Section 606

Guardrail and Median Barrier

PRECONSTRUCTION
Become familiar with the standard plans for guardrail installations. If guardrail is to be placed over a Mechanically Stabilized Wall, verify how the installation is to be accomplished in accordance with specifications.

EQUIPMENT
The following equipment will be required for inspection purposes:

1. Measuring tape
2. Documentation Resource

INSPECTION
Do not allow box beam installations to proceed without approved shop drawings. If guardrail materials arrive on the project and are stockpiled prior to beginning guardrail installation, verify that stockpiling is correct and precludes damage to the rail. Obtain from the contractor required paperwork including certifications and heat or lot numbers before installation begins.

Verify that guardrail lengths are the minimum specified.

Verify staking data whether provided by the department or the contractor. Ensure that line is correct and elevation is established. Be familiar with the planned number of posts paying special attention to transition locations where the distance between posts may decrease - an indication of the transition between the flexibility of the guardrail and the inflexibility of bridge rail.

Proper grading around guardrail installations is critical so that errant vehicles come into contact with the guardrail at the right height on the rail regardless of the vehicles departure angle.

Because of the different deflection characteristics of either box beam or corrugated beam installations when impacted, pay special attention to the horizontal relationship between the mounted rail and fixed objects so that clearances and elevations are as specified.

Posts may be placed by excavation and backfilling or driving. Posts that are placed in a portion of the surfacing section will be reviewed for maintenance purposes. If the surfacing is concrete, it is of more benefit to the department to install a sleeve type system where the post is inserted into a sleeve which was installed when the concrete was poured. Surfacing placed around posts will be placed at surfacing grade - do not force drainage onto the road nor allow drainage to pool and collect around posts.

To allow maximum performance of the guardrail posts that are inside of surfacing, maintain a “surfacing leave out area” of 3" in front of the post, 10" behind the post, and 6" on either side of the post. The pavement void left may be filled with native backfill, a 2 sack grout mix (maximum 120 psi), or a 2" lift of cold mix patching material.
Posts that are placed in the dirt grade will be closely inspected to determine the need for erosion control measures to prevent the eroding away of the slope and compromising the integrity of the post’s installation by eroding the material from around it. This can be accomplished by a variety of measures including the broadcast of mulch tack under the rail and the installation of a bituminous or burlap bag curb.

A majority of guardrail installations are for structure mitigation purposes. Close examination of the contract in most cases will reveal that where the rail begins to transition with the structures railing, the spacing of posts and the type of post usually changes.

As guardrail is erected, verify that connectors, splice plates and bolting assemblies are as specified. Inspect the quality of the material and require areas that have been damaged to be re-finished or painted as specified.

Delineation tabs will be set as specified.

Details and specifications shown in the standard plans for end anchorages and end terminals require special attention to the project details. The terminals are designed to be crash worthy for end on impact and rely on many specialized components and intricate details to function properly. Some details may appear to be generic, however, ensure that specialized bolts, hardware and other components will be as specified. Incorrect installation or the use of wrong components will drastically affect the performance of the end anchor or end terminal performance.

End anchors or treatments may be pre-cast or cast in place. In the event that pre-cast anchorages are used, make sure casting, handling and installation is as specified. Verify that the installation and operation of the WYBET system is as specified.

Resetting and upgrading of existing installations will be as specified. Be familiar with specifications concerning installation and provision of hardware, materials and correcting any damage.

Temporary guardrail installations may be required on a job. In that instance verify the installation, spacing, line and condition of rail as previously mentioned and as specified in the contract.

**DOCUMENTATION**
Installations will be measured and documented as the installation is completed in the project records. Other appurtenances or associated work will be either subsidiary to other pay items or measured and paid for as specified.
SAFETY
Use the following safety equipment:
1. Hard hat and vest
2. Safety glasses and hearing protection as needed.

Since this operation is done under traffic, the inspector must remain alert to the presence of traffic.