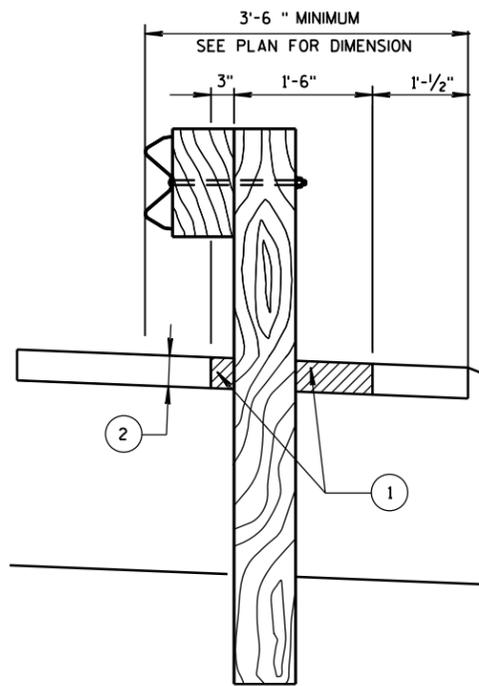
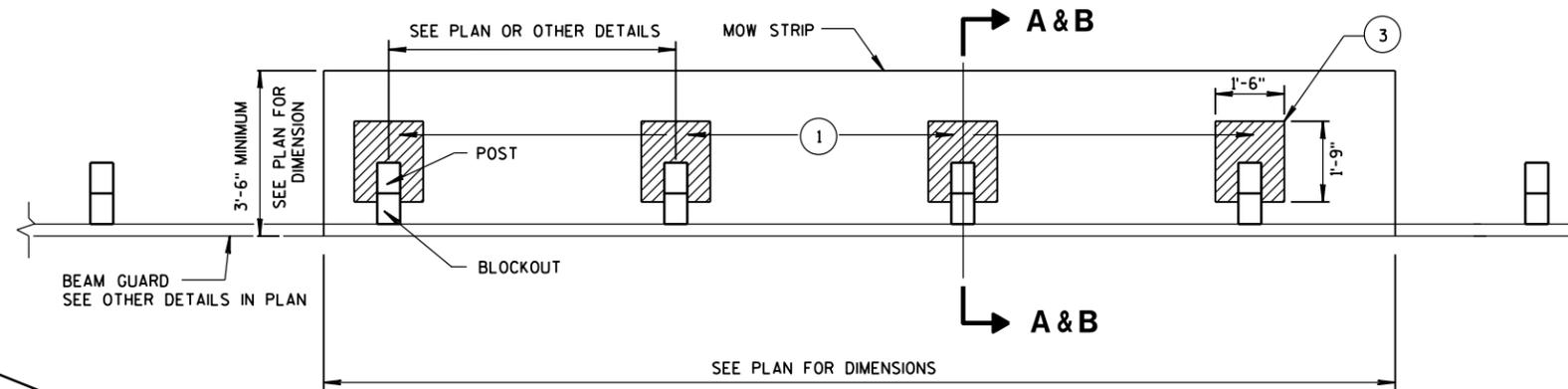


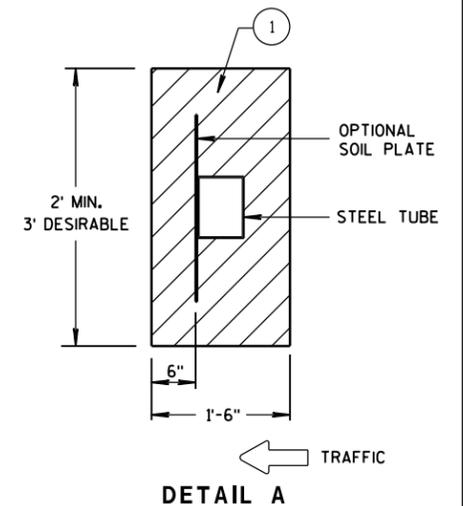
PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABORING TERMINAL



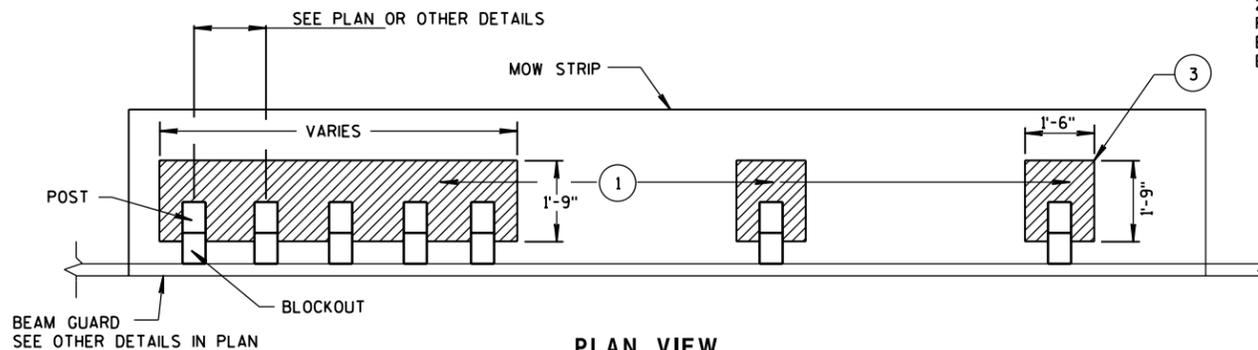
SECTION A-A



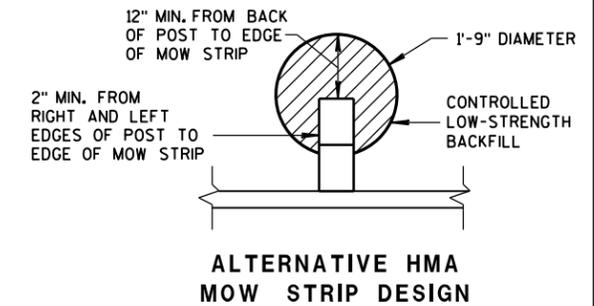
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



DETAIL A

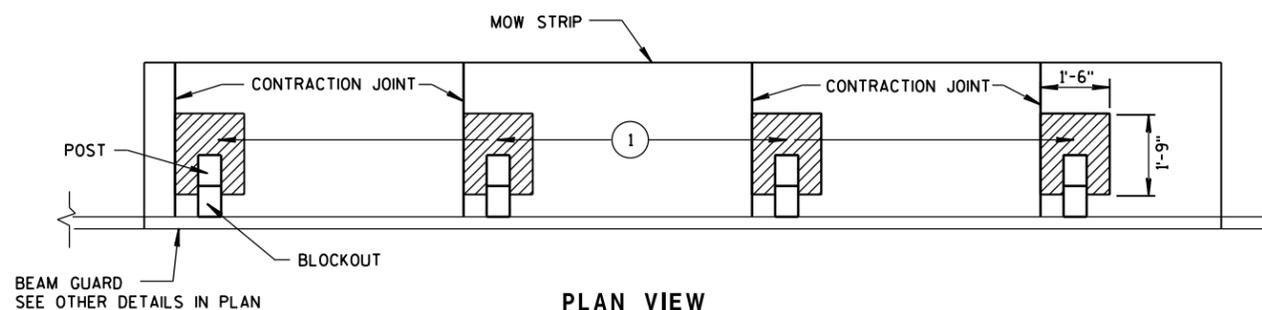


PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT

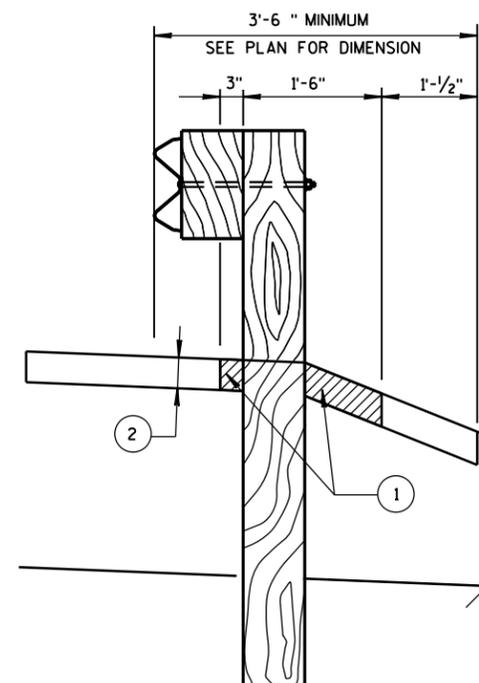


ALTERNATIVE HMA MOW STRIP DESIGN

- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT MOW STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS.)



PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



SECTION B-B

GUARDRAIL MOW STRIP	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

6

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S.D.D. 14 B 28-3

S.D.D. 14 B 28-3

Guardrail Mow Strip

References[Standard Spec 614](#)[FDM 11-45-2](#)

FHWA Memo W-Beam Guardrail Installations in Rock and in Mowing Strips, March 10, 2004

MwRSF Report TRP-03-119-03

TTI Report 0-4162-2

2011 AASHTO Roadside Design Guide

Roads and Bridges April 2013, "Guards Lose Cover" by Susan Barton

Bid items Required with this drawing:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
614.0395	Guardrail Mow Strip Concrete	SY
614.0396	Guardrail Mow Strip Asphalt	SY
614.0397	Guardrail Mow Strip Emulsified Asphalt	SY

Bid items associated with this drawing:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
614.0115	Anchorage for Steel Plate Beam Guard Type 2	EACH
614.0200	Steel Thrie Beam Structure Approach	LF
614.0220	Steel Thrie Beam Bullnose Terminal	LF
614.0230	Steel Thrie Beam	LF
614.0305	Steel Plate Beam Guard Class A	LF
614.0340	Steel Plate Beam Guard Over Low-Fill Culverts Class A	LF
614.0345	Steel Plate Beam Guard Short Radius	LF
614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH
614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH
614.0510	Guardrail Stiffened NW	LF
614.0515	Guardrail Stiffened LHW	LF
614.2300	MGS Guardrail 3	LF
614.2310	MGS Guardrail 3 HS	LF
614.2320	MGS Guardrail 3 QS	LF
614.2330	MGS Guardrail 3 K	LF
614.2340	MGS Guardrail 3 L	LF
614.2500	MGS Thrie Beam Transition	LF
614.2610	MGS Guardrail Terminal EAT	EACH
614.2620	MGS Guardrail Terminal Type 2	EACH

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

Other SDDs associated with this drawing:

SDD14B15	Steel Plate Beam Guard, Class "A" Installation and Elements
SDD14B17	Steel Plate Beam Guard, Class "A" End Treatments with Anchorage for Steel Plate Beam Guard
SDD14B18	Steel Plate Beam Guard Class "A"
SDD14B20	Steel Thrie Beam Structure Approach
SDD14B24	Steel Plate Beam Guard, Energy Absorbing Terminal
SDD14B25	Steel Plate Beam Guard, Class "A", over Low Fill Culverts
SDD14B26	Steel Thrie Beam Bullnose Terminal
SDD14B27	Steel Plate Beam Guard, Short Radius Terminal
SDD14B42	Midwest Guardrail System
SDD14B43	Midwest Guardrail System Long Span (MGS L)
SDD14B44	Midwest Guardrail System Terminal (MGS)
SDD14B45	Midwest Guardrail System Transitions (MGS)
SDD14B47	Midwest Guardrail System Type 2 terminal (MGS)

Design Notes:

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 make it more likely that the barrier system will not function as intended. Mow strips or concrete curb and gutter can be used to control erosion and other maintenance concerns near beam guard. Other SDDs and FDM guidance will provide information about acceptable beam guard and curb combinations.

Mow strips can be used with: beam guard, thrie beam bullnoses, thrie beam transitions to rigid barriers, EATS, and short radius system.

Discuss with regional or local maintenance staff the need for mow strips or curb and gutter to control erosion.

Delaware Department of Transportation evaluated different weed control method under beam guard. They reviewed: hand mowing, herbicides, special grass plantings and some commercially available weed barriers. The commercially available weed barrier systems were some form of plastic barrier placed under the beam guard. Cost of the commercially available weed barrier ranged from \$1,700 to \$2,500 per 100' of beam guard. Delaware's research indicated that weed barrier systems are the most costly form of vegetative control under beam guards when annualized over 10 years.

Use caution when selecting emulsified asphalt mow strips. Avoid locations that are sensitive to overspray or pooling of emulsified asphalt (e.g. environmentally sensitive locations, locations where roadway aesthetics can be sprayed, location where property owners flower bed can get sprayed, location of high pedestrian concentrations...). Emulsified asphalt mow strips may not be able to prevent heavy erosion.

Installing a mow strip to prevent erosion may only shift the location of the erosion from paved/gravel shoulder interface to other locations (e.g. mow strip/grass foreslope interface...). Other measures may be required to control erosion beyond the mow strip (e.g. installing a flume, additional erosion mat, rip rap...). Review drainage and erosion concerns when installing a mow strip.

Placement of objects that limit post rotation requires approval by BPD. Limited project by project exceptions for placing objects that may limit post rotation may be granted by BPD. However, these exceptions will be rare. Document the exception in DSR.

Provide construction details for mow strips near EATs, thrie beam transitions, thrie beam bullnoses, MGS long span and beam guard locations where post spacing is close enough that a single hole in the mow strip will accommodate multiple posts or the width of the mow strip is wider than what is detailed on the SDD.

Long Span MGS (MGS L) uses posts that are larger than a normal beam guard post. Detail wider holes in mow strip to accommodate larger posts.

Contact Person:

Erik Emerson (608) 266-2842