



**DETAIL A**

**SECTION A-A**

NOTE: MINI SPACER RELEASABLE FASTENER SUPPLIED BY GREGORY HIGHWAY SAFETY PRODUCTS- NO SEPARATE DESIGNATOR.

2011

**GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM**



**SGR43**

SHEET NO.	DATE
1 of 2	11/09/2011

### INTENDED USE

The Gregory Mini Spacer (GMS) Guardrail System is intended for roadside and median applications at NCHRP Report 350 and MASH Test Level 3. All GMS components are standard- only the Mini Spacer fastener component is proprietary. GMS does not require mid-span splices, blocks or backup plates. GMS does not rely upon a post bolt head pulling through and deforming a rail slot to release rail from a post during a vehicle impact. GMS instead incorporates the scientifically engineered Mini Spacer releasable mounting fastener that includes a separate deformable release element to provide an optimized release load magnitude in field installations. The same Mini Spacer fastener accommodates a range of top of rail heights of 27" [686] - 31" [787], a range of post types and spacing, and a range of rail types and gages. GMS W-beam accommodates 12'6" [3810] 2x standard post spacing, 6'3" [1905] 1x standard post spacing, narrower 3'1 1/2" [953] 1/2 x standard post spacing, and 1' 6 3/4" [476] 1/4 x standard post spacing; with respective roadside "working width" deflections of 66"[1680], 49" [1250], 44" [1120], and 35" [900]. GMS W-beam post spacing may be gradually varied in a single installation to accommodate local terrain and ADT. GMS enables cost-effective and efficient W-beam repair and upgrade retrofit. GMS Thrie-beam has 39" [991] top of rail height.

### COMPONENTS

Unit Length = 12'6" = 150" [3810]

Designator	Component	No.
RTM01a-b	W-beam rail	2
<b>or</b> RTM02a-b	alternate: W-beam rail	1
<b>or</b> RTM04a-b	alternate: W-beam rail	1
<b>or</b> RTM06a-b	alternate: W-beam rail	1
FBB01	Guardrail splice bolts and nuts	12*
PWE01	Wide-flange guardrail post	2
Mini Spacer	Fastener: supplied by Gregory Highway Safety Products	2

\* 24 for RTM01a-b

### APPROVALS

Acceptance	Date	Notes
HSA-10/B-150	10/27/2006	GMS W-beam for roadside and median use.
HSSD/B- 156	03/21/2007	GMS Thrie-beam- roadside and median use.
HSSD/CC- 96	12/21/2007	Use of approved End Terminals with GMS W-beam at equal top of rail height
HSSD/B-150A	03/26/2008	GMS W-beam "working width" deflections for: 1x, 1/2x, 1/4x standard 6'3" spacing
HSSD/B-150B	07/16/2008	GMS W-beam at 2x std. post spacing, ht. 27" - 31", for roadside or median use
HSSI/ B-150C	11/19/2010	GMS W-beam & Thrie-beam: Dual NCHRP Rept. 350 and MASH acceptance

### REFERENCES

1. Ochoa, C. M., GMS "Guardrail Mini Spacer Releasable Fastener: Improving Performance and Reliability of Conventional Strong Post Guardrail", Paper No. 08-0811, TRB AFB20 Committee on Roadside Safety Design, Transportation Research Board, Washington D.C., January 2008.
2. Ochoa, C. M., and Ochoa, T. A., "Guardrail Optimization for Rural Roads", Transportation Research Record 2203, Transportation Research Board, Washington D.C., June 2011, pp. 71-78. [2011 Eldon J. Yoder Award recipient for Best Paper]

### CONTACT INFORMATION

**Gregory Highway Safety Products**

4100 13th Street, SW • Canton, OH 44710 • Phone 330-477-4800

<http://www.gregorycorp.com/highway.cfm>

## GMS GUARDRAIL: 39" ROADSIDE THRIE-BEAM

SGR43



SHEET NO.	DATE
2 of 2	10/26/2011