NOTES

GENERAL: Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

See OMS 606 for guardrail specifications not covered on these drawings.

Refer to AASHTO M 180 for dimensional details of W-beam and Thrie-beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-beam to Thrie-beam Transition sections.

RAIL ELEMENTS: W-beam Rail has an effective length of 10'-0" unless otherwise specified, with 1/4" x 2-1/2" post bolt slots on 6'-0" centers regardless of post spacing. Field punch or drill bolt holes or slots for irregularly spaced posts as specified in OMS 606.04.

RAIL SPLICES: Lap splice between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the buffer or flared end sections in the direction of traffic.

For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.

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For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.
GUARDRAIL HEIGHT: For initial installation, construct the guardrail within a 9" of the standard height, h, or 29" is the top of W-Beam rail. See MEASURING GUARDRAIL HEIGHT. The finished height is to be within h ± 1" of the standard height.

POST EMBEDMENT DEPTH: Standard embedment is 3'-5" min. Where less than 2' of graded shoulder width (10:1 or flatter) exists, measured from the face of the pavement (excluding shoulders), use longer posts so that a minimum of 5'-5" embedment depth is provided. Allow 2'-0" for the longer posts will be made at the unit price bid for Item 606 - GUARDRAIL POST, 8', each.

SPECIAL POST MOUNTINGS: Install posts located over a drainage inlet or structure as shown in the FOOTING ANCHOR Detail, or anchor per the details shown on SCD GR-2.2.

ANCHORS: Holes and grouting must comply with CMS 510. Use either the FOOTING ANCHOR (swivel), or anchor per the details shown on SCD GR-2.2, may be used as an alternate anchorage method. The cover is between 2'-0" and 3'-5". If the post is driven into concrete, the post anchor may be omitted and the post encased instead with 4" (min.) of concrete. Do not drive posts located over a culvert with less than 4'-3" of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3'-5", the post with a minimum of 4" concretes. All costs associated with special post mountings are included in the unit price bid for Item 606 Guardrail of the type specified in the plans.

NOTE: For subsequent projects, such as resurfacings, affect the height of existing guardrail, the finished height is to be within 2" of the standard height, h, or 29" to the top of W-Beam rail. (See MEASURING GUARDRAIL HEIGHT.)

PROTECTIVE COATING: In lieu of the complying with CMS 710.06, coat expansion shields, anchors, and concrete insert anchor assemblies embedded in concrete in accordance with ASTM A 53 or be of stainless steel. Any bolts screwed into these devices must comply with CMS 710.06. (See sheet 3 for Concrete Insert Anchor Assembly Detail.)

DIRECTIONS:
- All dimensions are approximate. Dimensions not shown on plans, see sheet 3 for Concrete Insert Anchor Assembly Detail.
- All bolts shall be galvanized, except where noted.
**Guardrail Details**

- **Standards Swaged Fitting and Stud**
- **Cable Anchor**
- **End Plate**
- **Anchor Bracket**
- **Concrete Insert Anchor Assembly (W-Beam Only)**
- **Strut and Yoke Assembly**

Details include:
- Swaged fitting assembly details
- Anchor bracket assembly details
- Post sleeve
- Bearing plate
- Soil plate

Notations and specifications:
- Neutral axis
- Eight washers, 5/8" diameter
- Holes for nuts and washers
- Tack welded to back
- Plate dimensions
- Holes for bolts
- Holes for nuts
- Anchor bracket (See detail)
- Swaged fitting (See detail)
- End plate (See detail)
- Rail shown
- Channel legs shown down, for opposite hand, install channel legs up

Additional notes:
- Symmetry about centerline
- 3'-3" radius (Typ.)
- Channel C6 x 8.2
- Channel legs shown down. For opposite hand, install channel legs up.
- 3" radius (Typ.)
- 3" radius (Typ.)
- 3" radius (Typ.)