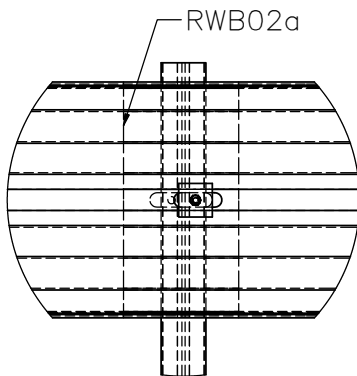
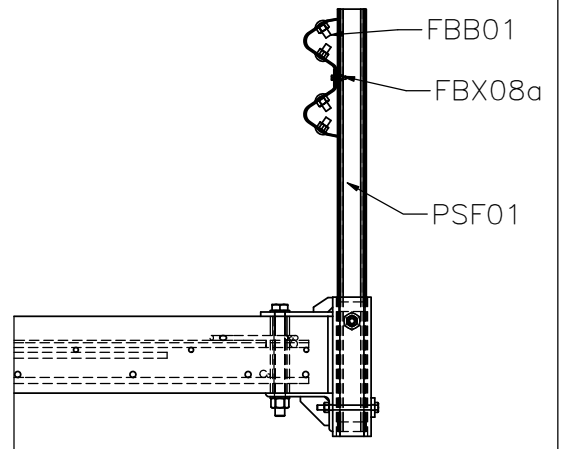


DETAIL A



DETAIL B



SECTION A-A

MGS BRIDGE RAIL



SBO02c

SHEET NO.

DATE:

1 of 8

7/29/2015

INTENDED USE

The Midwest Guardrail System (MGS) Bridge Rail is designed to be used where a low-cost bridge rail is desired. The MGS Bridge Rail is compatible with the MGS such that an approach transition would not be required between the two barriers. Special reinforcement was designed into the concrete bridge deck to minimize damage to the bridge deck. The MGS Bridge Rail can be used on applications with and without a wearing surface. The MGS Bridge Rail has been successfully crash tested according to the Test Level 3 (TL-3) guidelines provided in the Manual for Assessing Safety Hardware (MASH).

COMPONENTS

Unit Length=150" [3810]

DESIGNATOR	COMPONENT	NUMBER
-----	See Bill of Bars	--
PSF01	S3x5.7 by 44" long Post and standoff	4
FBX16a	Hex Bolt 0.625-11x5x1.25 and Nut	4
RWM04a	12'-6" W-Beam MGS Section ½ Post Spacing	1
FNX08a	0.3125" Dia. Hex Nut	4
FBX08a	Hex Bolt 0.3125-18x1.25x1.25	4
FWR01	1.75x1.75x0.125 Square Guardrail Washer	4
RWB02a	6" W-Beam Backup Plate	4
FBB01	0.625" Dia. x 1.5" Guardrail Bolt and Nut	8
-----	Bracket Assembly	4

ELIGIBILITY

FHWA Eligibility Letter B-228, December 19, 2011

REFERENCES

Thiele, J.C., Sicking, D.L., Faller, R.K., Bielenberg, R.W., Lechtenberg, K.A., Reid, J.D., and Rosenbaugh, S.K., *Development of a Low-Cost, Energy-Absorbing Bridge Rail*, Final Report to the Midwest States Pooled Fund Program, MwRSF Research Report No. TRP-03-226-10, Project No. SPR-3(017)- Years 18 and 19, Project Codes RPPF-08-09 and 09-06, Midwest Roadside Safety Facility, University of Nebraska-Lincoln, Lincoln, Nebraska, June 4, 2010.

Thiele, J.C., Sicking, D.L., Lechtenberg, K.A., Reid, J.D., Faller, R.K., Bielenberg, R.W., and Rosenbaugh, S.K., *Development of Low-Cost, Energy-Absorbing Bridge Rail*, Paper No. 11-2687, Transportation Research Record No. 2262, *Journal of the Transportation Research Board*, Transportation Research Board, Washington D.C., January 2011.

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/>



MGS BRIDGE RAIL



SBO02c

SHEET NO.

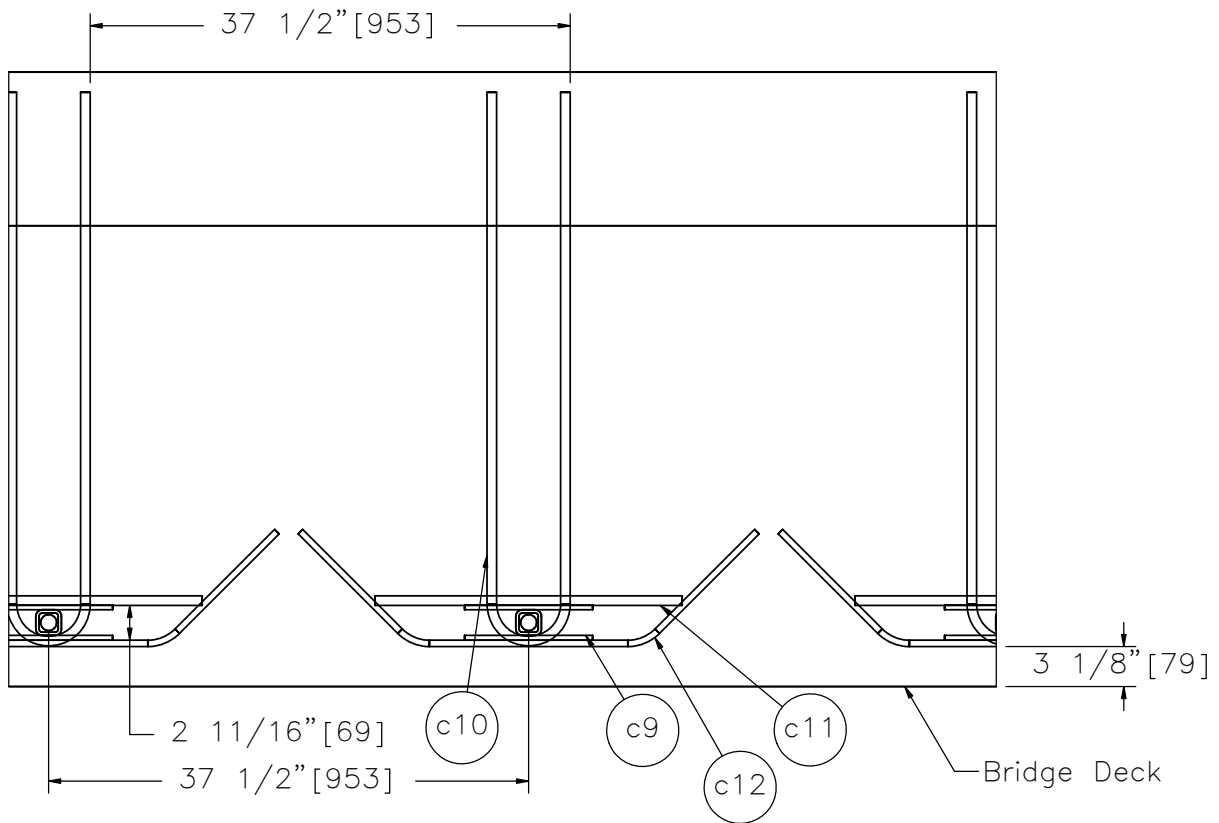
DATE:

2 of 8

7/29/2015

MGS Bridge Rail–Bridge Deck

Item No.	QTY.	Description	Material Spec
c9	8	#3 Straight Rebar, 10" long	Grade 60
c11	4	#6 Straight Rebar, 24" long	Grade 60
c12	4	#4 Bent Rebar, Total Length Unbent 42.5"	Grade 60
c10	4	#6 Rebar Loop, Total Length Unbent 89"	Grade 60



- Notes:
- (1) The additional reinforcing rebar placed in the bridge deck are shown.
 - (2) For c9 and c11, the rebar is tight against the tube in the deck and tied in place.

MGS BRIDGE RAIL



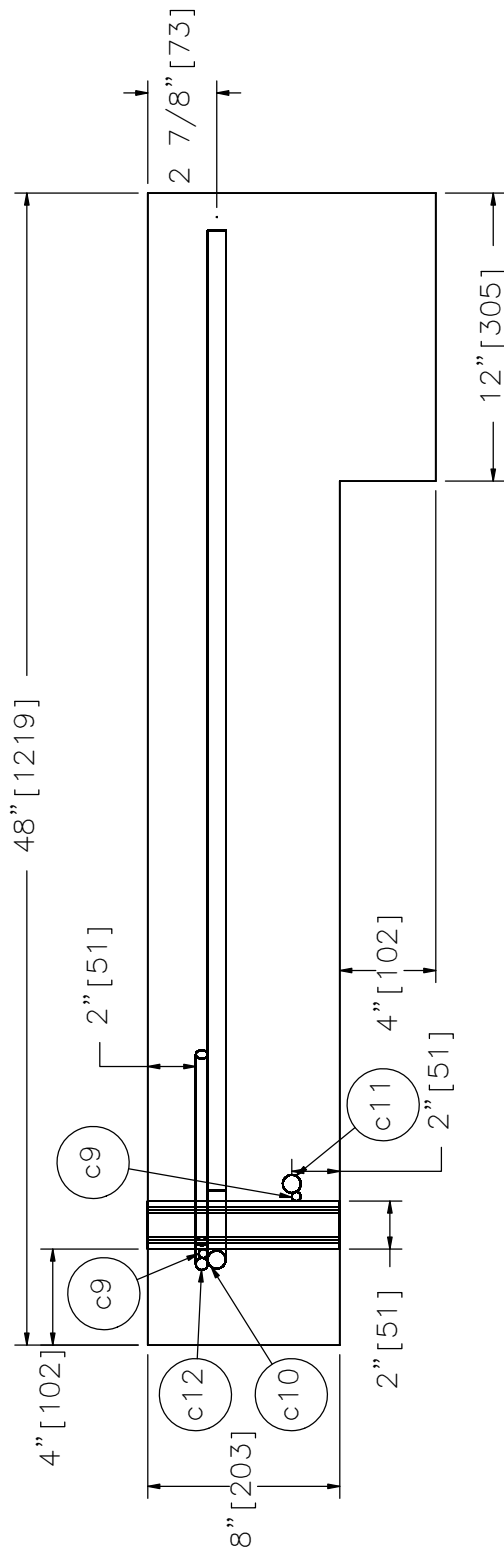
SBO02c

SHEET NO.

DATE:

3 of 8

7/29/2015



BRIDGE DECK

Note: To further strengthen the deck, additional reinforcement was placed around each boltsleeve assembly. Bent no. 4 (13-mm diameter) bars, part number c12, were placed above the upper reinforcement to the exterior of the bolt-sleeve assemblies. Longitudinal no. 6 (19-mm diameter) bars, part number c11, were placed to the interior of the bolt-sleeves, just above the lower transverse reinforcement, to prevent local crushing in the concrete in the lower portion of the deck.

MGS BRIDGE RAIL



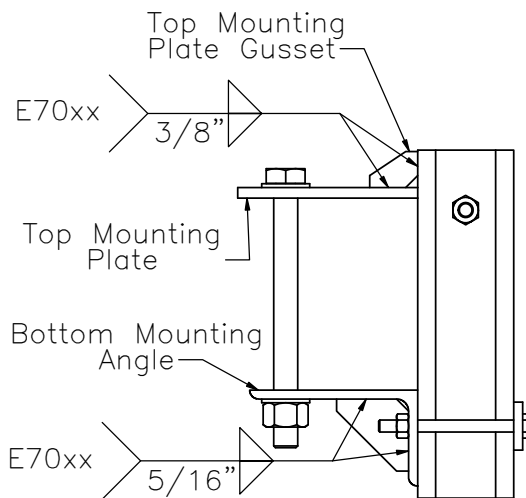
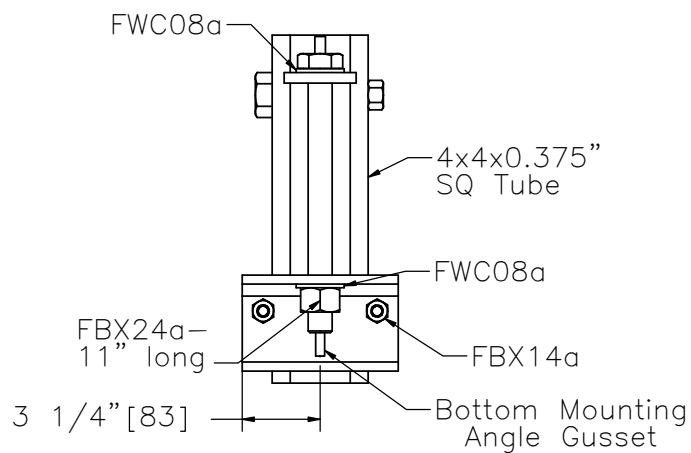
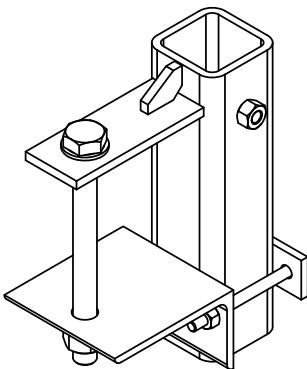
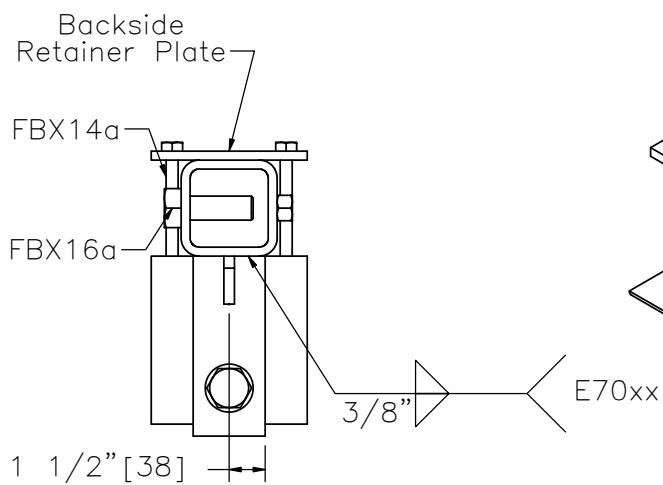
SBO02c

SHEET NO.

DATE:

4 of 8

7/29/2015



BRACKET ASSEMBLY

MGS BRIDGE RAIL



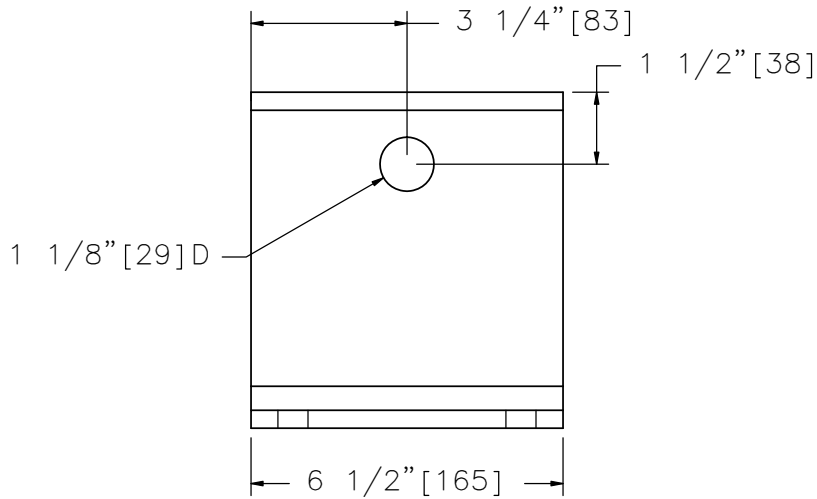
SBO02c

SHEET NO.

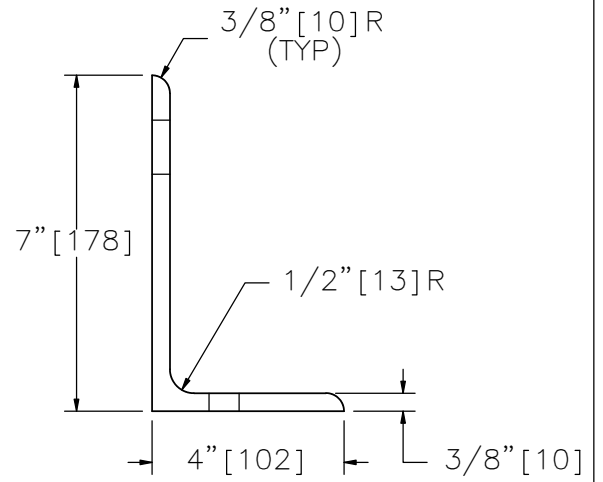
DATE:

5 of 8

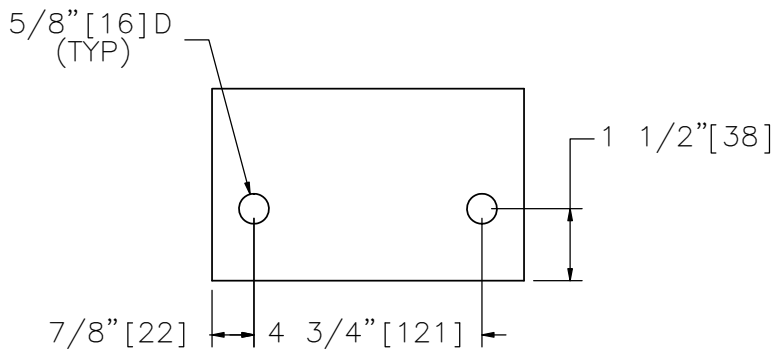
7/29/2015



ELEVATION VIEW

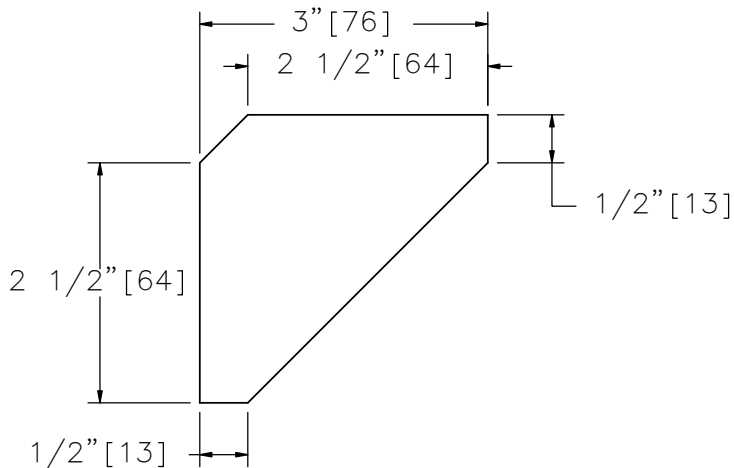


PROFILE VIEW

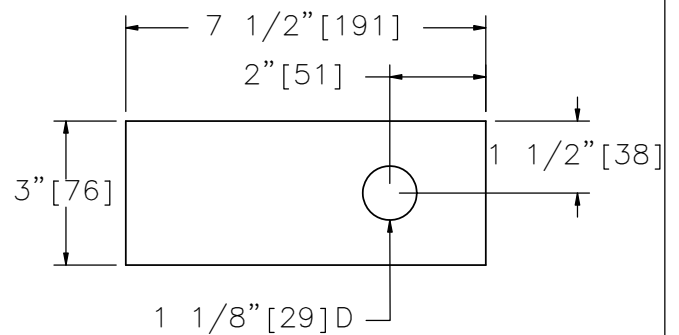


PLAN VIEW

BOTTOM MOUNTING ANGLE



3/8" [10] THICK BOTTOM MOUNTING GUSSET



7/16" [11] THICK TOP MOUNTING PLATE

MGS BRIDGE RAIL



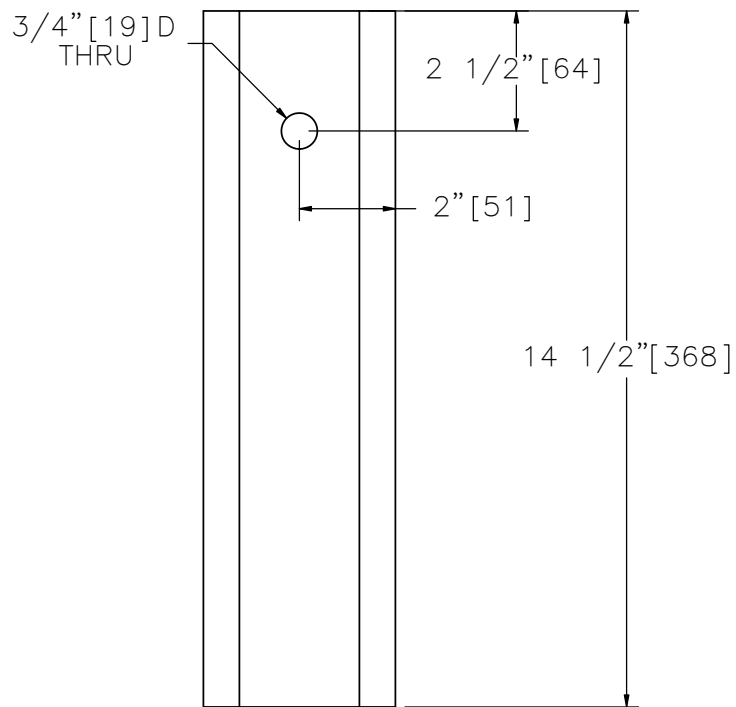
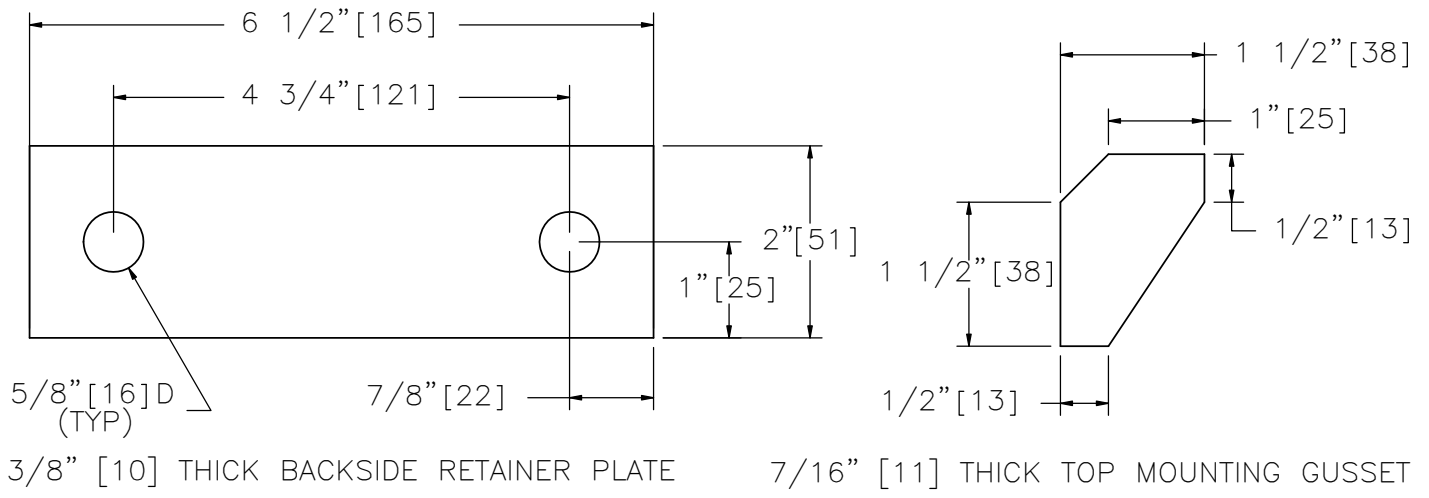
SBO02c

SHEET NO.

DATE:

6 of 8

7/29/2015



4"X4"X3/8" [102X102X10] TUBE

MGS BRIDGE RAIL



SBO02c

SHEET NO.

DATE:

7 of 8

7/29/2015

SPECIFICATIONS

4x4 in. 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 A36 galvanized steel.

Bottom Mounting Plate

The bottom mounting plate shall be ASTM A36 galvanized steel.

Bottom Mounting Plate Gusset

The bottom mounting plate gusset shall be ASTM A36 galvanized steel.

Backside Retainer Plate

The backside retainer plate shall be ASTM A36 galvanized steel.

MGS BRIDGE RAIL



SBO02c

SHEET NO.

DATE:

8 of 8

7/29/2015