

ITEM 08606.1801 M - MERRITT PARKWAY GUIDE RAIL

ITEM 08606.1802 M - MERRITT PARKWAY GUIDE RAIL (SYSTEM 2)

ITEM 08606.1803 M - MERRITT PARKWAY GUIDE RAIL (SYSTEM 3)

ITEM 08606.1804 M - MERRITT PARKWAY GUIDE RAIL (SYSTEM 3A)

DESCRIPTION:

This work consist of furnishing and installing a single steel-backed timber rail element fastened to steel posts and the appropriate treatment at fixed objects, bridge parapets and terminal ends as shown on the plans. It shall be erected in the locations shown and fabricated in accordance with the locations, designations, dimensions and details shown on the plans or as directed by the Engineer.

MATERIALS:

All steel posts, back rails and splice plates shall conform to Section 710-25, and be manufactured from ASTM A 588 Steel. The dimensions of each component shall conform to the plans and ASTM A 6. All steel posts shall be galvanized after fabrication to meet the requirements of ASTM A 123. The galvanized coating shall conform to the limits and tolerances shown on the plans. Back rails, splice plates, and non-galvanized portions of posts shall be uncoated.

A single 19 mm diameter hole may be drilled 50 mm from the top of each post, in the center of the web, to facilitate the galvanizing process.

All timber rail and block-out components shall be rough-sawn, pressure treated Southern Yellow Pine or Douglas Fir-Larch, and be in conformance with the following:

- A. Section 712-14
- B. AASHTO M 168
- C. Commercial Lumber Grade No. 1 or better after treatment
- D. Minimum stress grade of 9.3 MPa
- E. All timbers shall receive preservative treatment in accordance with AASHTO M133 after holes and cuts are made. Any drilling or cutting performed after preservative treatment shall be treated in accordance with American Wood Preservers Association (AWPA) Standards.
- F. Kiln Dried or air dried to maximum moisture content of 25% after pressure treatment (KDAT-15)
- G. Grade-marked after treatment by an agency certified by the American Lumber Standard Committee (ALSC).

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Carriage bolts shall be manufactured according to the geometric specifications included in ANSI B18.5.2.2M. Corrosion resistant bolt material shall conform to ASTM F 568, Class 8.8.3 (830 MPa minimum tensile strength and to 660 MPa minimum yield strength). Threads shall conform to ANSI B1.13M for Class 6g threads. Corrosion resistant carriage bolts shall be marked with the symbol "8.8.3" as specified in Section 12 of ASTM F 568. These carriage bolts are AASHTO Designation FBC16 and FBC20 in "A Guide to Standardized Highway Barrier Hardware," AASHTO Report No. TF-13, 1995.

Hex lag screws shall be manufactured according to the geometric specifications included in ANSI B18.2.3.8M, and shall conform to the requirements of ASTM F 568 for Class 4.6 material (400 MPa minimum tensile strength and 240 MPa minimum yield strength). Hex screw heads shall be marked with the symbol "4.6" as specified in Section 12 of ASTM F 568. All hex lag screws shall be galvanized in accordance with ASTM A 153. These Hex Lag screws are AASHTO Designation FLB16 in "A Guide to Standardized Highway Barrier Hardware," AASHTO Report No. TF-13, 1995.

CONSTRUCTION DETAILS:

The steel posts, with the exception of end anchor posts, shall be driven. Where rock boulders are encountered in driving, this material shall be removed so as to make a hole of sufficient size to permit the setting of the post. The post shall then be set, and the area adjacent to the post shall be backfilled and thoroughly compacted before the driving of the posts. Wood posts and end anchor posts, where required, shall be set in dug holes; and the area adjacent to the post shall be backfilled and thoroughly compacted. Any surplus material remaining after the completed installation shall be removed by the contractor.

The contractor is cautioned that within the limits of any project, buried cable for illumination or utilities, which may be energized, may be present.

In driving steel posts, suitable driving caps and equipment shall be provided to prevent battering or injury to the posts and to prevent the galvanizing on the posts above the ground line from being scratched, defaced or damaged.

The posts shall be located as shown on the plans, set plumb and in alignment with the rail or rail treatments. Where required, the brackets, back-up rails and rail elements shall be erected to produce a smooth, continuous rail as shown on the plans. The terminal sections and rail elements shall be lapped in the direction of traffic where possible.

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Whenever guide rail or rail treatments are being constructed adjacent to roadways open to traffic, the contractor shall complete the installation to and including the designed terminal treatment at the close of each day's work so as to prevent any hazard that would be caused by leaving an exposed end of the beam rail.

On long runs or other locations where it is not practical to complete the installation to and including the designed terminal treatment, the contractor shall use temporary methods for terminating the guide rail so as to minimize any hazard by lowering the rail end to the ground and providing adequate anchorage of the same by bolting, weighting, burying, etc.

The contractor shall submit to the Engineer, for approval, details of his proposed methods for the temporary terminal treatment of the end section. No work shall be performed adjacent to the areas open to traffic until approval is given.

The contractor shall be required to furnish extra length posts at transition areas or where field conditions warrant. These posts shall be of such length that the minimum depth in the ground, as shown on the plans, shall be maintained.

Before final erection, all galvanized elements which have been cut or worked so as to destroy the zinc coating and cause the base metal thoroughly cleaned and painted with one coat of zinc dust-zinc oxide paint and a finish coat of aluminum paint.

METHOD OF MEASUREMENT:

The quantity of Merritt Parkway Guide Rail measured for payment will be the number of meters measured along the axis of the railing, and between its extreme outer limits, including the terminal length of rail at bridges.

BASIS OF PAYMENT:

Merritt Parkway Guide Rail will be paid for at the unit price bid per meter for the type indicated on the plan or ordered by the Engineer, complete in place. The price shall include all labor, materials, fittings, back-up rail, posts, equipment and tools.