SECTION 03 20 00 - CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This section includes fabrication and installation of deformed bar and welded wire fabric reinforcing steel.

1.2 RELATED REQUIREMENTS

A. Section 03 10 00 - Concrete Forming and Accessories

B. Section 03 30 00 - Cast In Place Concrete

1.3 REFERENCE STANDARDS:

A. American Concrete Institute (ACI), latest versions:

1. ACI 301 - Specifications for Structural Concrete for Buildings
2. ACI 315 - Details and Detailing of Concrete Reinforcement
3. ACI 318 - Building Code Requirements for Structural Concrete

B. American Society for Testing and Materials (ASTM), latest versions:

1. ACI MNL-66 - ACI Detailing Manual.
2. ACI SPEC-301 - Specifications for Concrete Construction.
3. ASTM A82/A82M - Standard Specification for Steel Wire, plain, for Concrete Reinforcement
4. ASTM A184/A184M - Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement.
5. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
6. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.
7. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
8.

C. Concrete Reinforcing Steel Institute (CRSI). Design Handbook, latest version

1. CRSI (DA4) - Manual of Standard Practice.
2. CRSI (P1) - Placing Reinforcing Bars, 10th Edition.

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings for reinforcing steel. Comply with ACI 315 requirements showing layout, bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of reinforcing steel.

B. Shop Drawings shall not be made by reproduction of the Contract Drawings.

C. Product Data, including reinforcing steel yield strength and other supporting products.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcing Bars: ASTM A 615, Grade 60; ASTM A706 where specified.

B. Welded Wire Fabric: ASTM A1064; Flat sheets.

C. Steel Wire: ASTM A 82, 16 gage minimum, annealed.

D. Supports for Reinforcing Steel: Wire bar type and precast concrete block type meeting the requirements of CRSI Manual of Standard Practice.

2.2 FABRICATION

A. Fabricate reinforcing steel in accordance with fabricating tolerances in ACI 315.

B. Do not fabricate reinforcing steel until shop drawings are approved.

PART 3 - EXECUTION

3.1 PLACING BAR SUPPORTS

A. General: Provide bar supports meeting the requirements of CRSI Specification for Placing Bar Supports.

B. Slabs-on-grade: Use supports with sand plates or precast concrete blocks or horizontal runners where base material will not support chair legs.

3.2 PLACING REINFORCING STEEL

A. General: Comply with CRSI Code of Standard Practice for "Placing Reinforcing Bars".

B. Clean reinforcing steel of loose rust and mill scale, earth, ice, and other

materials, which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcing steel against displacement by formwork, construction, or concrete placement operations. Place reinforcing steel to obtain minimum coverages. Arrange, space and securely tie bars and bar supports to hold reinforcing steel in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

1. Concrete Cover:

Concrete cast against and permanently exposed to earth or weather	3 inches
Bars larger than No. 5	2 inches
Bars No. 5 or smaller	1 1/2 inches

D. Rebar Splices: Locate at points of minimum stress or as shown on contract drawings. Unless noted otherwise, provide lap splices 30 bar diameters (18 inches minimum) in length.

E. Welded Wire Fabric Splices: Lap one complete wire spacing.

F. Corner Reinforcing: Provide corner bars of same size and spacing as horizontal reinforcing steel. Lap with horizontal reinforcing 30 bar diameters or 18 inches minimum length.

G. Reinforcing at Construction/Control Joints: Continue reinforcing steel through construction joints unless noted otherwise. Discontinue reinforcing steel 2 inches from preformed construction joints in slabs-on-grade. Cut alternate longitudinal bars at weakened plane control joints in walls.

END OF SECTION 03 20 00