

SECTION 220549 CONCRETE PADS FOR PLUMBING EQUIPMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. General concrete pad requirements

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Subbase for Concrete Pads: Section 310000.

1.03 REFERENCES

- A. Except as shown or specified otherwise, the Work of this Section shall conform to the requirements of Specifications for Structural Concrete for Buildings ACI 301-99 of the American Concrete Institute.

1.04 SUBMITTALS

- A. Shop Drawings: Placing drawings for bar reinforcement.
- B. Quality Control Submittals:
 - 1. Certificates: Bar reinforcement manufacturer's certification that bar material conforms with ASTM A 615 and specified grade.

1.05 STORAGE

- A. Store materials as required to insure the preservation of their quality and fitness for the Work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Anchor Bolts: Standard bolts, ASTM A 307, with lock washers and nuts.
- B. Steel Plates: ASTM A 36.
- C. Sleeves: Steel Pipe, Schedule 40, black, ASTM A 53.
- D. Steel Shims and Fillers: ASTM A 569.
- E. Reinforcement: Furnish the following unless otherwise indicated on the Drawings:
 - 1. Fabric Reinforcement: ASTM A 185 welded wire fabric, 6 x 6 - W2.9 x W2.9 fabricated into flat sheets unless otherwise indicated.
 - 2. Bar Reinforcement: ASTM A 615, Grade 60, deformed.
 - 3. Metal Bar Supports: Galvanized or AISI Type 430 stainless steel, and without plastic tips.
 - 4. Tie Wire: Black annealed wire, 16 gage minimum.
- F. Fly Ash: ASTM C 618, including Table 1A (except for footnote A), Class F except that loss on ignition shall not exceed 4.0 percent.

2.02 PROPORTIONING OF CONCRETE MIXES

- A. Compressive Strength: Minimum 4000 psi.
- B. Weight: Normal.
- C. Durability: Concrete shall be air-entrained. Design air content shall be 6 percent by volume, with an allowable tolerance of plus or minus 1.5 percent for total air content. Entrained air shall be provided by use of an approved air-entraining admixture. Air-entrained cement shall not be used.
- D. Slump: Between 2 inches and 4 inches.
- E. Admixtures: Do not use admixtures in concrete unless specified or approved in writing by the Director.
- F. Selection of Proportions: Concrete proportions shall be established on the basis of previous field experience or laboratory trial batches, unless otherwise approved in writing by the Director. Proportion mix with a minimum cement content of 611 pounds per cubic yard for 4000 psi concrete.
 - 1. Optional Material: Fly ash may be substituted for (Portland) cement in normal weight concrete up to a maximum of 15 percent by weight of the required minimum (Portland) cement. If fly ash is incorporated in a concrete design mix, make necessary adjustments to the design mix to compensate for the use of fly ash as a partial replacement for (Portland) cement.
 - a. Adjustments shall include the required increase in air-entraining admixture to provide the specified air content.

2.03 FABRICATION OF ANCHOR BOLT ASSEMBLIES

- A. Bolts: Diameter 1/8 inch less than the bolt holes in the equipment supports and length equal to the depth of the pad minus 1 inch plus the additional length required to provide full thread through nuts after shims, equipment, and washers are in place.
- B. Sleeves: Diameter 1/2 inch larger than the bolt diameter and length as required to extend from the head of the bolt to the top of the pad.
- C. Plates: 3 x 3 x 1/4 inch steel plate.
- D. Weld a plate to the head end of a bolt. Center the bolt in a sleeve and tack-weld the sleeve to the plate.

PART 3 - EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Concrete materials, reinforcement, forms, and earth which will be in contact with fresh concrete shall be free from frost at the time of concrete placement.

3.02 INSTALLING ANCHOR BOLTS AND SLEEVES

- A. Install anchor bolts (with sleeves) for all bolt holes in equipment supports.

- B. Accurately position and securely support anchor bolts and sleeves prior to placing concrete. Support head of bolt 1 inch above bottom of pad. Temporarily close open end of sleeves to prevent entry of concrete.
- C. Grout anchor bolts in sleeves with cement grout or approved shrink-resistant grout after final positioning.

3.03 REINFORCING

- A. Except where other reinforcement is shown on the Drawings, install welded wire fabric at mid-depth of each pad, extending to 1 inch from perimeter of pad.

3.04 FINISHES

- A. Formed Surfaces: Provide a smooth rubbed finish, with rounded or chamfered external corners, on all concrete surfaces exposed to view.
- B. Unformed Surfaces: Provide a troweled finish on top surface of pads.

END OF SECTION 220549