

EXCELLENCE
IN SOLUTIONS

FläktGroup
SEMCO

SEMCO PANEL Solutions Assembly



PANEL
SOLUTIONS

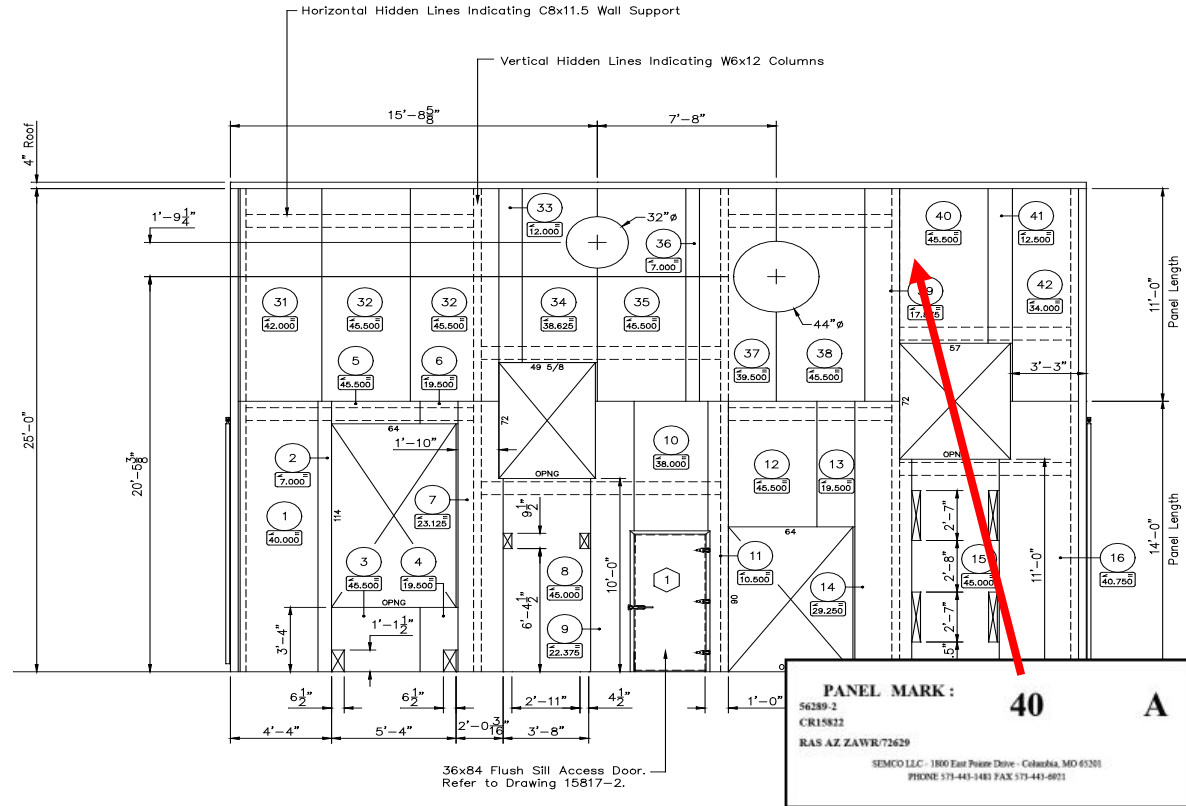
PANEL Solution Assembly:

- Assembly Packet
- Panel Arrival
- Important Notes
- Base Channel Assembly
- Wall Panel Installation
- Roof Panel Installation
- Trim Installation
- Connection Details



Assembly Packet Includes

- Full size 30"x42" D size Individual panel piece marked assembly drawings
- Assembly instructions
- Easy to read 1/4" scale
- Detailed bill of material
- Field applied sealant
- Tek screws for trim



Panels will arrive at the job site secured to custom built full size skids.

Level 2 packaging is available upon request.



Level 1 packaging

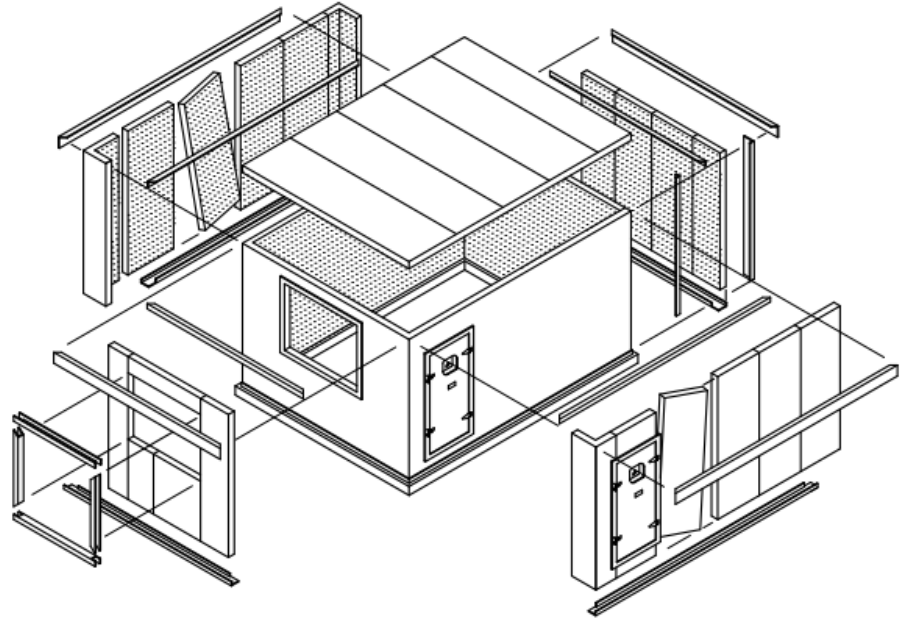


Level 2 packaging

Shows Finished Top Skid

Acoustic/Thermal Panel Systems Assembly Instructions

- Special instruction and/ or details on the panel layout drawings take precedence over assembly instructions.
- Butyl rubber sealant and Sikaflex are supplied they are to be stored and applied in accordance with manufacture's instructions.
- Check the shipment when it arrives against the bill of materials, notify SEMCO within seven days of receipt of any shortages or damages.



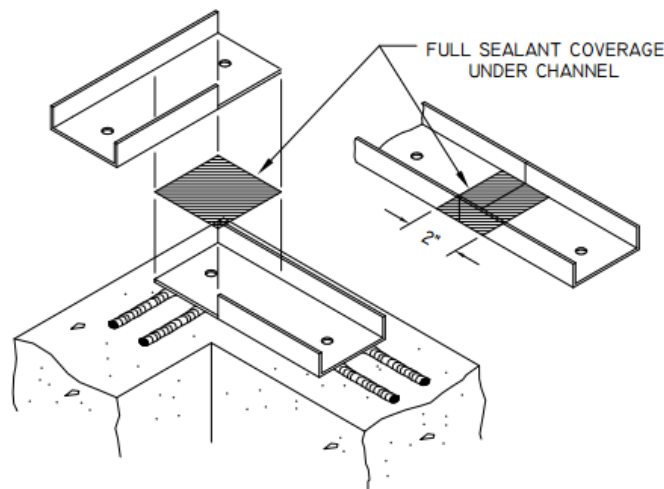
Step 1 – Base Channel

1.1 Using the plan view on the panel layout drawings, chalk a line, using the outside dimensions of the enclosure, directly on the curb (or finished structural floor.)

1.2 Base channels are supplied in 10ft. Lengths with 9/16" holes punched on 24" centers. Cut base channel to lengths required by the casing outline.

Straight joints are to be butted end-to-end and corner joints are to be lapped. (Figure 1)

Figure 1.

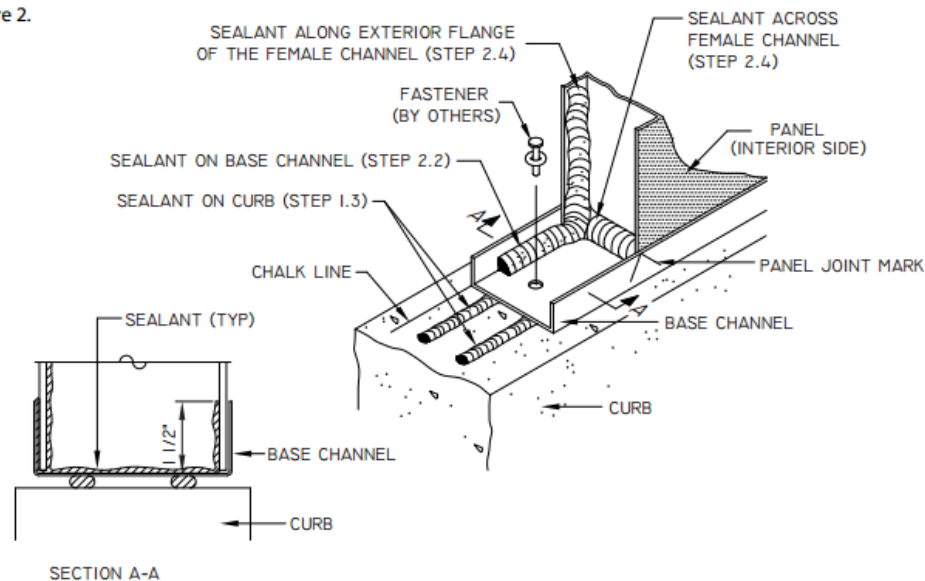


Step 1 – Base Channel

1.3 Sweep curb to remove all dust and debris prior to applying sealant. Apply two ½" continuous beads of butyl sealant directly on curb approximately ½" – 1" on either side of the base channel centerline. (Figure 2) Do not apply more sealant at one time than will be covered by the base channel within 15 minutes.

1.4 Place the base channel on sealant keeping the outside edge aligned with the chalk line. Secure base channel to curb with ramset, concrete anchor, expansion studs or other suitable fasteners with 2,000lbs. Shear and pullout (these fasteners are not supplied by SEMCO)

Figure 2.





SEMCO Panel Assembly

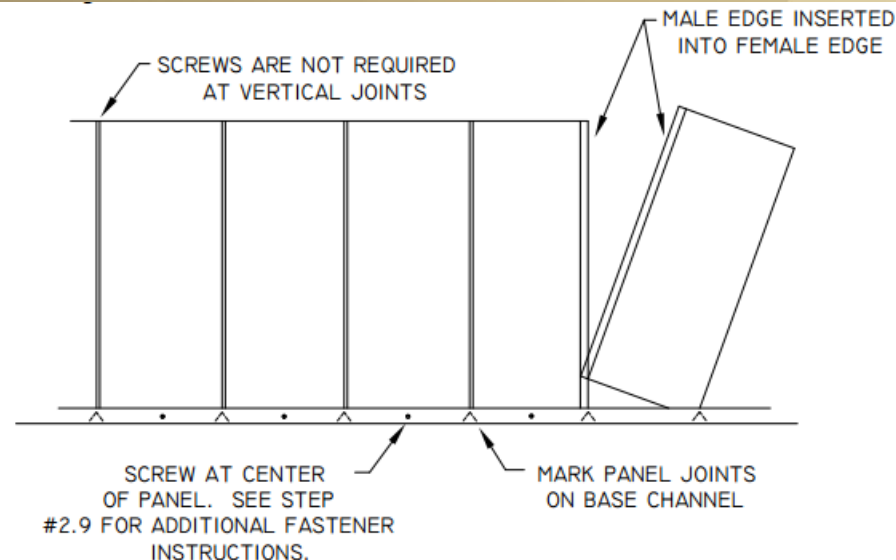
Step 2 – Wall Panel Installation

2.1 Using the panel layout drawings follow the wall panel sequence indicated. Beginning with wall #1, mark the dimensioned panel joint for each panel on the base channel for the entire perimeter of the casings. (figure 3) Take into account the exposed 1" male edge allowance where indicated on drawings.

This step will provide a reference point for the location of each panel and will serve to detect and correct any growth in the wall length.

2.2 Apply a $\frac{1}{2}$ " high by $\frac{1}{2}$ " wide continuous bead of butyl sealant to the outer flange of the base channel for a distance slightly greater than the panel to be installed. Do not apply sealant too far in advance to avoid premature curing or collection of debris.

Figure 3.



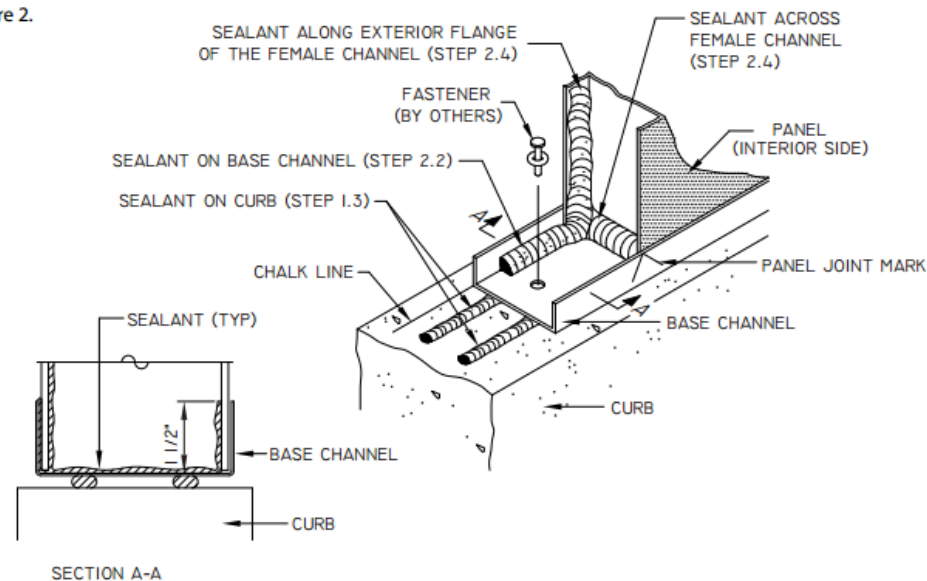
Step 2 – Wall Panel Installation

2.3 All panels are individually piece-marked as indicated on the panel layout drawings and are labeled with these mark numbers on each panel.

Install the first panel, keeping the panel joint aligned with the mark on the base channel. Make certain that the male (<) and female (=) edges are properly oriented as indicated on the panel layout drawings.

2.4 Plumb the panel and install a Tek screw through the base channel at the centerline of the panel, inside and outside (Figure 3.) Apply sealant generously the entire length of the exterior flange of the female channel; make certain that the sealant ties into the sealant in the base channel. Continue sealant across the female channel where it meets the base channel and 1 1/2" up the interior flange of the female channel. (Figure 2)

Figure 2.



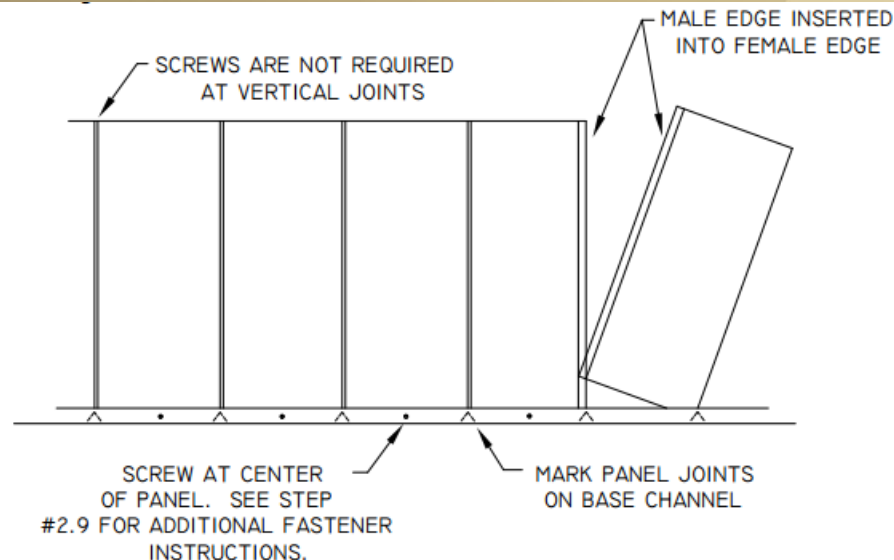
Step 2 – Wall Panel Installation

2.5 Install the next panel in sequence by placing the female edge near the next joint mark on the base channel. With the panel tilted about 12" above the base, slip the male edge into the female edge of the previously installed panel and lower male edge into place. (Figure 3) Keep in mind that the panels must be installed with the male edge inserted into the female edge.

Adjust the position horizontally so that the panel is centered between the joint line marks on the base channel. If necessary, carefully drive the panel into position by driving against a timber placed in the female channel of the panel. Take extreme care not to damage the roll-formed edges.

2.6 Install a Tek screw on the inside of the panel joint 3" below the top to maintain plumb; however, no additional screws are required in vertical joints for structural rigidity.

Figure 3.





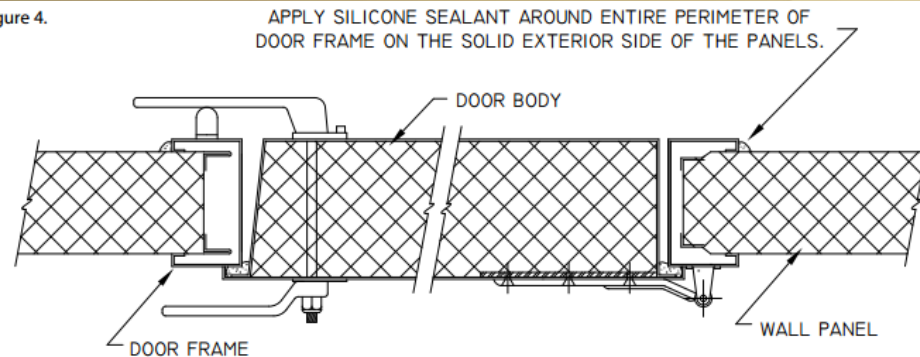
Step 2 – Wall Panel Installation

2.7 Continue installing panel as described following the sequence shown on the panel layout drawings. As each panel is installed, the joint line mark previously placed on the base channel will verify the location of each panel point.

2.8 Door frame installation must coincide with the panel installation. It is impossible to put them in at a later date. Doors must be installed to open against air pressure to ensure an airtight seal. Caulk the exterior perimeter of the door frame with silicone sealant. (Figure 4)

2.9 IMPORTANT: After installation of all wall panels is complete, Tek screw both sides of base channel through each panel joint and at 12: on center between joints.

Figure 4.





SEMCO Panel Assembly

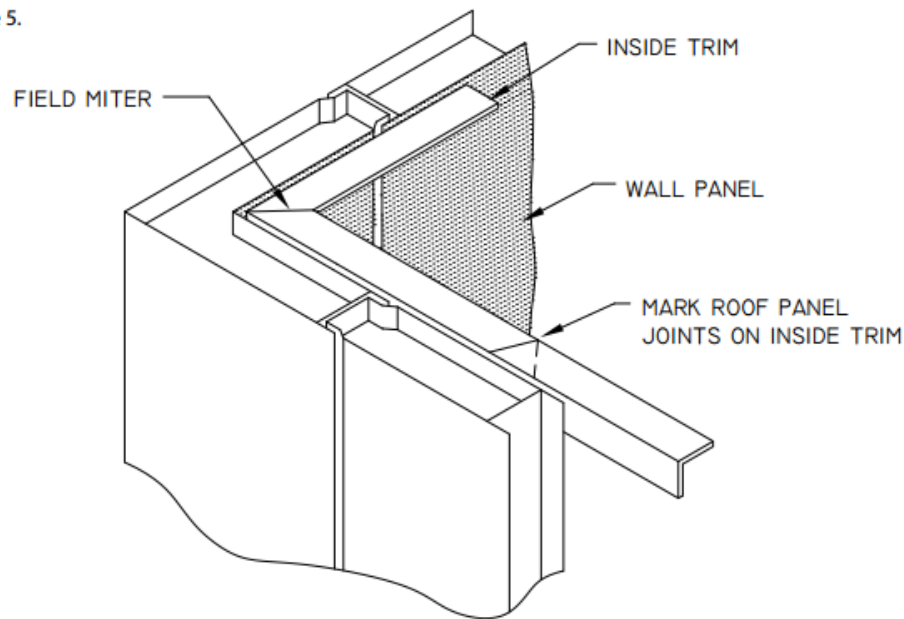
Step 3 – Roof Panel Installation

3.1 Review the roof plan on the panel layout drawings and locate roof panels. If structural reinforcement is required, it must be installed prior to the roof panels.

3.2 Install inside trim at the joint where the roof and walls meet. The upper edge of the trim must be level and flush with the highest point of the wall panels. (Figure 5) Fasten the trim to the assembled wall panels with Tek screws through every panel joint and at 12" on center between joints.

3.3 Mark roof panel joints (as dimensioned on the panel layout drawings) on the inside trim before installing roof panels. (Figure 5) Take into account the 1" male edge allowance where indicated on the drawing.

Figure 5.



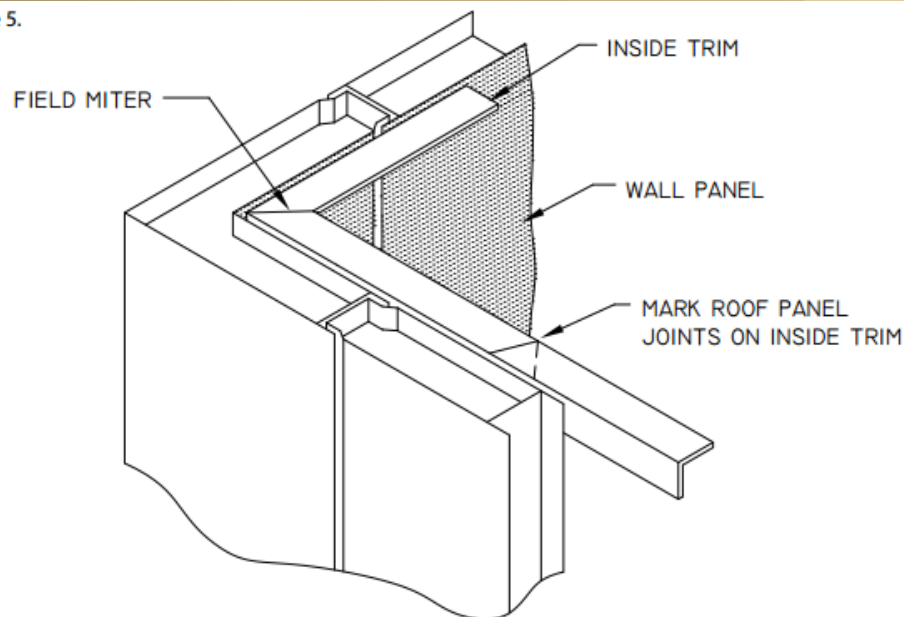
Step 3 – Roof Panel Installation

3.4 Install the first roof panel keeping the joint aligned with the mark on the inside trim. Square the panel with the walls and fasten both ends of the roof panel through the inside trim near the centerline of the panel with Tek screws. Make certain that the male (<) and female (=) edges are properly oriented as shown on the panel layout drawings. Keep in mind that the panels must be installed with the male edge inserted into the female edge.

3.5 Apply sealant generously to the exterior flange in the female channel on the previously installed roof panel and install next panel. Again, it is important to maintain proper alignment with the joint line marks on the inside trim.

3.6 After installation of all roof panels is complete, Tek screw inside trim through roof panel joints, internal channels, and at 12" on center.

Figure 5.

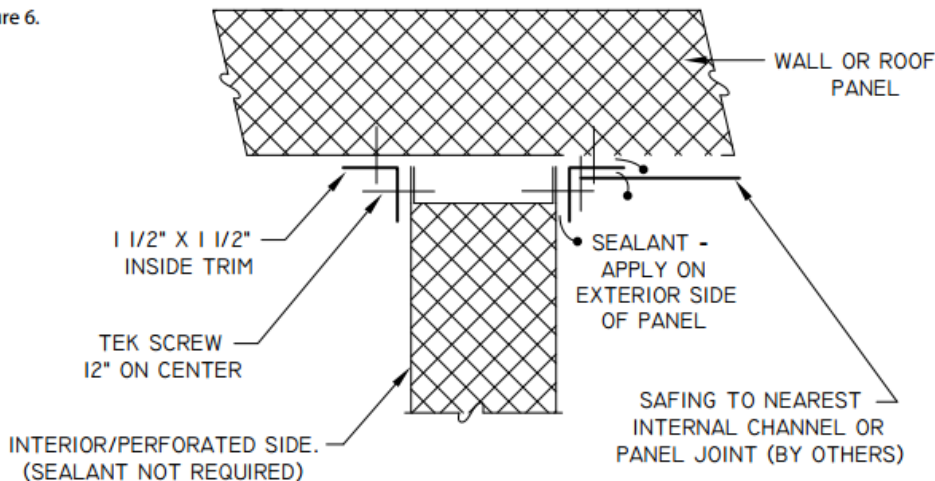


Step 4 – Trim Installation

4.1 All trim is supplied in 10 ft. lengths to be field cut to length as necessary. Trim is to be secured to panels with self-drilling Tek screws through each panel joint, internal stiffener and at 12" on center.

4.2 Install inside trim where interior wall panels meet exterior wall panels. (Figure 6) Sealant is not required for trim pieces that are joined to interior, perforated panel skin (Figure 6).

Figure 6.

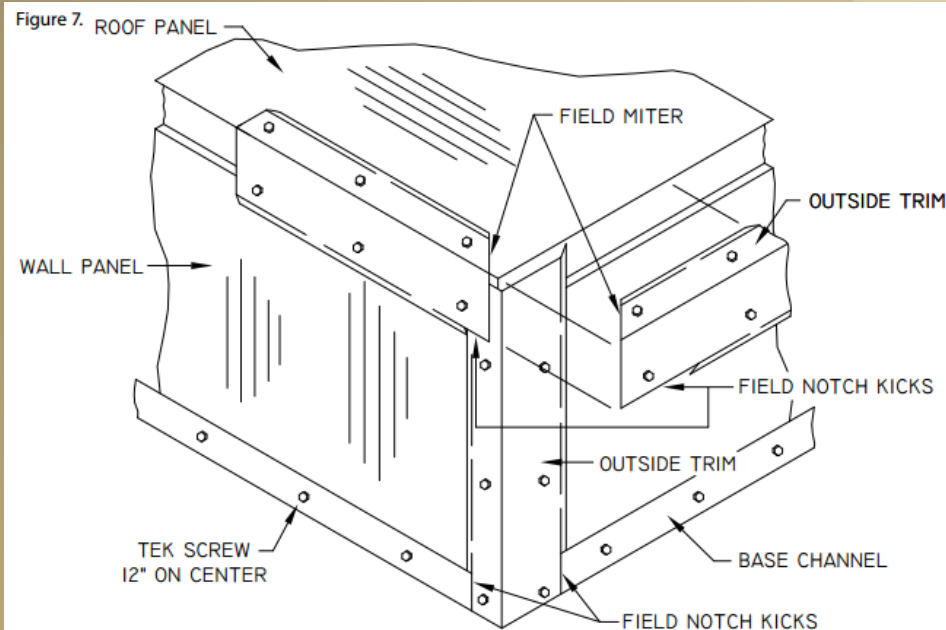




Step 4 – Trim Installation

4.3 Apply butyl sealant to both legs of outside trim and install vertical outside trim where preformed corner panels are not used. Attached the trim such that it runs from the top of the roof panels to the curb overlapping the base channel. Field notch kicks at trim overlapping the base channel. (Figure 7)

Attach vertical inside trim along interior corners where preformed corner panels are not used.



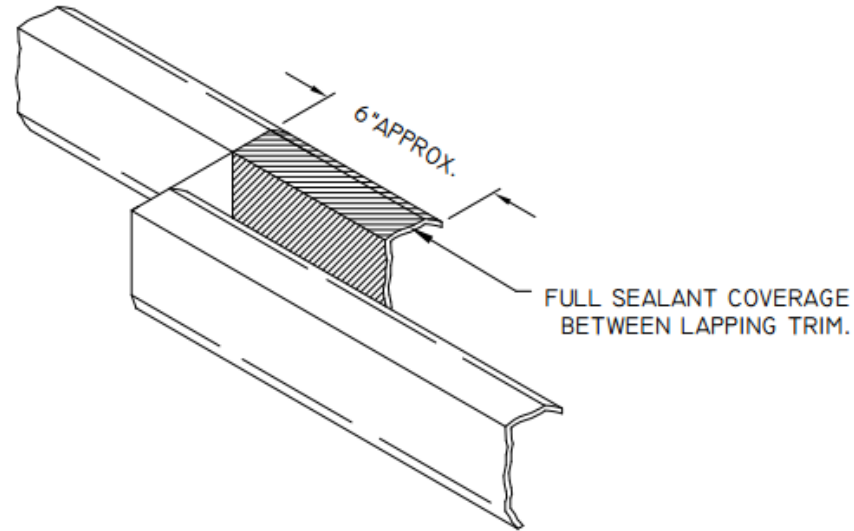


Step 4 – Trim Installation

4.4 Apply butyl sealant to both legs of horizontal outside trim and fasten to roof and wall panels providing a tight seal. (Step #4.1) Field notch kicks at trim overlap and miter as required. (Figure 7)

4.5 Where splices are necessary, overlap and 1" beyond. (Figure 8)

Figure 8.



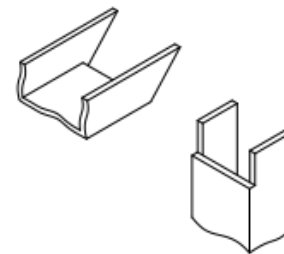
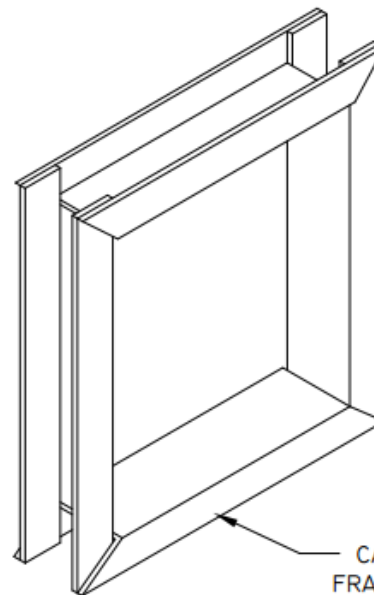


Step 4 – Trim Installation

4.6 Cap channel is supplied for trimming all exposed panel edges and framing all rectangular openings in the enclosure. Field cut and install cap channel to form a false miter. (Figure 9) Apply butyl sealant along panel exterior edge and fasten cap channel to panels with Tek screws at 12" on center.

4.7 Special trim applications not pictured in this presentation may be required on a particular enclosure and will be detailed on the final panel layout drawings.

Figure 9.



FIELD CUT AND INSTALL
CAP CHANNEL TO FORM
A FALSE MITER

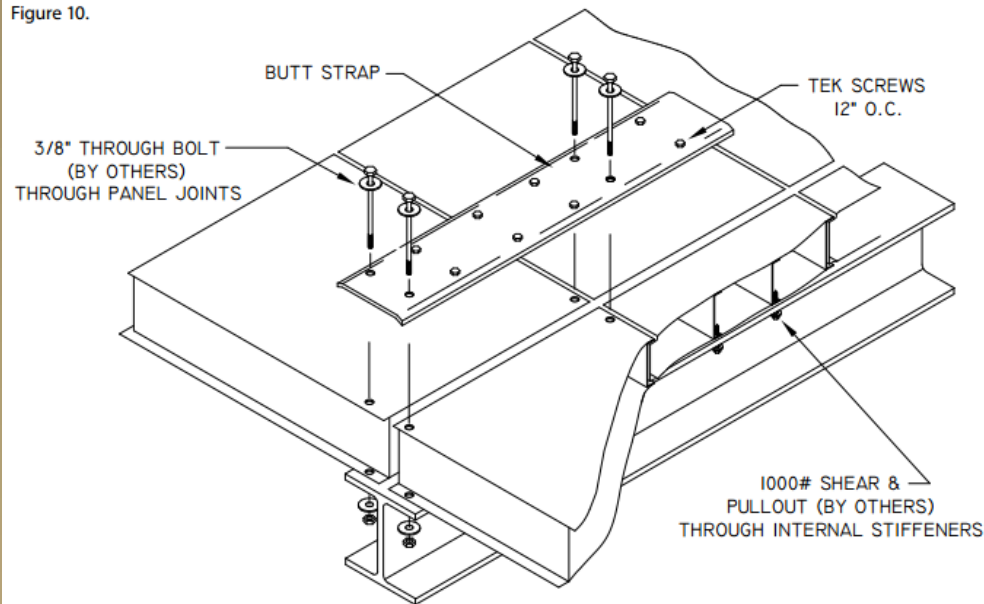
Step 4 – Trim Installation

4.8 Structural steel must be field welded and secured in place as necessary. All structural steel is to be secured to panels through tongue and groove panel joints and internal panel stiffeners with a fastener rated at a minimum of 1,000 lbs. shear and pullout.

In positive pressure areas, steel will require additional through bolts through tongue and groove panel joints to prevent uplift of panels at operating pressures. (Figure 10)

SEMCO does NOT provide any fasteners for securing structural steel.

Figure 10.



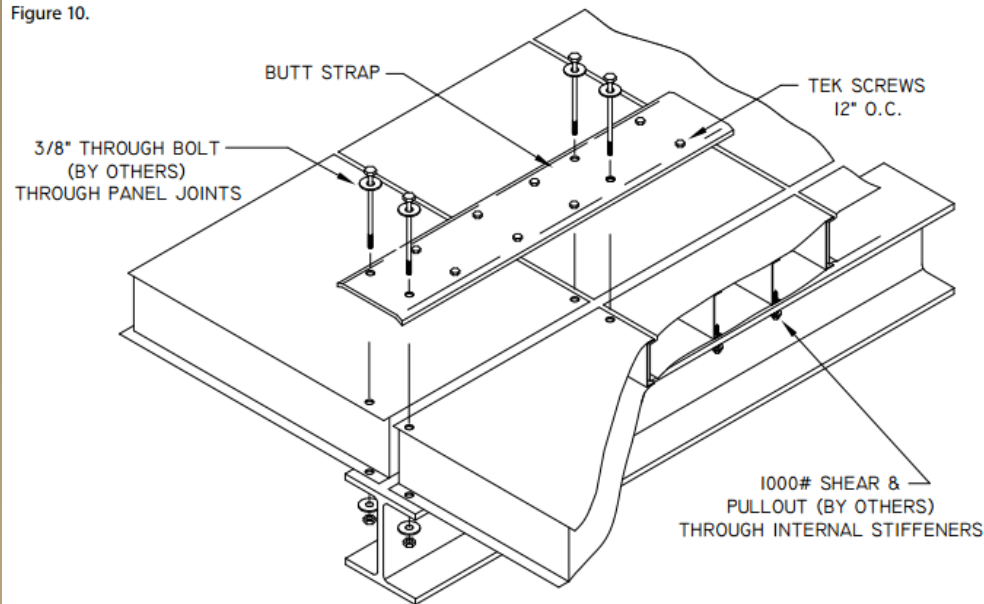
APPLICATION: ROOF SUPPORT WITH PANEL BREAK POSITIVE PRESSURE AREA

Step 4 – Trim Installation

4.9 On enclosures where SEMCO is supplying structural steel, that steel will be supplied in standard 10' and 20' lengths to be field cut as necessary.

4.10 Refer to panel layout drawings for further details for structural steel reinforcement.

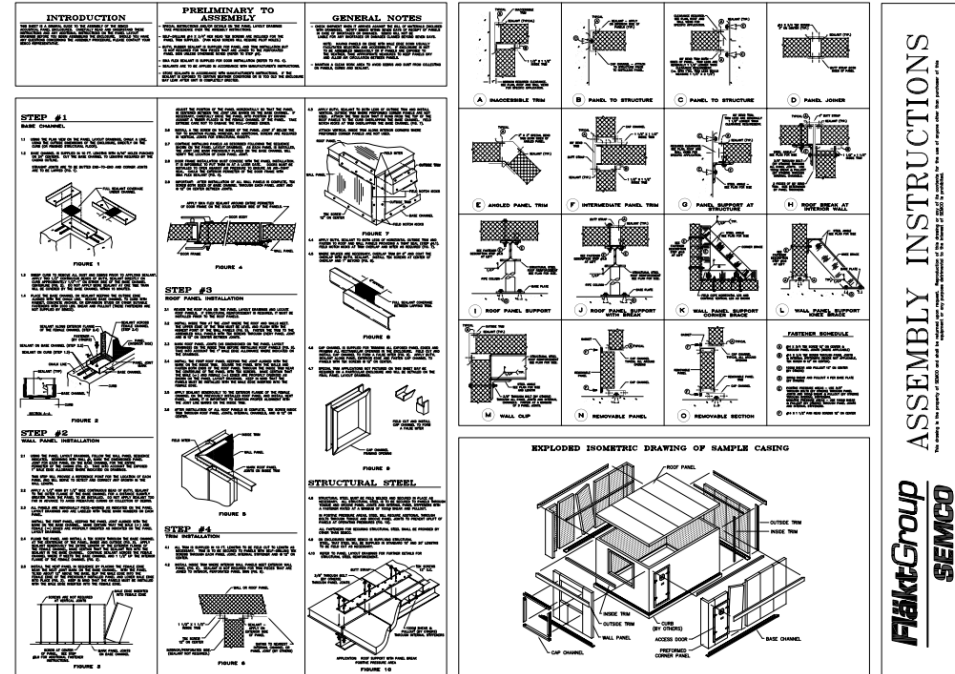
Figure 10.



APPLICATION: ROOF SUPPORT WITH PANEL BREAK POSITIVE PRESSURE AREA

SEMCO Panel Assembly

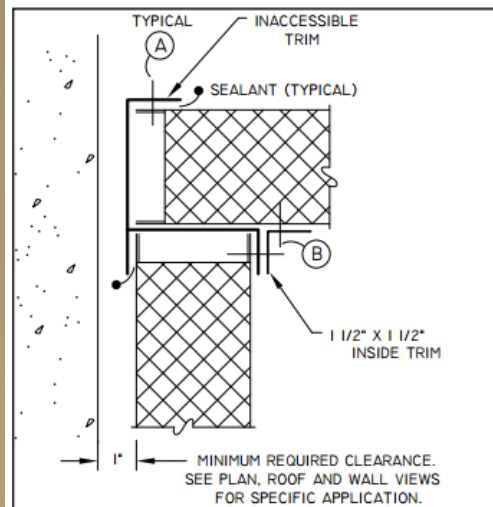
SEMCO will provide a full library of connection details for your project.



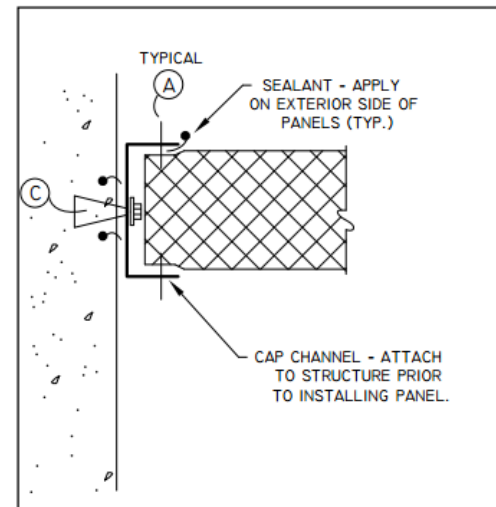
Fastener Schedule

- (A) #14 X 3/4 TEK SCREW 12" ON CENTER & THROUGH PANEL JOINTS (WHERE APPLICABLE)
- (B) #14 X 3/4 TEK SCREW THROUGH PANEL JOINTS & INTERNAL STIFFENERS (WHERE NOT APPLICABLE, TEK SCREW @ 12" ON CENTER).
- (C) 1000# SHEAR AND PULLOUT 12" ON CENTER (BY OTHERS)
- (D) 2500# SHEAR AND PULLOUT 4 PER BASE PLATE (BY OTHERS)
- (E) POSITIVE PRESSURE AREAS - USE 3/8" THROUGH BOLTS (BY OTHERS) THROUGH PANEL JOINTS AND 1000# SHEAR & PULLOUT (BY OTHERS) THROUGH INTERNAL STIFFENERS.
NEGATIVE PRESSURE AREAS - USE 1000# SHEAR & PULLOUT (BY OTHERS) THROUGH PANEL JOINTS AND INTERNAL STIFFENERS.
- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

A. Inaccessible Trim



B. Panel to Structure



- (A) #14 X 3/4 TEK SCREW 12" ON CENTER & THROUGH PANEL JOINTS (WHERE APPLICABLE)
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- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

#14 X 3/4 TEK SCREW
3" ON CENTER (TYP.)

SEALANT (TYP.)

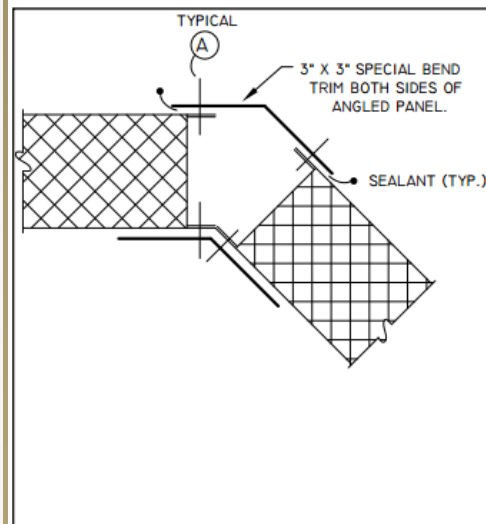
BUTT STRAP BOTH
SIDES OF PANEL

This diagram shows a cross-section of a panel joint. Two panels, represented by cross-hatching, are joined by a central butt strap. Two screws are shown passing through the panels and the strap. A sealant is applied to the joint between the panels. Labels with arrows point to the screws, the sealant, and the butt strap.

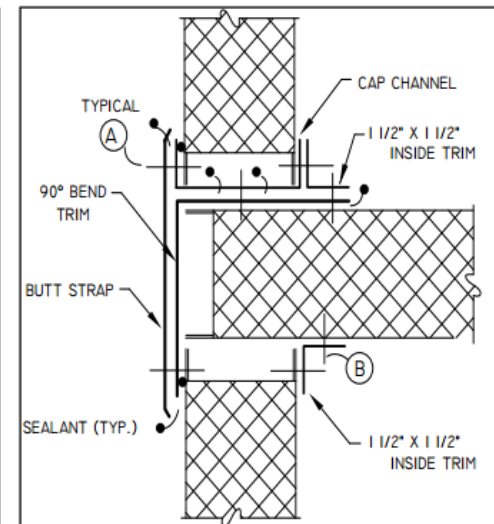
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- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

E. Angle Panel Trim



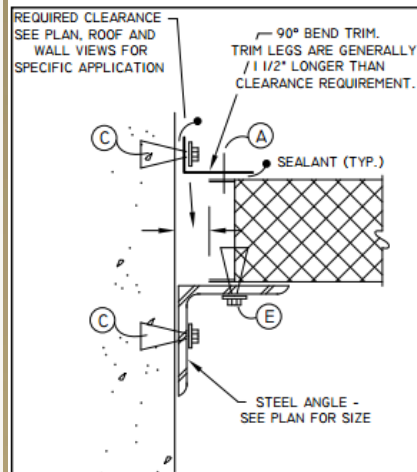
F. Intermediate Panel Trim



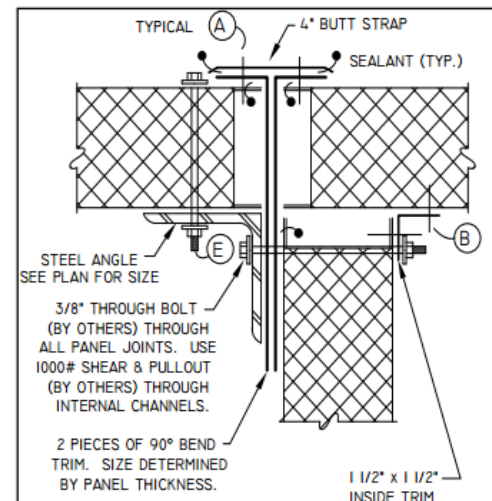
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- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

G. Panel Support at Structure



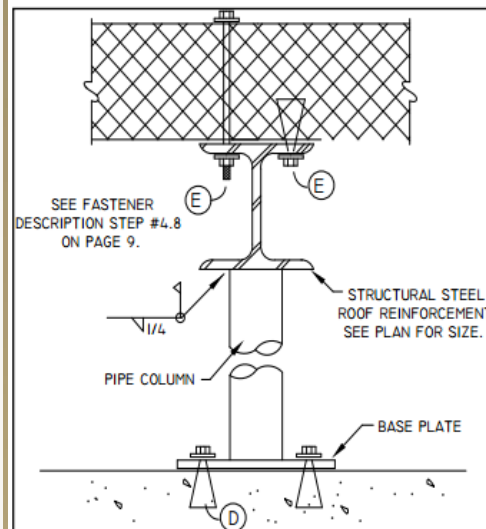
H. Roof Break at Interior Wall



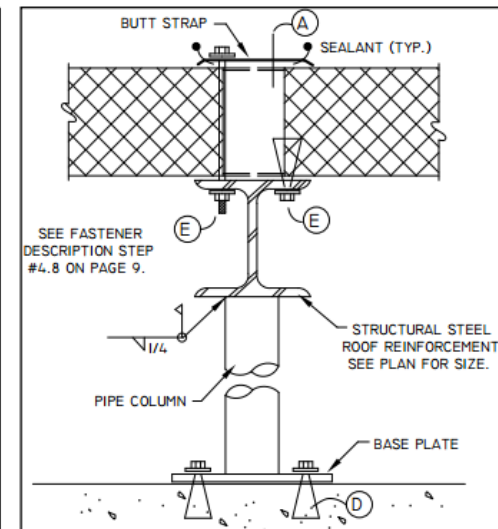
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- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

I. Roof Panel Support



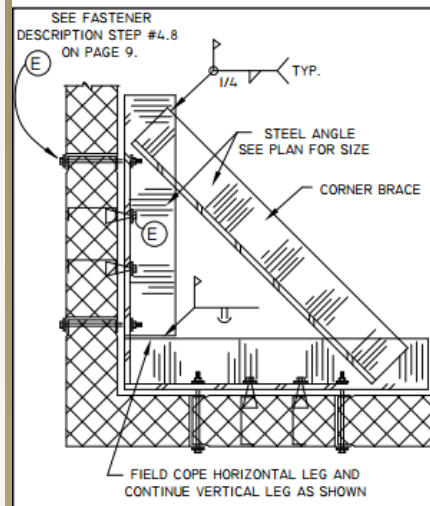
J. Roof Panel Support with Break



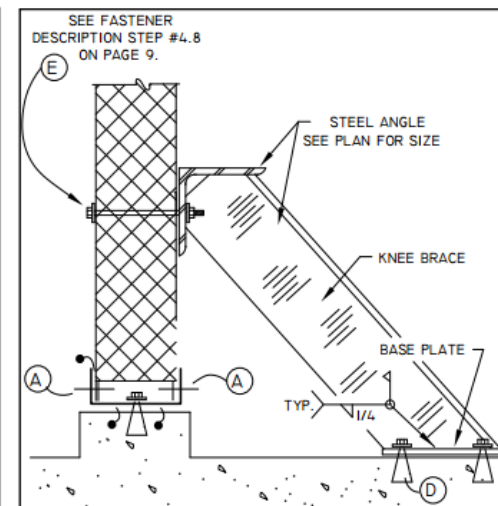
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K. Wall Panel Support Corner Brace



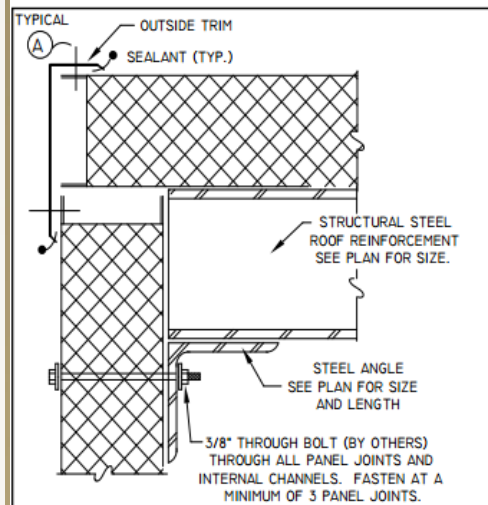
L. Wall Panel Support Knee Brace



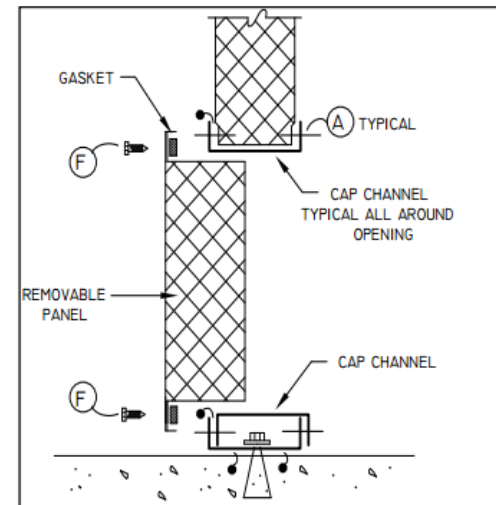
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- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

M. Wall Clip

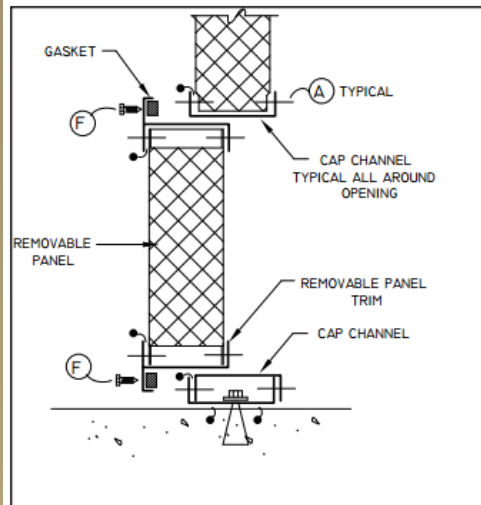


N. Removable Panel



SEMCO will provide any and all unique job specific connection details that are required to complete your project.

O. Removable Section



Fastener Schedule

- (A) #14 X 3/4 TEK SCREW 12" ON CENTER & THROUGH PANEL JOINTS (WHERE APPLICABLE)
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- (F) #14 X 1 1/2" PAN HEAD SCREWS 12" ON CENTER

- Cost Reduction
- Time-savings
- Engineered Performance
- Simplified Project Management

Questions?



We're ready to work to save you time and money.

FläktGroup SEMCO has the specialized skills,
broad experience, and technological expertise to
successfully complete your project.

Thank you.

BMS

m^3/h

Life Cycle Cost

Air Comfort

Efficiency

Sustainability

