

MERCURY METALS

REYNOBOND

07410
Preformed Metal Wall System
Specification – Page 1 of 4

Specification for PE panels (for FR panels see section 4.0)

1.0 GENERAL

1.1 RELATED WORK

- 1.1.1 Section 03300 Cast-in place concrete
- 1.1.2 Section 04200 Unit masonry
- 1.1.3 Section 05100 Structural Metal Framing
- 1.1.4 Section 05500 Metal Fabrications
- 1.1.5 Section 07195 Air Barriers
- 1.1.6 Section 07200 Insulation
- 1.1.7 Section 07513 Membrane Roofing
- 1.1.8 Section 07600 Flashing and Sheet Metal

1.2 SYSTEMS DESCRIPTION

- 1.2.1 Custom made, pre-finished, composite aluminum, dry joint modular wall cladding and soffit cladding. No exposed fasteners permitted.

1.3 PERFORMANCE REQUIREMENTS (DESIGN CRITERIA)

- 1.3.1 Panel: Metal panel system, including its support and attachments, shall be designed to resist positive and negative wind loads as calculated in the last edition of the National Building Code of Canada and its supplement, using a 1/30 return period. Adequate stiffening shall be provided to prevent wind induced vibrations and fatigue problems.
- 1.3.2 Deflection Movement: Maximum deflection due to wind loads not to exceed L/180. The panel shall exhibit no permanent deformation when subjected to these loads. Allowance shall be made in the panel design for movement within the system caused by deflection in the building structure.
- 1.3.3 Thermal Movement: Allowance shall be made for expansion and contraction of all parts of the metal panel assembly cause by surface temperatures varying from minus 40 degrees Celsius to plus 40 degrees Celsius. Such variation in temperature shall not cause buckling, stresses on enclosed or adjoining materials and fasteners, or in any way impair the performance or appearance of the system. Sub girt system design to incorporate a grid lock to eliminate rocking of the sub girt on drywall or other support sub-wall systems.
- 1.3.4 Weep Drainage: System shall provide clear, internal paths of drainage that weep any trapped moisture to the exterior. Weep water shall discharge in a matter that avoids staining of architectural finishes, collecting in puddles or the formation of icicles.
- 1.3.5 Water tightness: Exterior fascia and wall panels shall be designed to the rain screen principles as published by the National Research Council and prevent water infiltration into the interior systems.
- 1.3.6 Fastening: Panel assembly shall be fastened to the building structure in a manner which transmits all loads to the main structure without exceeding the capacity of any fastener.

1.4 FIELD QUALITY CONTROL

- 1.4.1 Inspection: Intermediate inspections of air barriers and insulation shall be carried out by the manufacturers' representative prior to the enclosure and concealment of these products in the system.
- 1.4.2 All walls and openings are to be within $\pm 3\text{mm}$ ($\pm 1/8''$) of location shown on architectural drawings. Also, structure is to be plumb within 1:1000 of overall height.
- 1.4.3 Final inspection and approval of completed work shall be carried out by the manufacturers' representative and the contractor

1.5 REFERENCES

- 1.5.1 ASTM A446 "sheet steel, zinc coated (galvanized) by Hot Dip Process Physical (structural) quality"
- 1.5.2 ASTM B209 Aluminum sheet and plate
- 1.5.3 ASTM B221 Extrude aluminum shapes

1.6 SUBMITTALS (SHOP DRAWINGS)

- 1.6.1 Samples: Samples of metal wall panels shall be submitted with specified substrate and in selected finish. Samples shall be 450mm X 450mm including all necessary items to show a vertical and horizontal joining between adjacent panels.
- 1.6.2 Drawings: Contractors' drawings shall clearly indicate by reflected ceiling plans, wall elevations and /or sectional details all material thickness, finishes, connections, inserts, joint conditions, method of anchorage, number of anchors, supports, fastenings, reinforcements, method of supporting and integrating mechanical and electrical fixtures. Trim and accessories. Drawings shall be signed by a BC Professional Engineer.
- 1.6.3 Identification: Panels shall be identified on show drawings as to building location to facilitate panel removal and replacement due to construction and/or occupant damage.

1.7 DELIVERY, STORAGE and HANDLING

- 1.7.1 Cover pre-finished components to protect surfaces from damage and deterioration.
- 1.7.2 Store components off ground to prevent twisting, bending and defacement. Slope to shed moisture.

1.8 MOCK UP

- 1.8.1 Provide a mock up wall approximately 3m X 3m illustrating metal cladding, coping and corner detail.

2.0 PRODUCTS**2.1 CLADDING TYPE**

- 2.1.1 Form modular panes from minimum 4mm pre-finished composite aluminum sheet. The composite aluminum sheet consists of two 0.50mm minimum aluminum skins bonded in a continuous process to a low density polyethylene core. Aluminum skins to be alloy 3150 H25. Acceptable products are REYNOBOND (PE) by Mercury Metals Ltd or equal approved by the architect prior to tender.

2.2 FABRICATION

- 2.2.1 All work to be fabricated with straight lines, square corners or smooth bends, free from twists or warps, kinks, dents, and other imperfections which may affect appearance or serviceability.
- 2.2.2 Panel deviation from flatness in all direction across the surface to be a maximum of 0.02%.
- 2.2.3 System shall have a flush appearance from the exterior with no exposed fixings or other irregularities and with no reveal of other than the module joint width.
- 2.2.4 Thickness of metal and details of assembly and support shall provide sufficient strength and stiffness to resist distortion of finished surface. Exposed edges and ends of metal shall be dressed smooth, free from sharp edges. Connections and joints exposed to the weather shall be constructed to exclude water.
- 2.2.5 Panels to be constructed with flanges on all sides. Exposed fasteners are not permitted. Aluminum extrusions are to frame the panels.

2.3 SUB GIRT SYSTEM

- 2.3.1 Panel load transfer grids shall be formed from minimum 1.2mm (18 gauge) full galvanized sheet steel conforming to ASTN A525 Grade A Zinc coating to Z275 designation.
- 2.3.2 Transfer grid to be hat bars, Z-bars, Adjustable Z-bars, or combination clip and Z-Bars.

2.4 FASTENERS

- 2.4.1 Fasteners to be concealed at all locations and a sufficient quantity of fasteners of the proper size for fastening of the work shall be provided.

2.5 OPENINGS

- 2.5.1 Openings shall be provided and coordinated with the work of other installers. Holes to accommodate the work of other sections to be provided in the panel prior to finishing whenever possible. The perimeter of holes greater than 300mm X 300mm shall be reinforced to details shown on the drawing or the manufacturers' standard.

2.6 FLASHINGS

- 2.6.1 Wherever practical at corners, jambs and abutments, no flashing will be permitted. Panel design to include for these connections.

2.7 PANEL FINISHES

- 2.7.1 Pre-finish fluorocarbon base with 70% Kynar Resin, colour(s)_____. Coating thickness to be 1.0mm (± 0.2mm). Hardness to NCCA 11-12, F minimum Eagle Turquoise T2375. Impact test method ASTM D-2794 Gardner variable impact tester. Adhesion test methods NCCA 11-5 and ASTM 3359-83 crosshatched
- 2.7.2 Exposed surfaces of aluminum extrusions to match the finish of the panels.

2.8 WEATHERING CHARACTERISTICS (to the following minimum standards :)

- 2.8.1 Humidity resistance: Test methods ASTM D714-56, ASTM D2247-87. Coating shall have none of few #8 blisters after 3000hrs.
- 2.8.2 Salt Spray Resistance: Test method ASTM B-117-85 Salt Fog Cabinet. Coating shall have none of few #8 blisters after 3000hrs.
- 2.8.3 Chemical Resistance: Test method ASTM D-1308-79 Procedure 6.2. No discolouration or blistering after 15 minutes spot test with 1-% muriatic acid. No discolouration or blistering after 18 hour spot check with 20% sulphuric acid.

- 2.8.4 Abrasion Resistance: Test method ASTM D968-81 Falling Sand. Coating shall resist abrasion of not less than 50 litres of sand.
- 2.8.5 Colour Retention: Test method ASTM D2244-79. No colour change greater than the 5NBS units measured after 5000 hours. No objectionable chalking in excess of 8 when rated per ASTM D659-86.

3.0 EXECUTION

3.1 PREPERATION

- 3.1.1 Develop all dimensions from the architectural drawings and co-ordinate with field dimensions to obtain final plan layout.

3.2 INSTALLATIONS

- 3.2.1 Prior to installation, inspect structure to ensure all walls and openings are within $\pm 3\text{mm}$ ($\pm 1/8''$) of location shown on architectural drawings. Also, structure is to be plumb within 1:1000 of overall height. Installation is not to proceed until the building is within these tolerances.
- 3.2.2 Support system shall be attached to the structural as required to transmit design loads.
- 3.2.3 Framing and other components shall be straight to match plane of panel as required to meet the installed panel tolerances with straight, sharply formed edges. Radius-formed components shall be bent to true circular curve.
- 3.2.4 After their correct position has been determined and allowances for expansion, building movement, uniform joint width and alignment of all parts has been determined, the components shall be permanently fastened.
- 3.2.5 Installed panels shall not deviate from overall plane or alignment by more than 1:1000. Joints shall be not less than their dimensioned width nor more than five percent greater than their dimensioned width at any location along their full length and shall not be wavy out of line or of different width from panel to panel.
- 3.2.6 Install flashings to divert all moisture to the exterior.
- 3.2.7 Install exterior metal cladding to structural supports with hidden mechanical fasteners.
- 3.2.8 Remove all excess materials, debris and equipment at completion.
- 3.2.9 Clean all panels free from grime and dirt at time of installation.

4.0 SPECIFICATION FOR FR PANELS

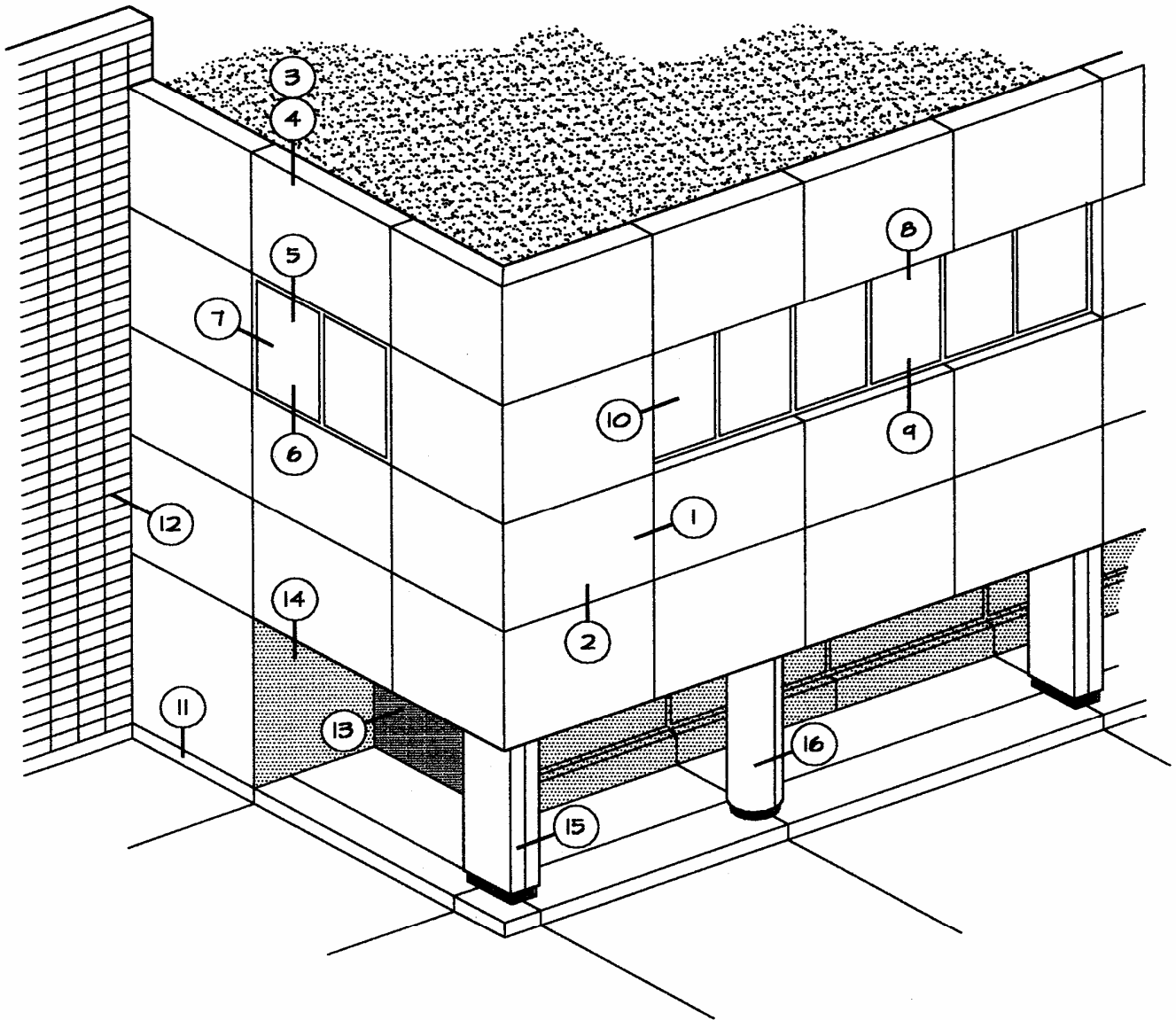
To alter previous PE specification for use with FR panels, please replace the corresponding paragraphs with ones that follow.

- 4.0.1 Custom made, pre-finished, fire-resistant, composite aluminum, dry joint modular wall cladding and soffit cladding. No exposed fasteners permitted.
- 4.0.2 Fire Resistance: Composite aluminum panel system shall be tested, by an accredited testing facility, to The Standard Method of Fire Test of Exterior Wall Assemblies, CAN4-S13-M92 and be approved for use in non-combustible construction in accordance with the last edition of the National Building Code of Canada, Article 3.1.5.5, Sentences (1) through (8).
- 4.0.3 Form modular panels from minimum 4mm pre-finished composite aluminum sheets. The composite aluminum sheet consists of two 0.50mm minimum skins bonded in a continuous process to a fire resistant thermo-plastic compound core. Aluminum skins to be 3105 H25. Acceptable products are REYNOBOND (FR) by Mercury Metals Ltd. Or equal approved by the architect prior to tender.

Mercury Metals Ltd.

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drawing title:

REYNOBOND REFERENCE

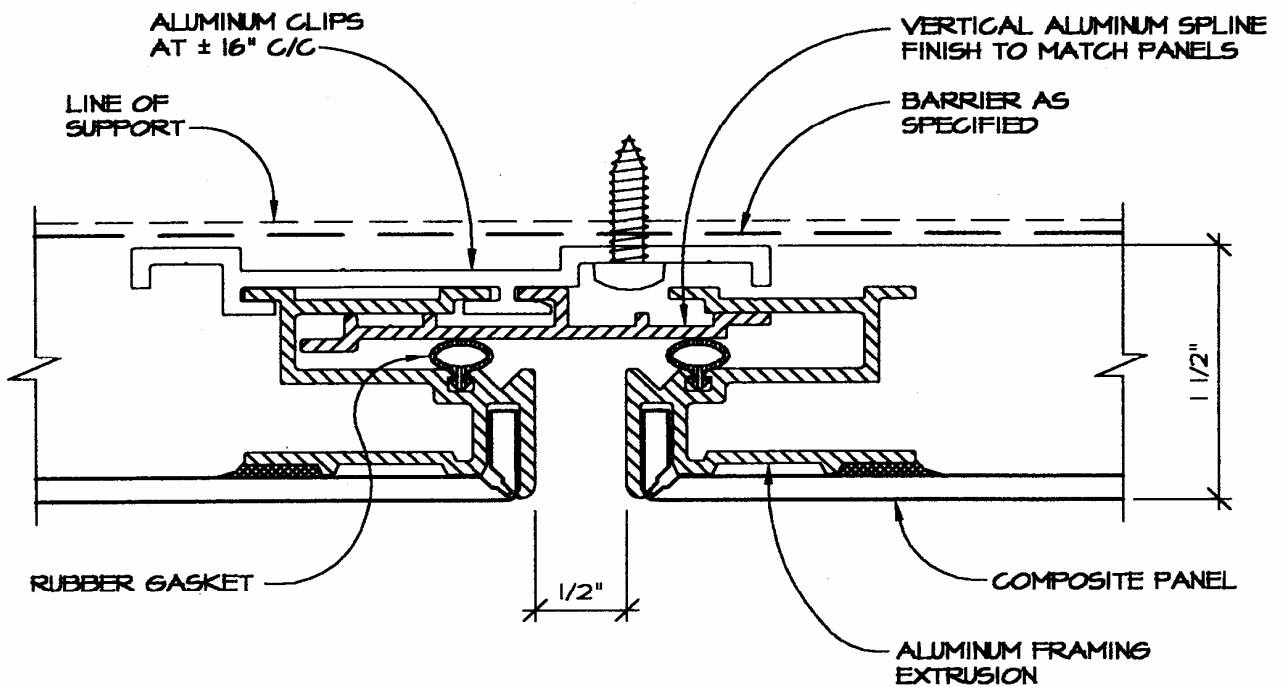
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REYNOBOND HORIZONTAL
JOINT

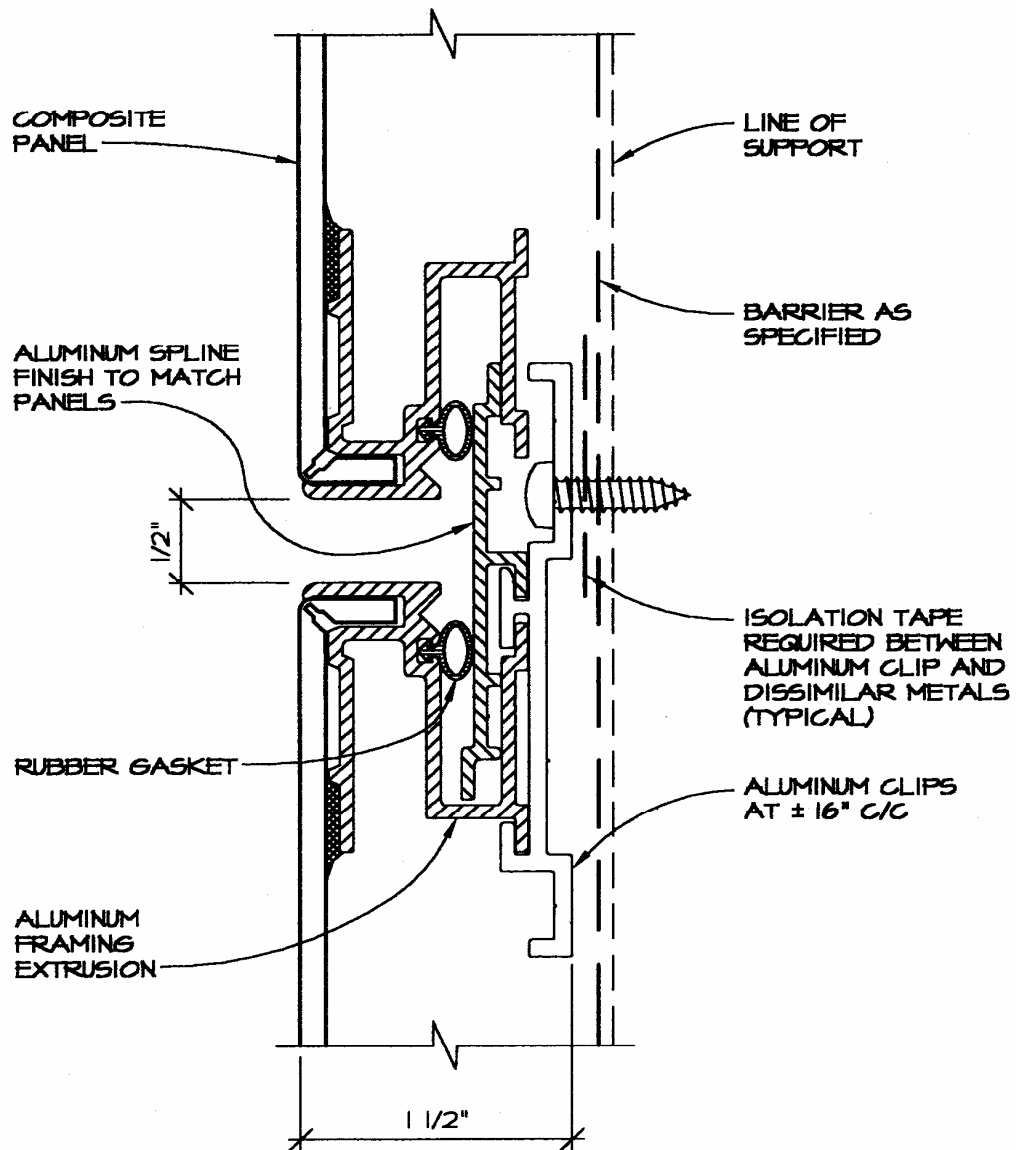
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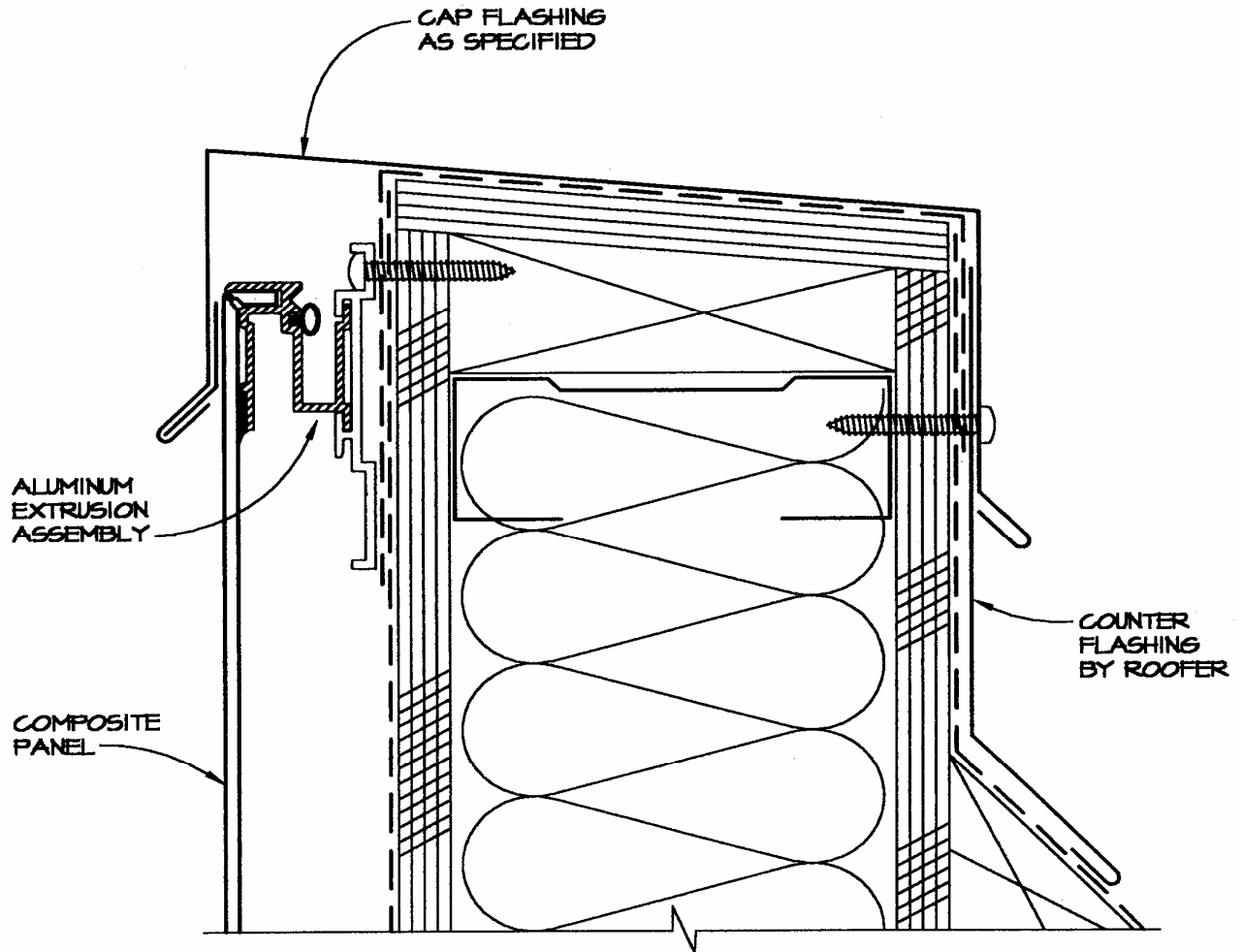
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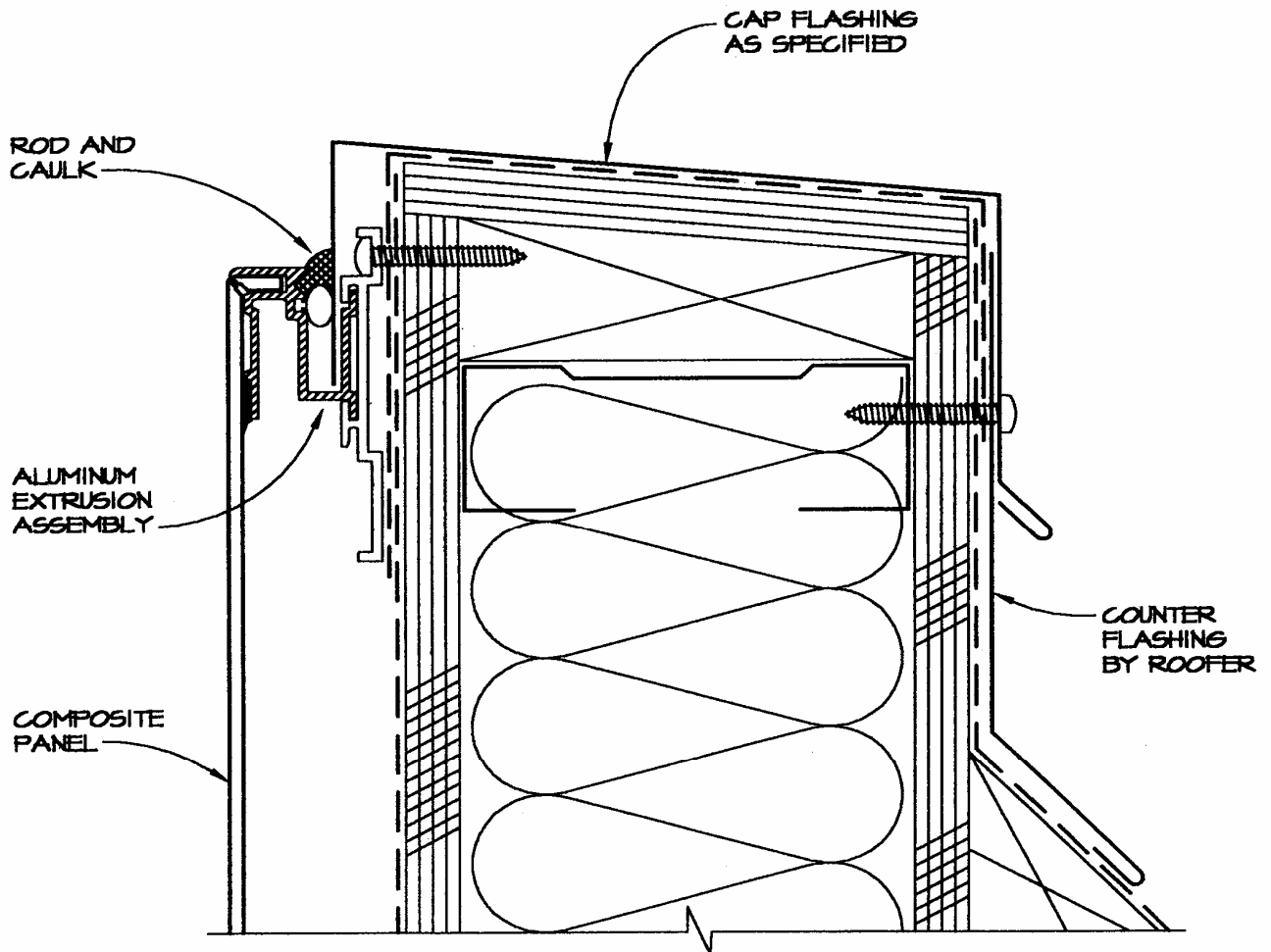
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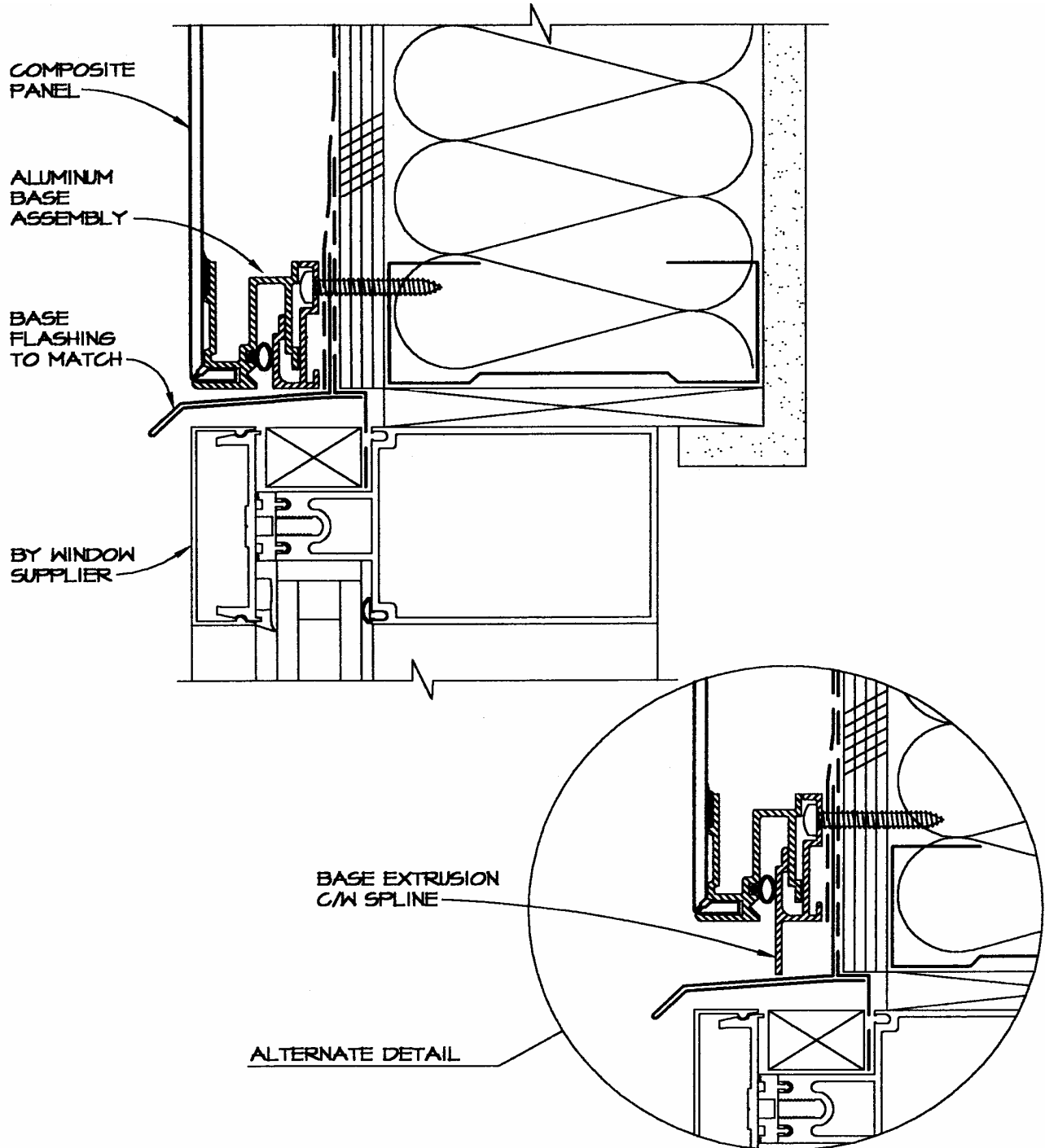
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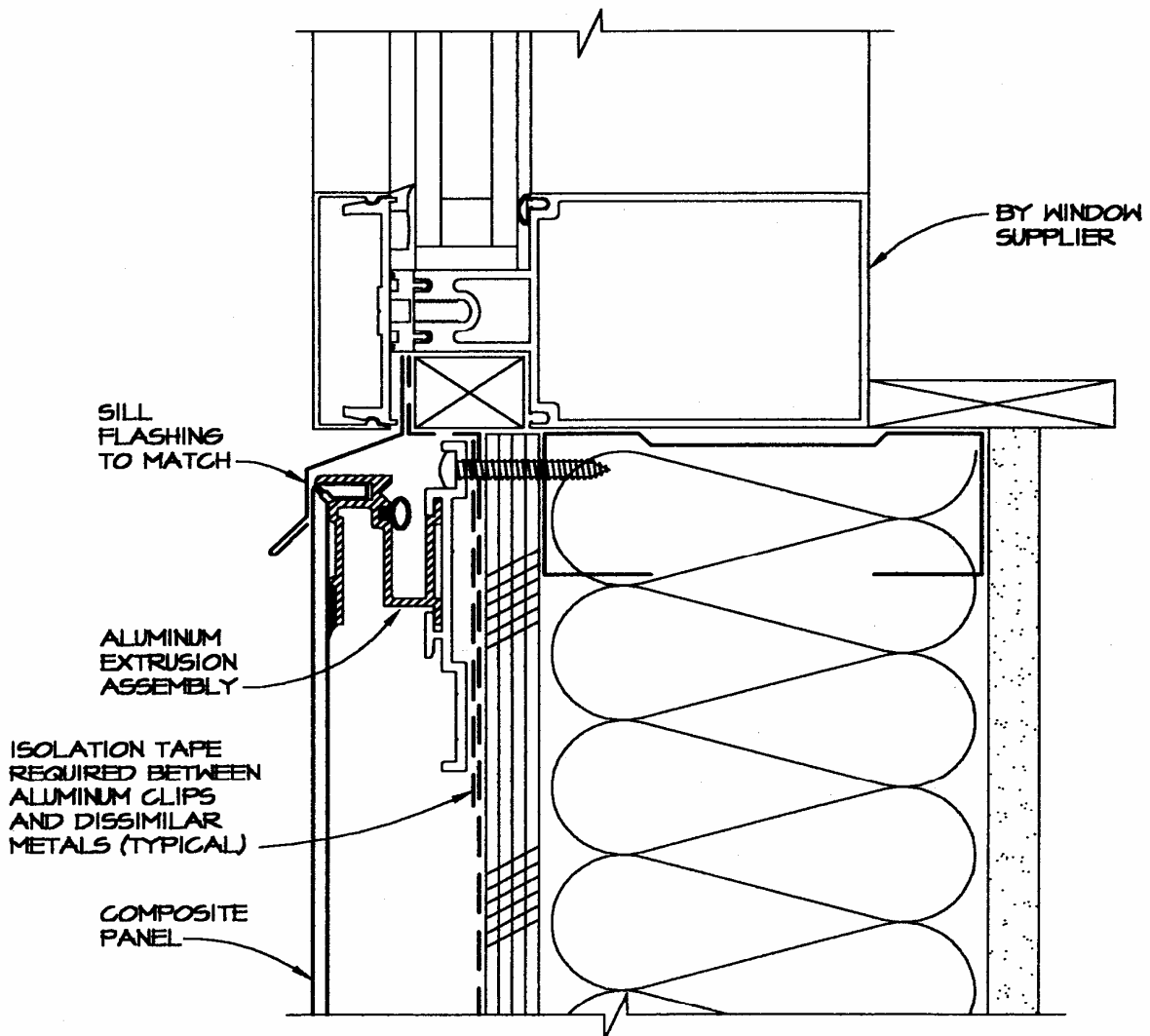
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SILL

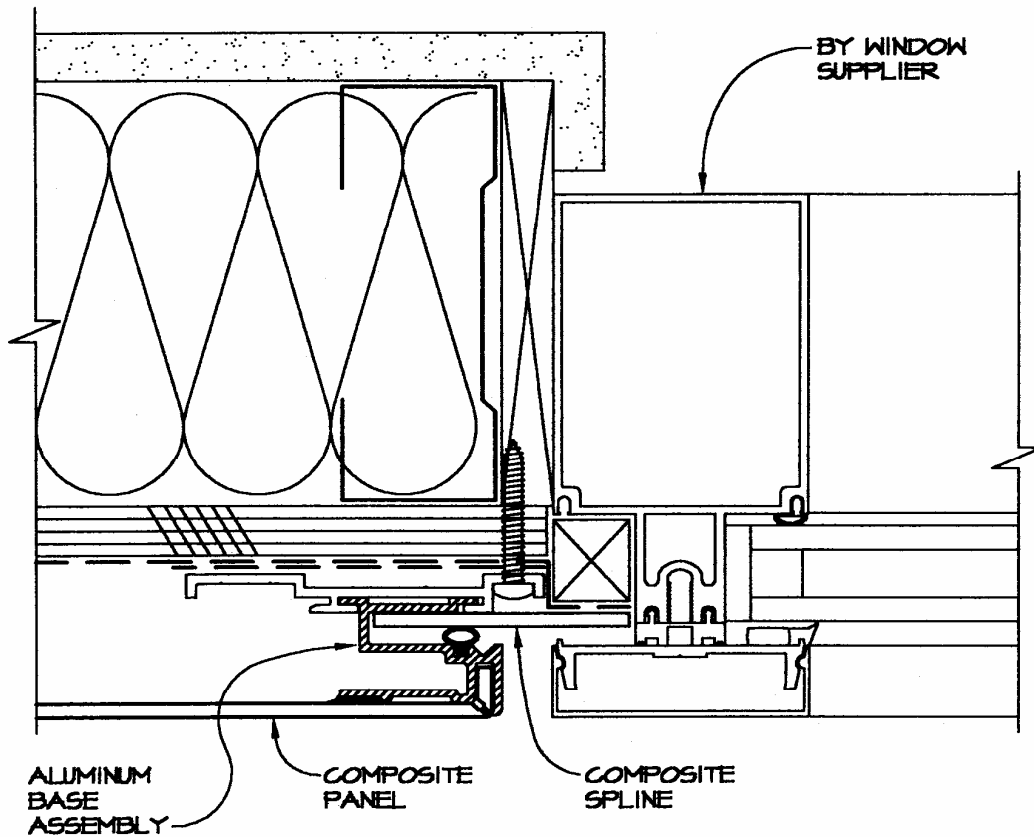
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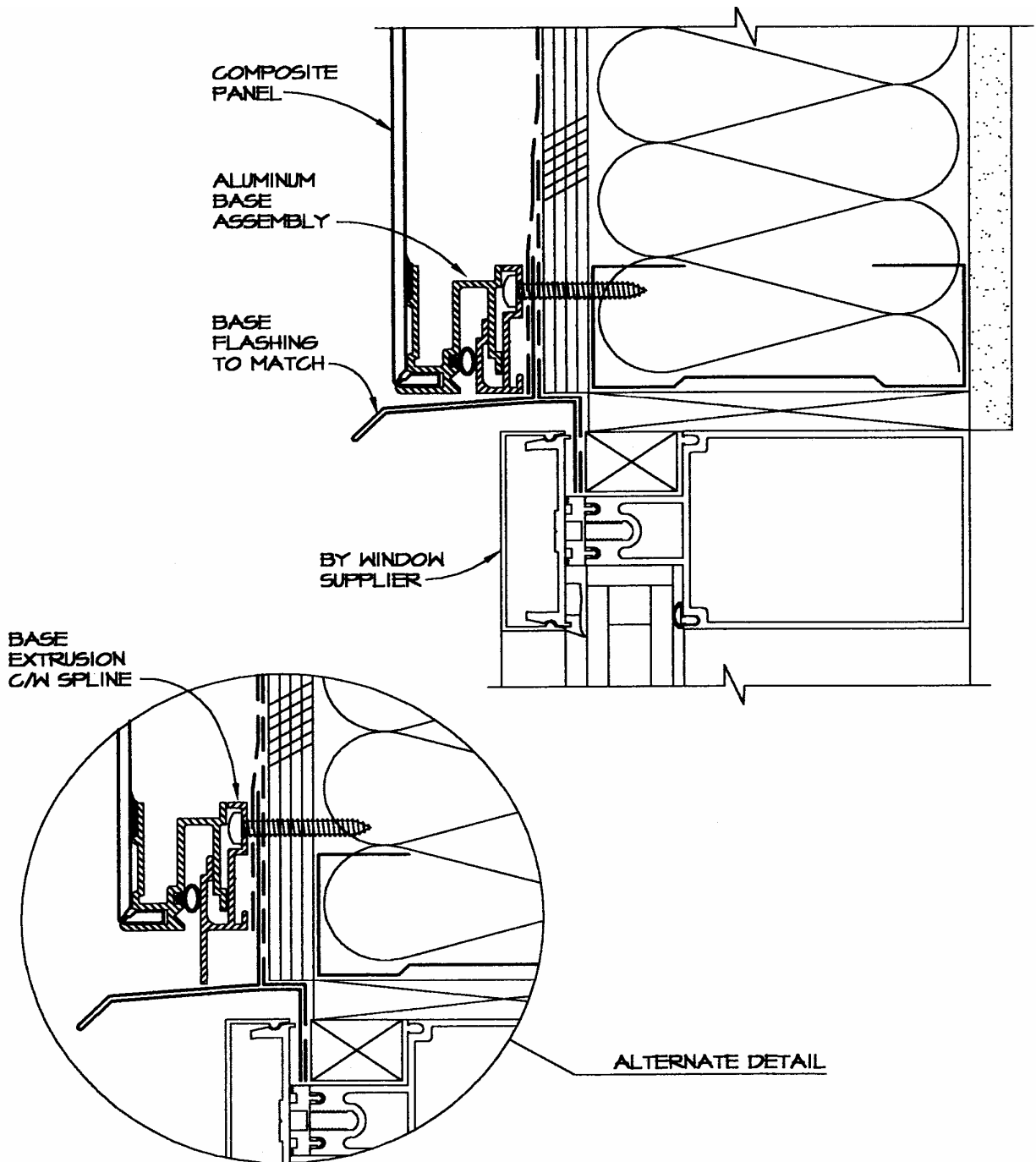
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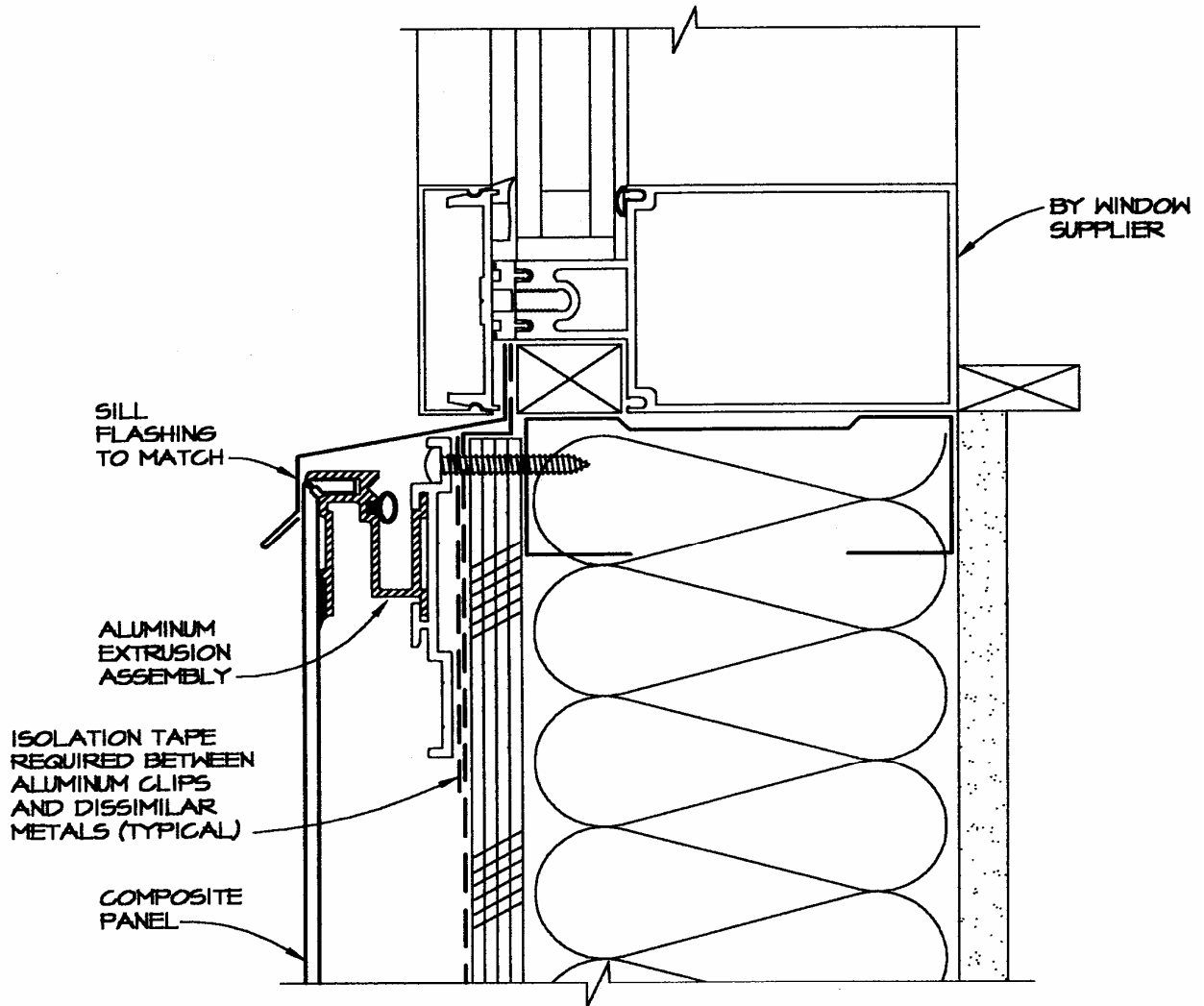
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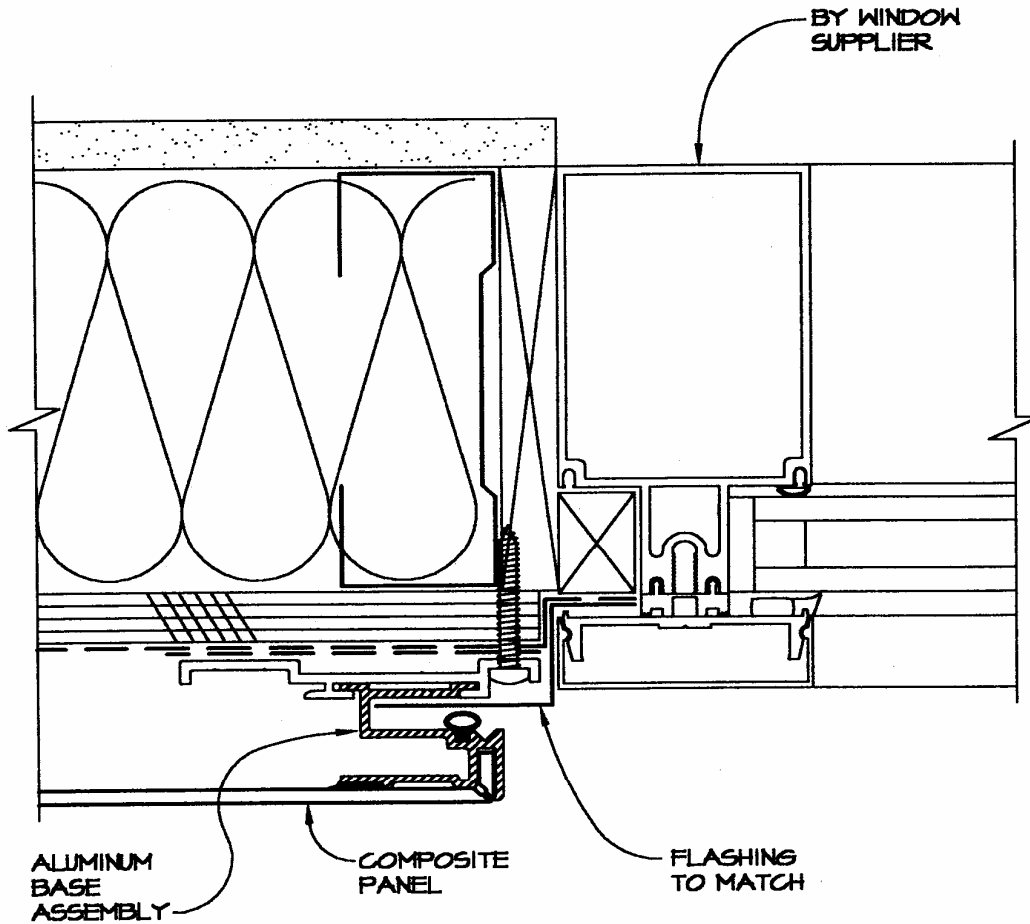
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COMPOSITE
PANEL

ALUMINUM
BASE
ASSEMBLY

BASE EXTRUSION
C/W SPLINE

ALTERNATE DETAIL

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REYNOBOND BASE DETAIL

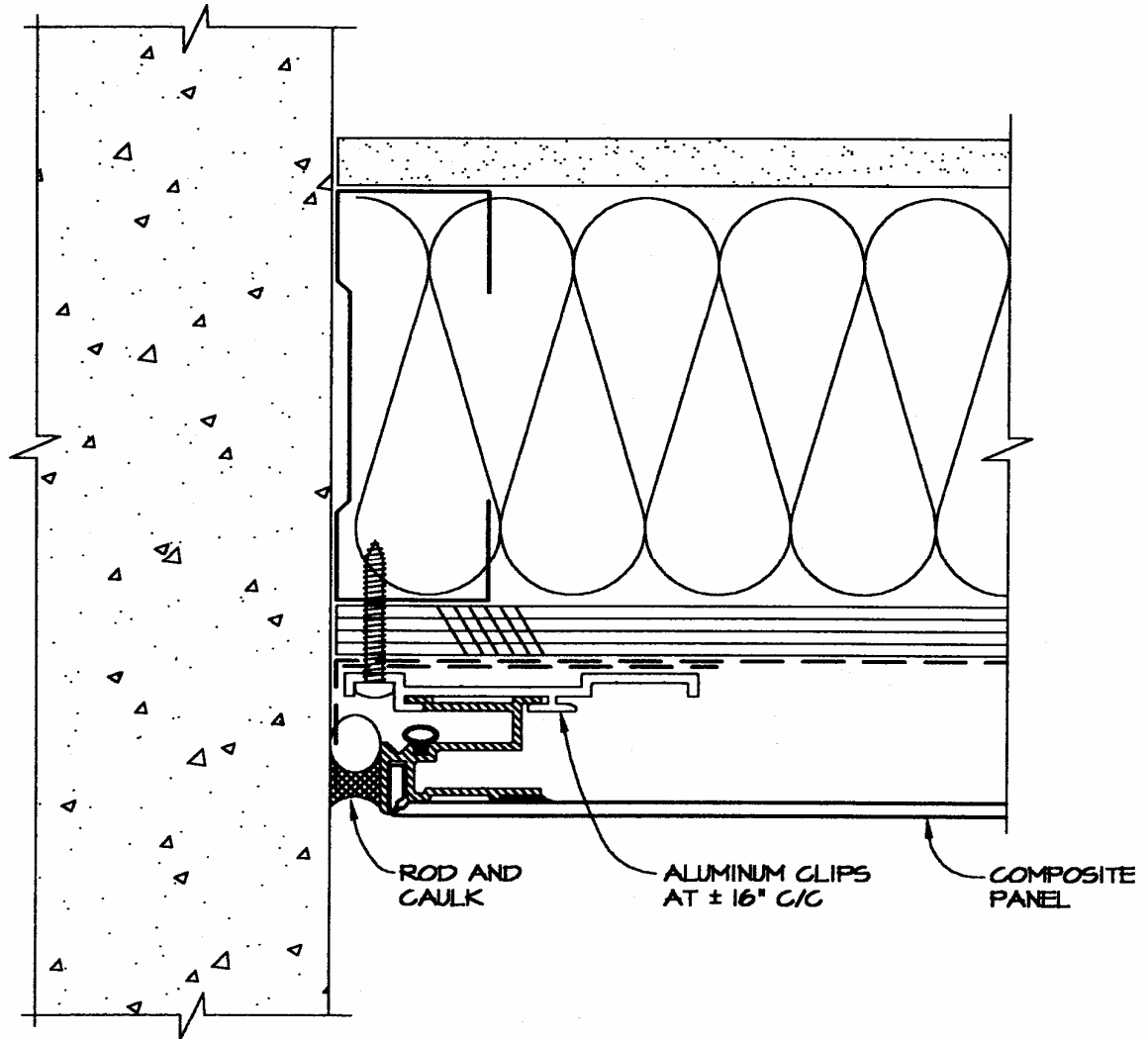
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DETAIL

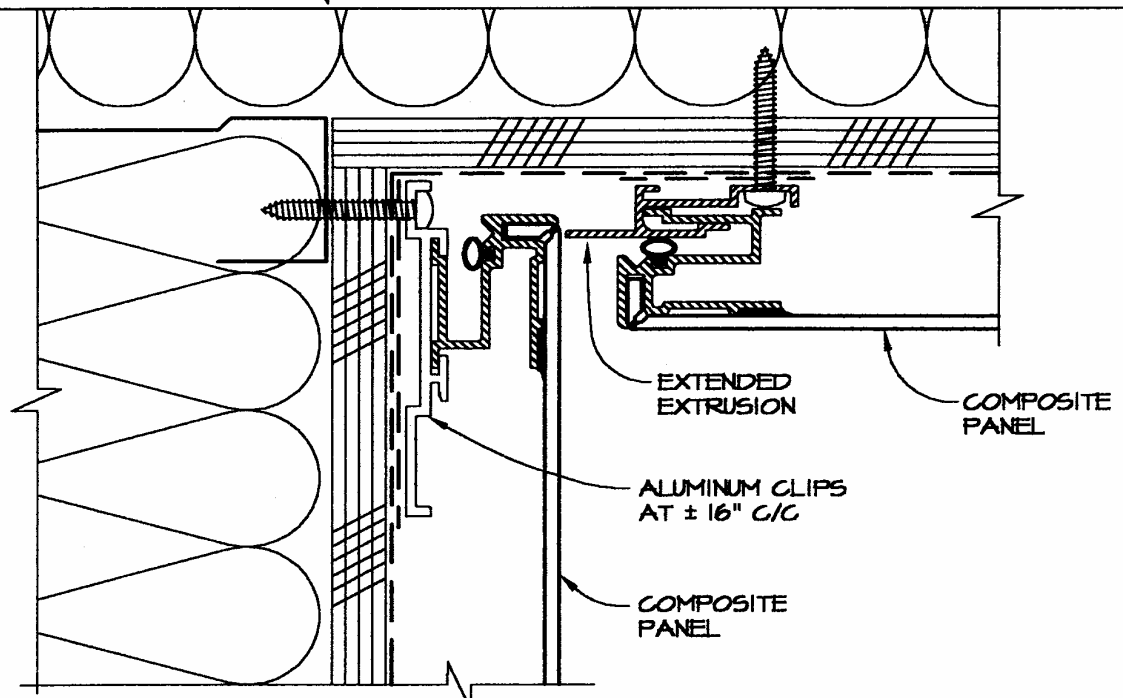
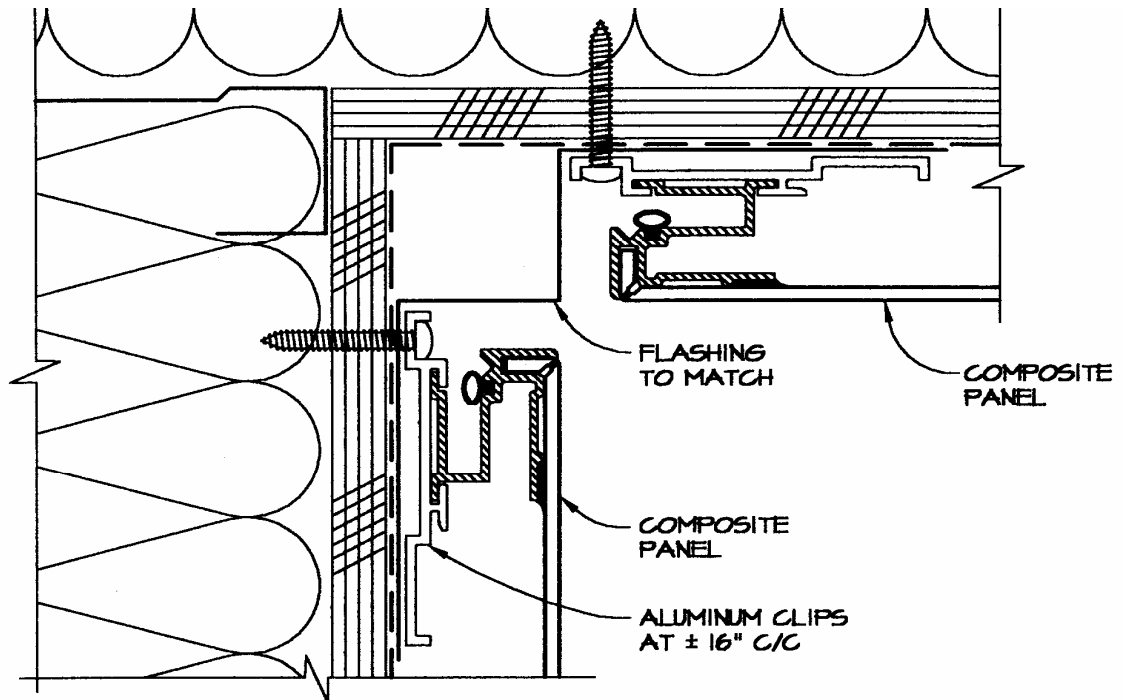
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CORNER

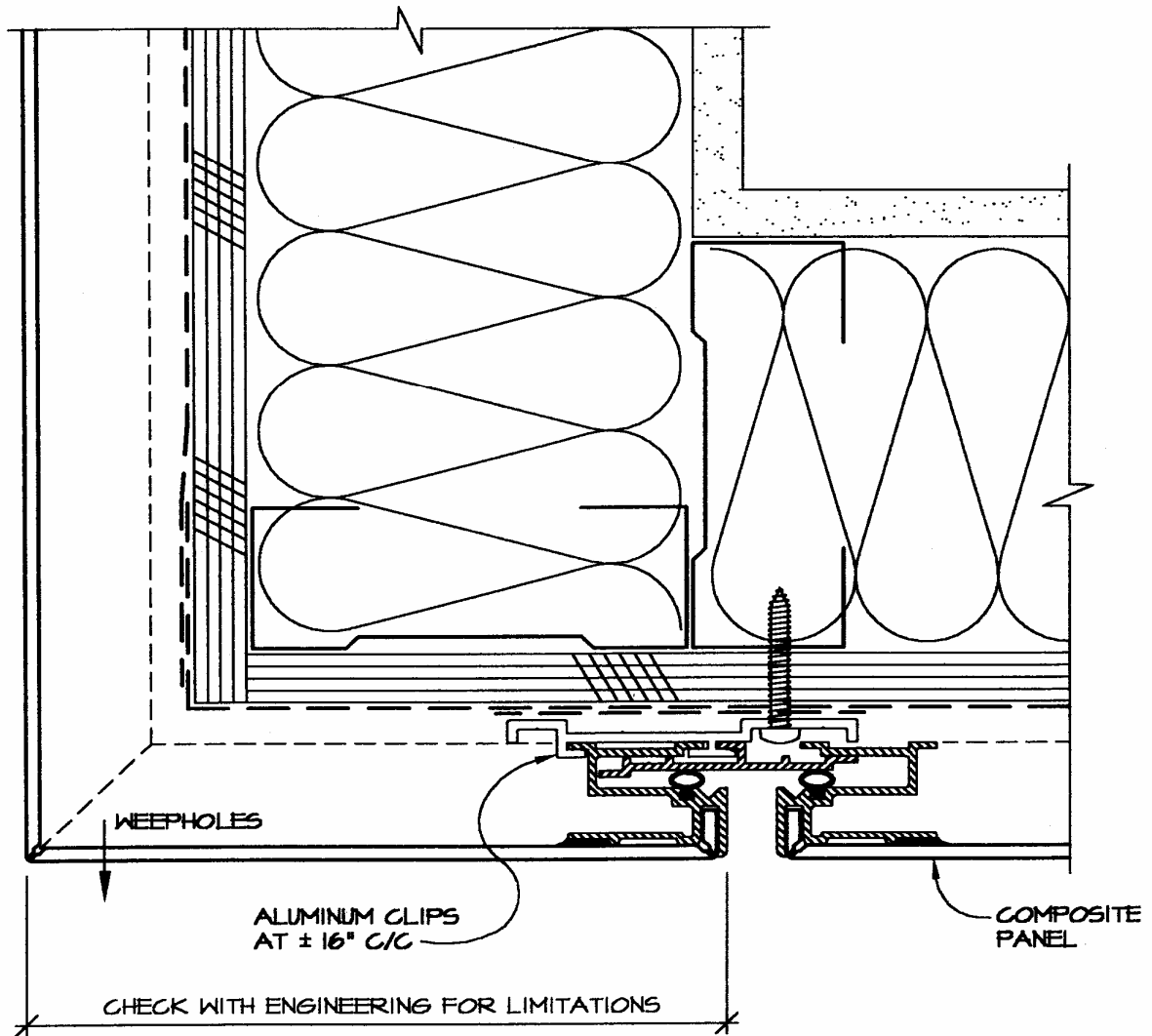
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DETAIL

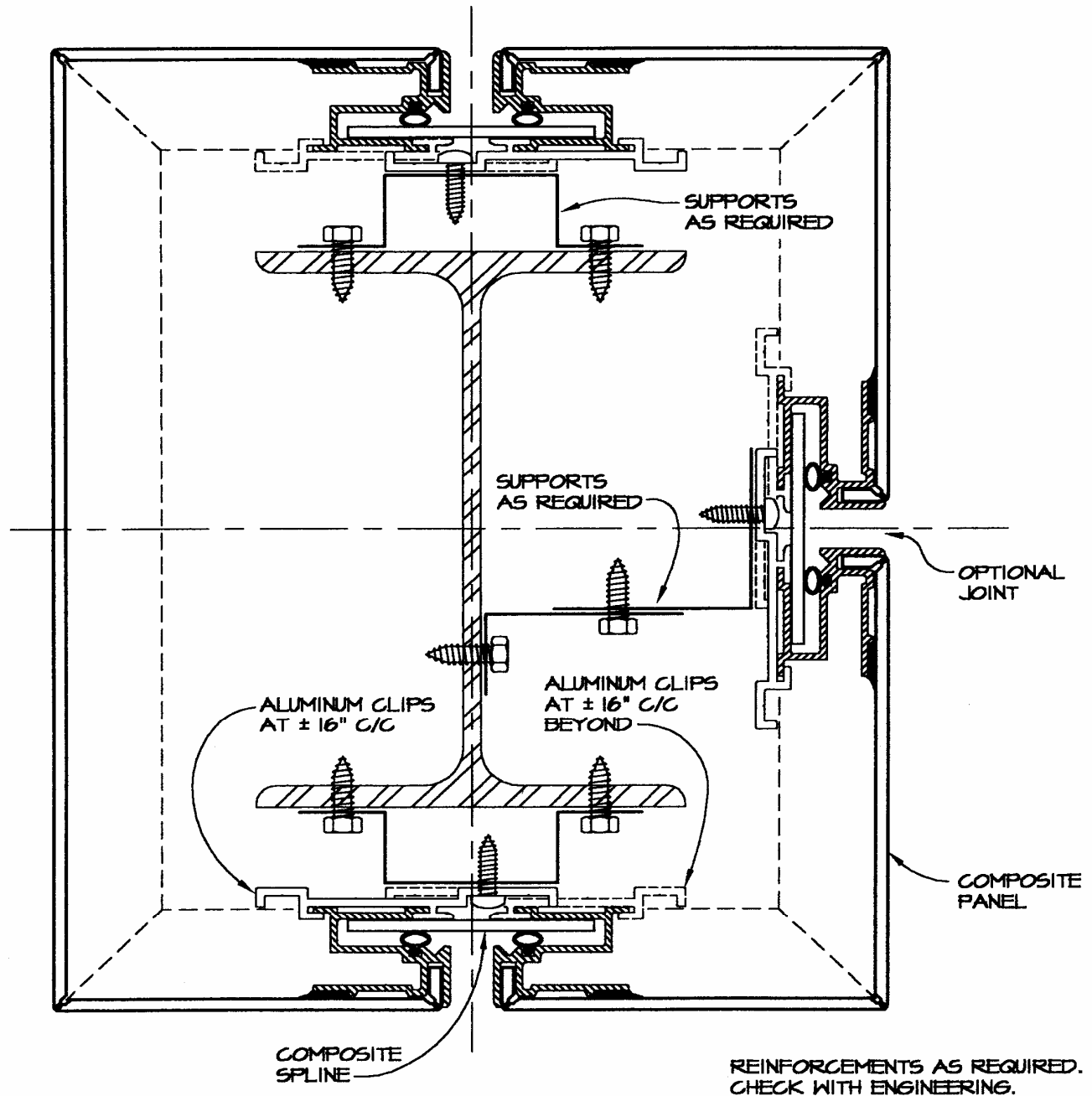
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REYNOBOND COLUMN
COVER

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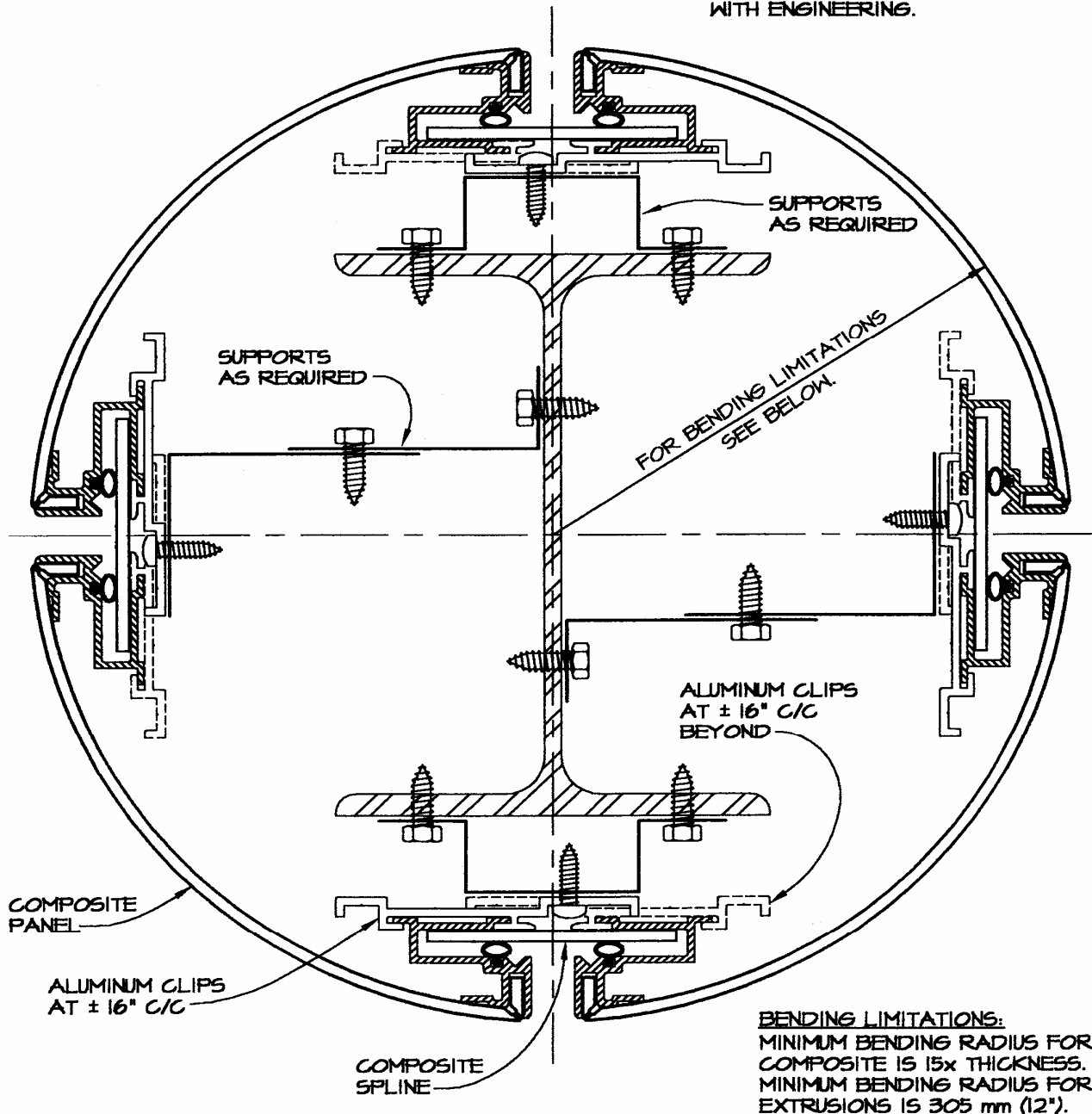
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