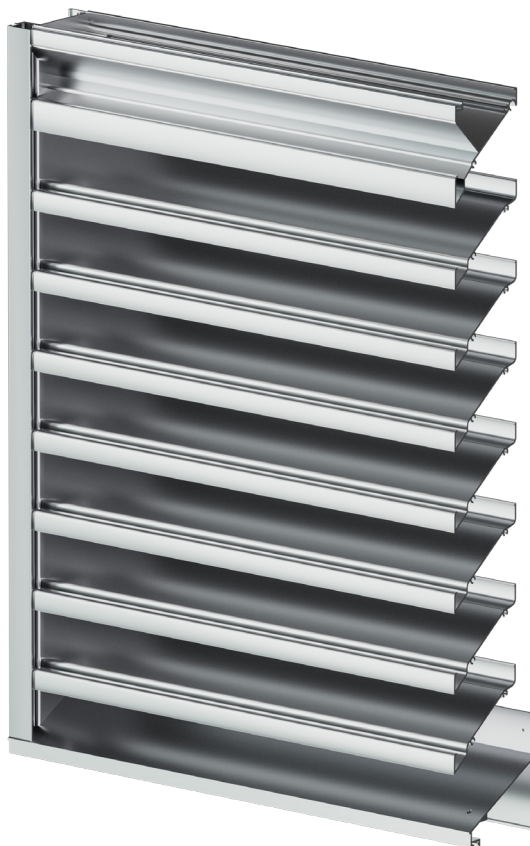


## Installation, Operation and Maintenance Manual

Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.



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### Receiving and Handling

Upon receiving louvers, check for both obvious and hidden damage. If damage is found, record all necessary information on the bill of lading and file a claim with the final carrier. Check to be sure that all parts of the shipment, including accessories are accounted for.

### Safety Warning

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

# General Louver Installation Instructions

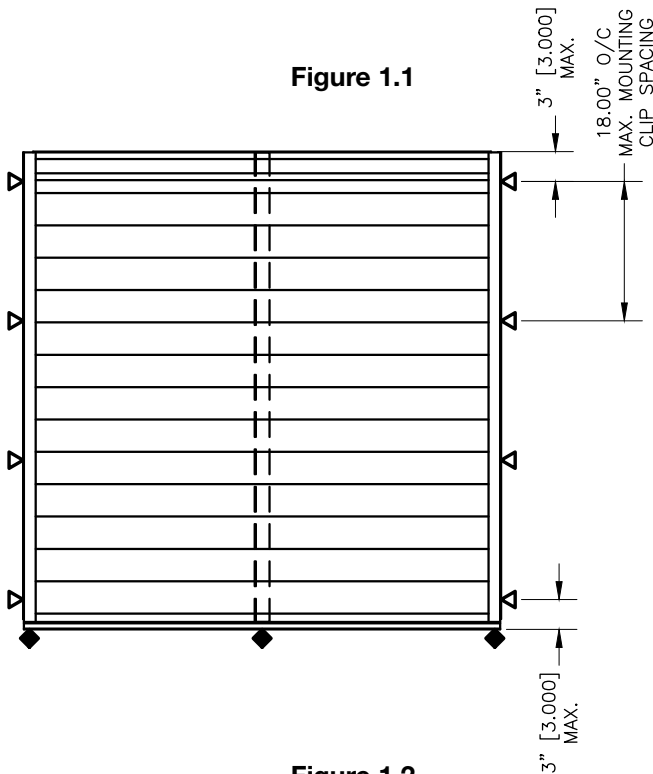
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## Installation Instructions

1. Locate all crates, boxes, cartons, etc.
2. Use care when handling louver sections to prevent damage. Louvers are to be carefully lifted by the louver frame or supports. Use multiple lifting points when possible to avoid deformation or distortion of louver components. **DO NOT LIFT LOUVERS BY THE LOUVER BLADES.** Use appropriate caution to prevent damage to the louver finish.
3. Remove louvers and any provided accessories from the packaging and inspect for damages. Verify louver dimensions and that all required pieces are present.
4. Single section louvers will ship fully assembled. Multiple section assemblies will ship as individual louver sections to be combined into the larger assembly at installation. Large multiple section louver assemblies may ship in multiple crates.
5. All louver sections will have a factory applied louver label affixed. This label will identify the louver size and a Tag identification if one was provided during the order process.
6. Verify that all required installation hardware is available, to include mounting angles and fasteners (customer provided or optional manufacturer provided). Inspect the opening for any damage or issues that may affect installation of the louvers. Remove any obstructions or debris as required. Adequate substrate depth must be verified.
7. Check the dimensions of the opening to verify the louver will fit correctly. Check the opening is square and plumb.
8. Louvers are custom built per order to fit the application and do not need to be field cut or modified. Check the dimensions of the louver to ensure fit prior to installation.

## Single Section Wide x Single Section High Installation

Figure 1.1



1. Locate the optional extended sill, if provided, and place in the opening. ([Extended Sill Details](#))
2. Locate mounting angles and fasteners required to attach the louver to the structure. Clip angles and fasteners are by others unless the optional mounting angles have been ordered from manufacturer with the louvers. Anchors to the structure are by others and are not manufacturer provided. ([Mounting Clip Details](#))
3. Place the louver in the opening and shim around the perimeter to maintain proper spacing for backer rod and caulk joint.
4. Using the appropriate fasteners, secure the mounting angles to the back of the louver frame at the perimeter.
5. Ensure the louvers is level and in the correct location within the opening and secure the mounting angles to the structure using the correct anchor (by others) for the building substrate material.
6. Once the louver is secured to the structure, install backer rod and caulk around the perimeter of the opening at the front of the louver.

Figure 1.2

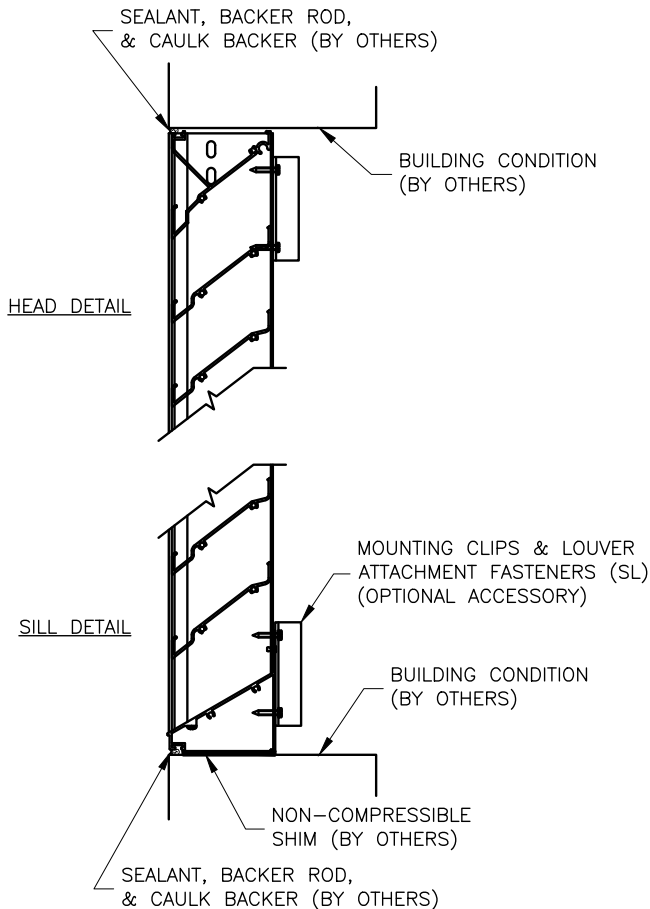
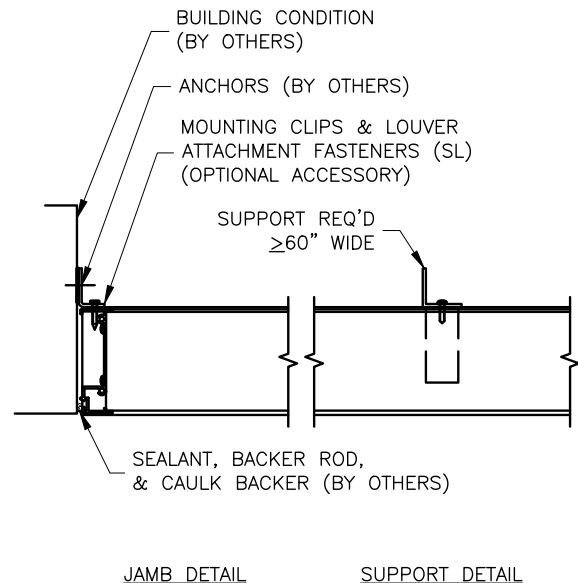
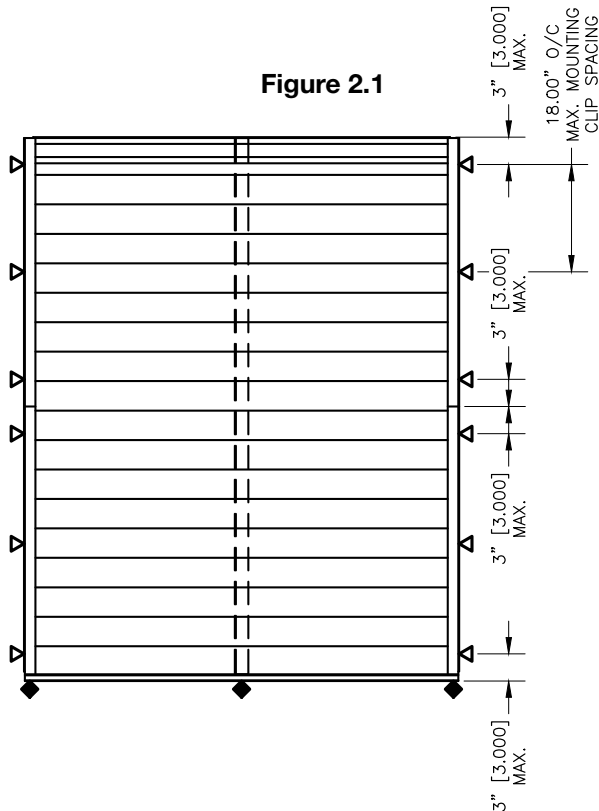


Figure 1.3

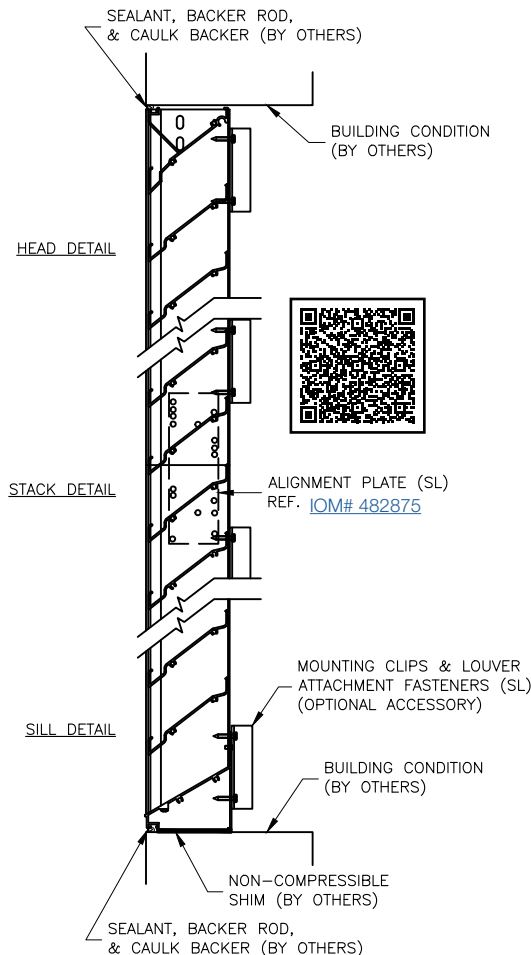


# Single Section Wide x Multiple Section High Installation

**Figure 2.1**

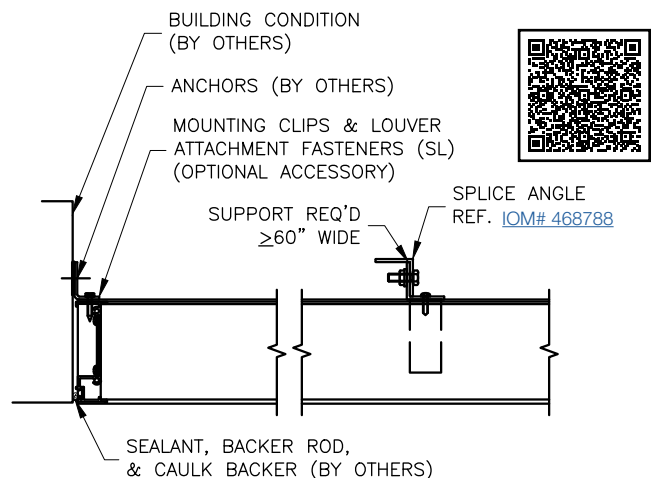


**Figure 2.2**



1. Locate the shipped loose Alignment Plates for the jambs. Following the provided Installation, Operation, and Maintenance Manual instructions included with the Alignment Plates, connect the upper and lower louver sections together.
2. If the louver sections are wide enough to require a blade support angle, the upper louver section and lower louver section angles will need to be spliced together. This can be accomplished by following the provided Installation, Operation, and Maintenance Manual instructions included with the shipped loose Splice Angle kit.
3. Locate the optional extended sill, if provided, and place in the opening. ([Extended Sill Details](#))
4. Locate mounting angles and fasteners required to attach the louver to the structure. Clip angles and fasteners are by others unless the optional mounting angles have been ordered from manufacturer with the louvers. Anchors to the structure are by others and are not manufacturer provided. ([Mounting Clip Details](#))
5. Place the louver in the opening and shim around the perimeter to maintain proper spacing for backer rod and caulk joint.
6. Using the appropriate fasteners, secure the mounting angles to the back of the louver frame at the perimeter.
7. Ensure the louvers is level and in the correct location within the opening and secure the mounting angles to the structure using the correct anchor (by others) for the building substrate material.
8. Once the louver is secured to the structure, install backer rod and caulk around the perimeter of the opening at the front of the louver.

**Figure 2.3**



## Multiple Section Structural Support

For multiple section wide and single section high louver installation, review Tables to determine if an additional structural support will be required based on the louver section width and height of the louvers being installed. If additional support *is not* required, reference the Multiple Section Wide and Single Section High-Unsupported installation instructions. If additional support *is* required, reference the Multiple Section Wide and Single Section High-Supported installation instructions.

Table 1.1

ESD-202	
Maximum Unsupported Height	
Section Width (In.)	At 25 PSF Wind Load (In.)
<= 36	90
<= 48	78
<= 60	70
<= 72	66
<= 84	58
<= 96	54
<= 108	52
<= 120	48

Table 1.2

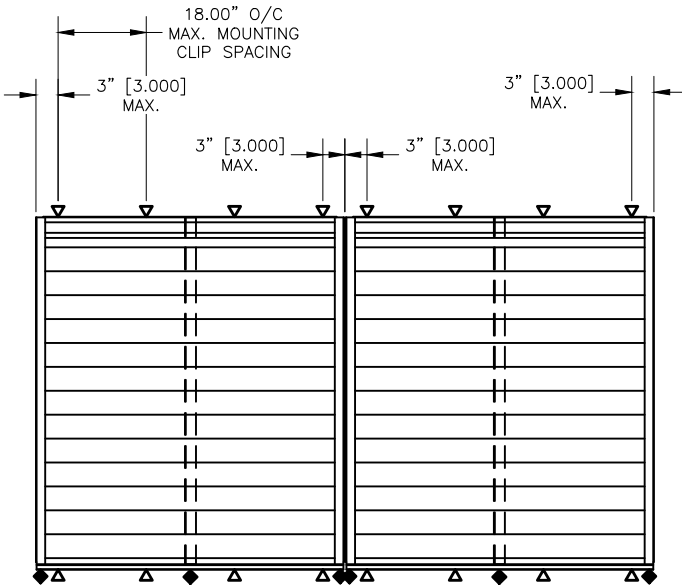
ESD-403 and ESD-435	
Maximum Unsupported Height	
Section Width (In.)	At 25 PSF Wind Load (In.)
<= 36	120
<= 48	108
<= 60	96
<= 72	88
<= 84	82
<= 96	76
<= 108	72
<= 120	68

Table 1.3

ESD-603 and ESD-635	
Maximum Unsupported Height	
Section Width (In.)	At 25 PSF Wind Load (In.)
<= 36	120
<= 48	120
<= 60	120
<= 72	118
<= 84	108
<= 96	84
<= 108	84
<= 120	84

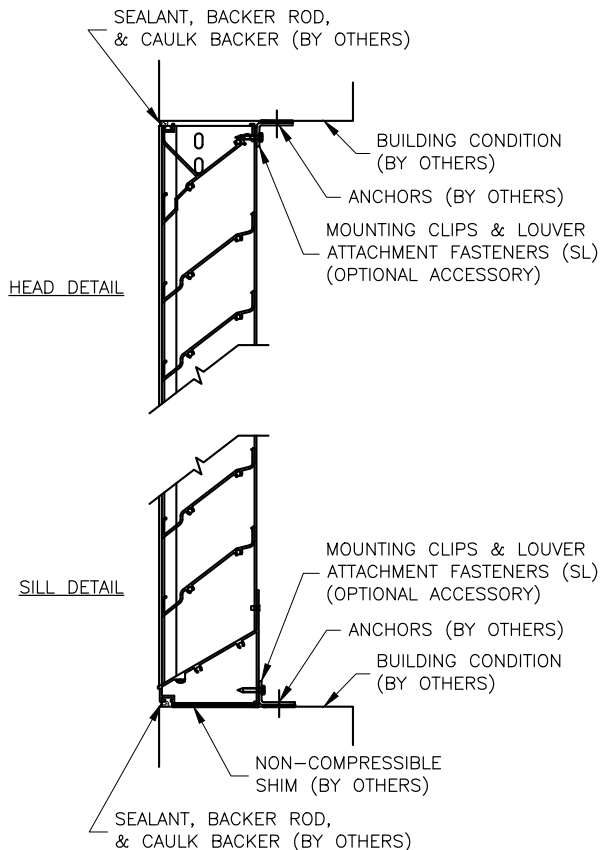
# Multiple Section Wide x Single Section High Installation - Unsupported

**Figure 3.1**

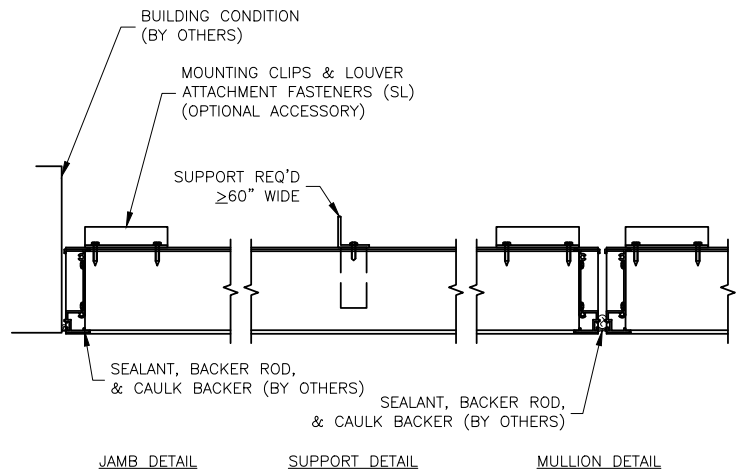


1. Locate the optional extended sill, if provided, and place in the opening. ([Extended Sill Details](#))
2. Locate mounting angles and fasteners required to attach the louver to the structure. Clip angles and fasteners are by others unless the optional mounting angles have been ordered from manufacturer with the louvers. Anchors to the structure are by others and are not manufacturer provided. ([Mounting Clip Details](#))
3. Place the left louver section (as viewed from the exterior) in the opening and shim around the perimeter to maintain proper spacing for backer rod and caulk joint.
4. Using the appropriate fasteners, secure the mounting angles to the back of the louver frame at the perimeter.
5. Ensure the louvers is level and in the correct location within the opening and secure the mounting angles to the structure using the correct anchor (by others) for the building substrate material.
6. Place the next louver section to the right of the first louver section and repeat steps 3-5 above to secure the louver to the structure. Follow the same procedure for any additional sections to the right.
7. Once the louver assembly is secured to the structure, install backer rod and caulk around the perimeter of the opening at the front of the louver as well as the mullion joint between the louver jambs.

**Figure 3.2**

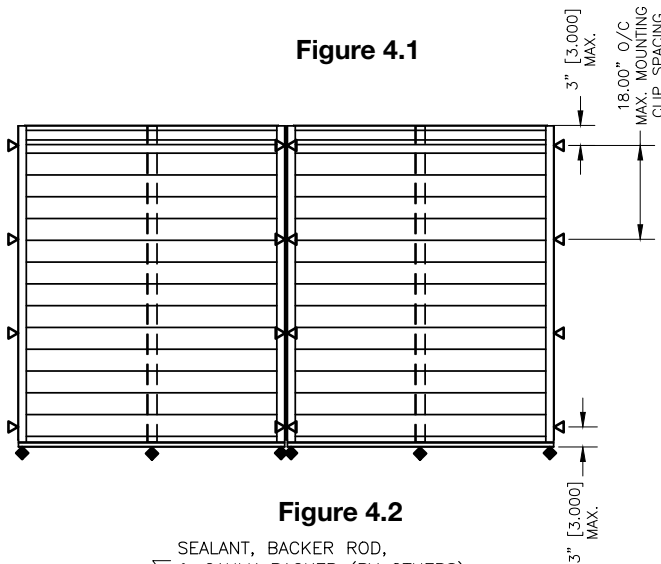


**Figure 3.3**

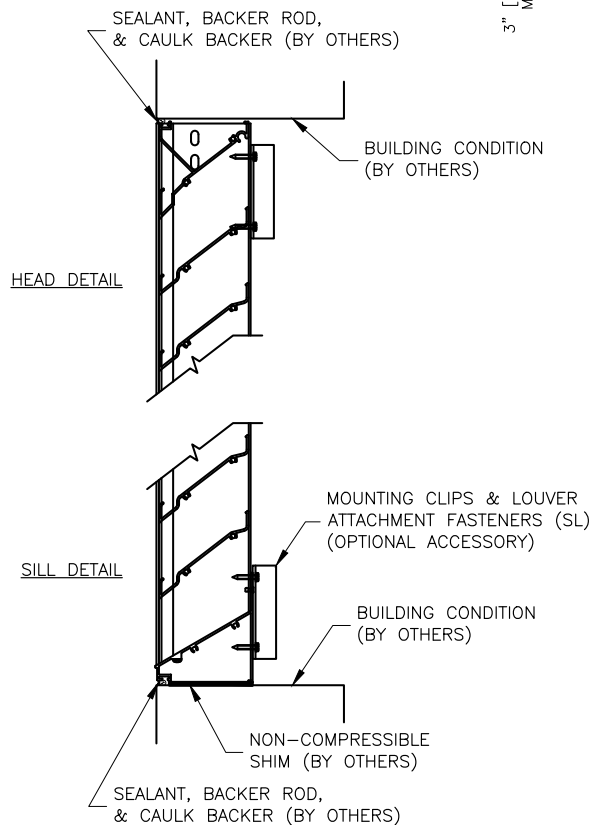


# Multiple Section Wide x Single Section High Installation - Supported

**Figure 4.1**

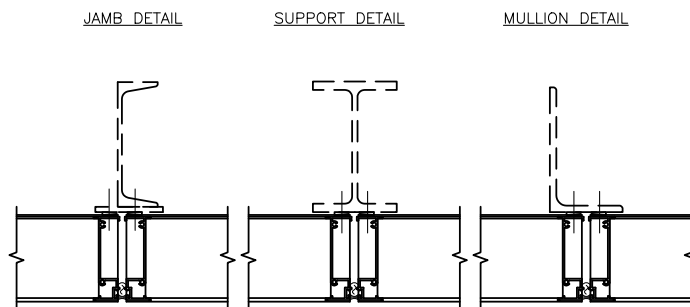


**Figure 4.2**



**Figure 4.3**

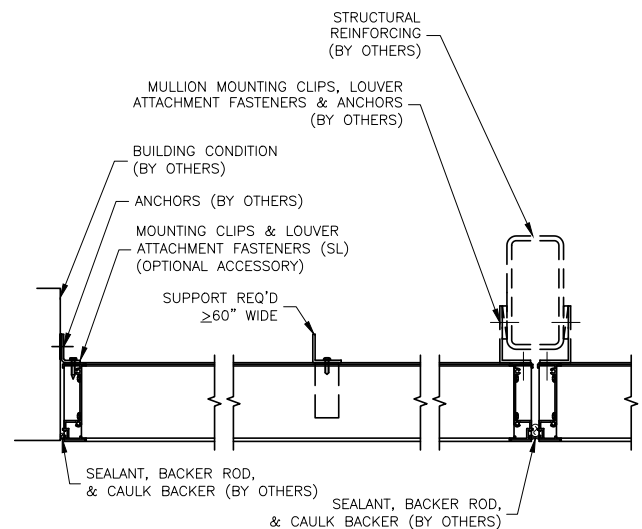
## Structural Reinforcing (by others)



ALTERNATE MULLION STRUCTURAL SUPPORT EXAMPLES

1. Locate the optional extended sill, if provided, and place in the opening. ([Extended Sill Details](#))
2. Locate mounting angles and fasteners required to attach the louver to the structure. Clip angles and fasteners are by others unless the optional mounting angles have been ordered from manufacturer with the louvers. Anchors to the structure are by others and are not manufacturer provided. ([Mounting Clip Details](#))
3. Place the left louver section (as viewed from the exterior) in the opening and shim around the perimeter to maintain proper spacing for backer rod and caulk joint.
4. Using the appropriate fasteners, secure the mounting angles to the back of the louver frame at the perimeter.
5. Ensure the louvers is level and in the correct location within the opening and secure the mounting angles to the structure using the correct anchor (by others) for the building substrate material.
6. Place the next louver section to the right of the first louver section and repeat steps 3-5 above to secure the louver to the structure. Follow the same procedure for any additional sections to the right.
7. Install additional structural supports (not by manufacturer) at the vertical louver mullions. Secure the louver frame to the structural support with the appropriate mounting angles and/or anchors (not by manufacturer).
8. Once the louver assembly is secured to the structure, install backer rod and caulk around the perimeter of the opening at the front of the louver as well as the mullion joint between the louver jambs.

**Figure 4.4**



## Multiple Section Wide x Multiple Section High Installation

Larger opening sizes require field assembly of multiple louver sections to make up the overall opening size. Individual louver sections are designed to withstand a 25 psf wind load. Structural reinforcing members may be required to adequately support and install multiple louver sections within a large opening. Structural reinforcing members along with any associated installation hardware is not provided by manufacturer unless indicated otherwise by manufacturer.

Figure 5.1

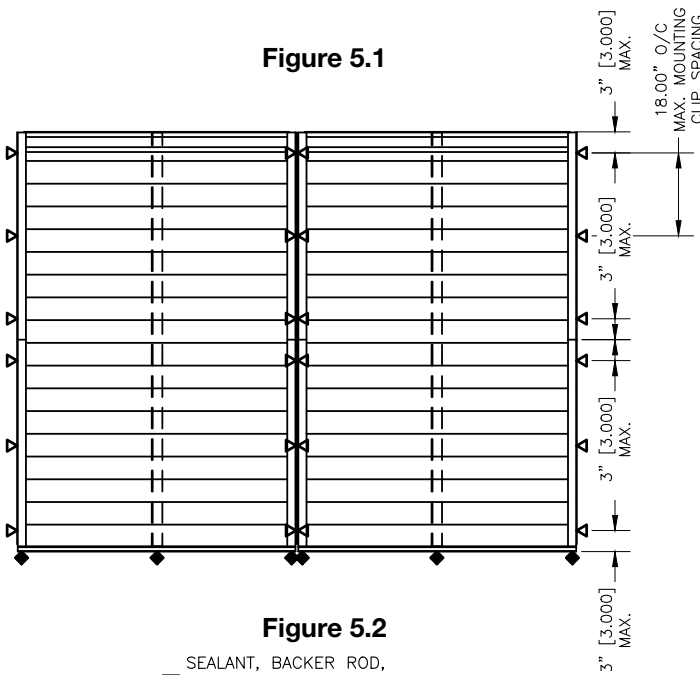
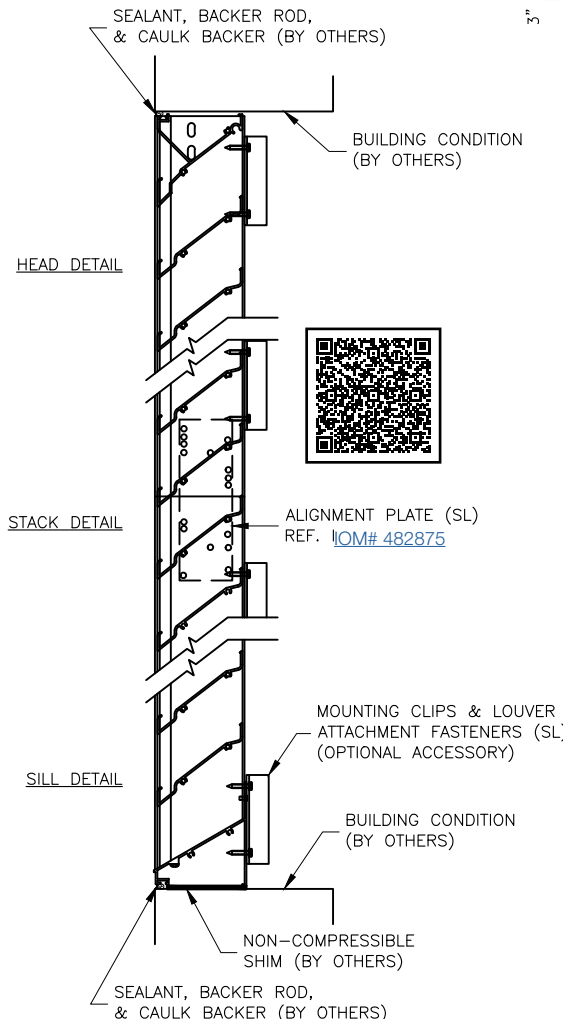


Figure 5.2

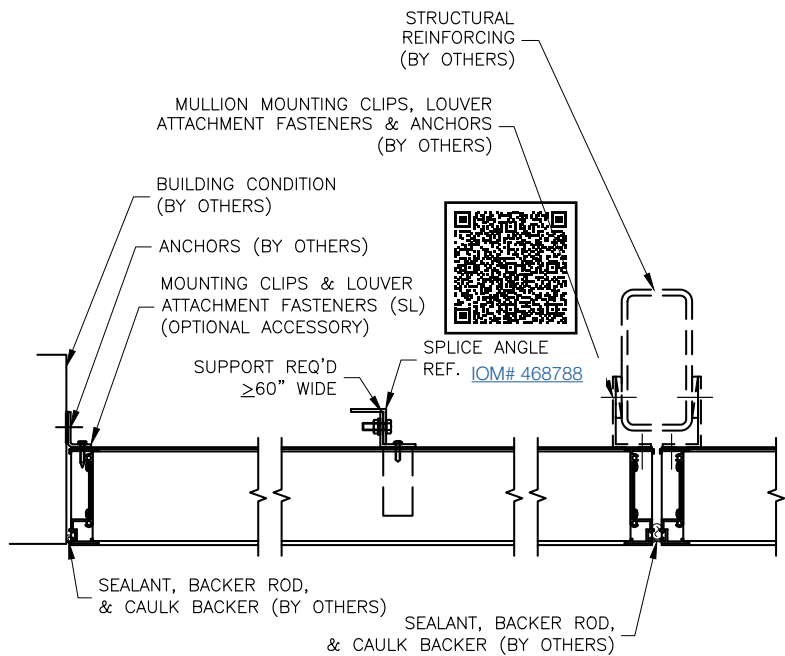


1. Locate the shipped loose Alignment Plates for the jambs. Following the provided Installation, Operation, and Maintenance Manual instructions included with the Alignment Plates, connect the upper and lower louver sections together.
2. If the louver sections are wide enough to require a blade support angle, the upper louver section and lower louver section angles will need to be spliced together. This can be accomplished by following the provided Installation, Operation, and Maintenance Manual instructions included with the shipped loose Splice Angle kit.
3. Locate the optional extended sill, if provided, and place in the opening. ([Extended Sill Details](#))
4. Locate mounting angles and fasteners required to attach the louver to the structure. Clip angles and fasteners are by others unless the optional mounting angles have been ordered from manufacturer with the louvers. Anchors to the structure are by others and are not manufacturer provided. ([Mounting Clip Details](#))
5. Place the combined left louver section assembly (as viewed from the exterior) in the opening and shim around the perimeter to maintain proper spacing for backer rod and caulk joint.
6. Using the appropriate fasteners, secure the mounting angles to the back of the louver frame at the perimeter.
7. Ensure the louvers is level and in the correct location within the opening and secure the mounting angles to the structure using the correct anchor (by others) for the building substrate material.
8. Place the next combined louver section to the right of the first louver section. Shim around the perimeter to maintain proper spacing for backer rod and caulk joint. Repeat steps 6-7 above to secure the louver to the structure.
9. Follow the same procedure for any additional sections to the right.
10. Additional structural supports (not designed or provided by manufacturer) may be required and will need to be installed behind the louver mullions at this point. The louvers must be secured to the structural support using the appropriate mounting angles and fasteners (by others)
11. Once the louver is secured to the structure, install backer rod and caulk around the perimeter of the opening at the front of the louver.

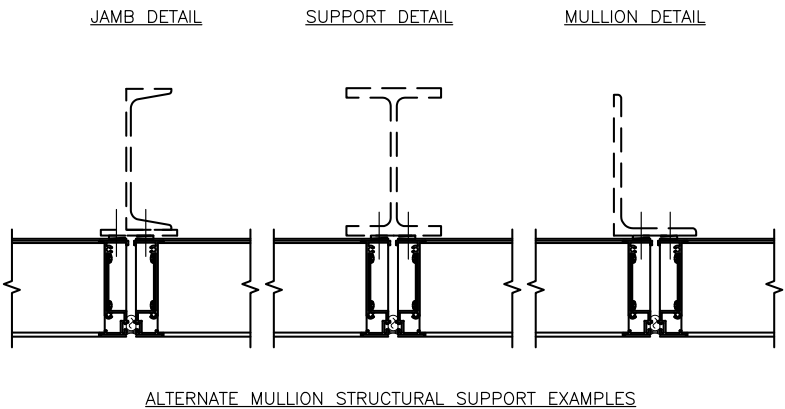


# Multiple Section Wide x Multiple Section High Installation Continued

**Figure 5.3**  
**Structural Reinforcing (by others)**



**Figure 5.4**



## Our Commitment

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*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

Product warranties can be found online at [Greenheck.com](http://Greenheck.com), either on the specific product page or in the literature section of the website at [Greenheck.com/Resources/Library/Literature](http://Greenheck.com/Resources/Library/Literature).

Greenheck's Louver Models catalog provides additional information describing the equipment, fan performance, available accessories, and specification data.

AMCA Publication 410-96, Safety Practices for Users and Installers of Industrial and Commercial Fans, provides additional safety information. This publication can be obtained from AMCA International, Inc. at [www.amca.org](http://www.amca.org).

