SECTION 04 01 00
MAINTENANCE OF MASONRY

SPEC WRITER NOTE:
1. Section number and title were revised from previous Section 04 05 01, MASONRY TUCK POINTING. Coordinate references within other affected sections.
2. Delete text between // // not applicable to project. Edit remaining text to suit project.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

SPEC WRITER NOTE:
1. Edit descriptions for specific masonry types such as brick, CMU, and stone, requiring repointing and repairing.
2. Ensure drawings show location and extent for repointing and replacement.

1. Repointing existing // damaged // masonry joints.
2. Replacing existing // damaged // masonry units.

1.2 RELATED WORK

SPEC WRITER NOTE: Update and retain references only when specified elsewhere in this section.

A. Section 04 05 13, MASONRY MORTARING: Mortars for new masonry.

1.3 APPLICABLE PUBLICATIONS

A. Comply with references to extent specified in this section.

B. ASTM International (ASTM):

C67/C67M-20.....Sampling and Testing Brick and Structural Clay Tile.

C144-18.....Aggregate for Masonry Mortar.

C150/C150M-20.....Specification for Portland Cement.

C207-18 - .....Hydrated Lime for Masonry Purposes

C216-19 - .....Facing Brick (Solid Masonry Units Made from Clay or Shale)

C270-19ae1.....Mortar for Unit Masonry

C295/C295M-19.....Petrographic Examination of Aggregates for Concrete

1.4 SUBMITTALS

A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Manufacturer's Literature and Data:

1. Description of each product.
2. Replacement units indicating manufacturer recommendation for each application.

C. Samples:

1. Pointing Mortar: Molded, 150 mm (6 inches) long for each type, texture, and color.

D. Test reports:

1. Preconstruction test results of existing masonry mortar and units.
2. Recommended mortar mix and mortar materials sources.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

1. Documented experience in completion of work, similar in design, material, and extent specified.

B. Preconstruction Testing:

1. Existing Brick: according to ASTM C67.
2. Existing Mortar: according to ASTM C295/C295M.
   a. Recommend mortar mix compatible with existing // and mortar material sources required to match existing color and texture //.

SPEC WRITER NOTE: Ensure mockup is indicated on drawings.

C. Mockups: Prepare mockup in size indicated on Drawings, demonstrating quality and aesthetics of // tuck pointing // masonry unit replacement // and cleaning //.

1.6 DELIVERY

A. Deliver products in manufacturer's original sealed packaging.

B. Mark packaging, legibly. Indicate manufacturer's name or brand, type, // color, // production run number, and manufacture date.

C. Before installation, return or dispose of products within distorted, damaged, or opened packaging.

1.7 STORAGE AND HANDLING

A. Store materials covered, protected from weather, and elevated above grade.

1. Prevent contamination of aggregates.

B. Protect products from damage during handling and construction operations.

1.8 FIELD CONDITIONS

A. Environment:

1. Cold Weather Requirements: Maintain mortar ingredients and substrate within temperature range between 4 degrees C (40 degrees F) and 49 degrees C (120 degrees F) when outside temperature is less than 4 degrees C (40 degrees F).
2. Hot Weather Requirements: Protect mortar-joint from evaporation of moisture from mortar material. When required, provide adequately shaded work area.

1.9 WARRANTY

SPEC WRITER NOTE: Always retain construction warranty. FAR includes Contractor's one year labor and material warranty.

A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

PART 2 - PRODUCTS

2.1 MATERIALS

A. Mortar Components:

1. Hydrated Lime: ASTM C207, Type S.
2. Aggregate: ASTM C144.
3. Portland Cement: ASTM C150/C150M, Type I.
4. Water: Potable, free of substances that are detrimental to grout, masonry, and metal.

2.2 PRODUCTS - GENERAL

SPEC WRITER NOTE: Ensure mortar color selection is included in Section 09 06 00, SCHEDULE FOR FINISHES.

A. Basis of Design: Section 09 06 00, SCHEDULE FOR FINISHES.

B. Provide each product from one manufacturer // and from one production run //.

2.3 REPLACEMENT MASONRY UNITS

A. Face Brick:

SPEC WRITER NOTE: Edit face brick grade and type when required to match existing.

1. ASTM C216, // Grade SW, Type FBS // matching existing //.

2. Efflorescence: Rated slight efflorescent when tested according to ASTM C67.

SPEC WRITER NOTE: Identify product requirements for other masonry units when known.

B. Other Masonry Units: Match existing.

2.4 MIXES

SPEC WRITER NOTE: Select mortar as recommended by preconstruction testing to be softer than existing mortar.

A. Tuck Pointing Mortar: ASTM C270; // Appendix X3. //

SPEC WRITER NOTE: Select required mortar type. ASTM C270 defines Type N and Type O mortar. ASTM C270 Appendix X3 defines Type K mortar. Only Portland cement is permitted for Type K mortar.

1. // Type N // Type O // Type K //.

SPEC WRITER NOTE: Brick Industry Association Tech Note 46 defines Type K mortar as follows.

2. // Type K: 1 part Portland cement, 4 parts hydrated lime and 11-1/4 to 15 parts fine sand. //

2.5 ACCESSORIES

SPEC WRITER NOTE: Edit detergent to suit required masonry type.

A. Cleaning Agent: Soapless, non-acidic, detergent, specially prepared for cleaning // brick // stone // concrete // masonry.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine and verify substrate suitability for product installation.

B. Protect existing construction and completed work from damage.

1. Protect from mortar droppings and cleaning operations.

C. Remove existing fixtures and fittings concealing masonry joints to permit repointing and repair.

3.2 EXISTING MORTAR JOINTS

A. Cut out existing bed and head mortar joints, to uniform depth of 19 mm (3/4 inches), or to sound mortar without damaging edges and faces of existing masonry units to remain.

B. Remove dust and debris from joints.

1. Do not rinse when temperature is below freezing.

3.3 TUCK POINTING

A. Dampen joints immediately before tuck pointing. Allow masonry units to absorb surface water.

B. Tightly pack tuck pointing mortar into joints in thin layers, 6 mm (1/4 inch) thick, maximum.

C. Allow layer to become slightly hardened before applying next layer.

D. Pack final layer flush with surfaces of masonry units.

3.4 MASONRY UNIT REPLACEMENT

A. Cut out mortar joints surrounding masonry units requiring replacement.

1. Remove existing masonry units creating opening for replacement masonry unit installation.

2. Remove mortar, dust, and debris from opening perimeter surfaces.

SPEC WRITER NOTE: Retain the following paragraph for cavity wall and veneer construction repair.

3. Prevent debris from falling into cavity.

B. Dampen surfaces of surrounding existing masonry before installing replacement masonry units.

1. Allow existing masonry to absorb surface moisture before installing replacement units.

2. Butter contact surfaces of existing masonry and replacement masonry units with mortar.

3. Center replacement masonry units in opening and press into position.

4. Remove excess mortar.

5. Tuck point replacement masonry units to ensure full head and bed joints.

3.5 JOINT TOOLING

A. Tool // repointed // and // replaced masonry // joints when mortar becomes slightly hardened.

B. Produce smooth, compacted, // concave joint // joint matching existing //.

3.6 CLEANING

A. Remove mortar splatter from exposed surfaces immediately.

B. Clean exposed masonry surfaces on completion.

C. Remove mortar droppings and other foreign substances from wall surfaces.

D. Wet surfaces with clean water.

E. Wash with cleaning agent.

F. Brush masonry surfaces with stiff fiber brushes while washing.

G. Immediately after washing, rinse with clean water.

1. Remove traces of detergent, foreign streaks or stains.

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