

OMEGA CI® ARCHITECTURAL DESIGN & FIELD INSTALLATION FRONT-FND INFORMATION

60 psf (ASD) / 100 psf (LRFD) Structural Capacity

PRODUCT OVERVIEW

Laminators Inc. Omega CI is a rigid insulation panel that consists of a foam plastic core bonded on both sides to a coated glass facer with an additional fire-treated plywood layer on one side. Intended for commercial applications, panels provide continuous insulation (CI) to a building envelope; are available in a range of thicknesses; and can be installed over a variety of substrates and behind exterior wall coverings.

ARCHITECTURAL DESIGN & FIELD INSTALLATION

This Laminators Inc. Architectural Design & Field Installation detail set consists of front-end information & details and is complete with respect to Architectural Design & Field Installation. The front-end information outlines all applicable information for the panels. The details represent the panels 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 also represent necessary components and procedures required for field installation of the panels and shall be applied to project-specific shop drawings with consideration of field conditions.

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
<u>LaminatorsInc.com</u>
engineering@laminatorsinc.com

FEATURES

The panels have been detailed to include the following:

- 1. Installation over gypsum sheathing over CFSF studs, concrete, or CMU substrates; however, installation over open framing lacking any substrate sheathing is not permitted
- 2. Defined fastener locations & spacings
- 3. Elevations with representative joints, edges, openings, and transitions



4. Sections with panel depth, representative substrate, typical joints, edge protection, 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 panels. Accordingly, the panels have 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. AISI S100: North American Specification for the Design of Cold-formed Steel Structural Members, 2016
- 3. ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction with 2018 NDS Supplement
- 4. ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- 5. ASHRAE 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings
- 6. International Energy Conservation Code (IECC)
- 7. TMS 402/602: Building Code Requirements and Specification for Masonry Structures

The panels have been tested to, and/or comply with, the following, applicable Referenced Standards:

- 1. ASTM C209 Standard Test Methods for Cellulosic Fiber Insulating Board
- 2. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- 3. ASTM C1289 Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- 4. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- 5. ASTM D2126 Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- 6. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- 7. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- 8. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials



- 9. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- 10. 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 panels 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 panels based on codes, standards, and industry-accepted specifications. From design and testing, the structural capacity of the panels for this detail set has been established at **60 psf (ASD) / 100 psf (LRFD)**.

Accordingly, the project-specific C&C wind loads (*Required Strength*) shall not exceed the structural capacity of the panels (*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 panels, 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:
 - a. Spacing: 16"
 - b. Face flange width: 1-1/4" (min)
 - c. Thickness: 18 ga (43 mils)
 - d. Tensile strength (Fu): 45 ksi
- 2. Concrete:
 - a. Normal weight
 - b. Compressive strength (f'c): 2500 psi
- 3. 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

The panels are intended to be used with the following Laminators Inc. panel systems:

- 1. 1-Piece, Tight-Fit Molding (BD&V)
- 2. Clip & Caulk[™] (BD&V)
- 3. AdaptaClad® RS
- 4. Rout & Return

1-Piece, Tight-Fit Molding (BD&V) and Clip & Caulk (BD&V) over Omega CI and in relationship to a typical exterior wall assembly have been tested to, and meet the Conditions of Acceptance of, NFPA 285. Each detail set may be considered a baseline and appropriately applied to project-specific exterior wall assembly drawings & specifications. AdaptaClad RS and Rout & Return have also been tested to, and meet the Conditions of Acceptance of, NFPA 285; however, neither test included Omega CI.

Engineering Evaluations (EEV) are available from Laminators Inc. Technical Support that present specific engineering extensions and permit substitutions with respect to base wall components, fire-stopping at floor lines, cavity insulation, exterior sheathing, water-resistive barriers, and exterior insulation (e.g., Omega CI), while maintaining NFPA 285 compliance. An 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 one of the EEVs, <u>or if Omega CI is intended to be used with any other panel system or exterior wall covering</u>, 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.

MATERIALS

- Omega CI rigid insulation panels
- Membrane flashing edge protection
- Temporary edge protection
- Silicone or butyl sealant (as required)
- Fabricated color-matched aluminum components (e.g., flashings, copings, etc.)

SCREWS

1/4" DP3 CONCEALOR pancake head self-drilling screw by Triangle Fastener Corporation

EQUIPMENT

- Aviation snips or heavy-duty scissors
- Drill & bits
- Driver & bits
- Circular/table saw (non-ferrous 60-tooth minimum blade required)



- Personal Protective Equipment (gloves, safety glasses, etc.)
- Tape measure

RECEIVING

Upon receipt of materials and screws, perform a visual inspection and inventory to identify any damages that may have occurred during shipping and/or missing components. Any such conditions must be noted on the bill of lading at the time of receipt and must be immediately reported by the Installer to Laminators Inc. or the Fabricator from which the materials and screws were purchased.

STORAGE

- 1. Store all materials and screws horizontally on pallets and in a dry, well-ventilated environment under the protection of a temporary or permanent structure.
- 2. Store all materials and screws a minimum of 4" above grade level to avoid contact with direct moisture (e.g. water, snow, etc.).
- 3. Store all materials and screws in an area protected from construction activities and associated debris.
- 4. Storage temperatures shall not exceed 120°F.
- 5. Other materials shall not be stacked on, or placed in contact with, fabricated materials to prevent staining, denting, or other damage.

HANDLING

- 1. Protective masking should be left on all aluminum components during Field Installation to prevent damage. Masking should be removed from each aluminum component <u>prior</u> to Field Installation.
- 2. Handle all materials with clean work gloves to avoid hand injury from any sharp edges and to prevent staining of panel and aluminum component surfaces from contaminants.
- 3. When transferring panels from shipping containers or storage conditions, always handle each panel individually to prevent damage.

PREPARATION & TOLERANCES

Field-verify all project-specific locations of exterior wall framing (e.g., studs, tracks, etc.); proposed panel system edges, openings, transitions, and penetrations; and project-specific substrate conditions are acceptable for Field Installation. The General Contractor (GC) is responsible for providing an acceptable substrate with the following tolerances:

1. Adjacent substrate surface out-of-plane offset: +/- 1/8"



- 2. Level, plumb, and location control line deviation: 1/4" in any 20 feet
- 3. Building elevation direction deviation: +/- 1/2"

Documentation shall be provided to the GC indicating any conditions detrimental to the Field Installation of the panels. Install the panels level, plumb, and true in accordance with the detail set and approved project-specific shop drawings with the following tolerances:

- 1. Panel joint width deviation: +/- 1/16"
- 2. Adjacent panel out-of-plane offset: +/- 1/8"
- 3. Adjacent panel out-of-plane edge alignment: +/- 1/16"

WARRANTY

To satisfy the 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. 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, and shop drawings to be in general conformance with the Laminators Inc. Architectural Design & Field Installation detail set may void the Limited Warranty. Laminators Inc. does not support any Field Installation warranty.

To satisfy the Installation Warranty requirement of project-specific specifications, a warranty document shall be made available from the Installer that is project-specific and addresses workmanship for a minimum period (e.g., one year) commencing on Date of Substantial Completion. Failure of the project-specific shop drawings to be in general conformance with the Laminators Inc. Field Installation detail set may void the Installation Warranty.

ADDITIONAL INFORMATION

In addition to the Laminators Inc. Architectural Design & Field Installation detail set, information is available in Laminators Inc. Specification Section 07 21 13 – Board Insulation and on the Laminators Inc. YouTube channel.



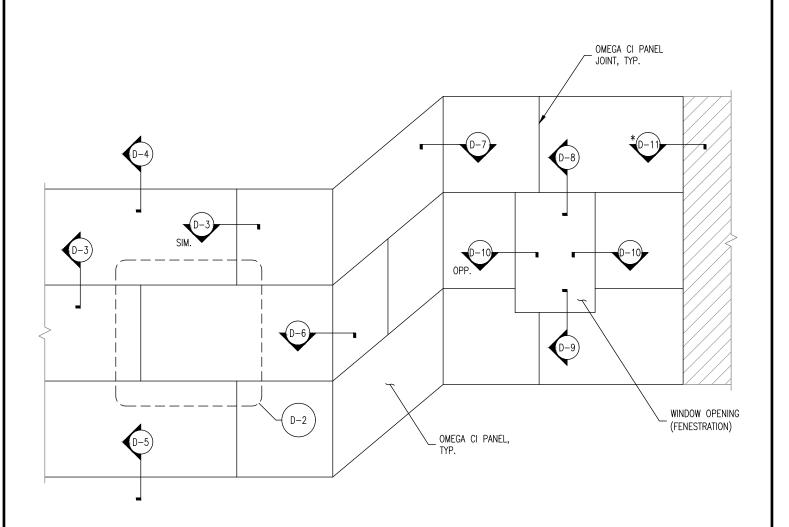
OMEGA CI® ARCHITECTURAL DESIGN & FIELD INSTALLATION DETAILS

60 psf (ASD) / 100 psf (LRFD) Structural Capacity Gypsum Sheathing / 18 ga. CFSF / 16" Spacing

DRAWING INDEX

REV 03, 8/2/2024

DWG NO.	TITLE	REV DATE	REV	CHANGE FROM PREVIOUS REV
D-1	OVERALL ELEVATION	3/30/2020	02	
	LAYOUT AND FASTENING			
D-2	REQUIREMENTS	3/30/2020	02	
D-3	JOINT DETAIL	8/2/2024	03	Required AWB callout added
D-4	TOP OF WALL DETAIL	8/2/2024	03	Detail notes revised
D-5	BASE OF WALL DETAIL	8/2/2024	03	Detail notes revised
D-6	OUTSIDE CORNER DETAIL	8/2/2024	03	Detail notes revised
D-7	INSIDE CORNER DETAIL	8/2/2024	03	Detail notes revised
D-8	WINDOW HEAD DETAIL	8/2/2024	03	Detail notes revised
D-9	WINDOW SILL DETAIL	8/2/2024	03	Detail notes revised
D-10	WINDOW JAMB DETAIL	8/2/2024	03	Detail notes revised
	VERTICAL EDGE DETAIL			
D-11.1	(ADJACENT TO NEW)	8/2/2024	03	Detail notes revised
	VERTICAL EDGE DETAIL			
D-11.2	(ADJACENT TO EXISTING)	8/2/2024	03	Detail notes revised



OVERALL ELEVATION

GENERAL NOTES:

- OMEGA CI (PART NO. OCI-2.1-48) INSTALLATION DETAILS PROVIDED ONLY FOR FIRE-RATED ASSEMBLIES WITH EXTERIOR-GRADE GYPSUM SHEATHING OVER 18 GA. (MIN) STEEL STUD FRAMING (CONTACT LAMINATORS TECHNICAL SUPPORT FOR INSTALLATION OVER ALTERNATE EXTERIOR WALL ASSEMBLIES)
- 2. INSTALLATION OF OMEGA CLOVER OPEN FRAMING (I.E. WITHOUT SHEATHING) IS NOT PERMITTED
- 3. OMEGA CI STANDARD PANEL THICKNESS IS 2.1 INCH
- 4. REFER TO D-2 FOR PANEL LAYOUT AND FASTENING REQUIREMENTS
- * DENOTES SECTIONS WITH AT LEAST (2) CONFIGURATIONS AVAILABLE (EX. D-11.1, D-11.2, ETC)

IMPORTANT NOTICE

PROJECT-SPECIFIC COMPONENTS AND CLADDING WIND LOADS (REQUIRED STRENGTH, Ra) SHALL NOT EXCEED AVAILABLE LOAD-CARRYING CAPACITY OF RIGID INSULATION PANELS (ALLOWABLE STRENGTH, ${\rm Rn}/\Omega$) OF 60 PSF

- A. PROJECT-SPECIFIC COMPONENTS AND CLADDING WIND LOADS (REFERRED TO AS WIND LOADS IN EL-2.0, 2.1, 3.0, & 3.1) ARE TO BE DETERMINED BY THE DESIGN PROFESSIONAL OF RECORD
- B. AVAILABLE LOAD—CARRYING CAPACITY OF RIGID INSULATION PANELS (60 PSF) IS BASED ON ALLOWABLE STRENGTH DESIGN (ASD) METHOD
- C. FOR PROJECT-SPECIFIC COMPONENTS AND CLADDING WIND LOADS GREATER THAN 60 PSF, CONTACT LAMINATORS TECHNICAL SUPPORT FOR PROJECT-SPECIFIC DETAILING REQUIREMENTS



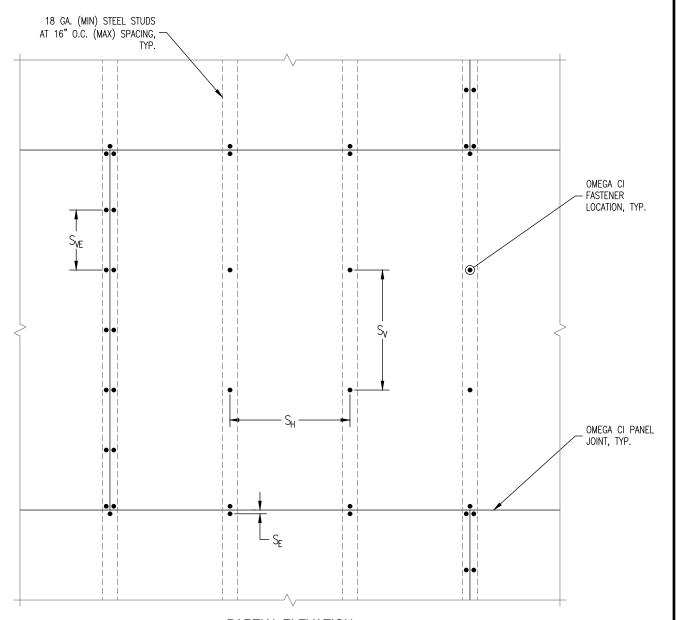
OVERALL ELEVATION

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: Drawn By: 3/30/2020 JJM

Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-1 02

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PARTIAL ELEVATION

OMEGA CI RIGID INSULATION PANEL INSTALLATION:

- 1. LAYOUT REQUIREMENTS:
 - A. ORIENT PANELS HORIZONTALLY IN A RUNNING BOND PATTERN WITH A SINGLE STUD (MIN) JOINT OFFSET
 - B. ALIGN ALL VERTICAL PANEL EDGES WITH CENTERLINE OF STUD FRAMING MEMBERS
 - C. MAINTAIN 1/8" GAP BETWEEN ADJACENT PANELS TO ALLOW FOR THERMAL EXPANSION OF PANEL PLYWOOD SHEATHING LAYER
- 2. FASTENING REQUIREMENTS:
 - A. FASTEN OMEGA CI (PART NO. OCI-2.1-48) TO EXTERIOR WALL ASSEMBLY USING 1/4" X 4" PANCAKE HEAD SELF-DRILLING SCREWS (PART NO. OCI-FASTENER-4"WOOD/STEEL)
 - B. THICKER VERSIONS OF OMEGA CI REQUIRE LONGER SCREWS (CONTACT LAMINATORS TECHNICAL SUPPORT FOR ADDITIONAL INFORMATION REGARDING SCREW SIZING)
 - C. ENSURE FASTENERS FULLY ENGAGE STÚD FLANGES
 - D. FASTENER SPACING TO BE BASED ON WIND LOADS
 - WIND LOADS UP TO 60 PSF (ASD):
 - HORIZONTAL SPACING WITHIN FIELD OF PANEL (S_{H}): 16" O.C. (MAX) TO MATCH STUD SPACING
 - VERTICAL SPACING WITHIN FIELD OF PANEL (S_V): 16" O.C. (MAX)
 - VERTICAL SPACING ALONG EDGE OF PANEL (SvE): 8" O.C. (MAX)
 - FASTENER EDGE DISTANCE (S_E): 1/4" (MIN) TO 2" (MAX)
 - E. CONTACT LAMINATORS TECHNICAL SUPPORT FOR INSTALLATION REQUIREMENTS WITH STUD SPACING GREATER THAN 16" O.C.

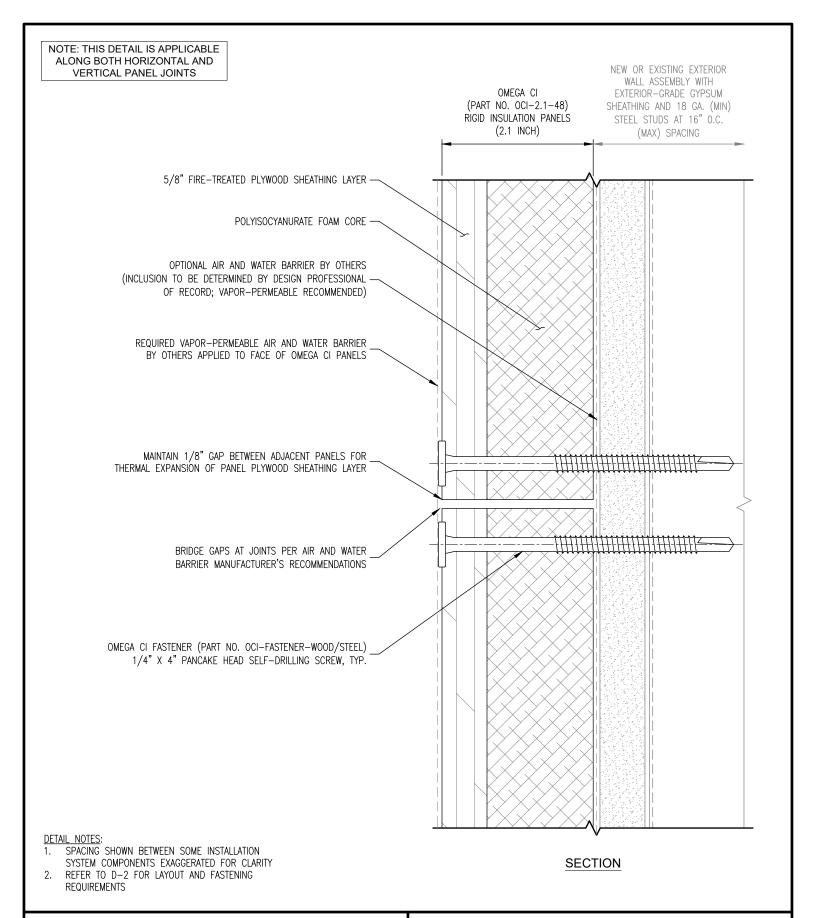


LAYOUT AND FASTENING REQUIREMENTS

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: Drawn By: 3/30/2020 JJM

Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-2 02





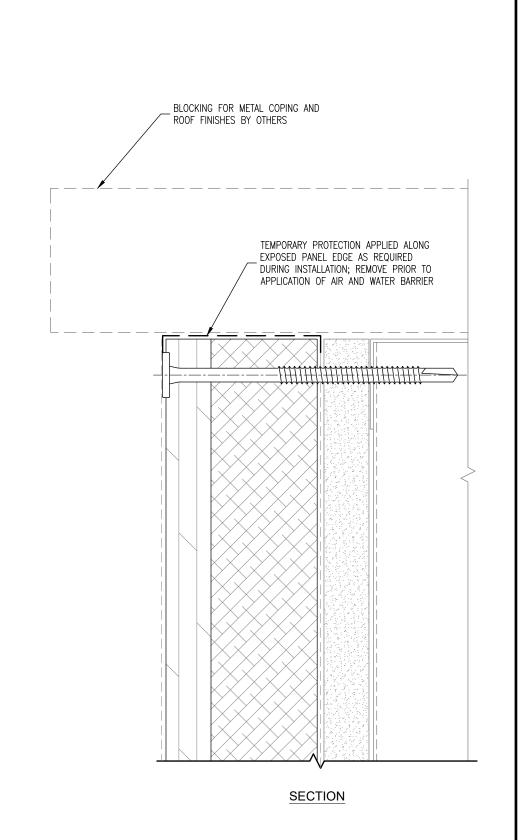
JOINT DETAIL

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Drawn By: Detail Set: JJM OCI-SF-GYP

Dwg. No.: D-3 Rev:

03



- SPACING SHOWN BETWEEN SOME INSTALLATION SYSTEM COMPONENTS EXAGGERATED FOR CLARITY
- 2. REFER TO D-2 FOR LAYOUT AND FASTENING REQUIREMENTS
- REFER TO D-3 FOR TYPICAL COMPONENTS NOT ANNOTATED

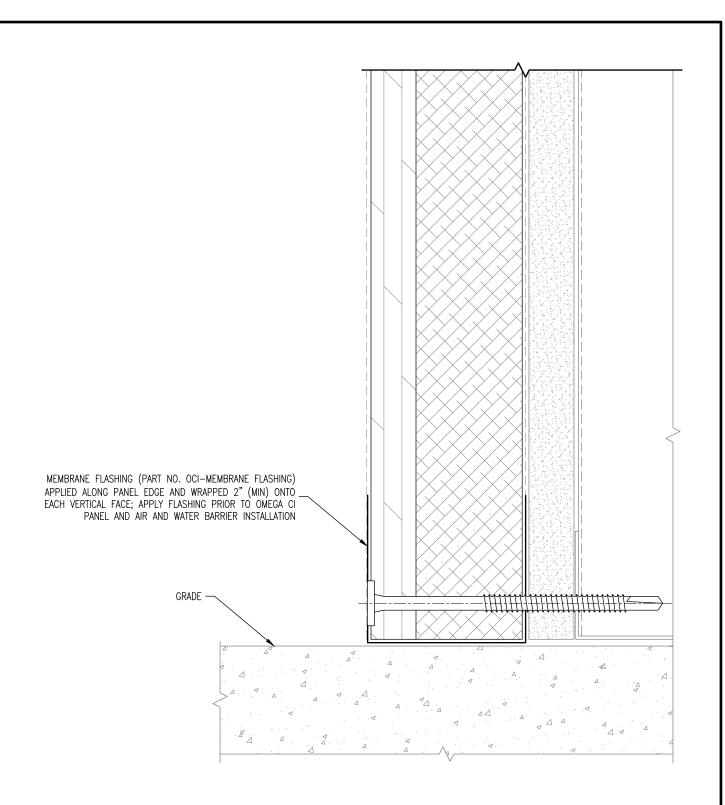


TOP OF WALL DETAIL

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Drawn By: JJM Detail Set: OCI-SF-GYP Dwg. No.: D-4 Rev:

03



- SPACING SHOWN BETWEEN SOME INSTALLATION SYSTEM COMPONENTS EXAGGERATED FOR CLARITY
- 2. REFER TO D-2 FOR LAYOUT AND FASTENING REQUIREMENTS
- 3. REFER TO D-3 FOR TYPICAL COMPONENTS NOT ANNOTATED

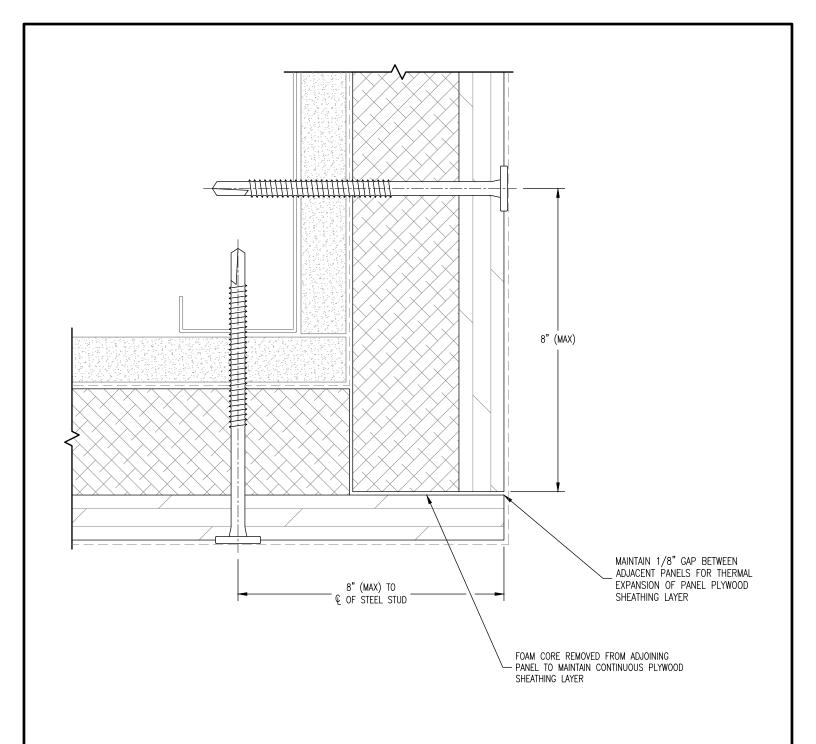
SECTION



BASE OF WALL DETAIL

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Drawn By: JJM Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-5 03



DETAIL NOTES:

- SPACING SHOWN BETWEEN SOME INSTALLATION SYSTEM COMPONENTS EXAGGERATED FOR CLARITY
- 2. REFER TO D-2 FOR LAYOUT AND FASTENING REQUIREMENTS
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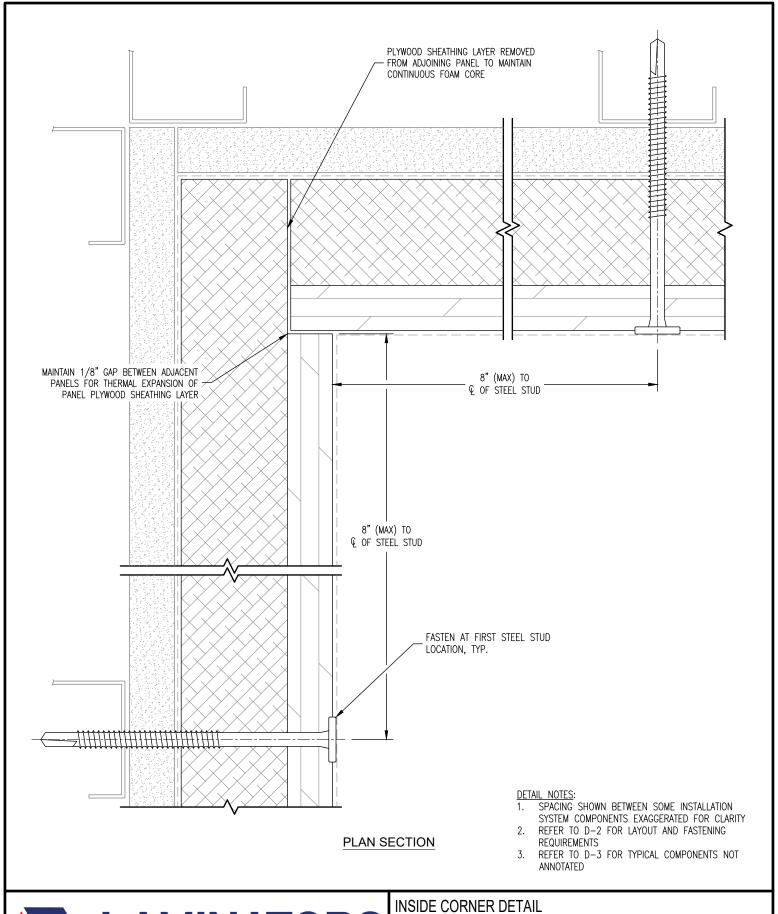


OUTSIDE CORNER DETAIL

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Drawn By: Detail Set: JJM OCI-SF-GYP

Dwg. No.: Rev: D-6 03



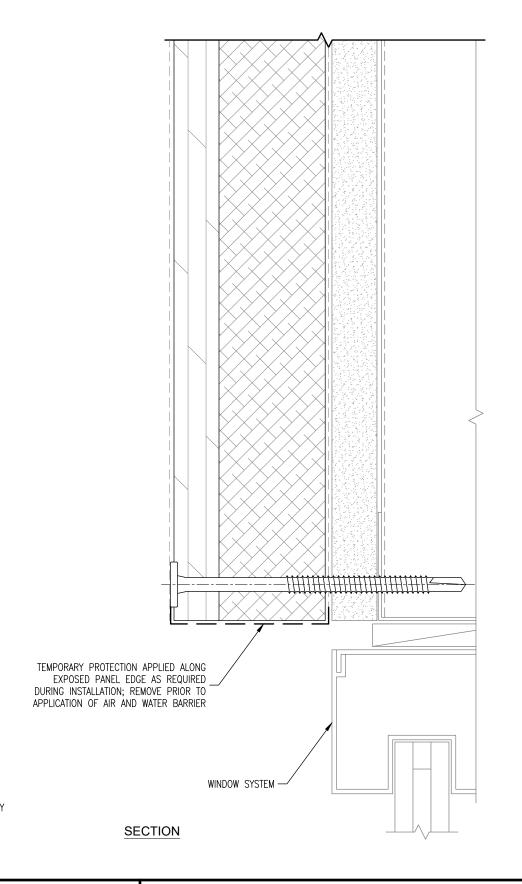


OMEGA CI RIGID INSULATION PANELS OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: Drawn By: 8/2/2024 JJM

Detail Set: OCI-SF-GYP

Rev: Dwg. No.: D-7 03



- SPACING SHOWN BETWEEN SOME INSTALLATION
 SYSTEM COMPONENTS EXAGGERATED FOR CLARITY
- 2. REFER TO D-2 FOR LAYOUT AND FASTENING REQUIREMENTS
- REFER TO D-3 FOR TYPICAL COMPONENTS NOT ANNOTATED

LAMINATORS Composite Panel Solutions

WINDOW HEAD DETAIL

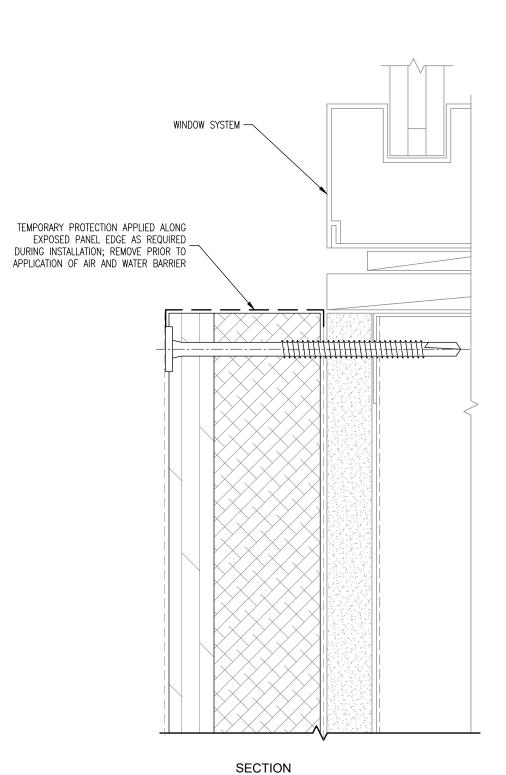
OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Drawn By: JJM Detail Set: OCI-SF-GYP Dwg. No.: D-8 Rev:

03

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- SPACING SHOWN BETWEEN SOME INSTALLATION SYSTEM COMPONENTS EXAGGERATED FOR CLARITY
- 2. REFER TO D-2 FOR LAYOUT AND FASTENING REQUIREMENTS
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LAMINATORS Composite Panel Solutions

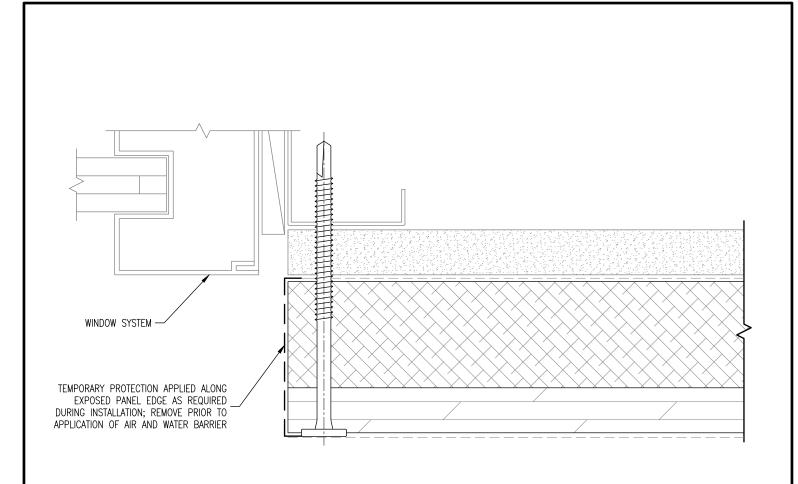
WINDOW SILL DETAIL

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024

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Drawn By: JJM Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-9 03



DETAIL NOTES:

- SPACING SHOWN BETWEEN SOME INSTALLATION SYSTEM COMPONENTS EXAGGERATED FOR CLARITY
- 2. REFER TO D-2 FOR LAYOUT AND FASTENING REQUIREMENTS
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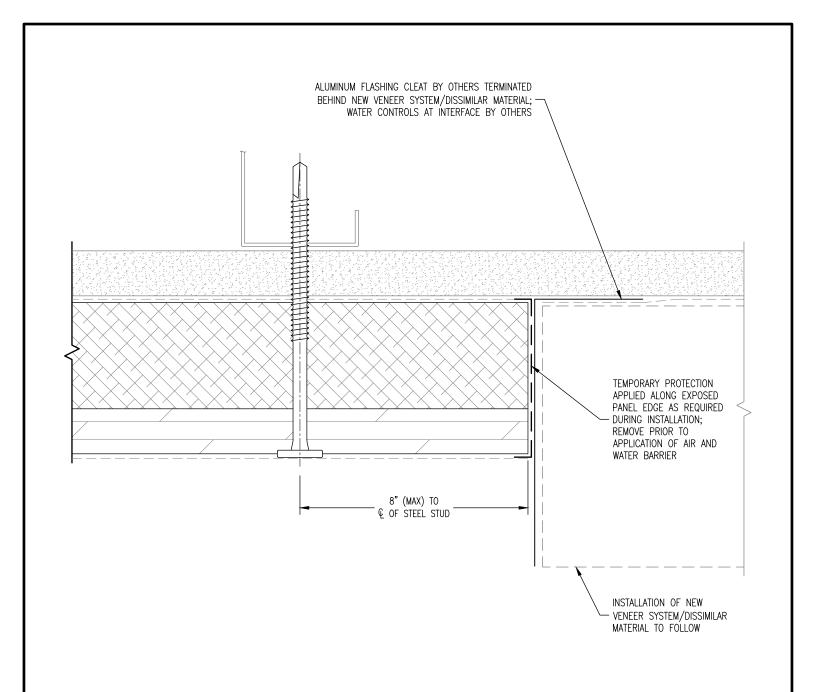
WINDOW JAMB DETAIL

Drawn By:

JJM

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-10 03



DETAIL NOTES:

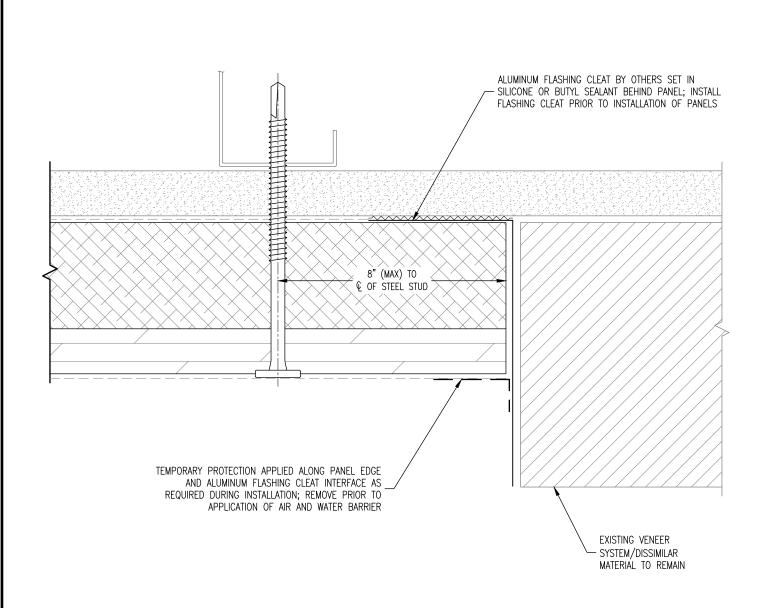
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VERTICAL EDGE DETAIL (ADJACENT TO NEW)

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: 8/2/2024 Drawn By: JJM Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-11.1 03



DETAIL NOTES:

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VERTICAL EDGE DETAIL (ADJACENT TO EXISTING)

OMEGA CI RIGID INSULATION PANELS
OVER STEEL STUD FRAMING WITH GYPSUM SHEATHING

Date: Drawn By: 8/2/2024 JJM

Detail Set: OCI-SF-GYP Dwg. No.: Rev: D-11.2 03