

SECTION 03 30 01 - CAST-IN-PLACE CONCRETE FOR SITE WORK

GENERAL

1.1 SUMMARY

- A. Furnish and install cast-in-place concrete as shown on the drawings and specified.
- B. Section includes all cast-in-place concrete shown on the drawings and required by these specifications.
- C. The A/E has designed a project which will be safe after full completion. The A/E has no expertise in, and takes no responsibility for, construction means and methods or job site safety during construction, which are exclusively the Contractor's responsibility. Processing and/or approving submittals made by the Contractor which may contain information related to construction methods or safety issues, or participation in meetings where such issues might be discussed, shall not be construed as voluntary assumption by the Associate of any responsibility for safety procedures.
- D. Coordinate the work of other trades who will provide and install items (sleeves, piping, conduit, inserts, etc.) to be cast in the concrete. Place no concrete until all such items are in place.
- E. Inspection and testing services required by this section are to be performed by an agency retained by A/E. This includes all field sampling and testing required by this section.

1.2 RELATED WORK

- A. Documents affecting this work shall include, but are not limited to Bidding Requirements, General Conditions, and Division 1.

1.3 QUALITY ASSURANCE

- A. Standards
 - 1. Comply with the provisions of the following standards:
 - a. ACI - American Concrete Institute.
 - b. CRSI - Concrete Reinforcing Steel Institute.
 - c. ASTM - American Society for Testing and Materials.
 - d. AASHTO - American Association of State Highway and Transportation Officials.
- B. Concrete Testing

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1. The A/E shall engage a testing laboratory to perform material evaluation tests, field quality control testing, and laboratory testing for the compressive strength of all concrete.

C. Codes

1. Perform all work to furnish and install the cast-in-place concrete in compliance with applicable requirements of governing agencies having jurisdiction.

1.4 SUBMITTALS

A. Shop Drawings for Reinforcement

1. Submit shop drawings prepared by a registered Professional Engineer for fabrication, bending and placement of concrete reinforcement. Comply with ACI SP-66, AACI Detailing Manual, showing bar schedules, stirrup spacing, diagrams of bent bars and arrangement of concrete reinforcement. Include special reinforcement required for openings through concrete structures and dowel reinforcement for masonry. Three sets of prints and one set of reproducible shop drawings shall be submitted for approval. The reproducible set will be returned to the contractor, who will make and distribute as many copies as needed. Only prints with the approval stamp printed on them shall be permitted on the site.

B. Concrete Mix Designs

1. Submit concrete mix designs for each class of concrete to be used on the project, including specifics regarding admixtures proposed for each mix design. Include concrete test reports to substantiate trial batch mixes or previous performance of the same mix design.

C. Product Data

1. Submit data for proprietary materials and items, including cement, reinforcement, embedded forming accessories, admixtures, patching compounds, water stops, joint systems, curing compounds and others, as requested by the A/E.

D. Batch Tickets

1. Submit batch ticket for each load of concrete used on the job. Each ticket shall indicate the design mix, the project name, the date, the time of batching, and the truck number.

1.5 JOB CONDITIONS

A. Climatic Conditions

1. Placement and curing of concrete shall be performed under various weather conditions in accordance with ACI 301, Specifications for Structural Concrete for Buildings, ACI 305, Hot Weather Concreting, and ACI 306, Cold Weather Concreting, except as modified herein.

2. In general, do not place concrete when site conditions exist such as standing water, extreme heat or cold, etc., unless the necessary precautions have been taken to properly place and protect concrete as recommended by ACI, and as acceptable to the A/E.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete Materials

1. The materials and admixtures used in Portland cement concrete shall be as per Item 499 - Concrete in the City of Columbus, Construction and Materials Specifications, Edition 2002.

B. Reinforcing Material

1. The material used in reinforcing steel shall be as per Item 509 Reinforcing Steel in the City of Columbus, Construction and Material Specifications Edition 2002.

2.2 MIXES

- A. Design Mixes shall be as per Item 499 - Concrete, in the City of Columbus, Construction and Material Specification, Edition 2002, using the following Table:

<u>Item</u>	<u>Description</u>	<u>Class of Concrete</u>
305	Portland Cement Conc. Pvmnt.-Arterial	Class E
452	Concrete Pavement	Class C
511	Concrete for Sewer Junction Chambers	Class C
511	Concrete for Slab Foundations	Class C
452	Concrete for Sewer Junction Chamber Flow Channels	Class C
602	Concrete Masonry	Class C
609	Concrete Curb	Class C
801	Concrete Blocking	Class C

- B. Design Mixes shall be as per Item 499 – Concrete, in the ODOT's, Construction and Material Specifications, Edition 2005, using the following Table:

<u>Item</u>	<u>Description</u>	<u>Class of Concrete</u>
524	Drilled Shafts	Class S

PART 3 – EXECUTION

3.1 INSTALLATION

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- A. The placement of the forms, reinforcing steel, joint material and concrete shall be as detailed on the plans as per the City of Columbus, Construction and Material Specifications, 2002 Edition.

3.2 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. Obtain concrete for required tests at point of placement.
- B. For each concrete class perform one strength test for each 50 cubic yards, or fraction thereof, placed in any one day.
- C. Determine slump and concrete temperature for each strength test.
- D. Determine air content for each strength test of air-entrained concrete.
- E. Do not place concrete when slump, air content or temperature vary from allowable.
- F. Maintain records of all tests, indicating exact location of the structure represented by each test.

3.3 ADJUST AND CLEAN

- A. Keep premises free of debris and unusable materials. As work progresses, or at the request of the A/E, remove waste materials from the site.

END OF SECTION 03 30 00