

SECTION 03200
CONCRETE REINFORCEMENT

1. MATERIALS:

1.01 REINFORCING BARS: Comply with the requirements of ASTM A 615.

Provide Grade 60, for bars No. 4 to 18, except for No. 3 bars and beams stirrups which may be grade 40.

1.02 SUPPORTS FOR REINFORCEMENT:

- A. Provide supports for reinforcement including bolsters, chairs, spacers and other devices suitable for proper spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with PS 7-66. Wood devices will not be acceptable.
- B. For slabs on grade, use supports with sand plates or horizontal runners where wetted base materials will not support chair legs. Brick scrap will be acceptable.
- C. For exposed-to-view concrete surfaces or suspended slabs, where legs of supports are in contact with forms, provided supports with legs which are hot-dip galvanized, or plastic protected, or stainless steel protected, or acceptable all-plastic supports. For walls, reinforcement shall be suspended in the form so that no supports are in contact with any exposed face.

2. FABRICATION:

2.01 GENERAL: Shop-fabricate reinforcing bars to conform to the required shapes and dimensions, with fabrication tolerances complying with ACI 315. In case of fabricating errors, do not re-bend or straighten reinforcement in a manner that will injure or weaken the material.

2.02 IDENTIFICATION: Deliver all reinforcement to the project site bundled, tagged and marked. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on placement diagrams.

2.03 REJECTED MATERIALS: Reinforcing with any of the following defects will not be permitted in the work:

Bar lengths, depths, and bends exceeding the specified fabrication tolerances.

Bends or kinks not indicated on drawings or final shop drawings.

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Bars with reduced cross-section due to excessive rusting other cause.

3. PLACING:

- 3.01 Comply with the specified codes and standards, and the Concrete Reinforcing Steel Institute recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports, and as herein specified.
- 3.02 Clean reinforcement to be free from loose rust, mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.
- 3.03 Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.
- 3.04 Place reinforcement to obtain the detailed or specified coverages for concrete protection. Arrange, space, and securely tie bar supports together with 16 gauge wire to hold reinforcement accurately in position during concrete placement operations. Set wire ties so that ends are directed into the concrete, not toward exposed concrete surfaces.
- 3.05 Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with 16 gauge wire. Do not make end laps between supporting beams. Offset end laps in adjacent widths to prevent continuous laps in either direction.
- 3.06 Provide sufficient numbers of supports and of strength to carry the reinforcement. Do not place reinforcing bars more than 2" beyond the last leg of any continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.
- 3.07 Space reinforcing bars to comply with ACI 318-71, Section 7.4. Reinforcing bars may be relocated as necessary to avoid interference with other reinforcement, conduct, or other embedded items. However, if any reinforcing bar is moved a distance exceeding one bar diameter or the specified placing tolerance, the resulting rearrangement of the reinforcement will be subject to acceptance by the Engineer.
- 3.08 Provide standard reinforcement splices by lapping ends, placing bars in contact, and tightly wire tying. Comply with the requirements of ACI 318-77.

Lapped ends of bars may be placed in contact and securely wired or may be separated sufficiently to permit the embedment of the entire surface of each bar in concrete. Lapped splices shall not be used for bars larger than size No. 11. Splices in bars larger

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than size No. 11, or where No. 11 bars are spliced to larger sizes shall be welded as specified or lapped 40 diameters. Splices in adjacent bars shall be staggered. Adjacent sheets of mesh reinforcement shall be spliced by lapping not less than 6 inches, the lapped ends being securely wired or clipped together with standard clips.

4. SHOP DRAWINGS:

Submit shop drawings for fabrication, bending, and placement of concrete reinforcement.

Comply with the ACI 315 "Manual of Standard Practice for Detaining Reinforced Concrete Structures," showing bar schedules, stirrup spacing, diagrams of bent bars, arrangements and assemblies, as required for the fabrication and placement of concrete reinforcement. Include all special reinforcement on elevations drawn at a scale of not less than ¼" to 1' - 0". Refer to specifications section 01340 for show drawings submittal information.

END OF SECTION