

ITEM 607.9601 10 – DECORATIVE TIMBER RAIL

DESCRIPTION:

The Contractor shall furnish and install decorative timber rail as shown in the Contract Documents at the locations shown and where directed by the Engineer.

MATERIALS:

General:

1. *Steel Rails and Hardware.* Steel splice plates, and all accessory components and hardware shall be fabricated as shown on the plans. Bolt holes, as necessary, may be enlarged or slotted to permit expansion and contraction and to facilitate erection. The splice plates shall be straight and of uniform section.

The steel splice plates shall meet the requirements of ASTM A36M and shall be galvanized. No punching, drilling, cutting or welding will be permitted after galvanizing.

Bolts, nuts, washers, and other miscellaneous fasteners and hardware shall conform to ASTM A325M and shall be galvanized.

2. Certified copies of the test results conducted by the manufacturer of the base metal for the physical and chemical requirements shall be furnished for all steel in the manner and form requested by the Department.
3. *Timber Rails and Posts.* The timber rail and posts shall conform to AASHTO M168. The timber elements shall be fabricated from dry, well seasoned, and dressed rough sawn Douglas Fir, Southern Pine, or other species having a stress grade of at least 10 MPa. The rail elements shall be treated with any one of the following Waterborne Wood Preservatives meeting the requirements of AASHTO M133: Acid Copper Chromate (ACC), Alkaline Copper Quat (ACQ), or Copper Azole (CA). Treatment shall meet the requirements of the American Wood Protection Association (AWPA) Category UC4A.

The following Waterborne Wood Preservatives meeting AASHTO M133 are also acceptable: Micronized Copper Quaternary, Micronized Copper Azole, and Dispersed Copper Azole Type C. Treatment with these products shall meet the requirements of the International Code Council-Evaluation Service, Inc. - Acceptance Criteria AC326.

Minimum net retention for all Waterborne Wood Preservatives shall be as required for material supplied.

A timber post that has a through check, shake, or end split in the same plane as, or a plane parallel to the bolt hole and extending from the top of the post to within 75 mm of the bolt hole will be rejected

4. *Concrete.* Cast in place concrete shall meet the requirements specified for Class A Concrete in Section 501 "Portland Cement Concrete - General." Precast concrete units shall meet the

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requirements of Subsection 704-03 "Precast Concrete - General." The requirement for a Department approved, automated concrete batch plant does not apply.

5. *Galvanizing.* Galvanizing shall conform to Subsection 719-01. Galvanizing shall be Type 1, except for hardware which shall be Type 2.

Basis of Acceptance. The Contractor shall supply manufacturer certification that all materials are of the type, quality and treatment level specified.

CONSTRUCTION DETAILS:

Decorative timber rail shall be installed as indicated in the Contract Documents.

Wood posts shall be placed by excavating or by using vibratory driving or impact driving equipment approved by the Engineer. Post driving will be permitted only if alignment and grade tolerances are met and providing no damage is done to the posts during installation. Damaged or misaligned posts shall be removed and replaced by the Contractor as directed by the Engineer. To facilitate driving, the base of the wood posts may be tapered.

Post and anchor excavations shall be backfilled, and backfilled material compacted in accordance with Subsection 203-3.15 "Fill and Backfill at Structures, Culverts, Pipes, Conduits and Direct Burial Cables."

All posts shall be aligned to a tolerance of 6 mm for plumb and grade line.

The timber rails shall be field cut to produce a fit at the joints as indicated on the plans or working drawings. Treat field cuts with two (2) coats of Waterborne Wood Preservative in accordance with AWWPA Standards.

Upon completion of the installation of the timber rail components, the Contractor shall restore the area to its original state to the satisfaction of the Engineer.

METHOD OF MEASUREMENT:

The decorative timber rail will be measured by the number of meters, measured along the axis of the rail, installed.

BASIS OF PAYMENT:

The unit price bid for the decorative timber rail shall include the cost of all labor, materials, and equipment necessary to complete the work, including paint, concrete, reinforcement, excavation, backfill, and removal and replacement of damaged or misaligned posts.