

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1      Section 04 03 42 - Historic - Replacing Stone.
- .2      Section 04 03 43 - Historic - Dismantling of Stone Masonry.
- .3      Section 06 03 15 - Historic - Splicing of Wood Components.
- .4      Section 06 15 00 - Wood Decking.

**1.2                REFERENCES**

- .1      American Society for Testing and Materials International (ASTM)
  - .1      ASTM A325M, Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength (Metric).
  - .2      ASTM A490M, Standard Specification for High Strength Steel Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints (Metric).
- .2      Canadian Standards Association (CSA International)
  - .1      CSA B111, Wire Nails, Spikes and Staples.
  - .2      CSA-G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .3      CAN/CSA O86.1, Engineering Design in Wood.
  - .4      CSA O121, Douglas Fir Plywood.
  - .5      CSA O122, Structural Glued-Laminated Timber.
  - .6      CSA O151, Canadian Softwood Plywood.
  - .7      CAN/CSA-S16, Limit States Design of Steel Structures.
  - .8      CAN/CSA-S136, North America Specification for the Design of Cold Formed Steel Structural Members including supplement CSA-S136.1.
  - .9      CSA W59, Welded Steel Construction (Metal Arc Welding).

**1.3                DEFINITIONS**

- .1      Bracing: temporary support installed in excavation or structure to stabilize against deformations or failure.
- .2      Shoring: temporary support installed in an excavation or structure to relieve loads.

**1.4                PERFORMANCE REQUIREMENTS**

- .1      Ensure that materials, equipment and procedures safely supporting existing structure and construction live loads; that allow work to be accomplished and that minimize risk of damage to historic and archaeological elements.

## **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Québec, Canada.
- .3 Shop drawings to indicate shop and erection details in accordance with performance requirements in 1.4.
- .4 Departmental Representative will authorise dismantling or excavation work only after receiving an engineer's written statement that bracing and shoring is adequately designed and complies with drawings.
- .5 Keep in mind that no computer file in .dwg format will be provided to contractor or subcontractor.

## **1.6 DELIVERY, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Structural wood members: timber or glue lam, grade No. 1.
  - .1 Forest Stewardship Council (FSC) certified.
    - .1 Lumber: FSC certified.
- .2 Structural steel members: to CSA G40.21, grade 350], type W.
- .3 Wood connections: Canadian soft wood plywood to CSA O151 sheathing grade.
  - .1 Forest Stewardship Council (FSC) certified.
    - .1 Lumber: FSC certified.
- .4 Steel connections: steel gusset plates and angles to CSA G40.21, grade 350, type W.
- .5 Nails: to CSA B111.
- .6 Bolts: lag screws, nuts and washers to CAN/CSA O86.1.
- .7 High-tensile bolts: to ASTM A325M or ASTM A490M.
- .8 Welding materials: CSA W59.

## **2.2 SOURCE QUALITY CONTROL**

- .1 Timber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Before starting work , verify existing conditions and variations from original contract documents and notify Departmental Representative.

### **3.2 PREPARATION**

- .1 Remove machinery installations, services and stored materials from building. Store in area designated by Departmental Representative.

### **3.3 INSTALLATION**

- .1 Commence work as per Departmental Representative instructions.
- .2 Obtain approval from Departmental Representative, before execution, if alteration to bracing or shoring system is necessary.
- .3 Support individual elements that become loose during shoring or bracing installation.
- .4 Erect structural timber to CAN/CSA O86.1.
- .5 Erect structural steel work to CAN/CSA-S16 and CAN/CSA-S136.
- .6 Weld to CSA W59.
- .7 Bracing and shoring of structures:
  - .1 To avoid any deformation, the Contractor will have to provide and install all temporary bracing and shoring required to carry out the work, especially when, but not limited to:
    - .1 Dismantling and reconstructing the chimney stalks.
      - .1 To temporarily shore the existing roof wood framing in order to support the working platforms above:
        - .1 Do not overload the existing framing.
        - .2 Do not use the working platforms for stone storage.
      - .2 To temporarily shore or brace the masonry work.
    - .2 Replacing framing components.
      - .1 To temporarily shore and brace adjacent components.
  - .2 Install packing after review by Departmental Representative behind wall pieces to compensate for unevenness of wall surface.
  - .3 Provide constant monitoring of hydraulic apparatus during shoring operation (if used).

**3.4 ADJUSTMENT**

- .1 Monitor bracing and shoring system performance and maintain its effectiveness by making adjustments, replacing or repairing damaged and weakened elements of system from its installation until final completion of project.
- .2 If adjustments exceed specified parameters, are major, frequent or repetitive, notify Departmental Representative.

**END OF SECTION**