SIDE-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT
INTENDED USE
The Side-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 Side-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 Side-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 Top-Mounted Weak-Post Guardrail Attached to Culvert (SGR52).

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>
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<tbody>
<tr>
<td>PSF01</td>
<td>S3x5.7 by 44” long Post and Standoff</td>
</tr>
<tr>
<td>RWM04a</td>
<td>12'-6&quot; W-Beam MGS Section 1/2 Post Spacing</td>
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<tr>
<td>RWB01a</td>
<td>12” 12-Gauge W-Beam Backup Plate</td>
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<tr>
<td>FBX08a</td>
<td>Hex Bolt 5/16”-18x1 1/4”x1 1/4” and Nut</td>
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<tr>
<td>RWR01</td>
<td>1 3/4”x1 3/4”x1/8” Square Guardrail Washer</td>
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<tr>
<td>FBB01</td>
<td>5/8” Dia., 1 1/2” Long Guardrail Bolt and Nut</td>
</tr>
<tr>
<td>FBX16a</td>
<td>Hex Bolt 5/8”-11x5”x1 1/2” and Nut</td>
</tr>
<tr>
<td>FWC20a</td>
<td>3/4” Plain Round Washer</td>
</tr>
<tr>
<td>FWC12a</td>
<td>1/2” Plain Round Washer</td>
</tr>
<tr>
<td>FRR20b</td>
<td>3/4” Dia., 11” Long Threaded Rod</td>
</tr>
<tr>
<td>FNX20a</td>
<td>3/4” Dia. Hex Nut</td>
</tr>
<tr>
<td>FRR12b</td>
<td>1/2” Dia., 7” Long Threaded Rod</td>
</tr>
<tr>
<td>FNX12a</td>
<td>1/2” Dia. Hex Nut</td>
</tr>
</tbody>
</table>
SIDE-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

MIN 16" [406]

14 1/2" [368]

SECTION C–C

SIDE-MOUNTED BRACKET ASSEMBLY

RWM04a
FBX08a
FWR01
RWB01a
PSF01
FBX16a
FWC20a
FRR20
FRR12b
FNX20a
FNX12a
FWC12a
PSF01
FWR01
8–FBB01
FRR12b
8–FBB01

SHEET NO. DATE:
SGR53 12/5/2016

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ELIGIBILITY

REFERENCES


CONTACT INFORMATION
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(402) 472-0965
Email: mwrsf@unl.edu
Website: http://mwrsf.unl.edu/
SIDE-MOUNTED BRACKET ASSEMBLY

SIDE-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

TOP MOUNTING PLATE GUSSET

1/4" [6]  E70xx

PLANE VIEW

1/4" [6]  E70xx

3/8" [10]  E70xx

ELEVATION VIEW

1/4" [6]  E70xx

3/8" [10]  E70xx

3/8" [10]  E70xx

ISOMETRIC VIEW

3/8" [10]  E70xx

TOP MOUNTING PLATE

3/8" [10]  E70xx

BOTTOM MOUNTING PLATE

PROFILE VIEW

SIDE-MOUNTED BRACKET ASSEMBLY

1/4" [6]  E70xx

3/8" [10]  E70xx

TOP MOUNTING PLATE

3/8" [10]  E70xx

BOTTOM MOUNTING PLATE

3/8" [10]  E70xx

TUBE
SIDE-MOUNTED WEAK-POST GUARDRAIL ATTACHED TO CULVERT

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

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

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