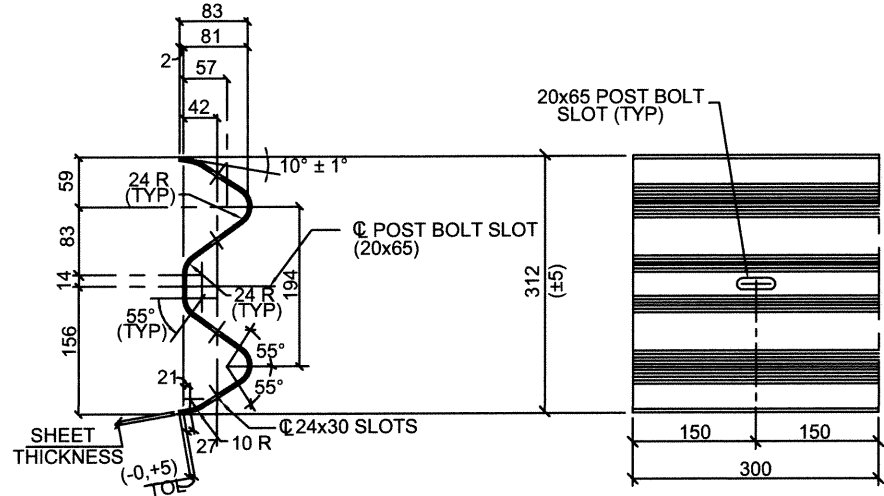
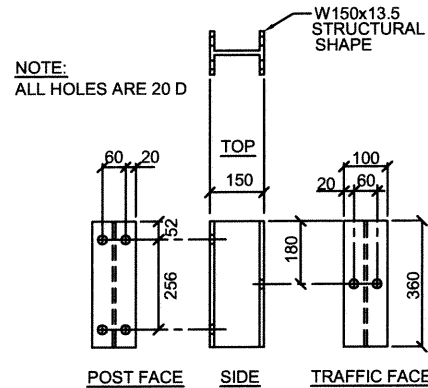


DWG BY: LMARTINEZ 2934



**W-BEAM BACK-UP PLATE**

- I. SPECIFICATIONS**
- A. BACK-UP PLATES SHALL CONFORM TO THE CURRENT REQUIREMENTS OF AASHTO M180. THE SECTION SHALL BE MANUFACTURED FROM SHEETS WITH A NOMINAL WIDTH OF 483 mm. IT SHALL CONFORM TO AASHTO M180 CLASS B. CORROSION PROTECTION SHALL BE TYPE II (ZINC-COATED). BASE METAL NOMINAL THICKNESS SHALL BE 3.43 mm.
  - B. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE AND ACCEPTED MANUFACTURING PRACTICES.
- II. INTENDED USE**
- A. THIS BACK-UP PLATE IS PLACED BEHIND W-BEAM GUARDRAIL ELEMENTS AT INTERMEDIATE STEEL POSTS (NON-SPLICE POSTS) IN THE CORRUGATED STEEL-BEAM GUARDRAIL.
  - B. BACK-UP PLATES SHALL BE INSTALLED WHEN METAL BLOCKOUTS ARE USED AS CALLED FOR IN THE CONTRACT DOCUMENTS.

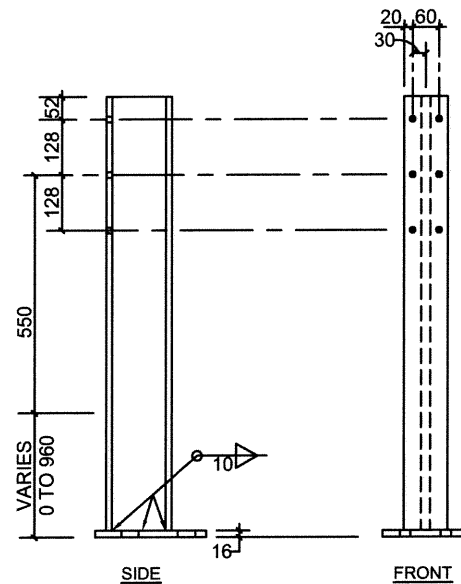
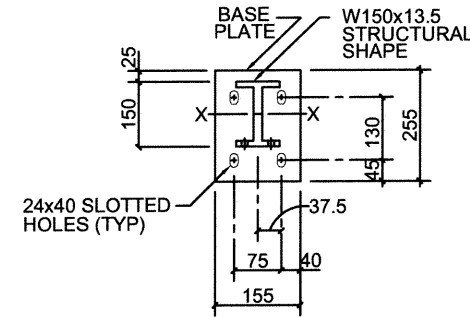


**W-BEAM GUARDRAIL BLOCKOUT**

- I. SPECIFICATIONS**
- A. W-BEAM GUARDRAIL BLOCKOUTS SHALL BE MANUFACTURED USING AASHTO M270M (ASTM A709M) GRADE 250 STEEL. THE DIMENSIONS OF THE STRUCTURAL W150x13.5 OR W150x12.6 ARE DEFINED IN AASHTO M160M (ASTM A6M).
  - B. AFTER THE SECTION IS CUT AND ALL HOLES ARE DRILLED OR PUNCHED THE COMPONENT SHALL BE ZINC-COATED ACCORDING TO AASHTO M111 (ASTM A123).
  - C. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE AND ACCEPTED MANUFACTURING PRACTICES.
- II. INTENDED USE**
- A. THIS BLOCKOUT IS USED IN THE STRONG-POST W-BEAM GUARDRAIL.

**NOTES:**

- 1. ALL HOLES 20 D UNLESS NOTED OTHERWISE.
- 2. THE POST LENGTH SHALL BE ADJUSTED SUCH THAT THE DISTANCE FROM THE ROAD SURFACE TO THE CENTER OF THE GUARDRAIL IS 550.

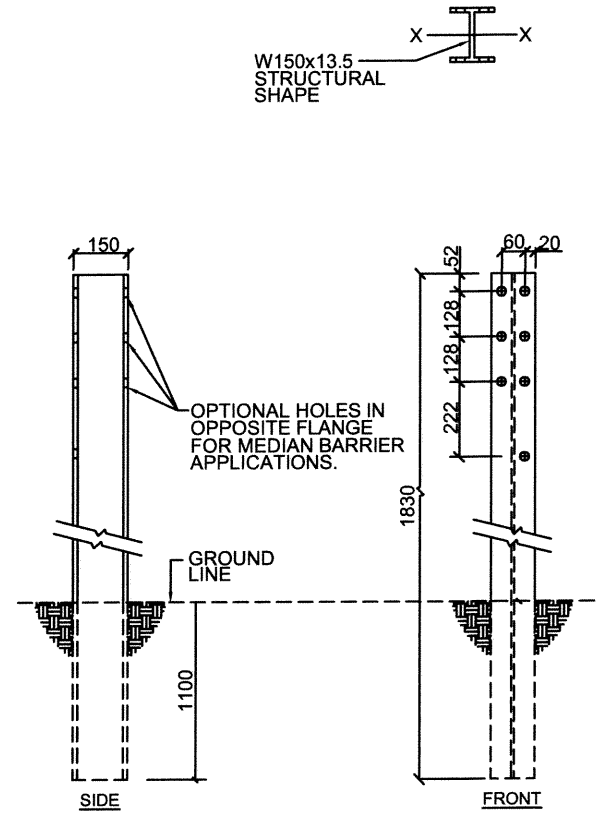


**CONCRETE SLAB MOUNTED GUARDRAIL POST**

- I. SPECIFICATIONS**
- A. THE CONCRETE SLAB MOUNTED GUARDRAIL POST SHALL BE MANUFACTURED USING AASHTO M270M (ASTM A709M) GRADE 250 STEEL. THE DIMENSIONS OF THE STRUCTURAL W150x13.5 OR W150x12.6 ARE DEFINED IN AASHTO M160M (ASTM A6M). AFTER THE SECTION IS CUT, ALL HOLES ARE DRILLED OR PUNCHED, AND THE BASE PLATE IS WELDED ON THE COMPONENT SHOULD BE ZINC-COATED ACCORDING TO AASHTO M111 (ASTM A123). WELDING SHALL CONFORM TO ANSI/AASHTO/AWS D1.5.

AREA (10 <sup>3</sup> mm) <sup>2</sup>	I <sub>x</sub> (10 <sup>6</sup> mm) <sup>4</sup>	I <sub>y</sub> (10 <sup>6</sup> mm) <sup>4</sup>	S <sub>x</sub> (10 <sup>3</sup> mm) <sup>4</sup>	S <sub>y</sub> (10 <sup>3</sup> mm) <sup>4</sup>
1.7	6.84	0.91	91.2	18.2

- B. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE AND ACCEPTED MANUFACTURING PRACTICES.
- II. INTENDED USE**
- A. THE POST IS USED TO ATTACH THE STRONG-POST GUARDRAIL SYSTEMS TO BRIDGE DECKS AND OTHER CONCRETE STRUCTURES. THE POST LENGTH SHALL BE SUCH THAT THE DISTANCE FROM THE PAVEMENT SURFACE TO THE GUARDRAIL MOUNTING BOLT IS 550 mm.
  - B. THE CONTRACTOR SHALL PROVIDE THIS POST AND THE NECESSARY HARDWARE AND ATTACHMENT TO CONCRETE STRUCTURES AS A SUBSIDIARY OBLIGATION.



**WIDE-FLANGE GUARDRAIL POST**

- I. SPECIFICATIONS**
- A. CORRUGATED STEEL BEAM GUARDRAIL POSTS SHALL BE MANUFACTURED USING AASHTO M270M (ASTM A709M) GRADE 250 STEEL. THE DIMENSIONS OF THE CROSS-SECTION SHALL CONFORM A W150x13.5 OR W150x12.6 SECTION AS DEFINED IN AASHTO M160M (ASTM A6M).
  - B. AFTER THE SECTION IS CUT AND ALL HOLES ARE DRILLED OR PUNCHED THE COMPONENT SHALL BE ZINC-COATED ACCORDING TO AASHTO M111 (ASTM A123).

AREA (10 <sup>3</sup> mm) <sup>2</sup>	I <sub>x</sub> (10 <sup>6</sup> mm) <sup>4</sup>	I <sub>y</sub> (10 <sup>6</sup> mm) <sup>4</sup>	S <sub>x</sub> (10 <sup>3</sup> mm) <sup>4</sup>	S <sub>y</sub> (10 <sup>3</sup> mm) <sup>4</sup>
1.7	6.84	0.91	91.2	18.2

- C. DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE AND ACCEPTED MANUFACTURING PRACTICES.
- II. INTENDED USE**
- A. POSTS ARE USED WITH THE STRONG-POST W-BEAM GUARDRAIL.



COMMONWEALTH OF PUERTO RICO  
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
HIGHWAY AND TRANSPORTATION AUTHORITY

DATE: 2/3/11

STANDARD DRAWING APPROVED BY: *[Signature]*

DEPUTY EXECUTIVE DIRECTOR  
FOR INFRASTRUCTURE

METAL BARRIER  
W-BEAM STRONG-POST  
HARDWARE

MB-2

SEPTEMBER 2009

ENGINEERING STANDARDS OFFICE  
ENGINEERING SERVICES AREA