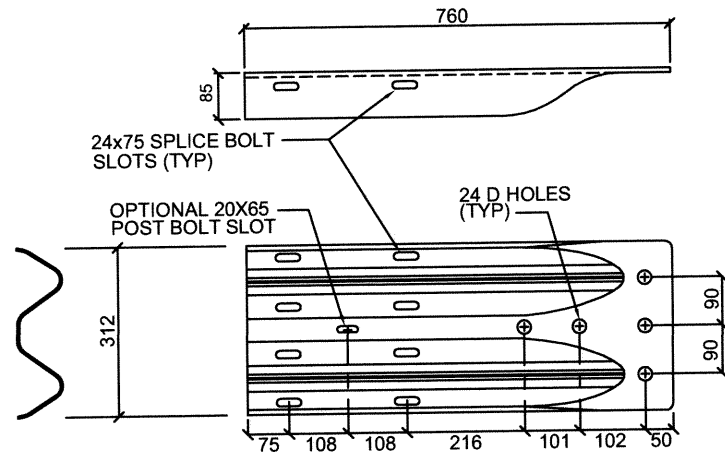


DWG BY: LMARTINEZ 2934

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| DATE | REVISION | BY |
| AUG. 96 | ORIGINAL | |
| FEB. 97 | GENERAL REVISION | |
| DEC. 98 | GENERAL REVISION | |
| DATE | REVISION | BY |
| SEPT. 09 | GENERAL REVISION | |
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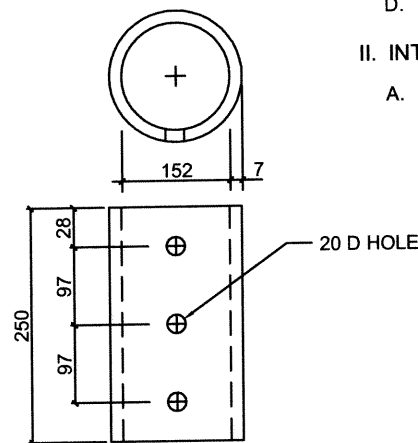
W-BEAM TERMINAL CONNECTOR

I. SPECIFICATIONS

- A. TERMINAL CONNECTOR SHALL CONFORM TO THE CURRENT REQUIREMENTS OF AASHTO M180, CLASS B. CORROSION PROTECTION SHALL BE TYPE I (ZINC-COATED).
- 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.
- C. BASE METAL NOMINAL THICKNESS SHALL BE 3.43.

II. INTENDED USE

- A. THIS TERMINAL CONNECTOR IS USED TO CONNECT THE GUARD RAIL TO BRIDGE PARAPETS AND CONCRETE BARRIERS.
- B. THE CONNECTOR IS FASTENED TO THE GUARD RAIL TERMINAL USING A BEAM TO BLOCK AND A RECTANGULAR PLATE WASHER UNDER THE HEAD AND NUT.



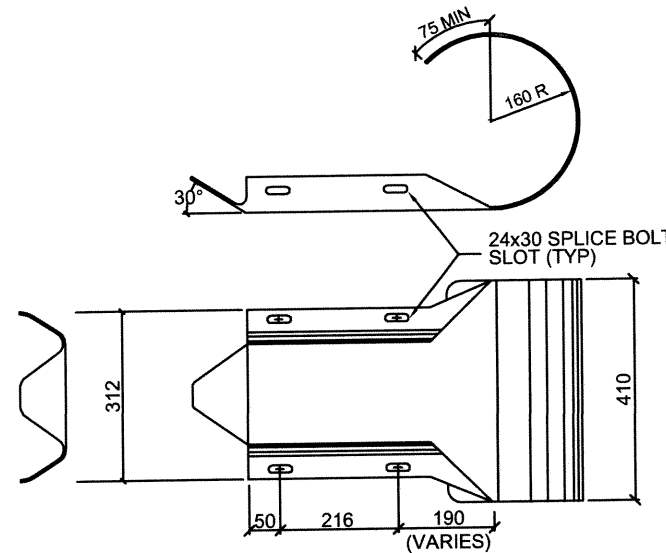
COLLAPSING TUBE

I. SPECIFICATIONS

- A. THE COLLAPSING TUBE SHALL BE MANUFACTURED FROM STANDARD-STRENGTH 152-mm INSIDE DIAMETER SCHEDULE 40 STEEL PIPE CONFORMING TO ASTM A53 GRADE B. AFTER CUTTING AND DRILLING THE PIPE SHALL BE ZINC-COATED ACCORDING TO AASHTO M111 (ASTM A123).
- 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 COLLAPSING TUBE ELEMENT IS A COMPONENT OF THE W-BEAM CONNECTION TO BRIDGE PARAPETS AND CONCRETE BARRIERS.



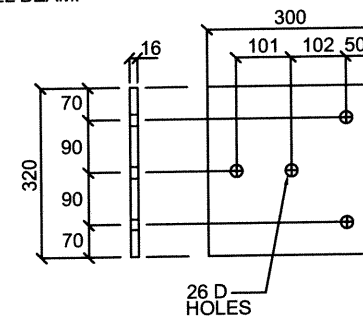
W-BEAM END SECTION (ROUNDED)

I. SPECIFICATIONS

- A. END SECTION SHALL CONFORM TO THE CURRENT REQUIREMENTS OF AASHTO M180, CLASS B. CORROSION PROTECTION SHALL BE TYPE I (ZINC-COATED).
- B. THE CROSS-SECTIONAL DIMENSIONS FOR THIS PART SHALL FIT OVER THE RAIL ELEMENT.
- 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.
- D. BASE METAL NOMINAL THICKNESS SHALL BE 3.43

II. INTENDED USE

- A. THIS END SECTION IS USED IN SOME OF THE RAIL ELEMENT TERMINAL CONFIGURATIONS EMPLOYED WITH THE STANDARD GUARD RAIL, CORRUGATED STEEL BEAM.



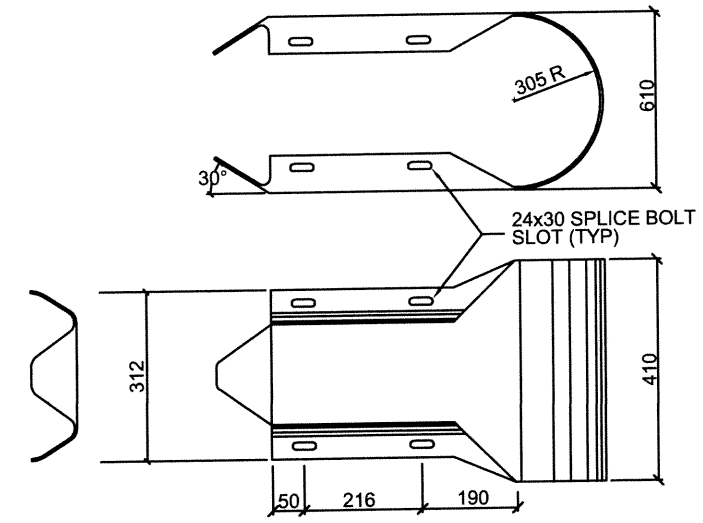
TERMINAL CONNECTOR BEARING PLATE

I. SPECIFICATIONS

- A. BEARING PLATE SHALL BE FORMED FROM AASHTO M270M (ASTM A709M) GRADE 250 STEEL PLATE AND ZINC-COATED ACCORDING TO AASHTO M111 (ASTM A123). NO PUNCHING, DRILLING OR CUTTING IS PERMITTED AFTER THE PLATE IS ZINC-COATED.
- 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 BEARING PLATE IS USED IN CONNECTIONS OF GUARD RAIL TO CONCRETE BARRIER OR BRIDGE PARAPET.



W-BEAM END SECTION (BUFFER)

I. SPECIFICATIONS

- A. BUFFERED W-BEAM END SECTIONS SHALL CONFORM TO THE CURRENT REQUIREMENTS OF AASHTO M180 CLASS B. CORROSION PROTECTION SHALL BE TYPE I (ZINC-COATED).
- B. THE CROSS-SECTIONAL DIMENSIONS FOR THIS PART SHALL FIT OVER THE RAIL ELEMENT.
- 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.
- D. BASE METAL NOMINAL THICKNESS SHALL BE 3.43

II. INTENDED USE

- A. THIS BUFFERED W-BEAM END SECTION IS USED IN TERMINAL CONFIGURATIONS FOR CORRUGATED STEEL BEAM MEDIAN BARRIER.



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

DATE: 03/17/09

[Signature]

DEPUTY EXECUTIVE DIRECTOR
FOR INFRASTRUCTURE

**METAL BARRIER
W-BEAM STRONG POST
HARDWARE**

MB-3

SEPTEMBER 2009

ENGINEERING SERVICES AREA ENGINEERING STANDARDS OFFICE