SECTION 629 THREE CABLE GUARDRAIL

629.1 DESCRIPTION

This work consists of constructing cable guardrail.

629.2 MATERIALS

A. Cable: Cable shall be ¾ inch (19 mm), Type I, Class A coating, conforming to AASHTO M30.

B. Cable Splices, Ends, Fittings, and Anchor Assembly: When galvanizing is specified, these materials shall be galvanized after fabrication to meet the requirements of ASTM A123.

C. Compensating Device: Design for alternate combination, or single unit compensating device and turnbuckle assembly, may be submitted for approval.

D. Hook Bolts: Hook bolts shall develop an ultimate pull open strength, applied in a direction normal to the longitudinal axis of the post, from 500 to 1000 pounds (2 to 4.5 kN).

E. Posts:

1. **Structural Steel Posts:** Structural steel posts and anchor plates shall conform to the requirements of ASTM A36 (ASTM A709M, Grade 50 Steel). They shall be galvanized after fabrication in accordance with ASTM A123.

2. **Flanged Channel Posts:** Flanged channel posts shall be fabricated from rerolled rail steel bars conforming to ASTM A499, Grade 60 (415) except that the minimum yield strength shall be 70,000 psi (480 MPa). The post shall meet the chemical properties of ASTM A1 for rails 30 pounds per foot (44.56 kg/m) and heavier.

   Post lengths shall be as specified plus or minus one inch and shall weigh a minimum of 4.0 pounds per foot (5.95 kg/m) plus or minus 3.5 percent. Posts shall be painted with a baked on high quality dark green enamel. Holes 3/8-inch (9.52 mm) in diameter shall be punched or bored on one inch (25 mm) centers beginning at the top of the post and extending to the bottom. All punching, boring, cutting, shearing, and welding shall be done prior to painting.

F. Concrete: Concrete shall be Class M6 (I28), as specified in Section 462.

629.3 CONSTRUCTION REQUIREMENTS

The following procedure shall be used to pretension installations of three cable guardrail:

A. Properly seat the spring in the compensator device and permanently mark the unloaded spring position on the compensator rod.

B. Install spring end assemblies at one end of the barrier and secure to the anchor.

C. With cable strung through the hook bolts, introduce tension in the cable at the opposite end of the barrier to compress the installed springs approximately 3½ inches (90 mm).

D. Clamp this tension in the cable while the end assemblies are installed at the second anchor.

E. Remove the slack between the clamp point and the second anchor by taking up the turnbuckle. If springs are also used at this end, compress them approximately 3½ inches (90 mm).

F. After two weeks at this setting, reset the spring compression as indicated in the standard sheet table on the plans. Ample turnbuckle takeup must be left at both ends to permit future adjustments.

629.4 METHOD OF MEASUREMENT

Cable guardrail will be measured by the linear foot (0.1 meter) along the axis of the cable. Measurement of cable guardrail will include the length of the anchorage sections. If the guardrail is anchored to a concrete bridge end anchor, measurement of cable guardrail shall be up to the anchor block.

The quantity of anchorage units to be paid for will be the number installed.

629.5 BASIS OF PAYMENT

Cable guardrail will be paid for at the contract unit price per linear foot (0.1 meter). Payment will be full compensation for the cost of furnishing labor, materials, and equipment necessary, except anchorage units.

Anchorage units will be paid for at the contract unit price per each. Payment will be full compensation for end posts with base plates, anchor assemblies, turnbuckles and compensating devices, appurtenant hardware, deadmen, and necessary excavation and backfill.

If the guardrail is anchored to a concrete bridge end anchor, compensation, devices, turnbuckles, and appurtenant hardware shall be incidental to the contract unit price for cable guardrail.