

SECTION 031000 - CONCRETE FORMWORK

PART 1 - GENERAL

1.01 Applicable provisions of "General Conditions", "Supplementary General Conditions" and "General Requirements", Division 01, govern work under this Section.

1.02 DESCRIPTION

A. Work Included: Labor, materials and equipment to design, fabricate, erect and remove formwork for cast-in-place concrete.

B. Work Installed but Furnished Under Another Section:

1. Expansion Joint Fillers: Section 033000
2. Waterstops: Section 033000
3. Anchors, Bolts, Embedded Items, etc., for Securing Metal Fabrications to Cast-In-Place Concrete Work: Section 032000

1.03 QUALITY ASSURANCE

A. Reference Standards (Current Editions):

1. ACI 301: Specifications for Structural Concrete for Buildings.
2. ACI 318: Building Code Requirements for Reinforced Concrete.
3. Southern Building Code Congress International, Inc.: Standard Building Code.
4. ASTM Standards referenced herein.

B. Accessibility of Standards: Maintain one (1) copy of ACI 301, ACI 318 and Standard Building Code at the construction office, readily accessible for reference.

1.04 SUBMITTALS

A. Manufacturer's Data:

1. Manufacturer's specifications and installation instructions for:
 - a. Form Release Agent.
 - b. Slab Construction Joint Key.

- c. Proprietary Forming Systems.
- 2. Manufacturer's written warranty that the form release agent will not stain concrete surfaces, will not adversely affect strength and texture of the concrete surfaces, and will not adversely affect the bond of subsequent surface applications.
- 3. Submit in sufficient quantity that Architect may retain two (2) sets of each submittal.
- B. Formwork and Shoring Procedures: Submit shop drawings and data for all formwork including shoring and re-shoring locations and procedures planned for the project. Submittals shall have been designed by a qualified Registered Engineer, and shall bear his signature and seal. Forward copies of drawings and data to each of the following:
 - 1. Architect: Two copies, for information.
 - 2. Contractor's Field Office: One copy, readily accessible for reference.
 - a. Drawings shall not contain reproductions of the contract drawings.
 - b. In designing shoring, assume that maximum live load reductions allowed by Code were taken in design of structural members.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Comply with reference standards.
- B. Blockouts and Keyways: Wood or styrofoam.
- C. Chamfer Strips: Wood.
- D. Nailing Strips: Pressure treated wood.
- E. Form Release Agent: Non-staining, rust preventive, guaranteed not to affect bond of subsequent surface applications to concrete.
- F. Concrete Joist Forms: Removable steel forms, with end caps, or tapered end forms. Ceco or accepted substitute.
- G. Anchor Bolt Templates: Steel or exterior grade plywood.
- H. Slab Construction Joint Key: Permanent sheet metal tongue-and-groove edge form with metal stakes and accessories. Burke Keyed Kold Joint or accepted substitute.

PART 3 - EXECUTION

3.01 CONSTRUCTION, ERECTION AND REMOVAL

- A. General: Comply with reference standards.

- B. Material: Use proper form material to secure the finishes specified in other sections.
- C. Chamfers: Install 3/4" chamfer strips in corners of exposed members, unless otherwise shown on the architectural drawings.
- D. Footing Forms: Footings shall be formed. Earth forms may be used only if sides of excavations will remain vertical during construction.
- E. Removal: Shoring shall remain in place until concrete has reached its specified 28-day compressive strength.
- F. Reshoring: Formwork shall not be reshored without the express permission of the Architect.
- G. Reuse: Formwork may be reused, if acceptance of the Architect is obtained. Reused forms must provide concrete finish equal to new formwork.
- H. Galvanized Corrugated Steel Permanent Deck Form:
 - 1. Install continuous over at least 3 spans, where possible.
 - 2. Form orientation, laps, bearing length, etc., shall conform to the recommendations of the manufacturer.
 - 3. Fasten to supports by welding through 16-gauge welding washers supplied by the manufacturer. Welds shall conform to manufacturer's recommendations, unless noted.
 - 4. Weld pattern:
 - a. End Laps: Weld at each side lap, plus one intermediate weld (3 welds per sheet).
 - b. Intermediate Supports: Weld at side laps.
- I. Joist Forms: Concrete joist forms shall be reasonably true to shape, and shall be installed in accordance with the manufacturer's recommendations. Use square end caps except where tapered end forms are shown on the drawings.
- J. Anchor Bolts: Prepare and set templates for column anchor bolts, so that bolts are properly located and will not displace during placement of concrete. Drill bolt holes in templates in accordance with information shown on approved structural steel shop drawings.
- K. Joint Keys: Install slab construction joint key in accordance with the manufacturer's instructions so that a combination edge form, construction joint, load transfer device and vibrating screed rail is provided.
- L. Joint Fillers: Install expansion joint fillers as shown on the drawings.
- M. Waterstops: Install waterstops as shown on the drawings. Make splices in strict accordance with the instructions of the manufacturer.

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FK PROJECT No. 5592

ISSUE DATE: 02/28/2020
PERMIT REVIEW SET

- N. Embedded Items: Install embedded items and anchorages for connection of work of other sections in the formwork in accordance with approved shop drawings.

END OF SECTION 031000