

**SECTION 9.11**  
**METAL BEAM RAIL ANCHORAGES**

**9.11.01--Description:** This work shall consist of rail elements, terminal section, posts, concrete end anchor and fittings.

**9.11.02--Materials:** The materials for this work shall conform to the requirements of Article M.10.02.

Nonshrink grout shall conform to Subarticle M.03.01.-12.

**9.11.03--Construction Methods:** Anchorages, channels, rails, terminal sections and fittings shall be placed as indicated on the plans and in a workmanlike manner. In excavating for the anchorages, the excavation shall be backfilled with suitable material and compacted in 150 mm layers. Any surplus material remaining after the completed installation shall be removed by the Contractor.

When the rail is to be attached to rock, the necessary rock shall be removed and the holes drilled in the rock in the proper locations. The diameter of the holes shall be sufficient to permit the placement of the bolts and the nonshrink grout, but shall not exceed twice the diameter of the bolts to be installed. The holes shall then be blown clean with an air jet.

The bolts shall be installed in the holes and the holes filled with nonshrink grout. After the steel plate is installed it and any spalled areas shall be backfilled with nonshrink grout.

When the rail is to be attached to a concrete surface, the bolts shall be installed and grouted as indicated above for installation in rock.

The rail elements shall be lapped in the direction of traffic.

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

**9.11.04--Method of Measurement:** The number of anchorages to be measured for payment will be the actual number of anchorages of each type installed and accepted in accordance with the "Pay Limit Anchorage" of each type shown on the plans.

**9.11.05--Basis of Payment:** Payment for anchorages will be paid for at the Contract unit price each for each type of anchorage, complete in place, which price will include necessary excavation, backfilling, materials, fittings, equipment, tools, removal of surplus material and labor incidental to the complete installation.

Drilling in or removal of rock or boulders and backfilling with suitable material when required for the installation of anchorages, will be paid for as "Extra Work" according to the provisions of Article 1.04.05 and 1.09.04, unless an item for the removal of rock appears in the proposal.

Pay Item	Pay Unit
(Type) End Anchorage Type I	EA.
(Type) End Anchorage Type II	EA.