

GUARDRAIL INSTALLATION CHECKLIST

The following checklist has been developed to help identify important elements of guardrail installation that need to be reviewed during installation and verified at the time of final review and acceptance of an installation. This list is not all-inclusive and does not negate the Specifications or Standard Road Plan requirements; it simply places emphasis on key areas where problems have been experienced in the past.

PRE-INSTALLATION:

Review the applicable Standard Road Plans:

YES NO

Does the current Standard Road Plan date match the date listed in the Table of Standard Road Plans in the project plans?

Has the grading been completed correctly as specified on the Standard Road Plan:

EW-302 special shaping at median barrier; no steeper than a 6:1 slope from the shoulder to the bottom of the ditch.

EW-301 guardrail grading; 10:1 slope from shoulder carried to a minimum of 5 feet (1.2 m) behind face of steel beam guardrail and as detailed in the designated 'z' distance area.

Have intakes, sod flumes, curbs, and shoulder surfacing been located and constructed correctly?

Note: They should not interfere with the correct location for installation of the guardrail system.

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 inch 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"x 4"x 4" (10 x 100 x 100) steel plate washers on the back face of the bridge end post at each attachment bolt?

Post Related Checks:**YES NO**

Have wood posts and spacer blocks been verified for certification and preservative treatment?

Has wood post condition been checked prior to installation?

Installation Location Related Checks:

Is the installation line correctly located for the type of guardrail (ie: w-beam, thrie-beam, or cable)?

Are offset distances correct for face of guardrail location from the installation line?

COMPLETED INSTALLATION:**Installation Location Related Checks:**

Are posts and guardrail located correctly?

Is rail/cable height according to height specified in the Standard Road Plans? (ie: 31 inches (787 mm) for w-beam and 32 inches (813 mm) for thrie-beam).

Are posts spaced correctly?

Post Related Checks:

Are posts reasonably plumb?

Has a nail been driven from the spacer block diagonally into the wood post to prevent rotation of the spacer block?

Has only one spacer block been installed at each wood post? At locations of post conflict with longitudinal obstructions, two spacer blocks may be used. Only one location of three spacer blocks in an installation is allowed. The use of more than one location with three spacer blocks should be reviewed for approval with Office of Design – Methods Section.

Rail/Cable Related Checks:

Is rail/cable alignment smooth both horizontally and vertically?

Are rail sections lapped correctly according to lapping detail on the Standard Road Plan or Appendix 12-7?

Is the terminal connector at the bridge end post lapped correctly (ie: under the rail section at the bridge end post on the approach end and over the rail section at the bridge end post on the trailing end)?

YES NO

Is there any damage to the guardrail from drilling or cutting or kinks from force fitting?

Bolt Related Checks:

Are bolt washers in the correct locations?

Were high strength bolts (ie: A325) used in the installation of the rail at the bridge end post?

Are the bolt lengths correct for the rail attachment at posts and the bridge end post? (ie: nut fully threaded on bolt with a minimum of 3 bolt threads projecting past the nut)

Are all bolts galvanized?

Are bolts at all guardrail and hardware attachments fully tight?

End Anchor/Terminal Related Checks:

Is the cable assembly correctly installed as detailed when Standard Road Plans BA-203, BA204, BA205 and BA206 are specified? (ie: bolts tight in anchor bracket, bearing plate installed, and cable assembly tightened).

Have the checklist items for the terminal been reviewed for correct installation? Refer to the Instructions available from the manufacturer's web site at: www.roadsystems.com or www.highwayguardrail.com.

Traffic Marker Related Checks:

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

High Tension Cable Guardrail Checks:

Is the grading uniformly flat along the length of the high tension cable guardrail installation location?

Are the cables installed at the correct position and height according to the manufacturer's recommendations?

Has the high tension cable guardrail been correctly tensioned at time of completion of installation?

Has the high tension cable guardrail tension been rechecked three weeks following the initial installation?