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PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 03 10 00 - Concrete Forming and Accessories.
- .2 Section 03 30 00 - Cast-in-Place Concrete.
- .3 Section 35 59 29 - Mooring Devices.

1.2 REFERENCES

- .1 American Concrete Institute (ACI)
  - .1 ACI 315R latest edition, Manual of Engineering and Placing Drawings for Reinforced Concrete Structure.
- .2 American National Standards Institute/American Concrete Institute (ANSI/ACI)
  - .1 ANSI/ACI 315 latest edition, Details and Detailing of Concrete Reinforcement.
- .3 Canadian Standards Association (CSA)
  - .1 CAN/CSA-A23.1-14, Concrete Materials and Methods of Concrete Construction.
  - .2 CSA-A23.3-14, Design of Concrete Structures for Buildings.
  - .3 CSA G30.3 latest edition, Cold Drawn Steel Wire for Concrete Reinforcement.
  - .4 CSA G30.5 latest edition, Welded Steel Wire Fabric for Concrete Reinforcement.
  - .5 CSA G30.14 latest edition, Deformed Steel Wire for Concrete Reinforcement.
  - .6 CSA G30.15 latest edition, Welded Deformed Steel Wire Fabric for Concrete Reinforcement.
  - .7 CAN/CSA-G30.18 latest edition, Billet-Steel Bars for Concrete Reinforcement.

.8 CAN/CSA-G40.21 latest edition,  
Structural Quality Steels.

.9 CAN/CSA-G164 latest edition,  
Hot Dip Galvanizing of Irregularly  
Shaped Articles.

.10 CSA W186 latest edition,  
Welding of Reinforcing Bars in  
Reinforced Concrete Construction.

### 1.3 SHOP DRAWINGS

- .1 Submit shop drawings including  
placing of reinforcement in  
accordance with Section 01 33 00 -  
Submittal Procedures.
- .2 Indicate on shop drawings, bar  
bending details, lists, quantities  
of reinforcement, sizes, spacings,  
locations of reinforcement and  
mechanical splices if approved by  
Departmental Representative, with  
identifying code marks to permit  
correct placement without reference  
to structural drawings. Indicate  
sizes, spacings and locations of  
chairs, spacers and hangers. Prepare  
reinforcement drawings in accordance  
with Reinforcing Steel Manual of  
Standard Practice - by Reinforcing  
Steel Institute of Canada. ANSI/ACI  
315 and ACI 315R, Manual of  
Engineering and Placing Drawings for  
Reinforced Concrete Structure.

### 1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials  
in accordance with Section 01 74 21  
- Construction/Demolition Waste  
Management and Disposal and the  
Waste Reduction Workplan.

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PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Substitute different size bars only if permitted in writing by Departmental Representative.
- .2 Reinforcing steel: billet steel, grade 400, deformed bars to CAN/CSA-G30.18, unless indicated otherwise.
- .3 Reinforcing steel: weldable low alloy steel deformed bars to CAN/CSA-30.18.
- .4 Cold-drawn annealed steel wire ties: to CSA G30.3.
- .5 Welded steel wire fabric: to CSA G30.5. Provide in flat sheets only.
- .6 Chairs, bolsters, bar supports, spacers: to CAN/CSA-A23.1.
- .7 Mechanical splices: subject to approval of Departmental Representative.

2.2 FABRICATION

- .1 Fabricate reinforcing steel in accordance with CAN/CSA-A23.1, ANSI/ACI 315, and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada. ACI 315R, Manual of Engineering and Placing Drawings for Reinforced Concrete Structures unless indicated otherwise.
- .2 Obtain Departmental Representative's approval for locations of reinforcement splices other than those shown on placing drawings.

- .3 Upon approval of Departmental Representative, weld reinforcement in accordance with CSA W186.
- .4 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.

2.3 SOURCE QUALITY CONTROL

- .1 Provide Departmental Representative with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 2 weeks prior to commencing reinforcing work.
- .2 Upon request inform Departmental Representative of proposed source of material to be supplied.

PART 3 - EXECUTION

3.1 FIELD BENDING

- .1 Do not field bend or field weld reinforcement except where indicated or authorized by Departmental Representative.
- .2 When field bending is authorized, bend without heat, applying a slow and steady pressure.
- .3 Replace bars which develop cracks or splits.

3.2 PLACING REINFORCEMENT

- .1 Place reinforcing steel as indicated on reviewed placing drawings and in accordance with CAN/CSA-A23.1.
- .2 Use approved type chairs to locate the reinforcing steel at the proper grade.
- .3 Tie reinforcement where spacing in each direction is:

- .1 Less than 300mm: tie at alternate intersections.
- .2 300mm or more: tie at each intersection.
- .4 Prior to placing concrete, obtain Departmental Representative's approval of reinforcing material and placement.
- .5 Ensure cover to reinforcement is maintained during concrete pour.

### 3.3 CLEANING

- .1 Clean reinforcing before placing concrete to CAN/CSA-A23.1.