

**SECTION 04200
BRICK MASONRY**

1.0 GENERAL

A. Description

Brick masonry shall include, but not necessarily be limited to, furnishing and installing brick masonry above and below grade to the sizes and shapes and at the locations indicated in accordance with the Contract Documents or as directed by the Commission.

B. Related Work Included Elsewhere

1. Removal or Abandonment of Existing Utilities: Section 02050
2. Boring and/or Jacking Pipe: Section 02300
3. Tunneling: Section 02400
4. Water Valves and Appurtenances: Section 02552
5. Water Services, Water Meter Settings, and Vaults: Section 02553
6. Fire Hydrants: Section 02554
7. Sanitary Sewer Manholes: Section 02562

C. Quality Assurance

The Commission will inspect all materials before, during and after installation to ensure compliance with the Contract Documents.

2.0 MATERIALS

A. Materials Furnished by the Commission

The Commission will not furnish any materials for brick masonry.

B. Contractor's Options

None.

C. Detailed Material Requirements

1. Sewer brick shall be grade SM, have dimensions not exceeding 2-1/4" x 3-3/4" x 8", and meet the requirements of ASTM Designation C32. The bricks shall have a fine-grained uniform, and dense structure, free from lumps of lime, laminations, cracks, checks, soluble salts or other defects which may in any way impair their strength, durability, appearance, or usefulness for the purpose intended. Bricks shall emit a clear, metallic ring when struck with a hammer.
2. Mortar shall be as specified in Section 04100.

- D. Material Storage Note: Materials shall be stored in order to insure the preservation of their quantity, quality and fitness for Work. The Contractor shall place materials on wooden platforms, or other hard, clean surfaces, not on the ground, and the materials shall be placed under cover when directed by the Owner. Stored materials shall be located in order to facilitate prompt inspection by the Owner. Lawns, grass plots, or other private or public property shall not be used for storage purposes without written permission of the owner or lessee. Unless directed or noted otherwise in the Contract documents, there will be no payment for stored materials.

3.0 EXECUTION

A. Environmental Requirements

1. General

- a. Cover completed work each day to prevent rain or melting snow from penetrating the mortar of upper courses. Do not uncover until immediately before new work is to be laid. Protect new masonry for a period of not less than 72 hours immediately following laying. This time period may be extended by the Commission.
- b. Spray masonry laid during the period from April to November, inclusive, with sufficient water so as to be moist, but not saturated with water just prior to use.

2. Cold Weather Protection

- a. No brick masonry work or pointing shall be done when there is frost in the brick or when the air temperature is below 40°F, unless the Contractor has on the project ready to use, if and when directed, suitable housing, covering, tarpaulins, etc. and artificial heating devices necessary to keep the atmosphere surrounding the masonry at a temperature of not less than 40°F.
- b. Protect work by heating and maintaining the temperature of the masonry materials at not less than 40°F but not more than 160°F and maintaining an air temperature above 40°F on both sides of the masonry for not less than 72 hours. Work will not be permitted with or on frozen materials. When the temperature reaches or is above 40°F proceed as under warm weather conditions.

3. Hot Weather Protection

- a. During hot weather, protect masonry from direct rays of sun. Cover, and/or wet all finished work for a period of 7 days after laying.
- b. Do not erect masonry when the ambient air is warmer than 99°F in the shade and has a relative humidity of less than 40% unless the work is prevented from drying out for not less than 48 hours after having been installed.

B. General

1. Keep joints equal to the difference between the actual and nominal dimensions of the unit being installed.

2. Tothing of new work into existing work will not be permitted.
- C. Preparation
1. Clean dirt, debris, oil, grease, and other foreign substances which would affect bond of mortar, from all surfaces to receive mortar.
 2. Lay out brickwork to establish accurate spacing of bond pattern, to ensure uniform joint widths, and to locate openings, returns, and offsets. Arrange units in a manner which will result in few or no units to be cut.
 3. Wetting Bricks
 - a. Brick having absorption rates in excess of 0.025 ounces per square inch per minute, when tested in accordance with ASTM C 67 shall be wetted, so that the rate of absorption does not exceed that rate.
 - b. Wetting methods shall ensure that each brick, immediately before being installed, is nearly saturated but brick surfaces are dry.
- D. Erection
1. Workmanship
 - a. All brickwork shall be laid by competent masons and any workman not deemed to be such by the Commission shall be removed from the work at once.
 - b. Lay masonry plumb, true to line, with level and accurately spaced courses. Joints shall be not less than three-eighths (3/8) inch or more than one-half (1/2) inch wide.
 - c. Build in wood blocking, strips, grounds, wedges, pipe sleeves, frames, and similar items of material necessary to properly secure the work for other trades.
 - d. Remove mortar which has splashed or been smeared on finished surfaces with stiff bristle brushes as the work progresses.
 - e. Special care shall be taken in laying brick in inverts of manholes, transition sections, junction chambers, brick wyes and similar structures to insure a uniform flow of water through the sections. In such locations joints shall not exceed three-sixteenths (3/16) inch thickness and each brick shall be laid in full mortar joints on bottom side and end performed in one operation; no grouting or working in of mortar after laying the brick will be permitted.
 2. Parging
 - a. Parge exterior masonry in contact with the earth with two coats of Portland cement mortar, each 3/8 inch thick. The first coat shall be cross-scratched; the second coat shall be troweled smooth, beveled at the top, and coved out at the edge of the footing. Extend parging not more than 4 inches above grade, unless otherwise, and keep damp for at least 3 days.

- b. Parging the interior surfaces of a manhole is not permitted without prior Commission approval.
3. Brick
- a. Lay brick work in common bond. Fill all joints between bricks completely with mortar.

Form bed joints with a thick layer of mortar, which shall be smoothed. The practice of buttering at the corners of brick and then throwing mortar or scrappings into the empty joints will not be permitted. Lay closure brick with a bed joint and with head joints. Place the brick carefully without disturbing the joints. Place the brick carefully without disturbing the brick previously laid. Properly bond each course. Dry or butt joints will not be permitted. Provide grouting where indicated.
 - b. Use sewer brick whenever brick construction is exposed to sewage flow. Lay sewer brick on edge so that the 2-1/4 by 8 inch side is exposed to the flow.
 - c. Channel configurations shall be constructed as per the Standard Details.
 - d. All manhole frame and cover adjustment brick work will be installed in a flat radial pattern.

4.0 METHOD OF MEASUREMENT

Unit masonry will not be measured.

5.0 BASIS OF PAYMENT

Unit masonry will not be paid for as a separate item but is considered incidental to other items of work. Payment will be included in other related items of work and will constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the required work.

****END OF SECTION 04200****