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:		
RL-12 special shaping at median barrier; no steeper than a 6:1 slope from the shoulder to the bottom of the ditch.	___	___
RL-14 special shaping at side barrier; 10:1 slope from shoulder carried to a minimum of 4 feet (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?	___	___
Note: They should not interfere with the correct location for installation of the guardrail system. Concrete curb section should be behind the face of guardrail.		

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: 27 inches (686 mm) for w-beam and 32 inches (813 mm) for thrie-beam).	___	___
Are posts spaced correctly?	___	___
Post Related Checks:		
Are posts reasonably plumb?	___	___
When connecting to existing bridge end posts, are wood shims installed according to RE-27B?	___	___
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? The use of a second spacer block should be reviewed for approval with Office of Design – Methods Section.	___	___
Is spacer block positioned so guardrail has full contact with the spacer block from top to bottom of the rail?	___	___
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?	___	___
Are all rail splices occurring at only post locations?	___	___

	YES	NO
Is the 'J' terminal section 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)?	___	___
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 RE-33A, RE-33B, and RE-76 are specified? (ie: bolts tight in anchor bracket, bearing plate installed, and cable assembly tightened).	___	___
Have the checklist items for the RE-76 Fleat 350 Terminal been reviewed for correct installation? Refer to the Fleat 350 Instructions available from the manufacturer's web site at: www.roadsystems.com.	___	___
Traffic Marker Related Checks: Are object markers, delineators, and associated hardware installed correctly?	___	___
High Tension Cable Safety Barrier Checks: Is the grading uniformly flat along the length of the high tension cable safety barrier installation location?	___	___
Are the cables installed at the correct position and height according to the manufacturer's recommendations?	___	___
Has the high tension cable safety barrier been correctly tensioned at time of completion of installation?	___	___
Has the high tension cable safety barrier tension been rechecked three weeks following the initial installation?	___	___