

**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 01 11 01 – Work-related General Information.

**1.2 REFERENCES**

- .1 Canadian Standards Association (CSA)/CSA International.
  - .1 CAN/CSA-G40.20/G40.21-F04 (C2009), General requirements for Rolled or Welded. Structural Quality Steel / Structural Quality Steels.
  - .2 CAN/CSA-S16-F01 (C2007) Limit States Design of Steel Structures.
  - .3 CSA W48-F06, Filler metals and allied materials for metal arc welding (Developed in co-operation with the Canadian Welding Bureau).
  - .4 CSA W59-F03 (C2008), Welded Steel Construction (Metal Arc Welding) (metric).
- .2 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM A307 - 07b Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.

**1.3 SUBMITTALS**

- .1 Shop drawings.
  - .1 Submit required shop drawings as prescribed in section 01 33 00 (Submittals).
  - .2 Indicate or show materials, dimensions, connections, joints, and welds.

**1.4 SHIPPING, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading
  - .1 The equipment and materials must be transported, stored, handled and protected in accordance with Section 01 61 00 - Common Product Requirements.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Steel plates to retain the two cantilever walls and the plates at both ends of the prefabricated wall: grade 300W, according to CAN / CSA G40.20 / G40.21.
- .2 Welding material: to CSA W59 (2003).
- .3 Welding electrodes: CSA series W48.
- .4 Bolts and anchor bolts: to ASTM A307. Bolts may be fabricated in A-36 steel.

**2.2 METAL FABRICATIONS – GENERAL**

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

- .2 Where possible, fit and shop assemble work, ready for erection.
- .3 Exposed welds shall be continuous over the entire length of joint; file or grind weld to a uniform, smooth and even surface.

### **2.3 FINISH**

- .1 Galvanization: cold type such as Galva ZN by Aerochem or Galvano-spray of the company Metalflux or zinga of the company Zingametal.

## **Part 3 Execution**

### **3.1 ERECTION**

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, as indicated and specified.
- .3 Assemble elements on site using bolts to CAN / CSA S16.1. Steel plates will be fastened by T-bolts including small plates as indicated on the drawing.
- .4 All the openings to be made in the wings of the sheet pile to install the T bolts should be performed using templates. These openings will have minimum dimensions as strictly necessary for the implementation of the steel components.

### **3.2 FABRICATION**

- .1 Assemble and erect the different elements according to the requirements of CSA Standard CAN3-S16.1.
- .2 Prior to the fabrication of the elements, check the dimensions and condition of the existing structure. Changes to certain steel plates may be necessary because of local conditions, camber issues and twists in existing steel sheet piling. The Contractor should visit the site to measure the dimensions and geometry of the existing piles. Ignorance of local conditions existing piles will not constitute a reason to claim any extra amount of money.
- .3 Comply with required tolerances.
- .4 Take full responsibility for the integrity of the structure during assembly.
- .5 Take good care not to soil the steel surfaces, ensure that the location of parts of the supporting structure and anchor bolts as well as the elevation of the supporting parts are in accordance with the requirements in the plans and specifications.

### **3.3 CONTROL AND INSPECTION**

- .1 The Departmental Representative reserves the right to proceed any time with non-destructive testing of the welds made on the worksite. The costs of these tests will be paid for by the Department.

- .2 Contractor will give access and facilitate the welds examination by the Departmental Representative at no extra cost for the Department.
- .3 If the welds examination reveals any defect, it will be repaired and re-inspected by the Departmental Representative. The Contractor will have to change his welding procedure so as to eliminate all failures noted. The repairs and the second inspection will be paid for by the Contractor.
- .4 Report to Departmental Representative any failure in the material or any assembly problem on the worksite. In the occurrence of any repairs, they should be made at the Departmental Representative's satisfaction.

### **3.4 STEEL PLATES FOR THE REPAIR OF PERFORATED ZONE**

- .1 Fabricate 12.7 mm thick steel plate, Grade 300 W, as shown on the plan.
- .2 The backfilling behind the sheet pile wall is made of stone ballast or small aggregate. The Contractor shall take this fact into account for the installation method of the steel elements.

**END OF SECTION**