



**STANDARD SPECIFICATIONS
FOR
HIGHWAY AND BRIDGE
CONSTRUCTION**

SERIES 2012

outside the above dates, will be paid for when approved by the Engineer.

4. Payment for protection will be made when heated housing or insulated forms are used to meet requirements of Article 2403.03, I. The additional payment for protection will be \$7.00 per cubic yard (\$9.25 per cubic meter). If a footing is protected by flooding with water, no payment will be made. If footings are protected with coverings of burlap, hay, straw, plastic, insulation, and/or other materials sufficient to meet the temperatures and time specified in Article 2403.03, I, payment for protection will be made.
- B. Reinforcing Steel and Structural Steel: according to Sections 2404 and 2408, respectively.
 - C. Concrete sealer application to structural concrete: included in the contract unit price for structural concrete.
 - D. Subdrains, porous backfill material, and granular backfill material required and furnished for structural concrete placement at bridge abutments: included in the contract unit price for the structural concrete.
 - E. When an admixture is required to be added by the contract documents or the Engineer for the purpose of retarding the set, the cost of the retarding admixture is incidental to the contract unit price per cubic yard (cubic meter) of structural concrete
 - F. Payment is full compensation for:
 - Furnishing all materials, including materials for filling and sealing joints, but not including structural steel or steel reinforcement.
 - Furnishing, constructing, and removing all forms, ties, and falsework.
 - Incidental work necessary for completion of the work in conformance with the contract documents.
 - G. Heating frozen soil or protecting soil from freezing, or both, prior to concrete placement is incidental regardless of winter work being specified on the contract documents.

Section 2404. Reinforcement

2404.01 DESCRIPTION.

Furnish and place all reinforcing bars and fabrics used in concrete according to the contract documents.

2404.02 MATERIALS.

Use reinforcement meeting the requirements of Section 4151.

D. Placing and Fastening.

1. Place reinforcement in the position indicated in the contract documents. Ensure reinforcement is held securely in place during placing and hardening of the concrete.
2. Tie reinforcement bars at all intersections except where spacing is less than 1 foot (300 mm) in each direction, in which case tie alternate intersections.
3. The Engineer will inspect and approve the locations, fastening, and condition of reinforcement before concrete is placed around it.
4. Welding of reinforcing steel will not be permitted unless specified in the contract documents or approved by the Engineer.
5. In floors of culverts and in other footings without piling, suspend reinforcement from cross wales above the tops of the forms or support on steel stakes driven into the subgrade or on chairs.
6. Install dowels, deformed bars, inserts, or other articles into existing pavements and structures as shown in the contract documents. When installed with epoxy material, complete the procedure according to Article 2301.03, E. Cut reinforcing steel, in the field, using mechanical methods. Do not flame cut.

E. Reinforcing Supports and Spacers.

1. Support horizontal reinforcement using support devices, or tie to vertical reinforcing steel.
2. Position vertical reinforcement using side-form spacers. Use support devices and side-form spacers, either plastic or steel, meeting the requirements of Materials I.M. 451.01.
3. Hold epoxy coated reinforcing steel in place with epoxy or plastic coated bar supports, and epoxy or plastic coated tie wires.
4. Do not use concrete block inserts, bricks, stones, wood blocks, wood stakes, and similar materials to support reinforcement if by their use they may become embedded in the concrete.
5. Space support devices according to the manufacturer's recommendations or as recommended by the current CRSI Manual of Standard Practice. Use a support system with spacing not to exceed 4 feet (1.2 m) in each direction for bolsters or continuous high chairs and 3 feet (0.9 m) in each direction for individual bar chairs.
6. Rest the base of chairs and support bolsters on the supporting false work. Use supporting chairs that have either upturned legs or a horizontal bar spot welded at the base of the leg.