

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

The requirements of the Standard Specifications for Public Works Construction (SSPWC), latest edition, Parts 2 through 6 (except as modified herein), apply to this project and are incorporated herein by this reference. Part 1 is specifically excluded.

Drawings, project manual, and general provisions of the Contract, including, without limitation, General Conditions of the Contract, additional General Conditions of the Contract, and Division 1 specification sections, apply to this section.

1.02 SCOPE

Work included: Provide all cast-in-place concrete, complete in place, as indicated on the drawings, specified herein, and needed for a complete and proper installation.

1.03 QUALITY ASSURANCE

Qualifications of Installers:

Throughout the progress of installation of the work of this Section, provide at least one person who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills, and who shall be present at the site and shall direct all work performed under this Section.

Use adequate number of skilled workers to ensure installation in strict accordance with the approved design.

PART 2 - MATERIALS

2.01 GENERAL

All materials shall conform to Section 201 of Standard Specifications.

- A. Portland Cement: Section 201-1.2.1, Type V. Only one brand of cement shall be used.
- B. Aggregates: Conform to Section 201-1.2.2.
- C. Water shall be clean and free from deleterious materials.

- D. Curing compound: "Clear Seal" as manufactured by A.C. Horn, "Burke Cure Seal" as manufactured by Burke Concrete Accessories, Inc.
- E. Form lumber shall be Douglas Fir, construction grade or better.
- F. Expansion joint material: Shall be ASTM Standard D1751-61 "Fibre Expansion Joint" as manufactured by W.R. Meadows, Inc. or approved equivalent.
- G. Joining new concrete adjacent to existing concrete: A single ply of 30 lb. asphalt roofing felt, meeting the guidelines of ASTM D-226, shall be placed along the entire thickness of the exposed vertical slab of existing concrete. Excess asphalt felt shall be removed so that the top edge of the felt is flush with the finished concrete surface after the concrete has cured.

PART 3 - EXECUTION

3.01 GENERAL

All materials shall conform to Section 302.6 of Standard Specifications except as modified herein.

3.02 CONCRETE MIX

- A. The Contractor shall supply and pay all costs for concrete mix designs.
- B. In no case shall concrete contain less than 5 sacks of cement per cubic yard, and a maximum of 7 gallons of water per sack of cement.
- C. Concrete mixes shall be proportioned by the using of 1-inch maximum size aggregate.
- D. All concrete shall conform to Concrete Class Use Table, Section 201-1.1.2, of the Standard Specifications and shall be 520-C-2500 (2,500 pounds per square inch ultimate compressive strength at 28 days) unless otherwise noted. Concrete mix shall have a maximum water/ cement ratio of 0.61.
- E. The maximum slump for slab on grade shall be 4".
- F. Mix design must be approved by Architect, and/or City's testing laboratory. Three or more mix design reviews will be at Contractor's expense.

3.03 TESTS AND INSPECTION

- A. The quality and quantity of materials used in the concrete shall be controlled at the batch plant by a Weighmaster.

- B. Contractor shall deliver two copies of each load ticket to the City representative.

3.04 FORMWORK

- A. Form shall be substantial, unyielding, true to line and grade, and shall conform to the dimensions indicated on the drawings.
- B. Use form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practical sizes to minimize number of joints.
 - (1) Panels at Smooth Concrete: New, FSC, urea-formaldehyde free, minimum 3/4-inch thick, MDO plywood made specifically for forming of Architectural Concrete to achieve joint pattern shown on Drawings or accepted shop drawings; Acceptable materials: "PureKor MDO Concrete Formply" by Panel Source International, Inc.
- C. Form Release Agent: Colorless non-staining, free from oils. Chemical agent shall not impair bonding of paint or other proposed coatings.

3.05 TRANSPORTATION AND PLACING CONCRETE

Responsibility for proper placing, compacting and finishing rests with the Contractor. Finished work showing voids and separation of aggregates will not be accepted.

3.06 SLAB FINISH

- A. Exterior slabs shall have a finish between light broom and medium broom to match existing adjacent as directed by the Architect. The finish must be true to line and grade.
- B. Concrete walks shall have 1/2" thick expansion joints at all locations indicated on plans, and score joints at all locations indicated on plans, with a maximum interval of 10 feet on-center.
- C. All exterior flatwork shall drain positively away from buildings, whether indicated or not on the drawings.
 - (1) Any condition which may result in water standing or flowing adjacent to buildings shall be brought to the attention of the City representative before placing concrete.
 - (2) Maximum allowable tolerance for level slab shall be a variation of 1/8" from a 10' straight edge.

- D. Graffitied concrete surfaces will not be accepted. The contractor shall provide watchmen as required to insure a graffiti-free surface. Patching of concrete surfaces will not be permitted. Whole sections must be removed and replaced.

3.07 BENCH FINISH

Bench finish: Hard troweled, extra smooth.

3.08 CURING CONCRETE

All concrete surfaces shall be kept continuously wet for a period of not less than 36 hours by ponding, soaking or spraying. Following this 36 hour period, the concrete shall be protected from loss of moisture by Edoco Cure & Seal 30 EF by Dayton Superior or approved equal.

END OF SECTION 03 30 00