

ADDENDUM NO. 1  
TO  
CONSTRUCTION OF TECHNOLOGY TRAINING CENTER  
NEWPORT, ARKANSAS  
M-N 20-038

October 6, 2021

The following revision shall be made to the plans and specifications and become a part thereof:

1. The allowance for brick pavers shall be \$575/1000 to include taxes, freight and delivery to the site. Selection shall be made by Owner.
2. The cast stone shall be wet cast. A Cast Stone Specification is attached.
3. The Geotechnical Report provided in Appendix A of the Specifications show low shear strength soils are present on site under the existing concrete pavement and are unsuitable for use. The depth of these soils range from 3.5' to 8.5'. The Contractor shall plan to remove these low shear strength soils, in accordance with the Geotechnical Report and replace with select fill material. The cost of this soil removal and replacement shall be included in the Bid under Bid Item No. 1.
4. As shown on Sheet C104 of the Plans, the Contractor shall remove the existing service to the Chamber of Commerce building and install new service to the existing Chamber of Commerce building. The new service shall comply with the Entergy Service Detail shown on Sheet E202 of the Plans. The Contractor shall provide and install the conduits, main disconnect, junction box, and CT enclosure. The main disconnect shall be equal to Cutler Hammer Model DH327NRK, 800 Amp, NEMA 3R, 240 volt, 3-phase fused. Contractor shall verify existing service size and insure new service is equal to existing service. Adjust main disconnect size as required to match existing service size. Contractors shall verify all requirements with power company and pay all charges related to installing new service.

(End of Addendum)

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## Section 04-72-00 Architectural Cast Stone

### Part 1 General

#### 1.1. Section Includes - Architectural Cast Stone.

Scope - Cast Stone shown on architectural drawings and as described in this specification.

- Manufacturer shall furnish Cast Stone covered by this specification.

#### 1.2. References

ACI 318 – Building Code Requirements for Reinforced Concrete.

ASTM A615/A615M – Standard Specification for Deformed and Plain Billet-Steel Bars for Reinforced Concrete.

ASTM A1064 / A1064M – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

ASTM C33 – Standard Specification for Concrete Aggregates.

ASTM C150 – Standard Specification for Portland Cement.

ASTM C595 – Blended Cement

ASTM C1157 – Hydraulic Cement

ASTM C173 – Standard Test Method for Air Content of Freshly Mixed Concrete by the Volume Method.

ASTM C231 – Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

ASTM C260 – Standard Specification for Air-Entrained Admixtures for Concrete.

ASTM C270 – Standard Specification for Mortar for Unit Masonry.

ASTM C426 – Standard Test Method for Linear Shrinkage of Concrete Masonry Units.

ASTM C494/C494M – Standard Specification for Chemical Admixtures for Concrete.

ASTM C618 – Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.

ASTM C666/666M – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

ASTM C979 – Standard Specification for Coloring Pigments for Integrally Colored Concrete.

ASTM C989 – Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete.

ASTM C1116 – Standard Specification for Fiber Reinforced Concrete and Shotcrete.

ASTM C1194 – Standard Test Method for Compressive Strength of Architectural Cast Stone.

ASTM C1195 – Standard Test Method for Absorption of Architectural Cast Stone.

ASTM C1364 – Standard Specification for Architectural Cast Stone.

ASTM D2244 – Standard Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.

Cast Stone Institute® Technical Manual (Current Edition)

TMS 404-504-604- Standards for Architectural Cast Stone Design – Fabrication - Installation

### 1.3. Definitions

Cast Stone - a refined architectural concrete building unit manufactured to simulate natural cut stone, used in Division 4 masonry applications.

- Wet Cast – Manufactured from measurable slump concrete.  
Wet casting method: Manufactured from measurable slump concrete and vibrated into a mold until it becomes densely consolidated.

## Part 2 Products

### 2.1. Architectural Cast Stone

Comply with current version ASTM C1364

Physical properties: Provide the following:

- Compressive Strength - ASTM C1194: 6,500 psi minimum at 28 days.
- Absorption – ASTM C1195: 6.0% maximum at 28 days.
- Air Content – Provide sufficient air content to meet the freeze-thaw requirements for wet cast products, when the air content is tested in accordance with Test Method C173/C173M or Test Method C231/C231M. Air entrainment is not required for Vibrant Dry Tamp (VDT) products.
- Freeze-thaw – ASTM C666/C666M in accordance with ASTM C1364. The CPWL shall be less than 5.0% after 300 cycles of freezing and thawing.
- Linear Drying Shrinkage – ASTM C426: Test and report in accordance with ASTM C1364.

## 2.2. Raw Materials

Portland cement – Type I or Type III, white and/or grey, ASTM C150.

Coarse aggregates - Granite, quartz or limestone, ASTM C33, except for gradation, and are optional for the Vibrant Dry Tamp (VDT casting method).

Fine aggregates - Manufactured or natural sands, ASTM C33, except for gradation.

Colors - Inorganic iron oxide pigments, ASTM C979 except that carbon black pigments shall not be used.

Admixtures - Comply with the following:

- ASTM C260 for air-entraining admixtures.
- ASTM C494/C495M Types A - G for water reducing, retarding, accelerating, and high range admixtures.
- Other admixtures: Integral water repellents and other chemicals, for which no ASTM Standard exists, shall be previously established as suitable for use in concrete by proven field performance or through laboratory testing.
- ASTM C618 mineral admixtures of dark and variable colors shall not be used in surfaces intended to be exposed to view.
- ASTM C989 granulated blast furnace slag may be used to improve physical properties. Tests are required to verify these features.

Water – Potable

Reinforcing bars:

- ASTM A615/A615M: Grade 40 or 60 steel galvanized or epoxy coated when cover is less than 1.5 in.
- Welded Wire Fabric: ASTM A1064 / A1064M where applicable for wet cast units.

All anchors, dowels and other anchoring devices and shims shall be standard building stone anchors commercially available in a non-corrosive material such as zinc plated, galvanized steel, brass, or stainless steel Type 302 or 304.

## 2.3. Color And Finish

Color shall be selected by Owner.

All surfaces intended to be exposed to view shall have a fine-grained texture similar to natural stone, with no air voids in excess of 1/32 in. and the density of such voids shall be less than 3 occurrences per any 1 in.<sup>2</sup> and not obvious under direct daylight illumination at a 5 ft distance.

Units shall exhibit a texture approximately equal to the approved sample when viewed under direct daylight illumination at a 10 ft distance.

## 2.4. Reinforcing

Minimum reinforcing shall be 0.25 percent of the cross section area.

Reinforcement shall be noncorrosive where faces exposed to weather are covered with less than 1.5 in. of concrete material. All reinforcement shall have minimum coverage of twice the diameter of the bars.

Panels, soffits and similar stones greater than 24 in. (600 mm) in one direction shall be reinforced in that direction. Units less than 24 in. (600 mm) in both their length and width dimension shall be non-reinforced unless otherwise specified.

Welded wire fabric reinforcing shall not be used in dry cast products.

## 2.5. Curing

Cure units in a warm curing chamber approximately 100°F (37.8°C) at 95 percent relative humidity for approximately 12 hours, or cure in a 95 percent moist environment at a minimum 70°F (21.1°C) for 16 hours after casting. Additional yard curing at 95 percent relative humidity shall be 350 degree-days (i.e. 7 days @ 50°F (10°C) or 5 days @ 70°F (21°C)) prior to shipping. Form cured units shall be protected from moisture evaporation with curing blankets or curing compounds after casting.

## 2.6. Manufacturing Tolerances

Cross section dimensions shall not deviate by more than  $\pm 1/8$  in. from approved dimensions.

Length of units shall not deviate by more than length/ 360 or  $\pm 1/8$  in., whichever is greater, not to exceed  $\pm 1/4$  in.

Maximum length of any unit shall not exceed 15 times the average thickness of such unit unless otherwise agreed by the manufacturer.

Warp, bow or twist of units shall not exceed length/ 360 or  $\pm 1/8$  in., whichever is greater.

Location of dowel holes, anchor slots, flashing grooves, false joints and similar features – On formed sides of unit,  $1/8$  in., on unformed sides of unit,  $3/8$  in. maximum deviation.

# 3. Part 3 Execution

## 3.1. Examination

Installing contractor shall check Cast Stone materials for fit and finish prior to installation.

Unacceptable units shall not be set.

## 3.2. Setting Tolerances

Comply with Cast Stone Institute® Technical Manual.

Set stones  $1/8$  in. or less, within the plane of adjacent units.

Joints, plus -  $1/16$  in., minus -  $1/8$  in.

### 3.3. Jointing

#### Joint Size:

- At stone/brick joints 3/8 in.
- At stone/stone joints in vertical position 1/4 in. (3/8 in. optional).
- Stone/stone joints exposed on top 3/8 in.

#### Joint materials:

- Mortar, Type N, ASTM C270.
- Use a full bed of mortar at all bed joints.
- Flush vertical joints full with mortar.
- Leave all joints with exposed tops or under relieving angles open for sealant.
- Leave head joints in copings and projecting components open for sealant.

### 3.4. Setting

Drench units with clean water prior to setting.

Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

Set units in full bed of mortar, unless otherwise detailed.

Rake mortar joints 3/4 in. in for pointing.

Remove excess mortar from unit faces immediately after setting.

Tuck point unit joints to a slight concave profile.

### 3.5. Joint Protection

Comply with requirements of Section 07 90 00.

Prime ends of units, insert properly sized backing rod and install required sealant.

### 3.6. Repair and Cleaning

Repair chips with touchup materials furnished by manufacturer.

Saturate units to be cleaned prior to applying an approved masonry cleaner.

Consult with the manufacture for appropriate cleaners.

### 3.7. Inspection and Acceptance

Inspect finished installation according to Cast Stone Institute® Technical Bulletin #36.

Do not field apply water repellent until repair, cleaning, inspection and acceptance is completed.

### 3.8. Water Repellent

Apply water repellent in accordance with Cast Stone Institute® Technical Bulletin #35 or water repellent manufacturer's directions.