

### Inspection of Standard Sections

There are several items that need to be checked before a guardrail is installed. Use the following checklist and questions as a guide. The technician/inspector should review the applicable Standard Road Plans, and answer “yes” or “no” to the following:

Note that some specifications described in the following content may not be the same as the specifications followed by your agency. Always check with your State agency's standards and specifications when using these guidelines.

#### Sections

- Pre-Installation
- During Installation
- Other Things to Look For

#### Pre-Installation

- Does the current Road Standard date match the date listed in the Table of Road Standards in the project plans?
- Has the grading been completed correctly as specified on the Standard Road Plan:
  - RL-12 special shaping at median barrier; 10:1 slope from shoulder to the bottom line of a 2-ft. (0.6 m) deep ditch.
  - RL-14 special shaping at side barrier; 10:1 slope from shoulder carried to a minimum of 4-ft. (1.2 m) behind face of guardrail location and as detailed in the designated ‘z’ distance area.
- Have intakes, sod flumes, curbs, and shoulder surfacing been located and constructed correctly?

### Pre-Installation (cont.)

#### Bolt-related checks:

- On newly constructed bridge end posts, have the anchor bolt sleeves for rail attachment bolts been located correctly for the specified guardrail connection?
- On existing bridge end posts, which do not have anchor bolt sleeves in the correct location for the specified guardrail connection, has the contractor correctly located and drilled the 1-in. diameter holes for the attachment bolts?
- For any concrete damage resulting from drilling of the bridge end post, has the contractor repaired the concrete and used galvanized 3/8-in. x 4-in. x 4-in. (10 mm x 100 mm x 100 mm) steel plate washers on the back face of the bridge end post at each attachment bolt?

#### Post-related checks:

- Have wood posts and spacer blocks been verified for certification and preservative treatment?
- Has wood post condition been checked prior to installation?

#### Installation location checks:

- Is the installation line correctly located for the type of guardrail (i.e., w-beam, thrie-beam, or cable)?
- Are offset distances correct for the face of the guardrail location from the installation line?

### During Installation

- The slope of shoulder from the edge of the pavement to the face of the guardrail is required to be the same as that of the planned shoulder slope, with a distance between the two of no more than 2-ft.
- The guardrail is required to be placed at a height of 2-ft., 3 in., measured along the front face of the rail.

### During Installation (cont.)

- The front face of the rail is required to be the correct distance specified in the plans from the edge of the pavement. Except for flares and tapers at the end of the railing, the shoulder is paved up to the front face of the railing.
- The rail is required to be built as parallel to the ground as possible; however, the rail is adjusted vertically to maintain a uniform appearance.
- Metal posts are required to be driven. If conditions do not allow driving the posts, then at least a 12-in. diameter hole is drilled and backfilled with soil in 6 in. lifts after which the post is then driven.
- Rail elements are required to be lapped in the direction of the closest traffic. For example, roofing shingles are lapped in the direction of the flow of water down the roof.
- When new guardrail is being installed to replace existing guardrail and traffic is maintained during the work, the installation of the new guardrail follows the removal of the existing guardrail as closely as practical. Adequate safety protection is provided as directed between the time that the existing guardrail is removed and the time that the installation of the new guardrail is complete.
- When new guardrail is being installed where there is no existing guardrail and traffic is to be maintained during the work, the time between the installation of the posts and the mounting of the blocks and rail elements may not exceed 24 hours. Drums are placed to mark all installed guardrail posts left bare overnight.
- Blocks and rail elements are required to be erected in a manner resulting in a smooth, continuous installation.
- Elements which are cut or drilled are coated with a high, dust-zinc oxide paint in accordance with the specifications.
- Expansion joint openings in guardrail, where connected to the bridge rail, are required to be 1 in. plus the deck expansion joint installation opening.
- All bolts are required to be tightened.

### Other Things to Look For

**Traffic marker checks:**

- Are object markers, delineators, and associated hardware installed correctly?

**Footings and anchors:**

- Some modified guardrail sections require concrete either as footings or anchors