

SECTION 04 22 00
CMU

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1.01 REFERENCE STANDARDS

- A. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2022.
- B. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.
- C. ASTM D1056 - Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber; 2020.

CONCRETE MASONRY UNITS

PART 1 - GENERAL

3.01 GENERAL REQUIREMENTS

- A. Contractor is referred to the Instructions to Bidders and General Conditions, NYCHA Contracts; the Special Notice to Contractors; the Form of Proposal; the Form of Bid Bond; Division 01 - General Requirements of the Contract Specifications; the Contract Drawings and all Amendments and Addenda thereto; all of which govern the Work of this Section.

3.02 SCOPE OF WORK

- A. Contractor shall furnish and install all necessary labor, materials, equipment, services, tools and all other incidentals necessary for installing glazed concrete masonry units (CMU) for the mailbox enclosures as shown on the Drawings.

3.03 RELATED WORK SPECIFIED ELSEWHERE

3.04 SECTION 05 50 00 MISC. METALS

3.05 SECTION 06 20 00 CARPENTRY

3.06 SUBMITTALS

3.07 SEE DIVISION 01, GENERAL REQUIREMENTS - SECTION 01 33 00.

- A. Contractor shall supply layout shop drawings for all elevations, to scale, in plan and elevation, for approval by NYCHA prior to installation. No ordering or construction is to be initiated without approval in writing from the Architect.
- B. Samples of all block, mortar and grout colors and finishes, for approval by NYCHA, prior to ordering.

3.08 DELIVERY, STORAGE AND HANDLING

- A. Materials shall be new and shall be delivered to the job site in the manufacturer's original unopened containers, with the brands and names clearly marked thereon. Opened or partially used sacks of mortar materials will not be accepted.
- B. Deliver, store, and handle all materials to prevent inclusion of foreign matter and water, and to prevent damage. Until time of use, packaged materials shall be kept in original, unopened containers, with the seals unbroken and labels intact.
- C. Store all masonry units on elevated platforms, under cover and in a dry location, to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not install until they are in an air-dried condition.
- D. Store cementitious material on elevated platforms, under cover, in a dry location.
- E. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- F. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

3.09 PROJECT CONDITIONS

- A. Do not apply uniform floor loads for at least twelve (12) hours, and concentrated loads for at least three (3) days, after building masonry walls or columns.
- B. Stain prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

PART 2 - PRODUCTS

4.01 CONCRETE MASONRY UNITS (CMU)

- A. Concrete block shall be of makes and types approved by the Board of Standards and Appeals and the New York City Building Code for the working stresses and fire ratings required.
- B. General: Provide shapes indicated on Drawings and as follows for each form of concrete masonry unit required.
- C. Colors as selected and approved by NYCHA and development stakeholders.

4.02 CONCRETE MASONRY UNITS: ASTM C90 AND AS FOLLOWS:

- A. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
- B. Aggregates: Do not use aggregates made from volcanic stone, such as pumice. All aggregates to comply with ASTM C33.
- C. Size: Manufactured to the actual dimensions listed below (within tolerances specified in the applicable referenced ASTM specification) for the corresponding nominal sizes indicated on Drawings:
 - 1. 4" nominal: 3-5/8" actual.
 - 2. 6" nominal: 5-5/8" actual.
 - 3. 8" nominal: 7-5/8" actual.
- D. Acceptable Manufacturer: SpectraGlaze, <https://spectraglaze.com>, 1-254-672-5262, as distributed by Westbrook Concrete Block, 439 Spencer Plains Road, P.O. Box 700, Westbrook, CT 06498, 860-399-6201, www.westbrookblock.com.
- E. Series: Spectra Glaze glazed CMU
 - 1. Sizes/configurations as indicated on Drawings.
 - 2. Masonry Units: Color(s)/Finishes as approved by Architect, from manufacturer's standard line(s).
- F. Or Approved Equal.

4.03 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type I & II, except Type III may be used for cold-weather construction. Provide natural color or white cement, as required, to produce indicated mortar color.

4.04 MORTAR CEMENT: U.B.C. STANDARD NO. 21-14.

- A. Hydrated Lime: ASTM C207, Type S.
- B. Portland Cement-Lime Mix: Packaged blend of Portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C207.
- C. Ready-Mixed Mortar: Cementitious material, water, and aggregate complying with requirements specified in this Article; combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C 1142.

4.05 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Pre-molded filler strips complying with ASTM D1056, Type 2, Class A, Grade 1; compressible up to thirty-five (35) percent; of width and thickness indicated; formulated from urethane.

- B. Preformed Control-Joint Gaskets: Material, as indicated below, designed to fit standard sash block and face brick, and to maintain lateral stability in masonry wall; i.e., Polyvinyl Chloride: ASTM D 2287, General Purpose Grade, Type PVC-65406.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

PART 3 - EXECUTION

5.01 INSTALLATION, GENERAL

- A. Thickness: Build masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of thickness indicated.
- B. Where required cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units, as required, to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting, where possible. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- C. Mix units for exposed unit masonry from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

5.02 CONSTRUCTION TOLERANCES

- A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4" in 10' nor 3/8" in 20' nor 1/2" in 40' or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4" in 20' or 1/2" in 40' or more. For vertical alignment of head joints, do not exceed plus or minus 1/4" in 10' nor 1/2" maximum.
- B. Variation from Level: For bed joints and lines of exposed lintels, sills, horizontal grooves, and other conspicuous lines, do not exceed 1/4" in 20' nor 1/2" in 40' or more.
- C. Variation in Mortar-Joint Thickness: Do not vary from bed-joint thickness indicated by more than plus or minus 1/8" with a maximum thickness limited to 1/2".

5.03 LAYING MASONRY WALLS

- A. Indicate location of base courses prior to installation. Verify approval in writing by Architect prior to initiating CMU installation.
- B. Lay out walls in advance for accurate spacing of surface bond patterns. Avoid the use of less-than-half-size units where possible.
- C. Lay walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.
- D. Bond Pattern for Exposed Masonry: Except as noted on Drawings, lay exposed masonry in the following bond pattern. Do not use units with less than nominal 4" horizontal face dimensions at corners of jambs.
- E. Stack bond, with vertical joints in each course centered on units in courses above and below or as indicated on Drawings.
- F. Stopping and Resuming Work: In each course, rake back 1/2-unit length for one-half bond or 1/3-unit length for one-third bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly, if required, and remove loose masonry units and mortar prior to laying fresh masonry.
- G. Built-in Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
- H. Field Constructed Mock-Ups: Prior to installation of unit masonry, erect partial sample wall panel to verify selections made under sample submittals and to demonstrate aesthetic effects, as well as qualities of materials and execution. Build mock-up on site to be part of construction, if accepted.

5.04 REPAIRING, POINTING AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units, install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, and completely fill with mortar. Point-up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for application of sealants.

5.05 IN-PROGRESS CLEANING:

- A. Clean unit masonry, as work progresses, by dry brushing to remove mortar fins and smears prior to tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
- C. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
- D. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
- E. Protect adjacent stone and non-masonry surfaces from contact with cleaner, by covering them with liquid strippable masking agent, polyethylene film or waterproof masking tape.
- F. Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.

5.06 MASONRY WASTE DISPOSAL

- A. Recycling: Undamaged, excess masonry materials are Contractor's property, and shall be removed from the Project site for his/her use.
- B. Excess Masonry Waste: Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off the property.

END OF SECTION 04 22 00