



# Standard Drawing Report

**Date:** January 20, 2023

**Technical Owner:** Alex Lim  
Bridge Standards Engineer

**Standard Drawing Number:** BR208

**Drawing Title:** 3-Tube Curb Mount Rail



RENEWS: 12-31-2024

**Original Report Date:** 10-02-2008

## Background Information, Including Reference Material:

<u>Dwg#</u>	<u>date</u>	<u>designer</u>	<u>units</u>
BR208	2002		Metric
BR208	Jan 2009	Kevin Davidson	English
BR208	Jan 2015	Emily Maurer	English
BR208	Jan 2017	Alex Lim	English
BR208	July 2020	Rebecca Burrow	English
BR208	Jan. 2023	Alex Lim	English



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## **Assumption Made:**

## **Design Narrative:**

Reviewed for Chapter 13 provisions of AASHTO LRFD Bridge Design Specifications, 7<sup>th</sup> Edition 2014.

## **Updates:**

### **July 1, 2009-**

Revision 1:

Removed A449

Added note: "Provide High Strength anchor bolts (Grade 105) according to ODOT Specification 02560.30 (b)"

### **July 1, 2011-**

Revision 2:

The rail tube ends were extended so the transitions can use standard 12'-6" thrie beam elements. This closely matches the configuration shown in the July 1999 Alaska Multi-State Bridge Rail Thrie-Beam Transition crash test reports.

Changes to the drawing:

Added note: "See dwg. BR207 for rebar in end panel."

Changed rail length from 7" to 1'-11 1/4"

Changed "D" Plate from 8" to 8 1/2", 8 3/8" to 8 3/4" and 5 3/8" to 5 3/4" with new overall length of 1'-5 1/2" from 1'-5". Added 3" typ.

Extend end rail post to top rail in Elevation view.

Changed top curved rail from 2'-5" to 1'-1"

Curb taper corrected from 1'-6 1/8" to 1'-6"

In PLAN view, show bolts behind rail.

Changed Galvanized to Galvanize.

Added "BR207" in Accompanied by dwgs.

Made some minor drafting corrections.

### **January 1, 2015 -**

Revision 1:

- Drafting changes for consistency and clarity. Added finish grade label to deck.
- Removed rail capacities and weight. They are listed on a spreadsheet on the BridgeShar and calculations are posted on the Intranet.



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- Changed tubing to HSS, instead of TS, to reflect industry standards.
- General Note changes:
  - Added “Rail designed and crashed tested to meet NCHRP 350 TL-4 requirements.”
  - Changed “ODOT Specification” to “Oregon Standard Specification”.
  - “Install posts normal to grade in longitudinal direction and vertical in the transverse direction.” Changed from all normal to grade for constructability, aesthetics, and consistency with specs.
- Added 1 additional “A” bar at posts to increase interaction between curb and deck to reflect ACI calculations.
- Reduced spacing to last post to reflect calculations, was 10’ now 9’.
- Emily Maurer’s PE stamp replaces Kevin Davidson.

## **January 1, 2017 -**

### Revision 2:

- Changed 9’-0” to 7’-0” max. spacing to end post.
- Removed “Add 1 Extra bar at each post”.
- Added 2-#4 U-bars at each post.
- Changed 6-#5 x 5’-0” to 7- #5 x 3’-0”
- Alex Lim’s PE Stamp replaces Emily Maurer.

## **July 02, 2020 –**

### Revision 1:

- Rebecca Burrow’s PE Stamp replaces Alex Lim.
- Updated General Notes
- Updated graphics to include  $\frac{3}{4}$ ” chamfer on all exposed corners of concrete.

## **January 20, 2023 –**

### Revision 3:

- General text revisions. Modify AWS reference to D1.1, add bolt tightening requirement. Specify material grade for post and plate.