Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 35 29.01 – HEALTH AND SAFETY REQUIREMENTS – BRIDGES.

.2 Section 01 35 43.01 – ENVIRONMENTAL PROCEDURES – BRIDGES.

1.2 REFERENCES

.1 ASTM International

.1 ASTM A325M, Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength.

.2 CSA International

.1 CSA G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

.2 CAN/CSA G164, Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 CAN/CSA S6, Canadian Highway Bridge Design Code.

.4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding

.5 CSA W59, Welded Steel Construction, Metal Arc Welding.

1.3 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for structural steel and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit WHMIS MSDS in accordance with Section 01 35 29.01 – HEALTH AND SAFETY REQUIREMENTS – BRIDGES.

.2 Certification:

.1 Submit Canadian Welding Bureau Certification for all welders.

.3 Shop Drawings:

.1 Indicate shop and erection details including shop splices, cuts, copes, connections, holes, bearing plates, threaded fasteners, rivets and welds. Indicate welds by CSA W59 welding symbols.

.2 Proposed welding procedures to be stamped and approved by Canadian Welding Bureau.

.4 Installation:

.1 Submit installation procedure to Departmental Representative for approval prior to start of work.

.2 Submit certificate of conformance bearing stamp and signature of qualified Professional Engineer licensed in Province of work following completion of installation.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Provide protective blocking for lifting, transportation and storing.

.1 Exercise care during fabrication, transportation and erection so as not to damage steel.

.2 Do not notch edges of members.

.3 Do not cause excessive stresses.

.2 Indicate mass on members weighing more than 3 tonnes using temporary markings.

.3 Ensure no portion of steel comes into contact with ground.

.4 Provide Departmental Representative with delivery schedules minimum 5 days prior to shipping.

.5 Deliver, store and handle materials in accordance with manufacturer's written instructions.

Part 2 Products

2.1 MATERIALS

.1 Structural steel: to CSA G40.20/G40.21, grade and types 300W

.2 Welding electrodes: to CSA W48-06 series.

.3 High strength bolts, nuts and washers: to ASTM A325M.

.4 Hot dip galvanizing: to CAN/CSA G164, minimum zinc coating of 600 g/m^2.

.5 Grout: Non-shrink, freeze-thaw resistant, 20 MPa compressive strength

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for structural steel installation in accordance with manufacturer's written instructions.

.1 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

.1 Clean welding surfaces to bare steel. Clean all other steel surfaces to remove dust, oil and any other debris on surface.

.2 Prior to installation, fabricated steel components to be:

.1 Hot dipped galvanized to CAN/CSA G164

.3 Work near river banks, embankments and edge of bridge in accordance with written instructions from Departmental Representative.

.1 Verify location of substructure units before erection of structural steel; report discrepancies to Departmental Representative.

3.3 PROCEDURE

.1 Do fabrication and erection of structural steel in accordance with CAN/CSA S6.

.1 No torch cutting permitted on-site.

.2 Fabricate new catwalk access ramp as indicated.

.1 New catwalk access ramp to meet Ontario Occupational Health and Safety Act, R.S.O. 1990, as amended.

.3 Install new catwalk as indicated.

.1 Install columns with levelling bolts as indicated.

.2 Grout space between anchor plate and concrete with non-shrink grout.

.4 Security Fencing

.1 Do fencing in accordance with Section 32 31 13.01 – SECURITY FENCING – BRIDGES.

.2 Install new security fencing as indicated.

.5 Do welding in accordance with CSA W59. Weld only at locations indicated.

.6 High strength bolting: in accordance with CAN/CSA S6. Use 'turn-of-nut' tightening method with a 1/3 turn from snug-tight position.

.7 Allowable tolerance for bolt holes:

.1 Matching holes for bolts to line up so that dowel 2 mm less in diameter than hole passes freely through assembled members at right angles to such members.

.2 Finish holes not more than 2 mm in diameter larger than diameter of bolt unless otherwise specified by Departmental Representative.

.3 Centre-to-centre distance between any two holes of group to vary by not more than 1 mm from dimensioned distance between such holes.

.4 Correct mispunched and misdrilled members as directed by Departmental Representative.

.8 Finish members true to line, free from twists, bends, open joints, sharp corners and sharp edges.

.9 Field splices: to approval of Departmental Representative.

3.4 CLEANING

.1 Remove from work site all debris and equipment after completion of work.

.2 Dispose all garbage and debris to approved landfill site.

END OF SECTION