

ADAPTACLAD[®] RS ARCHITECTURAL DESIGN FRONT-END INFORMATION

30 psf (ASD) / 50 psf (LRFD) Structural Capacity

SYSTEM OVERVIEW

Laminators Inc. AdaptaClad RS is a weather-resistant, exterior wall covering panel system that combines a dry-seal, reveal-joint aesthetic with drained and back ventilated rainscreen performance. The panel system includes shop-fabricated Omega-Lite[®] FR aluminum composite material (ACM) panels, aluminum panel extrusions and clips, and accessories. The panel system can be installed over a variety of substrates and on projects requiring Continuous Insulation (CI), such as Laminators Inc. Omega CI[®] rigid insulation panels or other third-party CI solutions.

ARCHITECTURAL DESIGN

This Laminators Inc. Architectural Design detail set consists of front-end information & details and is complete with respect to Architectural Design. The front-end information outlines all applicable information for the panels and panel system. The details represent the panel system in relationship to a typical exterior wall assembly and may be applied to project-specific exterior wall assembly drawings & specifications with consideration of potential impact on air, structural, water, and/or fire testing performance. The details may not be applied to project-specific shop drawings. Although not required for Architectural Design, additional information is available in the Shop Fabrication and Field Installation detail sets.

To consult directly with one of our Professional Engineers (PE) regarding the panel system, contact Laminators Inc. Technical Support during business hours (8 a.m. – 5 p.m. EST):

800.523.2347 LaminatorsInc.com engineering@laminatorsinc.com

FEATURES

The panel system has been designed and detailed to include the following:

- 1. Fabricated panels with long sides up to 142" and short sides up to 46" (for all finish colors) or 58" (for select finish colors), including options for color-matched rivets
- 2. Installation over a variety of substrates; however, installation over open framing lacking any substrate sheathing is not permitted
- 3. Defined perimeter extrusion, panel stiffener, and panel clip locations & spacings



- 4. Elevations with representative joints, edges, openings, transitions, and penetrations
- 5. Sections with system depth, representative substrate, fabricated panels, insert strips, perimeter extrusions, panel clips, typical joints with dimensions, and representative flashings

CODES & STANDARDS

Laminators Inc. retains Professional Engineers (PE) licensed in the state of primary research & development, design, and manufacturing (i.e., Commonwealth of Pennsylvania) to provide structural design, detailing, and testing support for the panel system. Accordingly, the panel system has been designed and detailed to the 2018 International Building Code (IBC), including the following, applicable Referenced Standards:

- 1. ACI 318: Building Code Requirements for Structural Concrete
- 2. ADM: Aluminum Design Manual: Part 1 A Specification for Aluminum Structures
- 3. AISI S100: North American Specification for the Design of Cold-formed Steel Structural Members, 2016
- 4. ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction with 2018 NDS Supplement
- 5. ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- 6. TMS 402/602: Building Code Requirements and Specification for Masonry Structures

The panel system has been tested to, and/or complies with, the following, applicable Referenced Standards:

- 1. AAMA 501.1 Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure
- 2. AAMA 509 Voluntary Test and Classification Method for Drained and Back Ventilated Rainscreen Wall Cladding Systems
- 3. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix)
- 4. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- 5. ASTM B209 Specification for Aluminum and Aluminum Alloy Steel and Plate
- 6. ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
- 7. ASTM C645 Standard Specification for Nonstructural Steel Framing Members



- 8. ASTM D635 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
- 9. ASTM D1929 Standard Test Method for Determining Ignition Temperature of Plastics
- 10. ASTM D2244 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
- 11. ASTM D4214 Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
- 12. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- 13. ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- 14. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- 15. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- 16. ASTM E529 Standard Guide for Conducting Flexural Tests on Beams and Girders for Building Construction
- 17. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components

CAPACITY

It is the responsibility of the Design Professional of Record (DPR) to establish the *Required Strength* of the panel system based on project-specific Components and Cladding (C&C) wind loads. By reference to the IBC, C&C wind loads are calculated per ASCE/SEI 7.

It is the responsibility of Laminators Inc. to establish the *Available Strength* of the panel system based on codes, standards, and industry-accepted specifications. From design and testing, the structural capacity of the panel system for <u>this</u> detail set has been established at **30 psf (ASD)** / **50 psf (LRFD)**.

Accordingly, the project-specific C&C wind loads (*Required Strength*) shall not exceed the structural capacity of the panel system (*Available Strength*). For C&C wind loads greater than the structural capacity, contact Laminators Inc. Technical Support.

CRITERIA

For Laminators Inc. to provide the *Available Strength* of the panel system, it is the responsibility of the DPR to verify that the project-specific drawings & specifications meet the following <u>baseline</u> criteria for the applicable substrate:



- 1. Gypsum sheathing over CFSF studs or CI solutions with CFSF rails:
 - a. Spacing: 16" or 24"
 - b. Face flange width: 1-1/4" (min)
 - c. Thickness: 18 ga. (43 mils)
 - d. Tensile strength (Fu): 45 ksi
- 2. Plywood sheathing:
 - a. Thickness: 5/8"
 - b. Specific gravity (G): 0.55 (Southern Pine)
- 3. OSB sheathing:
 - a. Thickness: 5/8"
 - b. Specific gravity (G): 0.49 (Southern Pine)
- 4. Concrete:
 - a. Normal weight
 - b. Compressive strength (f'c): 2500 psi
- 5. CMU:
 - a. Normal weight
 - b. Compressive strength (f'm): 2000 psi
 - c. Type II units
 - d. Face shell thickness: 1-1/4" (min)
 - e. Grade N mortar

Note: If the project-specific drawings & specifications do not meet the baseline criteria for the applicable substrate, contact Laminators Inc. Technical Support.

NFPA 285 COMPLIANCE

As represented in the Laminators Inc. Architectural Design details, the panel system in relationship to a typical exterior wall assembly has been tested in accordance with, and meets the Conditions of Acceptance of, NFPA 285. The panel system may be considered a baseline and appropriately applied to project-specific exterior wall assembly drawings & specifications.

An Engineering Evaluation (EEV) is available from Laminators Inc. Technical Support that presents specific engineering extensions and permits substitutions with respect to base wall components, firestopping at floor lines, cavity insulation, exterior sheathing, water-resistive barriers, and exterior insulation, while maintaining NFPA 285 compliance. The EEV may be required for project-specific submissions to an Authority Having Jurisdiction (AHJ).

If any engineering extensions are required beyond what is presented in the EEV, it is the responsibility of a third-party to pursue a <u>separate</u> EEV that permits other intended substitutions. Note that Laminators Inc. cannot serve as the third-party in pursuing this EEV.

While an EEV addresses fire performance, the application of any project-specific substitutions will need to be evaluated by the DPR with respect to potential impact on air, structural, and/or water performance of the exterior wall assembly.



COLOR COORDINATION & PLANNING

Coordinate with Laminators Inc. on large projects to ensure the most consistent color matches between project phases.

METALLIC & ANODIZED FINISHES

Variation and directionality are common characteristics across a range of colors, finishes, patterns, and textures of panel finishes. Therefore, project-specific coordination of panel orientation is particularly important for metallic paint and anodized aluminum finishes. Directional arrows are printed on the masking to assist with same-direction panel orientation during Shop Fabrication and Field Installation.

WARRANTY

To satisfy the ACM Manufacturer's Material Warranty requirement of project-specific specifications, a Limited Warranty document is available from the Laminators Inc. Sales/Customer Service team that is project-specific and consists of two parts: a *Panel Material and Product Warranty* and a *Panel and Extrusion Finish Warranty*. The Limited Warranty is subject to stated terms, conditions, limitations, remedies, legal rights, and a disclaimer. Failure of the project-specific exterior wall assembly drawings & specifications to be in general conformance with the Laminators Inc. Architectural Design detail set may void one or both parts of the Limited Warranty. Laminators Inc. does not support any Field Installation warranty.

ADDITIONAL INFORMATION

In addition to the Laminators Inc. Architectural Design, Shop Fabrication, and Field Installation detail sets, information is available in Laminators Inc. Specification Section 07 42 13.23 – Aluminum Composite Material Wall Panels and on the Laminators Inc. <u>YouTube</u> channel.



ADAPTACLAD[®] RS ARCHITECTURAL DESIGN DETAILS

30 psf (ASD) / 50 psf (LRFD) Structural Capacity

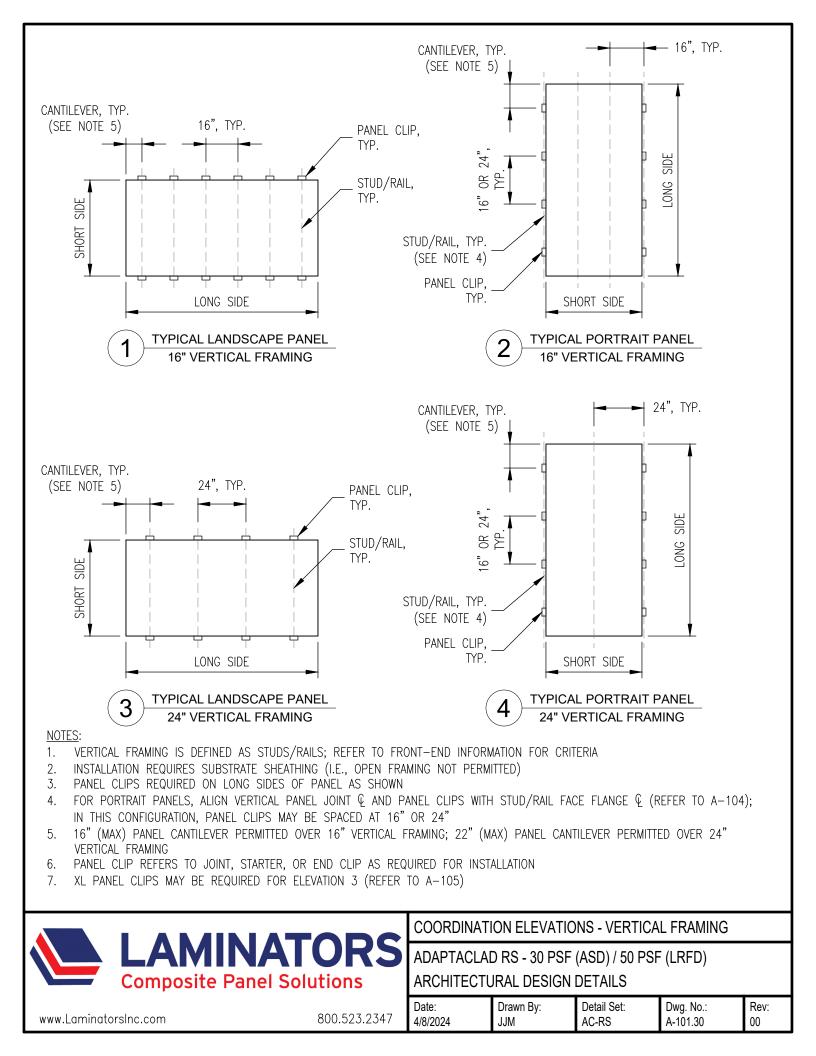
DRAWING INDEX

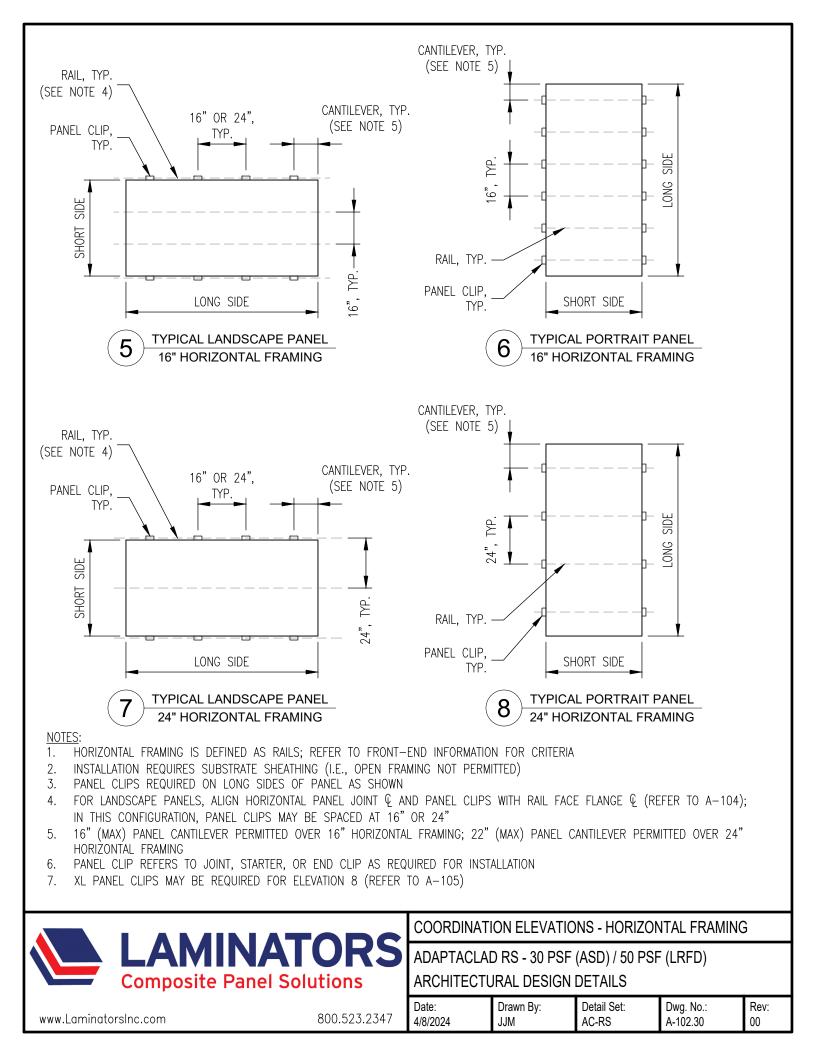
REV 04, 11/22/2024

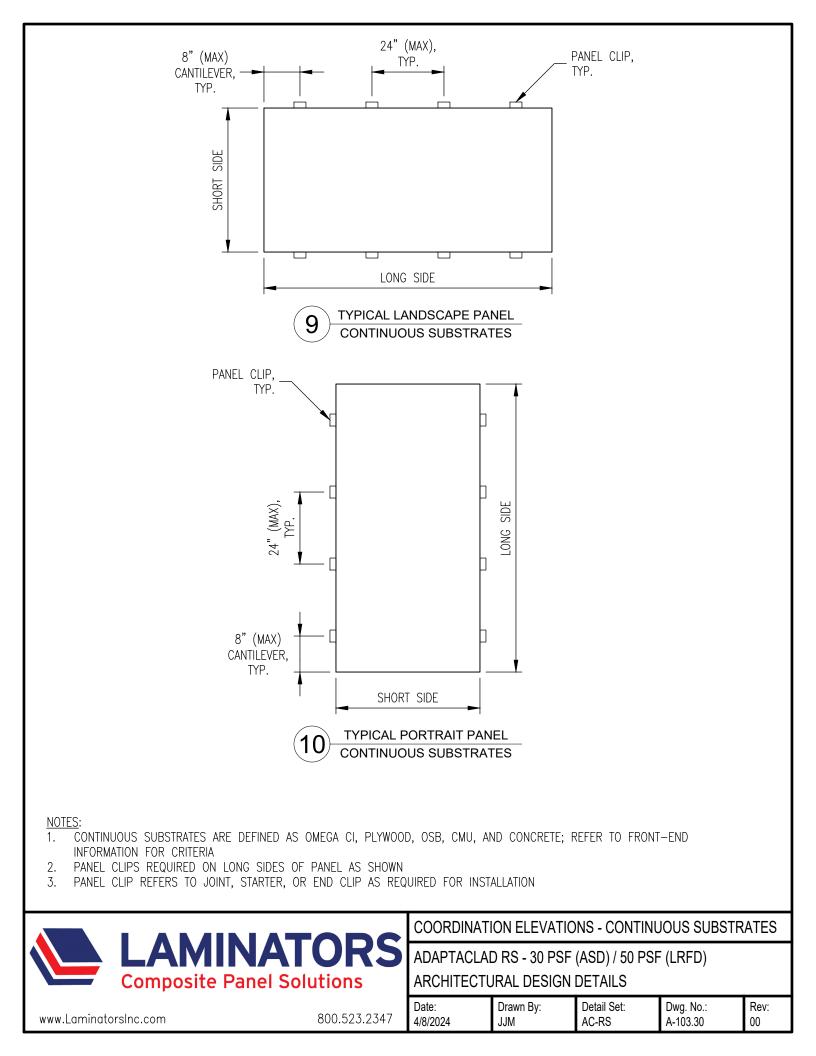
DWG NO.	TITLE	REV DATE	REV	CHANGE FROM PREVIOUS REV
	COORDINATION ELEVATIONS -			
A-101.30	VERTICAL FRAMING	4/8/2024	00	
	COORDINATION ELEVATIONS -			
A-102.30	HORIZONTAL FRAMING	4/8/2024	00	
	COORDINATION ELEVATIONS -			
A-103.30	CONTINUOUS SUBSTRATES	4/8/2024	00	
	COORDINATION DETAILS -			Note 1 removed; remaining notes
A-104	PANEL ALIGNMENT	11/22/2024	02	renumbered
	COORDINATION DETAILS -			
A-105	XL PANEL CLIPS	4/8/2024	00	
	FABRICATION OVERVIEW –			Min & max panel sizes removed;
A-106.30	COMPONENT LAYOUT	11/22/2024	01	blind rivet spacing added
	SPECIFIC CONDITIONS –			Landscape & portrait annotations
A-107	PANEL STIFFENER SPAN	11/22/2024	01	removed; rotation symbol added
	TYPICAL ELEVATION -			
A-201	JOINTS, EDGES, & OPENINGS	4/8/2024	00	
	TYPICAL ELEVATION –			
A-202	TRANSITIONS & PENETRATIONS	11/22/2024	01	Incorrect annotations fixed
	TRANSITION PANEL SIZE	A /0 /2024	00	
A-203.30	REQUIREMENTS	4/8/2024	00	
A-301	HORIZONTAL JOINT DETAIL	11/22/2024	02	Blind rivet spacing removed
A-302	VERTICAL JOINT DETAIL	11/22/2024	02	Blind rivet spacing removed
A-303	BOTTOM HORIZONTAL EDGE DETAIL	11/22/2024	02	Blind rivet spacing removed
A-304	TOP HORIZONTAL EDGE DETAIL	11/22/2024	02	Blind rivet spacing removed
A-305	LEFT VERTICAL EDGE DETAIL	11/22/2024	02	Blind rivet spacing removed
A-306	RIGHT VERTICAL EDGE DETAIL	11/22/2024	02	Blind rivet spacing removed
A-307	WINDOW (OR DOOR) HEAD DETAIL	11/22/2024	02	Blind rivet spacing removed
A-308	WINDOW SILL DETAIL	11/22/2024	02	Blind rivet spacing removed
	LEFT VERTICAL EDGE DETAIL AT			
A-309	WINDOW (OR DOOR) JAMB	11/22/2024	02	Blind rivet spacing removed
	RIGHT VERTICAL EDGE DETAIL AT			
A-310	WINDOW (OR DOOR) JAMB	11/22/2024	02	Blind rivet spacing removed
A-311	INSIDE CORNER DETAIL	4/8/2024	00	
A-312	OUTSIDE CORNER DETAIL	4/8/2024	00	
A-313	WALL TRANSITION DETAIL	11/22/2024	02	Blind rivet spacing removed
				Min dimension removed; blind
A-314	FASCIA-TO-SOFFIT TRANSITION DETAIL	11/22/2024	02	rivet spacing removed

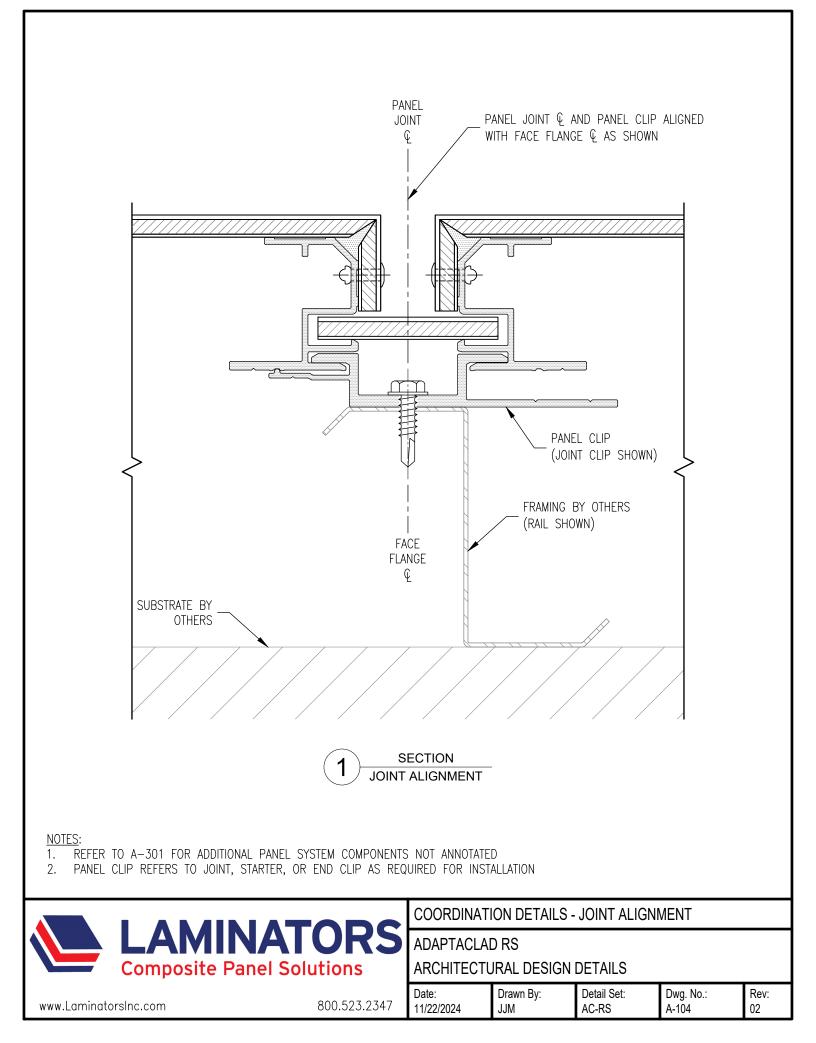


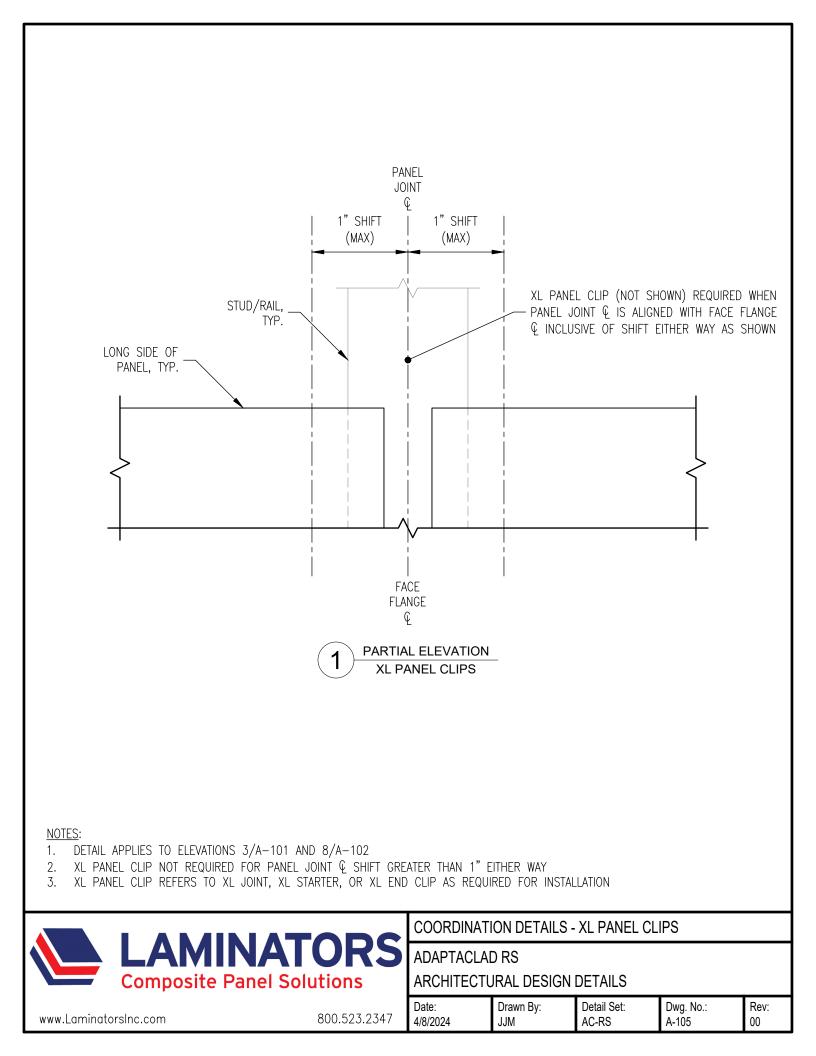
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A-315	PIPE PENETRATION DETAIL	4/8/2024	00	
A-316 -				
A-350	NOT USED			
	WINDOW HEAD (OR DOOR) DETAIL			
A-351	OVER OMEGA CI	9/20/2024	01	
	VERTICAL EDGE DETAIL AT WINDOW			
A-352	(OR DOOR) JAMB OVER OMEGA CI	9/20/2024	01	
	HORIZONTAL JOINT DETAIL			
A-401	(CUSTOM WIDTH)	11/22/2024	02	Blind rivet spacing removed
	VERTICAL JOINT DETAIL			Blind rivet spacing removed;
A-402	(CUSTOM WIDTH)	11/22/2024	02	missing dimension added
M-101	SHAPE PROFILES	4/8/2024	00	
M-102	INSERT STRIP SIZES	4/8/2024	00	

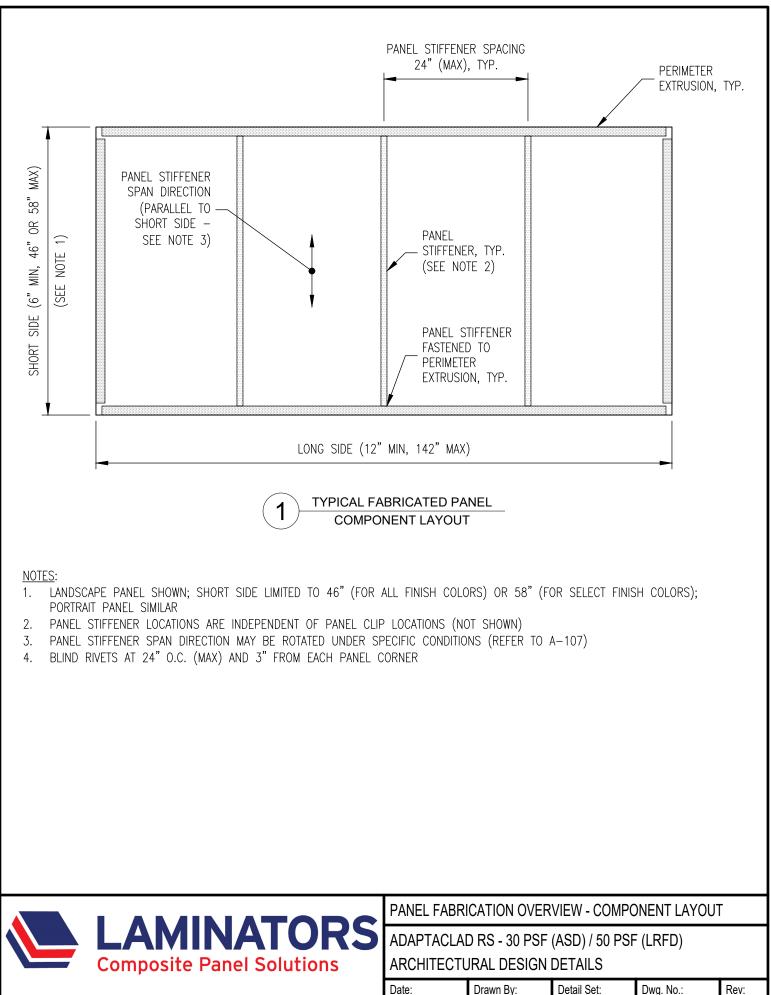












800.523.2347

Date: Drawn By: Detail Set: 11/22/2024 JJM AC-RS

Dwg. No.: A-106.30

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