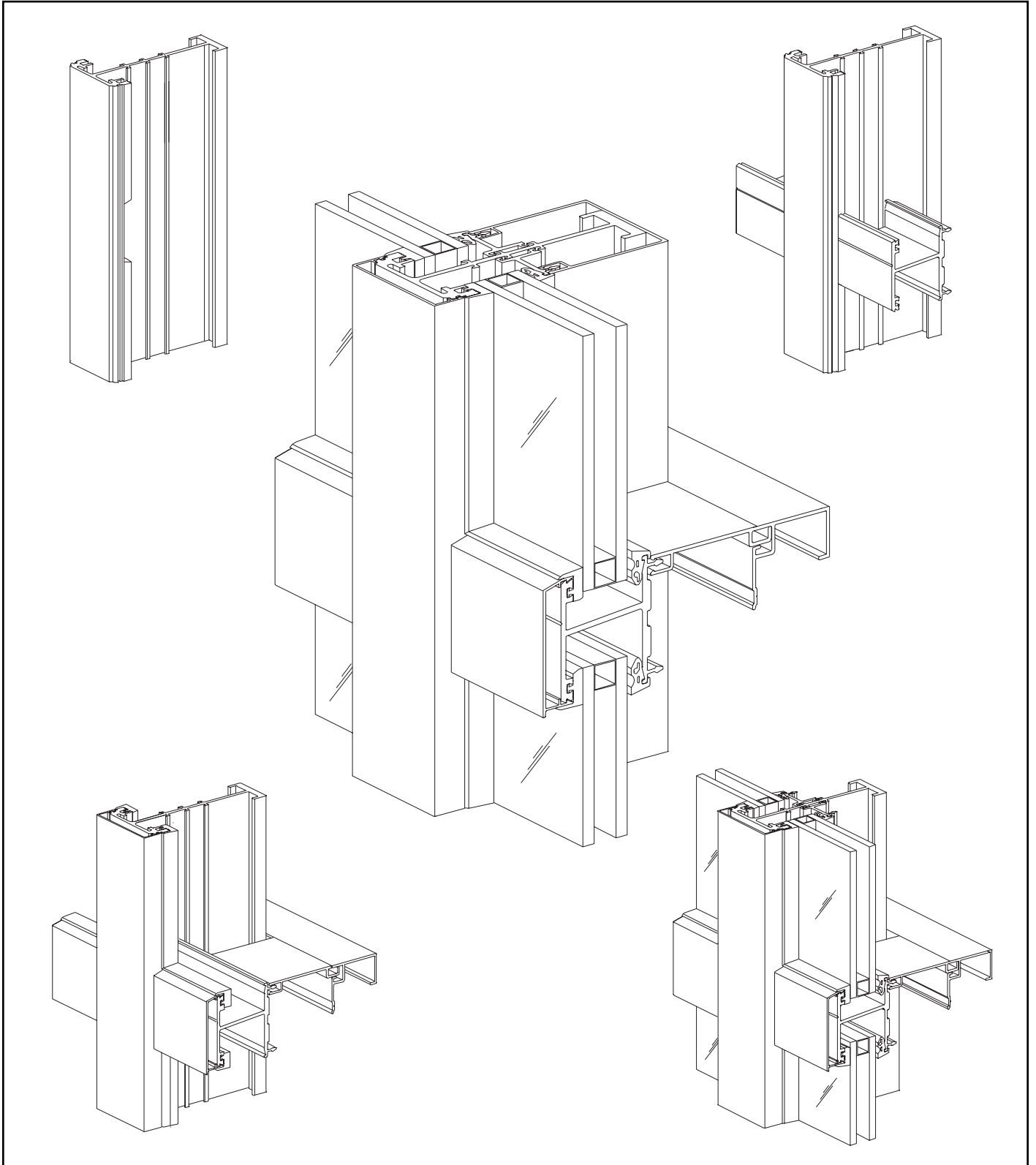


**YCW 250 I-Beam Curtain Wall System**



**Installation Manual**



**TABLE OF CONTENTS**

**INSTALLATION NOTES** ..... Page ii

**PARTS DESCRIPTION**

    Framing Members ..... Page 1

    Accessories ..... Page 2

**INSTALLATION INSTRUCTIONS**

    Mullion Anchor Clips ..... Page 3

    Base Channel Installation ..... Page 4 & 5

    Install Mullion Vertical ..... Page 6

    Install Vertical Expansion Splices ..... Page 7 & 8

    Install Vertical Face Covers ..... Page 8

    Typical Vertical Splice ..... Page 9

    Install Horizontal Members ..... Page 10 & 11

    Install Horizontal Face Covers ..... Page 11

**GLAZING**

    General Glazing Notes ..... Page 12

    Interior & Exterior Gaskets ..... Page 13 & 14

    Install Side & Setting Blocks and Weep Baffles ..... Page 15

    Setting Glass ..... Page 16

    Glass Setting Precautions ..... Page 17

    Install Interior Trim ..... Page 18

    Vision Lite Reglaze, Interior ..... Page 19

    Spandrel Lite Reglaze, Exterior ..... Page 20 & 21

## **INSTALLATION NOTES**





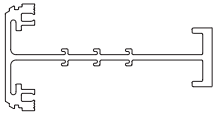

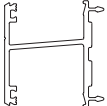

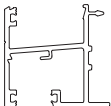

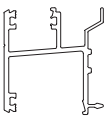

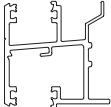





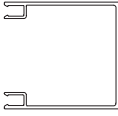



### **GENERAL NOTES**

1. These instructions are designed to specifically cover typical installation conditions of the product which has been factory fabricated.
2. It is most important for the installer/erector to study these instructions along with the approved shop drawings, coded erection drawings, shipping lists, and architectural drawings to become familiar with any non-typical conditions that may exist on the project before starting any work.
- 3) Check existing structure before start of erection or anchor layout. Building structure must be within tolerances provided by the fabricated wall system. Coordinate adjacent materials by others with the General Contractor.


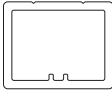

















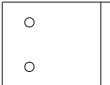


### **INSTALLATION NOTES**

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor aluminum finishes and paints.
3. All materials should be checked for quality upon receipt. Check to make sure that you have the required shims, sealants, supplies and tools necessary for the installation.
4. Carefully check the openings and surrounding conditions that will receive your material. Remember, if the construction is not per the construction documents, it is your responsibility to notify the general contractor in writing. Any discrepancies must be brought to the general contractor's attention before you proceed with the installation.
5. Gather your shop drawings, materials, packing list, and this installation manual. Carefully review parts location, the sequence it goes therein, when you glaze it and how you seal it. Installation instructions are of a general nature and may not cover every condition you will encounter. The shop drawings and/or installation manuals were prepared specifically for the product.
6. Any material substitutions must be of equal or greater quality.
7. Make certain that material samples have been sent for compatibility testing for all manufacturer's sealants involved. Make certain sealants have been installed in strict accordance with the manufacturer's recommendations and specifications.
8. Remember to isolate in an approved manner all aluminum from uncured masonry or other incompatible materials.
9. System-to-structure fasteners are not supplied by YKK AP. Fasteners called out on shop drawings are to indicate minimum sizes for design loading.
10. If any questions arise concerning YKK AP products or their installation, contact YKK AP for clarification before proceeding.
11. Curtain wall framing is typically completed before the drywall, flooring and other products are installed. Take the extra time to wrap and protect the work that you have proudly produced, because no one else will.
12. Check our website, [www.ykkap.com](http://www.ykkap.com), for the latest installation manual update prior to commencing work.

**FRAMING MEMBERS/ACCESSORIES**

	<b>Vertical Exterior Face Cover</b>	<b>E9-1206</b>		<b>Interior Horizontal Trim</b>	<b>E9-3035</b>
	<b>Horizontal Exterior Face Cover</b>	<b>E9-1207</b>		<b>Vertical Glass Stop</b> For Spandrel Area	<b>E9-3036</b>
	<b>Vertical Mullion</b> 2-1/2" x 4-7/8"	<b>E9-3001</b>		<b>Horizontal Reglazing Exterior Stop</b> Screw Applied For E9-3011 & E9-3013	<b>E9-3037</b>
	<b>Horizontal</b> 1" Vision / 1" Vision	<b>E9-3011</b>		<b>Horizontal Reglazing Exterior Stop</b> Hook In For E9-3012 & E9-3014	<b>E9-3038</b>
	<b>Horizontal</b> 1" Vision / 1/4" Spandrel	<b>E9-3012</b>		<b>Base Channel</b>	<b>E9-3081</b>
	<b>Horizontal</b> 1/4" Spandrel / 1" Vision	<b>E9-3013</b>		<b>Jamb Filler</b>	<b>E9-3083</b>
	<b>Horizontal</b> 1/4" Spandrel / 1/4" Spandrel	<b>E9-3014</b>		<b>Mullion End Cap</b>	<b>E1-3092</b>
	<b>Vertical Glass Stop</b> For Vision Area	<b>E9-3031</b>		<b>Base Channel End Dam</b>	<b>E1-3093</b>
	<b>Interior Horizontal Cover</b> 1" Vision / 1" Vision	<b>E9-3032</b>		<b>Base Channel Splice Sleeve</b>	<b>E1-3094</b>
	<b>Interior Horizontal Cover</b> 1" Vision / 1" Vision	<b>E9-3033</b>		<b>Horizontal Pressure Bracket Assembly</b> E1-3099 & Screws Included	<b>E1-3095</b>
	<b>Interior Horizontal Closure</b>	<b>E9-3034</b>		<b>Anchor Backer Plate</b>	<b>E1-3096</b>

## ACCESSORIES

	<b>Splice Sleeve</b> For E9-1206 Face Cover	<b>E1-1202</b>		<b>Mullion Back Splice Sleeve</b> 6" Long	<b>E1-3097</b>
	<b>Setting Block</b> For 1" Glazing 4" Long	<b>E2-0304</b>		<b>Mullion Front Splice Sleeve</b> 4" Long	<b>E1-3098</b>
	<b>Setting Block</b> For 1/4" Glazing 4" Long	<b>E2-0306</b>		<b>Weep Baffle</b> For Horizontals At Weep Holes	<b>E2-0098</b>
	<b>Side Block</b> For 1" Glazing 4" Long	<b>E2-0308</b>		<b>#8 x 7/8" FHSMS</b> Steel, Zinc Plated For Cover Splices	<b>FC-0808</b>
	<b>Side Block</b> For 1/4" Glazing 4" Long	<b>E2-0310</b>		<b>#12 x 5/8" FHSMS</b> Steel, Zinc Plated For Attachment of Anchor Plates	<b>FC-1210</b>
	<b>SM-5700 Butyl Tape</b> 1/16" x 1/2" x 25' Roll For Horz. to Vert. Seal	<b>E2-0311</b>		<b>#10 x 5/8" PHSMS</b> Steel, Zinc Plated For Vertical Faces At Splices	<b>PC-1010</b>
	<b>Exterior Fixed Glazing Gasket</b>	<b>E2-0301</b>		<b>#12 x 1/2" PHSMS</b> Steel, Zinc Plated	<b>PC-1208</b>
	<b>Interior Wedge Glazing Gasket</b>	<b>E2-0302</b>		<b>#12-24 x 7/8" Tek Screw</b> Steel, Zinc Plated For Trim & Splice Joints	<b>TEK-1214</b>
	<b>Wedge Glazing Gasket</b> For Exterior Re-glaze	<b>E2-0312</b>		<b>Wind Load Anchor</b> Steel w/ Zinc Oxide Paint Refer to Shop Drawings For Anchor Dimensions	Project Specific Part Number <b>E1-1204</b> *
	<b>PVC Isolator</b> For Interior Cover 1" Long	<b>E3-0019</b>		<b>Dead Load Anchor</b> Steel w/ Zinc Oxide Paint Refer to Shop Drawings For Anchor Dimensions	Project Specific Part Number <b>E1-1205</b> *
	<b>Nylon Slip Pad</b> For Wind Load & Dead Load Anchor	<b>E3-0020</b>		<b>1/8" Nylon Washer</b> Use with TEK-1214 to Attach Interior Trim	<b>E3-0035</b>

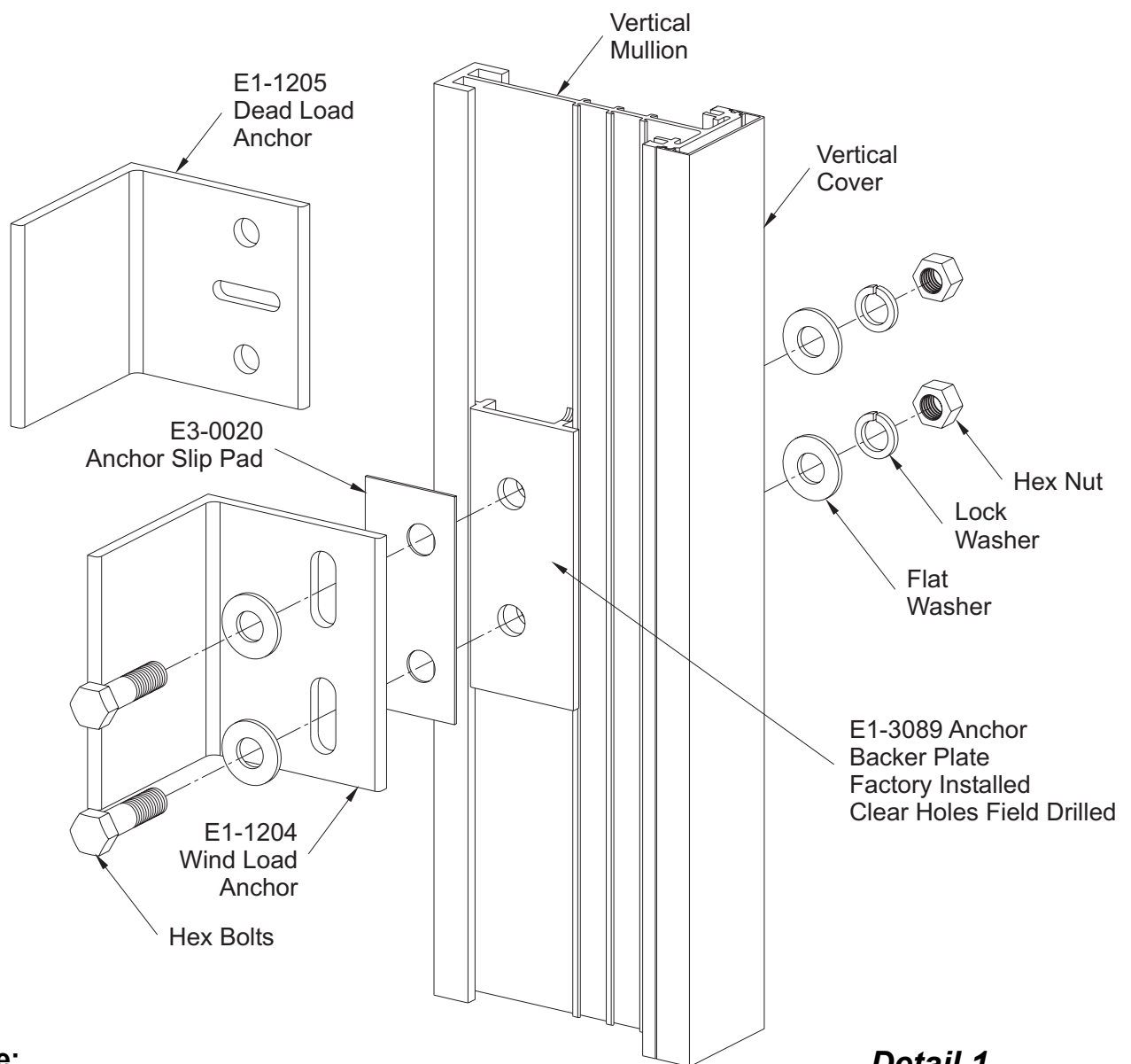
**NOTE:** Exact size of anchors should be determined from loads calculated on each individual curtain wall frame.

**INSTALLATION INSTRUCTIONS**

**STEP 1  
MULLION ANCHOR CLIPS**

Steel anchors (See **Detail 1**) which are attached to the structure are normally template or line set before mullions are hung.

Note that Detail 1 shows both "fixed or dead load" and "expansion or wind load" type anchors. See shop drawings for correct location. A nylon separator (E3-0020) is used between the anchor and the mullion at each wind load or dead load anchor.



**Note:**  
Anchors and anchor fasteners will vary based on project requirements.

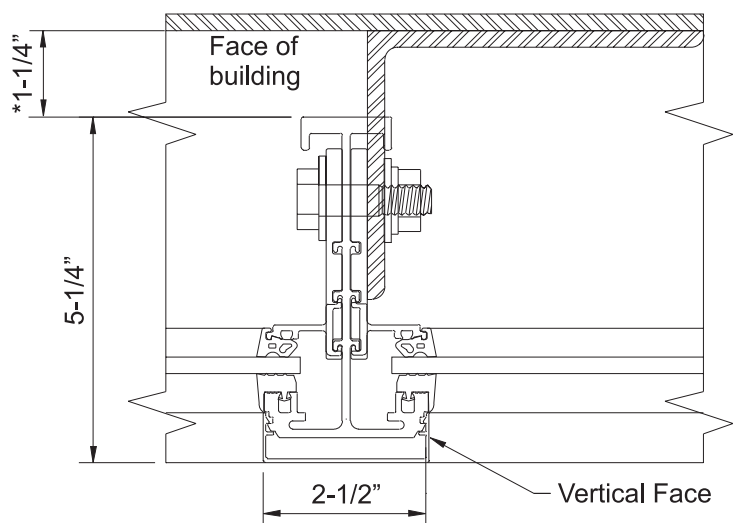
**Detail 1**

## INSTALLATION INSTRUCTIONS

### STEP 2 BASE CHANNEL INSTALLATION

- The YCW 250 curtain wall system sits down in a base channel that runs the width of the opening minus(-) 1/2" at each end.
- The base channel is both an anchor and a condensation gutter.
- Locate the front of the base channel on the anchoring surface.
- Refer to shop drawings to determine the location of the vertical face in relationship to the structure.
- Using a standard 3/4" vertical face, E9-1206, drop a chalk line 1-1/16" back from the vertical face of the curtain wall.
- See **Details 2 & 3**.

**Note:** \*These dimensions will vary based on the face used and the anchoring conditions of the building.



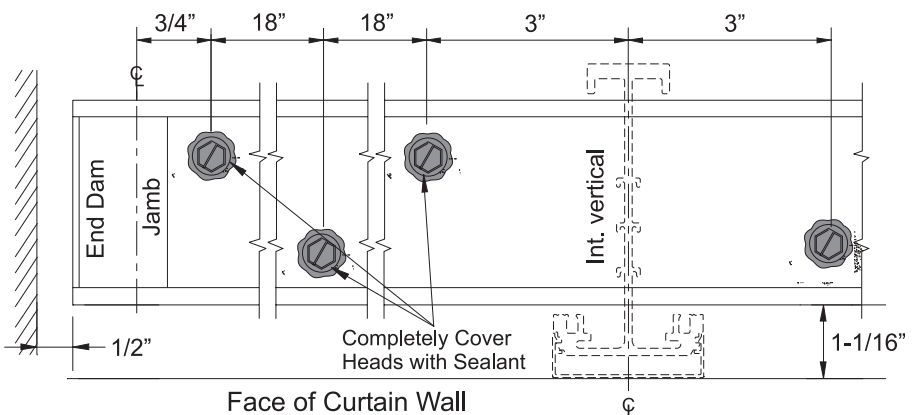
**Detail 2**

- Align the face of the base channel with the chalk line and set it down on the anchoring surface.
- Shim the base channel (3/8" minimum) so that it is level.
- Mark the center lines of each vertical on the base channel and anchor it to the building using the size and type of fasteners called out in the shop drawings or engineering calculations.
- Completely cover the heads of all fasteners that penetrate the base channel with sealant.
- See **Details 3 & 4**.

**NOTE:**

- Refer to shop drawings or engineering calculations for fastener size and center line to centerline dimension.
- Locate a fastener, minimum of 3" on either side of the center line of each mullion.
- Alternate the fasteners from the front of the base channel to the back of the base channel.

See **Detail 3**.



**Detail 3**

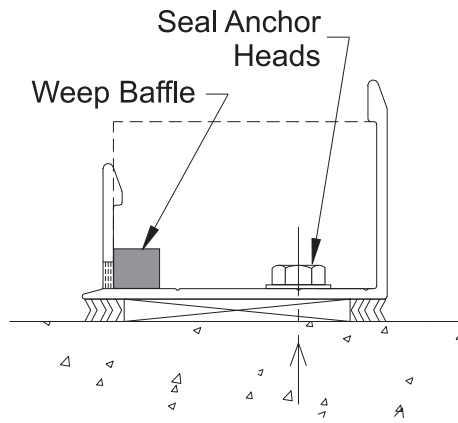


**INSTALLATION INSTRUCTIONS**

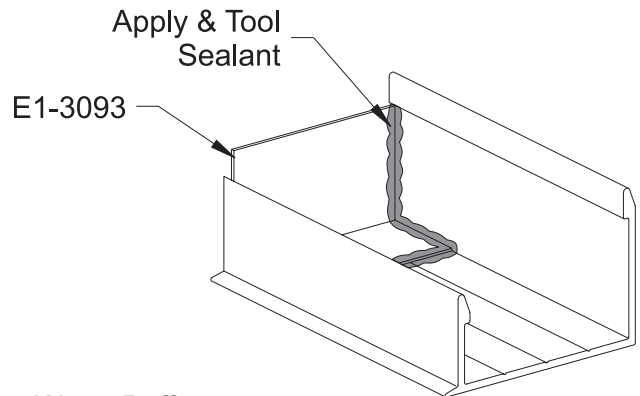
**STEP 2 (Continued)**

**BASE CHANNEL INSTALLATION**

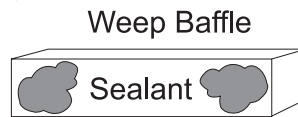
- Set end dam, E1-3093, in a bed of sealant flush with each end of the base channel.
- Apply and tool sealant to the joint between the angle and the base channel.
- Apply a small dab of sealant to the weep baffle to hold it in place, center a baffle over each weep hole.
- See **Details 4 & 5**.



**Detail 4**



**Detail 5**

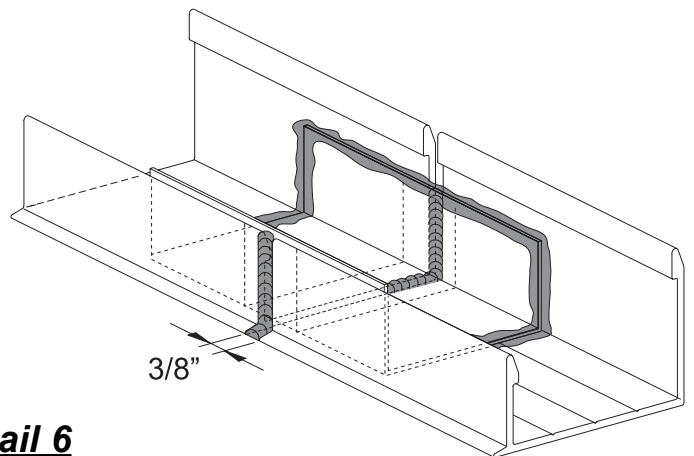
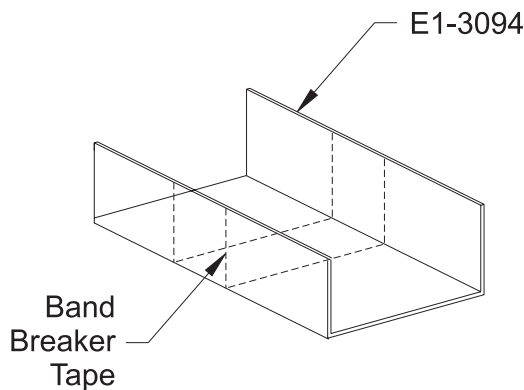


**BASE CHANNEL SPLICE**

Splicing of the base channel is accomplished by splicing two pieces together.

- Anchor holes in the base channel will be enlarged to permit the member to expand and contract.
- Apply bond breaker tape as shown below.
- Set splice sleeve, E1-3094, in a bed of sealant centered on the 3/8" splice between the two sections of base channel.
- Apply and tool sealant to the joint between the aluminum channel and the base channel.
- Seal the front and back of the splice sleeve.

See **Detail 6**.



**Detail 6**

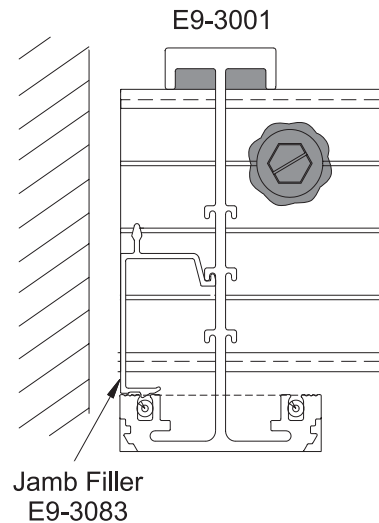
## INSTALLATION INSTRUCTIONS

### STEP 3 INSTALL VERTICAL MULLIONS

- Locate the vertical mullions that have the factory installed mullion end caps.
- Install jamb filler E9-3083 into the jamb members; use caution as the jamb members will be handed.
- Begin by installing the first jamb member down over the base channel.

See **Detail 7**.

**Detail 7**

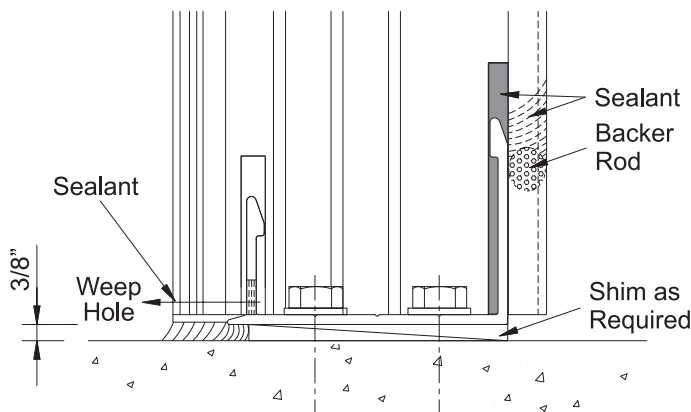
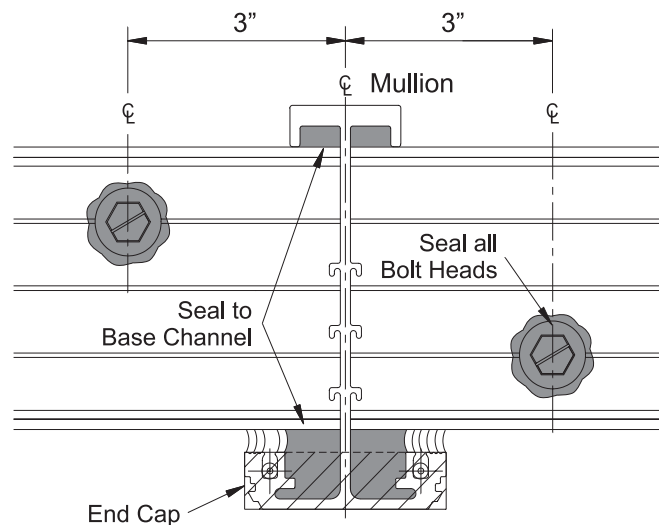


- Install the remaining bottom row of verticals down over the base channel and check to ensure that they are plumb. Be sure that the nylon slip pad is used between the anchor and the mullion.
- Field drill the mullions for the anchor bolts. Tighten all anchor bolts to 50 inch pounds and then loosen the bolts at wind load (expansion) anchors one quarter turn.

**Note:** If there is not sufficient clearance to permit the vertical to be set directly down over the base channel, then it will be necessary to rotate the verticals into the base channel by first aligning the slots in the verticals with the legs of the base channel and standing the verticals up into position.

- Seal the front and back of each vertical to the base channel.

See **Details 8 & 9**.



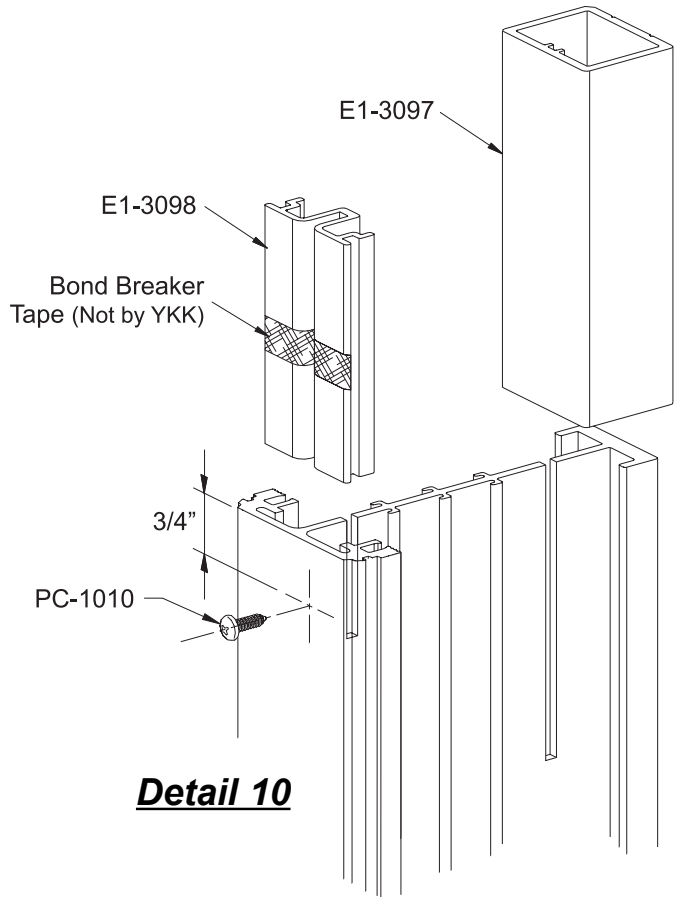
**Detail 8**

**Detail 9**

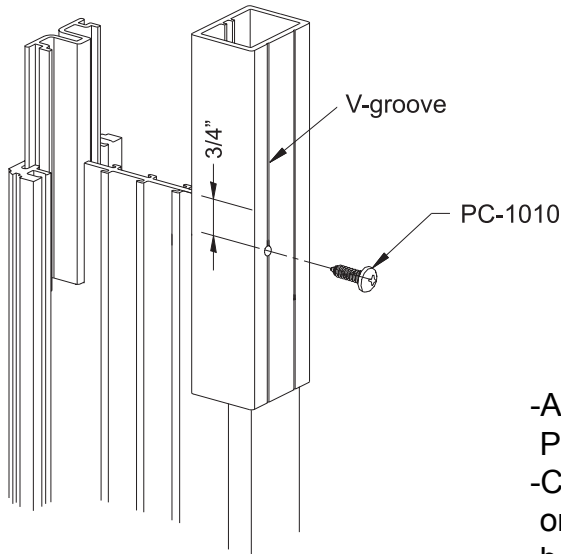
**INSTALLATION INSTRUCTIONS**

**STEP 4  
INSTALL VERTICAL EXPANSION SPLICES**

- Prior to installing the second and succeeding stack of vertical mullions, apply a one inch wide strip of bond breaker tape to the front of the splice sleeve, E1-3098.
- Slide the front and back splice sleeves down onto each vertical.
- Attach the front splice to the vertical using one PC-1010 located on one side of the face and 3/4" down from the end. See **Detail 10**.



**Detail 10**



**Detail 11**

- Attach the back splice to the vertical using one PC-1010 fastener.
- Center the fastener on one of the "V"-grooves on the back of the splice and locate it 3/4" below the end of the mullion. See **Detail 11**.

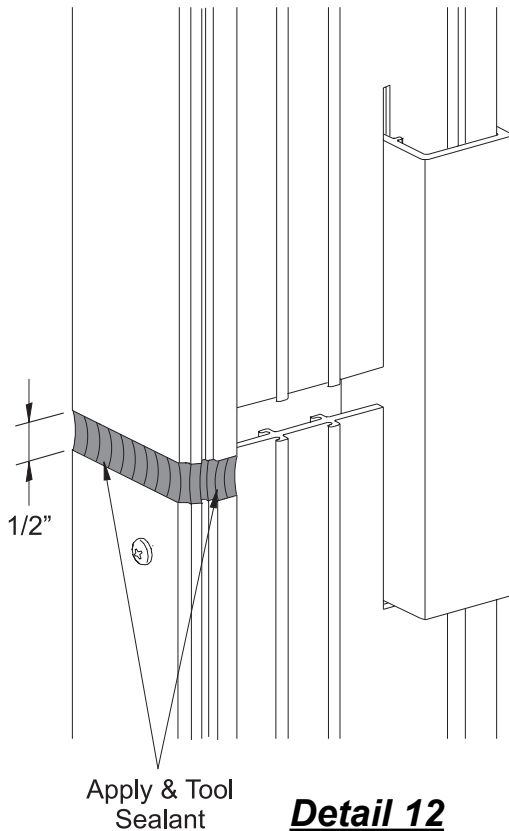
**NOTE:** If the building conditions do not permit a minimum of three inches of clearance at the top of the wall (e.g. the roof line extends out over the curtain wall) then:

- The top row of verticals will have slots that are long enough to permit the splices to be slid up into the verticals completely.
- Slide the top splices into the top row of verticals and temporarily attach the splices in place.
- Align the top row of verticals and allow the splice sleeves to slide down into the verticals below.
- Secure the splices as called out above.

## INSTALLATION INSTRUCTIONS

### STEP 5 (Continued) INSTALL VERTICAL EXPANSION SPLICES

-Position the next mullion above and slide it over the expansion splices until 1/2" gap is reached.  
See **Detail 12**.



-Use temporary shims between mullions to maintain proper joint spacing until the upper mullion is anchored.

-Once mullions are securely anchored, remove the temporary shims.

### STEP 6

-Apply sealant across the front face of the splice joint.  
-Tool the sealant to ensure water tightness.

### STEP 7 INSTALL VERTICAL FACE COVERS

Mullion and face cover splice joints should be staggered; exterior vertical cover splice joints are 2" below the mullion splice joints. See **Detail 13** on **Page 9**.

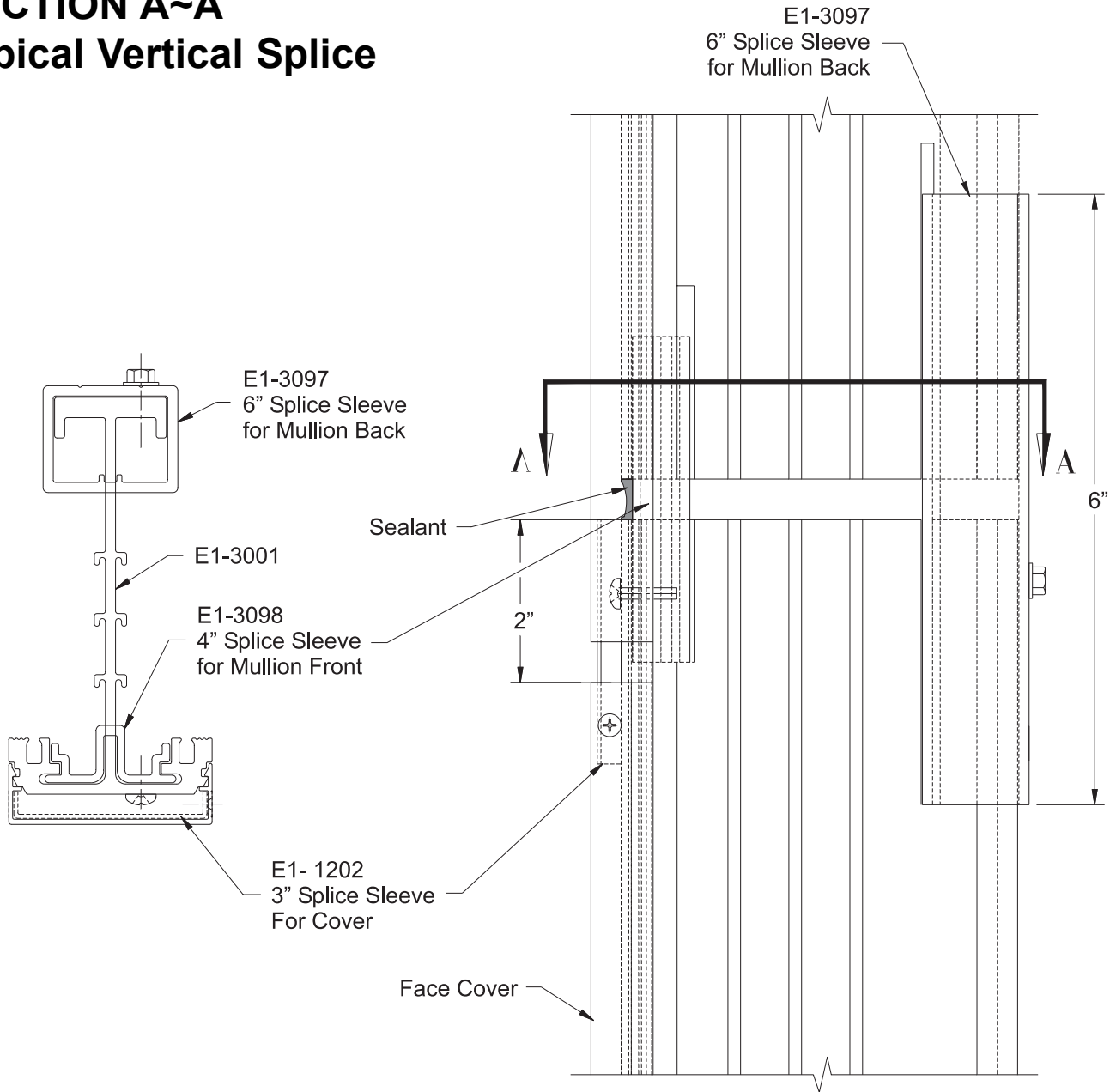
-Find the correct covers, E9-1206, for the starter row of mullions. (It will be 2" shorter than the starter mullions). The splice sleeve at the top end has already been factory attached.

-Starting at the bottom of the mullion with a block of wood and a mallet start snapping on the face cover while working your way up the mullion.

See **Detail 13** on **Page 9** for typical vertical splice.

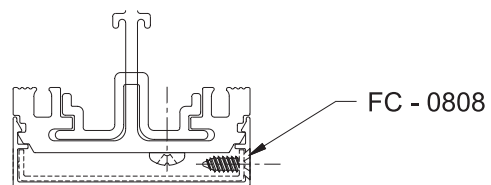
INSTALLATION INSTRUCTIONS

SECTION A~A  
Typical Vertical Splice



**DETAIL 13**

-Attach the vertical face cover to the splice using one FC-0808 fastener as shown.

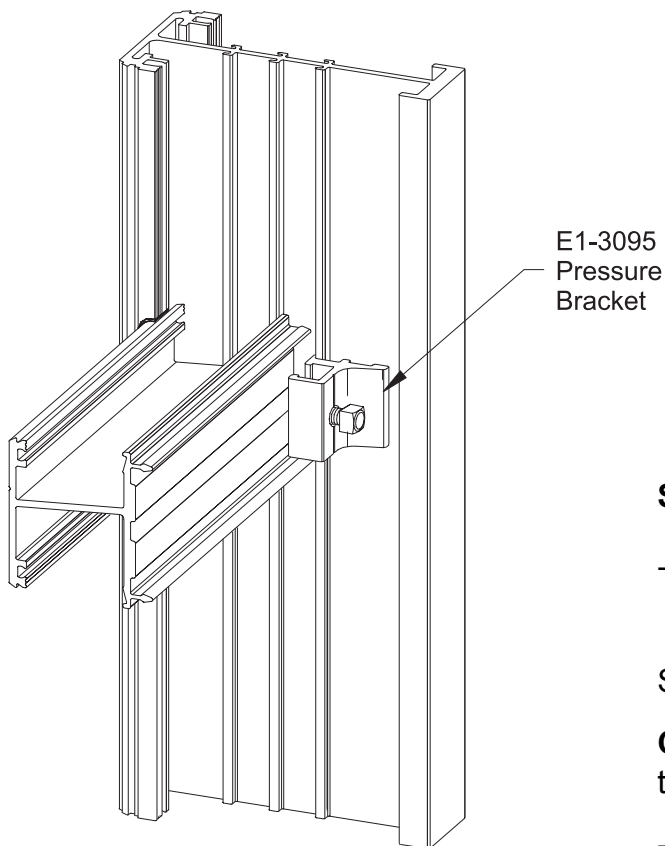
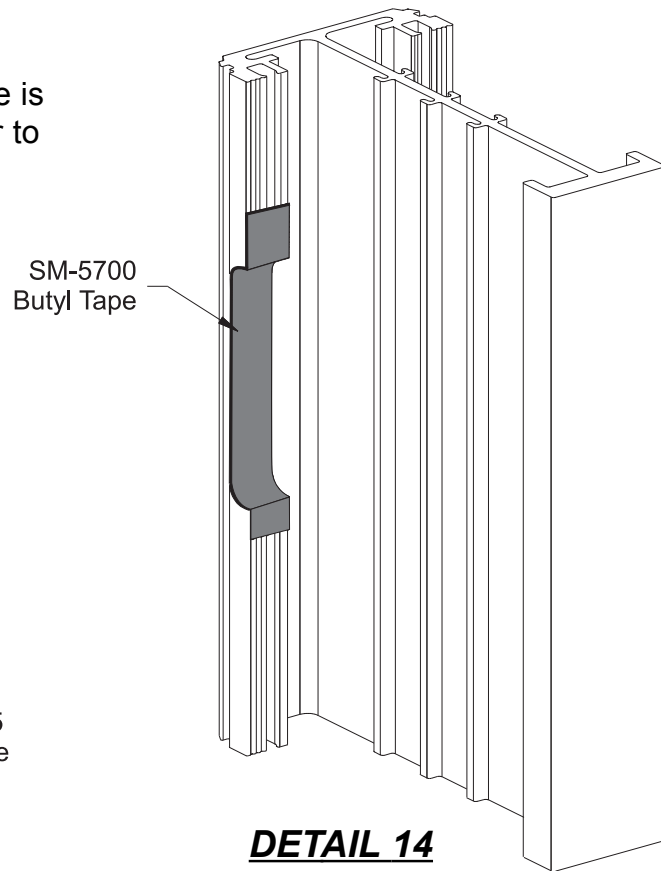


**INSTALLATION INSTRUCTIONS**

**STEP 8  
INSTALL HORIZONTAL MEMBERS**

-Apply Schnee-Morehead #SM-5700 (1/16" x 1/2") butyl tape at mullion notches which receive horizontals. See **Detail 14**.

-Remove paper backing and make sure no tape is damaged. If tape has any damage, repair prior to attachment of horizontals.



**STEP 9**

-Install horizontals and pressure brackets at each end. Tighten set screw in pressure bracket until glazing surfaces are in plane. See **Detail 15**.

**Caution:** Do not over tighten. Excessive tightening of screws will deform the horizontal.

-Make sure that any void at the top and bottom of horizontals is filled by pushing excess tape into any gaps as required.

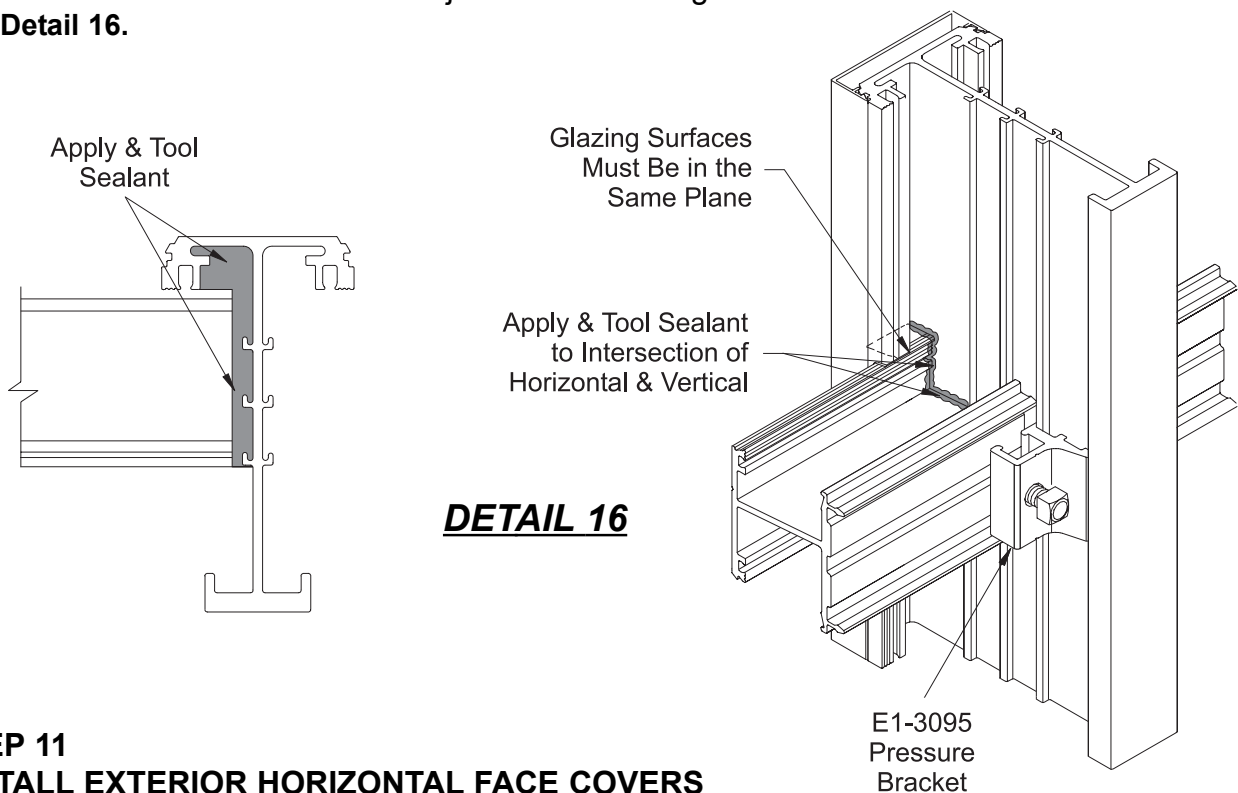
## INSTALLATION INSTRUCTIONS

### STEP 10 SEAL HORIZONTALS TO VERTICALS

After installation of the horizontals, it is necessary to form a water tight joint between the horizontals and the verticals.

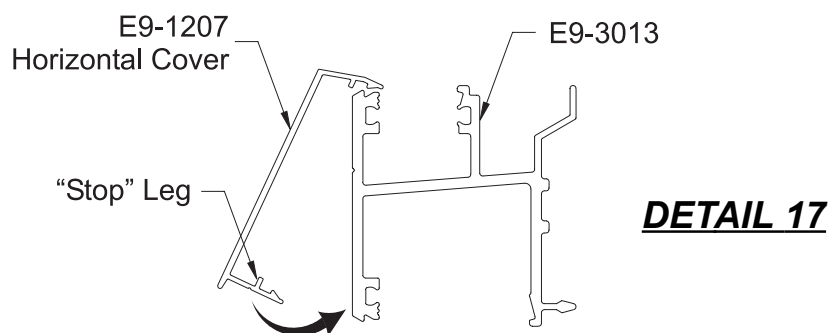
- Clean the appropriate aluminum surfaces with an approved cleaner.
- Apply a quality sealant, compatible with the butyl tape used on the face of the horizontals, to the top of the horizontal to completely close off the gap between all surfaces of the horizontal glazing pocket and the vertical mullion.
- Tool the sealant to ensure that the joints are water tight.

See **Detail 16**.



### STEP 11 INSTALL EXTERIOR HORIZONTAL FACE COVERS

- Engage top leg on groove first then snap together at bottom of cover.
- See **Detail 17**.



**GLAZING****GENERAL GLAZING NOTES**

1. Check EPDM gaskets (shipped direct from gasket manufacturer) for size, quantity, profile, and dart fit as soon as they arrive at the job site. Check thickness of all infill materials as soon as possible.
2. Gaskets are typically sent to the job site in rolls. If “Molded Corners” have been requested and priced, they will be sent to the job site with frame opening identification numbers.
3. Since glass is inside set, sequence of any back up walls, ducts, pipes, etc., must be coordinated with the General Contractor and other trades.
4. It is essential that all horizontal gutters be clean prior to glazing. This is necessary to avoid clogging the weep holes as well as staining of exterior metal and glass surround.
5. If it is necessary to lubricate either exterior gaskets or interior wedge gaskets, use liquid detergent diluted approximately ten (10) to one (1) with water or a suitable glazing lubricant.
6. Setting blocks of 85 durometer EPDM at least 4” long are supplied. These blocks should never be cut shorter than furnished nor located other than centered on weep holes. If additional blocking height is required to square glass in the opening, use EPDM or neoprene strips as long and as wide as the original block.



## GLAZING

### STEP 12 CUT EXTERIOR GASKETS

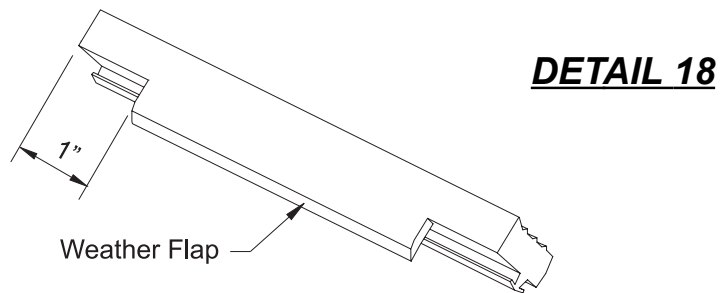
Vertical gasket:

- Cut to daylight opening plus 3/16" per foot of daylight opening.

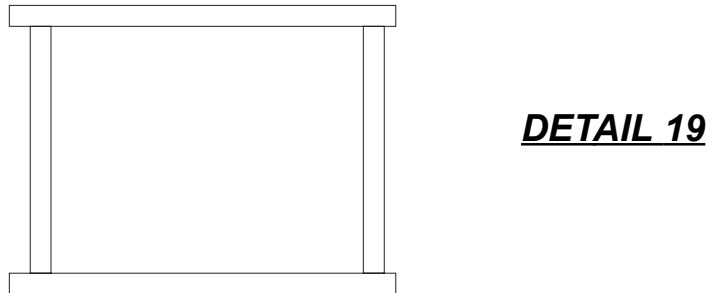
Horizontal gaskets:

- Cut to length of the horizontal.
- Nip off one inch of the weather flap on each end of the gasket.

See **Details 18**.



-The vertical gaskets will be installed between the horizontal gaskets.  
See **Detail 19**.



### CUT INTERIOR GASKETS

Vertical Gaskets:

- Cut to the length of the interior glazing stop (E9-3036) plus 1/4" per foot.

Horizontal Gaskets:

- Cut to the length of the horizontal.
- The vertical gasket will be installed between the horizontal gaskets.

See **Detail 19**.

**GLAZING**

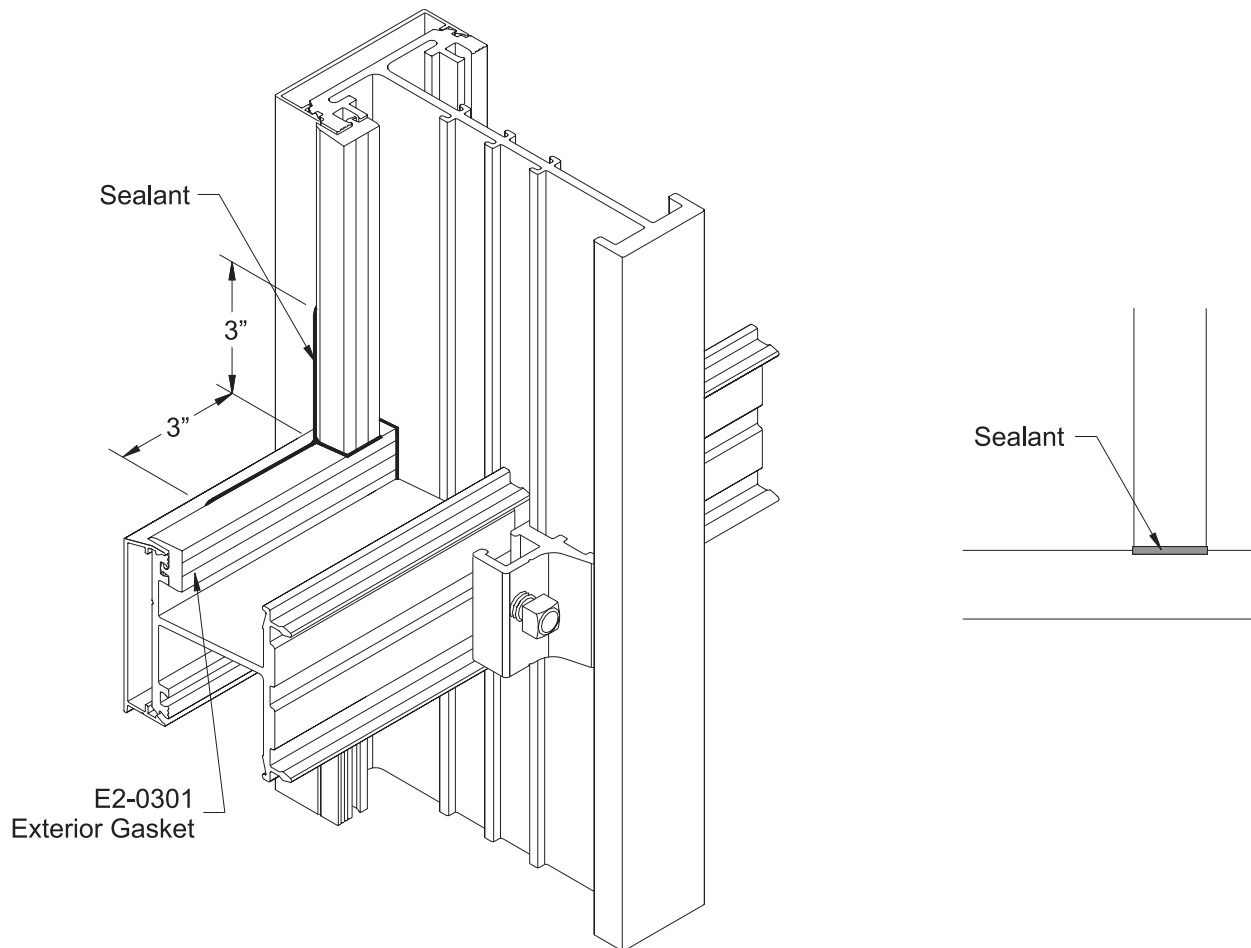
**STEP 13  
INSTALL EXTERIOR GASKETS**

-Install each end of the gasket into the corner and then install the center of the gasket.  
-Work from the center toward the corners of each side, press the gasket dart into the reglet. This will "crowd" the gasket and compress it as it should be.

-After installing the exterior gasket pull out the last 3" of each end of the gasket and apply sealant into the gasket reglet in the mullion.

-Apply sealant to the end of each vertical gasket and re-install against the horizontal gasket.

See **Detail 20**.



**DETAIL 20**

## GLAZING

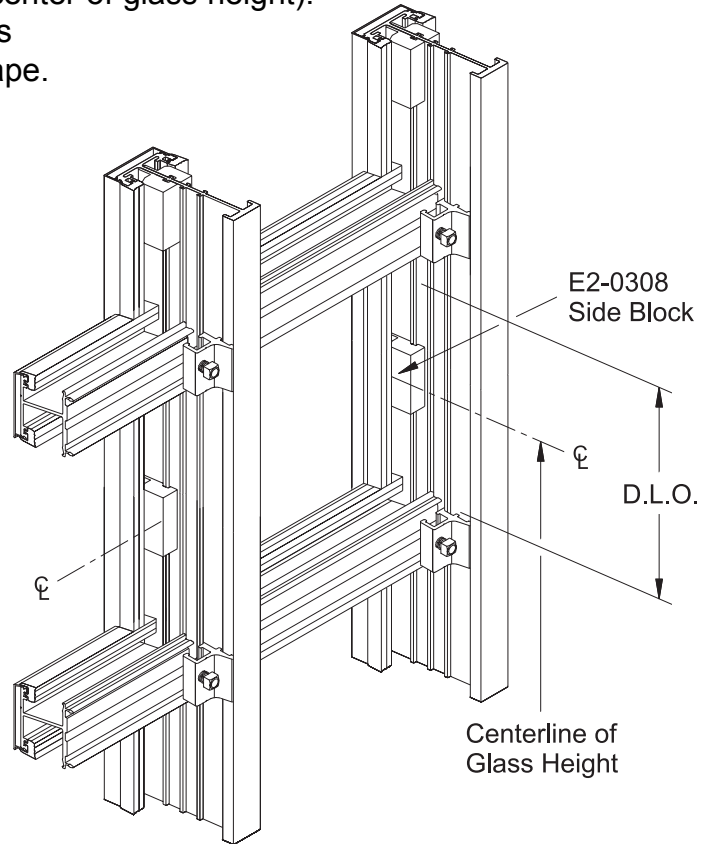
### STEP 14 INSTALL SIDE BLOCKS

Each lite requires a side block at each side (at center of glass height).

- Install the spacer blocks for each lite of glass with the factory applied pressure sensitive tape.

See **Detail 21**.

**DETAIL 21**



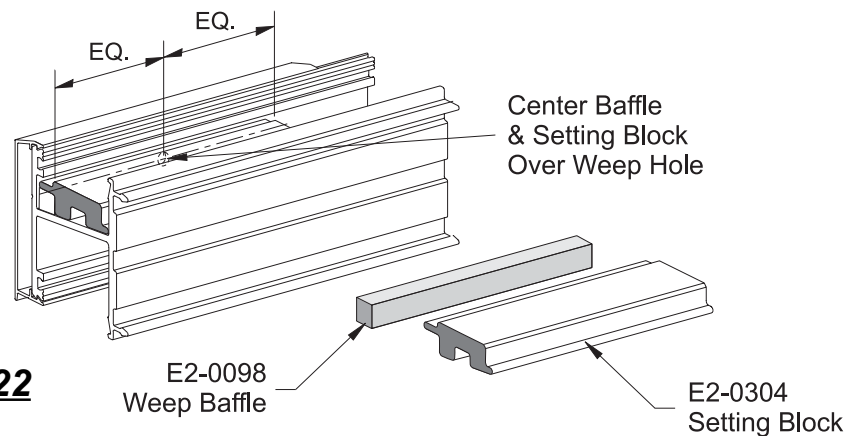
### STEP 15 INSTALL SETTING BLOCKS & WEEP BAFFLES

-Install open-cell, polyurethane foam weep baffles, E2-0098, and setting blocks, E2-0304.

Both weep baffles and setting blocks must be centered on weep holes.

See **Detail 22** and **General Glazing Note #6**.

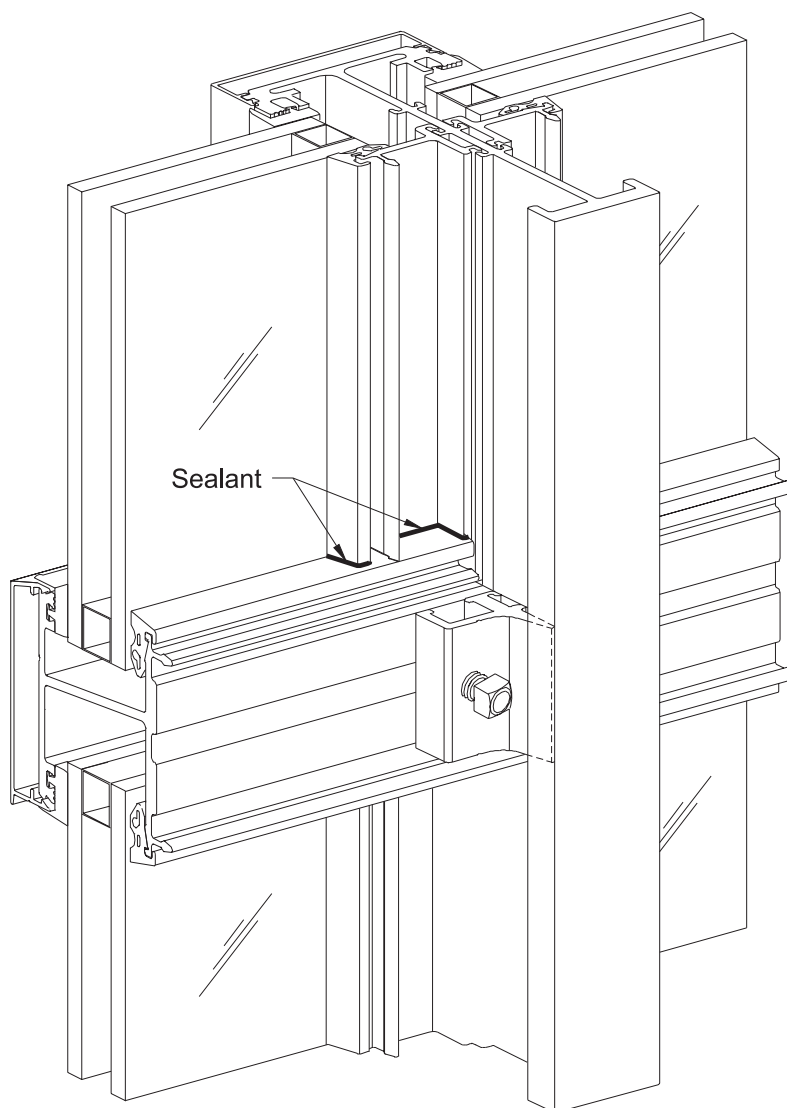
**DETAIL 22**



**GLAZING****STEP 16  
SETTING GLASS**

- Set glass into the opening carefully so as not to disturb the exterior gaskets.
- Install the interior wedge gasket into both the top and the bottom of the horizontals.
- Center the vertical glass stops into the opening and hook them into place.
- Apply sealant to each end of the interior vertical wedge gaskets and install them into the glass stops.
- Seal the joint between the vertical glass stop and the horizontal gasket.

See **Detail 23**.

**DETAIL 23**

## GLAZING

### GLASS SETTING PRECAUTIONS

- A. Glass must be centered in opening both horizontally and vertically.
- B. Exterior gasket must not be disturbed during setting. Glaze spandrel units first to allow visual inspection through vision glass openings.
- C. Glass must be set tight against exterior gasket at setting blocks before interior wedges are installed. Otherwise glass can drag or bite on setting blocks, introducing bending stress and breakage. This is especially critical on glass with raw edges.
- D. If glass is initially set with temporaries (short lengths of interior wedge), then the temporaries must be located at setting blocks as well as at the jambs.
- E. Caution: The glazing of the lites of glass that occur in front of the curtain wall anchors may require that the horizontals directly above these units, be left out until the glass is set into place. Install the lites of glass that occur directly in front of the curtain wall anchors into the glazing pockets and carefully slide them down into place; install the horizontal above the lite of glass.

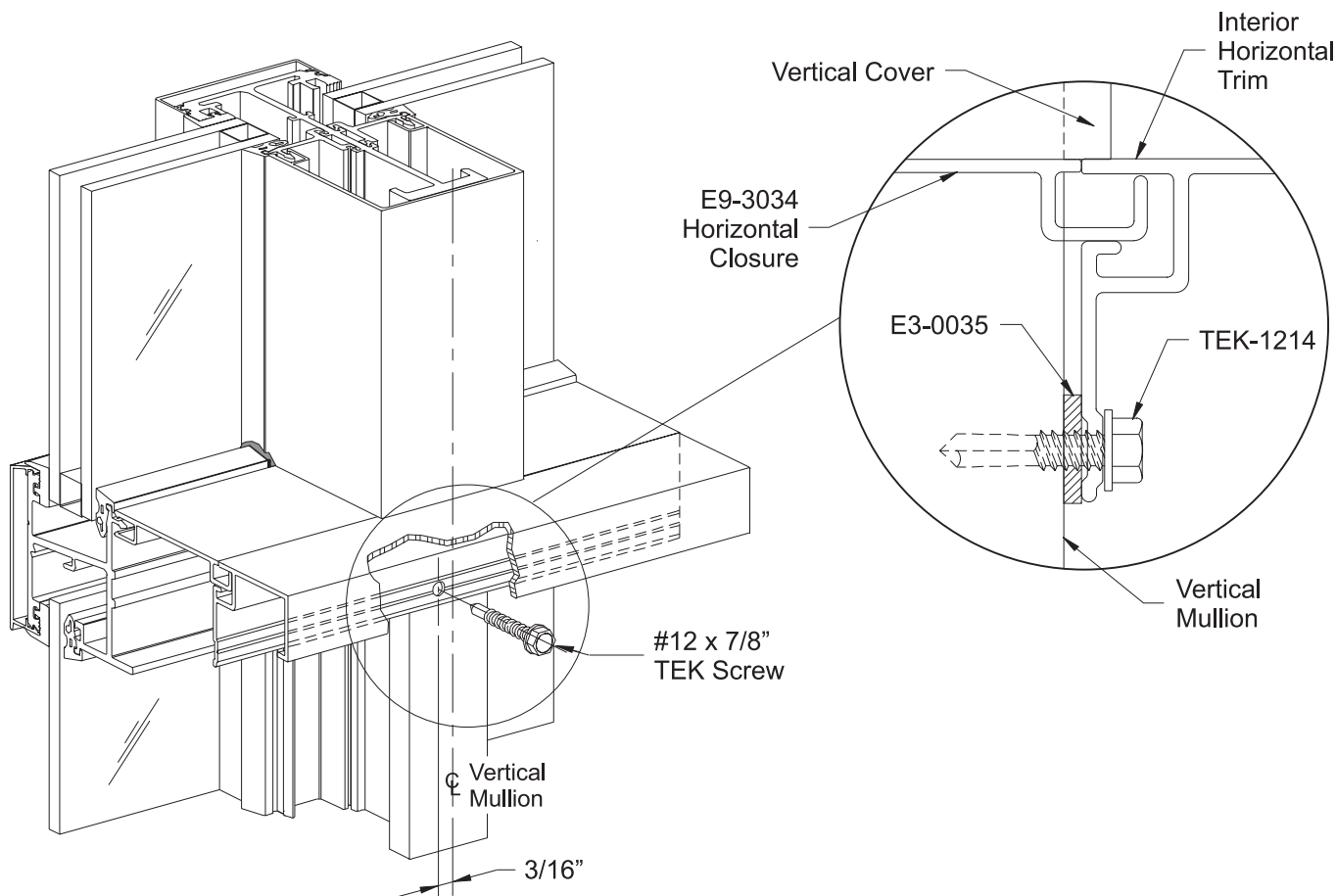
**GLAZING**

**STEP 17  
INSTALL INTERIOR TRIM**

- Snap isolator clips, E3-0019, onto the interior trim members 18" on center.
- Line up the interior horizontal covers/interior horizontal closures and snap into place.
- Attach the interior horizontal trim to the verticals using one TEK-1214 fastener located at 3/16" from the center of the vertical, with an 1/8" nylon washer, E3-0035, between the interior trim and the vertical mullion.

See **Detail 24**.

- Center the interior vertical covers and snap into place.
- Complete at least one bay with all of the interior trim prior to proceeding with the glazing operation.



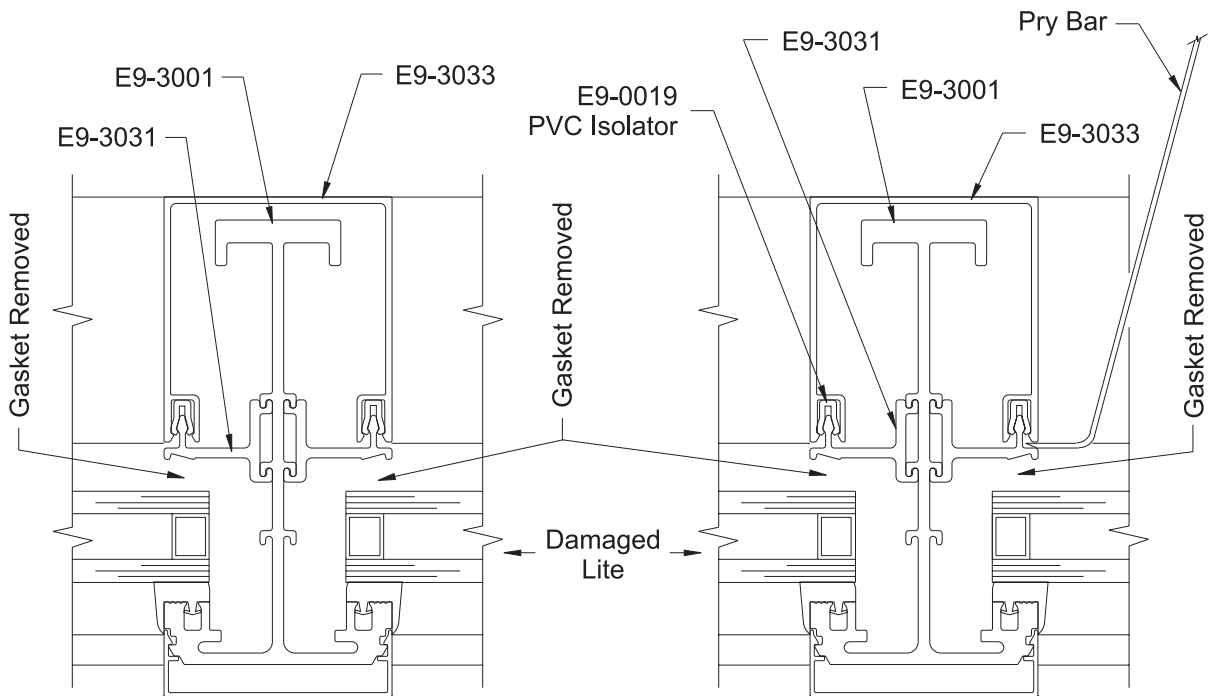
**DETAIL 24**

## GLAZING

### VISION LITE REGLAZE (From Interior)

1. Using a "Hook Tool" remove the vertical gaskets at left and right sides of the lite being replaced. Also, remove the vertical gaskets on the other side of the same interior vertical cover.

See **Detail 25**.



**DETAIL 25**

2. Using a wide blade (1" minimum width) pry bar, start at one end and snap off the two vertical covers on either side of the unit to be replaced.
3. Remove vertical glazing beads, E9-3031.
4. Remove horizontal wedge gaskets at the head and sill of the glass.
5. Remove bad glass and replace with a new lite of same size.
6. Replace vertical beads and perimeter wedge gaskets.
7. Replace interior snap-on covers.

**Note:** If partition condition does not allow removal of both interior mullion covers, replacement of lite must be joggle set and "W" side blocks must be used.

**GLAZING**

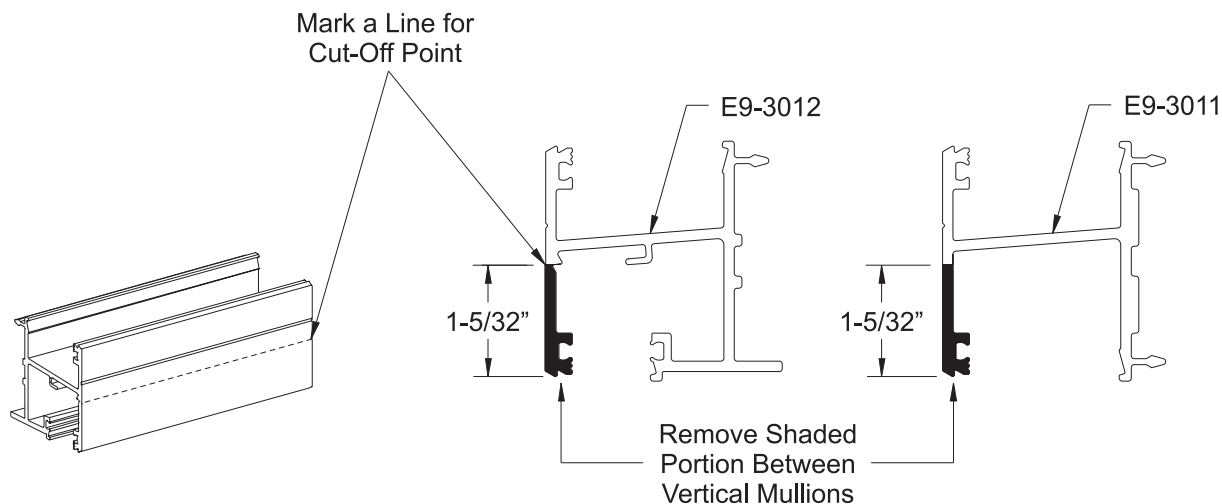
**SPANDREL LITE REGLAZE (From Exterior)**

1. Remove broken glass, exterior glazing gaskets, exterior horizontal face cover at the head, interior wedges and interior vertical glazing beads.
2. Mark on the face of the horizontal a line 1-5/32" up from the bottom.
3. The bottom exterior leg of the horizontal above the damaged lite must be removed. This is done by making vertical saw cuts, next to the vertical face covers, up to the line previously marked on the horizontal.

See **Detail 26**.

4. Carefully cut along the line marked on the face of the horizontal.

**Note:** Protect the edges of the exterior vertical face covers from scarring by saw blade.

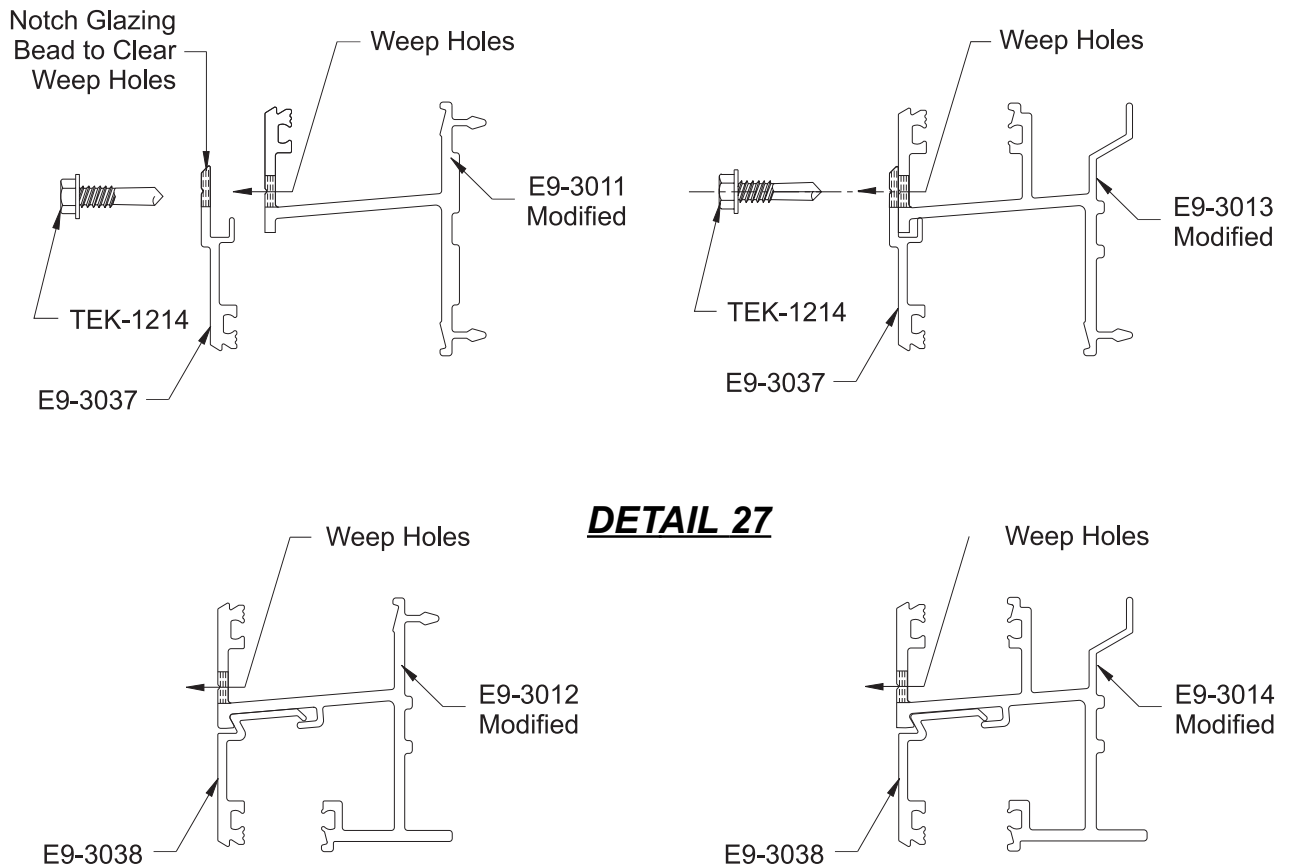


**DETAIL 26**



## GLAZING

### SPANDREL LITE REGLAZE (Continued)



5. Reposition the interior glazing beads and screw attach them to the vertical mullions to hold in place during the reglazing process. Make sure that the interior gasket, E2-0302, is installed correctly.
6. Install a new lite the same size as the original. Since this requires the lite to be “joggle set”, the solid side block at one pocket has to be replaced with a “W” type spacer.
7. Install a replacement exterior bead, E9-3037 for horizontals E9-3011 & E9-3013 or E9-3038 for horizontals E9-3012 & E9-3014, taking care to seal the horizontal to the vertical mullions at each end.

See **Detail 27**.

8. Replace the horizontal face cover.
9. Install new replacement exterior wedge gaskets, E2-0312.





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