

SECTION 415

MANUFACTURE AND ERECTION OF PRECAST AND PRECAST PRESTRESSED CONCRETE MEMBERS

DESCRIPTION

415.01 Scope – This Section covers the manufacture and erection of precast and precast prestressed concrete members.

415.02 General

415.02.01 The manufacture and erection of precast and precast prestressed concrete members shall conform to the requirements of the Contract and the Design.

415.02.02 Precast concrete elements shall be manufactured in plants certified to the current CSA A23.4 requirements in the appropriate category. Certification shall be by the Canadian Precast Prestressed Concrete Institute (i.e. CPCI Precast Concrete Certification Program for Structural, Architectural and Speciality Precast Concrete Products and Systems) or by a certification organization accredited by the Standards Council of Canada (i.e. Canadian Standards Association (CSA)) Certification shall be in effect prior to the beginning of Work, and maintained throughout the period of manufacture.

415.02.03 Materials and construction shall conform to the current CSA A23.4 and the current PCI “Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products”. Where there is a discrepancy between the requirements of these two standards, the more stringent shall apply.

415.03 Prefabrication Meeting – The Quality Manager will convene a prefabrication meeting with the Contractor, fabricator and the Ministry Representative to review issues such as, but not limited to, procedures on quality control, quality assurance, plant certification, concrete source and mix designs, use of Hydration Stabilization Admixtures (if applicable), mill certificates, alternate details and procedures, updated schedule for prefabrication and to confirm the Contract and Design requirements.

415.04 Working Drawings – Working drawings shall consist of the following:

- Shop drawings,
- Transportation details, and
- Erection drawings

Transportation details and erection drawings shall be prepared and sealed by a professional engineer registered with Association of Professional Engineers and Geoscientists of British Columbia (APEGBC).

Shop drawings shall be prepared and sealed by a professional engineer registered with APEGBC when the fabricator is responsible for the design of items that are

detailed on the shop drawings.

Working drawings shall be in the same system of units as the Design.

Working drawings shall be on D size sheets approximately 560 mm (22") by 865 mm (34"), (one drawing per sheet). Lettering for notes and dimensions shall be at least 2.5 mm and 4 mm for headings. Drawings shall be legible when half-sized or microfilmed.

415.04.01 Shop Drawings – Shop drawings shall show all information and details needed for the fabrication of the members including, but not limited to, such items as member shapes and dimensions, mark numbers and general arrangement of member locations, mass, prestressed and non-prestressed reinforcement, embedments, openings, block outs, chamfers, recesses, finishes, concrete mix design, stressing details, special tolerances, special handling instructions, lifting details and lifting locations.

415.04.02 Transportation Details – Transportation details shall include such items as:

- Description of hauling and handling equipment,
- Weight of members,
- Length and height of loads,
- Location and method of member support, and engineering calculations where members are to be supported during transportation further from their ends than outlined in DBSS 415.48,
- Details for handling, storing, and loading of members.

415.04.03 Erection Drawings

Erection drawings shall show in detail the method of erection including, but not limited to, the following:

- Erection procedures
- Procedures for off loading of members upon delivery
- Details for temporary storage and support of members on site prior to erection
- Equipment to be used
- Layout or general arrangement drawing showing the layout of the members, equipment positioning, and access roads
- Crane make, model, and capacity charts, boom length(s), crane placement, and access for transporting of members to crane(s)
- Radii and loads for crane lifts
- Rigging details
- Mass of members, rigging and special installation equipment
- Details for installation and removal of all falsework,