

# Special Specification 5049

## Natural Stone Veneer



### 1. DESCRIPTION

Furnish and construct natural stone veneer for aesthetic columns and abutment wingwalls of bridge structure.

### 2. MATERIALS

- 2.1. **Stone.** The natural stone shall be native and quarried in Salado, Texas or locally from a single source as shown on the plans and approved by the engineer.
- 2.1.1. **Color.** Variable color including tans, browns, reds, and blacks as approved by the Engineer from submitted samples.
- 2.1.2. **Dimensions.** 2 inch to 3 inch nominal bed thickness, 3 inch to 6 inch nominal height, random lengths between 1'-0" and 1'-6" (except as allowed at corners).
- 2.1.3. **Finish.**
- 2.1.3.1. Exposed Faces: Roughly chopped or split face
- 2.1.3.2. Bed and Joint Surfaces: Cut or sawn square and level
- 2.1.3.3. Back Face: Roughly chopped or sawn smooth
- 2.1.3.4. External Corners of Piers: Corner pieces
- 2.1.4. **Arrangement.** Provide stones in a natural ledge running bond with fixed course heights and random lengths. Provide a minimum bond lapping of 4 inches. Bond and interlock each course at pier corners. Do not use stones with less than nominal 10 inch primary face at corners.
- 2.1.5. **Samples.** Submit 1 sample of a representative size mix, not less than 5 square feet for approval by the Engineer. The sample shall be typical of the grade, color and finish specified.
- 2.2. **Mortar.** Provide cement/lime mortar, a mortar cement mortar, or masonry cement as described in ASTM C270.
- 2.2.1. **Proportion Requirements.** Comply with ASTM C270, Proportion Specification. Setting mortar shall be ASTM C270 Type S with a compressive strength of 1800 psi minimum at 28 days. Pointing mortar shall be ASTM C270, Type N.
- 2.2.2. **Cementitious Materials for Mortar.**
- 2.2.2.1. Masonry Cement. Conforming to ASTM C91
- 2.2.2.2. Mortar Cement. Conforming to ASTM C1329
- 2.2.2.3. Lime. Conforming to ASTM to ASTM C207 Type S or ASTM C5
- 2.2.3. **Color.** Mortar color shall be natural color only.

- 2.2.4. **Aggregates.** Sand for mortar shall be natural sand or quartz sand only, and comply with ASTM C144.
- 2.2.5. **Water.** Use only clean, potable water.
- 2.3. **Wall Ties.** Refer to the plans and details.

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### 3. CONSTRUCTION METHODS

- 3.1. Construct with skilled stone masons and fitters able to perform necessary field cutting and fitting as stone veneer is set.
- 3.2. Do not mix or place mortar when the temperature is 40 deg F or less and falling. When ambient temperature exceeds 100 deg F, or 90 deg F with winds exceeding 8 mph, do not spread mortar beds more than 48 inches in advance of masonry and set masonry within one minute of spreading mortar. Otherwise, use mortar within 2 hours after initial mixing. Protect unit masonry work with appropriate countermeasures when temperature or humidity conditions cause excessive evaporation from mortar.
- 3.3. Mix mortar in accordance with ASTM C270. Do not use admixtures with mortar unless approved by the Engineer. Thoroughly mix ingredients in quantities needed for immediate use.
- 3.4. Clean stones with fiber brushes and clean water before settings. Maintain a saturated surface dry to slightly wet condition for stone immediately before setting.
- 3.5. Provide full mortar setting bed of the specified thickness to fully support stone over bearing surface. Set stone level and at proper alignment. Completely fill beds and joints, and rake the mortar to a depth of  $\frac{1}{2}$ ". Point beds and joints with a concave tooled joint. Keep exposed faces of stone free from mortar.
- 3.6. Provide wall ties or anchors as shown in the plans.
- 3.7. Cover top surface of veneer/wall cross-section overnight, weekends, and when raining during work hours.
- 3.8. Plastic or other weep tubes, or felt wicks, shall be placed in joints where moisture may accumulate within the wall, and as shown on the plans or as directed by the Engineer.
- 3.9. Perform adjustment of natural stone veneer as required until acceptance by the Engineer.
- 3.10. Replace stone which becomes broken, chipped, stained or otherwise damaged. Replace unsatisfactory joints as required to provide a neat, uniform appearance.
- 3.11. Clean stone veneer promptly after installation with fiber brushes and clean water, or a mild cleaning agent. Do not use wire brushes, acidic cleaning agents, or cleaners that contain caustic or harsh fillers or abrasives.
- 3.12. Maintain site conditions to avoid damage, discoloration or deterioration to natural stone veneer during subsequent construction.

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### 4. MEASUREMENT

This Item shall be measured by the square foot of exposed surface area of installed Natural Stone Veneer.

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### 5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" shall be paid for at the unit price bid for "Natural Stone Veneer" by the depth specified in the plans. This price shall be full compensation for furnishing the stone, placing, finishing and cleaning of the Natural Stone Veneer, cast stone caps and/or plaques, and for all materials, tools, labor, equipment and

incidentals necessary to complete the work. The preparation of the samples or mock ups described will not be paid for directly and shall be considered subsidiary to this bid item.