

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction.
 - .2 CSA-A23.1-09/A23.2-09, Test Methods and Standard Practices for Concrete.
 - .3 CSA-A23.3-04(R2010), Design of Concrete Structures.
 - .4 CSA-A23.4-09, Precast Concrete-Materials and Construction.
 - .5 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel.
- .2 National Building Code of Canada, 2010.

1.2 MEASUREMENT AND PAYMENT

- .1 Pump stations including all base buildings and precast building elements and including all excavation, earthworks, bedding, structural, architectural, electrical and mechanical components, and portable davit bases, but excluding process and instrumentation components, shall be paid according to Lot Price.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00.
- .2 Shop Drawings: submit drawings stamped and signed by qualified professional engineer registered or licensed in Province of Ontario, Canada and specialized in precast concrete design.

1.4 QUALIFICATIONS

- .1 Fabricate and erect precast concrete elements by manufacturing plant certified in appropriate category.
 - .2 Precast concrete manufacturer to be certified in accordance with the Plant Prequalification Program administered by an agreement between the Ministry of Transportation Ontario/Ontario Provincial Standards, Municipal Engineers Association and the Ontario Concrete Pipe Association. Fabricator of above-grade buildings to be certified by the Canadian Standards Association for the production of structural concrete.
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1.4 QUALIFICATIONS
(Cont'd)

- .3 Precast concrete manufacturer to be certified to Canadian Precast/Prestressed Concrete Institute (CPCI) Certification Program.
- .4 Manufacturer must meet the requirements of CSA A23.4, including Appendices A and B, together PCI MNL-116 and 117 and CPCI certification requirements.
- .5 Only precast elements fabricated in such certified plants to be acceptable to Departmental Representative and plant certification to be maintained for duration of fabrication, erection, and until warranty expires.
- .6 Welding companies certified to CSA-W47.1.

1.5 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, handle and store precast/prestressed units according to manufacturer's written instructions.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 20.

1.6 WARRANTY

- .1 Contractor warrants that precast elements will not spall or show visible evidence of cracking, except for normal hairline shrinkage cracks. Warranty period to be 24 months.

PART 2 - PRODUCTS

2.1 MANUFACTURED
UNITS

- .1 Mark each precast unit to correspond to identification mark on shop drawings for location with date cast on part of unit not be exposed.
- .2 Provide hardware suitable for handling elements.

2.2 SOURCE QUALITY
CONTROL

- .1 Provide records from in-house quality control programme based upon plant certification requirements to Departmental Representative for inspection and review.
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2.2 SOURCE QUALITY CONTROL
(Cont'd)

- .2 Upon request, provide Departmental Representative with certified copy of mill test report of reinforcing steel supplied, showing physical and chemical analysis.
- .3 Precast plants shall keep complete records of supply source of concrete material, steel reinforcement, prestressing steel and provide to Departmental Representative for review upon request.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Construct cast-in-place footings as shown on the Drawings. Alternately precast concrete footings may be used where practical depending on soil conditions.
- .2 Erect precast elements within allowable tolerances as specified.
- .3 Set elevations and alignment between units to within allowable tolerances before connecting units.
- .4 Install units per manufacturer's specifications.
- .5 Joints between units to be treated/constructed per manufacturer's specifications such as grouting, filtercloth, etc.