TOP-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

SGR52

SHEET NO. DATE:
1 of 7 12/5/2016
INTENDED USE
The Top-Mounted Weak-Post Guardrail Attached to Culvert is designed as a treatment to continue W-beam guardrail systems across large box culverts. It is compatible with the Midwest Guardrail System (MGS) with or without blockouts (SGR20a-c or SGR41), respectively, such that an approach transition would not be required between the two barriers. The Top-Mounted Weak-Post Guardrail Attached to Culvert is an adaptation of the MGS Bridge Rail (SBO02c) with only the socket length and attachment hardware changing. All post and rail components are identical to the original MGS Bridge Rail (SBO02c). The Top-Mounted Weak-Post Guardrail Attached to Culvert is TL-3 crash-worthy, and has been tested according to the Manual for Assessing Safety Hardware (MASH) safety performance criteria.

The Top-Mounted Weak-Post Guardrail Attached to Culvert is one of two configurations for the Weak-Post Guardrail Attached to Culvert. The other configuration is a Side-Mounted Weak-Post Guardrail Attached to Culvert (SGR53).

A stiffness transition between the new guardrail attached to culvert system and adjacent MGS installation (SGR20a-c or SGR41) is unnecessary. A 75-in. [1905] spacing is recommended between the last S3x5.7 (S76x8.5) culvert post (PSF01) and the first guardrail post of the adjacent MGS installation. The adjacent MGS may be either blocked (SGR20a-c) or non-blocked (SGR41).

COMPONENTS
Unit Length = 150” [3810]

<table>
<thead>
<tr>
<th>DESIGNATOR</th>
<th>COMPONENT</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSF01</td>
<td>S3x5.7 by 44” long Post and Standoff</td>
<td>4</td>
</tr>
<tr>
<td>RWM04a</td>
<td>12'-6” W-Beam MGS Section 1/2 Post Spacing</td>
<td>1</td>
</tr>
<tr>
<td>RWB01a</td>
<td>12” 12-Gauge W-Beam Backup Plate</td>
<td>4</td>
</tr>
<tr>
<td>FBX08a</td>
<td>Hex Bolt 5/16”-18x1 1/4”x1 1/4” and Nut</td>
<td>4</td>
</tr>
<tr>
<td>FWR01</td>
<td>1 3/4”x1 3/4”x1/8” Square Guardrail Washer</td>
<td>4</td>
</tr>
<tr>
<td>FBB01</td>
<td>5/8” Dia., 1 1/2” Long Guardrail Bolt and Nut</td>
<td>8</td>
</tr>
<tr>
<td>FBX16a</td>
<td>Hex Bolt 5/8”-11x5”x1 1/2” and Nut</td>
<td>4</td>
</tr>
<tr>
<td>-----</td>
<td>Top-Mounted Bracket Assembly</td>
<td>4</td>
</tr>
<tr>
<td>FWC30a</td>
<td>1 1/8” Plain Round Washer</td>
<td>4</td>
</tr>
<tr>
<td>FWC12a</td>
<td>1/2” Plain Round Washer</td>
<td>8</td>
</tr>
<tr>
<td>FRR28</td>
<td>1 1/8” Dia., 13” Long Threaded Rod</td>
<td>4</td>
</tr>
<tr>
<td>FNX28a</td>
<td>1 1/8” Dia. Hex Nut</td>
<td>4</td>
</tr>
<tr>
<td>FRR12b</td>
<td>1/2” Dia., 7” Long Threaded Rod</td>
<td>8</td>
</tr>
<tr>
<td>FNX12a</td>
<td>1/2” Dia. Hex Nut</td>
<td>8</td>
</tr>
</tbody>
</table>

ELIGIBILITY
TOP-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

SECTION C–C

MIN 16" [406]

TOP-MOUNTED BRACKET ASSEMBLY

8–FBB01
FBX08a
RWM04a
FWR01
FWC30a
FRR28
FNX28a
PSF01
FBX16a
RWB01a

TOP-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

SGR52

SHEET NO. DATE:
3 of 7 12/5/2016
REFERENCES


CONTACT INFORMATION
Midwest Roadside Safety Facility
University of Nebraska-Lincoln
130 Whittier Research Center
2200 Vine Street
Lincoln, NE 68583-0853
(402) 472-0965
Email: mwrsf@unl.edu
Website: http://mwrsf.unl.edu/
TOP-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

PLAN VIEW

ISOMETRIC VIEW

ELEVATION VIEW

PROFILE VIEW

TOP-MOUNTED BRACKET ASSEMBLY
TOP-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

ELEVATION VIEW
1/2" [13] THICK TOP MOUNTING PLATE GUSSET

ELEVATION VIEW
1/2" [13] THICK BOTTOM MOUNTING PLATE

ELEVATION VIEW
4"x4"x3/8" [102x102x10] TUBE

ELEVATION VIEW
1/2" [13] THICK TOP MOUNTING PLATE
SPECIFICATIONS

4”x4”x3/8” Square Tube
The square tube shall be ASTM A500 grade B galvanized steel.

Top Mounting Plate
The top mounting plate shall be ASTM A572 grade 50 galvanized steel.

Top Mounting Plate Gusset
The top mounting plate gusset shall be ASTM A572 grade 50 galvanized steel.

Bottom Mounting Plate
The bottom mounting plate shall be ASTM A572 grade 50 galvanized steel.