

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1      Section 02 41 99 - Demolition for Minor Works
- .2      Section 02 83 10 - Lead Abatement - Minimum Precautions.
- .3      Section 02 83 12 - Lead Abatement - Maximum Precautions.
- .4      Section 03 10 00 - Concrete Forming and Accessories.
- .5      Section 03 20 00 - Concrete Reinforcing.
- .6      Section 03 30 00 - Cast-in-place Concrete.
- .7      Section 04 03 07 - Historic - Masonry Repointing.
- .8      Section 04 03 08 - Historic - Mortaring.
- .9      Section 04 03 31 - Historic - Replacing Brick.
- .10     Section 04 03 42 - Historic - Replacing Stone.
- .11     Section 04 05 00 - Common Work Results for Masonry.
- .12     Section 06 03 15 - Historic - Splicing of Wood Components.
- .13     Section 31 04 31 - Historic -Subgrade Shoring and Bracing.

**1.2                ACTION AND INFORMATIONAL SUBMITTALS**

- .1      Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2      Site Quality Control Submittals:
  - .1      Prepare a complete and detailed photographic record of the work to be dismantled, especially of the stones currently hidden behind the flashings, and note the number of each of the stones. Submit this file upon work completion.
  - .2      Complete annotated photographs and lists of stones provided in the architectural drawings by adding stones currently hidden behind the flashings (following the suggested numbering), and submit up-to-date copies of these documents.

**1.3                CLOSEOUT SUBMITTALS**

- .1      Submit in accordance with Section 01 78 00 - Closeout Submittals.

**1.4                QUALITY ASSURANCE**

- .1      Qualifications:
  - .1      Refer to Section 04 05 00 - Common Work Results for Masonry.
- .2      Mock-ups:
  - .1      Construct mock-up in accordance with Section 01 45 00 - Quality Control.

- .2 Perform mock-up 2 m x 2 m to demonstrate dismantling procedures for masonry elements of a chimney stack in a location designated by Departmental Representative.
- .3 Notify Departmental Representative minimum of 48 hours prior to construction of mock-up.
- .4 Perform mock-up under supervision of Departmental Representative to demonstrate a full understanding of specified procedures and techniques is achieved before work commences.
- .5 Perform mock-up where directed by Departmental Representative.
- .6 Work not to proceed prior to approval of mock-up. Allow 48 hours for inspection of mock-up by Departmental Representative before proceeding with masonry dismantling work.
- .7 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

## **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Protect and store stones to facilitate their resetting.
  - .1 Store dismantled masonry units on wood pallets, protected from exposure to water, elements, and potential mechanical damage fully covered under polyethylene.
  - .2 Submit storage and identification system to Departmental Representative.
- .3 Packaging Waste Management: remove for reuse in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal

## **1.6 AMBIENT CONDITIONS**

- .1 Loosen wet masonry only when temperature is above 5 degrees C.
- .2 In temperature 5 degrees C and below:
  - .1 Keep stones dry.
  - .2 Protect wet stones from freezing.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

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**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Examine masonry, staging and storage areas and notify Departmental Representative in writing of conditions detrimental to acceptable and timely completion of Work.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

**3.2 SITE VERIFICATION OF CONDITIONS**

- .1 Report in writing, to Departmental Representative areas of deteriorated stone not identified in the documents. Obtain Departmental Representative's approval and instructions for repair of stone before proceeding.
- .2 Stop work in that area and report to Departmental Representative immediately evidence of hazardous materials.

**3.3 PREPARATION**

- .1 Obtain Departmental Representative's approval for alternative methodology and tools to be employed before commencing the work.
- .2 Clean stone surface of dust and stone chips.

**3.4 PROTECTION**

- .1 Prevent damage to surrounding structures and features which are to remain.
- .2 Make good damage incurred.
- .3 Protect surrounding components from damage during work.
- .4 Make good damage to historic fabric.
- .5 Obtain Departmental Representative's approval for repair methodology.

**3.5 SPECIAL TECHNIQUES**

- .1 Number and identify stones and other elements on a photographic record.
- .2 Before dismantling stones, indicate dimensions of each numbered stone in removal area on a list provided in the architectural drawings.
- .3 Temporary Marking and Recording:
  - .1 Mark stone, on face, before removal using marking product which can be completely erased when required without damaging masonry unit:
    - .1 Ball-point pen on diachylon, attached to stone.
    - .2 Waxless chalk directly on stone.

- .2 Tracking relocated stones and other masonry units:
  - .1 Use numbering, marking, and positioning system shown on architectural drawings.
- .3 Mark/Identify:
  - .1 Stones and other elements or components to show identity and position.
  - .2 Wood platforms or other equipment used to transport and store stones.
  - .3 Work and storage areas.
  - .4 Location from which stones are removed on photographs.
- .4 Stone location recording system.
  - .1 Keep up-to-date the lists of stones provided in the architectural drawings and, if required, produce copies.
- .5 Ensure that temporary marking will remain in use resistant to weather, handling and cleaning until final marking of stones.
- .6 Remove markings and adhesive without damaging units:
  - .1 Brush with vegetable fibre brush: either dry or with water.
  - .2 Use no solvent, acid or other chemical product

### **3.6 TEMPORARY SHORING**

- .1 Construct shoring and bracing in accordance with Section 31 04 31 - Historic – Subgrade Shoring and Bracing.
- .2 Construct shoring and cradling, and other temporary framing work needed to support structure, or parts of it, during removal operations and in anticipation of resetting, if structure is not to be completely dismantled, according to approved shop drawings.

### **3.7 METHOD FOR LOOSENING STONES**

- .1 Use approved methods to loosen stones which will cause no damage either to stones or to other architectural elements.
- .2 Use only hand held tools
- .3 Obtain Departmental Representative's approval for use of power tools before commencing work.
- .4 Loosen wet masonry when temperature is above freezing.
- .5 Hazardous materials
  - .1 Considering the presence of lead in the mortar joints, take all precautions required when loosening stones and masonry, in accordance with Section 02 83 10 - Lead Abatement - Minimum Precautions or Section 02 83 12 - Lead Abatement - Maximum Precautions (depending on the assessment that will be carried out at the beginning of construction).

### **3.8 DISMANTLING AND MOVING STONES**

- .1 Avoid damaging arrises of stone when removing mortar and freeing up.
- .2 Remove excess mortar using hand tools.

- .3 Use wood wedges where required to remove or dislocate stone.
  - .1 Use flat pry bars protected with impact absorbing protection (burlap, cardboard).
- .4 Use regularly inspected nylon hoisting belts. Use minimum 2 belts per stone.
- .5 Protect stone from damage when hoisting and lifting from position.
  - .1 Use separators or wood shims to isolate units from hoisting belts.

### **3.9 HANDLING**

- .1 Usage of Lewis bolts for handling stone is not permitted.
- .2 Place detached stones on wood surfaces during handling. Prevent contact with metal.
- .3 When stones are lowered to ground, place directly on wooden platform used for transport or storage.
- .4 Transport and keep stones on wooden platforms.
- .5 Ensure that sharp edges of stones do not come into contact with hard objects.

### **3.10 TEMPORARY STORAGE STAGING AREA**

- .1 Place stones in designated area of site for cleaning, detailed inspection and for final marking, before storage.
- .2 Make stones accessible and retrievable when required.

### **3.11 CLEANING**

- .1 Do cleaning operations at above freezing temperature.
  - .1 After cleaning, protect wet stones against freezing until dry.
- .2 Clean stones by wet scrubbing with vegetable fibre brush unless otherwise instructed by Departmental Representative.
  - .1 Do not use high pressure water jet.
  - .2 Remove excess mortar with hand tools.
- .3 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .5 Waste Management: separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### **3.12 PRELIMINARY WORK BEFORE RESETTING**

- .1 The masonry against which the work will be reconstructed shall be sound and free of loose particles.

- .2 Before placing reconstruction elements, clean with air pressure jet and dampen surfaces before applying bedding mortar.
- .3 Install new veneer stones on water impregnated softwood wedges. Leave until mortar has hardened and wood has dried. Remove wedges without breakage.
- .4 Use anchors described on the drawings to fasten veneer stones (where required).
- .5 Perform reassembly of masonry to alignment of adjacent stones. Provide joints of same thickness as former joints and that match with joints in adjacent area.
- .6 Construct masonry core with new materials or sound, recovered stones as directed.

### **3.13 FILLING AND POINTING**

- .1 Fill masonry joints and point in accordance with section 04 03 07 - Historic - Masonry Repointing.

**END OF SECTION**