

SECTION 02708 - GUARDRAIL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing guardrail as shown on the Drawings.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Rail elements shall conform to AASHTO M 180, Class A, Type II, unless otherwise specified on the Drawings, or in the Special Provisions.
- B. Bolts and nuts shall be galvanized steel conforming to ASTM A 153, Class C and ASTM A 307.
- C. Wooden guardrail posts and blocks shall be construction grade (stress grade of 1,2000 psi or more) posts and timbers, or better, as rated by the West Coast Lumber Inspection Bureau, and shall be fabricated from one of the following timber species, Douglas Fir, Western Pine, Larch, or Hemlock. The length and cross section shall be as shown on the Drawings. Posts shall receive a preservative treatment in accordance with AASHTO M 133. Only one combination of post and block finish shall be used for any continuous length of guardrail.
- D. Steel guardrail posts shall be of the section and length shown on the Drawings, and shall be of ASTM M-36 steel, galvanized in accordance with ASTM A-123.
- E. All fittings, bolts, washers and other accessories shall be galvanized in accordance with the requirements of AASHTO M, or AASHTO M 232, whichever may apply. All galvanizing shall be done after fabrication.
- F. Concrete for anchors shall meet the requirements of Section 03302 - Concrete Structures.
- G. Paint for galvanized coating repair shall be "Zinc Clad II Ethyl Silicate" as manufactured by Sherwin Williams Ind. & Marine Coatings, or "Cold Galvanized Product No. 7002, 7007, 7008 & 7009 and Galva Bright Product No. 7707, 7708 & 7709," as manufactured by Crown North American Professional Products.

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. Guardrail posts shall be set plumb. When the Drawings require that the ends of a section of guardrail be curved outward or downward, the posts shall be set to accommodate the curve. The posts shall be backfilled with acceptable material and thoroughly compacted to the satisfaction of the ENGINEER. Any damage to the posts, pavement, shoulders and adjacent slopes resulting from post driving shall be repaired at the CONTRACTOR's expense.

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- B. The rail element shall be erected according to the Drawings in a manner resulting in a smooth, continuous installation with laps in the direction of traffic flow.
- C. All metal work shall be fabricated in the shop. No punching, cutting, or welding shall be done in the field, except that holes necessary when additional posts are required, or for special details in extraordinary cases, may be drilled in the field when approved by the ENGINEER. The rail shall be erected so that the bolts at expansion joints will be located at the centers of the slotted holes. Field-drilled holes shall be treated in accordance with AASHTO M 36.
- D. Rails on curves with a radius of 150' or less shall be shop bent.
- E. All bolts shall be drawn tight and extend at least one-fourth-inch beyond the nuts. Except where required for adjustments, bolts shall not extend more than one-half-inch beyond the nuts. Where the spelter coat on galvanized rail or post elements has been damaged, repairs to the spelter coat shall be made in accordance with AASHTO M 36.
- F. It is the CONTRACTOR's option to use either wood or steel posts when allowed by the type of guardrail specified, subject to the following conditions:
 - 1. Only one type of post on block shall be used on a Project, unless the WORK entails extending an existing run or guardrail;
 - 2. When extending an existing run of guardrail, the post and block used shall be the same material as the existing post and block.

END OF SECTION