



## SECTION \_\_\_\_\_

### 71R™ FACTORY PREFABRICATED SOLID GLASS PAVER AND PRECAST CONCRETE PANELS

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION OF WORK

- A. Extent of the Glass Paver and Precast Concrete Panels as indicated on the drawings.
- B. Principal Work in this section includes:
  - 1. 71R™ Precast Concrete and Glass Paver Panels
  - 2. Reinforcement, anchors, fasteners and similar items
  - 3. Glazing materials and sealant for panels

##### 1.2 DESCRIPTION OF PANELS

- A. Panels shall be factory prefabricated and glazed 71R™ Panels manufactured by Light Penetrating Systems, LLC dba Circle Redmont®, 1213 Medina Rd, Medina OH 44256 (800-358-3888 / 321-259-7374). Panels shall be of overall sizes as detailed on the drawings. Precast Concrete framework shall be produced to meet or exceed the specified structural performance. Solid Glass Paver units shall be Circle Redmont® standard, traffic bearing, replaceable, glass units. Glass units shall be initially factory installed in respective cell openings using Circle Redmont® standard waterproof sealant and bedding material.

##### 1.3 QUALITY ASSURANCE

- A. Structural: Design, engineer and fabricate the panels to provide live load capacity of not less than one hundred-fifty (150) pounds per square foot (*amend as required*) supported on four sides and to the stringent tolerance of (+) (-) .050 required for structural glass performance.
- B. Thermal Movement: Design the framing system to provide for such expansion and contraction of component materials as will be caused by the outside temperature range of -10 degrees F to 120 degrees F, without causing excessive buckling stress on glass pavers, failure of joint seals, undue stress on structural elements, damaging loads on fasteners, reduction in performance, or other detrimental effects.
- C. Water Penetration: Water penetration is defined as the appearance of or damage from water, other than condensation, on the underside of the panels. The panels shall be totally watertight.
- D. Manufacturer of Panels: The manufacturer of the prefabricated panels shall be a firm with not less than ten (10) years of successful experience in supplying the same type of panels as required for this project and which solely employs and is responsible for all of the personnel required for all facets of production in manufacturing the units at its production facility.
- E. Design Criteria: The drawings and specifications are based on a specific type of panel by a single manufacturer. Equivalent type panels by another manufacturer may be acceptable only if deviations in dimension, profile, appearance and performance history are minor and do not materially detract from the design concept or intended performances, as judged solely by the Architect.

In addition, if a substitute is being offered as an "Or Equal" to the specified products, in order to be considered, the Contractor will notify the Architect within five (5) business days of award of contract of such intent of substitution and upon notification by the Architect the Contractor will have three business days to provide adequate proof of equivalency, i.e.; documentation that the "Or Equal" meets the

minimum characteristics of these specifications. Submission of proof of equivalency and samples shall be at the bidder's expense and no compensation shall be offered by Architect or Owner.

Failure to provide this documentation which must include Substitute's Manufacturer History, Technical Specifications, Specifications, Brochures, Samples, Catalogs, Etc., will render the substitution non-responsive and ineligible for award.

- F. Warranty: Submit written warranties signed by the manufacturer, installer and contractor, agreeing to repair or replace defective materials and workmanship during the warranty period. Manufacturer must be able to document its warranty based upon at least fifty (50) projects with at least five (5) years of successful field performance.

Defective materials and workmanship in manufacture includes abnormal deterioration, aging or weathering of work, leakage of water (except at panel joints and perimeter), structural failure, deterioration of finishes in excess of normal weathering and aging.

The manufacturer shall warrant the panels to be free from manufacturing defects in either materials or workmanship for a period of one (1) year from the date of shipment. The manufacturer's warranty does not include glass breakage, damage caused by improper handling or use, improper installation, vandalism, abuse or natural conditions exceeding standard performance requirements.

Where the manufacturer is contacted and upon inspection finds that performance failure is due to defective materials of fabrication of the factory prefabricated **71R™ Glass Paver & Precast Concrete Panels**, all materials necessary to repair will be provided by the manufacturer at no extra cost to the customer. Freight and related charges not included.

The manufacturer's liability is limited to materials in the factory prefabricated panels only and the manufacturer shall not be liable for damage caused by handling by contractor and installer, installation procedures, and consequential damages or expenses.

The contractor and installer shall furnish a written warranty covering defects in handling, installation procedures, materials and workmanship and field applied perimeter sealant work for a period of one (1) year from the date of installation. The contractor and installer's liability shall be limited to the prompt repair or replacement of panels, materials and/or perimeter sealant work.

#### 1.4 SUBMITTALS:

- A. Shop Drawings: Submit shop and erection drawings at large scale clearly showing sections of panels with all connections, joinery techniques, provisions for expansion/contraction, precast concrete thickness and profiles. Identify all materials including metal alloys and fasteners. Locate and identify shop and field sealants on drawings. Show adjacent structural elements. G.C. shall provide accurate field dimensions to Light Penetrating Systems, LLC dba Circle Redmont® and coordinate all efforts with Light Penetrating Systems, LLC dba Circle Redmont® to insure Architect's design intent.
- B. Samples: Submit a full size sample of the Glass Paver units, which are to be factory installed in the precast concrete grid.
- C. Structural Calculations: Submit structural calculations for live and dead loads confirming the panels' capacity to withstand the specified load requirements.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Panels shall be factory fabricated Circle Redmont® **71R™ Glass Paver and Precast Concrete Panels** as manufactured by Light Penetrating Systems, LLC dba Circle Redmont®, 1213 Medina Rd, Medina OH 44256 (800-358-3888 / 321-259-7374). Panels by other manufacturers will be considered only if the manufacturer and the panels comply fully with these specifications and the drawings.

- B. The factory prefabricated panels shall consist of the following:
1. Panels shall be factory precast and glazed, of overall sizes as detailed on the shop drawings. Concrete materials, reinforcing steel and formwork shall be manufacturer's standard. Concrete mix design, size and placement of reinforcing shall produce a concrete grid which will meet or exceed the specified structural performance.
  2. Formed surfaces of the concrete grid shall have required radius on all inside and outside form surfaces for optimum panel performance and shall have a standard form finish. The top surface of the concrete grid, i.e., those surfaces of pedestrian traffic, shall have manufacturer's standard sandblast finish.
  3. Solid Glass Pavers units shall be standard, traffic bearing, replaceable type glass. Factory sandblasting of the top surfaces of glass pavers is recommended for walking surfaces (Custom sandblasted finishes available). Glass units shall be initially factory installed in respective cell openings using Circle Redmont® standard waterproof sealant and bedding material.

## **2.2 FABRICATION AND WORKMANSHIP**

- A. Maintain the visual design concept including steel member sizes, profiles and alignment components. Coordinate this work with that of other trades.
- B. Factory assemble each panel at the manufacturing facility employing qualified personnel solely engaged in prefabricated panel production.

## **PART 3 - EXECUTION**

### **3.1 STORAGE AND HANDLING**

- A. G.C. shall coordinate and cooperate with Light Penetrating Systems, LLC dba Circle Redmont® to ensure handling of panels in a manner that will prevent undue stress on component parts, sealants, and structural members. Do not rack, torque, or cause load forces in an inappropriate manner. Lift panels from top only unless specifically instructed by the manufacturer to prevent damage to finished surfaces.
- B. Store panels in a dry place, off the ground. Bear fully along all supported edges on level and true structural supports.
- C. Handle materials to prevent damage to finished surfaces. Do not install components which have been damaged or stained.
- D. Upon completion of installation, G.C. shall protect panels from damage caused by ensuing work of other trades.

### **3.2 PANEL INSTALLATION**

- A. Contractor shall coordinate all efforts with Light Penetrating Systems, LLC dba Circle Redmont® and ensure that panels are set into prepared openings and shall bear fully along all supported edges on structural supports. Top of panels shall finish flush with adjoining surfaces unless shown otherwise on drawings. Where necessary, build up support ledges and beams as required with materials similar to support members, prior to placement of panels. Panels shall be set to proper pitch (minimum ¼" pf) and cross falls to ensure proper drainage of surface water and avoid ponding. Panels shall be fastened as indicated on shop drawings.
- B. Allow 1/2" nom. spacing between panels and adjacent surfaces and between adjoining panels to permit installation of closed cell foam backer rod and sealant. All joints which are exposed to the weather and to surface traffic shall be sealed with sealant manufacturer's recommended sealant.

- C. Protect installed panels from damage during ensuing construction operations. Prior to the date of substantial completion replace any cracked, broken or otherwise damaged glazing units.

### **3.3 FIELD TESTING**

- A. After panel installations are installed, they shall be field tested for leakage. Tests shall be conducted by flooding the surface of panels with a sprinkler hose for a period of 15 minutes while observations are made of the undersides. Correct any deficiencies which are found in a manner to make panels completely watertight. Conduct testing in the presence of the Architect or the Architect's designated representative.

### **3.4 PAINTING**

- A. All interior surfaces of the prefabricated precast concrete grid which are exposed to view shall be finished after installation in accordance with the requirements of SPECIAL COATING SECTION. Care shall be taken so that the coating will not extend onto the glazing units. If spray application is used, mask all glazing. NOTE: Prior to painting precast underside surface cleaning with soap detergent and light scuffing is recommended to ensure factory mold release has been removed. Test paint adhesion on a small portion of panel to ensure proper paint adhesion.

### **3.5 CLEANING**

- A. Maintain installed panels, including glazing, in reasonably clean condition during construction operations. Remove any stains or materials which may have an adverse effect on panel materials and finishes. Remove any excess glazing compound and sealants.
- B. Immediately prior to the date of substantial completion clean glazing units to remove any accumulations of dirt, paint stains, etc. Glazing shall be cleaned on both inside and outside surfaces.

### **3.6 REPLACEMENT INSTRUCTION**

- A. G.C. shall furnish the Owner with a copy of the panel manufacturer's complete printed instructions for replacement of any damaged glazing units.

### **END OF SECTION**

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