

MONROE COUNTY  
NEW YORK

SPECIFICATIONS AND RELATED DOCUMENTS

FOR

TERMINAL IMPROVEMENTS PHASE II  
AT  
GREATER ROCHESTER INTERNATIONAL AIRPORT

PFC APPLICATION NO. 04-03-C-00-ROC  
CAPITAL IMPROVEMENT PROJECT NO. 1573

DATE: JANUARY 10, 2011

ADDENDUM NO. 2



TO ALL BIDDERS:

**\*\*\*THE BID DATE HAS BEEN EXTENDED TO JANUARY 18 \*\*\***

The following constitutes ADDENDUM NO. 2 of the Contract Documents. Each Bidder shall acknowledge receipt of this addendum on page P-4 of the PROPOSAL.

ADD1-1 through ADD1-3

Specification Sections:

08460 Automatic Sliding Doors Hurricane  
09420 Epoxy Terrazzo

11X17 Sketch: ASK-A4

**Prepared By:**  
Clough Harbour & Associates LLP  
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16 Main Street West  
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Rochester, NY 14614

**Prepared For:**  
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1200 Brooks Avenue  
Rochester, NY 14624

**TERMINAL IMPROVEMENTS PHASE II  
AT GREATER ROCHESTER INTERNATIONAL AIRPORT  
ADDENDUM NO. 1**

**CONTRACT DRAWINGS:**

**A. Revisions to the Drawings**

1. Addendum No. 1
  - a. CORRECT size of J type signs added to be 14"x14"
2. Drawing SGN-106
  - a. REVISE – SPECIFICATION TYPE L / FLOOR MOUNTED SIGNS to read: SPECIFICATION TYPE A / FLOOR MOUNTED SIGNS
  - b. ADD – Signage Type J per ASK-A4

**CONTRACT SPECIFICATIONS:**

**A. Revisions to the Specifications**

1. Notice to Bidders
  - a. REVISE the bid opening date from January 10, 2012 @ 2:00 PM to January 18, 2012 @ 2:00 PM
2. Table of Contents
  - a. ADD the following:  
  
"08460                      Automatic Sliding Doors Hurricane    08460-1 thru 08460-7"
3. Contract #1 – General Construction Proposal
  - a. REVISE PGC-1 THIRD - liquidated damages to read:  
  
"THIRD: To pay the OWNER the following liquidated damages in the sum of **Five Hundred Dollars and no cents (\$500.00)** for each calendar day of delay in completing the work beyond the specified times of completion or within the times to which such completion may have been extended in accordance with the Contract Documents:"
4. Contract #2 –Fire Protection Proposal
  - a. REVISE PP-1 THIRD - liquidated damages to read:  
  
"THIRD: To pay the OWNER the following liquidated damages in the sum of **Five Hundred Dollars and no cents (\$500.00)** for each calendar day of delay in completing the work beyond the specified times of completion or within the times to which such completion may have been extended in accordance with the Contract Documents:"
5. Contract #2 –Electrical Proposal
  - a. REVISE PE-1 THIRD - liquidated damages to read:  
  
"THIRD: To pay the OWNER the following liquidated damages in the sum of **Five Hundred Dollars and no cents (\$500.00)** for each calendar day of delay in completing the work beyond the specified times of completion or within the times to which such completion may have been extended in accordance with the Contract Documents:"

**TERMINAL IMPROVEMENTS PHASE II  
AT GREATER ROCHESTER INTERNATIONAL AIRPORT  
ADDENDUM NO. 1**

6. 08460 AUTOMATIC SLIDING DOOR HARDWARE

- a. ADD in its entirety the attached 08460 Automatic Sliding Door Hardware specification section

7. 09420 Epoxy Terrazzo

- a. REPLACE in its entirety 09420 Epoxy Terrazzo specification section with the attached 09420 Epoxy Terrazzo specification

END OF ADDENDUM NO. 2

## SECTION 08460 - AUTOMATIC SLIDING DOORS (HURRICANE RATED PERFORMANCE)

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings, the Contract, other Division 1 Specification Sections, and other Contract Documents apply to this Section
- B. See drawings and details for additional reference, design and fabrication information.

#### 1.02 GENERAL REQUIREMENTS

- A. Provide material, labor, equipment, and services necessary to furnish deliver and install all Work of this Section as shown on the Drawings, as specified herein, and/or as required by job conditions.
- B. The door system shall be single source manufactured.
- C. The door system shall withstand a uniform design pressure of 55 psi positive or negative as measured on a 16' 0" wide unit.

#### 1.03 SUMMARY

- A. The Work shall include, but is not limited to the following
  - 1. Bi-parting automatic sliding door system part fitted for hurricane winds

#### 1.04 RELATED SECTIONS

- A. Section 07920 – Joint sealants
- B. Section 08710 – Finish hardware – Thresholds
- C. Section 08800 - Glazing
- D. Section 08911 – Glazed Aluminum Curtain Wall

#### 1.05 SUBMITTALS

- A. Product Data: For each type of product specified. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes.
- B. Shop Drawings documenting profiles, joining methods, product components, anchorage and reinforcing details, adjacent construction interface, dimensions and necessary wiring and electrical requirements, glazing details.
- C. Submit Manufacturer's Warranty, Owner's Manual and AAADM inspection form completed and signed by certified AAADM inspector prior to doors being placed into operation.
- D. Installation Guide: Provide a written installation guide and job specific installation recommendations.

- E. Provide a written installation guide and job specific installation recommendations.

#### 1.06 SAMPLES

- A. Samples for Verification: Of size indicated below and of same thickness and material indicated for Work. Show the full range of color and texture variations expected.
  - 1. Metal Finishes: 6-inch long section of typical stile or rail with finish & color.
  - 2. Glass: 6 inches (150 mm) square each type.

#### 1.07 REFERENCES

- A. Underwriters Laboratories (UL), 333 Pfingsten Road, Northbrook, IL 60062, 847-272-8800
- B. American National Standards Institute (ANSI), 11 W. 42nd St., 13th Floor, New York, NY 10036, 212-642-4900
- C. Builders' Hardware Manufacturers Association (BHMA), 355 Lexington Ave., New York, NY 10017, 212-661-4261
- D. National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269, 800-344-3555, 617-770-3000
- E. Boca Evaluation Services, 4051 West Flossmoor Road, Country Club Hills, IL 60478, 708-799-2305
- F. ICBO Evaluation Services, 5360 Workman Mill Road, Whittier, CA 90601, 562-699-0543

#### 1.08 QUALITY ASSURANCE

- A. Installer Qualifications: Engage a manufacturer approved experienced installer to perform work of this Section who has specialized in installing automatic doors similar to those required for this Project and with a record of successful in-service performance.
- B. Source Limitations: Obtain automatic doors and all parts from a single manufacturer.
- C. Product Options: Drawings indicate size, profiles, and dimensional requirements of doors and are based on the "basis of design" system indicated. Other manufacturers' systems with equal performance characteristics may be considered. Refer to Division 1
- D. Do not modify intended aesthetic effects, as judged solely by the Architect, except with Architect's approval and only to the extent needed to comply with performance requirements. Where modifications are proposed, submit comprehensive explanatory data to Architect for review
- E. Automatic sliding door system shall be certified by the manufacturer to meet performance design criteria according to the following test standards:
  - 1. ANSI A156.10.
  - 2. Underwriter's Laboratories (UL) listed to UL325.
  - 3. ASTM test methods: E330-96, E283-91, F842-97

## 1.09 PROJECT CONDITIONS

- A. Field Measurements: Verify opening dimensions for automatic doors by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work
  - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating all-glass doors without field measurements. Coordinate construction to ensure actual opening dimensions correspond to established dimensions.
- B. Verify that adjacent work trades are complete with their required work before installing the automatic sliding door system.
- C. Mounting surfaces shall be plumb, straight and secure; substrates shall be of proper dimension and material; material which door is anchored to shall be capable of supporting the automatic door system and associated loads.
- D. Refer to the construction documents, shop drawings and manufacturer's installation instructions.
- E. Coordinate installation with the glass, glazing and electrical work.
- F. Observe all appropriate OSHA safety guidelines for this work.

## 1.10 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty executed by the manufacturer agreeing to repair or replace components of automatic doors that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following
  - 1. Structural failures.
  - 2. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 3. Failure of operating components to function normally.
- C. Warranty Period: 2 years from date of Substantial Completion

## PART 2 - PRODUCT

### 2.01 MANUFACTURER: Basis Of Design

DORMA Automatics, Inc.  
924 Sherwood Drive  
Lake Bluff, Illinois 60044  
T: 877-367-6211, Fx: 847-295-5288  
web: <http://www.dorma-usa.com>

## 2.02 PRODUCT: Basis of Design

ESA 200 Hurricane rated, medium stile, bi-parting automatic sliding doors with emergency breakout doors, fixed sidelites and transom. O-SX-SX-O Unit width 16'-0". Unit Height 7'-8 1/4"

## 2.03 DOOR SYSTEM COMPONENTS

- A. The system shall consist of medium stile, glazed bi-part sliding aluminum doors with fixed sidelights, 4.5" x 7.5" header with belt drive operator, threshold / track with all activating and safety sensors. The system shall be completely engineered, manufactured and assembled by single source manufacturer. All operator components shall be factory assembled within the header, fully adjusted and tested. Field wiring is not required; other than connection to job-site power. Door functions shall be in accordance with ANSI A156.10 and an AAADM compliance inspection shall be completed after the door system is completely installed. The system shall withstand a uniform design pressure of 55 psi positive or negative as measured on a 16' 0" wide unit.
- B. Sliding Aluminum Doors: Provide door units to dimension heights and widths with corresponding glazing as shown on construction documents. Door opening restrictor arms shall be provided for all panels to control and limit the opening angle of the doors as they swing in the direction of egress. Provide glass stops for 1" insulated glazing.
- C. All doors shall have standard 3.25" intermediate muntin (including glass stops) and 7.5" bottom rail (including glass stop). The bi-part sliding door system shall include a two-point lock: one being secured at the lead edges of the door into a 3/16" steel receiver strike and into the threshold and the other to the carrier assembly above the locking stile. The door package shall include 2 - 12" interlock clips that latch the sliding panels to the sidelight panels when the door system is in the fully closed position. The active sliding doors shall be provided with a maximum security hookbolt lock, with a key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.
- D. Door Operation: Shall be bi-part slide in compliance with NFPA 101, with sliding panels providing "breakout" to the full and open position to provide egress at any point in the door's movement or position. To allow safe egress, automatic operation shall be discontinued when any panel is in the "breakout" mode by way of a non-contact cut-off switch. Doors and sidelights shall be sized and positioned to provide a minimum 0.75" (19mm) finger protection to prevent pinch points at the meeting stiles when fully opened.
- E. Aluminum Frame and Extrusions: Door panels shall be 1.75" deep and all structural sections shall be of sufficient strength and thickness to properly self-support the functionality of the sliding door system. The framing materials, including the jambs and header, shall be 4.5" deep. Bi-part transom packages shall contain vertical transom tubes as per the design in the Contract Documents.
- F. Aluminum Extrusion Finish: Finish shall be a custom powdercoat finish to match the color and sheen of the existing interior curtain wall. Provide aluminum cladding components with matching finish to interface with adjacent vestibule framing as required by the Contract Documents and field conditions.
- G. Sidelights: Provide fixed sidelight door panels to match the design configuration of the operable sliding door panels in height and width as shown on construction documents with corresponding glazing. All sidelights shall have standard intermediate 3.25" overall muntin.
- H. Header: Shall be 4.5" wide by 7.5" high , a 6063-T5 extruded aluminum alloy - capable of supporting door panels of 2 x 190 lbs. for bi-part slide. The header shall contain the door operator and door mounting components. The header cover shall have a continuous self-locking hinge design and open flush with the top of the header. The roller track shall be a separate extrusion from the header and sound dampened by separating the track from the header with an extruded EPDM rubber gasket.

- I. Door Hanger Wheels: Shall be 1.5” diameter Delrin™ wheels with self lubricating sealed ball bearing cores. The sliding doors shall be stabilized on the track by 1.625” diameter anti-riser wheels. This assembly shall allow the sliding doors to freely swing outward for emergency egress. The door height shall have an upward or downward adjustment of 3/16” as required by field conditions.
- J. Threshold Track: Shall be required adjacent to the fixed sidelights.
- K. Door Operator and Controller: Shall be powered by an electro-mechanical operator with microprocessor controller. The operator components shall consist of: a DC permanent magnet motor, a self lubricating drive system, wear-free digital rotary encoder all linked to [and managed by] a fully integrated digital microprocessor controller.
- L. Microprocessor Controller: The microprocessor controller shall be a fully integrated digital design that is self-learning and self-monitoring. Performance parameters shall not exceed applicable ANSI A156.10 and / or UL standards. The controller shall continuously monitor all critical door functions and safety sensors. All door functions - such as opening speed, closing speed, check locations, partial open dimensions, etc., shall be fully programmable without the use of limit switches. This shall be accomplished by utilizing a portable hand terminal connected to the microprocessor controller.
- M. Threshold Sensors: Shall be self-monitored active infrared safety sensors. The sensors shall be self-contained and fully functioning during the opening and closing cycle of the door.
- N. Activation Sensor: Shall be motion sensor. The unit shall utilize K-band frequency (24.125 GHz) for improved detection of slow-moving pedestrian traffic, and shall be switchable between bi-directional and uni-directional operation. Circuitry is included to eliminate Radio Frequency Interference (RFI) and Electromagnetic Interference (EMI). The relay hold time shall be adjustable from 0.5 seconds to 9 seconds. The motion sensor shall be mounted to the sliding door header but no higher than at 120” AFF. Using the adjustable antenna the detection pattern shall be semi-circular. The sensor should provide a range of detection options and the location of the detection zone shall be fully adjustable.
- O. Wide pattern set-up: Approximately 12’-0” wide by 6’-6” deep
- P. Narrow pattern set-up: Approximately 6’-6” wide by 8’-0” deep
- Q. Vertical antenna adjustments: 0° to 90° in 15° increments
- R. Lateral adjustment: 30° left to 30° right and anywhere in between.
- S. Sensor operational temperature range: -30°F to + 131° F
- T. Power shall be provided by the microprocessor control.
- U. Electrical adjustments can be made with a universal coded infrared remote control.

#### 2.04 ACCESSORIES

- A. The door system shall include the following accessories to reduce energy loss
  - 1. Vinyl weather-stripping on the bottom of sliding doors and sidelights
  - 2. Track-in vinyl weather-stripping on the sliding door lead edges
  - 3. Track-in vinyl weather-stripping between the carrier and the header on the sliding doors
  - 4. Track-in vinyl weather-stripping at the interlock rails between sliding doors and sidelight doors

5. Track-in vinyl weather-stripping between sidelight doors and jambs
6. Interior side jamb mounted program switches consisting of:
  - a. Main Switch = AUTO-OFF-OPEN (operates door in fully automatic mode or turns it off or keeps it fully open) Exit Only Switch = OFF – ON (only the exit side motion detector will initiate door opening)
  - b. Partial Open Switch = OFF – ON (reduces the opening width according to weather and traffic conditions).

## 2.05 SUBSTITUTIONS

- A. Equal substitutions are acceptable for submission and should be shown as equal through supporting data, materials lists, performance data or any other supporting information.
- B. No substitution will be considered unless written request for approval has been submitted by the bidder and has been received by the architect per Division 1 requirements.
- C. The material, products, and equipment specified in this section establish a minimum standard for required: system performance, function, dimension, appearance, and quality to be met by any proposed substitution. A proposed substitution must meet the performance and material quality standards of this specification. Component materials must match or be improved and perform equally or better with regards to “the system”, components, material strengths, coatings and performance testing data.
- D. Each such request shall include the name of the materials for which it is to be substituted and a complete description of the proposed substitute, including specifications, drawings, samples, performance and test data, and any other information necessary for evaluation.

## 2.06 OPERATING CONDITIONS

- A. Climatic Conditions: All automatic sliding door system components shall operate between -30°F and +130° F in all climatic conditions.
- B. Performance Requirements: The maximum allowable air infiltration rate is 1.2 cfm/ft<sup>2</sup> in accordance with ASTM test methods. The header shall be capable of supporting bi-parting doors of 220 lbs per leaf over a span of 14 feet with a deflection not more than ¼".

## 2.07 RELATED WORK REQUIREMENTS

- A. Electrical: 120 VAC, 60 Hz, % Amp service provided to the header.

## PART 3 – EXECUTION

### 3.01 PRODUCT HANDLING

- A. All materials to arrive in the manufacturer’s original sealed and labeled containers.
- B. Store materials in a dry, protected, well-vented area.
- C. Remove all protective materials after installation.
- D. Protect installation from damage to system parts and finish until job completion and time of acceptance.

## AUTOMATIC SLIDING DOORS

### 3.02 INSPECTION

- A. Verify that the automatic sliding door system installation will not disrupt other trades. The door installer shall verify that the installation area is dry, clean and free of foreign matter. Check as-built conditions and verify the manufacturer's automatic sliding entrance system details for accuracy to fit the wall assembly prior to fabrication. Report in writing to the Contractor any detrimental conditions to the proper functioning of the automatic sliding door system. Installation shall proceed once any unsatisfactory conditions have been corrected and in accordance to the manufacturer's recommendations.

### 3.03 INSTALLATION

- A. Installation shall be by an installer approved and trained by the manufacturer in strict accordance with the manufacturer's instructions.
- B. Comply with all manufacturer's recommendations for installation. Set all units plumb, level and secure.
- C. Provide all fasteners required for complete installation.
- D. Adjustment and Cleaning: After repeated operation of completed installation, inspect door operators and controls for optimum operating condition and safety. Clean all metal surfaces promptly after installation.
- E. Explain and review the Daily Safety Check Procedure with Owner designated representative.

END OF SECTION

## SECTION 09420 - EPOXY TERRAZZO

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. The Agreement, General Conditions, Special Conditions, and all applicable provisions of Division 1 - General Requirements apply to all work of this Section.
- B. Appendix "A" Material Schedule at the end of these specifications

#### 1.02 GENERAL REQUIREMENTS

- A. Provide materials, labor, equipment and services necessary to furnish, deliver and install all work of this Section as shown on the drawings, as specified herein and/or as required by job conditions.

#### 1.03 SECTION INCLUDES

- A. The Work shall include, but is not limited to the following:
  - 1. Epoxy terrazzo floors where scheduled and shown on the drawings.
  - 2. Divider and control strips.
  - 3. Colorants and primers.
  - 4. Cleaners and sealers
  - 5. Crack Isolation System
  - 6. Isolation Membrane
  - 7. Floor Leveling

#### 1.04 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 09250: Gypsum drywall.
- B. Section 09410: Precast terrazzo - stair treads.

#### 1.05 QUALITY ASSURANCES

- A. Installer Qualifications
  - 1. Installer shall be a firm who can provide written documentation that the firm has demonstrated successful experience in this type of work and The installer shall provide a full-time field representative at the job site who shall be the official representative of the installer.
  - 2. Installer shall be a Contractor member of NTMA or be certified to perform the work in accordance with NTMA Standards.

#### 1.06 REFERENCE STANDARDS

- A. The latest edition of the following standards are included as part of this Specification and shall be followed as mandatory requirements

- B. The most stringent provision shall govern if conflict occurs between the referenced standards or between the standards and this Specification
  - 1. National Terrazzo and Mosaic Association (NTMA)
  - 2. American Society for Testing & Materials (ASTM)
    - a. ASTM C-580 Flexural Strength
    - b. ASTM D-635 Test Method of Rate of Burning of Self-Supporting Plastics
    - c. ASTM D-638 Tensile Strength
    - d. ASTM D-695 Compressive Strength
    - e. ASTM D-696 Test Method for Coefficient of Linear Expansion of Plastics
    - f. ASTM D-2240 Hardness Shore D
    - g. ASTM D-4060 Abrasion Resistance
  - 3. American Concrete Institute (ACI)
    - a. Committee 403 Bulletin Title No. 59-43
  - 4. National Fire Protection Association (NFPA)
    - a. NFPA Bulletin 99
- C. Job Mock-up
  - 1. Prior to proceeding with the entire work, place the terrazzo floor in its final location, put in a restricted area, to be determined by the Architect, complete with final polishing and bounded by walls and divider strips. The Mock up area shall be a minimum 100 sq. ft.
  - 2. This installation shall be judged for workmanship and performance and the matching to the previously reviewed submittals.
  - 3. When this mock-up is accepted proceed with the remainder of the work, which shall be judged based on the mock-up installation.

1.07 SUBMITTALS

- A. The Samples listed below are required to be submitted by the Contractor to the Architect, for review. An omission of an item or items does not relieve the Contractor from this responsibility, and for compliance with the Contract Documents, of which this is a part.
  - a. SAMPLES

Item No.	Quan.	Size	Description
S1	3	12" x 12"	White Epoxy terrazzo (EPT-1)

EPOXY TERRAZZO

S2	3	12" x 12"	Gray Epoxy terrazzo (EPT-2)
S3	4	6" long	Divider and control strips
S4	4	6" long	fiberglass scrim

B. Shop Drawings

1. Submit shop drawings for review in accordance with the requirements of the Contract Documents.
2. Shop drawings shall include 1/8" scale plans and full size details indicating pattern and location of every divider and expansion strip, and details where terrazzo abuts other materials.
3. Indicate all locations where terrazzo abuts other materials, and coordinate accordingly with other trades.

C. Submit manufacturer's product data, catalog cuts, and test data.

1. Provide color selection charts for marble chips.
2. Provide membrane literature.

D. Maintenance data: Submit recommended cleaning and maintenance instructions for materials being provided.

E. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, and other information specified.

F. Substrate acceptability: Submit certified statements signed by epoxy terrazzo manufacturer and installer verifying that substrates designated to receive epoxy terrazzo are acceptable for installation of work of this Section and will not void guarantee.

G. Placement Plan: Submit for approval a placement plan which will indicate the size, location, proposed placement sequence, and duration to complete each area..

H. Disposal Plan: Contractor responsible for proper removal and disposal of waste from wet grinding operations. A disposal plan outlining how the waste will be removed and where it is to be disposed of must be submitted and approved prior to grinding operations.

1.08 DELIVERY AND STORAGE

- A. Deliver materials to the site ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type of material, brand name and manufacturer's name. Delivered materials shall be identical to the reviewed submittals.
- B. Store materials under cover in a secure, dry and clean location, off the ground. Remove materials which are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.

1.09 JOB CONDITIONS

- A. The installer shall visit the jobsite prior to beginning the installation of the epoxy thin-set terrazzo flooring system to evaluate substrate condition, including substrate moisture content, and the extent of repairs required, if any. Concrete substrates shall be tested to verify that the moisture content of the substrate does not exceed the manufacturers' recommendations and the latest recommendations of the National Terrazzo and Mosaic Association (NTMA). Once tested, the contractor is responsible for determining and providing material solutions to coordinate with and or rectify the existing conditions of the site as required by latest industry standards.
- B. The installer shall exercise care during surface preparation and system installation to protect surrounding substrates and surfaces. Prepare the substrate to remove laitance and open the surface, which shall be achieved by light brush grit blasting. Surface profile achieved shall be similar to medium grit sandpaper and free from bond-inhibiting contaminants.
- C. The installer shall provide all labor and materials to repair cracks and deficiencies in the existing concrete slab using the industries best known methods and materials for such work as a preparation to the installation of epoxy terrazzo as specified in the drawings and specifications. The contractor shall provide labor and best materials for a minimum of 50 percent of the total area of work to receive terrazzo.
- D. The minimum slab temperature must be conditioned to 50°F before commencing installation, during installation, and for at least 72 hours after installation is complete.
- E. Maintain lighting at a minimum uniform level of 50 or more foot candles in area where the epoxy thin-set terrazzo flooring system is being installed. It is the recommendation of the manufacturer that the permanent lighting be in place and working during the installation.
- F. Close spaces where terrazzo is being installed to traffic and other work during installation and for at least 48 hours thereafter.
- G. Warranty
  - 1. The contractor and the manufacturer shall furnish a standard guarantee of the Pedestrian Traffic Topping System for a period of one year after Owner accepted installation. The labor and material guarantee shall include loss of bond and wear-through to the concrete substrate from normal use.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Flooring
  - 1. Terrazzo & Marble Supply Co. - Terroxy Resin Systems
  - 2. Sherwin Williams Co. - General Polymers - No. 1100 System
  - 3. or an equal acceptable to the Architect.
- B. Strips, Chips
  - 1. Terrazzo Marble Supply Company
  - 2. Manhattan American Terrazzo Strip Co.
  - 3. or an equal acceptable to the Architect.

- C. Crack Isolation System that utilizes 355 Epoflex 100% solids flexible epoxy
  - 1. Terroxy Iso-Crack epoxy membrane
  - 2. Sherwin Williams Co. - General Polymers – flex-Grid
  - 3. or an equal acceptable to the Architect

2.02 MATERIALS

- A. EPT-1, EPT-2 : See Appendix “A” at the end of these specifications.
- B. The thin set epoxy floor system shall consist of the following multiple components formulated by the manufacturer for compatibility and to provide a complete floor system.
  - 1. Epoxy primer, epoxy terrazzo matrix, epoxy filler, marble chips, epoxy grout, filler and sealer coats.
  - 2. For elevated concrete floors apply 40 mil thick epoxy flexible membrane.
- C. Installed flooring shall conform to the following physical characteristics:

	Characteristic	ASTM Test	Results
1.	Hardness	D-2240	Shore D Durometer 75-88
2.	Tensile strength	D-638 or C-307	4800 psi minimum 2500 psi
3.	Compressive strength	D-695	8,000 psi minimum
4.	Flexural strength	D-580 or D-790	6,500 psi minimum
5.	Impact resistance	-	Gardner 100 in./lb.
6.	Abrasive resistance	D-4060	0.045 gm maximum
7.	Water absorption	D-570	0.10%
8.	Flammability	D-635	Self-extinguishing
9.	Adhesion	(A.C.I. Committee 503.1)	100% failure in concrete

- D. The flexible epoxy membrane shall be formulated for the following:

	Characteristic	ASTM Test	Results
1.	Hardness	D-2240	23
2.	Tensile strength	D-412	1200 psi minimum
3.	Elongation	D-412	145%
4.	Thermal Cycling	C-884	No cracking (24 hrs, 6 <sup>0</sup> F to 77 <sup>0</sup> F)
5.	Flammability	D-635	Self-extinguishing
6.	VOC (Volatile Organic Content)		-0-
7.	Adhesion		(A.C.I. Committee 503.1) 350 psi adhesion 100% failure in concrete

E. Typical Physical Properties 3552 Epo-Flex

F. Solids, by volume 100%

G. Marble Chips

1. Standard quarry products, color, type and character as selected by the Architect with sizes conforming to the following grading of the NTMA: No. 1 passing 1/4" screen, retained on a 1/8" screen. No. 2 passing 3/8" screen, retained on a 1/4" screen. Percentages of No. 1 and 2 as selected by the Architect.
2. Each grade of chips shall be uniform in size and have a minimum of flats and flakes, and shall contain no deleterious or foreign matter. The chips shall have an abrasion hardness of Ha 10 minimum when tested in accordance with ASTM C-241. Twenty-four hour absorption rate shall not exceed 0.75%, and dust content shall be less than 1% by weight.
3. Marble Chip Mix: EPT-1 (White terrazzo to match existing): 30% Chewlah White #2, 30% Geo White #2, 40% Geo white #1. EPT-2 (Gray terrazzo to match existing): 30% Chewlah White #2, 30% Geo White #2, 40% Geo white #1.

H. Divider Strips

1. Black PVC 1/4 " face width

I. Control joint "T" strips shall be Black PVC 1/4 "gray neoprene for a 1/4" topping.

1. Provide anchoring devices for strips and control joints of proper configuration for attachment to the sub-floor.

J. Colorants shall be non-fading color pigments factory dispersed.

K. Epoxy primers, fillers, grouts and other components of the floor system shall be provided to provide a complete floor system.

L. Cleaner shall have a pH factor between 7 and 10, and be free from crystallizing salts or water soluble alkaline salts, and in addition, biodegradable and phosphate-free.

- M. Sealer shall have a pH factor between 7 and 10, and shall not discolor or turn amber. It shall be a penetrating type which shall produce a slip-resistance and having a flash point of 95 degrees °F. minimum as per ASTM D-56 and as recommended by the manufacturer.

#### 2.03 MIXES

- A. The mix and proportions for the resin epoxy terrazzo shall be in accordance with the recommendations of the resin manufacturer and the reviewed submitted samples.
- B. For the terrazzo topping charge and mix the marble chips and epoxy resin in strict accordance with the instructions of the terrazzo manufacturer.

#### 2.04 TYPES

- A. EPT -1, EPT-2: See Appendix "A"

#### 2.05 EXECUTION & EXAMINATION

- A. Study the Contract drawings and specifications with regard to the work as shown and required under this Section so as to insure its completeness.
- B. It should be noted that access to all rest rooms, tenants and gates must be maintained during the project. Contractor to maintain ingress and egress to and from these areas during the placement of the Terrazzo.
- C. Examine surfaces and conditions to which this work is to be attached and notify the Architect if conditions or surfaces exist which are detrimental to the proper and expeditious installation of the work. Starting on the work shall imply acceptance of the surfaces and conditions to perform the work as specified.
- D. Verify dimensions taken at the job site affecting the work. Bring field dimensions which are at variance, to the attention of the Architect. Obtain decision regarding corrective measures before the start of installation.
- E. Cooperate in the coordination and scheduling of the work of this Section with the work of other Sections so as not to delay job progress.

#### 2.06 WORKMANSHIP AND PREPARATION

- A. Prior to the start of the work examine the concrete substrates to assure that they are whole and intact. Penetrations through the slabs shall be in their proper locations, secure and at the right elevations. When the concrete substrate varies more than 1/8" in 10 feet from a true plane notify owner for direction..
- B. Only competent workers, experienced in the various branches of terrazzo work, shall be employed for the work of this Section.
- C. Furnish complete instructions relating to precautions or special handling for materials in order to comply with the Occupational Safety and Health Act and provide certification attesting that materials meet all the requirements of the Occupational Safety and Health Act.
- D. Do not execute terrazzo work until the concrete base has been thoroughly cleaned and brought to proper levels and lines and until the work of other trades have been installed, so as not to be damaged by, or interfere with, the installation of the terrazzo.
  - 1. Prepare substrates in accordance with recommendations of manufacturer of setting materials.

## 2. Slab Preparation

- a. Vacuum blast slab to completely remove curing compounds and other substances that would interfere with proper bond of epoxy terrazzo.
  - b. Clean area to receive terrazzo of loose chips and foreign matter.
  - c. Fill cracks in slab with epoxy resin and fiberglass tape, as recommended by system manufacturer.
- E. Install the epoxy flexible membrane onto the properly prepared slab to a thickness of not less than 40 mils when and where directed by the Owner.
- F. The terrazzo should be placed the same day the prime coat (max 20 hrs.) is applied to promote adhesion and interconnection of the two materials. the prime coat should be kept free of all foot traffic, dust and dirt.

### 2.07 INSTALLATION

- A. Execute installation using skilled workers authorized by the manufacturer, and working in conformance with the shop drawings and samples. Start of work shall imply acceptance of surfaces to install the epoxy terrazzo.
- B. Install divider strips on the concrete sub-floor and trowel firmly along the edges to assure positive anchorages. Install control joints trips where noted on the reviewed submittals. Alignment of continuing strips shall be true to line with-in 1/16". At locations where strips cross no gap is permissible.
- C. Prior to placing the epoxy terrazzo prime the concrete subfloor in accordance with the manufacturer's instructions.
- D. Apply the epoxy terrazzo matrix, filler and chips in accordance with the manufacturer's instructions, to a minimum of 3/8 inch thickness.
- E. Immediately after the topping is placed, and as soon as the surface will bear weight, apply a liberal coating of the curing material using an applicator according to the instructions of the manufacturer. Apply to all areas thoroughly. Cure until topping develops sufficient strength to prevent lifting or pulling of terrazzo chips during grinding.
- F. Finishing
1. Do not grind terrazzo floors or bases until they have developed sufficient strength to prevent chips from pulling out.
  2. Grind with 24 or finer grit stones or with comparable diamond plates. Follow initial grind with 80 or finer grit stones, at interior locations only. Work shall be ground so as to produce a non-slip surface.
  3. Hand grind bases and other areas as required.
  4. After grinding, thoroughly wash the surface with water and clean residue from holes and recesses. Remove excess water with a vacuum or squeegee, and machine or hand apply to fill all voids. Grout shall be identical to the in-place terrazzo topping. Remove excess grout by grinding with 100 or finer grit stones.
  5. Upon completion terrazzo shall be identical to the reviewed samples.

- G. After final grinding, thoroughly clean the terrazzo surfaces, using a neutral cleaning solution in accordance with the manufacturer's directions. Apply sealing compounds as per the manufacturer's directions.

2.08 PROTECTION

- A. Leave work in clean and finished condition. Protect finished terrazzo surfaces from damage until acceptance by the Owner. Do not use wax on finished terrazzo.
- B. Perform terrazzo work in such a way so as not to damage, injure or soil existing work of other trades. Work, including work of other trades which may be damaged, injured or soiled by this work during the operation of the terrazzo work and the setting of new work to replace such defective work, or by grinding, honing or cleaning or finishing, or by any other causes shall be removed and/or repaired at the expense of the Contractor, at no additional cost to the Owner.
- C. Leave installed work clean and protect with suitable covering before permitting traffic cover area. Remove protective devices when directed.

END OF SECTION 09402



**GREATER ROCHESTER INTERNATIONAL AIRPORT**  
**MONROE COUNTY**  
 1200 BROOKS AVENUE  
 ROCHESTER, NEW YORK

PROJECT TITLE:  
**PASSENGER CIRCULATION IMPROVEMENT PROJECT**

**CHA**  
 CLOUGH HARBOUR & ASSOCIATES LLP  
 Powers Building, 10 Main Street West, Suite 830,  
 Rochester, NY 14614-1607  
 www.cloughharbour.com

CHA Project No. 22327

**Bodouva**  
 Architects + Planners

3340 Peach Tree Road  
 One Thousand Tower Walk  
 Atlanta, Georgia 30328

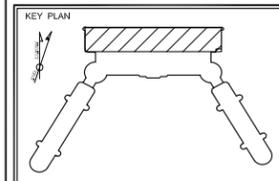
Tel: 404-661-0783  
 Fax: 404-720-1001

**LeCHASE**  
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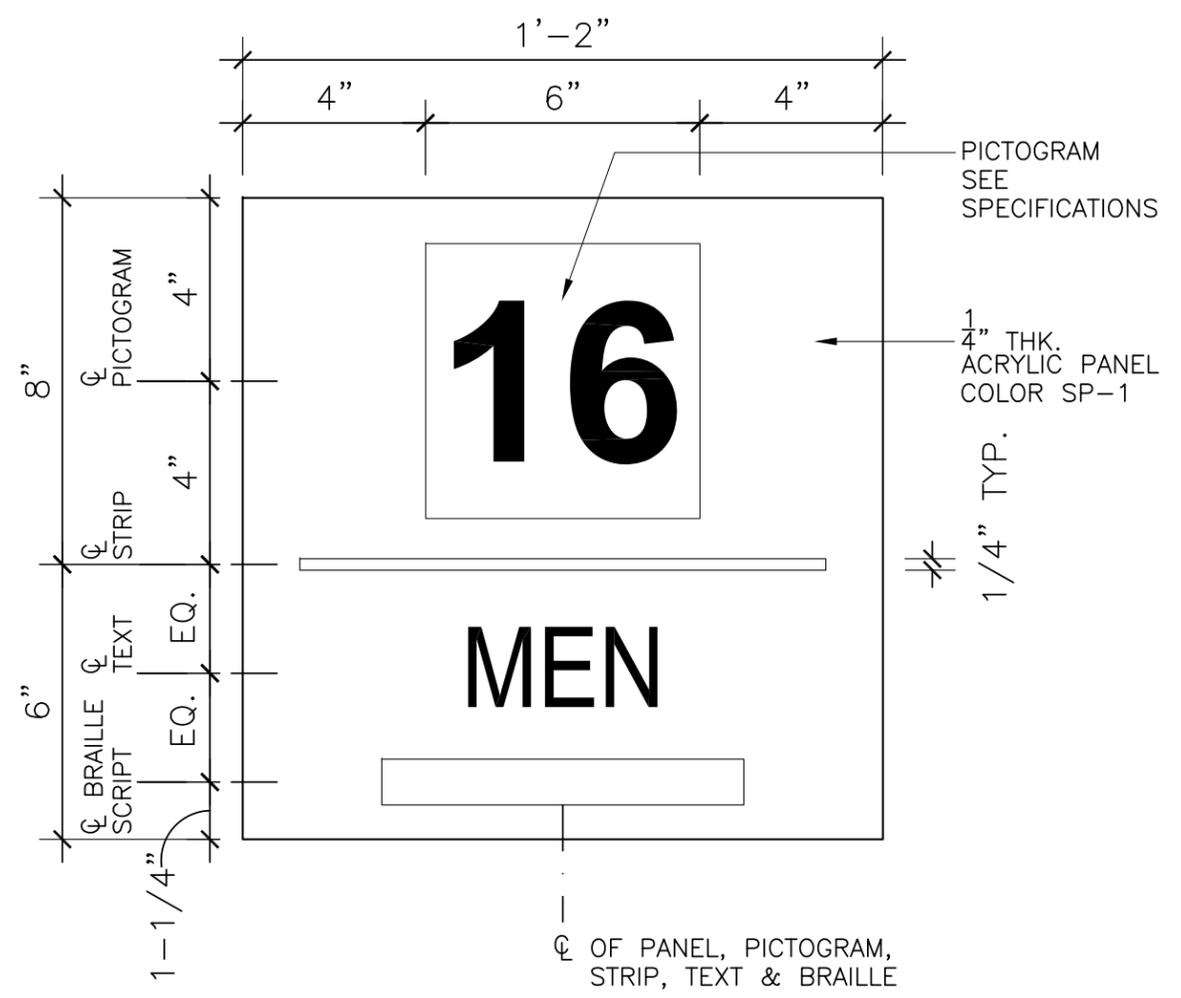
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DWG. TITLE:  
**GROUND FLOOR PLAN HOUSE PHONE SIGNAGE & LOCATIONS**

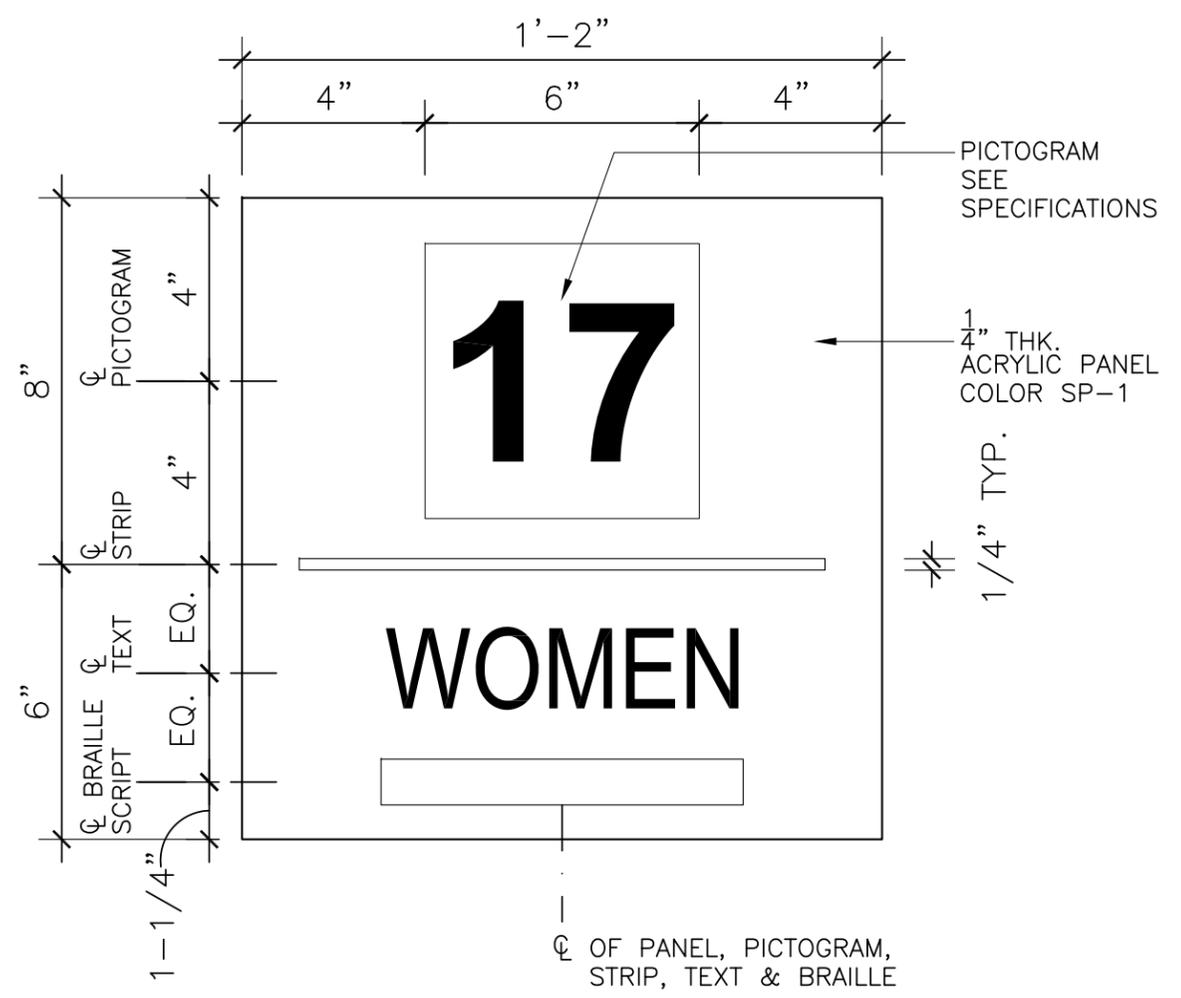
DATE: JANUARY 10, 2012 SCALE: NTS

DWG. NO.:

**ASK-A4**



6 SIGNAGE TYPE J  
 SCALE: 3" = 1'-0"



7 SIGNAGE TYPE J  
 SCALE: 3" = 1'-0"

FINISH KEYNOTES  
 SP1 = MP1 (WHITE)