ARCHITECTURAL PRECAST STONE SPECIFICATIONS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplemental Conditions and Division-1 Specification sections, apply to work specified in this section.

1.02 DESCRIPTION OF WORK

1. Codes and standards: Guidelines used from the following codes, specifications and standards, except as otherwise indicate. Precast Concrete Institute MNL 117, Manual for quality control for Plants and Production of Architectural Precast Concrete Products. "Architectural Precast Association (APA)" plant certification standards.

2. Manufacturer Qualifications: Only firms having a minimum of 5 years successful experience in fabrication of Architectural Precast Stone units, similar to units required for this project will be acceptable. Only manufacturers that are APA or PCI certified will be acceptable.

3. Acceptable Manufacturer: Southside Precast Products (phone 716-825-9300) or equal meeting these general specifications.

4. Design modifications may be made only as necessary to meet field conditions and to ensure proper fitting of the work and only acceptable to Architect. Maintain general design concept shown without increasing or decreasing sizes of members or altering profile and alignment shown.

5. Erector Qualifications: Minimum of 3 years successful experience in erection of Architectural Precast Stone units similar to ones required for this project.

1.03 SUBMITTALS

1. Submit product data for manufactured materials and products including the following:

.1 Mix Designs
.2 Test results for compression strengths
.3 Water absorption test results
.4 Type of admixtures used
.5 Warranty

2. Shop drawings: Include complete layout for the installation of Precast units. Showing the following:

.1 Dimensions including cross sections
.2 Reinforcement sizes, type and locations
.3 Layout and identification of each Precast unit as they will appear on the building including all joints
.4 Locations of fastening/anchoring details, lifting devices and possible in the field cut to fit locations by installer
.5 Where load bearing units are located provide complete design and load calculations by a registered Professional Engineer with experience in Architectural Precast units in the State where project is located

3. Samples: Precast Stone of sufficient size to properly illustrate finish, color, quality and texture.

1.04 DELIVERY STORAGE AND HANDLING

1. Deliver units to job site using means to minimize damage to units. Receiving parties to store units at project site ensuring against cracking, distortion, staining or other physical damage.

2. Precast units to be field inspected by the installing contractor for any excessively bowed, warped, cracked, out of square or excessive color variations and shall be approved/rejected prior to installation.

PART 2 PRODUCTS

2.01 REINFORCING MATERIALS

1. Reinforcing Bars: ASTM A615, Grade 60, deformed unless otherwise indicated.

2. Galvanize after fabrication all connections exposed to weather. Provide galvanized reinforcement where reinforcement is 1” or less from exterior face when exposed to weather.

2.02 CONCRETE MATERIALS

1. Portland cement: ASTM C150 Type I or TYPE III pending on desired final color

2. Aggregates: Per ASTM C33

3. Water: Potable and free of foreign materials

4. Portland Cement and Aggregates shall match Architects control sample or Southside Precast Products Mix Design # call Southside .
Surface Finish: call Southside .

2.03 CONNECTION DEVICES

1. Steel Plates: Structural quality, hot rolled carbon steel, ASTM A 283, Grade C.

2. Steel Shapes: ASTM A 36

3. Electrodes for welding: Comply with AWS Code

4. Finish of Steel Units: Galvanize after fabrication

5. Or as specified in Section 04200

2.04 GROUT MATERIALS

1. Cement grout: Portland Cement, ASTM C 150, Type 1 clean natural sand ASTM C 404. Mix at ratio of 1.0 part cement to 2.0 parts sand by volume with minimum water required for placement and hydration. Color selected by Architect. See 04200 section

2.05 PROPORTIONING AND DESIGN OF MIXES

1. Prepare design mix of Precast Stone by independent testing facility or by qualified Precast Manufacturer with a minimum of 5 years of manufacturing experience.

2. Design mix to achieve following performance:

.1 Compression strength to be a minimum of 5000 PSI at 28 days per ASTM C39
.2 Total Air Content to be not less than 4% nor more than 6% per ASTM C231
.3 Water absorption not to exceed 5% by weight as per PCI MNL 117-ASTM C642

3. Same design mix to be used for entire project. Back up or filler concrete not acceptable

2.06 FABRICATION

1. Fabricate units following quality control recommendations per PCI MNL 117, Architectural Precast Association and the following dimension tolerances:

.1 5' or under: plus or minus 3/16"
.2 Over 5' to 10': plus or minus 1/4"
.3 Over 10' to 20': plus or minus 3/8"
.4 Out of square (difference in length of two diagonal measurements) 3/16" per 5' of 3/8" total, which ever is greater.
.5 Cast in items including pockets, block outs, inserts & weld plates to be within 3/4" of centerline locations.

2. Provide as-cast or float finish for surfaces not exposed. Float finish sides that are unavoidably exposed are to be called out on submittal drawings for Architects' review.

3. Factory patch all voids or holes larger than 3/16" dia. with same color and mix. Installer to field patch to Architects satisfaction all other handling chips per the Precast Manufacturers' recommendations. Note that all necessary precautions are to be taken to avoid such damage.

2.07 QUALITY CONTROL

1. The Owner/Architect may employ an independent testing agency to evaluate quality control and testing methods of Precast Manufacturer. Manufacturer shall cooperate with the testing agency in providing access to materials and fabrication facilities and in providing material samples for testing.

PART 3 EXECUTION/INSTALLATION

3.01 INSTALLATION

1. Installer to follow normal good working practices as spelled out in 04200 section of these specifications and other as is required for this project. All units to be plumb level and true maintaining uniform joints at 3/8” plus or minus maximum 1/8” as spelled out on drawings or otherwise indicated.

2. Anchor units as spelled out in 04200 section or on drawings. Remove temporary shims, wedges and spacers as soon as possible after anchoring and grouting are completed. All bolt connections to use lock washer or other acceptable means to prevent loosening. Welded connections and other exposed metal surfaces apply rust inhibitor coating and galv. Repair coating for galv. Surfaced.

3. All in the field cuts to fit by the installer that are exposed to view finished surfaces must be approved by Architect.

4. Installer to clean exposed surfaces to remove dirt, staining, grout and all other handling marks after completion of joint treatment in accordance to Manufacturers recommendations. Protect other work from damage due to cleaning operation.

5. Installer to treat all surfaces with potential exposure to deicing/ corrosive materials in accordance to manufacturer's recommendations.

END OF SECTION 03450