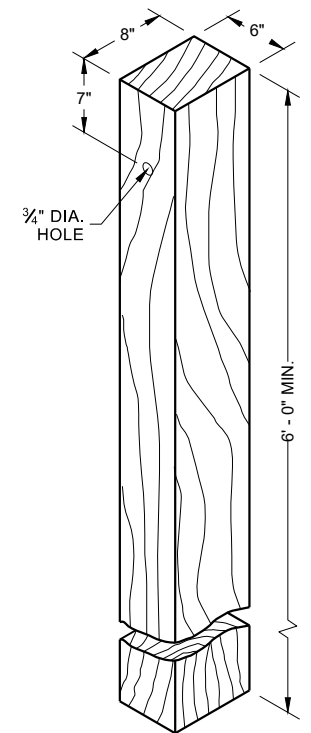


PLAN VIEW
WOOD POST, BLOCKOUT AND BEAM

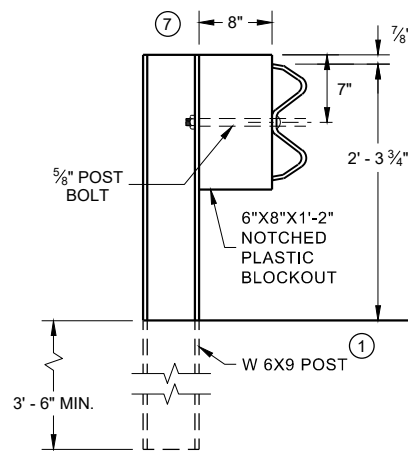


STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)

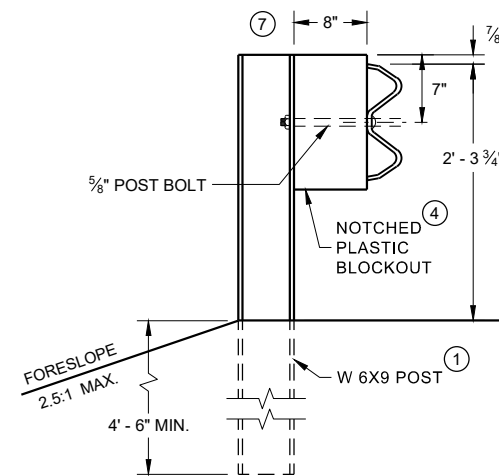
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



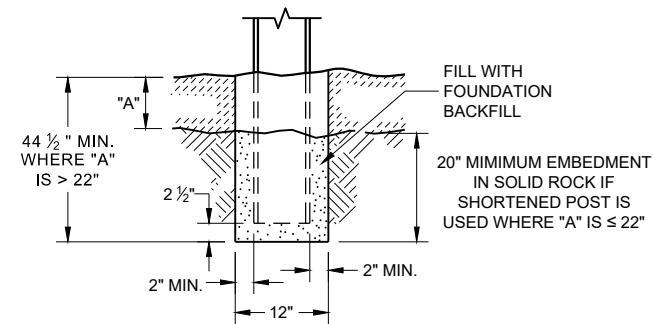
WOOD POST (6" X 8") NOMINAL



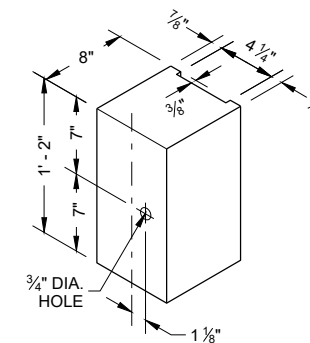
END VIEW
STEEL POST AND NOTCHED PLASTIC BLOCKOUT ALTERNATIVE STANDARD INSTALLATION



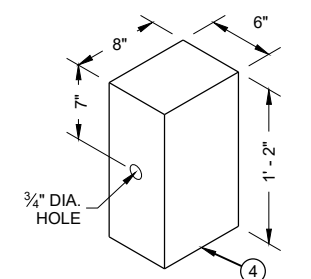
END VIEW
LONGER POST AT HALF POST SPACING W BEAM (LHW)



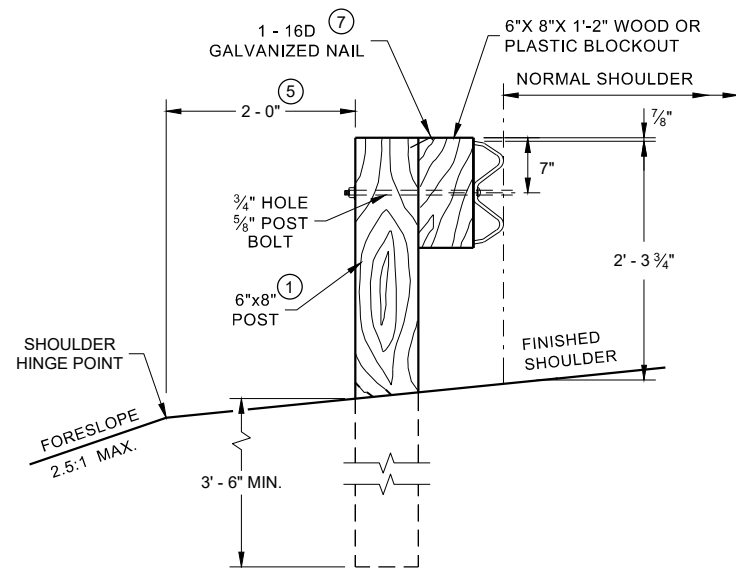
END VIEW
SETTING STEEL OR WOOD POST IN ROCK



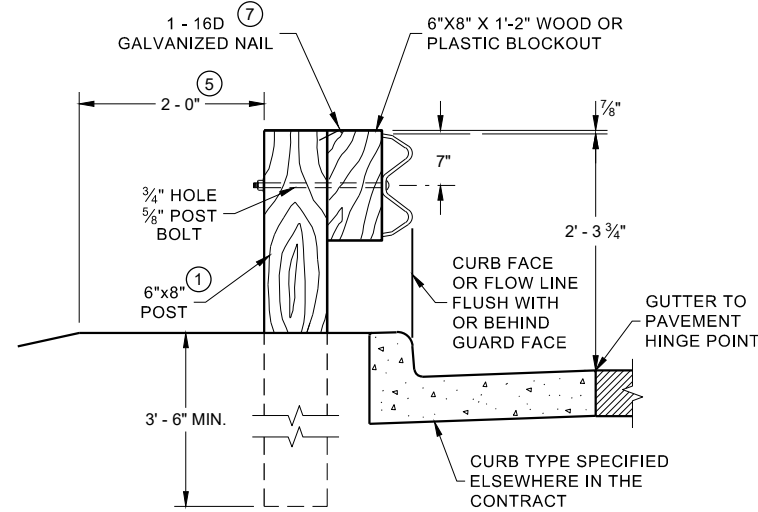
TYPICAL NOTCHED PLASTIC BLOCKOUT FOR STEEL POSTS



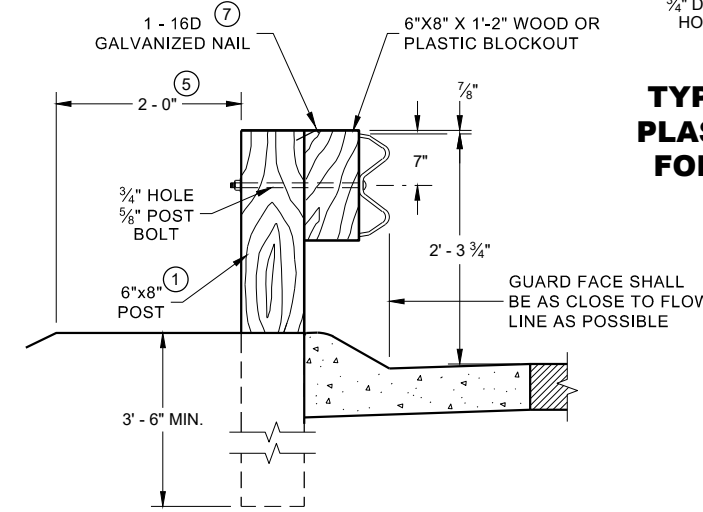
WOOD OR PLASTIC BLOCKOUT FOR WOOD POSTS



END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



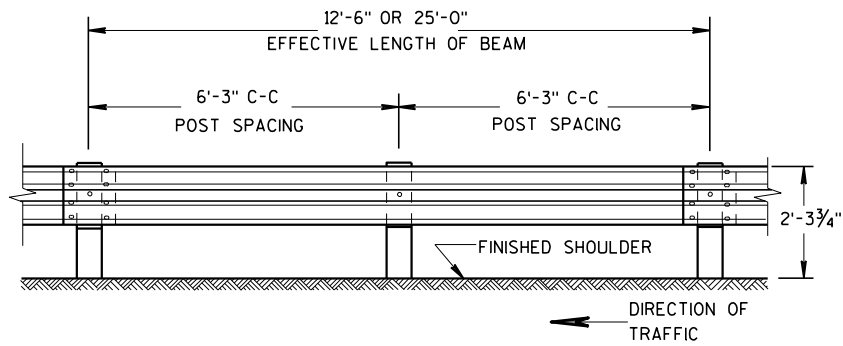
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LOCATED ALONG A MOUNTABLE CURBED ROADWAY

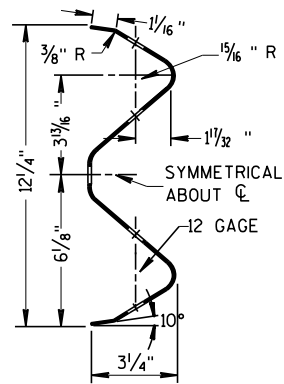
STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION AND ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

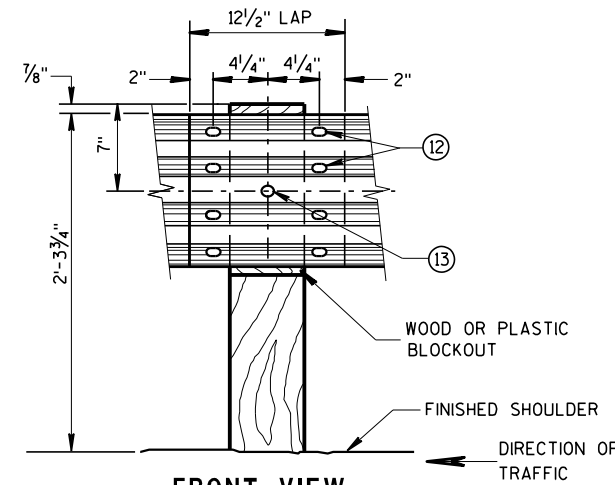


FRONT VIEW

POST SPACING STANDARD INSTALLATION



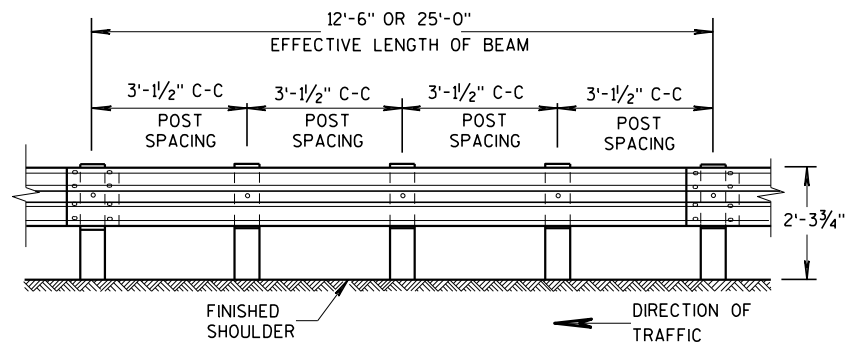
SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

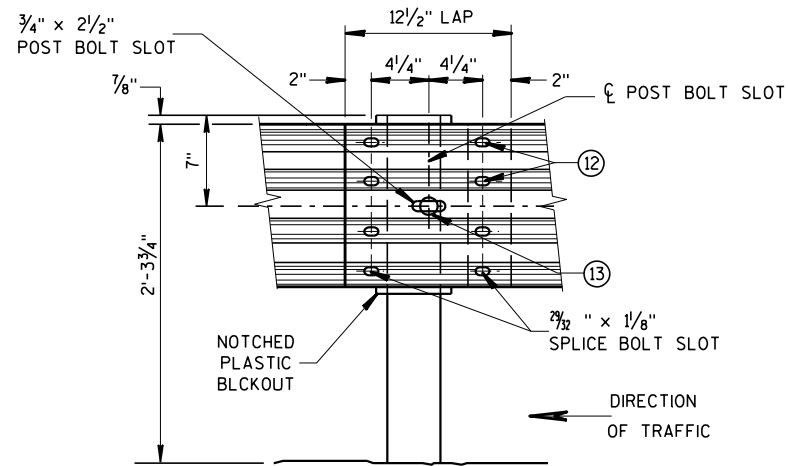
GENERAL NOTES

- FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
 - ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
 - ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.

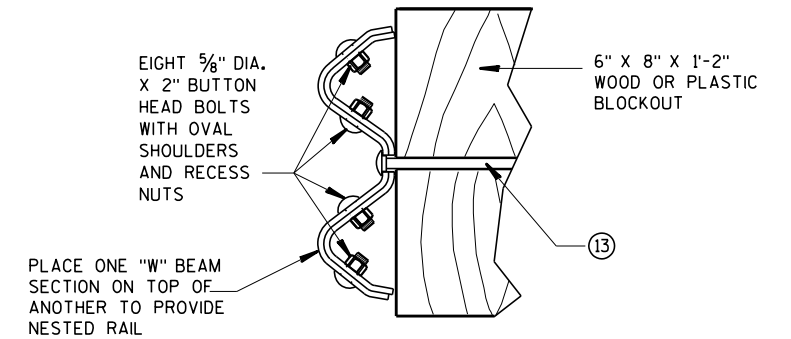


FRONT VIEW

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



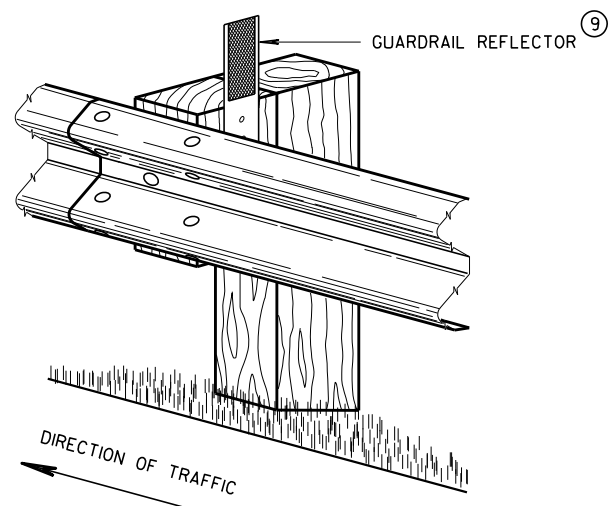
FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD



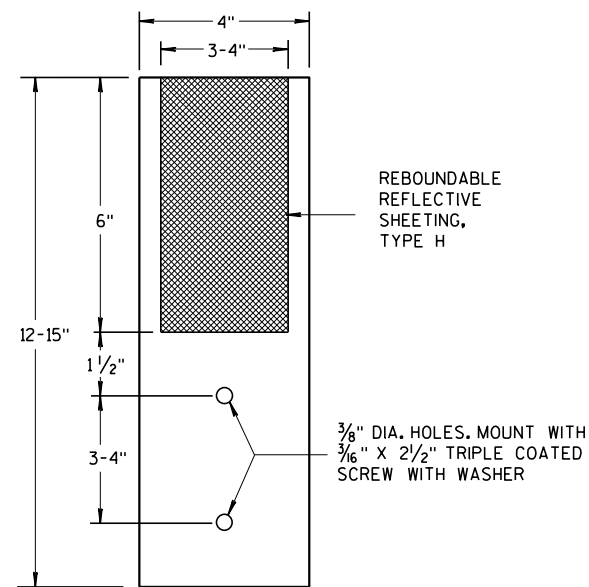
NESTED W BEAM (NW)

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

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



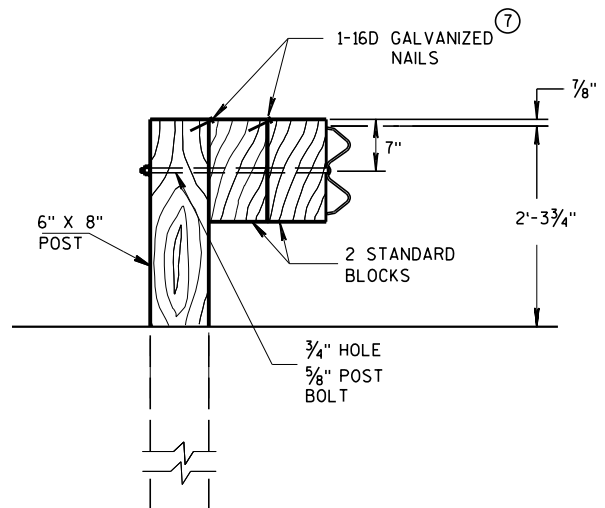
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4" x 12" GUARDRAIL REFLECTOR

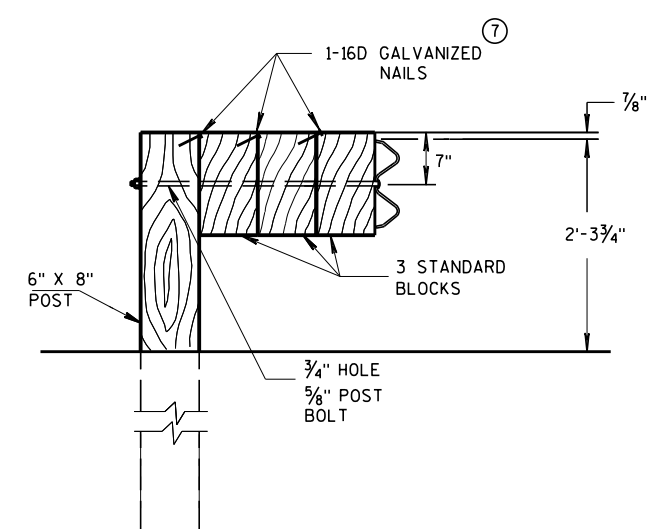
**STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

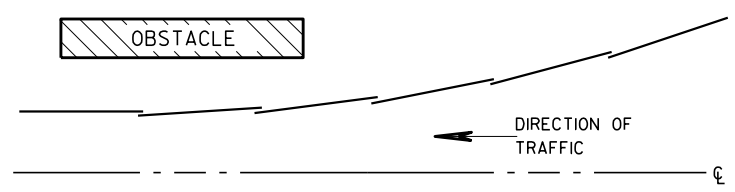


DETAIL FOR TRIPLE BLOCKS

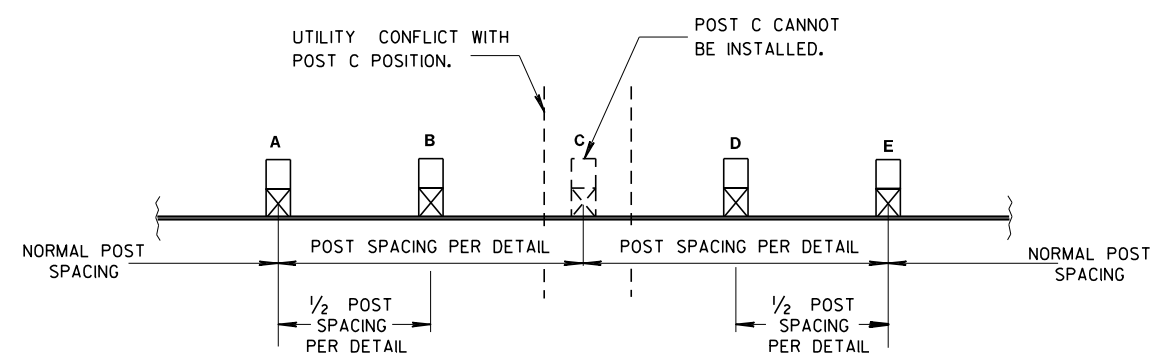
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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.



**PLAN VIEW
BEAM LAPPING DETAIL**



**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

6

6

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

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

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

*Steel Plate Beam Guard, Class "A", Installation and Elements***References:**[FDM 11-45-30](#)

AASHTO Roadside Design Guide

FHWA Technical Memo HAS-10/B64-B

MwRSF Report No. TRP-03-105-00

MwRSF Report No. TRP-03-83-99

MwRSF Report No. TRP-03-165-07

MwRSF Report No. TRP-03-119-03

TTI report No. 0-4162-2

Bid items associated with this drawing:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
614.0300 - 0339	Steel Plate Beam Guard (class).....	LF
614.0395 - 0399	Guardrail Mow Strip (material)	SY
614.0400	Adjusting Steel Plate Beam Guard	LF
614.0510 - 0515	Guardrail Stiffened (type).....	LF
614.0920	Salvaged Rail	LF
614.0950	Replacing Guardrail Posts and Blocks	EACH
614.0951	Replacing Guardrail Rail and Hardware	LF

Standardized Special Provisions associated with this drawing:

<u>STSP #</u>	<u>Title</u>
NONE	

Other SDDs associated with this drawing:

Include all SDD14B15 sheets "a", "b" and "c" with this SDD.

[SDD 14B16](#), [SDD 14B18](#), [SDD 14B20](#), [SDD 14B24](#), [SDD 14B25](#), and [SDD 14B27](#) may be required with this SDD depending on work being performed.

Design Notes:

Projects with PSE due August 2011 or later are required to install MGS beam guard (MGS) for new beam guard installations. Some exceptions allowing the installation of new non-MGS beam guard may be granted by Bureau of Project Development (BPD). A few of these exceptions require minimum documentation. Other exceptions require more documentation and discussion with Bureau of Project Development. Projects on the NHS or subject to FHWA oversight are to review the use of MGS with FHWA.

Designer is required to indicate where different types of beam guard (e.g NW, LHW...) are to be used in the plan.

Avoid using curb in combination with beam guard where the posted speed is 40 mph or more. If curb and gutter is required then use the table below to select appropriate beam guard and curb combinations.

Speed	6-inch Vertical Curb	4-inch Slope Faced Curb
<35 MPH	Standard Installation	Standard Installation
≥35 to <45 MPH	Nested Installation (i.e. Type NW)	Standard Installation
≥45 MPH	Not permitted	Nested Installation (i.e. Type NW)

If the distance from the back of post to the shoulder hinge point is less than 2-feet then install longer post at half post spacing (Type LHW). Posts installed close to the shoulder hinge point may not develop the required soil resistance and are subject to soil erosion.

Semi-rigid barrier systems use post rotation to absorb impact energy. Pinning the post into position (e.g. encasing within asphalt or concrete, placing rip rap next to the posts...) will weaken the barrier system and

make it more likely that the barrier system will not function as intended. Mow strips or concrete curb and gutter and beam guard combinations indicated previously can be used to control erosion and other maintenance concerns. Not using the provided mow strip details or curb and gutter and beam guard combinations will require significant coordination with BPD and will only be granted on a limited case-by-case basis and requires documentation within the DSR.

Do not use nested rails or reduced post spacing on EATs.

If total pavement structure is less than 2 feet (measured at edge of lane) and shallow rock is present (i.e. less than 22 inches of overburden measure from top of shoulder at post location to top of rock) contact BPD.

Connect adjoining beam guard sections with the rail overlap facing downstream with traffic. This reduces the potential for snagging on the exposed end of the lap and spearing of the vehicle by the beam guard element.

Contact Person:

Erik Emerson (608) 266-2842