



SECTION 08137 (08 13 16.16)

ALUMINUM AND CLEAR MODULAR PIVOT ENTRANCE DOORS

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**** NOTE TO SPECIFIER **** Solar Innovations Architectural Glazing Systems, Glass Structures, Skylights, Windows & Doors.

This section is based on the products of Solar Innovations Architectural Glazing Systems, which is located at:

31 Roberts Rd.
Pine Grove, PA 17963
Toll Free Tel: 800-618-0669
Tel: 570-915-1500
Fax: 800-618-0743
Email: skylight@solarinnovations.com
Web: <https://www.solarinnovations.com>

[[Click Here](#)] for additional information.

Since 1998, Solar Innovations has grown to become a leader in the architectural glazing industry, providing innovative solutions to customers all over the world. With over 30,000 projects completed, our 400,000 square foot Pine Grove, PA LEED Gold-designed manufacturing facility produces the most complete product line in the industry. With this capability, we can provide a cohesive look across the entirety of a project's glazing needs. Our glazed door, window, skylight, and structure systems have been recognized to be among the highest in quality and performance for both the commercial and residential markets. As a single-source manufacturer of aluminum, wood, and vinyl products, we tailor our systems to meet the project's specific needs. To further stand out, our custom hardware is machined in-house, delivering a level of craftsmanship to our products that is unmatched in the industry. Also, most of our engineering and product testing is done in-house, providing our customers with standards and specifications. While we already offer the most comprehensive product line in the architectural glazing industry, we continuously partner with customers to stretch the limits of architectural possibilities. This expands our product offerings and fuels our company's growth.

Solar Innovations' bifold, slide and stack, sliding, and lift-slide door systems allow our customers to open wide spans to the outdoors, while providing excellent air and water performance, ADA compliance, impact certification, and thermally-broken systems to lower energy consumption. Our casement, awning, hopper, pivot, and tilt-turn windows, as well as our aluminum and wood curtain walls, meet the same standards as our door systems and allow for excellent daylighting and fresh air, which brings health benefits to the building's inhabitants, reduces heating costs, and adds functionality to the space. For more daylight and fresh air, our retractable and operable skylights allow for motorized or manually-operated ventilation. Our pyramid, polygonal, barrel-vault and dome skylights make a bold architectural statement while our walkable skylights allow for more useable space to roofs with foot traffic. Additionally, our greenhouses, conservatories, sunrooms, pool enclosures, and walkways allow our customers to surround themselves with the beauty of the outdoors year-round, all in a climate-controlled environment for both plants and

people.

PART 1 GENERAL

1.1 SECTION INCLUDES

**** NOTE TO SPECIFIER ** Delete items below not required for project.**

- A. Modular Pivot Entrance Door System.
- B. Clear Pivot Glass Wall System.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER ** Delete any sections below not relevant to this project; add others as required.**

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 03 41 16 - Precast Concrete Slabs.
- C. Section 04 22 00 - Concrete Unit Masonry.
- D. Section 05 12 00 - Structural Steel Framing.
- E. Section 05 40 00 - Cold-Formed Metal Framing.
- F. Section 06 10 00 - Rough Carpentry.
- G. Section 06 20 00 - Finish Carpentry.
- H. Section 07 21 19 - Foamed-In-Place Insulation.
- I. Section 07 60 00 - Flashing and Sheet Metal.
- J. Section 07 90 00 - Joint Protection.
- K. Section 08 00 00 - Glazing.
- L. Section 08 70 00 - Hardware.
- M. Section 07 91 23 - Backer Rods.

1.3 REFERENCES

**** NOTE TO SPECIFIER ** Delete references from the list below that are not actually required by the text of the edited section.**

- A. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 611 - Voluntary specifications for anodized architectural aluminum (revised).
- B. ASTM International (ASTM):
 - 1. ASTM A36/A36M - Standard specification for carbon structural steel.
 - 2. ASTM B221/B221M - Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes.
 - 3. ASTM B241/B241M - Standard specification for aluminum and aluminum-alloy seamless pipe and seamless tubes.
 - 4. ASTM C1115 - Standard specification for dense elastomeric silicone rubber gaskets and accessories.
 - 5. ASTM C864 - Standard specification for dense elastomeric compression seal

- gaskets, setting blocks, and spacers.
 - 6. ASTM E283 - Standard test method for structural performance of exterior windows, curtain walls, and doors by uniform static air pressure difference.
 - 7. ASTM E330 - Standard test method for structural performance of exterior windows, curtain walls, and doors by uniform static air pressure difference.
 - 8. ASTM E331 - Standard test method for water penetration of exterior windows, curtain walls, and doors by uniform static air pressure difference.
 - 9. ASTM E547 - Water penetration of exterior windows, curtain walls, and doors.
 - 10. ASTM E1886 - Standard test method for performance of exterior windows, curtain walls, doors, and impact protective systems impacted by missiles and exposed to cyclic pressure differentials.
 - 11. ASTM E1996 - Standard specification for performance of exterior windows, curtain walls, doors, and impact protective systems impacted by windborne debris in hurricanes.
 - 12. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- C. American Welding Society (AWS): Structural Welding Code.
 - D. Flat Glass Marketing Association (FGMA):
 - 1. Glazing manual.
 - E. Fenestration and Glazing Industry Alliance (FGIA):
 - 1. AAMA 611 - Voluntary Specifications for Anodized Architectural Aluminum.
 - 2. AAMA 1503 - Voluntary Test Method for Thermal Transmittance And Condensation Resistance of Windows, Doors, And Glazed Wall Sections.
 - F. National Fenestration Rating Council (NFRC):
 - 1. NFRC 100: Procedure for Determining Fenestration Product U-factors.
 - 2. NFRC 102: Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
 - 3. NFRC 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence.
 - 4. NFRC 400: Procedure for Determining Fenestration Product Air Leakage.
 - 5. NFRC 500: Procedure for Determining Fenestration Product Condensation Index Ratings.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Shop Drawings: Detailed drawings prepared specifically for the project by manufacturer. Include information not fully detailed in manufacturer's standard product data, including, but not limited to, wall elevations and detail sections of every typical composite member. Show opening dimensions, framed opening tolerances, profiles, product components, anchorages, and accessories.
 - 1. Indicate fastener locations, glazing, and hardware arrangements.
 - 2. Include schedule identifying each unit, with marks or numbers referencing drawings.
 - 3. Must show all surrounding substrates and relevant conditions.
 - 4. Must be drawn in the domestic USA, by the manufacturer of the system.

**** NOTE TO SPECIFIER ** Delete color section samples if colors have been pre- selected.**

- D. Color Samples: Two complete color chip sets representing manufacturer's full range of stocked colors with a standard size of 2 x 3 inch (50 x 75 mm).
- E. Verification Samples: Required samples for verification of system.
 - 1. Aluminum Finish: Two samples, minimum size of 2 x 3 inches (50 x 75 mm), representing actual material and color.
 - 2. Glazing: Two samples, minimum size of 12 x 12 inches (300 x 300 mm), representing specified glass, including coatings and/or frit patterns.

**** NOTE TO SPECIFIER ** Assembly sample provided upon request only.**

- 3. Assembly Sample: One sample illustration connection details with a maximum size of 12 x 12 x 12 inch (300 x 300 x 300 mm). Glazing included as offered by glass supplier. Sample developed to best represent the specified product.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing of products specified in this section, including, but not limited to, greenhouses, doors, and operable vent systems. Manufacturer is to have twenty five (25) years of experience in fabrication and erection of exterior modular terrace door systems for projects of similar scope.
 - 1. Manufacturer must use an extruded aluminum system.
 - 2. Manufacturer must be recognized by NAMI.
 - 3. Manufacturer must be a member in good standing of the National Glass Association (NGA).
- B. Installer Qualifications: Experienced in performing work of this section that has specialized in installation of work similar to that required for this project for a minimum of five (5) years.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

**** NOTE TO SPECIFIER ** Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.**

- D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
 - 1. Approximate size: ___ inches x (___ mm).
 - 2. Finish areas designated by Architect
 - 3. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 - 4. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 - 5. Retain mock-up during construction as a standard for comparison with completed work.
 - 6. Do not alter or remove mock-up until work is completed or removal is authorized.
 - 7. Incorporate accepted mock-up as part of the Work.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a phone conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and

trades involved. Agenda shall include schedule, responsibilities, critical path items, and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to the jobsite freight prepaid.
- B. Store products in manufacturers original unopened packaging, covered to protect factory finishes from damage, precipitation, and construction dirt until ready for installation.
- C. Store materials off construction grounds in a secure location that is a dry, covered area and protected from weather conditions.
- D. Inspect and report any freight damages to the manufacturer immediately.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
- B. Perform structural silicone sealant work when air temperature is above 10 degrees F (minus 12 degrees C).

1.9 WARRANTY

- A. Provide manufacturer's limited warranty that all components are warranted for ten (10) years for cases of normal use.

**** NOTE TO SPECIFIER ** Delete warranty components that do not apply to the project.**

- B. Warranty Addendum: Manufacturer offers extended warranties and service contracts on a per job basis.

**** NOTE TO SPECIFIER ** Delete warranties below that do not apply to the selected finish(es).**

- C. Frame Finish:
 - 1. Anodized Finishes: Warranty of ten (10) years.
 - 2. Stock Color:
 - a. AAMA 2605 finishes with 2-3 coats powder or liquid dependent on color and/or application. Ten (10) years from date of application.
 - b.
 - 3. Custom Color: Paint manufacturer's warranties for color and film integrity.
 - a. AAMA 2605 finishes with 2-3 coats powder or liquid dependent on color and/or application. Ten (10) years from date of application.

**** NOTE TO SPECIFIER ** Under extreme conditions, warranties for glazing may be less than twenty (20) years. Verify conditions with manufacturer. Delete the following paragraph if not required or edit to suit conditions.**

- D. Flat Glazing: Glazing Manufacturer's standard warranty against defective materials, delamination, seal failure, and defects in manufacturing for ten (10) years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Solar Innovations Architectural Glazing Systems, which is located at: 31 Roberts Rd.; Pine Grove, PA 17963; Toll Free Tel: 800-618-0669; Tel:

**** NOTE TO SPECIFIER ** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.**

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 PERFORMANCE AND DESIGN REQUIREMENTS

**** NOTE TO SPECIFIER ** Edit the following section to suit project requirements. Coordinate with manufacturer for the project location, wall size, and local building code to provide a system tailored to your needs.**

- A. System Description: Ideal for oversized openings in interior and light exterior applications. Rather than being hinged at the door jamb, these doors utilize pivot points in the head and sill of the opening. The pivot point is determined by the desired form and function of the door, with center and off-center pivot locations available. Suitable for residential and commercial applications.
 - 1. Closers: Concealed within the floor.
- B. Air Performance: Design, fabricate, assemble, and erect aluminum glazed system to be permanently free of significant air leakage.
 - 1. Significant leakage to be defined as a differential test pressure amounting to 20 percent of specified strength performance pressure required with operable windows doors, or joints, if any, sealed to prevent crack leakage.
- C. Structural Performance: As tested in accordance with ASTM E330. No glass breakage or permanent damage to fasteners, anchors, hardware, or actuating mechanisms.
 - 1. Normal Wall Deflection:
 - a. Span Lengths of 13 ft 6 inches (4.115 m) or Less: 1/175 of clear span or less.
 - b. All Other Spans: 1/240 + 1/4 inch (6 mm) for all others.
 - c. Restrict deflection to 3/4 inch (19 mm) maximum for individual glazing lites.
 - 2. Parallel to Wall Deflection:
 - a. Not to exceed 75 percent of glass edge clearance.
 - b. Restrict deflection to L/360 or 1/8 inch (3 mm) maximum.
 - c. Restrict deflection to 1/16 inch (1.5 mm) maximum above doors and windows.
 - 1) Deflection of 1/8 inches (3 mm) is acceptable if door operation is not affected.
- D. Thermal Performance: Tested values, certifications, and simulation protocols.
 - 1. Thermal Characteristics:

**** NOTE TO SPECIFIER ** Thermal characteristics are available with performance values up to a U-Value of 41 and CRF of 32 based on glazing choices, rail types, and sill types. Please note this is subject to glass availability and project specific requirements. Consult manufacturer.**

- a. U-Value: _____.
- b. SHGC _____.
- c. VLT _____.
- d. CRF: _____.
- 2. U-Value: Comply with U-value NFRC rated, or simulated in accordance with NFRC 100 protocol, shown in manufacturers latest published data for the

- glazing and sill specified.
- 3. Solar Heat Gain Coefficient: Comply with Solar Heat Gain Coefficient NFRC rated, or simulated in accordance with NFRC 200 protocol, shown in manufacturers latest published data for the glazing and sill specified.
- 4. Visible Light Transmittance: Unit complies with Visible Light Transmittance, NFRC rating, or simulation in accordance with NFRC 200 protocol, shown in manufacturer's published data for glazing and sill specified.
- 5. Condensation Resistance Factor: Unit to comply with the Condensation Resistance Factor, NFRC rated, or simulation in accordance with NFRC 500 protocol, shown in manufacturers published data for the glazing and sill specified.

E. Design Requirements:

- 1. Thermally Enhanced: Utilizing thermal strut. Test results available upon request.
- 2. Non-Impact rated.
- 3. ADA compliant sill option.
- 4. Panels: LEED friendly system including recycled content.

**** NOTE TO SPECIFIER ** Delete swing and pivot options not required.**

- 5. Swing: In.
- 6. Swing: Out.
- 7. Swing: Dual action.
- 8. Pivot: Left.
- 9. Pivot: Right.
- 10. Pivot: Center.
 - a. Minimum 10 inch (254 mm) distance from center of pivot point to edge of either jamb.
 - 1) Pivot locations for doors wider than 60 inches (1524 mm) must be located further from the jamb at a location approximately 20 percent or greater than the width of the door panel.
- 11. Glazing: Monolithic and insulated glazing infills.

**** NOTE TO SPECIFIER ** Delete model option not required.**

- a. Framed Model G2: 3/16 to 1-1/8 inches (4.76 to 28.57 mm).
- b. Framed Model G3: 3/16 to 1-9/16 inches (4.76 to 39.69 mm).
- c. Clear Model: 1/2 inch (12 mm) or 5/8 inch (15 mm) float glass.
- 12. Decorative grid options; interior and exterior.

**** NOTE TO SPECIFIER ** Delete hardware options not required.**

- 13. Hardware: Self-actuating closers.
- 14. Hardware: Panic hardware and door limiters.
- 15. Hardware: Multiple hardware styles and finishes.

F. Compliance - For Framed System:

- 1. G2 Pivot Doors:
 - a. Terrace Door: SI2100 Single Pivot manufactured by Solar Innovations Architectural Glazing Systems, when tested with a unit size (W x H) 60 96 inches (1524 x 2438 mm) (NCTL-110-15488-1).
 - 1) Air Infiltration Test Per ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential:
 - a) TD Outswing sill with no upleg: 0.12 cfm/sqft 0.61 L per sec per sq m).
 - 2) Water Penetration Test per ASTM E331 in accordance TAS 202:
 - a) HP Outswing sill with no upleg: 2 psf (96 Pa).
 - 3) Uniform Structural Load Test per ASTM E330, With Throw Bolt:
 - a) Design Pressure: 100 psf (4788 Pa) positive or negative 80 psf (3830 Pa).

- 4) Uniform Structural Load Test per ASTM E330, With No Throw Bolt:
 - a) Design Pressure: positive or negative 30 psf (1436 Pa).
 - 5) Florida Product Approvals Non- Impact:
 - a) FL No.12279.1.
2. G3 Pivot Doors:
- a. Terrace Door: SI2100 G3 LT Thermal single Pivot and French Pivot Outswing Door with or without sidelite and transom manufactured by Solar Innovations Architectural Glazing Systems (TEL 11093971 & TEL 11093972).
 - 1) Unit Sizes:
 - a) Frame Dimension (W x H) Single Door with or without sidelite:
 - 1) X - 47.97 x 99.88 inches (1218 x 2537 mm).
 - 2) OX or XO - 68.72 x 99.88 inches (1745 x 2537 mm).
 - 3) OXO - 89.47 x 99.88 inches (2272 x 2537 mm).
 - b) Frame Dimension (W x H) Double Door with or without sidelite:
 - 1) OXXO - 131.72 x 99.88 inches (3346 x 2537 mm).
 - 2) XX or XO - 90.22 x 99.88 inches (2291 x 2537 mm).
 - c) Frame Dimension (W x H) Single Door with or without sidelite and with or without Transom:
 - 1) O/X - 47.97 x 119.69 inches (1218 x 3040 mm).
 - 2) O/OX or O/XO - 68.72 x 119.69 inches (1745 x 3040 mm).
 - 3) O/OXO - 89.47 x 119.69 inches (2280 x 3040 mm).
 - d) Frame Dimension (W x H) Double Door with Transom:
 - 1) O/XX - 90.22 x 119.69 inches (2291 x 3040 mm).
 - 2) Uniform Structural Load Test per ASTM E330:
 - a) Design Pressure: Positive or negative 50 psf.

2.3 ALUMINUM MODULAR PIVOTING DOORS

**** NOTE TO SPECIFIER ** Delete model option not required.**

- A. Pivot Doors: Model SI2100 G2 as Manufactured by Solar Innovations. Can be retrofitted to match an existing opening or accommodate specific structural requirements.

**** NOTE TO SPECIFIER ** Delete door configuration options not required.**

1. Door Configuration: Single.
2. Door Configuration: French.
3. Door Configuration: Double
4. Door Configuration: Center Pivot Triple.

**** NOTE TO SPECIFIER ** Delete either the thermal break system or non-thermal break system option. Whichever is not required.**

5. Thermal Break System: Thermal strut system separating the interior and exterior metal, minimizing heat energy transfer.
 - a. Bottom Stretch Rail: 4-3/8 inch (111 mm).
 - b. Bottom Rail: 10 inch (254 mm).
 - c. Head Rail: 7-7/16 inch (189 mm).

**** NOTE TO SPECIFIER ** Delete vertical stile width and mullion options not required.**

- d. Vertical Stile Width: Narrow. 2-7/16 inch (62 mm).
- e. Vertical Stile Width: Standard. 3-3/8 inch (86 mm).
- f. Mullions: True Divided Lites. Standard: 3-1/2 inch (89 mm).

- g. Mullions: True Divided Lites. Narrow: 2-5/8 inch (67 mm).
- h. Mullions: True Divided Lites.
- 6. Non-Thermal System: For indoor use such as interior commercial entryways.
 - a. Bottom Stretch Rail: 4-3/8 inch (111 mm).
 - b. Bottom Rail: 10 inch (254 mm).
 - c. Head Rail: 7-7/16 inch (189 mm).

**** NOTE TO SPECIFIER ** Delete vertical style width options not required.**

- a. Vertical Stile Width: Narrow. 2-7/16 inch (62 mm).
- b. Vertical Stile Width: Standard. 3-3/8 inch (86 mm).

**** NOTE TO SPECIFIER ** Delete mullion options not required.**

- c. Mullions: True Divided Lites. Standard: 3-1/2 inch (89 mm).
- d. Mullions: True Divided Lites. Narrow: 2-5/8 inch (67 mm).
- e. Mullions: True Divided Lites. Narrow: None.

**** NOTE TO SPECIFIER ** Delete sill options not required.**

- 7. Sill: Pemko. 1/4 x 7 inches (6 x 178 mm).
- 8. Sill: Pemko. 1/2 x 5 inches (13 x 127).
- 9. Sill: ADA. 1/2 x 3-1/2 inches (13 x 89 mm).
- 10. Sill: None.
- 11. Panel Size Range: Up to 5 x 10 ft (1.524 x 3.048 m). Larger panels available depending on the application.

**** NOTE TO SPECIFIER ** Delete panel size option not required.**

- a. Panel Size: ___ x ___ ft (___ x ___ m).
- b. Panel Size: As detailed on the Drawings.
- 12. Glazing: Accommodate almost any monolithic or insulated glazing infill.
 - a. Thickness: 3/16 to 1-1/4 inches (4.76 x 31.75 mm).

- B. Pivot Doors: Model SI2100 G3 as Manufactured by Solar Innovations. Can be retrofitted to match an existing opening or accommodate specific structural requirements.

**** NOTE TO SPECIFIER ** Delete door configuration options not required.**

- 1. Door Configuration: Single.
- 2. Door Configuration: French.
- 3. Door Configuration: Double
- 4. Door Configuration: Center Pivot Triple.

**** NOTE TO SPECIFIER ** Delete either the thermal break system or non-thermal break system option. Whichever is not required.**

- 1. Thermal Break System: Thermal strut system separating the interior and exterior metal, minimizing heat energy transfer.
 - a. Bottom Stretch Rail: 5-3/8 inch (136 mm).
 - b. Bottom Rail: 10 inch (254 mm).
 - c. Head Rail: 5-5/8 inch (143 mm).

**** NOTE TO SPECIFIER ** Delete vertical style width and mullion options not required.**

- a. Vertical Stile Width: Narrow. 2-7/16 inch (62 mm).
- b. Vertical Stile Widths: Standard. 3-3/8 inch (86 mm).
- c. Vertical Stile Widths: LT. 3-3/8 inch (86 mm).
- d. Mullions: True Divided Lites. Standard: 4 inch (102 mm).
- e. Mullions: True Divided Lites. Narrow: 2-7/8 inch (73 mm).
- f. Mullions: True Divided Lites. Narrow: None.
- 2. Non-Thermal System: For indoor use such as interior commercial entryways.
 - a. Bottom Stretch Rail: 5-3/8 inch (136 mm).
 - b. Bottom Rail: 10 inch (254 mm).
 - c. Head Rail: 5-5/8 inch (143 mm).

**** NOTE TO SPECIFIER ** Delete vertical style width and mullion options not required.**

- d. Vertical Stile Width: Narrow. 2-7/16 inch (62 mm).

- e. Vertical Stile Widths: Standard. 3-3/8 inch (86 mm).
- f. Mullions: True Divided Lites. Standard: 4 inch (102 mm).
- g. Mullions: True Divided Lites. Narrow: 2-7/8 inch.

**** NOTE TO SPECIFIER ** Delete sill options not required.**

- 1. Sill: Pemko. 1/4 x 7 inches (6 x 178 mm).
- 2. Sill: Pemko. 1/2 x 5 inches (13 x 127 mm).
- 3. Sill: ADA. 1/2 x 3-1/2 inches (13 x 89 mm).
- 4. Sill: None.
- 5. Panel Size Range: Up to 6 x 12 ft (1.829 x 3.658 m). Larger panels available depending on the application.

**** NOTE TO SPECIFIER ** Delete panel size option not required.**

- a. Panel Size: ___ x ___ ft (___ x ___ m).
- b. Panel Size: As detailed on the Drawings.
- 6. Glazing: Accommodate almost any monolithic or insulated glazing infill.
 - a. Thickness: 3/16 to 1-9/16 inches (4.76 x 39.69 mm).

C. Basis of Design: SI3000C clear wall system as manufactured by Solar Innovations Architectural Glazing Systems; pivoting door with non-thermal extruded aluminum frame 1.5 inches (38.10 mm) width.

- 1. Door Configuration: Single.
- 2. Door Configuration: French.
- 3. Door Configuration: Double.
- 4. Door Configuration: Center Pivot Triple.

**** NOTE TO SPECIFIER ** Delete sill options not required.**

- 5. Sill: Pemko. 1/4 x 7 inches (6 x 178 mm).
- 6. Sill: Pemko. 1/2 x 5 inches (13 x 127 mm).
- 7. Sill: ADA. 1/2 x 3-1/2 inches (13 x 89 mm).
- 8. Panel Size Range: Up to 6 x 9.5 ft (1.829 x 2.8956 m). Larger panels available depending on the application.

**** NOTE TO SPECIFIER ** Delete panel size option not required.**

- a. Panel Size: ___ x ___ ft (___ x ___ m).
- b. Panel Size: As detailed on the Drawings.
- 9. Glazing: Accommodate almost any monolithic or insulated glazing infill.
 - a. Thickness: 1/2 or 5/8 inch (12 mm or 15 mm) float glass.

2.4 GLAZING

**** NOTE TO SPECIFIER ** Delete glazing options not required. Contact the Manufacturer if your glazing performance requirements cannot be met by what is listed in this specification.**

- A. Monolithic: Clear. Overall Unit Thickness: 1/4 inch (6.35 mm).
 - 1. U-Value: 1.02. R-Value: 0.91.
 - 2. Solar Heat Gain Coefficient: 0.82.
 - 3. Transmission: Visible Light: 88 percent. UV: 62 percent.
 - 4. Reflectance: Out: 8 percent. In: 8 percent.
- B. Double Glazed Outside Lite / Inside Lite: Overall Unit Thickness: 1 inch (25.4 mm).
 - 1. 272 / Clear: 3/16 inch (4.76 mm) over 3/16 inch (4.76 mm).
 - a. U-Value: 0.25. R-Value: 4.00.
 - b. Solar Heat Gain Coefficient: 0.41.
 - c. Visible Light Transmission: 72 percent.
 - d. Reflectance Out: 11 percent.
 - e. Reflectance In: 12 percent.
 - f. UV Transmittance: 16 percent.
 - 2. 272 / Clear: 1/4 inch (6.35 mm) over 1/4 inch (6.35 mm).
 - a. U-Value: 0.25. R-Value: 4.00.

- b. Solar Heat Gain Coefficient: 0.40.
- c. Visible Light Transmission: 70 percent.
- d. Reflectance Out: 11 percent.
- e. Reflectance In: 12 percent.
- f. UV Transmittance: 16 percent.
- 3. 366 / Clear: 3/16 inch (4.76 mm) over 3/16 inch (4.76 mm).
 - a. U-Value: 0.24. R-Value: 4.17.
 - b. Solar Heat Gain Coefficient: 0.27.
 - c. Visible Light Transmission: 65 percent.
 - d. Reflectance Out: 11 percent.
 - e. Reflectance In: 12 percent.
 - f. UV Transmittance: 5 percent.
- 4. 340 / Clear: 3/16 inch (4.76 mm) over 3/16 inch (4.76 mm).
 - a. U-Value: 0.25. R-Value: 4.00.
 - b. Solar Heat Gain Coefficient: 0.18.
 - c. Visible Light Transmission: 39 percent.
 - d. Reflectance Out: 11 percent.
 - e. Reflectance In: 13 percent.
 - f. UV Transmittance: 2 percent.

**** NOTE TO SPECIFIER ** Delete the grid paragraph is not required. Otherwise delete grid type and profile options not required.**

- C. Grid: Like-sized grid types can have mixed or matched profiles, i.e., different interior and exterior profiles.
 - 1. Grid Type: Arched.
 - 2. Grid Type: Gothic.
 - 3. Grid Type: Double Gothic.
 - 4. Grid Type: Traditional.
 - 5. Grid Type: Cross.
 - 6. Grid Type: English.
 - 7. Profile: Traditional with SDL.
 - 8. Profile: Wide Traditional with SDL.
 - 9. Profile: Ogee with SDL.
 - 10. Profile: Low Profile with SDL.
 - 11. Profile: Simulated Steel with SDL.
 - 12. Profile: Interior Muntin in Insulated Glass.

**** NOTE TO SPECIFIER ** Delete accessories options not required.**

- D. Accessories:
 - 1. Matching fixed transoms and sidelites.
 - 2. Multiple sill designs, including ADA compliant ramps and sill-less options.
 - 3. Mullions, decorative muntins, simulated divided lites (SDLs), interior and exterior grids.

2.5 HARDWARE

- A. **Framed** Pivot Door Handles: All handles available with thumbturn interior lock with lever exterior, lever interior and exterior, and thumbturn interior lock with keyed exterior options.

**** NOTE TO SPECIFIER ** Delete application, style, and finish options not required.**

- 1. Application: Coastal. Material: Solid Brass.
 - a. Style: Toronto.
 - 1) Finish: Matte Black.
 - 2) Finish: Satin Nickel.
 - 3) Finish: Polished Brass.
 - 4) Finish: Brushed Chrome.

- 5) Finish: Rustic Umber.
- b. Style: Dallas.
 - 1) Finish: Polished Brass.
 - 2) Finish: Matte Black.
 - 3) Finish: Satin Nickel.
 - 4) Finish: Rustic Umber.
 - 5) Finish: Dark Bronze Metallic.
- c. Style: Munchen.
 - 1) Finish: Antique Brass.
 - 2) Finish: Brushed Chrome.
 - 3) Finish: Dark Bronze Metallic.
 - 4) Finish: Matte Black.
 - 5) Finish: Oil Rubbed Brass.
 - 6) Finish: Polished Brass.
 - 7) Finish: Rustic Umber.
 - 8) Finish: Satin Nickel.
- d. Style: Rodos.
 - 1) Finish: Antique Brass.
 - 2) Finish: Brushed Chrome.
 - 3) Finish: Matte Black.
 - 4) Finish: Oil Rubbed Brass.
 - 5) Finish: Rustic Umber.
 - 6) Finish: Satin Nickel.
 - 7) Finish: White.
- e. Style: Verona.
 - 1) Finish: Antique Brass.
 - 2) Finish: Brushed Chrome.
 - 3) Finish: Matte Black.
 - 4) Finish: Oil Rubbed Brass.
 - 5) Finish: Polished Chrome.
 - 6) Finish: Rustic Umber.
 - 7) Finish: Satin Nickel.
 - 8) Finish: White.
- 2. Application: Inland. Material: Aluminum.
 - a. Style: Frankfurt.
 - 1) Finish: Silver.
 - 2) Finish: Chestnut.
 - 3) Finish: White.
 - b. Style: London.
 - 1) Finish: Silver.
- 3. Application, G2 Only: Inland. Material: Zamac Brass.
 - a. Style: Allegro.
 - b. Style: Venice.
 - c. Finish: Satin Chrome.
 - d.
 - e. Finish: Polished Brass.
 - f. Finish: Antique Brass.
 - g. Finish: Oil Rubbed Bronze.
 - h. Finish: Dark Bronze PC.
 - i. Finish: Black PC.
 - j. Finish: White PC.
 - k. Finish: Satin Nickel.
 - l. Finish: Dark Bronze.
 - m. Finish: Pewter.

B. Locks:

**** NOTE TO SPECIFIER ** Delete type and color options not required.**

1. Type: Two Point Locking Handle Non-Keyed.
2. Type: Two Point Keyed Lock.
3. Type: Thumb Turn Lock.
4. Color: SI White.
5. Color: SI Bronze.
6. Color: Class 1 Clear Anodized.
7. Color: Dark Bronze Anodized.

C. Pull Hardware:

**** NOTE TO SPECIFIER ** Delete type and color options not required.**

1. Type: Recessed Pull.
2. Type: Low Profile Pull.
3. Type: GeoMetek.
4. Type: Bandwidth.
5. Type: MegaCurve.
6. Color: SI White.
7. Color: SI Bronze.
8. Color: Class 1 Clear Anodized.
9. Color: Dark Bronze Anodized.

D. Closers and Catch:

1. Adjustable Door Catch.

**** NOTE TO SPECIFIER ** Delete floor closer and color options not required.**

2. Floor Closer: R Series 370. Up to 500 lbs (226.8 kg).
3. Floor Closer: D Series BTS80. Up to 660 lbs (299.4 kg).
4. Floor Closer: R Series H28S. Up to 1,000 lbs (453.6 kg).
5. Color: SI White.
6. Color: SI Bronze.
7. Color: Class 1 Clear Anodized.
8. Color: Dark Bronze Anodized.

**** NOTE TO SPECIFIER ** Delete panic hardware if not required, or delete options not required.**

E. Commercial Panic Hardware:

1. Concealed vertical rod.
2. Exterior Entry Trim, Square.
3. Mortise Panic.
4. Push/Pull.
5. Wire Pulls.
6. Push Only.

F. Passive Hardware Sets:

1. Square, commercial.
2. Toronto.

G. Clear Pivot Door Handles:

1. Handles: As scheduled and indicated on Drawings.
2. Handles: Handle notch in glazing.
3. Handles: Finish: Custom, _____.
4. Handles: Natural Aluminum.

2.6 MATERIALS

A. Aluminum: 6063-T5, 6063-T6 alloy and temper.

1. Other alloys and tempers may be used for non-structural members, provided

- they do not void the required warranties.
2. Framing Members: Thickness based on design loading, cross sectional configuration, and fabrication requirements.
 3. Aluminum Flashing and Closures: 0.040 inches (1.02 mm) thick, minimum.
 4. Snap-on Covers and Miscellaneous Non-structural trim: Minimum thickness as recommended by the manufacturer.
- B. Insulated Panels: Expanded polystyrene. Provide at filler panels and sheet metal members.
- C. Glazing: See product section.
- D. Flashings: Sheet aluminum.
1. Finish: Same as system components.
 2. Secured with concealed fastening method or fastener with head finished to match.
 3. Thickness: As required for conditions encountered.

**** NOTE TO SPECIFIER ** Delete the following when not required.**

- E. Thermal Insulbar Separation: Manufacturer's standard system to provide thermal separation between exterior and interior components.

**** NOTE TO SPECIFIER ** Verify with manufacturer if internal reinforcing is required based on framing material, structure, size, and configuration.**

- F. Internal Reinforcing:
1. Structural Aluminum: ASTM B221/B221M and ASTM B241/B241M.
 2. Shapes and Sizes: To suit installation.
- G. Glazing Gaskets Complying with ASTM C864: EPDM compression type Replaceable.
1. Compatible with glazing sealant used.
 2. Profile and Hardness: As necessary. Maintain uniform pressure for watertight seal.
 3. Color: Black.
 4. Factory molded corners required at interior.
- H. Setting Blocks, Edge Blocks, and Spacers: As required by manufacturer and compatible with insulated glass where required.
- I. Structural Glazing Sealant: Manufacturer's Standard. Color: Black.
- J. Perimeter Sealant: Manufacturer's standard.
1. Color: Match framing finish if available, otherwise as selected by Architect from manufacturer's standard range.
- K. Anchors and Fasteners:
1. Aluminum and stainless steel of type which will not cause electrolytic action or corrosion.
 2. Zinc cadmium-plated fasteners may be used if acceptable to manufacturer.
 3. Exposed Fasteners: Finish to match aluminum frame.

2.7 FRAME FINISH

**** NOTE TO SPECIFIER ** Delete the following finishes not required. If more than one finish is required, indicate the locations where each is to be used on the architectural drawings.**

1. Finishes: Can be mixed, interior and exterior, or the same.
2. Anodized: AAMA 611 Class I: Clear.
3. Anodized: AAMA 611 Class I: Dark Bronze.

4. Powder Coat Solids: AAMA 2605: Black.
5. Powder Coat Solids: AAMA 2605: White.
6. Powder Coat Solids: AAMA 2605: Sandstone.
7. Powder Coat Solids: AAMA 2605: Natural Clay.
8. Powder Coat Solids: AAMA 2605: Bronze.
9. Powder Coat Solids: AAMA 2605: Harford Green.

**** NOTE TO SPECIFIER ** The remaining options are premium colors.**

10. Powder Coat Solids: AAMA 2605: Apollo White
11. Powder Coat Solids: AAMA 2605: Bone White.
12. Powder Coat Solids: AAMA 2605: Ivory.
13. Powder Coat Solids: AAMA 2605: Seawolf.
14. Powder Coat Solids: AAMA 2605: Fashion Gray.
15. Powder Coat Solids: AAMA 2605: Colonial Gray
16. Powder Coat Solids: AAMA 2605: Charcoal.
17. Powder Coat Solids: AAMA 2605: Antique Bronze.
18. Powder Coat Solids: AAMA 2605: Burgundy.
19. Powder Coat Solids: AAMA 2605: Military Light Blue.
20. Metal Clad: Copper.
21. Metal Clad: No. 4 Polished Stainless Steel.

**** NOTE TO SPECIFIER ** The remaining options are premium.**

22. Metal Clad: Rheinzink Bright Rolled.
23. Metal Clad: Rheinzink Blue Gray.
24. Metal Clad: Rheinzink Graphite Gray.
25. Metal Clad: Brass.
26. Metal Clad: Bronze.
27. Decoral Powder Coat: Aged Dark Oak.
28. Decoral Powder Coat: Aged Light Oak.
29. Decoral Powder Coat: American Douglas.
30. Decoral Powder Coat: American Maple.
31. Decoral Powder Coat: Cherry.
32. Decoral Powder Coat: Cherry with Flame.
33. Decoral Powder Coat: Colony Maple.
34. Decoral Powder Coat: Dark Walnut.
35. Decoral Powder Coat: European Cherry.
36. Decoral Powder Coat: Golden Oak.
37. Decoral Powder Coat: Knotty Pine.
38. Decoral Powder Coat: National Walnut.
39. Decoral Powder Coat: Oak.
40. Decoral Powder Coat: Oregon Douglas.
41. Decoral Powder Coat: Table Cherry.
42. Decoral Powder Coat: Teak.

**** NOTE TO SPECIFIER ** Wood veneering is for interior applications only.**

43. Wood Veneering; Unfinished: Douglas Fir.
44. Wood Veneering; Unfinished: White Oak.
45. Wood Veneering; Unfinished: Walnut.
46. Wood Veneering; Unfinished: Mahogany.

**** NOTE TO SPECIFIER ** The remaining items are premium options.**

47. Wood Veneering; Unfinished: White Pine.
48. Wood Veneering; Unfinished: Pecan Pine.
49. Wood Veneering; Unfinished: Cherry.

2.8 FABRICATION

- A. Fabricate components in accordance with shop drawings approved by the Architect.

- B. All major fabrication to be done at the manufacturing location and not onsite.
- C. Manufacturer must remove burrs and rough edges prior to finish application.
- D. Install gaskets and tapes at factory, as reasonable.
- E. Disassemble only to extent necessary for shipping and handling limitations.
- F. Notify Manufacturer of any field modification prior to activity commencing.
- G. Welding shall comply with standards set forth by the American Welding Society.
 - 1. Grind exposed welds smooth and flush with adjacent surfaces before finishing.
 - 2. Restore mechanical finish.
- H. Perform all work in a method that will meet or exceed industry standards.
- I. Isolation membrane materials must be used to separate dissimilar metals to prevent galvanic corrosion action between materials.
- J. Fabricate components to allow accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections are flush and weather tight. Ensure slip joints make full, tight contact and are weather tight.

**** NOTE TO SPECIFIER ** Delete the following if internal reinforcing is not required for this project.**

- K. Fabricate components true to detail and free from defects impairing appearance, strength, or durability.
- L. Provide contoured exterior horizontal or purlin glazing retainers to minimize water, ice, and snow buildup.
- M. Reinforce components at anchorage and support points, joints, and attachment points for interfacing work.
- N. Accurately size glazing to fit openings allowing for clearances as set forth by the "Glazing Manual" published by the Flat Glass Marketing Association (FGMA).
- O. Cut glass clean and carefully. Nicks and damaged edges will not be accepted. Replace all glass with damaged edges.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. General contractor shall direct, supervise, and inspect all site work related to the modular terrace door system.
- B. Clean surfaces thoroughly prior to installation.

- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Installation of the modular terrace door system shall be done in accordance with approved shop drawings and manufacturer's instruction and installation manuals.
- B. Separate dissimilar materials using nonconductive tape, paint, or other material not visible in finished work.
- C. Provide attachments and shims to permanently fasten system to building structure.
- D. Maintain dimensional tolerances and alignment with adjacent work.
- E. Anchor securely in place, allowing for required movement, including expansion and contraction.
- F. Install glazing sealants in accordance with manufacturer's instructions without exception, including surface preparations.
- G. Set sill members in bed of sealant. Set other members with internal sealants to provide weather tight construction.
- H. Install flashings, bent metal closures, corners, gutters, and other accessories as required or detailed.
- I. Clean surfaces and install sealant in accordance with sealant manufacturer's instructions and guidelines.

3.4 ADJUSTING AND CLEANING

- A. Adjust hinge set, locksets, and other hardware for proper operation. Lubricate using a suitable lubricant compatible with door and frame coatings.
- B. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions before owner's acceptance.
- C. Any abraded surface of the finish shall be cleaned and touched up with air dry paint, as approved and furnished by the window manufacture, in a color to match factory applied finish.
- D. Remove from project site and legally dispose of construction debris associated with this work.
- E. Removable sill and head stop provide for greater serviceability of hardware without the need to remove the other panels.

3.5 HOUSEKEEPING

- A. Manufacturer shall deliver all related operating instructions, maintenance manuals, and warranty registration cards to the general contractor during the completion of the project.
- B. Installer shall protect installed products until completion of the installation from all construction debris and natural elements.

- C. Manufacturer is responsible for all touch-up repair or replace damaged products during the installation.
- D. Installer shall keep area tidy and safe at all times.
- E. Clean and dress all sealant prior to installation completion.
- F. Clean all glass prior to installation completion.
- G. Installer shall clean the entire enclosure one time at the completion of the installation. Cleaning shall include surface cleaning of aluminum framing and glass and cleanup of construction debris. All subsequent cleaning shall be the responsibility of the general contractor.

3.6 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

**** NOTE TO SPECIFIER ** Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.**

- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.7 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturer's recommendations.
- B. Protect installed products until completion of project.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION