Bolts with self-locking nuts shall be placed with the heads toward the roadway or walkway.

Welded joints shall be finished by grinding or filing to provide a neat appearance.

Steel railing shall be galvanized.

Aluminum railing shall be cleaned of all dirt and foreign matter, and polished to provide a uniform appearance.

624.04 METHOD OF MEASUREMENT.

The unit of measure for Railing will be the total number of Linear Feet of Railing in place and accepted, measured along the Railing centerline as specified.

When a separate Bid Item is not included for Railing, the Railing will be measured by the Pound or Lump Sum basis as specified for Structural Steel in Section 616.

624.05 BASIS OF PAYMENT.

Payment will be made at the Contract Unit Prices as follows:

Pay Item	**Pay Unit**
Railing	Linear Feet

This payment will be full compensation for all labor, equipment, and materials necessary to complete the work.

SECTION 626
COFFERDAMS

626.01 DESCRIPTION.

This work consists of designing, constructing, dewatering, maintaining, removing, and backfilling all cofferdams necessary for constructing footings.

Cofferdam shall designate any temporary or removable structure designed to hold the surrounding earth, water, or both out of the excavation. A cofferdam may be constructed of earth, timber, steel, concrete, or a combination of these. It includes earthen dikes, timber cribs, any type of sheet piling, and removable steel shells or any similar construction.

626.02 CONSTRUCTION REQUIREMENTS.

A. **General.** Cofferdams for foundation construction shall be carried to adequate depths and heights. They shall be designed and constructed to be safe and as wa-

tertight as necessary for the proper performance of the work which must be done inside them. Interior dimensions shall give sufficient clearance for construction and exterior inspection of forms, and placement of pumping equipment.

Cofferdams which tilt or move laterally during the process of sinking shall be righted or enlarged to provide the necessary clearance at the Contractor's expense.

Cofferdams shall be constructed to protect green concrete against damage from a sudden rising of the stream and to prevent damage to the foundation by erosion. No timber or bracing which extends into the substructure shall be left in the substructure without approval of the Engineer.

B. **Excavation.** Excavation inside the cofferdam that is within the limits defined in Section 210.04 A shall be paid for by the class of excavation designated on the Plans. Other excavation inside the cofferdam but outside the limits defined in Section 210.04 A will be incidental to the bid item "Cofferdams."

C. **Removal of Cofferdams.** Cofferdams shall be removed when no longer needed. Excavation shall not be removed below the natural channel bottom outside the cofferdam to facilitate sheeting removal.

After the cofferdam is removed, Ordinary Backfill shall be used to fill the excavated area to the natural channel bottom. Ordinary Backfill will be incidental to excavation.

D. **Seal Concrete.** Concrete foundation seals shall be constructed and paid for according to Section 602.

E. **Pumping.** Pumping from the interior of any foundation enclosure shall not be permitted during placement of concrete, or for at least 24 hours after placement, unless it is done from a sump separated from the concrete work. Pumping to dewater a sealed cofferdam shall not begin until the seal has set sufficiently to withstand the hydrostatic pressure.

626.03 METHOD OF MEASUREMENT.

When the Proposal Form includes a quantity for Cofferdams, each Cofferdam will be measured as a unit. This unit shall include all Cofferdams required in the construction of any pier or abutment.

626.04 BASIS OF PAYMENT.

Payment will be made at the Contract Unit Price as follows:

Pay Item	Pay Unit
Cofferdams	Each

When the Cofferdam is installed, 70% of the Contract Unit Price will be paid. The remaining 30% will be paid when the Cofferdam is removed and disposed of.

Any modification of a Cofferdam made necessary by a change in Plans will be paid for according to Section 104.03 D.

This payment will be full compensation for all labor, equipment, and materials necessary to complete the work.

SECTION 630
PAINTING

630.01 DESCRIPTION.

This work consists of furnishing all paints and paint materials; preparing surfaces to be painted; applying, protecting, and drying paint coatings; and protecting all traffic, adjacent property, and the work itself against spatters or other damage due to painting operations.

The shop paint system for new structural steel shall consist of an inorganic zinc silicate primer and a compatible high-build, aliphatic polyurethane finish coat. After fabrication and before shipment, the primer and finish coat shall be applied to all surfaces except as specified.

The field applied system shall be an aluminum filled epoxy mastic primer and a compatible high-build, aliphatic polyurethane finish coat. This system is intended for rehabilitation painting of existing steel structures. It is also intended for coating field splices as well as touch-up of damaged areas of shop applied coats on new structural steel after erection.

630.02 MATERIALS.

A. **Inorganic Zinc Silicate Primer.** The inorganic zinc silicate primer shall be a 2-component self-curing type which, when mixed and applied by the manufacturer's instructions, cures without the use of a separate curing solution, and has the following properties:

1. **Composition:** Zinc dust shall meet ASTM D 520 Type I, modified to allow 0.1 percent retained on the No. 100 sieve. The vehicle component shall consist primarily of a partially hydrolyzed ethyl silicate in an appropriate solvent. The mixed paint shall have the following properties:

   a. Zinc portion shall be at least 72 percent by weight of the total solids of the dried coating.

   b. Total solids shall be at least 78 percent by weight.

   c. The color shall be a distinct contrast with the blast cleaned metal and the finish coat.

2. **Corrosion Resistance:** Test panels meeting ASTM D 609, having minimum dimensions of 2"x5"x1/8", shall be prepared by cleaning all surfaces